

INDUSTRIAL AVE,  
STATE 3  
MORRIS HAWK NJ 07430  
PHONE: 201.684.0055  
FAX: 201.684.0066



---

December 3, 2021

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

RE: Notice of Exempt Modification  
77 Pease Road, Woodbridge, CT 06525  
Latitude: 41.3414444  
Longitude: -72.9936  
T-Mobile Site#: CTNH521A - Anchor

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 130' level of the 172' monopole located at 77 Pease Road in Woodbridge, CT. The monopole is owned by American Tower and the property is owned by Kenneth Johnson. T-Mobile now intends to replace six (6) of its existing antennas with three (3) L2500/N2500 antennas. The new antennas would be installed at the same 130' level of the tower. The new antennas support 5G services.

**Planned Modifications:**

**Tower:**

Install New:

- (3) Ericsson AIR6449 B41 Antennas
- (3) Radio 4449 B71 B85
- (3) Radio 4460 B2 B25
- (1) 1 5/8" Hybrid Cables

To Be Removed:

- (6) Ericsson AIR21 Antennas
- (3) Radio 4449 B12 B71
- (1) 1 1/4" Hybrid Cable

To Remain:

- (3) RFS APXVAALL24 43-U-NA20 Antennas

(3) 1 1/4" Coax Cables

Ground Work:

**Install** (1) 6160 Equipment Cabinet and (1) Battery Cabinet B160

This facility was approved by the Connecticut Siting Council in Docket No. 44 on July 24, 1984. The Docket is attached. None of the modifications break the conditions given.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to First Selectwoman Beth Heller, Elected Official, and Kristine Sullivan, Zoning Enforcement Office, 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](mailto:ebreun@transcendwireless.com)

Attachments

cc: Beth Heller - First Selectwoman of Woodbridge

Kristine Sullivan - Zoning Enforcement Office

Kenneth Johnson - Property Owner

American Towers - Tower Owner

ERIC BREUN  
2016587728  
10 INDUSTRIAL AVE  
MAHWAH NJ 07430

1 LBS

1 OF 1

**SHIP TO:**  
KRISTINE SULLIVAN  
11 MEETINGHOUSE LANE  
**WOODBIDGE CT 06525**



**CT 064 7-02**



**UPS GROUND**

TRACKING #: 1Z V25 742 03 9689 6776



BILLING: P/P

Reference #1: CTNH521A

XOL 21.11.24 NV45 49.0A 11/2021\*



TM

ERIC BREUN  
2016587728  
10 INDUSTRIAL AVE  
MAHWAH NJ 07430

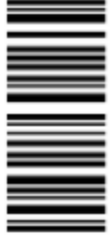
1 LBS

1 OF 1

**SHIP TO:**  
FIRST SELECTWOMAN  
BETH HELLER  
11 MEETINGHOUSE LANE  
**WOODBIDGE CT 06525**

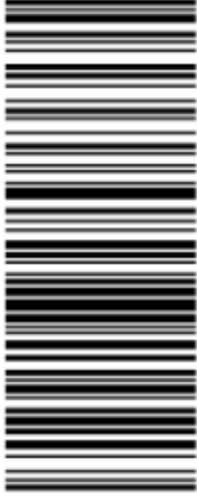


**CT 064 7-02**



**UPS GROUND**

TRACKING #: 1Z V25 742 03 9834 6768



BILLING: P/P

Reference #1: CTNH521A

XOL 21.11.24 NV45 49.0A 11/2021\*



TM

ERIC BREUN  
2016587728  
10 INDUSTRIAL AVE  
MAHWAH NJ 07430

1 LBS

1 OF 1

**SHIP TO:**  
KENNETH JOHNSON  
77 PEASE ROAD  
WOODBIDGE CT 06525



**CT 064 7-02**



**UPS GROUND**

TRACKING #: 1Z V25 742 03 9068 9528



BILLING: P/P

Reference #1: CTNH521A

XOL 21.11.24 NV45-49.0A 11/2021\*



TM

ERIC BREUN  
2016587728  
10 INDUSTRIAL AVE  
MAHWAH NJ 07430

1 LBS

1 OF 1

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



**MA 018 9-04**



**UPS GROUND**

TRACKING #: 1Z V25 742 03 9150 3538



BILLING: P/P

Reference #1: CTNH521A

XOL 21.11.24 NV45-49.0A 11/2021\*



TM

**Hello, your package has been delivered.**

**Delivery Date:** Thursday, 12/02/2021

**Delivery Time:** 11:40 AM

**Left At:** FRONT DESK

**Signed by:** ANCRI

## TRANSCEND WIRELESS

**Tracking Number:** [1ZV257420391503538](#)

**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:** [CTNH521A](#)

**Hello, your package has been delivered.**

**Delivery Date:** Thursday, 12/02/2021

**Delivery Time:** 11:03 AM

**Left At:** FRONT DOOR

### Experience UPS My Choice<sup>®</sup> Premium Today

Be in total control of how, when and where your packages are delivered.

[Upgrade to Premium Now](#)



[Set Delivery Instructions](#)

[Manage Preferences](#)

## TRANSCEND WIRELESS

**Tracking Number:** [1ZV257420390689528](#)

**Ship To:** KENNETH JOHNSON  
77 PEASE ROAD  
WOODBIDGE, CT 06525  
US

**Number of Packages:** 1

**UPS Service:** UPS Ground

**Package Weight:** 1.0 LBS

**Reference Number:** [CTNH521A](#)

**Hello, your package has been delivered.**

**Delivery Date:** Thursday, 12/02/2021

**Delivery Time:** 9:44 AM

**Left At:** RECEPTION

**Signed by:** BULENSKI

**TRANSCEND WIRELESS**

**Tracking Number:** [1ZV257420398346768](#)

**Ship To:** BETH HELLER  
11 MEETINGHOUSE LANE  
WOODBIDGE, CT 06525  
US

**Number of Packages:** 1

**UPS Service:** UPS Ground

**Package Weight:** 1.0 LBS

**Reference Number:** [CTNH521A](#)

**Hello, your package has been delivered.**

**Delivery Date:** Thursday, 12/02/2021

**Delivery Time:** 9:44 AM

**Left At:** RECEPTION

**Signed by:** BULENSKI

**TRANSCEND WIRELESS**

**Tracking Number:** [1ZV257420396896776](#)

**Ship To:** KRISTINE SULLIVAN  
11 MEETINGHOUSE LANE  
WOODBIDGE, CT 06525  
US

**Number of Packages:** 1

**UPS Service:** UPS Ground

**Package Weight:** 1.0 LBS

**Reference Number:** [CTNH521A](#)



# Town of Woodbridge, CT

## Property Listing Report

Map Block Lot

2204/1410/77//

Building # 1

PID

896

Account

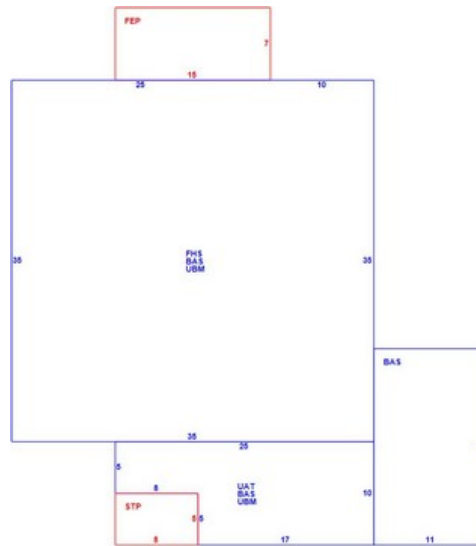
101505

### Property Information

Property Location	77 PEASE RD
Owner	JOHNSON SR, KENNETH W EST
Co-Owner	
Mailing Address	77 PEASE RD WOODBIDGE CT 06525
Land Use	1010 Single Family
Land Class	R
Zoning Code	A
Census Tract	

Neighborhood	
Acreage	2.61
Utilities	Well,Septic
Lot Setting/Desc	Level
Book / Page	874/225
Additional Info	

### Photo



### Primary Construction Details

Year Built	1930
Building Desc.	Single Family
Building Style	Conventional
Building Grade	B
Stories	1.5
Occupancy	1.00
Exterior Walls	Brick/Masonry
Exterior Walls 2	NA
Roof Style	Gambrel
Roof Cover	Asph/F Gls/Cmp
Interior Walls	Drywall/Sheet
Interior Walls 2	Plastered
Interior Floors 1	Carpet
Interior Floors 2	Hardwood

Heating Fuel	Propane
Heating Type	Forced Air-Duc
AC Type	03
Bedrooms	04
Full Bathrooms	2
Half Bathrooms	0
Extra Fixtures	1
Total Rooms	7
Bath Style	Average
Kitchen Style	Average
Fin Bsmt Area	NA
Fin Bsmt Quality	NA
Bsmt Gar	NA
Fireplaces	NA

### (\*Industrial / Commercial Details)

Building Use	Residential
Building Condition	A
Sprinkler %	NA
Heat / AC	NA
Frame Type	NA
Baths / Plumbing	NA
Ceiling / Wall	NA
Rooms / Prtns	NA
Wall Height	NA
First Floor Use	NA
Foundation	NA



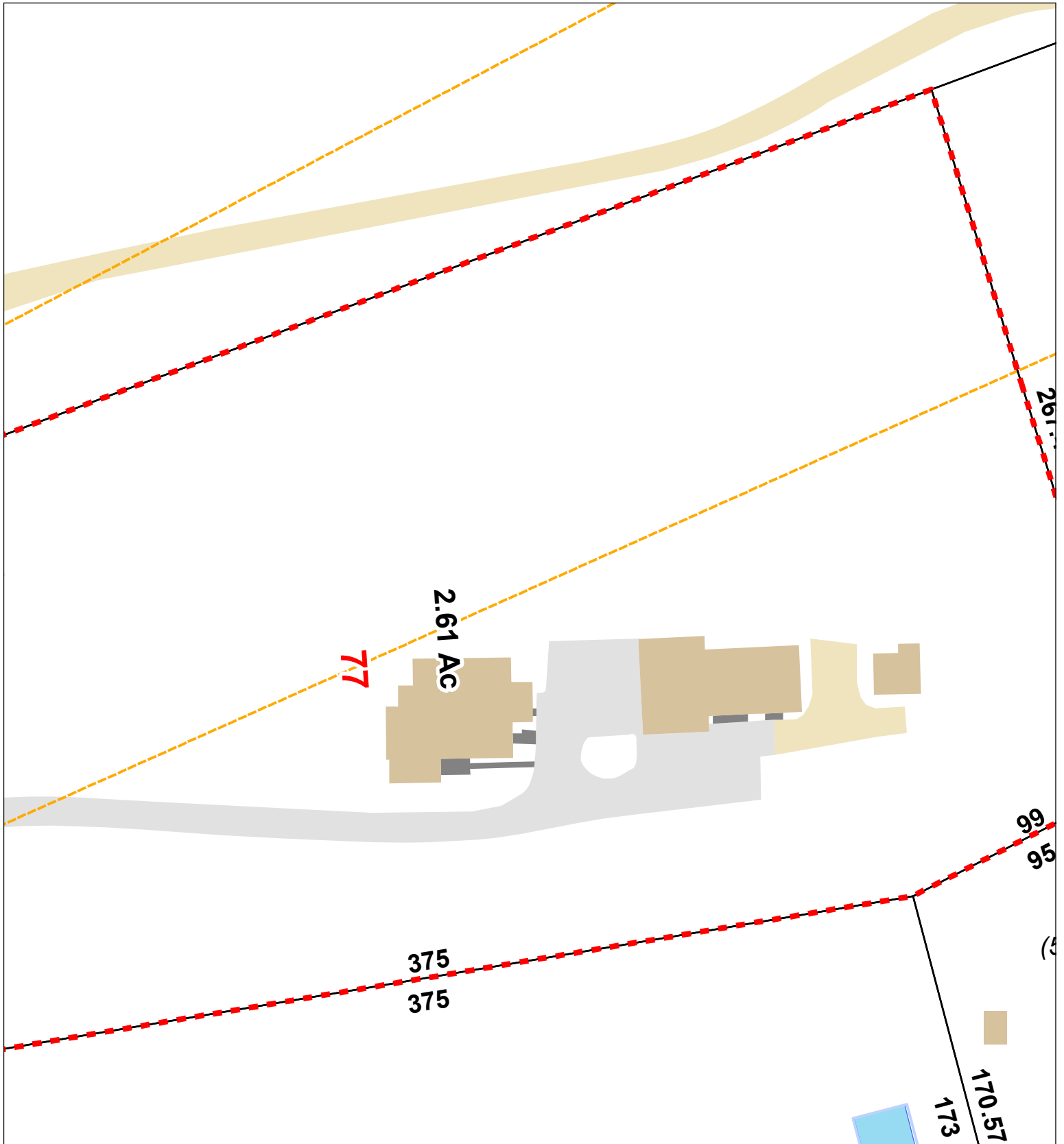


# Town of Woodbridge, Connecticut - Assessment Parcel Map



GIS ID: 896

Address: 77 PEASE RD



Approximate Scale:

1:600

Map Produced June 2021



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

DOCKET NO. 44

AN APPLICATION SUBMITTED BY THE SOUTHERN : CONNECTICUT SITING  
NEW ENGLAND TELEPHONE COMPANY FOR A :  
CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY : COUNCIL  
AND PUBLIC NEED FOR THE CONSTRUCTION,  
MAINTENANCE AND OPERATION OF FACILITIES TO  
PROVIDE CELLULAR SERVICE IN NEW HAVEN COUNTY : July 24, 1984

DECISION AND ORDER

Pursuant to the foregoing opinion, the Council hereby directs that a certificate of environmental compatibility and public need as required by section 16-50k of the General Statutes of Connecticut, revisions of 1958, revised to 1983, as amended, be issued to the Southern New England Telephone Company for the construction, operation, and maintenance of a telecommunications tower and associated equipment to provide cellular service at each of the following sites:

Jasudowich tract, Brushy Plain Road, Branford, Connecticut;  
Town of Guilford tract, Tanner Marsh Road, Guilford, Connecticut;  
Bridgeport Avenue, Milford, Connecticut;  
Quagliaro tract, Farmdale Drive, Waterbury, Connecticut;  
Pease Road, Woodbridge, Connecticut; and  
Dwight Street, North Haven, Connecticut.

The facilities shall be constructed, operated, and maintained as specified in the Council's record on this matter, and subject to the following conditions:

1. The towers including antennas shall be no taller than necessary to provide the proposed service and in no event shall exceed
  - a) 167' at the Branford site,
  - b) 167' at the Guilford site,
  - c) 117' at the Milford site,
  - d) 167' at the Waterbury site,
  - e) 167' at the Woodbridge site,
  - f) 167' at the North Haven site;
2. A fence not lower than eight feet shall surround each tower and its associated equipment;

3. The applicant or its successor shall notify the Council if and when directional antennas or any other equipment is added to any of these facilities;
4. The applicant or its successor shall permit, in accordance with representations made by it during the proceeding, public or private entities to share space on the facilities, for due consideration received, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing;
5. Unless necessary to comply with condition number six, below, no lights shall be installed on any of these towers;
6. The facilities shall be constructed in accordance with all applicable federal, state, and municipal laws and regulations;
7. The applicant shall submit a development and management plan (D&M) for the Branford, Milford, Woodbridge, and North Haven sites pursuant to sections 16-50j-85 through 16-50j-87 of the regulations of state agencies, except that irrelevant items in section 16-50j-86 need only be identified as such. The D&M plans shall include appropriate evergreen screening of the sites, erosion control measures, reseeding plans, and tree removal plans. The applicant shall comply with the reporting requirements of section 16-50j-87 for all sites;
8. Construction activities shall take place during daylight working hours;
9. This decision and order shall be void and the towers and associated equipment approved herein shall be dismantled and removed, or reapplication for any new use shall be made to the Connecticut

Siting Council before any such new use is made, if the towers do not provide or permanently cease to provide cellular service following completion of construction;

10. This decision and order shall be void if all construction authorized is not completed within three years of the issuance of this decision.

Pursuant to section 16-50p of the General Statutes, we hereby direct that a copy of the opinion and decision and order be served on each person listed below. A notice of the issuance shall be published in the Hartford Courant, New Haven Register, and the Waterbury Republican.

The parties to this proceeding are

The Southern New England Telephone Company (Applicant)  
Room 314  
227 Church Street  
New Haven, Connecticut 06506

ATTENTION: Mr. Peter J. Tyrrell (its attorney)  
Senior Attorney

Town of Hamden represented by:  
Peter F. Villano, Mayor  
Shirley Gonzales, Town Planner  
Mr. Hugh Manke, Esquire  
Office of the Town Attorney  
Memorial Town Hall  
2372 Whitney Avenue  
Hamden, Connecticut 06518

Inland Wetlands Agency represented by:  
Town of Woodbridge  
Robert J. Klancko  
Chairman  
Town Hall  
11 Meeting House Lane  
Woodbridge, Connecticut 06525

Town Plan and Zoning  
Commission  
Town of Woodbridge

represented by:

Norman Fineberg  
Chairman  
Town Hall  
11 Meeting House Lane  
Woodbridge, Connecticut 06525

The Honorable Peter M. Lerner  
State Representative  
State of Connecticut  
House of Representatives  
State Capitol  
Hartford, Connecticut 06115

John Menta  
Felicia Tencza

represented by:

Ms. Felicia Tencza  
580 Gaylord Mountain Road  
Hamden, Connecticut 06518

Ms. Renee Robinson  
265 Blue Trail  
Hamden, Connecticut 06518

(service waived)

Irene L. Wong  
Edson H. Mount  
Dr. & Mrs. H.M. Fiskio  
Dr. & Mrs. Alexander Gottschalk

represented by:

Dr. & Mrs. Alexander Gottschalk  
230 Six Rod Highway  
Hamden, Connecticut 06518

The Sleeping Giant Park Association

represented by:

Mr. Dag Pfeiffer  
President  
Box 14  
Quinnipiac College  
Hamden, Connecticut 06518

West Rock Ridge Park Association

represented by:

Mr. William L. Dohney, Jr., D.D.S.  
President  
220 Mountain Road  
Hamden, Connecticut 06514

Sierra Club

represented by:

Ms. M. Kim Yanoshick  
Executive Director  
Hartford Chapter  
118 Oak Street  
Hartford, Connecticut 06106

Quinnipiac College

represented by:

Mr. Richard A. Terry  
President  
Hamden, Connecticut 06518

Guilford Conservation Commission

represented by:

Ms. Carolyn K. Evans  
Chairman  
Town Hall  
Park Street  
Guilford, Connecticut 06437

Mrs. Barbara R. Peterson  
Mary & Phil Faust  
Anita L. & Richard M. Sullivan

represented by:

Anita L. & Richard M. Sullivan  
315 Chestnut Lane  
Hamden, Connecticut 06518

Mrs. Pauline H. Hoff

represented by:

Herbert L. Emanuelson, Jr.  
Emanuelson and Wynne  
205 Church Street  
New Haven, Connecticut 06510

Hamden League of Women Voters

represented by:

Mrs. Sherrill Zoller  
605 West Woods Road  
Hamden, Connecticut 06518  
(service waived)

Joan Rosenberg  
230 Ridewood Avenue  
Hamden, Connecticut 06517

Mr. & Mrs. Richard Sykes  
110 Blue Trail  
Hamden, Connecticut 06518

Thomas & Claudia Sullivan, Jr.  
100 Blue Trail  
Hamden, Connecticut 06518

Mr. William N. Pantalone  
27 Pease Road  
Woodbridge, Connecticut 06525

(service waived)

INTERVENORS

Metromedia TeleCommunications  
Nutmeg Telecommunications, Inc.  
CSI of New Haven  
CSI of Stamford  
Cellular Communications, Inc.  
LIN Cellular Corp.  
Cellular Mobile Services  
Maxcell TeleCommunications, Inc.  
Mobile Cellular Telephone, Inc.  
Cellular Dynamics  
Connecticut Corridor Cellular  
Chase/Post Cellular

represented by:

Dwight A. Johnson  
Murtha, Cullina, Richter  
and Pinney  
101 Pearl Street  
P.O. Box 3197  
Hartford, Connecticut 06103-0197

C E R T I F I C A T I O N

The undersigned members of the Connecticut Siting Council hereby certify that they have heard this case or read the record thereof, and that we voted as follows:

Dated at New Britain, Connecticut, this 24th day of July, 1984.


<u>Council Members</u>	<u>Vote Cast</u>
_____) Gloria Dibble Pond Chairperson	Absent
_____) Commissioner John Downey Designee: Commissioner Peter G. Boucher	Absent
<i>Brian Emerick</i> _____) Commissioner Stanley Pac Designee: Brian Emerick	<del>Yes</del> Absent <del>Abstain</del>
<i>Owen L. Clark</i> _____) Owen L. Clark	Yes
<i>Fred J. Doosy</i> _____) Fred J. Doosy	Yes
<i>Mortimer A. Gelston</i> _____) Mortimer A. Gelston	Yes
<i>James G. Horsfall</i> _____) James G. Horsfall	Yes
_____) Janet Sitty	Absent
<i>Colin C. Tait</i> _____) Colin C. Tait Acting Chairperson	Yes

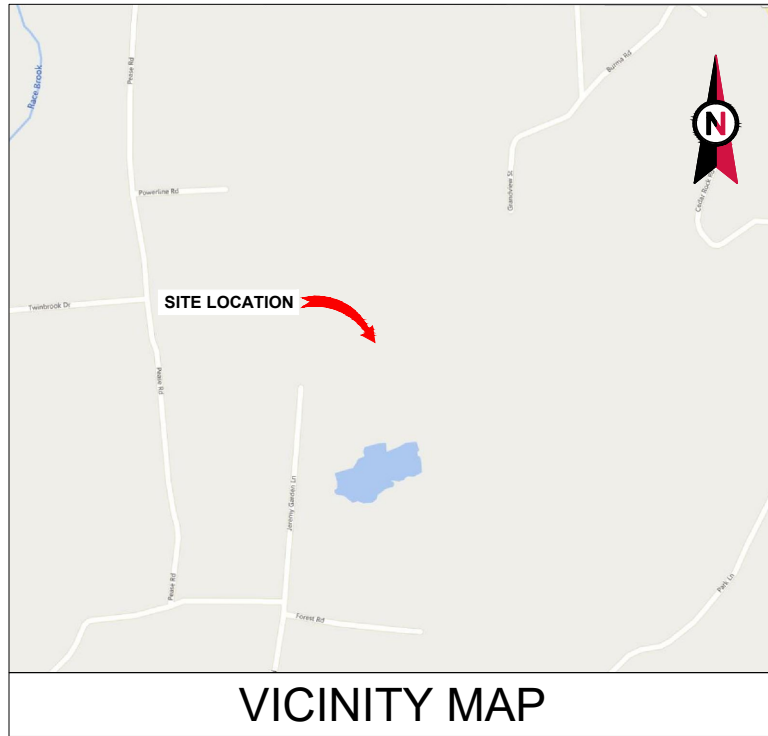


STATE OF CONNECTICUT            )  
                                          :  
COUNTY OF HARTFORD            )        ss.        New Britain, July 24, 1984

I hereby certify that the foregoing is a true and correct copy of the decision and order issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:

  
\_\_\_\_\_  
Christopher S. Wood, Executive Director  
Connecticut Siting Council

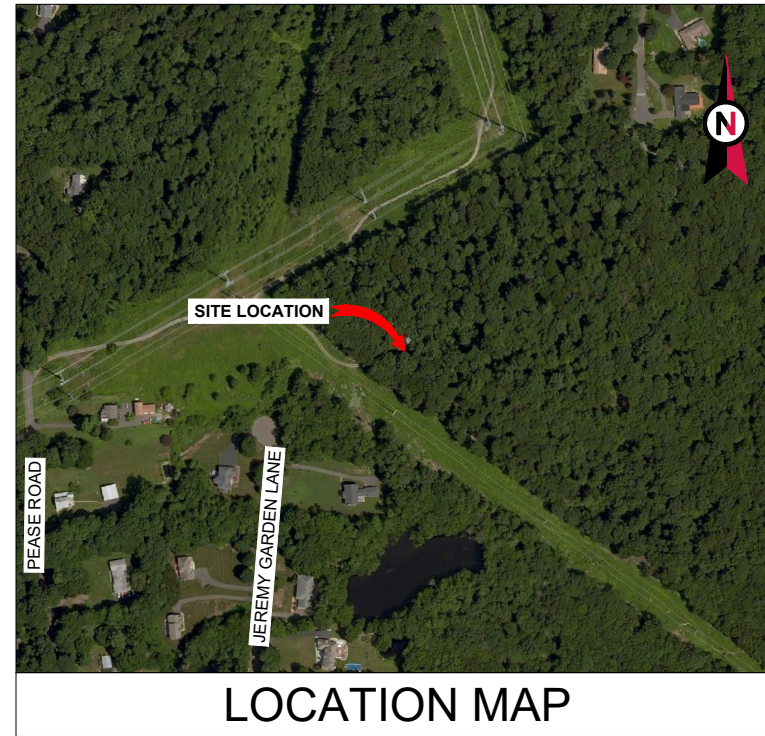


VICINITY MAP



**AMERICAN TOWER®**

ATC SITE NAME: WOODBRIDGE CT 1  
 ATC SITE NUMBER: 302480  
 T-MOBILE SITE NAME: ATC WOODBRIDGE MONOPOLE  
 T-MOBILE SITE NUMBER: CTNH521A  
 SITE ADDRESS: 77 PEASE ROAD  
 WOODBRIDGE, CT 06525



LOCATION MAP

**T-MOBILE ANCHOR ANTENNA AMENDMENT PLAN  
 67D5A998E OUTDOOR CONFIGURATION**



**Colliers** Engineering & Design

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

Copyright © 2021, Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, revised, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

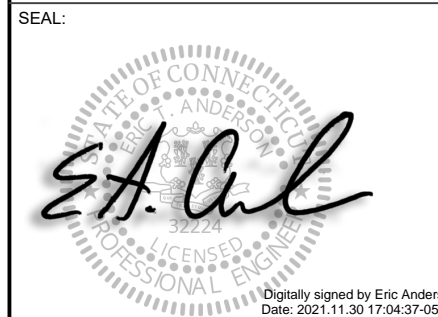
REV.	DESCRIPTION	BY	DATE
A	PRELIM	JLK	09/30/21
0	FOR CONSTRUCTION	RMD	11/30/21

ATC SITE NUMBER:  
302480

ATC SITE NAME:  
WOODBRIDGE CT 1

T-MOBILE SITE NAME:  
ATC WOODBRIDGE MONOPOLE

SITE ADDRESS:  
77 PEASE ROAD  
WOODBRIDGE, CT 06525



Digitally signed by Eric Anderson  
 Date: 2021.11.30 17:04:37-0500'

COA: JPC.0000131



DATE DRAWN: 09/30/21  
 ATC JOB NO: 13732458\_G3  
 CUSTOMER ID: ATC WOODBRIDGE MONOPOLE  
 CUSTOMER #: CTNH521A

**TITLE SHEET**

SHEET NUMBER:  
**G-001**

REVISION:  
**0**

COMPLIANCE CODE	PROJECT SUMMARY	PROJECT DESCRIPTION	SHEET INDEX				
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	<u>SITE ADDRESS:</u> 77 PEASE ROAD WOODBRIDGE, CT 06525 COUNTY: NEW HAVEN  <u>GEOGRAPHIC COORDINATES:</u> LATITUDE: 41.34144444 LONGITUDE: -72.9936 GROUND ELEVATION: 322' AMSL	THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW: <u>TOWER WORK:</u> REMOVE (6) ANTENNA(S), (3) RRH(S) AND (1) HYBRID CABLE(S) INSTALL (3) ANTENNA(S), (6) RRH(S) AND (1) HYBRID TRUNK CABLE(S)  EXISTING (3) ANTENNA(S) AND (3) HYBRID CABLE(S) TO REMAIN  <u>GROUND WORK:</u> INSTALL (1) ENCLOSURE 6160 AND (1) B160 BATTERY CABINET EXISTING (1) RBS 6131 CABINET TO REMAIN	SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
	<u>PROJECT TEAM</u>  <u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801  <u>ENGINEER:</u> COLLIERS ENGINEERING & DESIGN CT, P.C. 135 NEW ROAD MADISON, CT 06443  PROJECT#: 21904531A  <u>PROPERTY OWNER:</u> KENNETH W JOHNSON 77 PEASE ROAD WOODBRIDGE, CT 06525	<u>PROJECT NOTES</u> 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).	G-001	TITLE SHEET	0	11/30/21	JLK
<u>UTILITY COMPANIES</u>  POWER COMPANY: UNITED ILLUMINATING PHONE: (800) 722-5584  TELEPHONE COMPANY: FRONTIER COMMUNICATIONS PHONE: (800) 376-6843		<u>PROJECT LOCATION DIRECTIONS</u>  FROM HARTFORD TAKE I-91 SOUTH TO MERRIT PKWY SOUTH TO EXIT 59. TAKE RT 63 NORTH, TURN LEFT ON RT 114. FOLLOW TO PEASE RD (FIRST LEFT). ACCESS ROAD IS DOWN ON LEFT.	G-002	GENERAL NOTES	0	11/30/21	JLK
			C-101	DETAILED SITE PLAN	0	11/30/21	JLK
			C-102	DETAILED GROUND PLAN	0	11/30/21	JLK
			C-201	TOWER ELEVATION	0	11/30/21	JLK
			C-401	ANTENNA INFORMATION & SCHEDULE	0	11/30/21	JLK
			C-501	CONSTRUCTION DETAILS	0	11/30/21	JLK
			E-501	GROUNDING DETAILS	0	11/30/21	JLK
			E-502	ELECTRICAL DETAILS	0	11/30/21	JLK
			R-601	SUPPLEMENTAL			
			R-602	SUPPLEMENTAL			
			R-603	SUPPLEMENTAL			
			R-604	SUPPLEMENTAL			
			R-605	SUPPLEMENTAL			



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

**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 ANSIEIA/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 NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLIGENCE 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 OF 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 AND PROVIDE PRINTOUT OF THAT TEST.
  - 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)

**ELECTRICAL NOTES:**

1. ELECTRICAL DESIGN SHALL BE PERFORMED BY ELECTRICAL CONTRACTOR. STRUCTURAL DESIGN SHALL BE PERFORMED BY GENERAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL ENSURE THAT ALL WORK COMPLIES WITH ALL APPLICABLE LOCAL AND STATE CODES AND NATIONAL ELECTRICAL CODE.
2. ALL SUGGESTED ELECTRICAL ELEMENTS (SUCH AS BREAKER SIZES, WIRE SIZES, CONDUITS SIZES ARE FOR ZONING PURPOSES ONLY. IT IS THE RESPONSIBILITY TO OF THE ELECTRICAL CONTRACTOR TO CONFIRM COMPLIANCE WITH LOCAL ELECTRICAL CODES AND PASS ALL APPLICABLE AND NECESSARY INSPECTIONS. IN SOME EVENTS, IT MAY BE NECESSARY TO PERFORM AN ELECTRICAL LOAD STUDY TO VERIFY THE CAPACITY OF THE EXISTING SERVICE. THIS IS NOT THE RESPONSIBILITY OF CONCORDIA. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
3. CONTRACTOR SHALL FIELD LOCATE ALL BELOW GRADE GROUND LINES AND UTILITY LINES PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR RELOCATION OF ALL UTILITIES AND GROUND LINES THAT MAY BECOME DISTURBED OR CONFLICTING IN THE COURSE OF CONSTRUCTION.

**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.**



**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

Copyright © 2021, Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, revised, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

REV.	DESCRIPTION	BY	DATE
A	PRELIM	JLK	09/30/21
0	FOR CONSTRUCTION	RMD	11/30/21

ATC SITE NUMBER:  
**302480**

ATC SITE NAME:  
**WOODBIDGE CT 1**

T-MOBILE SITE NAME:  
**ATC WOODBRIDGE MONOPOLE**

SITE ADDRESS:  
77 PEASE ROAD  
WOODBIDGE, CT 06525

SEAL:

Digitally signed by Eric Anderson  
Date: 2021.11.30 17:04:40-0500

COA: JPC.0000131



DATE DRAWN:	09/30/21
ATC JOB NO:	13732458_G3
CUSTOMER ID:	ATC WOODBRIDGE MONOPOLE
CUSTOMER #:	CTNH521A

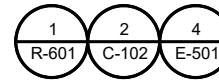
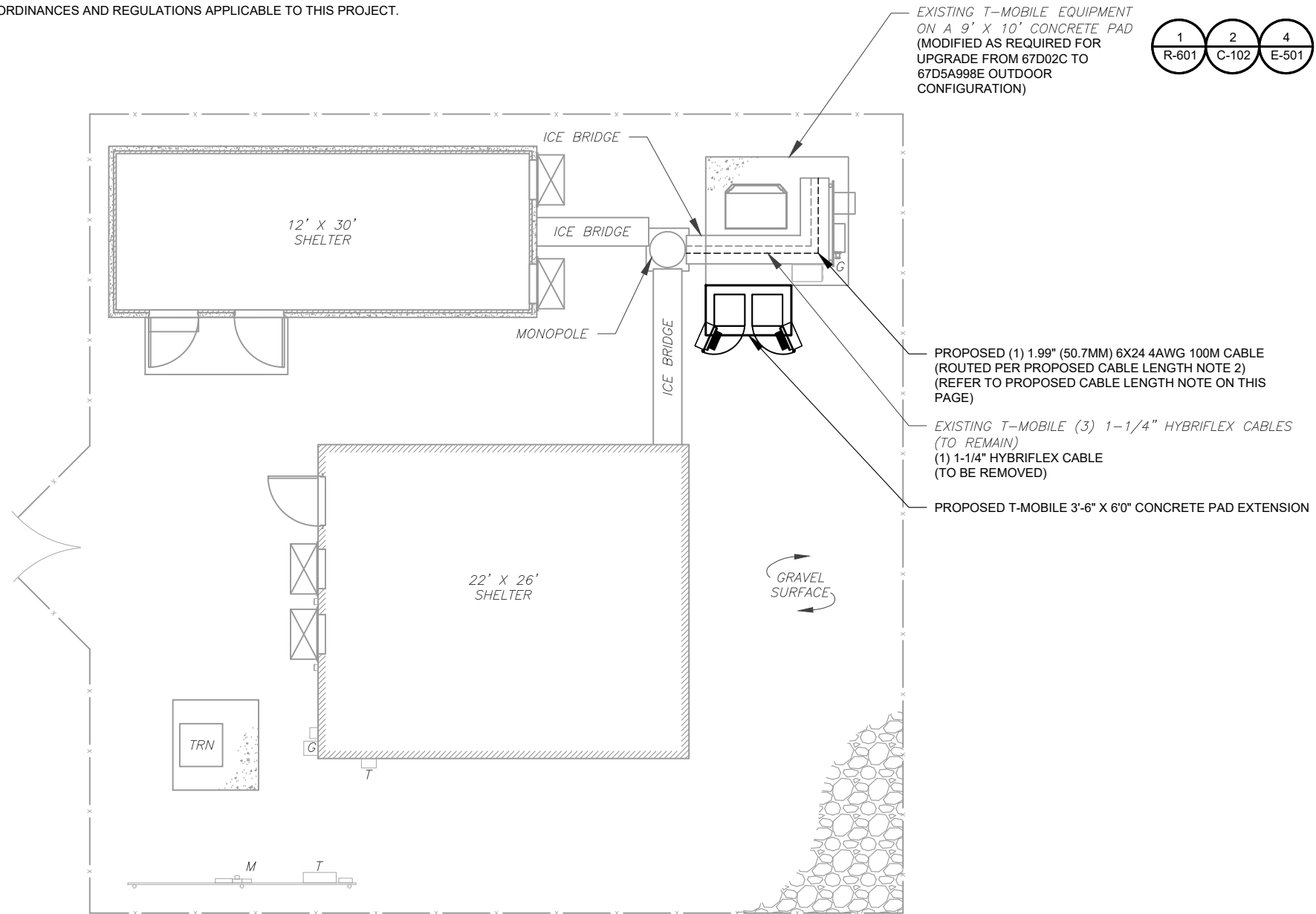
<b>GENERAL NOTES</b>	
SHEET NUMBER: <b>G-002</b>	REVISION: <b>0</b>

Copyright © 2021 ATC IP, LLC, All Rights Reserved.

**SITE PLAN NOTES:**

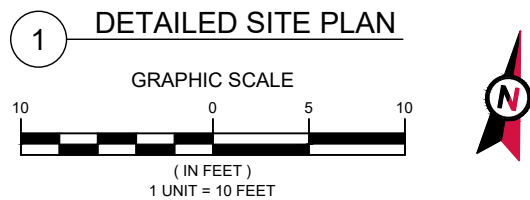
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE 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. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE T-MOBILE REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.

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



**PROPOSED CABLE LENGTH:**

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **170'**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES). CDS DEFER TO GREATEST CABLE LENGTH.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.



**Colliers** Engineering & Design

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

Copyright © 2021, Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, revised, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

REV.	DESCRIPTION	BY	DATE
A	PRELIM	JLK	09/30/21
0	FOR CONSTRUCTION	RMD	11/30/21

ATC SITE NUMBER:  
**302480**

ATC SITE NAME:  
**WOODBIDGE CT 1**

T-MOBILE SITE NAME:  
**ATC WOODBRIDGE MONOPOLE**

SITE ADDRESS:  
77 PEASE ROAD  
WOODBIDGE, CT 06525

SEAL:

Eric T. Anderson  
32224  
LICENSED PROFESSIONAL ENGINEER

Digitally signed by Eric Anderson  
Date: 2021.11.30 17:04:43-0500'

COA: JPC.0000131



DATE DRAWN:	09/30/21
ATC JOB NO:	13732458_G3
CUSTOMER ID:	ATC WOODBRIDGE MONOPOLE
CUSTOMER #:	CTNH521A

**DETAILED SITE PLAN**

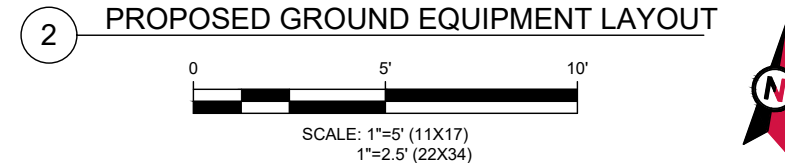
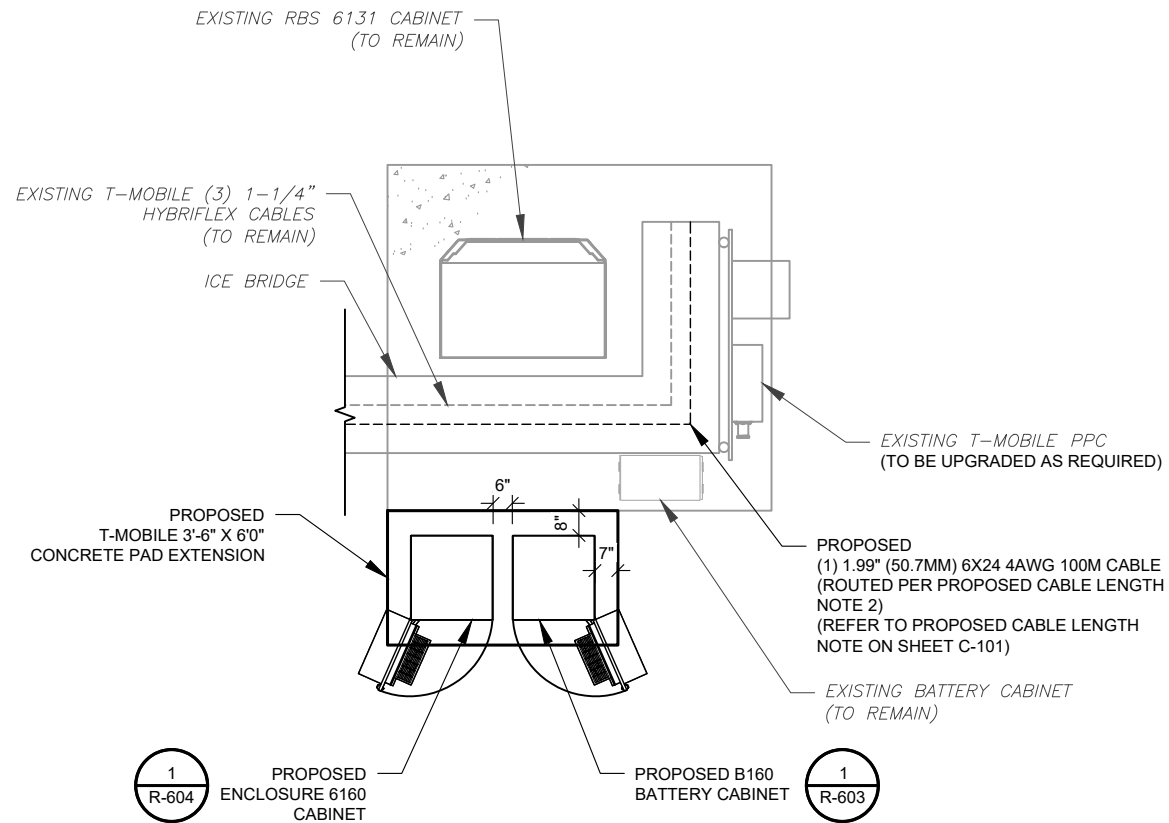
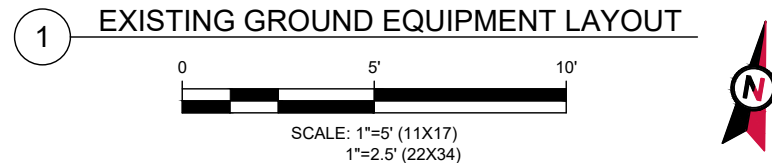
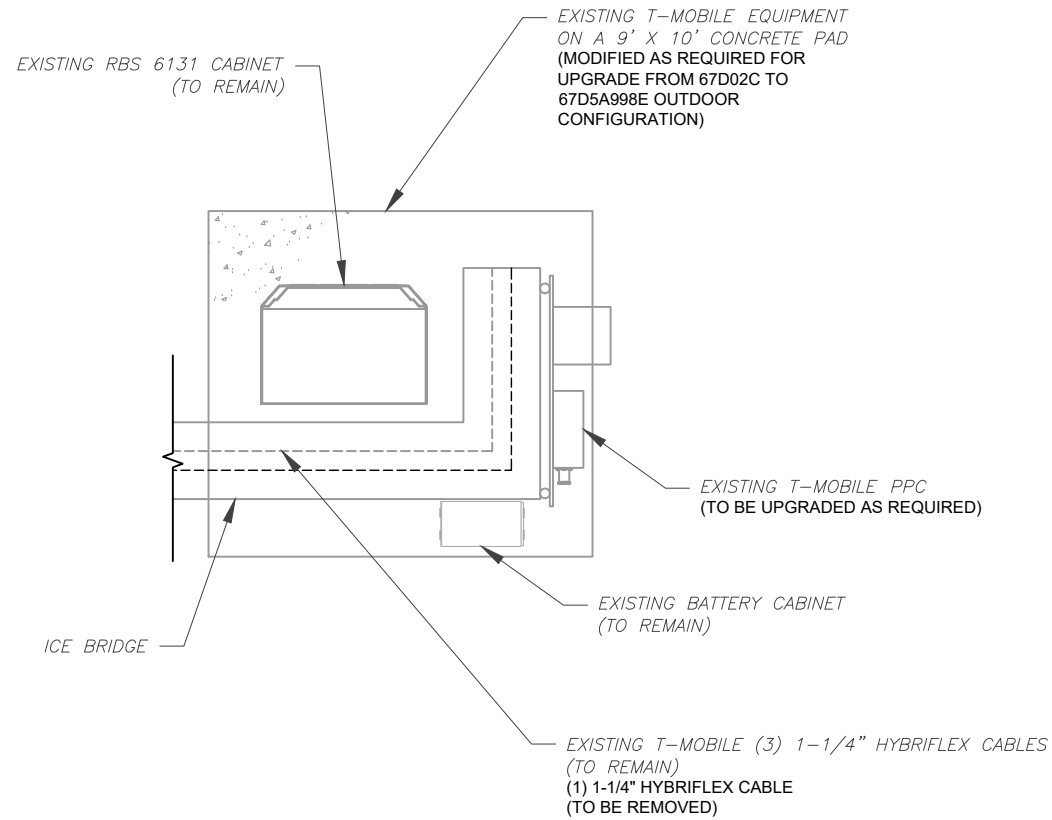
SHEET NUMBER:	REVISION:
<b>C-101</b>	<b>0</b>

Copyright © 2021 ATC IP, LLC. All Rights Reserved.

**SITE PLAN NOTES:**

1. CONTRACTOR TO VERIFY THERE IS NO LIVE AAV FIBER RUNNING THROUGH EXISTING DEAD EQUIPMENT. IF SO, THIS WILL NEED TO BE RERUN THROUGH CONDUIT PRIOR TO REMOVING DEAD 2G (6201 CABS) EQUIPMENT.
2. REMOVE EXISTING 2G CABINETS, AND POWER / TELCO WHIPS ASSOCIATED WITH THE DEAD EQUIPMENT IF APPLICABLE.
3. ALL OPEN PORTS NEED TO BE SEALED / WEATHERPROOFED PROPERLY
4. ALL UNNEEDED / EXCESS EQUIPMENT AND GARBAGE TO BE REMOVED FROM EQUIPMENT AREA. DISPOSE OF MATERIALS PROPERLY OFF SITE.

T-MOBILE CM APPROVAL REQUIRED BEFORE INSTALLING CABINETS



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

REV.	DESCRIPTION	BY	DATE
A	PRELIM	JLK	09/30/21
0	FOR CONSTRUCTION	RMD	11/30/21

ATC SITE NUMBER:  
302480

ATC SITE NAME:  
WOODBRIDGE CT 1

T-MOBILE SITE NAME:  
ATC WOODBRIDGE MONOPOLE

SITE ADDRESS:  
77 PEASE ROAD  
WOODBRIDGE, CT 06525

SEAL:

Eric T. Anderson  
 32224  
 LICENSED PROFESSIONAL ENGINEER

Digitally signed by Eric Anderson  
 Date: 2021.11.30 17:04:45-0500

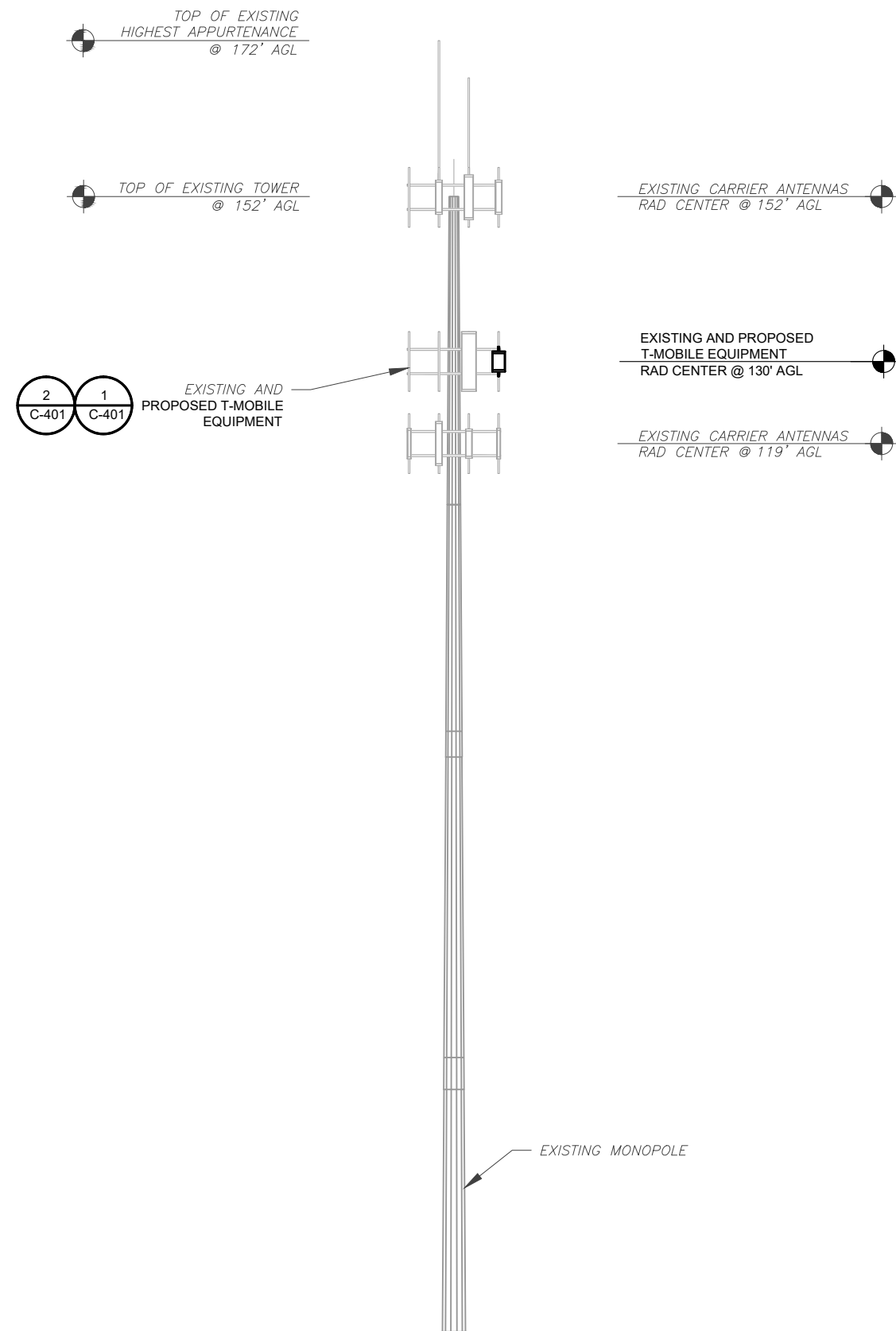
COA: JPC.0000131



DATE DRAWN:	09/30/21
ATC JOB NO:	13732458_G3
CUSTOMER ID:	ATC WOODBRIDGE MONOPOLE
CUSTOMER #:	CTNH521A

<b>DETAILED GROUND PLAN</b>	
SHEET NUMBER: <b>C-102</b>	REVISION: <b>0</b>

Copyright © 2021 ATC IP, LLC. All Rights Reserved.



PER MOUNT ANALYSIS COMPLETED BY CLS ENGINEERING, DATED 10/08/21, THE EXISTING MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.

1 TOWER ELEVATION  
SCALE: N.T.S.

**TOWER NOTE:**

- 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.
- 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.
- ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.
- TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)



**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	09/30/21
0	FOR CONSTRUCTION	RMD	11/30/21

ATC SITE NUMBER:  
**302480**

ATC SITE NAME:  
**WOODBIDGE CT 1**

T-MOBILE SITE NAME:  
**ATC WOODBRIDGE MONOPOLE**

SITE ADDRESS:  
77 PEASE ROAD  
WOODBIDGE, CT 06525

SEAL:

Eric T. Anderson  
32224  
LICENSED PROFESSIONAL ENGINEER

Digitally signed by Eric Anderson  
Date: 2021.11.30 17:04:49-0500

COA: JPC.0000131

**T-Mobile**

DATE DRAWN:	09/30/21
ATC JOB NO:	13732458_G3
CUSTOMER ID:	ATC WOODBRIDGE MONOPOLE
CUSTOMER #:	CTNH521A

<b>TOWER ELEVATION</b>	
SHEET NUMBER: <b>C-201</b>	REVISION: <b>0</b>

Copyright © 2021 ATC IP, LLC. All Rights Reserved.



**Colliers Engineering & Design**

www.colliersengineering.com  
Doing Business as MASER

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

Copyright © 2021, Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, revised, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

REV.	DESCRIPTION	BY	DATE
A	PRELIM	JLK	09/30/21
0	FOR CONSTRUCTION	RMD	11/30/21

ATC SITE NUMBER:  
**302480**

ATC SITE NAME:  
**WOODBIDGE CT 1**

T-MOBILE SITE NAME:  
**ATC WOODBRIDGE MONOPOLE**

SITE ADDRESS:  
77 PEASE ROAD  
WOODBIDGE, CT 06525

SEAL:

Eric Anderson  
32224  
LICENSED PROFESSIONAL ENGINEER  
Digitally signed by Eric Anderson  
Date: 2021.11.30 17:04:51-0500

COA: JPC.0000131

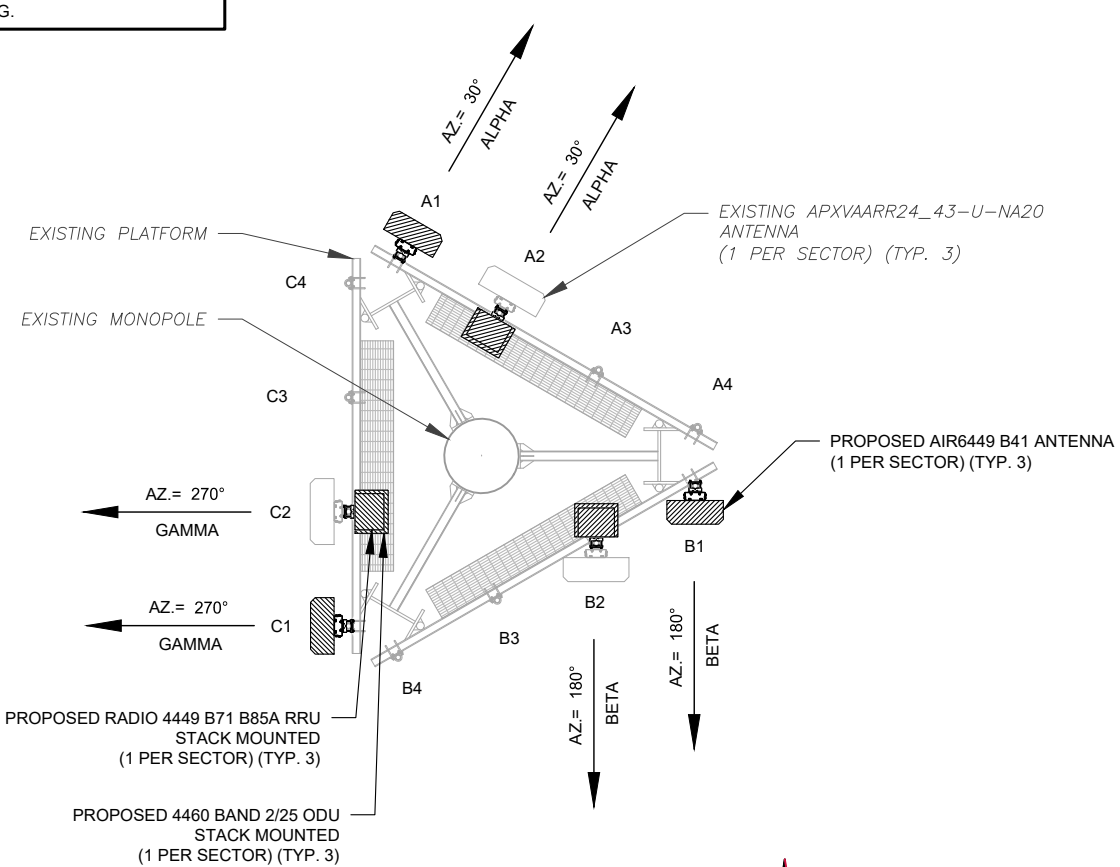
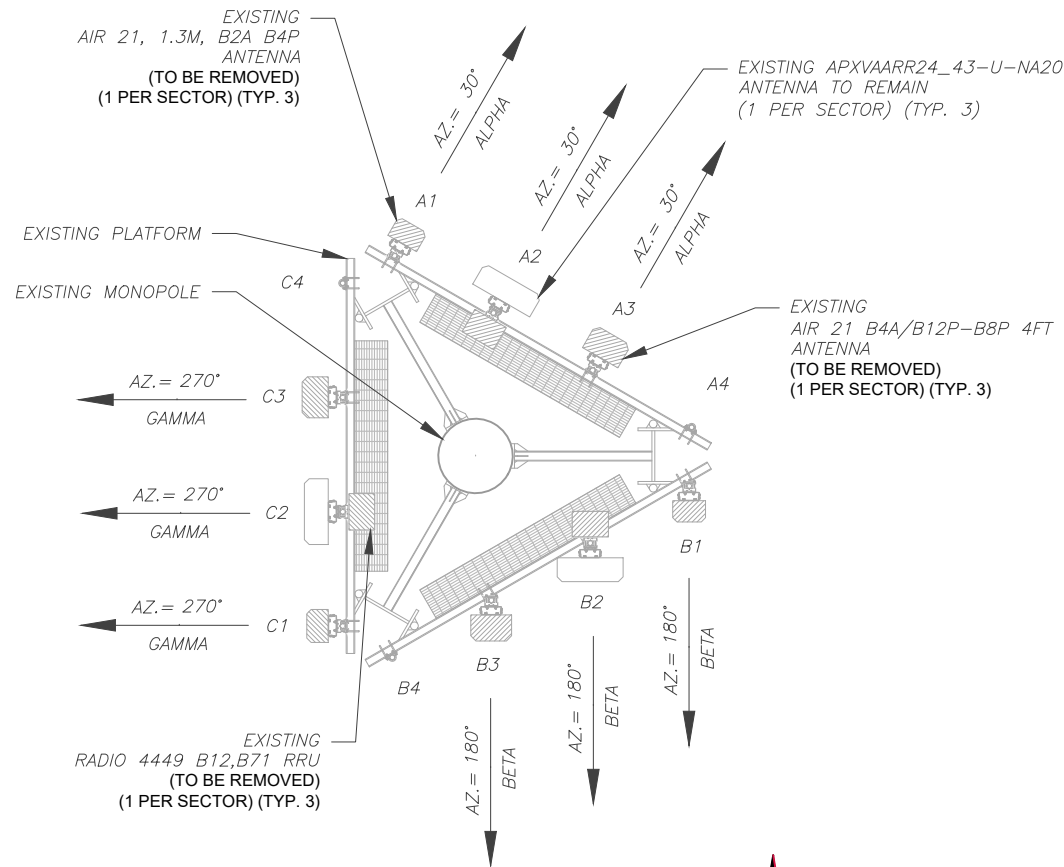


DATE DRAWN:	09/30/21
ATC JOB NO:	13732458_G3
CUSTOMER ID:	ATC WOODBRIDGE MONOPOLE
CUSTOMER #:	CTNH521A

**ANTENNA INFORMATION & SCHEDULE**

SHEET NUMBER:	REVISION:
<b>C-401</b>	<b>0</b>

PER MOUNT ANALYSIS COMPLETED BY CLS ENGINEERING, DATED 10/08/21, THE EXISTING MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.



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	130'	30°	A1	AIR 21, 1.3M, B2A B4P	U1900	0/2	RMV	-	-
			A2	APXVAARR24_43-U-NA 20	L700/L600/N600	0/2/2	RMN	RADIO 4449 B12,B71	RMV
			A3	AIR 21 B4A/B12P-B8P, 4FT	L2100	0/2	RMV	-	-
			A4	-	-	-	-	-	-
BETA	130'	180°	B1	AIR 21, 1.3M, B2A B4P	U1900	0/2	RMV	-	-
			B2	APXVAARR24_43-U-NA 20	L700/L600/N600	0/2/2	RMN	RADIO 4449 B12,B71	RMV
			B3	AIR 21 B4A/B12P-B8P, 4FT	L2100	0/2	RMV	-	-
			B4	-	-	-	-	-	-
GAMMA	130'	270°	C1	AIR 21, 1.3M, B2A B4P	U1900	0/2	RMV	-	-
			C2	APXVAARR24_43-U-NA 20	L700/L600/N600	0/2/2	RMN	RADIO 4449 B12,B71	RMV
			C3	AIR 21 B4A/B12P-B8P, 4FT	L2100	0/2	RMV	-	-
			C4	-	-	-	-	-	-

**NOTES**

- CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
- 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'

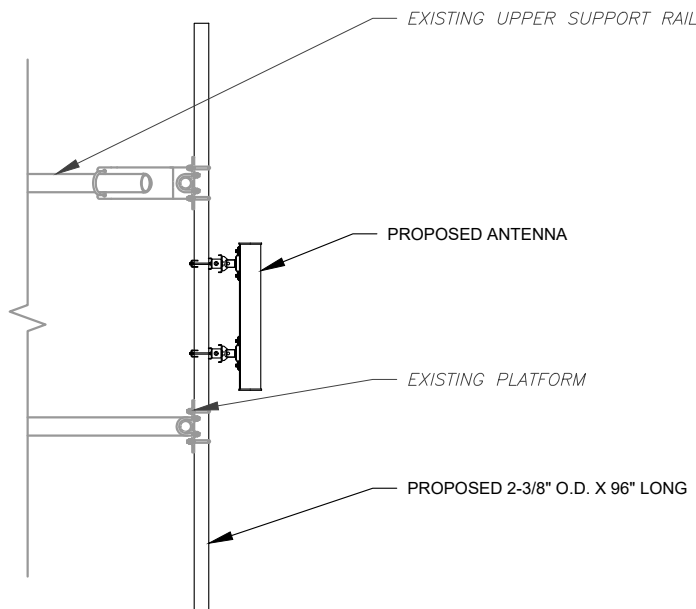
FINAL ANTENNA SCHEDULE									
LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY		
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	130'	30°	A1	AIR6449 B41	L2500/N2500	0/2/2	ADD	-	-
			A2	APXVAARR24_43-U-NA 20	L700/L600/N600 L2100/L1900/U1900	0/2/2/2	RMN	RADIO 4449 B71 B85A 4460 BAND 2/25	ADD ADD
			A3	-	-	-	-	-	-
			A4	-	-	-	-	-	-
BETA	130'	180°	B1	AIR6449 B41	L2500/N2500	0/2/2	ADD	-	-
			B2	APXVAARR24_43-U-NA 20	L700/L600/N600 L2100/L1900/U1900	0/2/2/2	RMN	RADIO 4449 B71 B85A 4460 BAND 2/25	ADD ADD
			B3	-	-	-	-	-	-
			B4	-	-	-	-	-	-
GAMMA	130'	270°	C1	AIR6449 B41	L2500/N2500	0/2/2	ADD	-	-
			C2	APXVAARR24_43-U-NA 20	L700/L600/N600 L2100/L1900/U1900	0/2/2/2	RMN	RADIO 4449 B71 B85A 4460 BAND 2/25	ADD ADD
			C3	-	-	-	-	-	-
			C4	-	-	-	-	-	-

EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	-	(3) 1-1/4"	RMN
-	-	-	(1) 1-1/4"	RMV

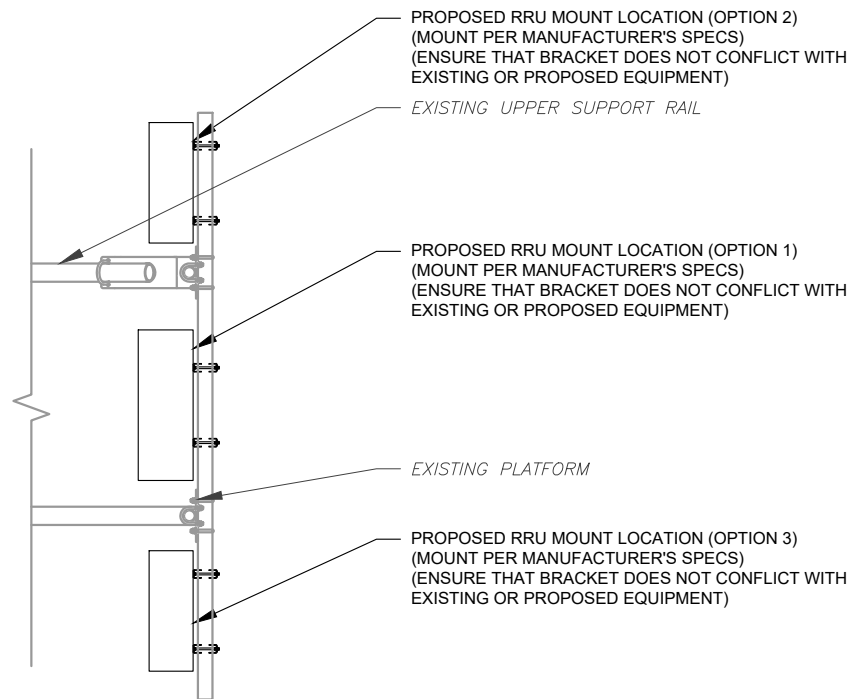
FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	-	(3) 1-1/4"	RMN
-	-	-	(1) 1.99" (50.7MM) 6/24 4AWG 100M	ADD

**3 EQUIPMENT SCHEDULES**

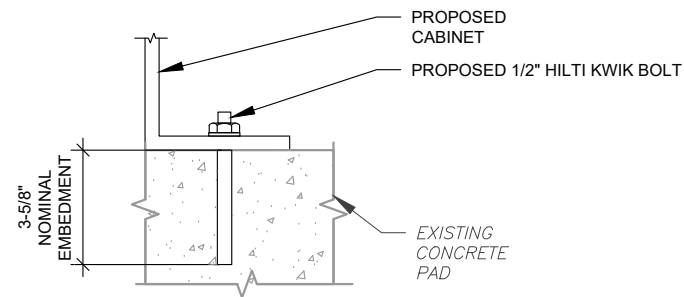
Copyright © 2021 ATC IP, LLC. All Rights Reserved.



1 PROPOSED 5G ANTENNA MOUNTING DETAIL - TYPICAL  
SCALE: N.T.S.

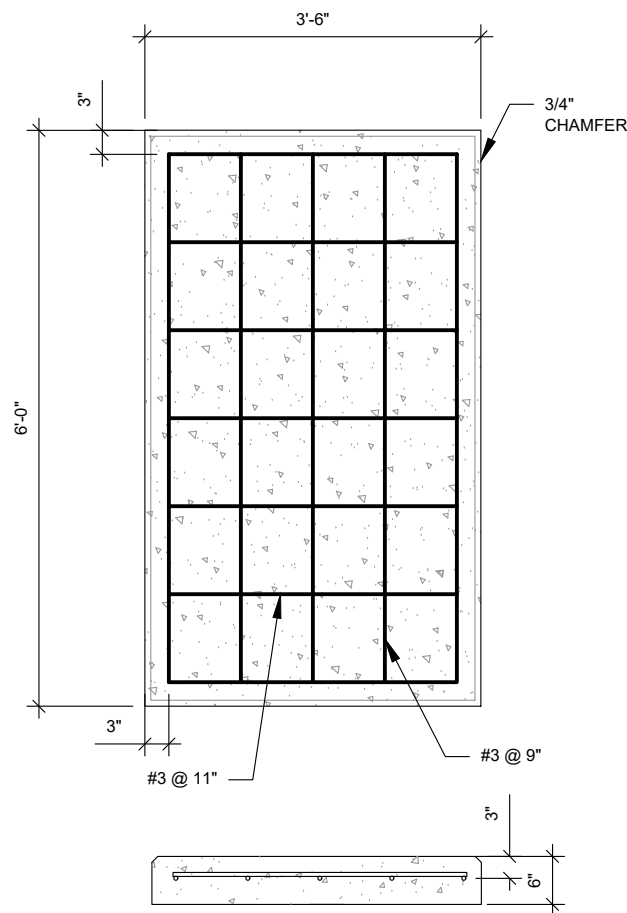


2 PROPOSED RRU MOUNTING DETAIL - TYPICAL  
SCALE: N.T.S.



**NOTE:**  
INSTALL HILTI KWIK BOLT ANCHORS STRICTLY PER INSTALLATION INSTRUCTIONS INCLUDED WITH PRODUCT OR FOUND ONLINE AT WWW.US.HILTI.COM. PROPER INSTALLATION IS CRITICAL FOR FULL PERFORMANCE.

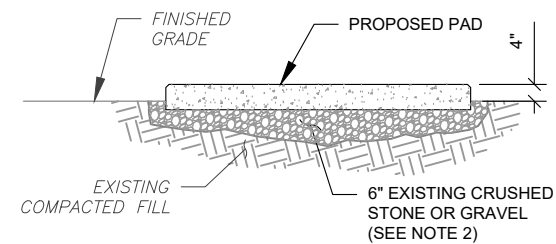
3 CABINET ATTACHMENT DETAIL  
SCALE: NOT TO SCALE



**PAD NOTES:**

1. PADS SHALL BE PRE-CAST MATCHING THIS DESIGN WHERE ALLOWED BY LOCAL JURISDICTION.
2. REFER TO CONCRETE & REINFORCED STEEL NOTES ON SHEET G-002 & ATC SPEC 033000 FOR CAST-IN-PLACE PADS.

4 REINFORCED PAD LAYOUT  
SCALE: NOT TO SCALE



**PAD NOTES:**

1. SUBGRADE AND FILL SHALL CONSIST OF CLEAN SOIL. DELETERIOUS MATERIAL AND ORGANICS SHALL BE REMOVED.
2. MECHANICALLY COMPACT FOOTPRINT OF PAD PLUS 2' PERIMETER.
3. USE GALVANIZED HILTI EXPANSION ANCHORS OR APPROVED EQUAL, FOR EQUIPMENT ANCHORAGE.
4. FOR SIZE AND LOCATION OF ANCHORS AND OTHER REQUIREMENT, SEE EQUIPMENT VENDOR DRAWINGS.

5 GRAVEL PREPARATION  
SCALE: NOT TO SCALE



**Colliers** Engineering & Design

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

Copyright © 2021, Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, revised, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

REV.	DESCRIPTION	BY	DATE
A	PRELIM	JLK	09/30/21
0	FOR CONSTRUCTION	RMD	11/30/21

ATC SITE NUMBER:  
**302480**

ATC SITE NAME:  
**WOODBIDGE CT 1**

T-MOBILE SITE NAME:  
**ATC WOODBRIDGE MONOPOLE**

SITE ADDRESS:  
77 PEASE ROAD  
WOODBIDGE, CT 06525

SEAL:



COA: JPC.0000131

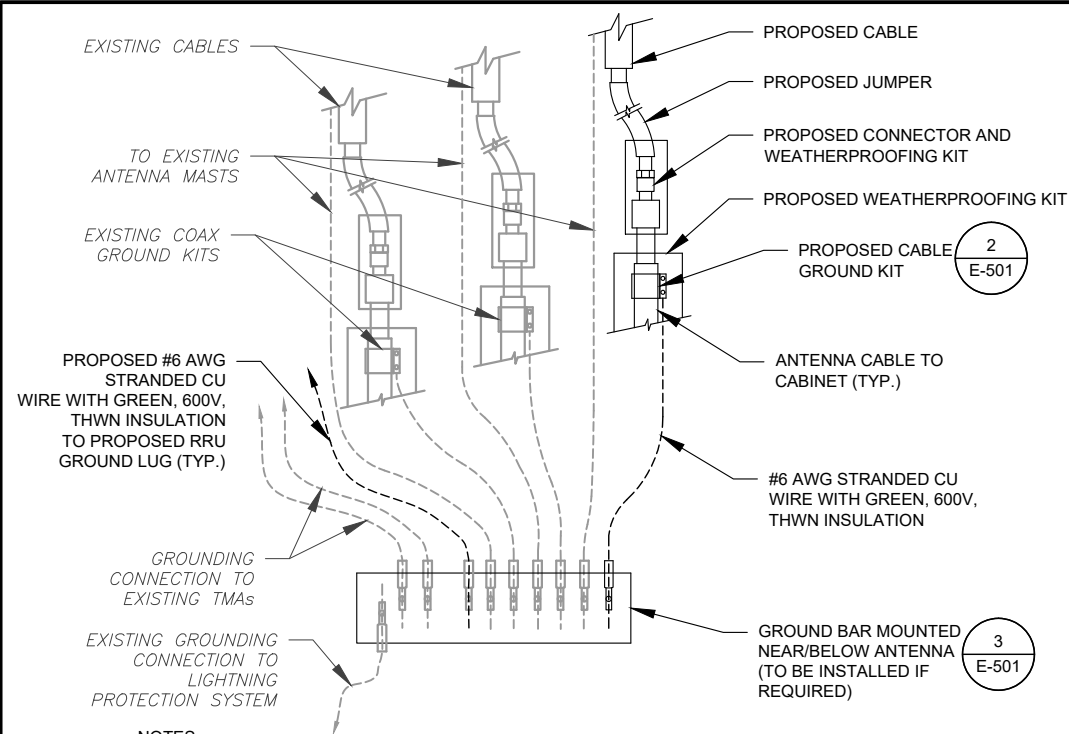


DATE DRAWN:	09/30/21
ATC JOB NO:	13732458_G3
CUSTOMER ID:	ATC WOODBRIDGE MONOPOLE
CUSTOMER #:	CTNH521A

**CONSTRUCTION DETAILS**

SHEET NUMBER:	REVISION:
<b>C-501</b>	<b>0</b>

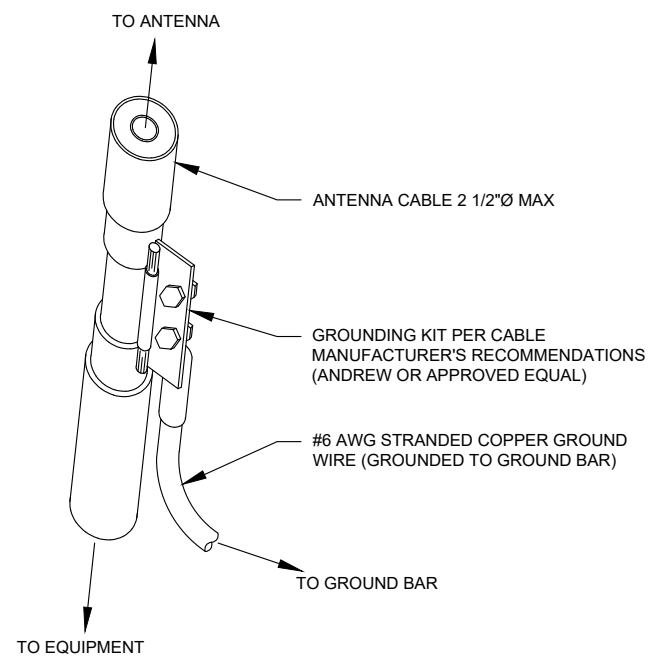




**NOTES:**

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.

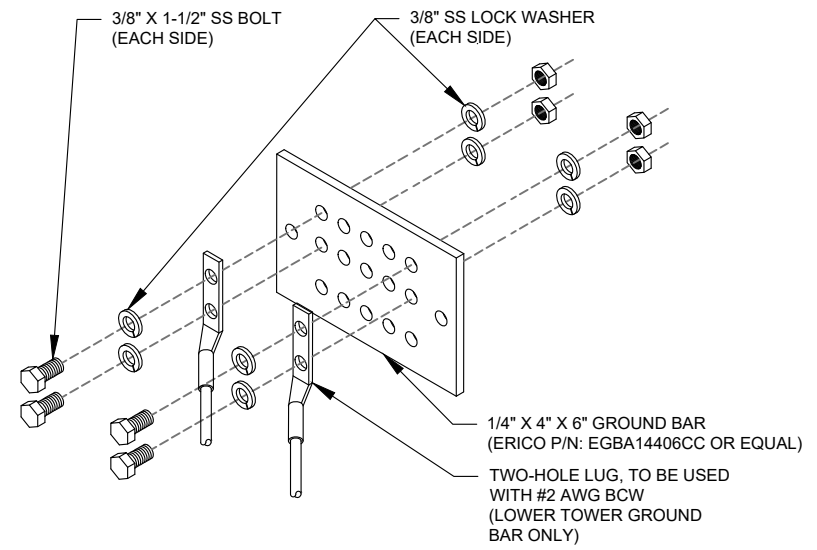
**1 TYPICAL ANTENNA GROUNDING DIAGRAM**  
SCALE: N.T.S.



**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:**

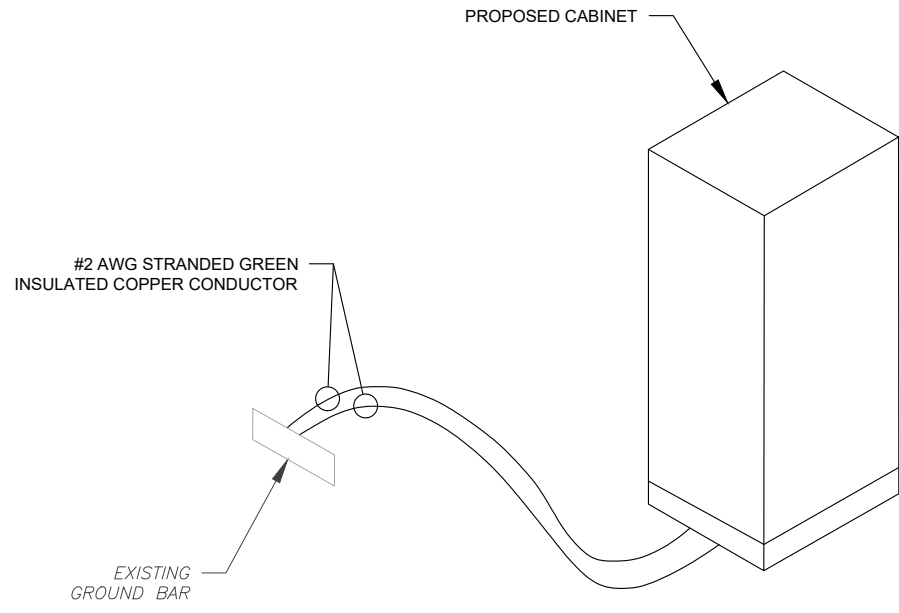
1. GROUND BAR KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
2. GROUND BAR TO BE BONDED DIRECTLY TO TOWER.

**3 TOWER GROUND BAR DETAIL**  
SCALE: N.T.S.

**ELECTRICAL NOTES:**

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE T-MOBILE REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.
2. ATC HAS NOT VERIFIED ANY EXISTING T-MOBILE GROUND EQUIPMENT OR ELECTRICAL LOADING. PROPOSED WORK BASED ON INSTALLATION CONFIGURATION PROVIDED BY T-MOBILE. CONTRACTOR TO VERIFY EXISTING T-MOBILE PANEL HAS SUFFICIENT SPACE FOR PROPOSED BREAKER. PROPOSED CABLE AND CONDUIT SHALL BE MINIMUM SIZE PER BELOW IN CHART.
3. FOR SPECIFIC CABINET / ANCILLARY EQUIPMENT WIRING REQUIREMENTS, THE T-MOBILE CONTRACTOR SHOULD REFERENCE DESIGN DOCUMENTS PROVIDED BY T-MOBILE FOR THIS CURRENT PROJECT CONFIGURATION, IN ACCORDANCE WITH LOCAL JURISDICTION REQUIREMENTS & NEC STANDARDS & PRACTICES.

OCPD SIZE	WIRE SIZE	GROUND SIZE	CONDUIT SIZE
80A/2P	2#3 AWG	#8 AWG	1-1/4"
100/2P	2#2 AWG	#8 AWG	1-1/4"
125A/2P	2#1 AWG	#8 AWG	1-1/2"
150A/2P	2#1/0 AWG	#8 AWG	1-1/2"



**4 CABINET GROUNDING DETAIL**  
SCALE: N.T.S.



**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	09/30/21
0	FOR CONSTRUCTION	RMD	11/30/21

ATC SITE NUMBER:  
**302480**

ATC SITE NAME:  
**WOODBIDGE CT 1**

T-MOBILE SITE NAME:  
**ATC WOODBRIDGE MONOPOLE**

SITE ADDRESS:  
77 PEASE ROAD  
WOODBIDGE, CT 06525

SEAL:

COA: JPC.0000131

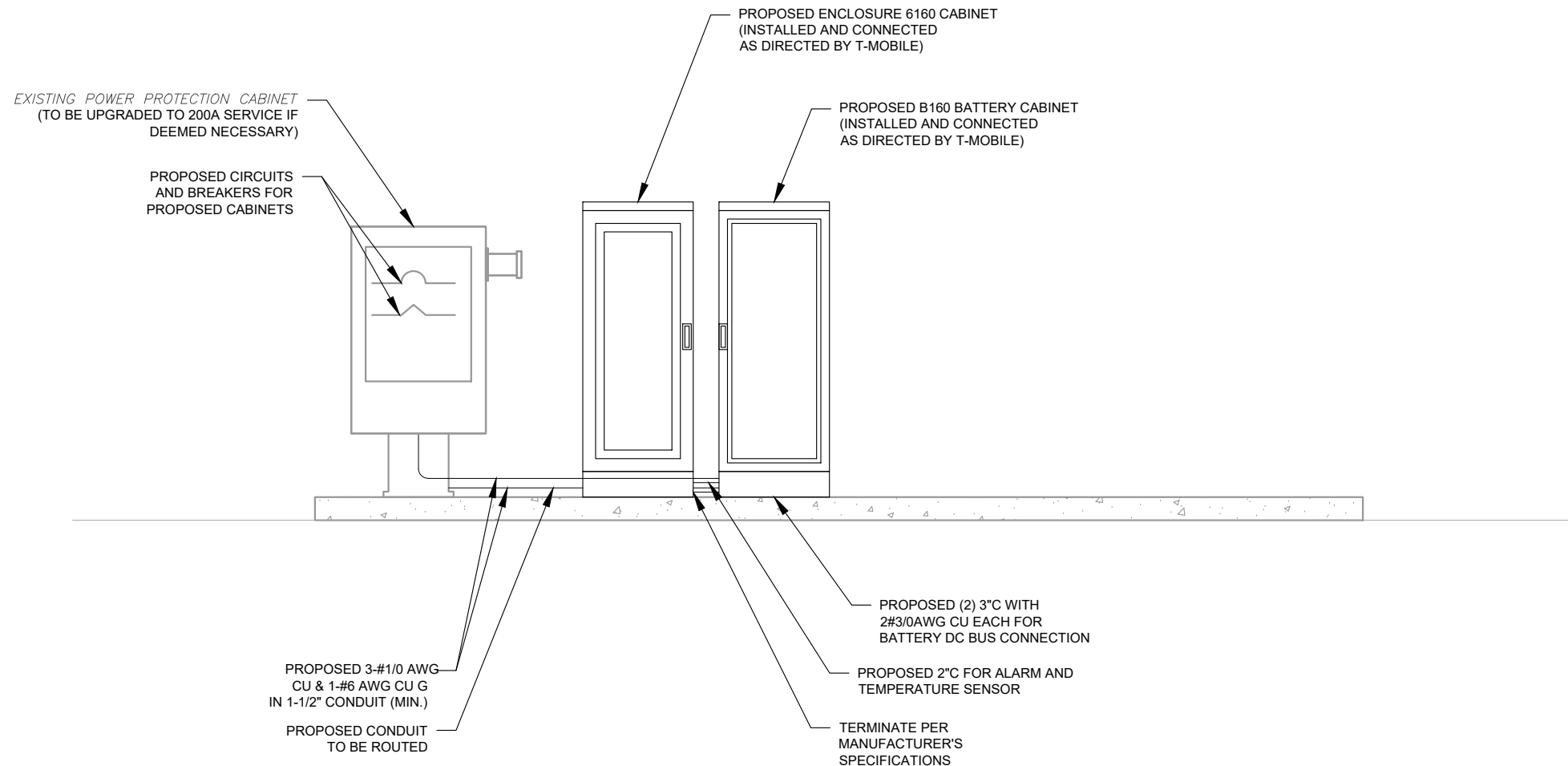
DATE DRAWN:	09/30/21
ATC JOB NO:	13732458_G3
CUSTOMER ID:	ATC WOODBRIDGE MONOPOLE
CUSTOMER #:	CTNH521A

**GROUNDING DETAILS**

SHEET NUMBER: <b>E-501</b>	REVISION: <b>0</b>
-------------------------------	-----------------------

Copyright © 2021 ATC IP, LLC, All Rights Reserved.

- NOTES:
1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE 2017 EDITION OF NATIONAL ELECTRICAL CODE (NEC), NATIONAL ELECTRICAL SAFETY CODE, NAPA, NETA, OSHA, AND ALL OTHER EXISTING CODES AND REGULATIONS OF AUTHORITIES WHICH WOULD HAVE JURISDICTION.
  2. ALL NEW WIRING SHALL BE WITH THWN-2 OR XHHW-2 INSULATION AND RATED FOR 75 DEG CELSIUS.
  3. ALL UNDERGROUND CONDUIT SHALL BE PVC SCH40. ALL ABOVE GROUND CONDUIT SHALL BE PVC SCH80 OR RMC.



- ELECTRICAL NOTES:
1. THIS DIAGRAM 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. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE T-MOBILE REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.
  3. ATC HAS NOT YET VERIFIED ANY EXISTING T-MOBILE GROUND EQUIPMENT OR ELECTRICAL LOADING. PROPOSED WORK BASED ON INSTALLATION CONFIGURATION PROVIDED BY T-MOBILE. CONTRACTOR TO VERIFY EXISTING T-MOBILE PANEL HAS SUFFICIENT SPACE FOR PROPOSED BREAKER.

1 ELECTRICAL UPGRADE DIAGRAM  
SCALE: NOT TO SCALE



**Colliers** Engineering & Design  
www.colliersengineering.com  
Doing Business as **MASER**  
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	09/30/21
0	FOR CONSTRUCTION	RMD	11/30/21

ATC SITE NUMBER:  
302480

ATC SITE NAME:  
WOODBIDGE CT 1

T-MOBILE SITE NAME:  
ATC WOODBRIDGE MONOPOLE

SITE ADDRESS:  
77 PEASE ROAD  
WOODBIDGE, CT 06525

SEAL:

Digitally signed by Eric Anderson  
Date: 2021.11.30 17:04:59-0500

COA: JPC.0000131

**T-Mobile**

DATE DRAWN:	09/30/21
ATC JOB NO:	13732458_G3
CUSTOMER ID:	ATC WOODBRIDGE MONOPOLE
CUSTOMER #:	CTNH521A

**ELECTRICAL DETAILS**

SHEET NUMBER: <b>E-502</b>	REVISION: <b>0</b>
-------------------------------	-----------------------

Proposed RAN Equipment			
Template: 67D5A998E Outdoor			
Enclosure	1	2	3
Enclosure Type	RBS 6131	Enclosure 6160	B160
Baseband	DUW30 U1900 BB 6630 L700 L600 N600 BB 6630 L2100 L1900	BB 6648 L2500 N2500	
Hybrid Cable System	Ericsson 6x12 HCS *Select Length & AWG* (x 3)	PSU 4813 Ericsson Hybrid Trunk 6/24 4AWG 100m	
Transport System		CSR IXRe V2 (Gen2)	

**RAN Scope of Work:**

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

Add (1) Enclosure 6160.

Add (1) iXRe Router to new Enclosure 6160.

Add (1) BB6648 for L2500 and N2500 (MMBB - Mixed Mode Baseband) to new Enclosure 6160.

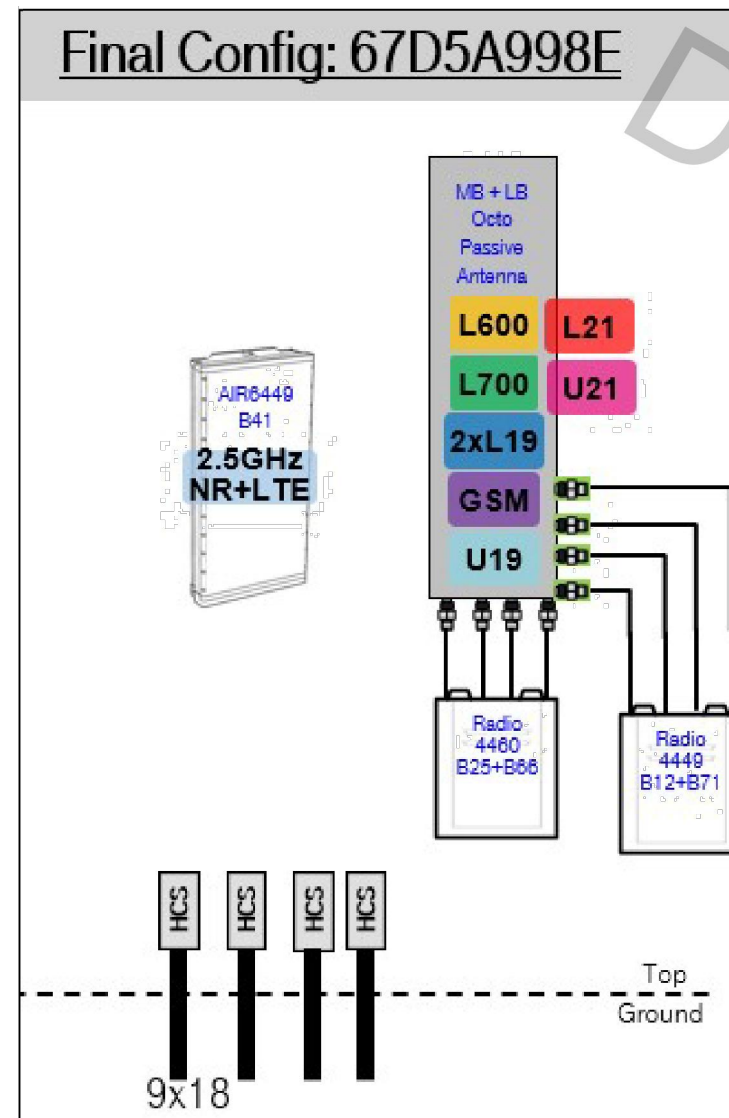
Add (1) PSU4813 Voltage Booster to new Enclosure 6160.

Add (1) Battery Cabinet B160.

Existing : (3) 6X12 (1) 9x18 - Remove (1) 9x18

Add (1) 6X24 HCS terminating at the Enclosure 6160. Connect DC for the AIR6449 B41 to the PSU4813 Voltage Booster.

1 CABINET CONFIGURATION  
SCALE: NOT TO SCALE

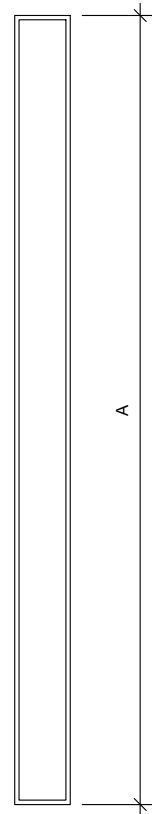


2 ANTENNA CONFIGURATION  
SCALE: NOT TO SCALE

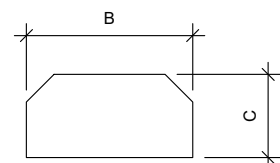
NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER: R-601  
REVISION: -



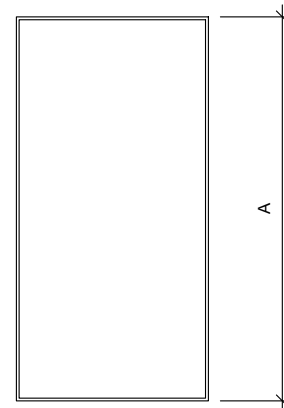
FRONT VIEW



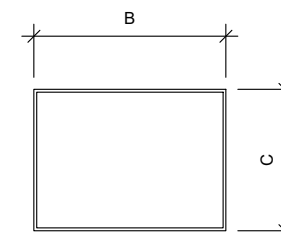
TOP VIEW

**1 ANTENNA SPECIFICATIONS**  
FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

ANTENNA SPECIFICATIONS				
ANTENNA MODEL	A	B	C	WEIGHT (LBS)
AIR6449 B41	33.1"	20.6"	8.6"	104.0



FRONT VIEW



TOP VIEW

**2 RRU SPECIFICATIONS**  
FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

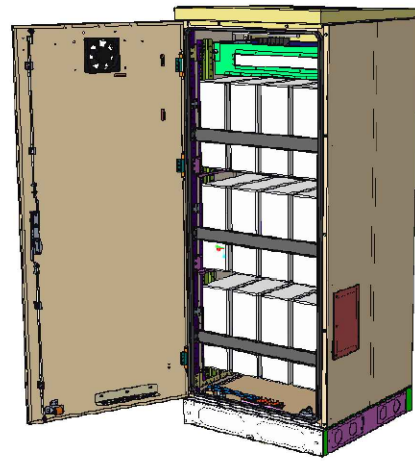
RRU SPECIFICATIONS				
RRU MODEL	A	B	C	WEIGHT (LBS)
RADIO 4449 B71 B85A	15.0"	13.2"	10.5"	75.0
4460 BAND 2/25	19.6"	15.7"	12.1"	109.0

SUPPLEMENTAL

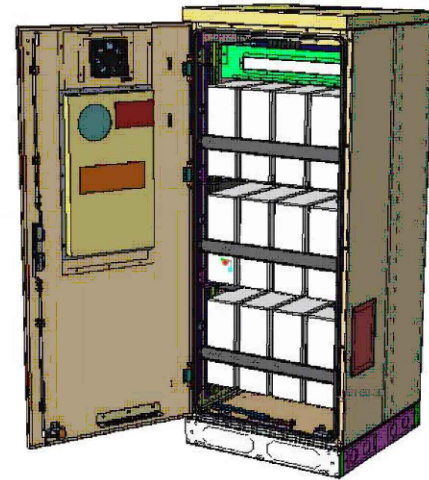
SHEET NUMBER:  
**R-602**

REVISION:  
-

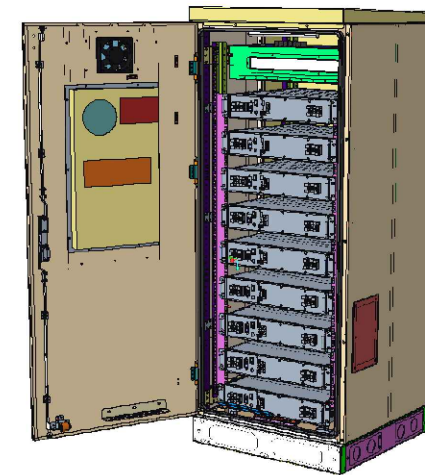
# Enclosure B160



Enclosure B160  
AirCon + VRLA



Enclosure B160  
AirCon + Li-Ion



Enclosure B160  
Convection Cooling  
+ VRLA

PA1 | 2019-02-03 | Ericsson Confidential | Page 1

# Enclosure B160

## Capacity

- VRLA 12V: 100Ah / 150Ah / 170Ah / 190Ah / 210Ah
- Li-Ion: 24U 19" / 23"
- Sodium-Nickel: 3x FIAMM

## Electrical specification

- DC Output: -48VDC/200A
- Battery breakers: 2x 125/2p
- Alarms: Door open, Climate failure, MCB Connection

## Mechanical specification

- Weight: 134kg
- Dimensions: 63 x 26 x 26 in. (incl. Base frame)
- Base frame height: 6 in.
- Material: Galvanized steel (180g/m<sup>2</sup>)
- Color: Powder paint NCS 2002-B
- Door: Front access
- Locking type: Pad lock / cylinder

## Environmental specification

- Ingress protection: VRLA/Sodium IP44  
Li-Ion IP55
  - Relative humidity: 15-100%
- ## Climate system
- Air Conditioner
  - Fan type: DC
  - Cooling capacity: 500W @L35/L35
  - Convection cooling
  - Emergency fan

PA1 | 2019-02-03 | Ericsson Confidential | Page 2

SUPPLEMENTAL

SHEET NUMBER:

R-603

REVISION:

-

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



# Enclosure 6160 AC

The Enclosure 6160 is a multi-purpose site cabinet designed to support a multitude of equipment such as ERS Baseband, Transport, Li-Ion battery and 3PP vendor equipment. It also provides a highly capable power system and battery back-up - all in a streamlined design and minimized footprint to support cost efficient expansion of mobile broadband.

Being an all-in-one enclosure, the Enclosure 6160 is a very fitting choice for all types of sites where the capacity need is large or room for future expansion is needed. It is ideally used for modernizing existing sites or in greenfield scenarios to match both current and future needs.

With a robust design, IP65 compliance and a sealed Heat Exchanger (HEX) climate system the Enclosure 6160 ensures optimal environmental protection of the active equipment - enabling them for a long-lasting service. The complete system is also integrated and verified for the entire Ericsson Radio System and ensures best-in-class service.

The power system offers 31,5kW of power in total and provides 24kW of -48V DC power for both internal and external consumers.

The equipment space allows 19U of rack space ensuring well enough capacity for existing need and future expansion.

One of the main advantages of the Enclosure 6160 is its default integration with ENM - allowing for advanced remote monitoring and control such a fault management (alarms), inventory management and performance measurements. The cabinet also provides an open O&M interface for integration to 3PP O&M systems.



## Preliminary technical specification for Enclosure 6160 AC

### CAPACITY

Rack space user equipment	19U (19" rack)
Hardware capabilities	Power and CPRI support for multi-standard remote radios (RRU or AIR) ERS Baseband and Transport units Li-Ion batteries 3PP equipment Additional power feed available as option

### MECHANICAL SPECIFICATION

Weight	145 kg (excluding active equipment) 320 lbs (excluding active equipment)
Dimension (H x W x D)	1600 x 650 x 650 mm (incl. Base frame) 63 x 26 x 26 in. (incl. Base frame)
Base frame height	150 mm 6 in.
Mounting position	Ground
Enclosure material	Aluminum
Color	Power paint NCS 2002-B
Door	Front access
Rack type	19" (IEC 60297-3-100)
Locking type	Pad lock or Cylinder

### POWER SYSTEM

Input voltage	3P+N+PE: 346/200-415/240 VAC 2P+N+PE: 208/120-220/127 VAC 1P+N+PE: 200-250 VAC
Input power	<33kW
Output load (-48VDC)	24kW
Total capacity (-48VDC)	31.5kW
AC SPD	Class 2/Type 2
DC SPD	Class 2/Type 2
PSU Slots	9x
Service outlet	Optional
Priority load	8x Circuit Breaker
LLVD 1	6x Circuit Breaker
LLVD 2	6x Circuit Breaker
CB ratings	3A / 5A / 10A / 15A / 20A / 25A / 30A / 40A / 50A / 60A / 80A / 100A
Battery Interface	2x Circuit Breaker
Battery Circuit Breaker rating	125A 2pol (200A)
PSU capacity	3500W

SUPPLEMENTAL

SHEET NUMBER:

R-604

REVISION:

-

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



This report was prepared for American Tower Corporation by



### Antenna Mount Analysis Report

**ATC Site Name** : Woodbridge CT 1  
**ATC Asset Number** : 302480  
**Engineering Number** : 13732458\_C8\_03  
**Mount Elevation** : 131 ft  
**Carrier** : T-Mobile  
**Carrier Site Name** : ATC Woodbridge Monopole  
**Carrier Site Number** : CTNH521A  
**Site Location** : 77 Pease Road  
 Woodbridge, CT 06525-2044  
 41.341400, -72.993600  
**County** : New Haven  
**Date** : October 8, 2021  
**Max Usage** : 40%  
**Result** : Pass

Prepared By:  
Kowsalya V  
CLS Engineering, PLLC

Reviewed By:  
Tyler M. Barker, P.E.  
CLS Engineering, PLLC



Mount Analysis for American Tower  
302480 - Woodbridge CT 1

October 8, 2021  
CLS Engineering, PLLC Project #41124-13732458\_C8\_03-01-MA

#### Antenna Loading

Elevation (ft)		Antennas	
Mount	Rad.	#	Name
131.0	130.0	3	RFS Celwave APXVAARR24 43-U-NA20
		3	Ericsson Air6449 B41
		3	Ericsson 4460 BAND 2/25
		3	Ericsson Radio 4449 B71 B85A

#### Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Mount Pipes	40%	Pass
Bracing Members	32%	Pass
Support Rail	16%	Pass
Platform Base	14%	Pass
Stand-Off Horizontals	12%	Pass
Tower Mount Bolt Connection	11%	Pass
Corner Plates	9%	Pass

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-605  
REVISION: -



**AMERICAN TOWER®**  
CORPORATION

This report was prepared for American Tower Corporation by

**CLS**ENGINEERING  
PLLC

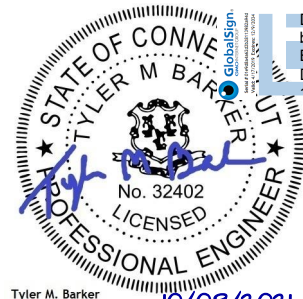
---

## Antenna Mount Analysis Report

**ATC Site Name** : Woodbridge CT 1  
**ATC Asset Number** : 302480  
**Engineering Number** : 13732458\_C8\_03  
**Mount Elevation** : 131 ft  
**Carrier** : T-Mobile  
**Carrier Site Name** : ATC Woodbridge Monopole  
**Carrier Site Number** : CTNH521A  
**Site Location** : 77 Pease Road  
Woodbridge, CT 06525-2044  
41.341400, -72.993600  
**County** : New Haven  
**Date** : October 8, 2021  
**Max Usage** : 40%  
**Result** : Pass

Prepared By:  
**Kowsalya V**  
CLS Engineering, PLLC

Reviewed By:  
**Tyler M. Barker, P.E.**  
CLS Engineering, PLLC



Digitally signed  
by Tyler M.  
Barker PE  
Date: 2021.10.08  
17:02:16-04'00'

Tyler M. Barker  
CLS Engineering PLLC  
PE # 32402 Exp. 1/31/2022  
COA # PEC.001833 Exp. 8/14/2022  
10/08/2021



**Table of Contents**

Introduction..... 2

Supporting Documents ..... 2

Analysis ..... 2

Conclusion ..... 2

Antenna Loading..... 3

Structure Usages.....3

Equipment Layout Plan View .....4

Equipment Layout Front Elevation View.....5

Standard Conditions .....6

Calculations ..... Attached

## Introduction

The proposed equipment is to be mounted to the existing Platform w/ Support Rails. This proposed mounting configuration was analyzed using RISA-3D, a commercially available finite element analysis software package. A selection of input and output from our analysis is attached to the end of this report.

## Supporting Documents

<b>Structural Data</b>	Site Photos dated October 05, 2020 Spec Sheet by Perfect Vision, Part #LPP-ENG-01
<b>Previous Analyses</b>	Tower SA by ATC, Engineering #13668990_C3_01, dated May 6, 2021 Mount Analysis by CLS Engineering PLLC, Site #302480, dated August 7, 2019
<b>Loading Data</b>	ATC Application, Project #13732458, dated September 20, 2021 T-Mobile RFDS, Site #CTNH521A, Ver. 8.00, dated August 16, 2021

## Analysis

<b>Codes</b>	TIA-222-H
<b>Basic Wind Speed</b>	119 mph, $V_{ult}$ (3-Second Gust)
<b>Basic Wind Speed w/ Ice</b>	50 mph (3-Second Gust) w/ 1" Radial Ice (Escalating)
<b>Exposure Category</b>	B
<b>Topographic Factor Procedure:</b>	Method 2
<b>Feature:</b>	Flat
<b>Crest Height (H):</b>	0 ft
<b>Crest Length (L):</b>	0 ft
<b>Risk Category</b>	II
<b>Maintenance Live Load</b>	$L_M$ : 500 lb
<b>Spectral Response</b>	$S_S$ : 0.20; $S_1$ : 0.05; Site Class: D

## Conclusion

Based on the analysis, 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](mailto:Engineering@americantower.com). Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

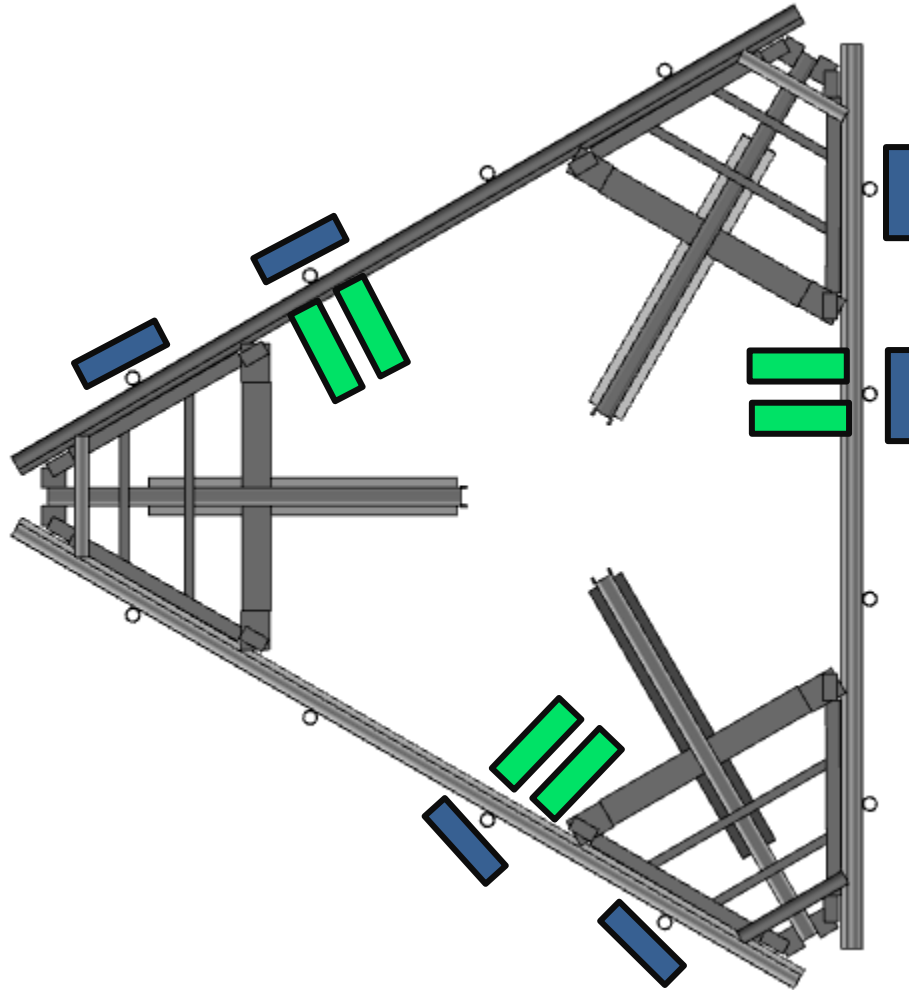
**Antenna Loading**

Elevation (ft)		Antennas	
Mount	Rad.	#	Name
131.0	130.0	3	RFS Celwave APXVAARR24 43-U-NA20
		3	Ericsson Air6449 B41
		3	Ericsson 4460 BAND 2/25
		3	Ericsson Radio 4449 B71 B85A

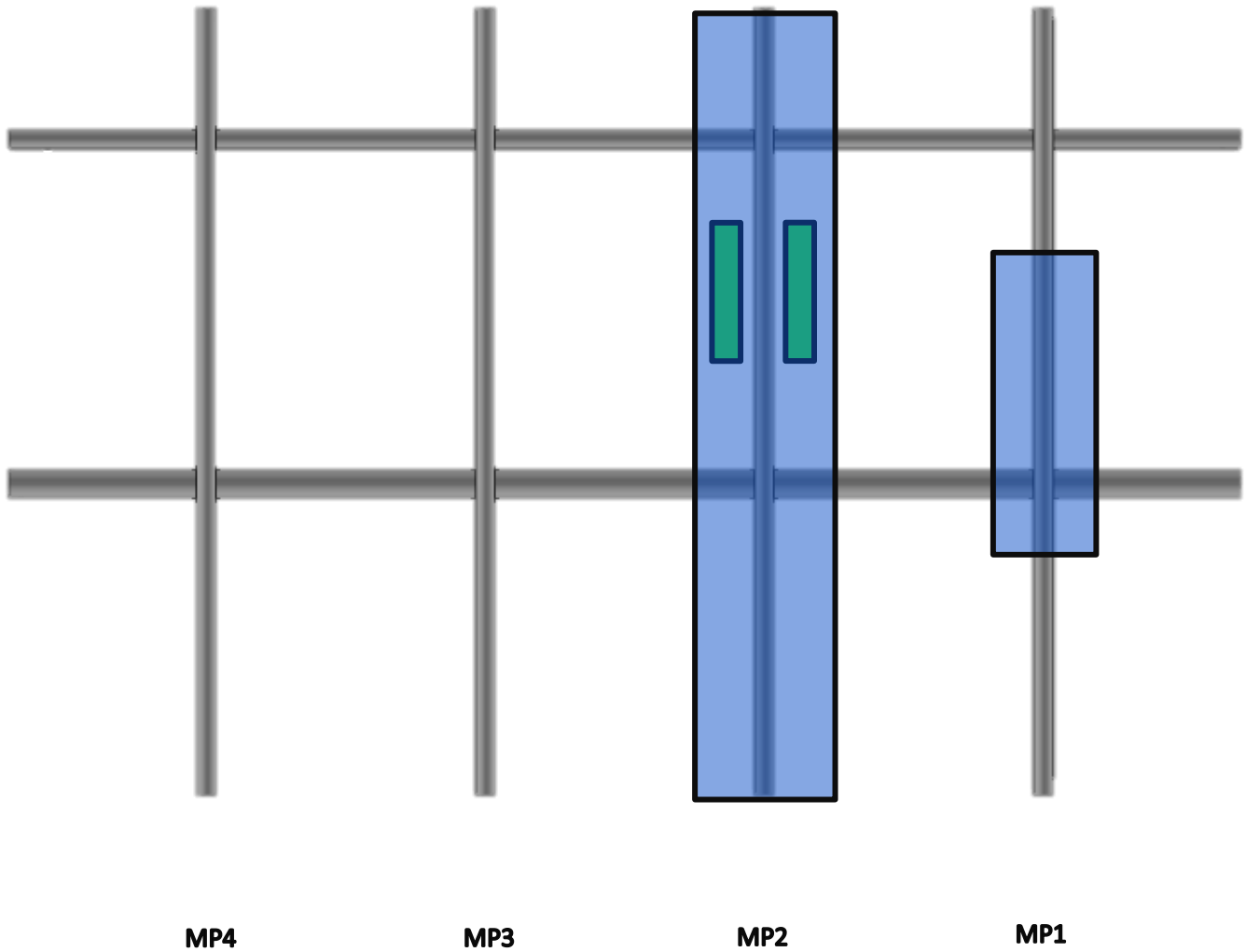
**Structure Usages**

Structural Component	Controlling Usage	Pass/Fail
Mount Pipes	40%	Pass
Bracing Members	32%	Pass
Support Rail	16%	Pass
Platform Base	14%	Pass
Stand-Off Horizontals	12%	Pass
Tower Mount Bolt Connection	11%	Pass
Corner Plates	9%	Pass

Equipment Layout Plan View



Equipment Layout Front Elevation View



### **Standard Conditions**

This analysis is inclusive of the antenna supporting frames/mounts and all recorded connections that will support the equipment listed in this report. It considers only the theoretical capacity of structural components and it is not a condition assessment. The validity of the analysis may be dependent on the accuracy of structural information supplied by others. The client is responsible for verifying this information. If any provided information is revised after completion of this analysis, CLS Engineering, PLLC should be notified immediately to revise results.

This analysis assumes the following:

1. The tower or other superstructure and mounts (if existing) were properly constructed as per the original design and have been properly maintained in accordance with applicable code standards.
2. Member sizes and strengths are accurate as supplied or are assumed as stated in the calculations.
3. In the absence of sufficient design information, all welds and connections are assumed to develop at least the capacity of the connected member, unless otherwise stated in this analysis.
4. All prior structural modifications, if any, are assumed to be correctly installed and fully effective.
5. The loading configuration is complete and accurate as supplied and/or as modeled in the previous analysis. All appurtenances are assumed to be properly installed and supported as per manufacturer requirements.
6. Some conservative assumptions may be used regarding appurtenances and their projected areas based on careful interpretation of data supplied, previous experience and standard industry practice.
7. Installation of all equipment and steel should be confirmed not to cause tower conflicts nor impede the tower climbing pegs.

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of the report. All opinions and conclusions contained herein are subject to revision based upon receipt of new or updated information. All services are provided exercising a level of care and diligence equivalent to the standard of our profession. No warranty or guarantee, either expressed or implied, is offered. All services are confidential in nature and this report will not be released to any other party without the client's consent. The use of this analysis is limited to the expressed purpose for which it was commissioned and it may not be reused, copied or disseminated for any other purpose without consent from CLS Engineering, PLLC.

All services were performed, results obtained and recommendations made in accordance with generally accepted engineering principles and practices. CLS Engineering, PLLC is not responsible for the conclusions, opinions or recommendations made by others based on the information supplied in this analysis.

It is not possible to have the fully detailed information necessary to perform a complete and thorough analysis of every structural sub-component of an existing structure. The structural analysis by CLS Engineering, PLLC verifies the adequacy of the primary members of the structure. CLS Engineering, PLLC provides a limited scope of service in that we cannot verify the adequacy of every weld, bolt, gusset, etc.

Wind & Ice Loading			
Nominal Mount Elevation (AGL), $z_{mount}$	131 ft	$K_a$	0.90
Nominal Rad Elevation (AGL), $z_{rad}$	130 ft	$K_d$	0.95
Elevation AMSL (ft)	324 ft	$K_s$	0.99
TIA Standard	H	$K_z$	1.07
Basic Wind Speed, $V_{ult}$ (bare)	119 mph	$K_{zt}$	1.00
Basic Wind Speed, $V$ (ice)	50 mph	$K_s$	1.00
Design Ice Thickness, $t_i$	1 in	$t_{iz}$	1.15 in
Exposure Category	B	$G_h$	1.00
Risk Category	II	$q_z$ (bare)	36.3 psf
Seismic Response Coeff., $C_s$	0.11	$q_z$ (ice)	6.4 psf

Live Loading	
At Mount Pipes, $L_M$	500 lb
Joint Labels Considered	1_M1
	1_M2
	1_M3
	1_M4

Member Distributed Loading				
Section Set Label	Shape Label	$F_A$ (lb/ft)		Ice Wt. (lb/ft)
		Bare	Ice	
Offset Tube	HSS5x3x3/8"	27.25	1.69	8.75
End Plate Angle	L5x4x0.25	27.25	1.69	9.53
Grating Angle 2	L6.4x4.75x0.25	34.88	1.79	11.45
Grating Angle 4	L7.25x2.375x0.25	39.51	1.85	10.09
Grating Angle 3	L2.375x1.25x0.25	12.94	1.50	4.74
Grating PL 2	PL1.50x0.25	8.18	2.20	3.17
Grating Angle 1	L4.75x4.5x0.25	25.89	1.67	9.76
Platform Horizontal Pipe	PIPE_3.0	11.45	3.35	6.52
Mount Pipe	PIPE_2.0	7.77	2.70	4.94
Support Rail	PIPE_2.0	7.77	2.70	4.94
Stabilizer	L3X3X3	16.35	1.54	6.86
Conn. PL	PL8.5x3/8	46.33	6.24	9.53
SR Conn Pipe	PIPE_2.0	7.77	2.70	4.94

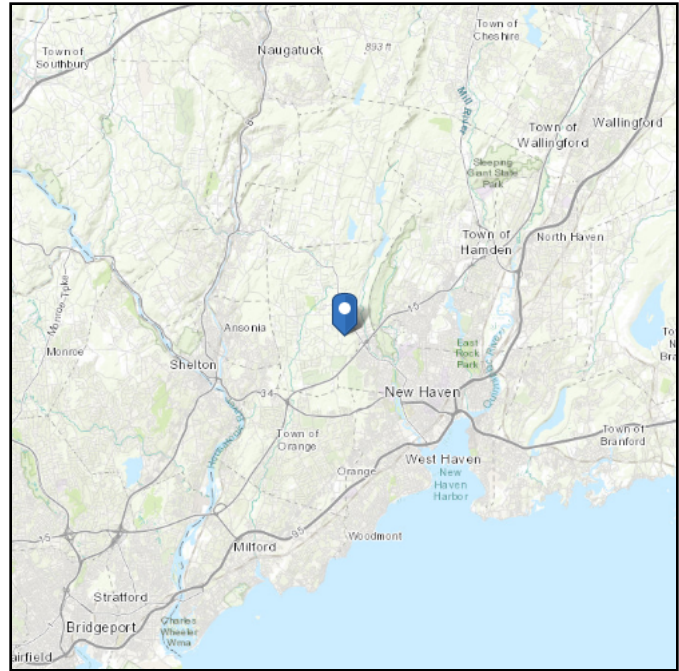
Appurtenances																														
Appurtenance Model	Status	Azimuth Offset ( $^{\circ}$ , $\cup$ )	Rad Elev. Override (ft)	Swap Width & Depth	Area Factor		Qty. per Azimuth			Total Qty. Override	0° Joints		150° Joints		240° Joints		Height (in)	Width (in)	Depth (in)	Weight (Bare) (lb)	Shape	Weight of Ice (lb)	$EPA_A$ (Bare) (ft $^2$ )		$EPA_A$ (Ice) (ft $^2$ )		$F_A$ (Bare) (lb)		$F_A$ (Ice) (lb)	
					Front	Side	0°	150°	240°		1	2	1	2	1	2							N	T	N	T	N	T	N	T
					AIR6449 B41				<input type="checkbox"/>				1	1	1	3							1_A1T	1_A1B	2_A1T	2_A1B	3_A1T	3_A1B	33.1	20.6
APXVAARR24_43-U-NA20				<input type="checkbox"/>			1	1	1	3	1_A2T	1_A2B	2_A2T	2_A2B	3_A2T	3_A2B	95.9	24	8.7	153.3	Generic	258.27	14.67	5.32	16.41	6.86	478.68	173.59	94.55	39.50
RADIO 4449 B71/B85A				<input checked="" type="checkbox"/>	0.5		1	1	1	3	1_R2BT		2_R2BT		3_R2BT		14.96	13.19	10.51	74.95	Flat	39.61	1.31	0.82	1.84	1.11	42.75	26.83	10.60	6.41
4460 BAND 2/25				<input checked="" type="checkbox"/>	0.5		1	1	1	3	1_R2BT		2_R2BT		3_R2BT		19.6	15.7	12.1	109	Flat	63.10	1.98	1.28	2.63	1.64	64.49	41.84	15.13	9.46

# ASCE 7 Hazards Report

**Address:**  
No Address at This Location

**Standard:** ASCE/SEI 7-16  
**Risk Category:** II  
**Soil Class:** D - Default (see Section 11.4.3)

**Elevation:** 324.23 ft (NAVD 88)  
**Latitude:** 41.3414  
**Longitude:** -72.9936



## Wind

### Results:

Wind Speed:	119 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	98 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2

Date Accessed: Fri Oct 08 2021

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

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

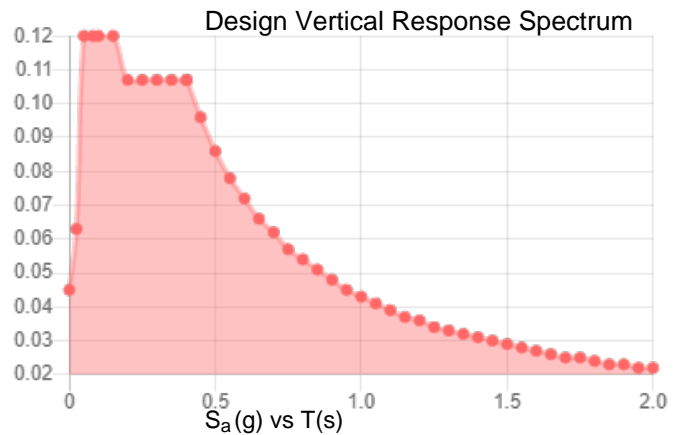
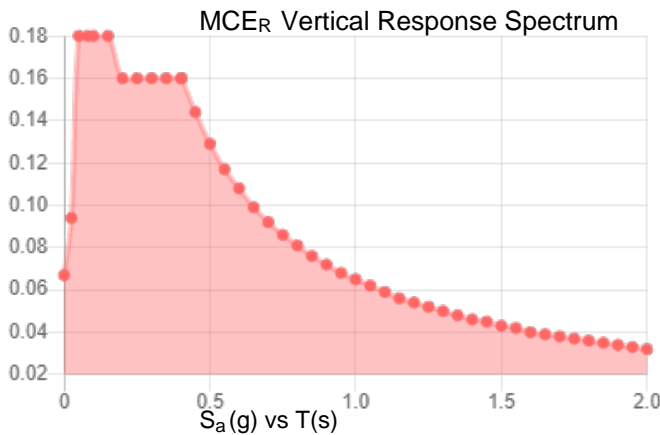
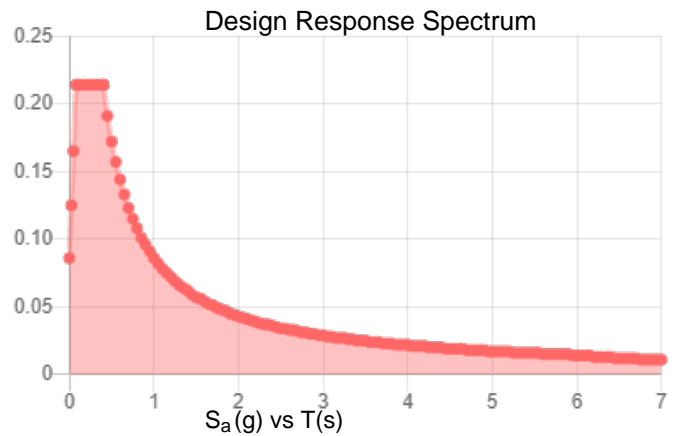
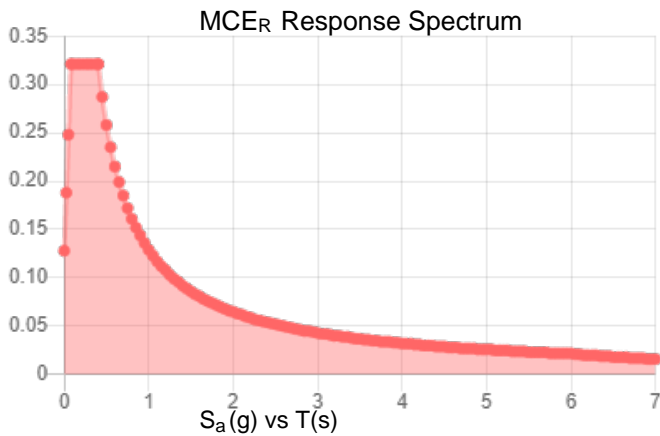


**Site Soil Class:** D - Default (see Section 11.4.3)

**Results:**

$S_s$ :	0.2	$S_{D1}$ :	0.086
$S_1$ :	0.054	$T_L$ :	6
$F_a$ :	1.6	PGA :	0.112
$F_v$ :	2.4	PGA <sub>M</sub> :	0.177
$S_{MS}$ :	0.321	$F_{PGA}$ :	1.576
$S_{M1}$ :	0.129	$I_e$ :	1
$S_{DS}$ :	0.214	$C_v$ :	0.701

**Seismic Design Category** B



**Data Accessed:** Fri Oct 08 2021  
**Date Source:** USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

## Ice

---

### Results:

Ice Thickness: 1.00 in.

Concurrent Temperature: 15 F

Gust Speed: 50 mph

**Data Source:** Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

**Date Accessed:** Fri Oct 08 2021

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

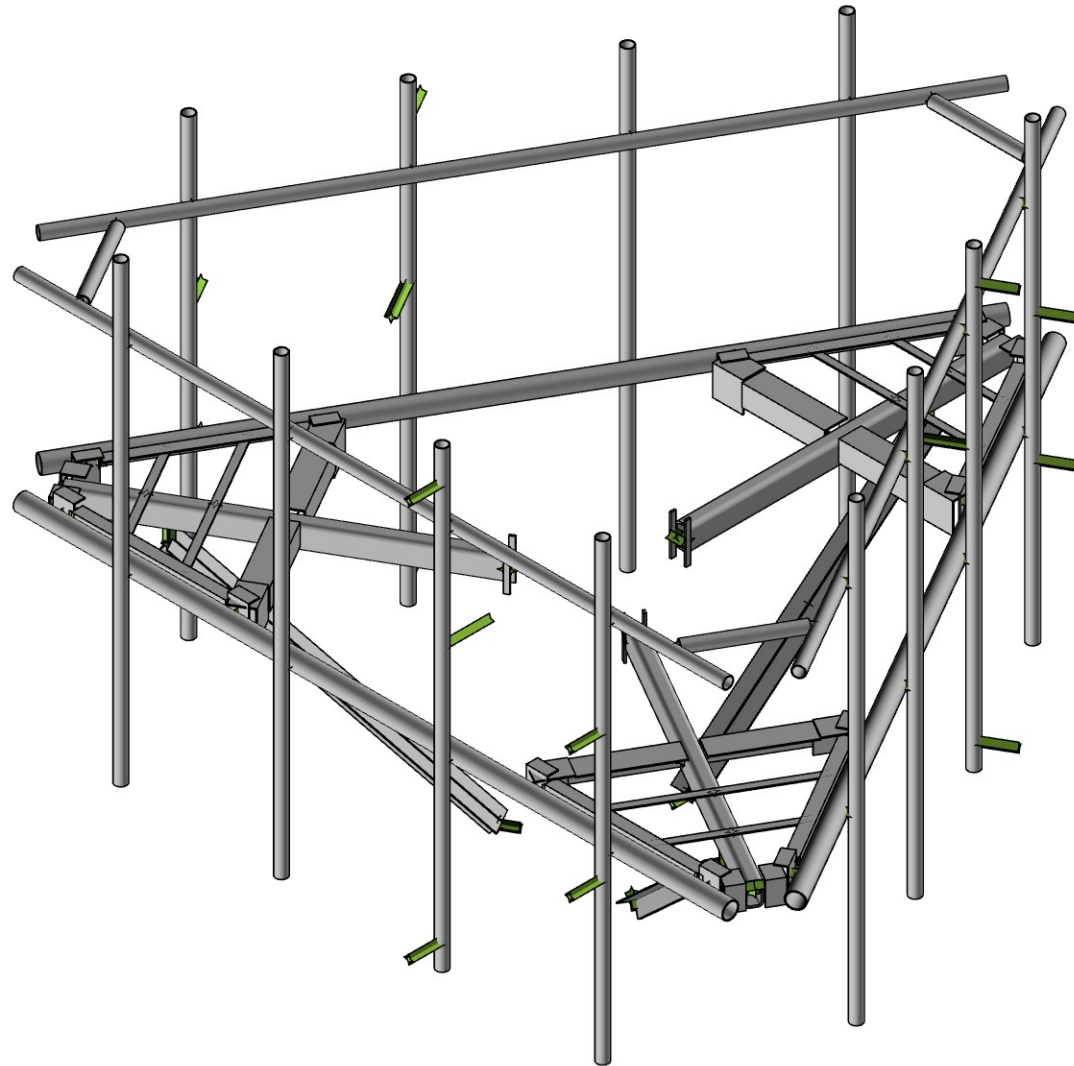
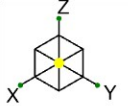
Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

---

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

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

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



Member Code Checks Displayed (Enveloped)  
Envelope Only Solution

Telamon CLS

KV

41124-13732458\_C8\_03-01-MA

41124-13732458\_C8\_03-Woodbridge CT 1

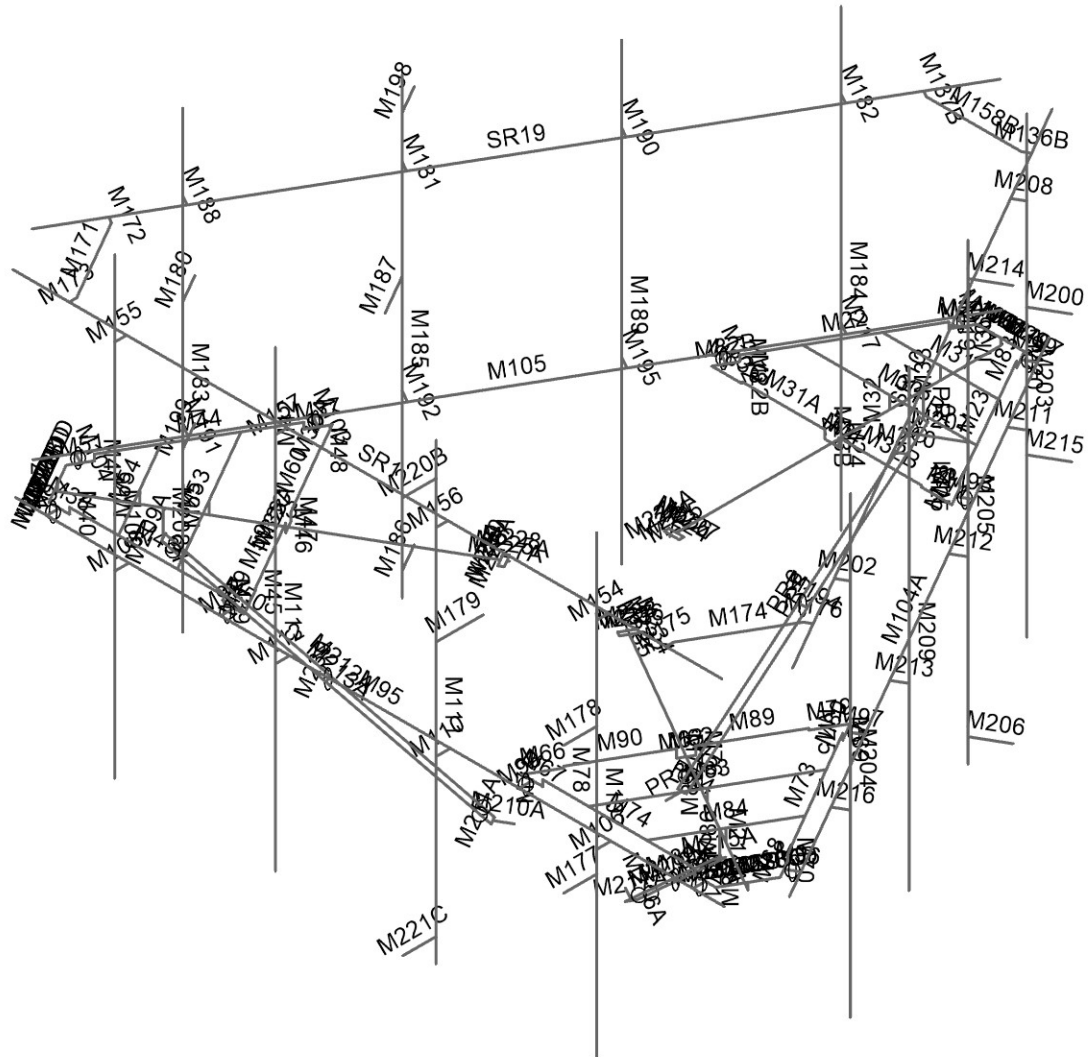
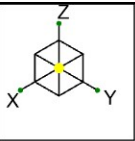
Rendered

SK-1

Oct 08, 2021

41124-13732458\_C8\_03-01-MA.r3d



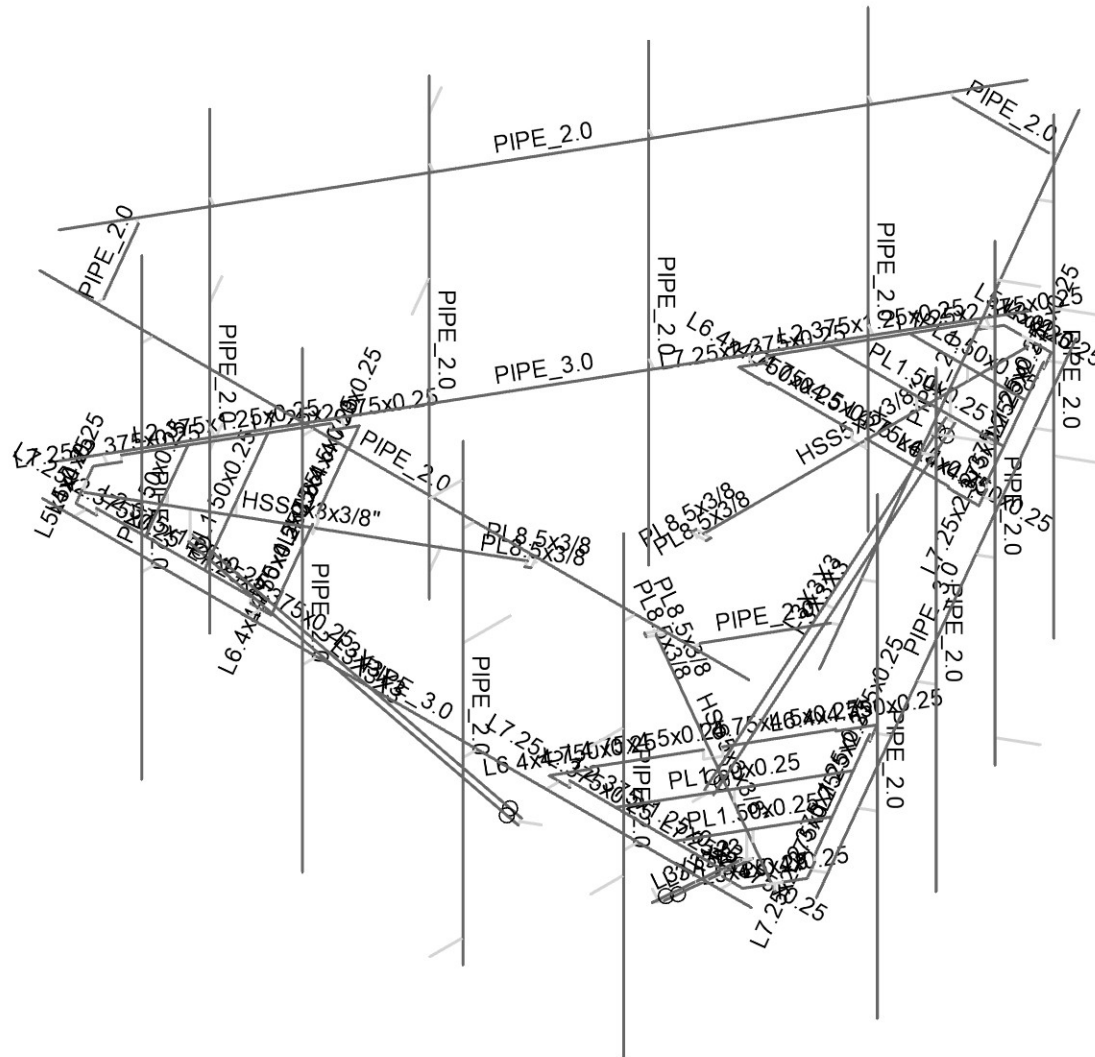
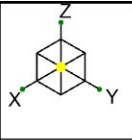


Envelope Only Solution

Telamon CLS  
KV  
41124-13732458\_C8\_03-01-MA

41124-13732458\_C8\_03-Woodbridge CT 1  
Member Labels

SK-3  
Oct 08, 2021  
41124-13732458\_C8\_03-01-MA.r3d



Envelope Only Solution

Telamon CLS

KV

41124-13732458\_C8\_03-01-MA

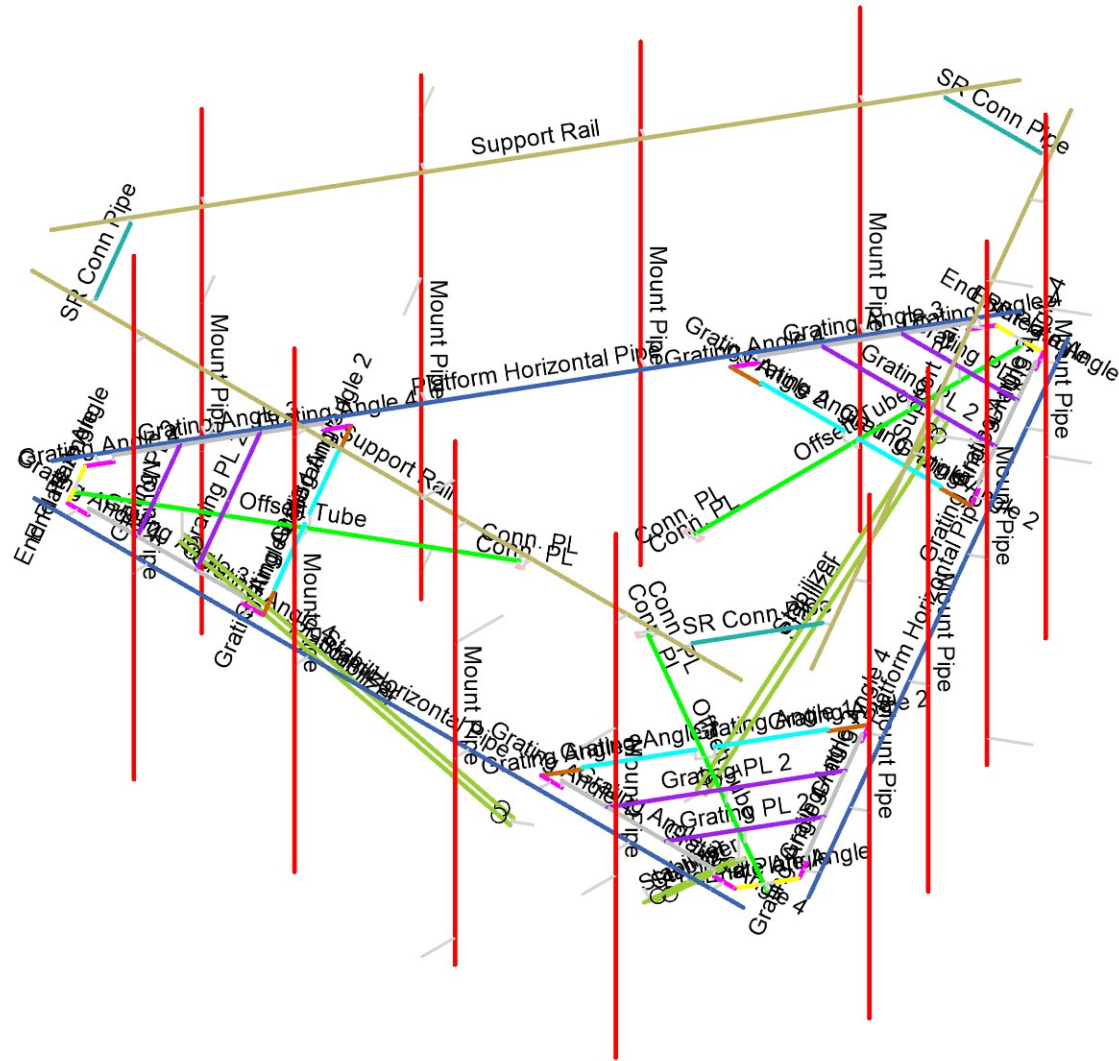
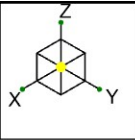
41124-13732458\_C8\_03-Woodbridge CT 1

Member Shapes

SK-3.1

Oct 08, 2021

41124-13732458\_C8\_03-01-MA.r3d



- Section Sets
- Platform Horizontal Pipe
  - Offset Tube
  - Mount Pipe
  - Grating Angle 3
  - Grating Angle 4
  - Grating Angle 1
  - Grating Angle 2
  - End Plate Angle
  - Grating PL 2
  - Support Rail
  - Stabilizer
  - Conn. PL
  - SR Conn Pipe
  - RIGID

Envelope Only Solution

Telamon CLS

KV

41124-13732458\_C8\_03-01-MA

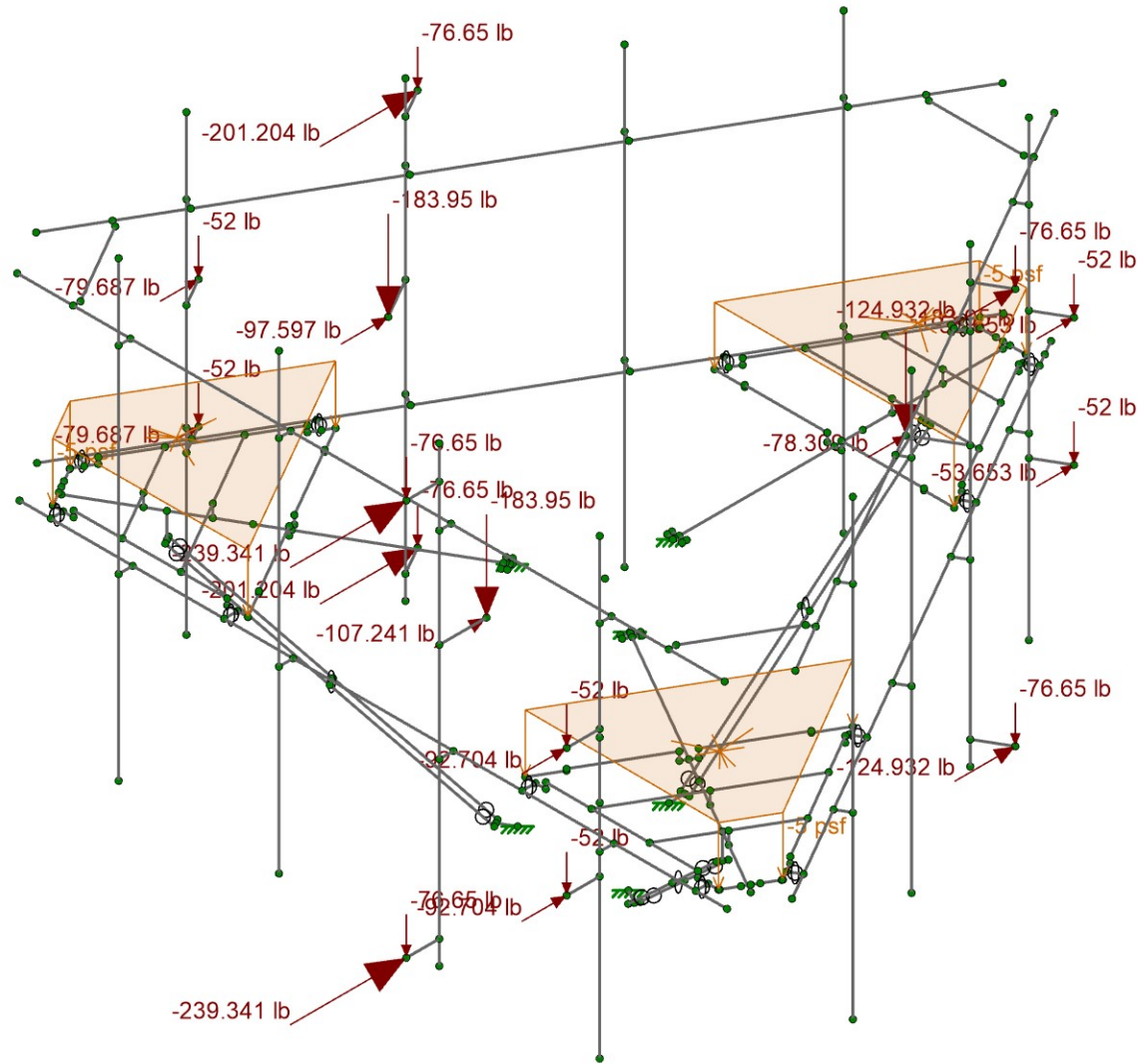
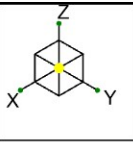
41124-13732458\_C8\_03-Woodbridge CT 1

Section Sets

SK-4

Oct 08, 2021

41124-13732458\_C8\_03-01-MA.r3d



Loads: LC 1, DISPLAY (1.0D + 1.0W\_0)  
Envelope Only Solution

Telamon CLS

41124-13732458\_C8\_03-Woodbridge CT 1

SK-5

KV

Oct 08, 2021

41124-13732458\_C8\_03-01-MA

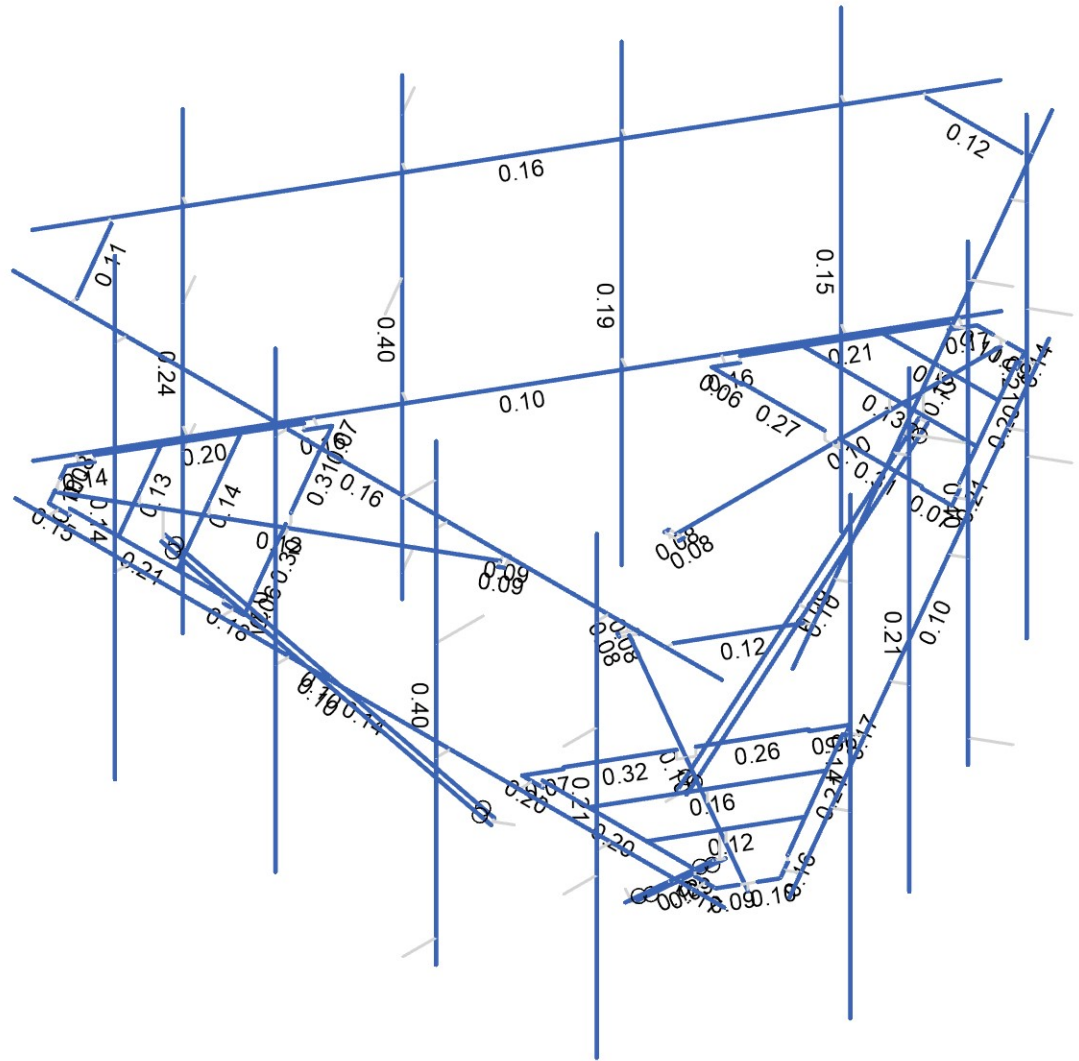
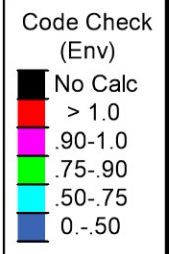
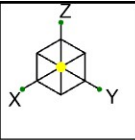
Joint Loads – Dead and Normal Wind

41124-13732458\_C8\_03-01-MA.r3d



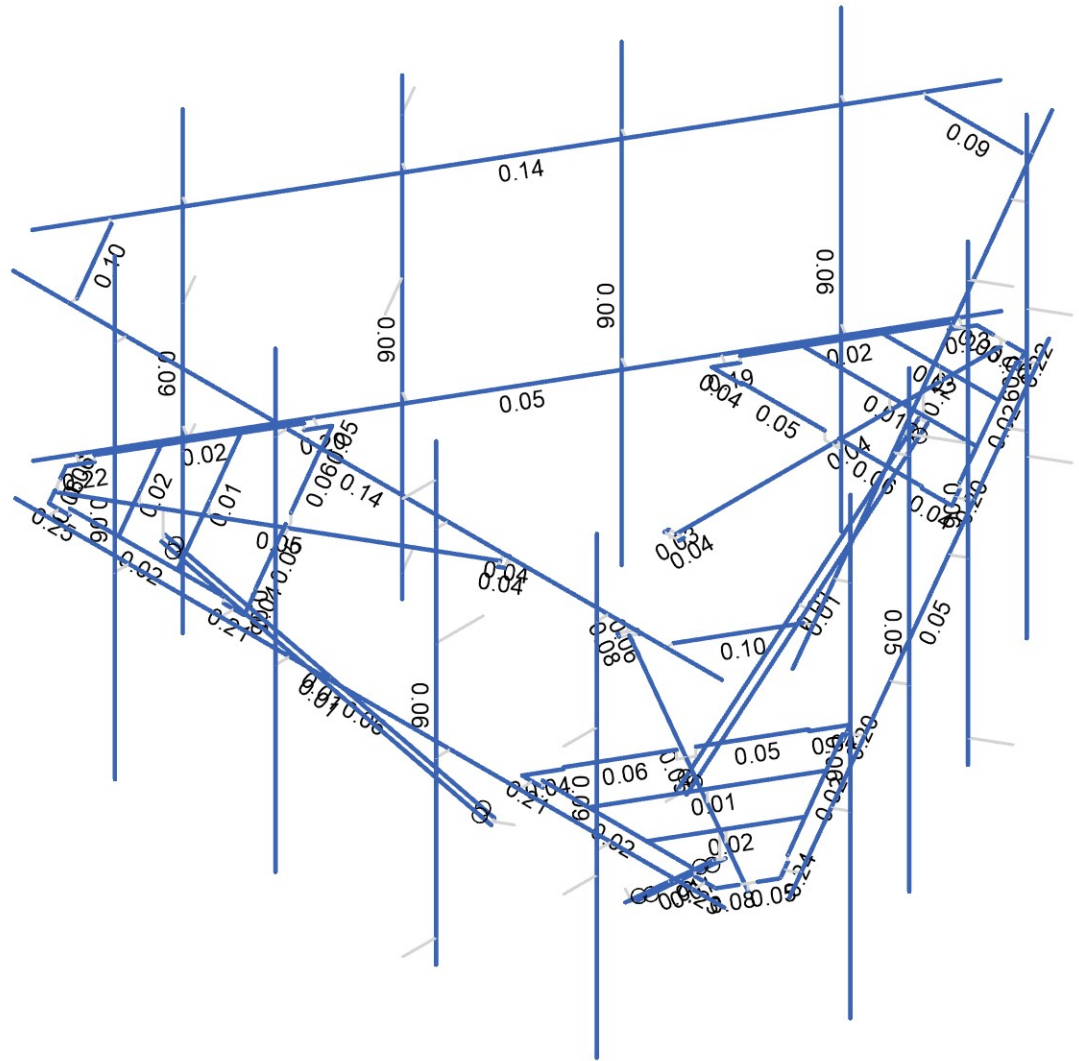
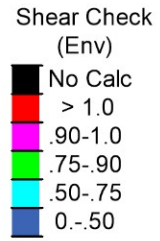
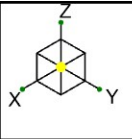






Member Code Checks Displayed (Enveloped)  
Envelope Only Solution

Telamon CLS	41124-13732458_C8_03-Woodbridge CT 1	SK-8
KV		Oct 08, 2021
41124-13732458_C8_03-01-MA	Envelope Member Unity Check Results – Bending	41124-13732458_C8_03-01-MA.r3d



Member Shear Checks Displayed (Enveloped)  
Envelope Only Solution

Telamon CLS	41124-13732458_C8_03-Woodbridge CT 1	SK-9
KV		Oct 08, 2021
41124-13732458_C8_03-01-MA	Envelope Member Check Results – Shear	41124-13732458_C8_03-01-MA.r3d

**Basic Load Cases**

	BLC Description	Category	Z Gravity	Nodal	Distributed	Area(Member)
1	Dead	DL	-1	18		3
2	Ice Dead	RL		18		3
3	BLC 1 Transient Area Loads	None			99	
4	BLC 2 Transient Area Loads	None			99	
5	Structure Wind 0°	None			75	
6	Structure Wind 30°	None			134	
7	Structure Wind 45°	None			156	
8	Structure Wind 60°	None			150	
9	Structure Wind 90°	None			67	
10	Structure Wind 120°	None			150	
11	Structure Wind 135°	None			156	
12	Structure Wind 150°	None			134	
13	Structure Wind 180°	None			75	
14	Structure Wind 210°	None			134	
15	Structure Wind 225°	None			156	
16	Structure Wind 240°	None			150	
17	Structure Wind 270°	None			67	
18	Structure Wind 300°	None			150	
19	Structure Wind 315°	None			156	
20	Structure Wind 330°	None			134	
21	Structure Wind w/ Ice 0°	None			75	
22	Structure Wind w/ Ice 30°	None			134	
23	Structure Wind w/ Ice 45°	None			156	
24	Structure Wind w/ Ice 60°	None			150	
25	Structure Wind w/ Ice 90°	None			67	
26	Structure Wind w/ Ice 120°	None			150	
27	Structure Wind w/ Ice 135°	None			156	
28	Structure Wind w/ Ice 150°	None			134	
29	Structure Wind w/ Ice 180°	None			75	
30	Structure Wind w/ Ice 210°	None			134	
31	Structure Wind w/ Ice 225°	None			156	
32	Structure Wind w/ Ice 240°	None			150	
33	Structure Wind w/ Ice 270°	None			67	
34	Structure Wind w/ Ice 300°	None			150	
35	Structure Wind w/ Ice 315°	None			156	
36	Structure Wind w/ Ice 330°	None			134	
37	Antenna Wind 0°	None		18		
38	Antenna Wind 30°	None		36		
39	Antenna Wind 45°	None		36		
40	Antenna Wind 60°	None		36		
41	Antenna Wind 90°	None		18		
42	Antenna Wind 120°	None		36		
43	Antenna Wind 135°	None		36		
44	Antenna Wind 150°	None		36		
45	Antenna Wind 180°	None		18		
46	Antenna Wind 210°	None		36		
47	Antenna Wind 225°	None		36		
48	Antenna Wind 240°	None		36		
49	Antenna Wind 270°	None		18		
50	Antenna Wind 300°	None		36		
51	Antenna Wind 315°	None		36		
52	Antenna Wind 330°	None		36		
53	Antenna Wind w/ Ice 0°	None		18		
54	Antenna Wind w/ Ice 30°	None		36		
55	Antenna Wind w/ Ice 45°	None		36		

**Basic Load Cases (Continued)**

	BLC Description	Category	Z Gravity	Nodal	Distributed	Area(Member)
56	Antenna Wind w/ Ice 60°	None		36		
57	Antenna Wind w/ Ice 90°	None		18		
58	Antenna Wind w/ Ice 120°	None		36		
59	Antenna Wind w/ Ice 135°	None		36		
60	Antenna Wind w/ Ice 150°	None		36		
61	Antenna Wind w/ Ice 180°	None		18		
62	Antenna Wind w/ Ice 210°	None		36		
63	Antenna Wind w/ Ice 225°	None		36		
64	Antenna Wind w/ Ice 240°	None		36		
65	Antenna Wind w/ Ice 270°	None		18		
66	Antenna Wind w/ Ice 300°	None		36		
67	Antenna Wind w/ Ice 315°	None		36		
68	Antenna Wind w/ Ice 330°	None		36		
69	Seismic X	ELX		18	78	
70	Seismic Y	ELY		18	78	
71	Seismic Z	ELZ		18	78	
72	Maintenance Live 500 (1)	OL1		1		
73	Maintenance Live 500 (2)	OL2		1		
74	Maintenance Live 500 (3)	OL3		1		
75	Maintenance Live 500 (4)	OL4		1		

**Load Combinations**

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	DISPLAY (1.0D + 1.0W_0°)	Yes	Y	DL	1	37	1				
2	1.4D	Yes	Y	DL	1.4						
3	1.2D + 1.0W_0°	Yes	Y	DL	1.2	5	1	37	1		
4	1.2D + 1.0W_30°	Yes	Y	DL	1.2	6	1	38	1		
5	1.2D + 1.0W_45°	Yes	Y	DL	1.2	7	1	39	1		
6	1.2D + 1.0W_60°	Yes	Y	DL	1.2	8	1	40	1		
7	1.2D + 1.0W_90°	Yes	Y	DL	1.2	9	1	41	1		
8	1.2D + 1.0W_120°	Yes	Y	DL	1.2	10	1	42	1		
9	1.2D + 1.0W_135°	Yes	Y	DL	1.2	11	1	43	1		
10	1.2D + 1.0W_150°	Yes	Y	DL	1.2	12	1	44	1		
11	1.2D + 1.0W_180°	Yes	Y	DL	1.2	13	-1	45	-1		
12	1.2D + 1.0W_210°	Yes	Y	DL	1.2	14	-1	46	-1		
13	1.2D + 1.0W_225°	Yes	Y	DL	1.2	15	-1	47	-1		
14	1.2D + 1.0W_240°	Yes	Y	DL	1.2	16	-1	48	-1		
15	1.2D + 1.0W_270°	Yes	Y	DL	1.2	17	-1	49	-1		
16	1.2D + 1.0W_300°	Yes	Y	DL	1.2	18	-1	50	-1		
17	1.2D + 1.0W_315°	Yes	Y	DL	1.2	19	-1	51	-1		
18	1.2D + 1.0W_330°	Yes	Y	DL	1.2	20	-1	52	-1		
19	1.2D + 1.0Di + 1.0Wi_0°	Yes	Y	DL	1.2	21	1	53	1	RL	1
20	1.2D + 1.0Di + 1.0Wi_30°	Yes	Y	DL	1.2	22	1	54	1	RL	1
21	1.2D + 1.0Di + 1.0Wi_45°	Yes	Y	DL	1.2	23	1	55	1	RL	1
22	1.2D + 1.0Di + 1.0Wi_60°	Yes	Y	DL	1.2	24	1	56	1	RL	1
23	1.2D + 1.0Di + 1.0Wi_90°	Yes	Y	DL	1.2	25	1	57	1	RL	1
24	1.2D + 1.0Di + 1.0Wi_120°	Yes	Y	DL	1.2	26	1	58	1	RL	1
25	1.2D + 1.0Di + 1.0Wi_135°	Yes	Y	DL	1.2	27	1	59	1	RL	1
26	1.2D + 1.0Di + 1.0Wi_150°	Yes	Y	DL	1.2	28	1	60	1	RL	1
27	1.2D + 1.0Di + 1.0Wi_180°	Yes	Y	DL	1.2	29	-1	61	-1	RL	1
28	1.2D + 1.0Di + 1.0Wi_210°	Yes	Y	DL	1.2	30	-1	62	-1	RL	1
29	1.2D + 1.0Di + 1.0Wi_225°	Yes	Y	DL	1.2	31	-1	63	-1	RL	1
30	1.2D + 1.0Di + 1.0Wi_240°	Yes	Y	DL	1.2	32	-1	64	-1	RL	1
31	1.2D + 1.0Di + 1.0Wi_270°	Yes	Y	DL	1.2	33	-1	65	-1	RL	1
32	1.2D + 1.0Di + 1.0Wi_300°	Yes	Y	DL	1.2	34	-1	66	-1	RL	1

**Load Combinations (Continued)**

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
33	1.2D + 1.0Di + 1.0Wi 315°	Yes	Y	DL	1.2	35	-1	67	-1	RL	1
34	1.2D + 1.0Di + 1.0Wi 330°	Yes	Y	DL	1.2	36	-1	68	-1	RL	1
35	1.2D + 1.0Ev + 1.0Eh 0°	Yes	Y	DL	1.243	ELX	-1	ELY			
36	1.2D + 1.0Ev + 1.0Eh 30°	Yes	Y	DL	1.243	ELX	-0.866	ELY	0.5		
37	1.2D + 1.0Ev + 1.0Eh 45°	Yes	Y	DL	1.243	ELX	-0.707	ELY	0.707		
38	1.2D + 1.0Ev + 1.0Eh 60°	Yes	Y	DL	1.243	ELX	-0.5	ELY	0.866		
39	1.2D + 1.0Ev + 1.0Eh 90°	Yes	Y	DL	1.243	ELX		ELY	1		
40	1.2D + 1.0Ev + 1.0Eh 120°	Yes	Y	DL	1.243	ELX	0.5	ELY	0.866		
41	1.2D + 1.0Ev + 1.0Eh 135°	Yes	Y	DL	1.243	ELX	0.707	ELY	0.707		
42	1.2D + 1.0Ev + 1.0Eh 150°	Yes	Y	DL	1.243	ELX	0.866	ELY	0.5		
43	1.2D + 1.0Ev + 1.0Eh 180°	Yes	Y	DL	1.243	ELX	1	ELY			
44	1.2D + 1.0Ev + 1.0Eh 210°	Yes	Y	DL	1.243	ELX	0.866	ELY	-0.5		
45	1.2D + 1.0Ev + 1.0Eh 225°	Yes	Y	DL	1.243	ELX	0.707	ELY	-0.707		
46	1.2D + 1.0Ev + 1.0Eh 240°	Yes	Y	DL	1.243	ELX	0.5	ELY	-0.866		
47	1.2D + 1.0Ev + 1.0Eh 270°	Yes	Y	DL	1.243	ELX		ELY	-1		
48	1.2D + 1.0Ev + 1.0Eh 300°	Yes	Y	DL	1.243	ELX	-0.5	ELY	-0.866		
49	1.2D + 1.0Ev + 1.0Eh 315°	Yes	Y	DL	1.243	ELX	-0.707	ELY	-0.707		
50	1.2D + 1.0Ev + 1.0Eh 330°	Yes	Y	DL	1.243	ELX	-0.866	ELY	-0.5		
51	0.9D - 1.0Ev + 1.0Eh 0°	Yes	Y	DL	0.857	ELX	-1	ELY			
52	0.9D - 1.0Ev + 1.0Eh 30°	Yes	Y	DL	0.857	ELX	-0.866	ELY	0.5		
53	0.9D - 1.0Ev + 1.0Eh 45°	Yes	Y	DL	0.857	ELX	-0.707	ELY	0.707		
54	0.9D - 1.0Ev + 1.0Eh 60°	Yes	Y	DL	0.857	ELX	-0.5	ELY	0.866		
55	0.9D - 1.0Ev + 1.0Eh 90°	Yes	Y	DL	0.857	ELX		ELY	1		
56	0.9D - 1.0Ev + 1.0Eh 120°	Yes	Y	DL	0.857	ELX	0.5	ELY	0.866		
57	0.9D - 1.0Ev + 1.0Eh 135°	Yes	Y	DL	0.857	ELX	0.707	ELY	0.707		
58	0.9D - 1.0Ev + 1.0Eh 150°	Yes	Y	DL	0.857	ELX	0.866	ELY	0.5		
59	0.9D - 1.0Ev + 1.0Eh 180°	Yes	Y	DL	0.857	ELX	1	ELY			
60	0.9D - 1.0Ev + 1.0Eh 210°	Yes	Y	DL	0.857	ELX	0.866	ELY	-0.5		
61	0.9D - 1.0Ev + 1.0Eh 225°	Yes	Y	DL	0.857	ELX	0.707	ELY	-0.707		
62	0.9D - 1.0Ev + 1.0Eh 240°	Yes	Y	DL	0.857	ELX	0.5	ELY	-0.866		
63	0.9D - 1.0Ev + 1.0Eh 270°	Yes	Y	DL	0.857	ELX		ELY	-1		
64	0.9D - 1.0Ev + 1.0Eh 300°	Yes	Y	DL	0.857	ELX	-0.5	ELY	-0.866		
65	0.9D - 1.0Ev + 1.0Eh 315°	Yes	Y	DL	0.857	ELX	-0.707	ELY	-0.707		
66	0.9D - 1.0Ev + 1.0Eh 330°	Yes	Y	DL	0.857	ELX	-0.866	ELY	-0.5		
67	1.2D + 1.5Lm 1 + 1.0Wm 0°	Yes	Y	DL	1.2	5	0.067	37	0.067	OL1	1.5
68	1.2D + 1.5Lm 1 + 1.0Wm 30°	Yes	Y	DL	1.2	6	0.067	38	0.067	OL1	1.5
69	1.2D + 1.5Lm 1 + 1.0Wm 45°	Yes	Y	DL	1.2	7	0.067	39	0.067	OL1	1.5
70	1.2D + 1.5Lm 1 + 1.0Wm 60°	Yes	Y	DL	1.2	8	0.067	40	0.067	OL1	1.5
71	1.2D + 1.5Lm 1 + 1.0Wm 90°	Yes	Y	DL	1.2	9	0.067	41	0.067	OL1	1.5
72	1.2D + 1.5Lm 1 + 1.0Wm 120°	Yes	Y	DL	1.2	10	0.067	42	0.067	OL1	1.5
73	1.2D + 1.5Lm 1 + 1.0Wm 135°	Yes	Y	DL	1.2	11	0.067	43	0.067	OL1	1.5
74	1.2D + 1.5Lm 1 + 1.0Wm 150°	Yes	Y	DL	1.2	12	0.067	44	0.067	OL1	1.5
75	1.2D + 1.5Lm 1 + 1.0Wm 180°	Yes	Y	DL	1.2	13	-0.067	45	-0.067	OL1	1.5
76	1.2D + 1.5Lm 1 + 1.0Wm 210°	Yes	Y	DL	1.2	14	-0.067	46	-0.067	OL1	1.5
77	1.2D + 1.5Lm 1 + 1.0Wm 225°	Yes	Y	DL	1.2	15	-0.067	47	-0.067	OL1	1.5
78	1.2D + 1.5Lm 1 + 1.0Wm 240°	Yes	Y	DL	1.2	16	-0.067	48	-0.067	OL1	1.5
79	1.2D + 1.5Lm 1 + 1.0Wm 270°	Yes	Y	DL	1.2	17	-0.067	49	-0.067	OL1	1.5
80	1.2D + 1.5Lm 1 + 1.0Wm 300°	Yes	Y	DL	1.2	18	-0.067	50	-0.067	OL1	1.5
81	1.2D + 1.5Lm 1 + 1.0Wm 315°	Yes	Y	DL	1.2	19	-0.067	51	-0.067	OL1	1.5
82	1.2D + 1.5Lm 1 + 1.0Wm 330°	Yes	Y	DL	1.2	20	-0.067	52	-0.067	OL1	1.5
83	1.2D + 1.5Lm 2 + 1.0Wm 0°	Yes	Y	DL	1.2	5	0.067	37	0.067	OL2	1.5
84	1.2D + 1.5Lm 2 + 1.0Wm 30°	Yes	Y	DL	1.2	6	0.067	38	0.067	OL2	1.5
85	1.2D + 1.5Lm 2 + 1.0Wm 45°	Yes	Y	DL	1.2	7	0.067	39	0.067	OL2	1.5
86	1.2D + 1.5Lm 2 + 1.0Wm 60°	Yes	Y	DL	1.2	8	0.067	40	0.067	OL2	1.5
87	1.2D + 1.5Lm 2 + 1.0Wm 90°	Yes	Y	DL	1.2	9	0.067	41	0.067	OL2	1.5

**Load Combinations (Continued)**

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
88	1.2D + 1.5Lm 2 + 1.0Wm 120°	Yes	Y	DL	1.2	10	0.067	42	0.067	OL2	1.5
89	1.2D + 1.5Lm 2 + 1.0Wm 135°	Yes	Y	DL	1.2	11	0.067	43	0.067	OL2	1.5
90	1.2D + 1.5Lm 2 + 1.0Wm 150°	Yes	Y	DL	1.2	12	0.067	44	0.067	OL2	1.5
91	1.2D + 1.5Lm 2 + 1.0Wm 180°	Yes	Y	DL	1.2	13	-0.067	45	-0.067	OL2	1.5
92	1.2D + 1.5Lm 2 + 1.0Wm 210°	Yes	Y	DL	1.2	14	-0.067	46	-0.067	OL2	1.5
93	1.2D + 1.5Lm 2 + 1.0Wm 225°	Yes	Y	DL	1.2	15	-0.067	47	-0.067	OL2	1.5
94	1.2D + 1.5Lm 2 + 1.0Wm 240°	Yes	Y	DL	1.2	16	-0.067	48	-0.067	OL2	1.5
95	1.2D + 1.5Lm 2 + 1.0Wm 270°	Yes	Y	DL	1.2	17	-0.067	49	-0.067	OL2	1.5
96	1.2D + 1.5Lm 2 + 1.0Wm 300°	Yes	Y	DL	1.2	18	-0.067	50	-0.067	OL2	1.5
97	1.2D + 1.5Lm 2 + 1.0Wm 315°	Yes	Y	DL	1.2	19	-0.067	51	-0.067	OL2	1.5
98	1.2D + 1.5Lm 2 + 1.0Wm 330°	Yes	Y	DL	1.2	20	-0.067	52	-0.067	OL2	1.5
99	1.2D + 1.5Lm 3 + 1.0Wm 0°	Yes	Y	DL	1.2	5	0.067	37	0.067	OL3	1.5
100	1.2D + 1.5Lm 3 + 1.0Wm 30°	Yes	Y	DL	1.2	6	0.067	38	0.067	OL3	1.5
101	1.2D + 1.5Lm 3 + 1.0Wm 45°	Yes	Y	DL	1.2	7	0.067	39	0.067	OL3	1.5
102	1.2D + 1.5Lm 3 + 1.0Wm 60°	Yes	Y	DL	1.2	8	0.067	40	0.067	OL3	1.5
103	1.2D + 1.5Lm 3 + 1.0Wm 90°	Yes	Y	DL	1.2	9	0.067	41	0.067	OL3	1.5
104	1.2D + 1.5Lm 3 + 1.0Wm 120°	Yes	Y	DL	1.2	10	0.067	42	0.067	OL3	1.5
105	1.2D + 1.5Lm 3 + 1.0Wm 135°	Yes	Y	DL	1.2	11	0.067	43	0.067	OL3	1.5
106	1.2D + 1.5Lm 3 + 1.0Wm 150°	Yes	Y	DL	1.2	12	0.067	44	0.067	OL3	1.5
107	1.2D + 1.5Lm 3 + 1.0Wm 180°	Yes	Y	DL	1.2	13	-0.067	45	-0.067	OL3	1.5
108	1.2D + 1.5Lm 3 + 1.0Wm 210°	Yes	Y	DL	1.2	14	-0.067	46	-0.067	OL3	1.5
109	1.2D + 1.5Lm 3 + 1.0Wm 225°	Yes	Y	DL	1.2	15	-0.067	47	-0.067	OL3	1.5
110	1.2D + 1.5Lm 3 + 1.0Wm 240°	Yes	Y	DL	1.2	16	-0.067	48	-0.067	OL3	1.5
111	1.2D + 1.5Lm 3 + 1.0Wm 270°	Yes	Y	DL	1.2	17	-0.067	49	-0.067	OL3	1.5
112	1.2D + 1.5Lm 3 + 1.0Wm 300°	Yes	Y	DL	1.2	18	-0.067	50	-0.067	OL3	1.5
113	1.2D + 1.5Lm 3 + 1.0Wm 315°	Yes	Y	DL	1.2	19	-0.067	51	-0.067	OL3	1.5
114	1.2D + 1.5Lm 3 + 1.0Wm 330°	Yes	Y	DL	1.2	20	-0.067	52	-0.067	OL3	1.5
115	1.2D + 1.5Lm 4 + 1.0Wm 0°	Yes	Y	DL	1.2	5	0.067	37	0.067	OL4	1.5
116	1.2D + 1.5Lm 4 + 1.0Wm 30°	Yes	Y	DL	1.2	6	0.067	38	0.067	OL4	1.5
117	1.2D + 1.5Lm 4 + 1.0Wm 45°	Yes	Y	DL	1.2	7	0.067	39	0.067	OL4	1.5
118	1.2D + 1.5Lm 4 + 1.0Wm 60°	Yes	Y	DL	1.2	8	0.067	40	0.067	OL4	1.5
119	1.2D + 1.5Lm 4 + 1.0Wm 90°	Yes	Y	DL	1.2	9	0.067	41	0.067	OL4	1.5
120	1.2D + 1.5Lm 4 + 1.0Wm 120°	Yes	Y	DL	1.2	10	0.067	42	0.067	OL4	1.5
121	1.2D + 1.5Lm 4 + 1.0Wm 135°	Yes	Y	DL	1.2	11	0.067	43	0.067	OL4	1.5
122	1.2D + 1.5Lm 4 + 1.0Wm 150°	Yes	Y	DL	1.2	12	0.067	44	0.067	OL4	1.5
123	1.2D + 1.5Lm 4 + 1.0Wm 180°	Yes	Y	DL	1.2	13	-0.067	45	-0.067	OL4	1.5
124	1.2D + 1.5Lm 4 + 1.0Wm 210°	Yes	Y	DL	1.2	14	-0.067	46	-0.067	OL4	1.5
125	1.2D + 1.5Lm 4 + 1.0Wm 225°	Yes	Y	DL	1.2	15	-0.067	47	-0.067	OL4	1.5
126	1.2D + 1.5Lm 4 + 1.0Wm 240°	Yes	Y	DL	1.2	16	-0.067	48	-0.067	OL4	1.5
127	1.2D + 1.5Lm 4 + 1.0Wm 270°	Yes	Y	DL	1.2	17	-0.067	49	-0.067	OL4	1.5
128	1.2D + 1.5Lm 4 + 1.0Wm 300°	Yes	Y	DL	1.2	18	-0.067	50	-0.067	OL4	1.5
129	1.2D + 1.5Lm 4 + 1.0Wm 315°	Yes	Y	DL	1.2	19	-0.067	51	-0.067	OL4	1.5
130	1.2D + 1.5Lm 4 + 1.0Wm 330°	Yes	Y	DL	1.2	20	-0.067	52	-0.067	OL4	1.5

**Hot Rolled Steel Properties**

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e <sup>6</sup> F <sup>-1</sup> ]	Density [k/ft <sup>3</sup> ]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
3	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3



**Hot Rolled Steel Section Sets**

	Label	Shape	Type	Design List	Material	Design Rule	Area [in <sup>2</sup> ]	Iyy [in <sup>4</sup> ]	Izz [in <sup>4</sup> ]	J [in <sup>4</sup> ]
1	Platform Horizontal Pipe	PIPE 3.0	Beam	None	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	Offset Tube	HSS5x3x3/8"	Beam	None	A500 Gr.B Rect	Typical	5.438	7.216	16.856	15.248
3	Mount Pipe	PIPE 2.0	Beam	None	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
4	Grating Angle 3	L2.375x1.25x0.25	Beam	None	A36 Gr.36	Typical	0.844	0.093	0.479	0.016
5	Grating Angle 4	L7.25x2.375x0.25	Beam	None	A36 Gr.36	Typical	2.344	0.789	12.975	0.047
6	Grating Angle 1	L4.75x4.5x0.25	Beam	None	A36 Gr.36	Typical	2.25	4.444	5.077	0.045
7	Grating Angle 2	L6.4x4.750x0.25	Beam	None	A36 Gr.36	Typical	2.725	5.633	11.713	0.055
8	End Plate Angle	L5x4x0.25	Beam	None	A36 Gr.36	Typical	2.188	3.248	5.631	0.044
9	Grating PL 2	PL1.50x0.25	Beam	None	A36 Gr.36	Typical	0.375	0.002	0.07	0.007
10	Support Rail	PIPE 2.0	Beam	None	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
11	Stabilizer	L3X3X3	Beam	None	A36 Gr.36	Typical	1.09	0.948	0.948	0.014
12	Conn. PL	PL8.5x3/8	Beam	None	A36 Gr.36	Typical	3.188	0.037	19.191	0.145
13	SR Conn Pipe	PIPE 2.0	Beam	None	A53 Gr.B	Typical	1.02	0.627	0.627	1.25

**Hot Rolled Steel Design Parameters**

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	K y-y	K z-z	Function
1	A1	Offset Tube	68.625					Lateral
2	M8	End Plate Angle	3.313			0.65	0.65	Lateral
3	M11	Grating Angle 2	6.406			0.65	0.65	Lateral
4	M13	Grating Angle 4	4.375			0.65	0.65	Lateral
5	M14	Grating Angle 4	4.375			0.65	0.65	Lateral
6	M22	Grating Angle 3	32.414			0.65	0.65	Lateral
7	M23	Grating Angle 3	32.414			0.65	0.65	Lateral
8	M83C	Grating Angle 2	6.406			0.65	0.65	Lateral
9	M82B	Grating Angle 4	4.375			0.65	0.65	Lateral
10	M83D	Grating Angle 4	4.375			0.65	0.65	Lateral
11	M29	End Plate Angle	3.313			0.65	0.65	Lateral
12	M30	Grating PL 2	36.828			0.65	0.65	Lateral
13	M31	Grating PL 2	24.556			0.65	0.65	Lateral
14	M31A	Grating Angle 1	17.5			0.65	0.65	Lateral
15	M32B	Grating Angle 1	17.5			0.65	0.65	Lateral
16	M36A	Grating Angle 2	6.406			0.65	0.65	Lateral
17	M37	Grating Angle 4	4.375			0.65	0.65	Lateral
18	M38	Grating Angle 4	4.375			0.65	0.65	Lateral
19	M43	Grating Angle 3	32.414			0.65	0.65	Lateral
20	M44	Grating Angle 3	32.414			0.65	0.65	Lateral
21	M49	Grating Angle 2	6.406			0.65	0.65	Lateral
22	M50	Grating Angle 4	4.375			0.65	0.65	Lateral
23	M51	Grating Angle 4	4.375			0.65	0.65	Lateral
24	M53	Grating PL 2	36.828			0.65	0.65	Lateral
25	M54	Grating PL 2	24.556			0.65	0.65	Lateral
26	M59	Grating Angle 1	17.5			0.65	0.65	Lateral
27	M60	Grating Angle 1	17.5			0.65	0.65	Lateral
28	M66	Grating Angle 2	6.406			0.65	0.65	Lateral
29	M67	Grating Angle 4	4.375			0.65	0.65	Lateral
30	M68	Grating Angle 4	4.375			0.65	0.65	Lateral
31	M73	Grating Angle 3	32.414			0.65	0.65	Lateral
32	M74	Grating Angle 3	32.414			0.65	0.65	Lateral
33	M79	Grating Angle 2	6.406			0.65	0.65	Lateral
34	M80	Grating Angle 4	4.375			0.65	0.65	Lateral
35	M81	Grating Angle 4	4.375			0.65	0.65	Lateral
36	M83	Grating PL 2	36.828			0.65	0.65	Lateral
37	M84	Grating PL 2	24.556			0.65	0.65	Lateral
38	M89	Grating Angle 1	17.5			0.65	0.65	Lateral

**Hot Rolled Steel Design Parameters (Continued)**

Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	K y-y	K z-z	Function
39	M90	Grating Angle 1	17.5		0.65	0.65	Lateral
40	M95	Platform Horizontal Pipe	150	63.19	34		Lateral
41	M104A	Platform Horizontal Pipe	150	63.19	34		Lateral
42	M105	Platform Horizontal Pipe	150	63.19	34		Lateral
43	M107	Mount Pipe	96				Lateral
44	M109	Mount Pipe	96				Lateral
45	M111	Mount Pipe	96				Lateral
46	M113	Mount Pipe	96				Lateral
47	SR1	Support Rail	150	126.28	34		Lateral
48	SR10	Support Rail	150	126.28	34		Lateral
49	SR19	Support Rail	150	126.28	34		Lateral
50	PR5	Stabilizer	66.515				Lateral
51	PR6	Stabilizer	66.515				Lateral
52	M212A	Stabilizer	66.515				Lateral
53	M213A	Stabilizer	66.515				Lateral
54	M218A	Stabilizer	66.515				Lateral
55	M219A	Stabilizer	66.515				Lateral
56	M224A	Conn. PL	1		0.65	0.65	Lateral
57	M225	Conn. PL	1		0.65	0.65	Lateral
58	A3	Offset Tube	68.625				Lateral
59	M227A	Conn. PL	1		0.65	0.65	Lateral
60	M228	Conn. PL	1		0.65	0.65	Lateral
61	A2	Offset Tube	68.625				Lateral
62	M234	Conn. PL	1		0.65	0.65	Lateral
63	M235	Conn. PL	1		0.65	0.65	Lateral
64	M227E	End Plate Angle	3.313		0.65	0.65	Lateral
65	M228D	End Plate Angle	3.313		0.65	0.65	Lateral
66	M233C	End Plate Angle	3.313		0.65	0.65	Lateral
67	M234C	End Plate Angle	3.313		0.65	0.65	Lateral
68	M158B	SR Conn Pipe	20.125				Lateral
69	M171	SR Conn Pipe	20.125				Lateral
70	M174	SR Conn Pipe	20.125				Lateral
71	M183	Mount Pipe	96				Lateral
72	M184	Mount Pipe	96				Lateral
73	M185	Mount Pipe	96				Lateral
74	M189	Mount Pipe	96				Lateral
75	M203	Mount Pipe	96				Lateral
76	M204	Mount Pipe	96				Lateral
77	M205	Mount Pipe	96				Lateral
78	M209	Mount Pipe	96				Lateral

**Member Advanced Data**

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
1	A1			Yes	Default	None
2	M3			Yes	** NA **	None
3	M4			Yes	** NA **	None
4	M6			Yes	** NA **	None
5	M8			Yes	Default	None
6	M11			Yes	Default	None
7	M13			Yes	Default	None
8	M14			Yes	Default	None
9	M18			Yes	** NA **	None
10	M19			Yes	** NA **	None
11	M20			Yes	** NA **	None
12	M21			Yes	** NA **	None

**Member Advanced Data (Continued)**

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
13	M22			Yes	Default	None
14	M23			Yes	Default	None
15	M22B			Yes	** NA **	None
16	M23B			Yes	** NA **	None
17	M24			Yes	** NA **	None
18	M25			Yes	** NA **	None
19	M83C			Yes	Default	None
20	M82B			Yes	Default	None
21	M83D			Yes	Default	None
22	M29			Yes	Default	None
23	M30			Yes	Default	None
24	M31			Yes	Default	None
25	M32			Yes	** NA **	None
26	M33			Yes	** NA **	None
27	M36			Yes	** NA **	None
28	M32A			Yes	** NA **	None
29	M31A			Yes	Default	None
30	M32B			Yes	Default	None
31	M32C			Yes	** NA **	None
32	M33A			Yes	** NA **	None
33	M36A			Yes	Default	None
34	M37			Yes	Default	None
35	M38			Yes	Default	None
36	M39			Yes	** NA **	None
37	M40			Yes	** NA **	None
38	M41			Yes	** NA **	None
39	M42			Yes	** NA **	None
40	M43			Yes	Default	None
41	M44			Yes	Default	None
42	M45			Yes	** NA **	None
43	M46			Yes	** NA **	None
44	M47			Yes	** NA **	None
45	M48			Yes	** NA **	None
46	M49			Yes	Default	None
47	M50			Yes	Default	None
48	M51			Yes	Default	None
49	M53			Yes	Default	None
50	M54			Yes	Default	None
51	M55			Yes	** NA **	None
52	M56			Yes	** NA **	None
53	M57			Yes	** NA **	None
54	M59			Yes	Default	None
55	M60			Yes	Default	None
56	M62			Yes	** NA **	None
57	M63			Yes	** NA **	None
58	M66			Yes	Default	None
59	M67			Yes	Default	None
60	M68			Yes	Default	None
61	M69			Yes	** NA **	None
62	M70			Yes	** NA **	None
63	M71			Yes	** NA **	None
64	M72			Yes	** NA **	None
65	M73			Yes	Default	None
66	M74			Yes	Default	None
67	M75			Yes	** NA **	None

**Member Advanced Data (Continued)**

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
68	M76			Yes	** NA **	None
69	M77			Yes	** NA **	None
70	M78			Yes	** NA **	None
71	M79			Yes	Default	None
72	M80			Yes	Default	None
73	M81			Yes	Default	None
74	M83			Yes	Default	None
75	M84			Yes	Default	None
76	M85			Yes	** NA **	None
77	M86			Yes	** NA **	None
78	M87			Yes	** NA **	None
79	M89			Yes	Default	None
80	M90			Yes	Default	None
81	M91		OOOXXO	Yes	** NA **	None
82	M92		OOOXXO	Yes	** NA **	None
83	M93		OOOXXO	Yes	** NA **	None
84	M94		OOOXXO	Yes	** NA **	None
85	M95			Yes	Default	None
86	M96		OOOXXO	Yes	** NA **	None
87	M97		OOOXXO	Yes	** NA **	None
88	M98		OOOXXO	Yes	** NA **	None
89	M99		OOOXXO	Yes	** NA **	None
90	M101		OOOXXO	Yes	** NA **	None
91	M102		OOOXXO	Yes	** NA **	None
92	M103		OOOXXO	Yes	** NA **	None
93	M104		OOOXXO	Yes	** NA **	None
94	M104A			Yes	Default	None
95	M105			Yes	Default	None
96	M106			Yes	** NA **	None
97	M107			Yes	Default	None
98	M108			Yes	** NA **	None
99	M109			Yes	Default	None
100	M110			Yes	** NA **	None
101	M111			Yes	Default	None
102	M112			Yes	** NA **	None
103	M113			Yes	Default	None
104	M154			Yes	** NA **	None
105	M155			Yes	** NA **	None
106	M156			Yes	** NA **	None
107	M157			Yes	** NA **	None
108	SR1			Yes	Default	None
109	SR10			Yes	Default	None
110	SR19			Yes	Default	None
111	M196			Yes	** NA **	None
112	M197			Yes	** NA **	None
113	PR1			Yes	** NA **	None
114	PR2			Yes	** NA **	None
115	PR3			Yes	** NA **	None
116	PR4			Yes	** NA **	None
117	PR5	OOOOOX	OOOOOX	Yes	Default	None
118	PR6	OOOOXO	OOOOXO	Yes	Default	None
119	M208A			Yes	** NA **	None
120	M209A			Yes	** NA **	None
121	M210A			Yes	** NA **	None
122	M211A			Yes	** NA **	None

**Member Advanced Data (Continued)**

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
123	M212A	OOOOOX	OOOOOX	Yes	Default	None
124	M213A	OOOOXO	OOOOXO	Yes	Default	None
125	M214A			Yes	** NA **	None
126	M215A			Yes	** NA **	None
127	M216A			Yes	** NA **	None
128	M217A			Yes	** NA **	None
129	M218A	OOOOOX	OOOOOX	Yes	Default	None
130	M219A	OOOOXO	OOOOXO	Yes	Default	None
131	M221			Yes	** NA **	None
132	M224			Yes	** NA **	None
133	M224A			Yes	Default	None
134	M225			Yes	Default	None
135	M226			Yes	** NA **	None
136	M227			Yes	** NA **	None
137	A3			Yes	Default	None
138	M225A			Yes	** NA **	None
139	M226A			Yes	** NA **	None
140	M227A			Yes	Default	None
141	M228			Yes	Default	None
142	M229			Yes	** NA **	None
143	M230			Yes	** NA **	None
144	A2			Yes	Default	None
145	M232			Yes	** NA **	None
146	M233			Yes	** NA **	None
147	M234			Yes	Default	None
148	M235			Yes	Default	None
149	M236			Yes	** NA **	None
150	M237			Yes	** NA **	None
151	M226E			Yes	** NA **	None
152	M227E			Yes	Default	None
153	M228D			Yes	Default	None
154	M229D			Yes	** NA **	None
155	M230D			Yes	** NA **	None
156	M231D			Yes	** NA **	None
157	M232C			Yes	** NA **	None
158	M233C			Yes	Default	None
159	M234C			Yes	Default	None
160	M235D			Yes	** NA **	None
161	M236D			Yes	** NA **	None
162	M237C			Yes	** NA **	None
163	M220B			Yes	** NA **	None
164	M221C			Yes	** NA **	None
165	M239	OOOXOO		Yes	** NA **	None
166	M193	OOOXOO		Yes	** NA **	None
167	M194	OOOXOO		Yes	** NA **	None
168	M136B			Yes	** NA **	None
169	M137B			Yes	** NA **	None
170	M158B			Yes	Default	None
171	M171			Yes	Default	None
172	M172			Yes	** NA **	None
173	M173			Yes	** NA **	None
174	M174			Yes	Default	None
175	M175			Yes	** NA **	None
176	M176			Yes	** NA **	None
177	M177			Yes	** NA **	None

**Member Advanced Data (Continued)**

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
178	M178			Yes	** NA **	None
179	M179			Yes	** NA **	None
180	M180			Yes	** NA **	None
181	M181			Yes	** NA **	None
182	M182			Yes	** NA **	None
183	M183			Yes	Default	None
184	M184			Yes	Default	None
185	M185			Yes	Default	None
186	M186			Yes	** NA **	None
187	M187			Yes	** NA **	None
188	M188			Yes	** NA **	None
189	M189			Yes	Default	None
190	M190			Yes	** NA **	None
191	M191			Yes	** NA **	None
192	M192			Yes	** NA **	None
193	M195			Yes	** NA **	None
194	M198			Yes	** NA **	None
195	M199			Yes	** NA **	None
196	M200			Yes	** NA **	None
197	M201			Yes	** NA **	None
198	M202			Yes	** NA **	None
199	M203			Yes	Default	None
200	M204			Yes	Default	None
201	M205			Yes	Default	None
202	M206			Yes	** NA **	None
203	M207			Yes	** NA **	None
204	M208			Yes	** NA **	None
205	M209			Yes	Default	None
206	M210			Yes	** NA **	None
207	M211			Yes	** NA **	None
208	M212			Yes	** NA **	None
209	M213			Yes	** NA **	None
210	M214			Yes	** NA **	None
211	M215			Yes	** NA **	None
212	M216			Yes	** NA **	None
213	M217			Yes	** NA **	None

**Node Boundary Conditions**

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	N2						
2	P5	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N326A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N335A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N338B	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N342A						
7	N343A						
8	N342						
9	N343						
10	N340						
11	N344	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
12	N345						
13	N346						
14	N347						
15	N348						
16	N350						

**Node Boundary Conditions (Continued)**

Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
17 N354	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
18 N355						
19 N356						
20 N357						
21 N358						

**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 P5 max	-434.0664	11	124.6595	15	1416.1276	19	120.4324	7	413.2308	19	176.5797	7
2 min	-1624.0262	19	-112.1802	7	353.2391	11	-114.9495	15	81.4178	10	-174.1479	15
3 N326A max	796.1943	126	-414.815	6	1398.3439	30	-5.8861	10	-39.609	18	191.0131	18
4 min	234.4333	6	-1395.028	30	388.9127	5	-394.1905	130	-195.388	31	-189.7354	10
5 N335A max	821.5479	24	1396.0898	24	1410.7392	24	348.8394	24	48.9086	4	168.1637	12
6 min	243.0606	16	409.3641	17	391.2673	16	92.0949	16	-246.3532	12	-168.2387	4
7 N338B max	2642.3184	3	1005.0432	15	873.6016	27	298.5556	7	1300.5708	27	1749.4779	7
8 min	-1375.2855	11	-1007.2057	7	330.1604	52	-43.8247	15	489.2508	52	-1739.2827	15
9 N344 max	801.8357	3	2144.649	14	864.5862	20	-466.6106	58	-41.7928	18	1999.7462	18
10 min	-1434.2981	11	-1045.1681	6	327.7355	63	-1261.7841	34	-828.2238	106	-1987.4373	10
11 N354 max	992.119	3	980.6899	16	860.6941	31	1008.0125	20	-248.3387	1	1762.2258	12
12 min	-1632.195	11	-2082.5605	8	326.1498	57	363.9803	59	-1109.4198	92	-1748.2478	4
13 Totals: max	4066.2059	3	3618.3682	15	6530.4116	27						
14 min	-4066.1942	11	-3618.3716	7	2453.8069	51						

**Envelope AISC 15TH (360-16): LFRD 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 M111	PIPE 2.0	0.4014	58.1053	3	0.06	58.1053	17	14916.0955	32130	1871.625	1871.625	2.253	H1-1b	
2 M205	PIPE 2.0	0.4014	58.1053	14	0.0588	58.1053	12	14916.0955	32130	1871.625	1871.625	2.4037	H1-1b	
3 M185	PIPE 2.0	0.4014	58.1053	10	0.0588	58.1053	8	14916.0955	32130	1871.625	1871.625	1.9172	H1-1b	
4 M90	L4.75x4.5x0.25	0.3195	17.5	90	0.0578	17.5	z	23	50368.9694	72900	4381.6915	8212.7367	1.4401	H2-1
5 M32B	L4.75x4.5x0.25	0.3117	17.5	20	0.058	17.5	z	34	50368.9694	72900	4381.6915	8212.7367	1.4414	H2-1
6 M60	L4.75x4.5x0.25	0.3106	17.5	31	0.0578	17.5	z	29	50368.9694	72900	4381.6915	8212.7367	1.4425	H2-1
7 M59	L4.75x4.5x0.25	0.2968	0	108	0.0526	0	z	111	50368.9694	72900	4381.6915	8212.7367	1.4356	H2-1
8 M31A	L4.75x4.5x0.25	0.2664	0	34	0.0511	0	z	20	50368.9694	72900	4381.6915	8212.7367	1.4384	H2-1
9 M89	L4.75x4.5x0.25	0.2597	0	23	0.0503	0	z	25	50368.9694	72900	4381.6915	8212.7367	1.4389	H2-1
10 M183	PIPE 2.0	0.2383	57.6	11	0.0882	57.6	16	14916.0955	32130	1871.625	1871.625	2.0683	H1-1b	
11 M113	PIPE 2.0	0.2135	57.6	18	0.0544	57.6	12	14916.0955	32130	1871.625	1871.625	1.9333	H1-1b	
12 M107	PIPE 2.0	0.2113	57.6	5	0.0901	57.6	10	14916.0955	32130	1871.625	1871.625	2.0017	H1-1b	
13 M209	PIPE 2.0	0.2099	57.6	12	0.0529	57.6	7	14916.0955	32130	1871.625	1871.625	1.9328	H1-1b	
14 M22	L2.375x1.25x0.25	0.2088	32.414	33	0.0223	22.178	y	16	19687.8479	27337.5	329.6375	1353.8038	1.5	H2-1
15 M43	L2.375x1.25x0.25	0.2081	32.414	27	0.0245	22.178	y	11	19687.8479	27337.5	329.6375	1353.8038	1.5	H2-1
16 M13	L7.25x2.375x0.25	0.2076	0	12	0.1972	0	z	14	50043.8921	75945.6	631.1291	-4661.359	1.1493	H2-1
17 M203	PIPE 2.0	0.2072	57.6	32	0.0929	57.6	5	14916.0955	32130	1871.625	1871.625	2.0081	H1-1b	
18 M73	L2.375x1.25x0.25	0.2054	32.414	22	0.0224	22.178	y	5	19687.8479	27337.5	329.6375	1353.8038	1.5	H2-1
19 M74	L2.375x1.25x0.25	0.2039	0	10	0.0234	10.236	y	11	19687.8479	27337.5	329.6375	1288.2362	1.5	H2-1
20 M23	L2.375x1.25x0.25	0.2022	0	4	0.0221	10.236	y	5	19687.8479	27337.5	329.6375	1288.2362	1.5	H2-1
21 M44	L2.375x1.25x0.25	0.2017	32.414	31	0.0216	10.236	y	16	19687.8479	27337.5	329.6375	1287.6853	1.4963	H2-1
22 M67	L7.25x2.375x0.25	0.2012	0	18	0.205	0	z	3	50043.8921	75945.6	631.1291	-4654.6253	1.1489	H2-1
23 M189	PIPE 2.0	0.1912	57.6	4	0.0612	57.6	18	14916.0955	32130	1871.625	1871.625	1.9354	H1-1b	
24 M50	L7.25x2.375x0.25	0.1792	4.375	18	0.2095	4.375	z	11	50043.8921	75945.6	631.1291	5474.5622	1.17	H2-1
25 M80	L7.25x2.375x0.25	0.1722	4.375	13	0.2023	4.375	z	5	50043.8921	75945.6	631.1291	5474.5622	1.1822	H2-1
26 M14	L7.25x2.375x0.25	0.1718	2.1875	11	0.2276	2.1875	z	16	50043.8921	75945.6	631.1291	5474.5622	1.3635	H2-1
27 M81	L7.25x2.375x0.25	0.1656	4.375	80	0.2317	2.1875	z	11	50043.8921	75945.6	631.1291	5474.5622	1.2671	H2-1
28 M37	L7.25x2.375x0.25	0.1643	0	7	0.1998	0	z	9	50043.8921	75945.6	631.1291	5474.5622	1.1586	H2-1

**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	
29	M68	L7.25x2.375x0.25	0.164	2.1875	17	0.2375	2.1875	z	5	50043.8921	75945.6	631.1291	5474.5622	1.3249	H2-1
30	M82B	L7.25x2.375x0.25	0.163	4.375	7	0.1894	4.375	z	16	50043.8921	75945.6	631.1291	5474.5622	1.1673	H2-1
31	M83	PL1.50x0.25	0.1599	36.8278	95	0.0113	18.4139	y	11	769.9524	12150	63.2826	379.6875	1.9004	H1-1b*
32	SR1	PIPE 2.0	0.1568	92.3684	11	0.1366	137.3684	z	3	8882.5619	32130	1871.625	1871.625	2.5364	H1-1b
33	SR19	PIPE 2.0	0.1556	91.5789	18	0.1388	137.3684	z	10	8882.5619	32130	1871.625	1871.625	2.7708	H1-1b
34	SR10	PIPE 2.0	0.155	92.3684	6	0.1336	137.3684	z	14	8882.5619	32130	1871.625	1871.625	2.5746	H1-1b
35	M38	L7.25x2.375x0.25	0.1539	2.1875	6	0.2468	2.1875	z	11	50043.8921	75945.6	631.1291	5474.5622	1.3774	H2-1
36	M184	PIPE 2.0	0.1452	57.6	3	0.0634	57.6	z	17	14916.0955	32130	1871.625	1871.625	2.0212	H1-1b
37	M95	PIPE 3.0	0.1448	92.3684	92	0.0573	106.5789	z	92	56210.2893	65205	5748.75	5748.75	2.4382	H1-1b
38	M83D	L7.25x2.375x0.25	0.143	4.375	25	0.2201	2.1875	z	5	50043.8921	75945.6	631.1291	5474.5622	1.5	H2-1
39	M109	PIPE 2.0	0.1424	57.6	111	0.0639	57.6	z	11	14916.0955	32130	1871.625	1871.625	1.9782	H1-1b
40	M51	L7.25x2.375x0.25	0.1423	3.7533	4	0.2219	2.1875	z	16	50043.8921	75945.6	631.1291	5474.5622	1.5	H2-1
41	M53	PL1.50x0.25	0.1413	0	104	0.0116	18.4139	y	11	769.9524	12150	63.2826	379.6875	1.8464	H1-1b*
42	M204	PIPE 2.0	0.1392	57.6	10	0.0633	57.6	z	6	14916.0955	32130	1871.625	1871.625	1.983	H1-1b
43	M30	PL1.50x0.25	0.1301	0	13	0.0108	18.4139	y	5	769.9524	12150	63.2826	379.6875	1.8603	H1-1b*
44	M54	PL1.50x0.25	0.127	0	11	0.0196	12.2778	y	16	1731.8791	12150	63.2826	379.6875	2.0774	H1-1b
45	M158B	PIPE 2.0	0.1247	20.125	5	0.0898	20.125	z	15	31064.5553	32130	1871.625	1871.625	2.1939	H1-1b
46	M174	PIPE 2.0	0.1217	20.125	11	0.0962	20.125	z	4	31064.5553	32130	1871.625	1871.625	2.2296	H1-1b
47	M31	PL1.50x0.25	0.1195	0	16	0.0204	12.2778	y	6	1731.8791	12150	63.2826	379.6875	2.0697	H1-1b
48	M84	PL1.50x0.25	0.1178	0	6	0.0212	12.2778	y	11	1731.8791	12150	63.2826	379.6875	2.0713	H1-1b
49	M218A	L3X3X3	0.1166	33.2576	70	0.0105	66.5152	z	4	17922.7715	35316	1320.0966	2467.6267	1.4385	H2-1
50	A3	HSS5x3x3/8"	0.1152	0	18	0.0506	0	z	18	177306.8364	225112.5	20255.2743	29634.9618	2.2823	H1-1b
51	M171	PIPE 2.0	0.1086	20.125	16	0.1023	20.125	z	10	31064.5553	32130	1871.625	1871.625	2.2439	H1-1b
52	M8	L5x4x0.25	0.1059	0	3	0.0583	0	z	18	52760.6923	70875	3500.8908	6820.024	1.3807	H2-1
53	M105	PIPE 3.0	0.1046	91.5789	22	0.0521	107.3684	z	7	56210.2893	65205	5748.75	5748.75	2.2264	H1-1b
54	A2	HSS5x3x3/8"	0.1039	0	12	0.0468	0	z	12	177306.8364	225112.5	20255.2743	29634.9618	2.2835	H1-1b
55	A1	HSS5x3x3/8"	0.1038	0	7	0.0444	0	z	7	177306.8364	225112.5	20255.2743	29634.9618	2.2958	H1-1b
56	M104A	PIPE 3.0	0.1021	92.3684	23	0.053	58.4211	z	13	56210.2893	65205	5748.75	5748.75	2.2535	H1-1b
57	M213A	L3X3X3	0.1007	66.5152	10	0.011	66.5152	y	18	17922.7715	35316	1320.0966	2493.5336	1.5	H2-1
58	PR5	L3X3X3	0.1003	33.2576	19	0.0104	66.5152	z	15	17922.7715	35316	1320.0966	2386.8221	1.2693	H2-1
59	M212A	L3X3X3	0.1001	33.2576	28	0.0105	66.5152	z	10	17922.7715	35316	1320.0966	2383.4578	1.2629	H2-1
60	M227E	L5x4x0.25	0.0971	0	13	0.0614	0	y	115	52760.6923	70875	3500.8908	6820.024	1.3696	H2-1
61	M233C	L5x4x0.25	0.0958	0	8	0.0539	0	z	7	52760.6923	70875	3500.8908	6820.024	1.3815	H2-1
62	PR6	L3X3X3	0.0933	66.5152	15	0.0108	66.5152	y	7	17922.7715	35316	1320.0966	2493.5336	1.5	H2-1
63	M29	L5x4x0.25	0.0927	3.313	3	0.065	3.313	z	12	52760.6923	70875	3500.8908	6820.024	1.4045	H2-1
64	M234C	L5x4x0.25	0.0917	3.313	9	0.0751	3.313	y	67	52760.6923	70875	3500.8908	6820.024	1.3968	H2-1
65	M219A	L3X3X3	0.0903	65.815	4	0.0108	66.5152	y	12	17922.7715	35316	1320.0966	2493.5336	1.5	H2-1
66	M228	PL8.5x3/8	0.0898	0	18	0.0432	0	y	34	103079.1717	103275	806.8356	18288.2826	1.1507	H1-1b
67	M227A	PL8.5x3/8	0.088	0	10	0.0445	0	y	106	103079.1717	103275	806.8356	18288.2826	1.0518	H1-1b
68	M228D	L5x4x0.25	0.0829	3.313	14	0.0587	3.313	z	7	52760.6923	70875	3500.8908	6820.024	1.4049	H2-1
69	M235	PL8.5x3/8	0.0818	0	12	0.0753	0	y	92	103079.1717	103275	806.8356	18288.2826	1.1468	H1-1b
70	M225	PL8.5x3/8	0.0813	0	7	0.0412	0	y	23	103079.1717	103275	806.8356	18288.2826	1.1324	H1-1b
71	M234	PL8.5x3/8	0.0802	0	4	0.0565	1	y	92	103079.1717	103275	806.8356	18288.2826	1.0443	H1-1b
72	M224A	PL8.5x3/8	0.0796	0	7	0.0266	1	y	7	103079.1717	103275	806.8356	18288.2826	1.0883	H1-1b
73	M66	L6.4x4.750x0.25	0.0722	0	27	0.0449	0	z	3	51597.6325	88290	2962.2769	7667.7487	1.5	H2-1
74	M11	L6.4x4.750x0.25	0.0719	0	21	0.0445	0	z	14	51597.6325	88290	2962.2769	7667.7487	1.5	H2-1
75	M36A	L6.4x4.750x0.25	0.0711	0	32	0.0453	0	z	9	51597.6325	88290	2962.2769	7667.7487	1.5	H2-1
76	M49	L6.4x4.750x0.25	0.0621	6.4063	27	0.0388	6.4063	z	18	51597.6325	88290	2962.2769	7667.7487	1.5	H2-1
77	M83C	L6.4x4.750x0.25	0.0621	6.4062	32	0.0368	6.4062	z	7	51597.6325	88290	2962.2769	7667.7487	1.5	H2-1
78	M79	L6.4x4.750x0.25	0.0611	6.4062	22	0.0377	6.4062	z	12	51597.6325	88290	2962.2769	7667.7487	1.5	H2-1



# TOWER-MOUNT CONNECTION ANALYSIS

v.1.0.0

SITE INFORMATION	
Site ID	302480
Site Name	Woodbridge CT 1
Project ID	41124-13732458_C8_03-01-MA

ANALYSIS PARAMETERS	
TIA Revision	H

APPLIED FORCES FROM R3D		
Member Label		A3
Member End Label		I
Force-X	Fx, lbs	-2421.7
Force-Y	Fy, lbs	860.6
Force-Z	Fz, lbs	-1129.5
Moment X-X	Mx, lbs-ft	-344.7
Moment Y-Y	My, lbs-ft	1869.7
Moment Z-Z	Mz, lbs-ft	1189.4

STANDOFF MEMBER PROPERTIES	
Standoff Member Type	Square/Rect. HSS
Standoff Member Shape	HSS5X3X3/8
Standoff Member Grade	A500-46 Gr.B Rect.
Member to Plate Weld Size, in	5/16

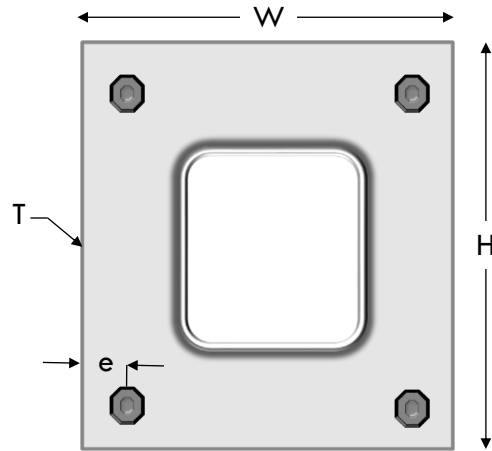
BOLT & PLATE PROPERTIES	
Bolt Quantity	4
Bolt Edge Distance (e), in	1.50
Nominal Bolt Diameter ( $\varnothing Db$ ), in	0.75
Bolt Grade	A325
Plate Height (H), in	10.00
Plate Width (W), in	10.00
Plate Thickness (T), in	0.75
Plate Grade	A36

BOLT ANALYSIS	
Shear Demand ( $V_u$ ), k	0.41
Shear Capacity ( $\Phi R_{nv}$ ), k	19.88
Tension Demand ( $T_u$ ), k	3.29
Tension Capacity ( $\Phi R_{nt}$ ), k	30.10
Shear Utilization	2.0%
Tension Utilization	10.9%
Interaction Utilization	1.2%

PASS



319 Chapanoke Road, Suite 118  
 Raleigh, NC 27603  
 Office: (405) 348-5460  
 Fax: (405) 341-6334



MATERIAL PROPERTIES	
Standoff Member - Yield Strength ( $F_y$ ), ksi	46
Standoff Member - Ultimate Strength ( $F_u$ ), ksi	58
Bolt - Yield Strength ( $F_y$ ), ksi	92
Bolt - Tensile Strength ( $F_u$ ), ksi	120
Plate - Yield Strength ( $F_y$ ), ksi	36
Plate - Ultimate Strength ( $F_u$ ), ksi	58



**AMERICAN TOWER®**  
CORPORATION

---

## Structural Analysis Report

**Structure** : 152 ft Monopole  
**ATC Site Name** : Woodbridge CT 1,CT  
**ATC Site Number** : 302480  
**Engineering Number** : 13732458\_C3\_02  
**Proposed Carrier** : T-MOBILE  
**Carrier Site Name** : ATC Woodbridge Monopole  
**Carrier Site Number** : CTNH521A  
**Site Location** : 77 Pease Road  
Woodbridge, CT 06525-2044  
41.3414, -72.9936  
**County** : New Haven  
**Date** : October 15, 2021  
**Max Usage** : 96%  
**Result** : Pass

Prepared By:

Sammie Brown  
Structural Engineer I

Reviewed By:



Authorized by "EOR"  
15 Oct 2021 02:12:26

**COA : PEC.0001553**



## Table of Contents

Introduction .....	3
Supporting Documents .....	3
Analysis .....	3
Conclusion.....	3
Existing and Reserved Equipment.....	4
Equipment to be Removed .....	4
Proposed Equipment.....	4
Structure Usages .....	5
Foundations .....	5
Deflection and Sway* .....	5
Standard Conditions.....	6
Calculations .....	Attached

## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 152 ft Monopole to reflect the change in loading by T-MOBILE.

## Supporting Documents

<b>Tower Drawings</b>	Smith Cullum Acquisition #CT-0016, dated May 15, 2001 AT&T SPEC #AT-8935, dated April 13, 1984
<b>Foundation Drawing</b>	Mapping By ATC, PIT ID#302480, dated April 1, 2009
<b>Geotechnical Report</b>	Johnson Soil Job#15220, dated May 20, 2002
<b>Modifications</b>	Spectrasite Drawing #CT-0016-E1, dated September 19, 2002 ATC Project #40430532, dated May 29, 2007 ATC Project #42299235, dated November 18, 2008 ATC Project #44303434, dated January 18, 2010 ATC Project #447950F2, dated April 2, 2010
<b>Mount Analysis</b>	CLS Engineering Project #41124-13732458_C8_03-01-MA, dated October 8, 2021

## 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.

<b>Basic Wind Speed:</b>	119 mph (3-second gust)
<b>Basic Wind Speed w/ Ice:</b>	50 mph (3-second gust) w/ 1.00" radial ice concurrent
<b>Code:</b>	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
<b>Exposure Category:</b>	B
<b>Risk Category:</b>	II
<b>Topographic Factor Procedure:</b>	Method 1
<b>Topographic Category:</b>	1
<b>Crest Height (H):</b>	0 ft
<b>Crest Length (L):</b>	0 ft
<b>Spectral Response:</b>	$S_s = 0.20$ , $S_i = 0.05$
<b>Site Class:</b>	D - Stiff Soil - Default

**\*\*Wind load and Ice thickness have been reduced by applicable existing structure load modification factors in accordance with TIA-222-H, Annex S.**

## 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](mailto: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. <sup>1</sup> (ft)	Qty	Equipment	Mount Type	Lines	Carrier
167.0	1	Generic 22' Omni	Side Arm	(2) 1 5/8" Coax	OTHER
160.0	1	Generic 20' Dipole	Side Arm	(2) 1 5/8" Coax	
153.0	3	CCI HPA-65R-BUU-H6	Triangular Platform with Handrails	(2) 0.78" (19.7mm) 8 AWG 6 (12) 1 5/8" Coax	AT&T MOBILITY
	3	Ericsson RRUS 11 (Band 12) (55 lb)			
	3	Ericsson RRUS 32 B2			
	6	Powerwave Allgon 7770.00			
	6	LGP Allgon TMA-DD 1900			
	6	Powerwave Allgon LGP13519			
	1	Raycap DC6-48-60-18-8F ("Squid")			
130.0	3	RFS APXVAARR24_43-U-NA20	Triangular Platform with Handrails	(3) 1 1/4" Hybriflex Cable	T-MOBILE
119.0	6	RFS FD9R6004/1C-3L	T-Arm	(12) 1 5/8" Coax (1) 1 5/8" Hybriflex	VERIZON WIRELESS
	6	Andrew PCS1900 Dual Duplex TMA			
	6	ADC ClearGain Dual Band 800/1900 MHz			
	3	Alcatel-Lucent RRH2x40-AWS.			
	3	Amphenol Antel BXA-171063-8BF-EDIN-X			
	3	Amphenol Antel BXA-171085-8CF-EDIN-X			
	3	Antel BXA-80063/4CF			
	1	RFS DB-T1-6Z-8AB-OZ			
	3	Antel BXA-70063/6CF_			
107.0	1	Generic GPS	Leg	(1) 1/2" Coax	

**Equipment to be Removed**

Elev. <sup>1</sup> (ft)	Qty	Equipment	Mount Type	Lines	Carrier
130.0	3	Ericsson Radio 4449 B12,B71	-	(1) 1 5/8" (1.63"- 41.3mm) Fiber (2) 0.27	T-MOBILE
	3	Ericsson AIR 21, 1.3M, B2A B4P (91.5 lbs)			
	3	Ericsson AIR B4A/B12P-B8P, 4FT			
128.0	1	Fastback Networks Intelligent Backhaul Radio 1300 Series		(1) 1.58" (40.1mm) Hybrid	

**Proposed Equipment**

Elev. <sup>1</sup> (ft)	Qty	Equipment	Mount Type	Lines	Carrier
130.0	3	Ericsson Radio 4449 B71 B85A	Triangular Platform with Handrails	(1) 1.99" (50.7mm) Hybrid	T-MOBILE
	3	Ericsson 4460 BAND 2/25			
	3	Ericsson Air6449 B41			

<sup>1</sup> Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Install proposed lines inside the pole shaft.

### Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	66%	Pass
Shaft	96%	Pass
Base Plate	59%	Pass
Reinforcement	92%	Pass
Flanges	95%	Pass

### Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	2359.4	15%
Axial (Kips)	44.3	2%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

### Deflection and Sway\*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
130.0	Ericsson Radio 4449 B71 B85A	T-MOBILE	1.858	1.880
	Ericsson Air6449 B41			
	Ericsson 4460 BAND 2/25			

\*Deflection 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.

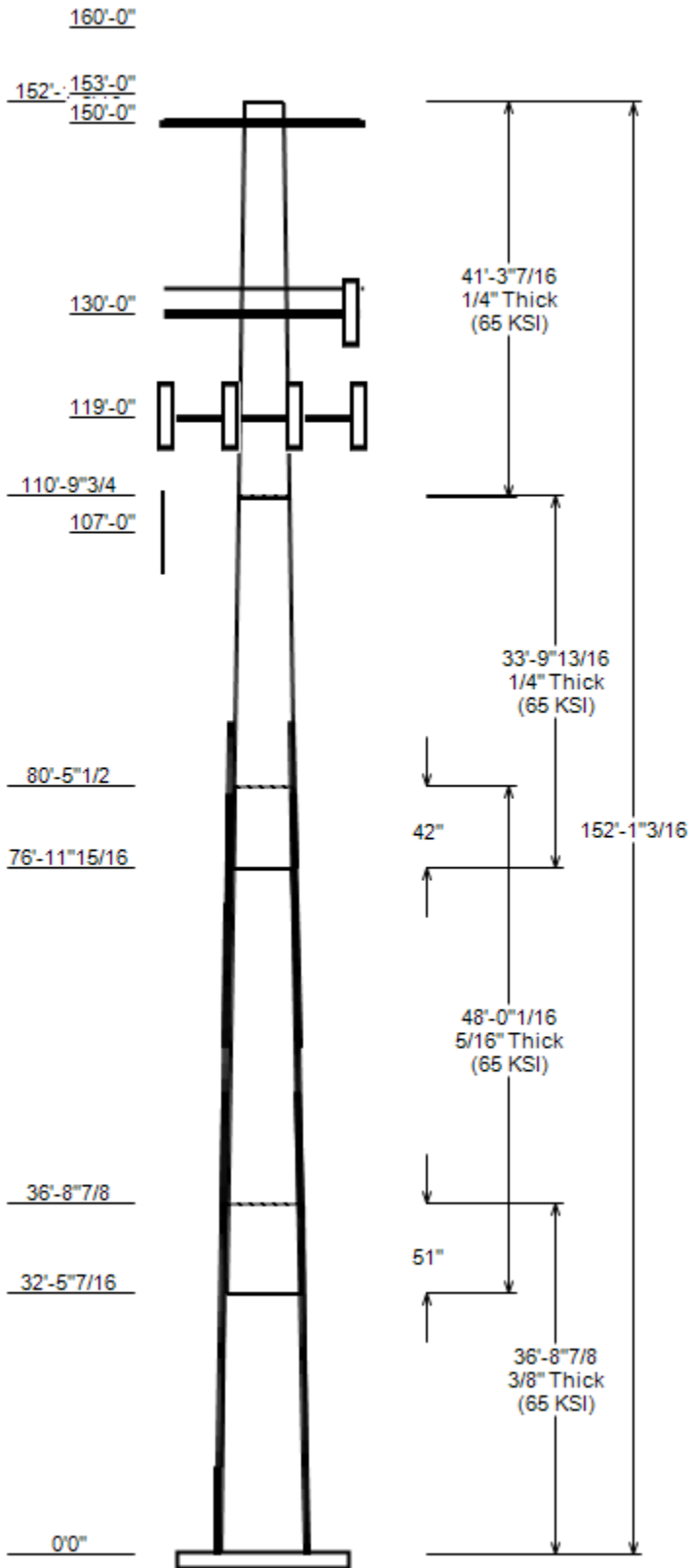
Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

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 : 302480, Woodbridge CT 1  
 Client : T-MOBILE  
 Code : ANSI/TIA-222-H

Height : 152.1 ft  
 Base Width : 37  
 Shape : 12 Sides



SITE PARAMETERS

Base Elev (ft): 0.00 Structure Class: II  
 Taper : 0.15200 (In/ft) Exposure : B  
 Topographic Category : 1 Topographic Feature:  
 Topo Method : Method 1

SECTION PROPERTIES

Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Overlap Length (in)	Steel Grade (ksi)
		Across Flats Top	Across Flats Bottom			
1	36.737	31.42	37.00	0.375	0.000	65
2	48.003	25.39	32.69	0.312	51.390	65
3	33.820	21.28	26.42	0.250	41.560	65
4	41.286	15.00	21.28	0.250	0.000	65

DISCRETE APPURTENANCE

Attach Elev (ft)	Force Elev (ft)	Qty	Description
167.0	167.0	1	Generic 22' Omni
160.0	160.0	1	Generic 20' Dipole
153.0	153.0	6	Powerwave Allgon LGP13519
153.0	153.0	6	LGP Allgon TMA-DD 1900
153.0	153.0	1	Raycap DC6-48-60-18-8F ("Squid
153.0	153.0	3	Ericsson RRUS 11 (Band 12) (55
153.0	153.0	3	Ericsson RRUS 32 B2
153.0	153.0	6	Powerwave Allgon 7770.00
153.0	153.0	3	CCI HPA-65R-BUU-H6
150.0	150.0	3	Generic Round Side Arm
150.0	150.0	1	Flat Platform w/ Handrails
130.0	130.0	3	Ericsson Radio 4449 B71 B85A
130.0	130.0	3	Ericsson 4460 BAND 2/25
130.0	130.0	3	Ericsson Air6449 B41
130.0	130.0	1	Generic Mount Reinforcement
130.0	130.0	3	RFS APXVAARR24_43-U-NA20
130.0	130.0	1	Generic Round Platform with Ha
119.0	119.0	6	RFS FD9R6004/1C-3L
119.0	119.0	6	Andrew PCS1900 Dual Duplex TMA
119.0	119.0	6	ADC ClearGain Dual Band 800/19
119.0	123.0	3	Alcatel-Lucent RRH2x40-AWS.
119.0	119.0	3	Amphenol Antel BXA-171085-8CF-
119.0	119.0	3	Amphenol Antel BXA-171063-8BF-
119.0	119.0	3	Antel BXA-80063/4CF
119.0	123.0	1	RFS DB-T1-6Z-8AB-OZ
119.0	119.0	3	Antel BXA-70063/6CF_
119.0	119.0	3	Generic Round T-Arm
107.0	107.0	1	Generic GPS

LINEAR APPURTENANCE

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
0.0	167.0	1 5/8" Coax	No
0.0	160.0	1 5/8" Coax	No
0.0	153.0	1 5/8" Coax	No
0.0	153.0	0.78" (19.7mm) 8 AWG 6	No
0.0	130.0	1.99" (50.7mm) Hybrid	No
0.0	130.0	1 1/4" Hybriflex Cable	No
0.0	119.0	1 5/8" Hybriflex	No
0.0	119.0	1 5/8" Coax	No
0.0	107.0	1/2" Coax	No
0.0	94.0	#20 w/ Angle Brackets	Yes
0.0	94.0	#20 w/ Angle Brackets	Yes



**JOB INFORMATION**

Asset : 302480, Woodbridge CT 1  
 Client : T-MOBILE  
 Code : ANSI/TIA-222-H

Height : 152.1 ft  
 Base Width : 37  
 Shape : 12 Sides

**LINEAR APPURTENANCE**

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
0.0	94.0	#20 w/ Angle Brackets	Yes
0.0	94.0	#20 w/ Angle Brackets	Yes
33.0	81.0	PL 4" x 1"	Yes
33.0	81.0	PL 4" x 1"	Yes
33.0	81.0	PL 4" x 1"	Yes
33.0	81.0	PL 4" x 1"	Yes

**LOAD CASES**

1.2D + 1.0W Normal	115.99 mph wind with no ice
0.9D + 1.0W Normal	115.99 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Nor	48.73 mph wind with 0.850" radial
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	2359.41	23.09	44.30
0.9D + 1.0W Normal	2314.97	23.07	33.21
1.2D + 1.0Di + 1.0Wi Normal	529.77	4.61	54.44
1.2D + 1.0Ev + 1.0Eh Normal	142.95	1.11	44.28
0.9D - 1.0Ev + 1.0Eh Normal	139.40	1.11	30.55
1.0D + 1.0W Service Normal	558.96	5.52	36.96

**DISH DEFLECTIONS**

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

ASSET: 302480, Woodbridge CT 1  
CUSTOMER: T-MOBILE

CODE: ANSI/TIA-222-H  
ENG NO: 13732458\_C3\_02

#### ANALYSIS PARAMETERS

Location:	New Haven County,CT	Height:	152.1 ft
Type and Shape:	Taper, 12 Sides	Base Diameter:	37.00 in
Manufacturer:	ITT Meyer	Top Diameter:	-7.00 in
K <sub>d</sub> (non-service):	0.95	Taper:	0.1520 in/ft
K <sub>e</sub> :	0.99	Rotation:	0.000°

#### ICE & WIND PARAMETERS

Exposure Category:	B	Design Wind Speed w/o Ice:	116 mph
Risk Category:	II	Design Wind Speed w/Ice:	49 mph
Topo Factor Procedure:	Method 1	Operational Wind Speed:	60 mph
Topographic Category:	1	Design Ice Thickness:	0.85 in
Crest Height:	0 ft	HMSL:	322.00 ft

#### SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil	Period Based on Rayleigh Method (sec):	3.00		
T <sub>L</sub> (sec):	6	P:	1	C <sub>s</sub> :	0.030
S <sub>s</sub> :	0.200	S <sub>1</sub> :	0.054	C <sub>s</sub> Max:	0.030
F <sub>a</sub> :	1.600	F <sub>v</sub> :	2.400	C <sub>s</sub> Min:	0.030
S <sub>ds</sub> :	0.213	S <sub>d1</sub> :	0.086		

#### LOAD CASES

1.2D + 1.0W Normal	115.99 mph wind with no ice
0.9D + 1.0W Normal	115.99 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Normal	48.73 mph wind with 0.850" 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

ASSET: 302480, Woodbridge CT 1  
 CUSTOMER: T-MOBILE

CODE: ANSI/TIA-222-H  
 ENG NO: 13732458\_C3\_02

SHAFT SECTION PROPERTIES

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint len (in)	Bottom							Top						
						Weight (lb)	Dia (in)	Elev (ft)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Dia (in)	Elev (in)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Taper (in/ft)
1-12	36.74	0.3750	65		0.00	5,107	37.00	0.003	44.22	7,571.9	23.76	98.67	31.42	36.74	37.48	4,609.1	19.77	83.77	0.1520
2-12	48.00	0.3125	65	Slip	51.39	4,722	32.69	32.457	32.58	4,359.6	25.35	104.61	25.39	80.46	25.24	2,026.1	19.09	81.25	0.1520
3-12	33.82	0.2500	65	Slip	41.56	2,186	26.42	76.990	21.07	1,841.4	25.64	105.68	21.28	110.81	16.93	955.3	20.13	85.11	0.1520
4-12	41.29	0.2500	65	Butt	0.00	2,023	21.28	110.814	16.93	955.3	20.13	85.11	15.00	152.10	11.87	329.7	13.40	60.00	0.1520

Shaft Weight 14,038

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice			Ice		
					Weight (lb)	EPAA (sf)	Orientation Factor	Weight (lb)	EPAA (sf)	Orientation Factor
167.00	Generic 22' Omni	1	1.00	0.000	70.00	6.600	1.00	163.91	11.021	1.00
160.00	Generic 20' Dipole	1	1.00	0.000	60.00	7.520	1.00	185.74	14.260	1.00
153.00	Ericsson RRUS 32 B2	3	0.75	0.000	53.00	2.743	0.50	94.79	3.408	0.50
153.00	Ericsson RRUS 11 (Band 12) (55	3	0.75	0.000	55.00	2.522	0.50	93.23	3.113	0.50
153.00	LGP Allgon TMA-DD 1900	6	0.75	0.000	10.40	0.503	0.50	18.77	0.779	0.50
153.00	Powerwave Allgon LGP13519	6	0.75	0.000	5.30	0.290	0.50	10.69	0.510	0.50
153.00	Powerwave Allgon 7770.00	6	0.75	0.000	35.00	5.508	0.65	99.59	6.716	0.65
153.00	CCI HPA-65R-BUU-H6	3	0.75	0.000	51.00	9.658	0.69	175.67	11.233	0.69
153.00	Raycap DC6-48-60-18-8F ("Squid	1	0.75	0.000	31.80	1.470	1.00	66.86	1.867	1.00
150.00	Generic Round Side Arm	3	1.00	0.000	187.50	5.200	0.67	239.33	6.740	0.67
150.00	Flat Platform w/ Handrails	1	1.00	0.000	2000.00	42.400	1.00	2805.63	54.289	1.00
130.00	Ericsson 4460 BAND 2/25	3	0.75	0.000	109.00	2.564	0.50	158.38	3.153	0.50
130.00	Ericsson Radio 4449 B71 B85A	3	0.75	0.000	75.00	1.650	0.50	108.60	2.125	0.50
130.00	Ericsson Air6449 B41	3	0.75	0.000	104.00	5.682	0.63	180.14	6.569	0.63
130.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	3404.90	40.856	1.00
130.00	RFS APXVAARR24_43-U-NA20	3	0.75	0.000	127.90	20.243	0.63	347.23	22.315	0.63
130.00	Generic Mount Reinforcement	1	1.00	0.000	200.00	7.500	1.00	308.12	11.683	1.00
119.00	Antel BXA-70063/6CF_	3	0.80	0.000	17.00	7.569	0.65	95.33	9.097	0.65
119.00	RFS DB-T1-6Z-8AB-0Z	1	0.80	4.000	44.00	4.800	1.00	113.71	5.587	1.00
119.00	Antel BXA-80063/4CF	3	0.80	0.000	9.90	4.708	0.65	65.45	5.727	0.65
119.00	Amphenol Antel BXA-171085-8CF-	3	0.80	0.000	10.50	2.940	0.67	46.73	3.857	0.67
119.00	Amphenol Antel BXA-171063-8BF-	3	0.80	0.000	10.50	2.940	0.67	46.73	3.857	0.67
119.00	Generic Round T-Arm	3	0.75	0.000	312.50	9.700	0.67	457.20	14.266	0.67
119.00	ADC ClearGain Dual Band 800/19	6	0.80	0.000	28.70	1.328	0.50	50.05	1.752	0.50
119.00	Alcatel-Lucent RRH2x40-AWS.	3	0.80	4.000	44.00	2.155	0.50	77.57	2.733	0.50
119.00	RFS FD9R6004/1C-3L	6	0.80	0.000	3.10	0.314	0.50	7.54	0.528	0.50
119.00	Andrew PCS1900 Dual Duplex TMA	6	0.80	0.000	20.00	0.909	0.50	32.47	1.294	0.50
107.00	Generic GPS	1	0.80	0.000	10.00	0.900	1.00	26.05	1.251	1.00

Totals Num Loadings: 28 86 9,031.20 14,948.72

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	167.00	2	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	Other
0.00	160.00	2	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	Other
0.00	153.00	12	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	153.00	2	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	130.00	3	1 1/4" Hybriflex Cabl	1.54	1	N	0	0	0	0	0	N	T-MOBILE
0.00	130.00	1	1.99" (50.7mm) Hybrid	1.99	1.9	N	0	0	0	0	0	N	T-MOBILE
0.00	119.00	12	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	VERIZON WIREL
0.00	119.00	1	1 5/8" Hybriflex	1.98	1.3	N	0	0	0	0	0	N	VERIZON WIREL
0.00	107.00	1	1/2" Coax	0.63	0.15	N	0	0	0	0	0	N	VERIZON WIREL
0.00	94.00	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	180	0	Y	
0.00	94.00	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	270	0	Y	
0.00	94.00	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	0	0	Y	
0.00	94.00	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	90	0	Y	
33.00	81.00	1	PL 4" x 1"	1	0	Y	1	0	0	15	0	Y	
33.00	81.00	1	PL 4" x 1"	1	0	Y	1	0	0	105	0	Y	
33.00	81.00	1	PL 4" x 1"	1	0	Y	1	0	0	195	0	Y	
33.00	81.00	1	PL 4" x 1"	1	0	Y	1	0	0	285	0	Y	

ASSET: 302480, Woodbridge CT 1  
 CUSTOMER: T-MOBILE

CODE: ANSI/TIA-222-H  
 ENG NO: 13732458\_C3\_02

ADDITIONAL STEEL

Intermediate Connectors

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Offset (in)	Description	Spacing (in)	Len (in)	Connectors	Continuation?
0.00	9.00	4	SOL #20 All Thread Bar	80	2.19	6" Angle Bracket	39.00		5/8" A36 U-Bolt	N
9.00	87.23	4	SOL #20 All Thread Bar	80	2.19	6" Angle Bracket	30.00	3.31	5/8" A36 U-Bolt	Y
35.25	48.25	4	PL PL 4" x 1"	39	0.00	5/8" Hollo Bolt	9.00	3.00	5/8" Hollo Bolt	N
53.13	68.13	4	PL PL 4" x 1"	40	0.00	5/8" Hollo Bolt	18.00	3.00	5/8" Hollo Bolt	N
68.13	71.88	4	PL PL 4" x 1"	40	1.00	5/8" Hollo Bolt	15.00	3.00	5/8" Hollo Bolt	N
71.88	79.63	4	PL PL 4" x 1"	40	0.00	5/8" Hollo Bolt	18.00	3.00	5/8" Hollo Bolt	N

SEGMENT PROPERTIES

(Max Len: 5.ft)

Additional Reinforcing

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	F'y (ksi)	S (in <sup>3</sup> )	Z (in <sup>3</sup> )	Weight (lb)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	Weight (lb)
0.00		0.3750	37.000	44.225	7,571.90	23.76	98.67	78.8	395.3	0.0	0.0	19.640	4,872.50	0.0
5.00		0.3750	36.240	43.307	7,110.10	23.21	96.64	79.4	379.0	0.0	744.6	19.640	4,702.00	334.0
9.00	Reinf. Top Reinf Bottom	0.3750	35.632	42.572	6,754.60	22.78	95.02	79.9	366.2	0.0	584.5	19.640	4,567.80	267.2
10.00		0.3750	35.480	42.389	6,667.50	22.67	94.61	80	363.0	0.0	144.6	19.640	4,534.60	66.8
15.00		0.3750	34.719	41.471	6,243.70	22.13	92.59	80.6	347.4	0.0	713.4	19.640	4,370.20	334.0
20.00		0.3750	33.959	40.553	5,838.20	21.59	90.56	81.2	332.1	0.0	697.8	19.640	4,208.80	334.0
25.00		0.3750	33.199	39.635	5,450.70	21.04	88.53	81.8	317.2	0.0	682.2	19.640	4,050.50	334.0
30.00		0.3750	32.439	38.717	5,080.70	20.50	86.50	81.9	302.6	0.0	666.5	19.640	3,895.20	334.0
32.45	Bot - Section 2	0.3750	32.066	38.267	4,905.30	20.23	85.51	81.9	295.5	0.0	321.4	19.640	3,820.10	163.9
35.00		0.3750	31.679	37.799	4,727.80	19.96	84.48	81.9	288.3	0.0	610.0	19.640	3,867.90	170.1
35.25	Reinf Bottom	0.3750	31.641	37.753	4,710.60	19.93	84.38	81.9	287.6	0.0	59.5	19.640	3,860.20	16.7
36.74	Top - Section 1	0.3125	32.040	31.925	4,101.90	24.79	102.53	77.7	247.3	0.0	352.5	35.640	6,009.40	180.3
40.00		0.3125	31.543	31.426	3,912.40	24.37	100.94	78.1	239.6	0.0	351.7	35.640	5,845.70	395.6
45.00		0.3125	30.783	30.661	3,633.60	23.72	98.51	78.8	228.0	0.0	528.2	35.640	5,599.20	606.2
48.25	Reinf. Top	0.3125	30.289	30.164	3,459.70	23.29	96.93	79.3	220.7	0.0	336.3	35.640	5,441.90	394.0
50.00		0.3125	30.023	29.896	3,368.40	23.06	96.07	79.6	216.7	0.0	178.8	19.640	3,421.90	116.9
53.13	Reinf Bottom	0.3125	29.547	29.417	3,209.10	22.66	94.55	80	209.8	0.0	315.9	19.640	3,332.30	209.1
55.00		0.3125	29.263	29.131	3,116.40	22.41	93.64	80.3	205.7	0.0	186.3	32.106	4,640.50	226.7
60.00		0.3125	28.503	28.366	2,877.30	21.76	91.21	81	195.0	0.0	489.1	32.106	4,434.80	606.2
65.00		0.3125	27.743	27.601	2,650.80	21.11	88.78	81.7	184.6	0.0	476.1	32.106	4,233.80	606.2
68.13	Reinf. Top Reinf Bottom	0.3125	27.267	27.123	2,515.20	20.70	87.25	81.9	178.2	0.0	291.4	32.106	4,110.40	379.5
70.00		0.3125	26.982	26.837	2,436.40	20.46	86.34	81.9	174.4	0.0	171.7	35.640	4,679.00	226.7
71.88	Reinf. Top Reinf Bottom	0.3125	26.696	26.549	2,358.90	20.21	85.43	81.9	170.7	0.0	170.8	35.640	4,595.50	227.9
75.00		0.3125	26.222	26.072	2,234.00	19.80	83.91	81.9	164.6	0.0	279.3	35.640	4,232.80	378.3
76.99	Bot - Section 3	0.3125	25.919	25.767	2,156.50	19.54	82.94	81.9	160.7	0.0	175.9	35.640	4,148.80	241.8
79.63	Reinf. Top	0.3125	25.518	25.363	2,056.80	19.20	81.66	81.9	155.7	0.0	416.8	35.640	4,176.20	319.6
80.00		0.3125	25.462	25.307	2,043.00	19.15	81.48	81.9	155.0	0.0	58.0	19.640	2,695.40	24.7
80.46	Top - Section 2	0.2500	25.892	20.642	1,732.40	25.07	103.57	77.4	129.3	0.0	71.5	19.640	2,683.80	30.5
85.00		0.2500	25.202	20.086	1,596.20	24.33	100.81	78.2	122.4	0.0	314.8	19.640	2,569.10	303.5
87.23	Reinf. Top	0.2500	24.863	19.813	1,532.00	23.97	99.45	78.6	119.0	0.0	151.4	19.640	2,513.70	149.0
90.00		0.2500	24.442	19.474	1,454.70	23.52	97.77	79.1	115.0	0.0	185.2			
95.00		0.2500	23.681	18.862	1,321.80	22.70	94.73	80	107.8	0.0	326.1			
100.00		0.2500	22.921	18.250	1,197.30	21.89	91.68	80.8	100.9	0.0	315.7			
105.00		0.2500	22.161	17.638	1,080.90	21.07	88.64	81.7	94.2	0.0	305.3			
107.00		0.2500	21.857	17.394	1,036.50	20.75	87.43	81.9	91.6	0.0	119.2			
110.00		0.2500	21.401	17.026	972.20	20.26	85.60	81.9	87.8	0.0	175.7			
110.81	Top - Section 3	0.2500	21.277	16.927	955.30	20.13	85.11	81.9	86.7	0.0	47.0			
110.81	Bot - Section 4	0.2500	21.277	16.927	955.30	20.13	85.11	81.9	86.7	0.0				
115.00		0.2500	20.641	16.414	871.10	19.44	82.56	81.9	81.5	0.0	237.5			
119.00		0.2500	20.032	15.925	795.50	18.79	80.13	81.9	76.7	0.0	220.1			
120.00		0.2500	19.880	15.802	777.30	18.63	79.52	81.9	75.5	0.0	54.0			
125.00		0.2500	19.120	15.191	690.40	17.81	76.48	81.9	69.8	0.0	263.7			
130.00		0.2500	18.360	14.579	610.30	17.00	73.44	81.9	64.2	0.0	253.2			
135.00		0.2500	17.600	13.967	536.60	16.18	70.40	81.9	58.9	0.0	242.8			
140.00		0.2500	16.840	13.355	469.10	15.37	67.36	81.9	53.8	0.0	232.4			
145.00		0.2500	16.079	12.743	407.60	14.55	64.32	81.9	49.0	0.0	222.0			
150.00		0.2500	15.319	12.131	351.60	13.74	61.28	81.9	44.3	0.0	211.6			
152.10		0.2500	15.000	11.874	329.70	13.40	60.00	81.9	42.5	0.0	85.8			

Totals: 14,038.3 7,977.4

Load Case: 1.2D + 1.0W Normal	115.99 mph wind with no ice	27 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	-44.30	-23.09	0.00	-2,359.4	0.00	2,359.41	3,136.53	776.14	2,681.85	2,336.59	0	0	0.625
5.00	-42.62	-22.74	0.00	-2,244.0	0.00	2,243.95	3,094.52	760.03	2,571.72	2,256.96	0.14	-0.26	0.609
9.00	-41.31	-22.52	0.00	-2,153.0	0.00	2,152.97	3,060.21	747.15	2,485.27	2,193.69	0.45	-0.47	0.596
10.00	-40.94	-22.34	0.00	-2,130.4	0.00	2,130.45	3,051.53	743.92	2,463.89	2,177.94	0.56	-0.53	0.592
15.00	-39.29	-21.96	0.00	-2,018.8	0.00	2,018.75	3,007.56	727.81	2,358.37	2,099.58	1.25	-0.79	0.575
20.00	-37.67	-21.57	0.00	-1,909.0	0.00	1,908.96	2,962.61	711.70	2,255.16	2,021.93	2.22	-1.06	0.558
25.00	-36.07	-21.17	0.00	-1,801.1	0.00	1,801.13	2,916.68	695.59	2,154.26	1,945.03	3.47	-1.32	0.540
30.00	-34.51	-20.84	0.00	-1,695.3	0.00	1,695.26	2,853.84	679.49	2,055.67	1,858.55	4.99	-1.58	0.525
32.45	-33.74	-20.63	0.00	-1,644.1	0.00	1,644.12	2,820.63	671.58	2,008.13	1,815.30	5.84	-1.71	0.518
35.00	-32.64	-20.47	0.00	-1,591.6	0.00	1,591.59	2,786.18	663.38	1,959.39	1,770.97	6.79	-1.84	0.503
35.25	-32.52	-20.41	0.00	-1,586.5	0.00	1,586.48	2,782.79	662.57	1,954.64	1,766.64	6.88	-1.86	0.502
36.74	-31.76	-20.20	0.00	-1,556.1	0.00	1,556.13	2,231.82	560.29	1,677.05	1,440.82	7.47	-1.93	0.446
40.00	-30.63	-19.82	0.00	-1,490.2	0.00	1,490.22	2,210.04	551.53	1,625.03	1,404.24	8.84	-2.07	0.433
45.00	-28.93	-19.36	0.00	-1,391.1	0.00	1,391.13	2,175.87	538.10	1,546.91	1,348.54	11.12	-2.28	0.413
48.25	-27.84	-19.07	0.00	-1,328.2	0.00	1,328.21	2,153.13	529.38	1,497.17	1,312.58	12.72	-2.41	0.401
48.25	-27.84	-19.07	0.00	-1,328.2	0.00	1,328.21	2,153.13	529.38	1,497.17	1,312.58	12.72	-2.41	0.514
50.00	-27.36	-18.85	0.00	-1,294.8	0.00	1,294.84	2,140.71	524.68	1,470.72	1,293.31	13.62	-2.49	0.506
53.13	-26.51	-18.57	0.00	-1,235.9	0.00	1,235.86	2,118.21	516.28	1,424.00	1,259.01	15.31	-2.65	0.490
55.00	-25.88	-18.26	0.00	-1,201.1	0.00	1,201.13	2,104.58	511.26	1,396.45	1,238.61	16.36	-2.75	0.397
60.00	-24.23	-17.70	0.00	-1,109.8	0.00	1,109.84	2,067.46	497.83	1,324.10	1,184.48	19.36	-2.96	0.375
65.00	-22.62	-17.19	0.00	-1,021.4	0.00	1,021.36	2,029.37	484.41	1,253.67	1,130.96	22.58	-3.17	0.354
68.13	-21.62	-16.86	0.00	-967.6	0.00	967.57	1,999.21	476.00	1,210.57	1,094.60	24.7	-3.3	0.311
68.13	-21.62	-16.86	0.00	-967.6	0.00	967.57	1,999.21	476.00	1,210.57	1,094.60	24.7	-3.3	0.342
70.00	-21.02	-16.64	0.00	-936.0	0.00	936.03	1,978.12	470.98	1,185.18	1,071.50	26.01	-3.38	0.305
71.88	-20.42	-16.37	0.00	-904.8	0.00	904.75	1,956.92	465.93	1,159.92	1,048.52	27.35	-3.45	0.298
71.88	-20.42	-16.37	0.00	-904.8	0.00	904.75	1,956.92	465.93	1,159.92	1,048.52	27.35	-3.45	0.308
75.00	-19.44	-16.03	0.00	-853.7	0.00	853.68	1,921.74	457.56	1,118.60	1,010.94	29.64	-3.56	0.297
76.99	-18.82	-15.76	0.00	-821.7	0.00	821.71	1,899.25	452.20	1,092.59	987.29	31.14	-3.63	0.290
79.63	-17.78	-15.51	0.00	-780.2	0.00	780.16	1,869.52	445.12	1,058.67	956.44	33.17	-3.73	0.274
79.63	-17.78	-15.51	0.00	-780.2	0.00	780.16	1,869.52	445.12	1,058.67	956.44	33.17	-3.73	0.359
80.00	-17.66	-15.46	0.00	-774.4	0.00	774.42	1,865.35	444.13	1,053.95	952.15	33.46	-3.74	0.357
80.46	-17.49	-15.25	0.00	-767.4	0.00	767.35	1,437.38	362.27	876.38	750.06	33.82	-3.76	0.409
85.00	-16.47	-14.80	0.00	-698.1	0.00	698.08	1,413.26	352.51	829.82	717.42	37.49	-3.96	0.381
87.23	-15.97	-14.52	0.00	-665.1	0.00	665.06	1,401.12	347.72	807.43	701.49	39.37	-4.07	0.366
87.23	-15.97	-14.52	0.00	-665.1	0.00	665.06	1,401.12	347.72	807.43	701.49	39.37	-4.07	0.961
90.00	-15.53	-14.18	0.00	-624.8	0.00	624.83	1,385.77	341.77	780.04	681.82	41.76	-4.19	0.929
95.00	-14.77	-13.76	0.00	-553.9	0.00	553.91	1,357.31	331.03	731.81	646.62	46.46	-4.77	0.869
100.00	-14.11	-13.52	0.00	-485.1	0.00	485.10	1,327.87	320.29	685.11	611.85	51.75	-5.33	0.805
105.00	-13.50	-13.33	0.00	-417.5	0.00	417.50	1,297.46	309.55	639.95	577.57	57.61	-5.86	0.735
107.00	-13.24	-13.18	0.00	-390.8	0.00	390.84	1,282.08	305.26	622.32	562.72	60.11	-6.08	0.707
110.00	-12.89	-13.07	0.00	-351.3	0.00	351.31	1,255.02	298.81	596.33	539.08	64.01	-6.38	0.664
110.81	-12.77	-12.96	0.00	-340.7	0.00	340.67	1,247.67	297.07	589.38	532.75	65.11	-6.46	0.652
115.00	-12.28	-12.73	0.00	-286.4	0.00	286.44	1,209.91	288.07	554.25	500.81	70.94	-6.85	0.584
119.00	-10.24	-10.29	0.00	-234.6	0.00	234.55	1,173.82	279.48	521.70	471.20	76.82	-7.2	0.508
120.00	-10.13	-10.14	0.00	-224.3	0.00	224.27	1,164.80	277.33	513.71	463.94	78.33	-7.28	0.493
125.00	-9.69	-9.85	0.00	-173.6	0.00	173.56	1,119.69	266.59	474.71	428.49	86.13	-7.64	0.415
130.00	-4.98	-6.03	0.00	-124.3	0.00	124.31	1,074.59	255.85	437.25	394.44	94.28	-7.95	0.320
135.00	-4.62	-5.72	0.00	-94.2	0.00	94.15	1,029.48	245.11	401.33	361.81	102.72	-8.2	0.265
140.00	-4.28	-5.42	0.00	-65.5	0.00	65.53	984.37	234.37	366.95	330.58	111.4	-8.41	0.203
145.00	-3.96	-5.12	0.00	-38.4	0.00	38.42	939.27	223.63	334.11	300.77	120.27	-8.57	0.132
150.00	-0.92	-2.37	0.00	-12.8	0.00	12.80	894.16	212.90	302.80	272.36	129.27	-8.66	0.048
152.10	0.00	-2.21	0.00	-7.8	0.00	7.82	875.21	208.38	290.12	260.85	133.07	-8.68	0.030

ASSET: 302480, Woodbridge CT 1  
 CUSTOMER: T-MOBILE

CODE: ANSI/TIA-222-H  
 ENG NO: 13732458\_C3\_02

Load Case: 0.9D + 1.0W Normal	115.99 mph wind with no ice	27 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	-33.21	-23.07	0.00	-2,315.0	0.00	2,314.97	3,136.53	776.14	2,681.85	2,336.59	0	0	0.611
5.00	-31.93	-22.67	0.00	-2,199.6	0.00	2,199.64	3,094.52	760.03	2,571.72	2,256.96	0.14	-0.26	0.595
9.00	-30.94	-22.42	0.00	-2,109.0	0.00	2,108.96	3,060.21	747.15	2,485.27	2,193.69	0.44	-0.47	0.581
10.00	-30.64	-22.21	0.00	-2,086.5	0.00	2,086.53	3,051.53	743.92	2,463.89	2,177.94	0.55	-0.52	0.578
15.00	-29.39	-21.79	0.00	-1,975.5	0.00	1,975.46	3,007.56	727.81	2,358.37	2,099.58	1.23	-0.78	0.561
20.00	-28.15	-21.36	0.00	-1,866.5	0.00	1,866.53	2,962.61	711.70	2,255.16	2,021.93	2.18	-1.03	0.544
25.00	-26.93	-20.93	0.00	-1,759.7	0.00	1,759.74	2,916.68	695.59	2,154.26	1,945.03	3.4	-1.29	0.526
30.00	-25.75	-20.57	0.00	-1,655.1	0.00	1,655.10	2,853.84	679.49	2,055.67	1,858.55	4.89	-1.55	0.511
32.45	-25.17	-20.35	0.00	-1,604.6	0.00	1,604.62	2,820.63	671.58	2,008.13	1,815.30	5.72	-1.67	0.504
35.00	-24.34	-20.18	0.00	-1,552.8	0.00	1,552.81	2,786.18	663.38	1,959.39	1,770.97	6.64	-1.8	0.489
35.25	-24.24	-20.11	0.00	-1,547.8	0.00	1,547.77	2,782.79	662.57	1,954.64	1,766.64	6.74	-1.82	0.488
36.74	-23.67	-19.90	0.00	-1,517.9	0.00	1,517.86	2,231.82	560.29	1,677.05	1,440.82	7.32	-1.89	0.434
40.00	-22.81	-19.50	0.00	-1,452.9	0.00	1,452.93	2,210.04	551.53	1,625.03	1,404.24	8.66	-2.02	0.421
45.00	-21.53	-19.04	0.00	-1,355.4	0.00	1,355.43	2,175.87	538.10	1,546.91	1,348.54	10.88	-2.23	0.401
48.25	-20.71	-18.74	0.00	-1,293.6	0.00	1,293.56	2,153.13	529.38	1,497.17	1,312.58	12.45	-2.36	0.389
48.25	-20.71	-18.74	0.00	-1,293.6	0.00	1,293.56	2,153.13	529.38	1,497.17	1,312.58	12.45	-2.36	0.499
50.00	-20.34	-18.51	0.00	-1,260.8	0.00	1,260.76	2,140.71	524.68	1,470.72	1,293.31	13.33	-2.43	0.491
53.13	-19.70	-18.23	0.00	-1,202.8	0.00	1,202.83	2,118.21	516.28	1,424.00	1,259.01	14.97	-2.59	0.476
55.00	-19.22	-17.90	0.00	-1,168.7	0.00	1,168.74	2,104.58	511.26	1,396.45	1,238.61	16.01	-2.69	0.385
60.00	-17.98	-17.34	0.00	-1,079.2	0.00	1,079.23	2,067.46	497.83	1,324.10	1,184.48	18.94	-2.9	0.364
65.00	-16.76	-16.83	0.00	-992.6	0.00	992.55	2,029.37	484.41	1,253.67	1,130.96	22.08	-3.1	0.343
68.13	-16.01	-16.51	0.00	-939.9	0.00	939.87	1,999.21	476.00	1,210.57	1,094.60	24.15	-3.22	0.301
68.13	-16.01	-16.51	0.00	-939.9	0.00	939.87	1,999.21	476.00	1,210.57	1,094.60	24.15	-3.22	0.331
70.00	-15.56	-16.29	0.00	-909.0	0.00	908.99	1,978.12	470.98	1,185.18	1,071.50	25.42	-3.3	0.295
71.88	-15.11	-16.02	0.00	-878.4	0.00	878.36	1,956.92	465.93	1,159.92	1,048.52	26.73	-3.36	0.289
71.88	-15.11	-16.02	0.00	-878.4	0.00	878.36	1,956.92	465.93	1,159.92	1,048.52	26.73	-3.36	0.298
75.00	-14.37	-15.69	0.00	-828.4	0.00	828.38	1,921.74	457.56	1,118.60	1,010.94	28.97	-3.47	0.287
76.99	-13.90	-15.42	0.00	-797.1	0.00	797.10	1,899.25	452.20	1,092.59	987.29	30.43	-3.54	0.280
79.63	-13.13	-15.18	0.00	-756.4	0.00	756.44	1,869.52	445.12	1,058.67	956.44	32.42	-3.64	0.265
79.63	-13.13	-15.18	0.00	-756.4	0.00	756.44	1,869.52	445.12	1,058.67	956.44	32.42	-3.64	0.347
80.00	-13.03	-15.13	0.00	-750.8	0.00	750.82	1,865.35	444.13	1,053.95	952.15	32.7	-3.65	0.345
80.46	-12.91	-14.92	0.00	-743.9	0.00	743.90	1,437.38	362.27	876.38	750.06	33.05	-3.67	0.395
85.00	-12.14	-14.48	0.00	-676.1	0.00	676.14	1,413.26	352.51	829.82	717.42	36.63	-3.86	0.367
87.23	-11.77	-14.20	0.00	-643.8	0.00	643.85	1,401.12	347.72	807.43	701.49	38.46	-3.96	0.353
87.23	-11.77	-14.20	0.00	-643.8	0.00	643.85	1,401.12	347.72	807.43	701.49	38.46	-3.96	0.928
90.00	-11.42	-13.84	0.00	-604.5	0.00	604.53	1,385.77	341.77	780.04	681.82	40.8	-4.09	0.897
95.00	-10.84	-13.39	0.00	-535.3	0.00	535.34	1,357.31	331.03	731.81	646.62	45.37	-4.64	0.838
100.00	-10.33	-13.12	0.00	-468.4	0.00	468.41	1,327.87	320.29	685.11	611.85	50.52	-5.18	0.775
105.00	-9.86	-12.91	0.00	-402.8	0.00	402.82	1,297.46	309.55	639.95	577.57	56.22	-5.7	0.707
107.00	-9.65	-12.75	0.00	-377.0	0.00	377.00	1,282.08	305.26	622.32	562.72	58.65	-5.91	0.679
110.00	-9.38	-12.64	0.00	-338.7	0.00	338.74	1,255.02	298.81	596.33	539.08	62.45	-6.2	0.638
110.81	-9.29	-12.51	0.00	-328.4	0.00	328.45	1,247.67	297.07	589.38	532.75	63.51	-6.28	0.626
115.00	-8.91	-12.28	0.00	-276.1	0.00	276.07	1,209.91	288.07	554.25	500.81	69.17	-6.66	0.560
119.00	-7.44	-9.90	0.00	-226.0	0.00	226.00	1,173.82	279.48	521.70	471.20	74.88	-6.99	0.487
120.00	-7.35	-9.74	0.00	-216.1	0.00	216.09	1,164.80	277.33	513.71	463.94	76.35	-7.06	0.473
125.00	-7.02	-9.45	0.00	-167.4	0.00	167.38	1,119.69	266.59	474.71	428.49	83.92	-7.42	0.398
130.00	-3.57	-5.81	0.00	-120.1	0.00	120.12	1,074.59	255.85	437.25	394.44	91.83	-7.71	0.308
135.00	-3.31	-5.51	0.00	-91.0	0.00	91.05	1,029.48	245.11	401.33	361.81	100.02	-7.96	0.255
140.00	-3.06	-5.22	0.00	-63.5	0.00	63.48	984.37	234.37	366.95	330.58	108.44	-8.16	0.196
145.00	-2.83	-4.94	0.00	-37.4	0.00	37.37	939.27	223.63	334.11	300.77	117.05	-8.32	0.128
150.00	-0.62	-2.32	0.00	-12.7	0.00	12.70	894.16	212.90	302.80	272.36	125.78	-8.4	0.047
152.10	0.00	-2.21	0.00	-7.8	0.00	7.82	875.21	208.38	290.12	260.85	129.46	-8.42	0.030

Load Case: 1.2D + 1.0Di + 1.0Wi Normal	48.73 mph wind with 0.850" radial ice		26 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	-54.44	-4.61	0.00	-529.8	0.00	529.77	3,136.53	776.14	2,681.85	2,336.59	0	0	0.150
5.00	-52.66	-4.58	0.00	-506.7	0.00	506.70	3,094.52	760.03	2,571.72	2,256.96	0.03	-0.06	0.147
9.00	-51.23	-4.57	0.00	-488.4	0.00	488.37	3,060.21	747.15	2,485.27	2,193.69	0.1	-0.11	0.144
10.00	-50.87	-4.55	0.00	-483.8	0.00	483.80	3,051.53	743.92	2,463.89	2,177.94	0.13	-0.12	0.144
15.00	-49.09	-4.51	0.00	-461.1	0.00	461.07	3,007.56	727.81	2,358.37	2,099.58	0.28	-0.18	0.140
20.00	-47.33	-4.47	0.00	-438.5	0.00	438.53	2,962.61	711.70	2,255.16	2,021.93	0.5	-0.24	0.137
25.00	-45.59	-4.43	0.00	-416.2	0.00	416.18	2,916.68	695.59	2,154.26	1,945.03	0.79	-0.3	0.133
30.00	-43.87	-4.39	0.00	-394.0	0.00	394.05	2,853.84	679.49	2,055.67	1,858.55	1.13	-0.36	0.130
32.45	-43.02	-4.37	0.00	-383.3	0.00	383.27	2,820.63	671.58	2,008.13	1,815.30	1.33	-0.39	0.129
35.00	-41.81	-4.35	0.00	-372.2	0.00	372.15	2,786.18	663.38	1,959.39	1,770.97	1.54	-0.42	0.126
35.25	-41.70	-4.34	0.00	-371.1	0.00	371.07	2,782.79	662.57	1,954.64	1,766.64	1.57	-0.43	0.125
36.74	-40.89	-4.31	0.00	-364.6	0.00	364.61	2,231.82	560.29	1,677.05	1,440.82	1.7	-0.44	0.111
40.00	-39.64	-4.26	0.00	-350.5	0.00	350.54	2,210.04	551.53	1,625.03	1,404.24	2.02	-0.47	0.109
45.00	-37.74	-4.20	0.00	-329.2	0.00	329.25	2,175.87	538.10	1,546.91	1,348.54	2.54	-0.52	0.104
48.25	-36.52	-4.16	0.00	-315.6	0.00	315.61	2,153.13	529.38	1,497.17	1,312.58	2.91	-0.56	0.101
48.25	-36.52	-4.16	0.00	-315.6	0.00	315.61	2,153.13	529.38	1,497.17	1,312.58	2.91	-0.56	0.130
50.00	-35.97	-4.13	0.00	-308.3	0.00	308.33	2,140.71	524.68	1,470.72	1,293.31	3.12	-0.57	0.128
53.13	-35.01	-4.09	0.00	-295.4	0.00	295.42	2,118.21	516.28	1,424.00	1,259.01	3.51	-0.61	0.125
55.00	-34.31	-4.05	0.00	-287.8	0.00	287.77	2,104.58	511.26	1,396.45	1,238.61	3.75	-0.64	0.101
60.00	-32.46	-3.96	0.00	-267.5	0.00	267.54	2,067.46	497.83	1,324.10	1,184.48	4.45	-0.69	0.096
65.00	-30.63	-3.89	0.00	-247.7	0.00	247.73	2,029.37	484.41	1,253.67	1,130.96	5.19	-0.74	0.091
68.13	-29.50	-3.84	0.00	-235.6	0.00	235.56	1,999.21	476.00	1,210.57	1,094.60	5.69	-0.77	0.081
68.13	-29.50	-3.84	0.00	-235.6	0.00	235.56	1,999.21	476.00	1,210.57	1,094.60	5.69	-0.77	0.089
70.00	-28.82	-3.81	0.00	-228.4	0.00	228.38	1,978.12	470.98	1,185.18	1,071.50	5.99	-0.79	0.079
71.88	-28.14	-3.76	0.00	-221.2	0.00	221.22	1,956.92	465.93	1,159.92	1,048.52	6.31	-0.81	0.078
71.88	-28.14	-3.76	0.00	-221.2	0.00	221.22	1,956.92	465.93	1,159.92	1,048.52	6.31	-0.81	0.080
75.00	-27.03	-3.71	0.00	-209.5	0.00	209.48	1,921.74	457.56	1,118.60	1,010.94	6.84	-0.83	0.078
76.99	-26.32	-3.67	0.00	-202.1	0.00	202.08	1,899.25	452.20	1,092.59	987.29	7.2	-0.85	0.076
79.63	-25.16	-3.63	0.00	-192.4	0.00	192.41	1,869.52	445.12	1,058.67	956.44	7.67	-0.87	0.072
79.63	-25.16	-3.63	0.00	-192.4	0.00	192.41	1,869.52	445.12	1,058.67	956.44	7.67	-0.87	0.095
80.00	-25.02	-3.62	0.00	-191.1	0.00	191.07	1,865.35	444.13	1,053.95	952.15	7.74	-0.88	0.094
80.46	-24.85	-3.58	0.00	-189.4	0.00	189.42	1,437.38	362.27	876.38	750.06	7.82	-0.88	0.108
85.00	-23.65	-3.52	0.00	-173.1	0.00	173.13	1,413.26	352.51	829.82	717.42	8.69	-0.93	0.101
87.23	-23.06	-3.47	0.00	-165.3	0.00	165.29	1,401.12	347.72	807.43	701.49	9.13	-0.96	0.098
87.23	-23.06	-3.47	0.00	-165.3	0.00	165.29	1,401.12	347.72	807.43	701.49	9.13	-0.96	0.252
90.00	-22.56	-3.43	0.00	-155.7	0.00	155.66	1,385.77	341.77	780.04	681.82	9.7	-0.99	0.245
95.00	-21.69	-3.38	0.00	-138.5	0.00	138.51	1,357.31	331.03	731.81	646.62	10.81	-1.13	0.230
100.00	-20.98	-3.34	0.00	-121.6	0.00	121.60	1,327.87	320.29	685.11	611.85	12.07	-1.27	0.215
105.00	-20.28	-3.30	0.00	-104.9	0.00	104.91	1,297.46	309.55	639.95	577.57	13.48	-1.41	0.197
107.00	-19.99	-3.27	0.00	-98.3	0.00	98.31	1,282.08	305.26	622.32	562.72	14.08	-1.46	0.190
110.00	-19.58	-3.25	0.00	-88.5	0.00	88.50	1,255.02	298.81	596.33	539.08	15.02	-1.54	0.180
110.81	-19.47	-3.23	0.00	-85.9	0.00	85.86	1,247.67	297.07	589.38	532.75	15.29	-1.56	0.177
115.00	-18.92	-3.18	0.00	-72.4	0.00	72.35	1,209.91	288.07	554.25	500.81	16.7	-1.66	0.160
119.00	-15.46	-2.58	0.00	-59.4	0.00	59.42	1,173.82	279.48	521.70	471.20	18.13	-1.74	0.139
120.00	-15.34	-2.54	0.00	-56.8	0.00	56.85	1,164.80	277.33	513.71	463.94	18.49	-1.76	0.136
125.00	-14.78	-2.48	0.00	-44.1	0.00	44.13	1,119.69	266.59	474.71	428.49	20.39	-1.86	0.116
130.00	-7.94	-1.52	0.00	-31.8	0.00	31.75	1,074.59	255.85	437.25	394.44	22.38	-1.94	0.088
135.00	-7.44	-1.45	0.00	-24.1	0.00	24.13	1,029.48	245.11	401.33	361.81	24.44	-2	0.074
140.00	-6.97	-1.37	0.00	-16.9	0.00	16.90	984.37	234.37	366.95	330.58	26.57	-2.05	0.058
145.00	-6.51	-1.29	0.00	-10.0	0.00	10.05	939.27	223.63	334.11	300.77	28.74	-2.1	0.040
150.00	-2.29	-0.62	0.00	-3.6	0.00	3.59	894.16	212.90	302.80	272.36	30.95	-2.12	0.016
152.10	0.00	-0.53	0.00	-2.3	0.00	2.29	875.21	208.38	290.12	260.85	31.88	-2.12	0.009



ASSET: 302480, Woodbridge CT 1  
 CUSTOMER: T-MOBILE

CODE: ANSI/TIA-222-H  
 ENG NO: 13732458\_C3\_02

Load Case: 1.0D + 1.0W Service Normal	60 mph Wind with No Ice	26 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	-36.96	-5.52	0.00	-559.0	0.00	558.96	3,136.53	776.14	2,681.85	2,336.59	0	0	0.154
5.00	-35.63	-5.43	0.00	-531.3	0.00	531.34	3,094.52	760.03	2,571.72	2,256.96	0.03	-0.06	0.150
9.00	-34.58	-5.38	0.00	-509.6	0.00	509.60	3,060.21	747.15	2,485.27	2,193.69	0.11	-0.11	0.146
10.00	-34.31	-5.33	0.00	-504.2	0.00	504.23	3,051.53	743.92	2,463.89	2,177.94	0.13	-0.13	0.146
15.00	-33.01	-5.23	0.00	-477.6	0.00	477.59	3,007.56	727.81	2,358.37	2,099.58	0.3	-0.19	0.141
20.00	-31.73	-5.13	0.00	-451.4	0.00	451.44	2,962.61	711.70	2,255.16	2,021.93	0.53	-0.25	0.137
25.00	-30.46	-5.03	0.00	-425.8	0.00	425.78	2,916.68	695.59	2,154.26	1,945.03	0.82	-0.31	0.133
30.00	-29.21	-4.95	0.00	-400.6	0.00	400.62	2,853.84	679.49	2,055.67	1,858.55	1.18	-0.37	0.129
32.45	-28.61	-4.90	0.00	-388.5	0.00	388.48	2,820.63	671.58	2,008.13	1,815.30	1.38	-0.4	0.127
35.00	-27.70	-4.86	0.00	-376.0	0.00	376.02	2,786.18	663.38	1,959.39	1,770.97	1.61	-0.44	0.123
35.25	-27.61	-4.84	0.00	-374.8	0.00	374.80	2,782.79	662.57	1,954.64	1,766.64	1.63	-0.44	0.123
36.74	-27.00	-4.79	0.00	-367.6	0.00	367.60	2,231.82	560.29	1,677.05	1,440.82	1.77	-0.46	0.109
40.00	-26.09	-4.70	0.00	-352.0	0.00	351.97	2,210.04	551.53	1,625.03	1,404.24	2.09	-0.49	0.106
45.00	-24.71	-4.59	0.00	-328.5	0.00	328.49	2,175.87	538.10	1,546.91	1,348.54	2.63	-0.54	0.101
48.25	-23.82	-4.52	0.00	-313.6	0.00	313.58	2,153.13	529.38	1,497.17	1,312.58	3.01	-0.57	0.098
48.25	-23.82	-4.52	0.00	-313.6	0.00	313.58	2,153.13	529.38	1,497.17	1,312.58	3.01	-0.57	0.126
50.00	-23.43	-4.46	0.00	-305.7	0.00	305.67	2,140.71	524.68	1,470.72	1,293.31	3.22	-0.59	0.124
53.13	-22.75	-4.40	0.00	-291.7	0.00	291.71	2,118.21	516.28	1,424.00	1,259.01	3.62	-0.63	0.120
55.00	-22.25	-4.32	0.00	-283.5	0.00	283.49	2,104.58	511.26	1,396.45	1,238.61	3.87	-0.65	0.097
60.00	-20.90	-4.18	0.00	-261.9	0.00	261.89	2,067.46	497.83	1,324.10	1,184.48	4.58	-0.7	0.092
65.00	-19.57	-4.06	0.00	-241.0	0.00	240.97	2,029.37	484.41	1,253.67	1,130.96	5.34	-0.75	0.087
68.13	-18.75	-3.99	0.00	-228.2	0.00	228.25	1,999.21	476.00	1,210.57	1,094.60	5.84	-0.78	0.076
68.13	-18.75	-3.99	0.00	-228.2	0.00	228.25	1,999.21	476.00	1,210.57	1,094.60	5.84	-0.78	0.084
70.00	-18.26	-3.93	0.00	-220.8	0.00	220.79	1,978.12	470.98	1,185.18	1,071.50	6.15	-0.8	0.075
71.88	-17.77	-3.87	0.00	-213.4	0.00	213.40	1,956.92	465.93	1,159.92	1,048.52	6.47	-0.81	0.073
71.88	-17.77	-3.87	0.00	-213.4	0.00	213.40	1,956.92	465.93	1,159.92	1,048.52	6.47	-0.81	0.075
75.00	-16.95	-3.79	0.00	-201.3	0.00	201.32	1,921.74	457.56	1,118.60	1,010.94	7.01	-0.84	0.073
76.99	-16.44	-3.73	0.00	-193.8	0.00	193.77	1,899.25	452.20	1,092.59	987.29	7.37	-0.86	0.071
79.63	-15.57	-3.67	0.00	-183.9	0.00	183.94	1,869.52	445.12	1,058.67	956.44	7.85	-0.88	0.067
79.63	-15.57	-3.67	0.00	-183.9	0.00	183.94	1,869.52	445.12	1,058.67	956.44	7.85	-0.88	0.088
80.00	-15.47	-3.66	0.00	-182.6	0.00	182.59	1,865.35	444.13	1,053.95	952.15	7.91	-0.88	0.087
80.46	-15.35	-3.61	0.00	-180.9	0.00	180.91	1,437.38	362.27	876.38	750.06	8	-0.89	0.100
85.00	-14.50	-3.50	0.00	-164.5	0.00	164.54	1,413.26	352.51	829.82	717.42	8.87	-0.94	0.093
87.23	-14.09	-3.43	0.00	-156.7	0.00	156.73	1,401.12	347.72	807.43	701.49	9.31	-0.96	0.090
87.23	-14.09	-3.43	0.00	-156.7	0.00	156.73	1,401.12	347.72	807.43	701.49	9.31	-0.96	0.234
90.00	-13.77	-3.35	0.00	-147.2	0.00	147.22	1,385.77	341.77	780.04	681.82	9.88	-0.99	0.226
95.00	-13.21	-3.25	0.00	-130.5	0.00	130.47	1,357.31	331.03	731.81	646.62	10.99	-1.13	0.212
100.00	-12.74	-3.19	0.00	-114.2	0.00	114.24	1,327.87	320.29	685.11	611.85	12.24	-1.26	0.196
105.00	-12.27	-3.14	0.00	-98.3	0.00	98.31	1,297.46	309.55	639.95	577.57	13.62	-1.38	0.180
107.00	-12.08	-3.10	0.00	-92.0	0.00	92.03	1,282.08	305.26	622.32	562.72	14.21	-1.43	0.173
110.00	-11.81	-3.08	0.00	-82.7	0.00	82.72	1,255.02	298.81	596.33	539.08	15.14	-1.51	0.163
110.81	-11.74	-3.05	0.00	-80.2	0.00	80.22	1,247.67	297.07	589.38	532.75	15.4	-1.53	0.160
115.00	-11.37	-3.00	0.00	-67.4	0.00	67.45	1,209.91	288.07	554.25	500.81	16.78	-1.62	0.144
119.00	-9.48	-2.42	0.00	-55.2	0.00	55.24	1,173.82	279.48	521.70	471.20	18.17	-1.7	0.125
120.00	-9.40	-2.38	0.00	-52.8	0.00	52.82	1,164.80	277.33	513.71	463.94	18.52	-1.72	0.122
125.00	-9.04	-2.31	0.00	-40.9	0.00	40.91	1,119.69	266.59	474.71	428.49	20.37	-1.8	0.104
130.00	-4.77	-1.42	0.00	-29.4	0.00	29.35	1,074.59	255.85	437.25	394.44	22.3	-1.88	0.079
135.00	-4.46	-1.35	0.00	-22.2	0.00	22.24	1,029.48	245.11	401.33	361.81	24.29	-1.94	0.066
140.00	-4.16	-1.28	0.00	-15.5	0.00	15.49	984.37	234.37	366.95	330.58	26.35	-1.99	0.051
145.00	-3.86	-1.21	0.00	-9.1	0.00	9.10	939.27	223.63	334.11	300.77	28.45	-2.02	0.034
150.00	-1.04	-0.57	0.00	-3.1	0.00	3.06	894.16	212.90	302.80	272.36	30.58	-2.04	0.012
152.10	0.00	-0.53	0.00	-1.9	0.00	1.87	875.21	208.38	290.12	260.85	31.48	-2.05	0.007

**EQUIVALENT LATERAL FORCES METHOD ANALYSIS**  
*(Based on ASCE7-16 Chapters 11, 12 and 15)*

Spectral Response Acceleration for Short Period ( $S_S$ ):	0.200
Spectral Response Acceleration at 1.0 Second Period ( $S_1$ ):	0.054
Long-Period Transition Period ( $T_L$ – Seconds):	6
Importance Factor ( $I_a$ ):	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 ( $S_{ds}$ ):	0.213
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):	3.000
Redundancy Factor ( $\rho$ ):	1.000
Seismic Force Distribution Exponent ( $k$ ):	2.000
Total Unfactored Dead Load:	36.960 k
Seismic Base Shear (E):	1.110 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)
46	151.05	116	2,642	0.009	10	144
45	147.5	283	6,159	0.021	23	352
44	142.5	294	5,960	0.020	22	365
43	137.5	304	5,746	0.020	22	378
42	132.5	314	5,519	0.019	21	391
41	127.5	349	5,677	0.019	21	434
40	122.5	360	5,397	0.018	20	447
39	119.5	73	1,045	0.004	4	91
38	117	341	4,674	0.016	18	424
37	112.907	364	4,646	0.016	18	453
36	110.407	72	874	0.003	3	89
35	108.5	267	3,140	0.011	12	331
34	106	180	2,025	0.007	8	224
33	102.5	458	4,809	0.016	18	569
32	97.5	468	4,450	0.015	17	582
31	92.5	553	4,736	0.016	18	688
30	88.615	321	2,524	0.009	10	399
29	86.115	410	3,041	0.010	11	510
28	82.7286	842	5,761	0.020	22	1,046
27	80.2286	125	801	0.003	3	155
26	79.815	101	643	0.002	2	125
25	78.312	866	5,312	0.018	20	1,076
24	75.997	516	2,979	0.010	11	641
23	73.44	811	4,375	0.015	16	1,008
22	70.94	491	2,472	0.008	9	610
21	69.065	490	2,339	0.008	9	609
20	66.565	825	3,655	0.012	14	1,025
19	62.5	1,328	5,189	0.018	20	1,651
18	57.5	1,341	4,435	0.015	17	1,667
17	54.065	505	1,476	0.005	6	628
16	51.565	679	1,805	0.006	7	844
15	49.125	382	921	0.003	3	475
14	46.625	890	1,935	0.007	7	1,106
13	42.5	1,380	2,493	0.008	9	1,715

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
12	38.3685	908	1,337	0.004	5	1,128
11	35.9935	606	785	0.003	3	753
10	35.125	89	109	0.000	0	110
9	33.7271	905	1,030	0.004	4	1,125
8	31.2271	606	591	0.002	2	753
7	27.5	1,247	943	0.003	4	1,549
6	22.5	1,262	639	0.002	2	1,568
5	17.5	1,278	391	0.001	1	1,588
4	12.5	1,293	202	0.001	1	1,607
3	9.5	261	24	0.000	0	324
2	7	1,048	51	0.000	0	1,303
1	2.5	1,325	8	0.000	0	1,646
Generic 22' Omni	152.1	70	1,619	0.006	6	87
Generic 20' Dipole	152.1	60	1,388	0.005	5	75
Powerwave Allgon LGP13519	152.1	32	736	0.002	3	40
LGP Allgon TMA-DD 1900	152.1	62	1,444	0.005	5	78
Raycap DC6-48-60-18-8F ("Squid")	152.1	32	736	0.002	3	40
Ericsson RRUS 11 (Band 12) (55 lb)	152.1	165	3,817	0.013	14	205
Ericsson RRUS 32 B2	152.1	159	3,678	0.012	14	198
Powerwave Allgon 7770.00	152.1	210	4,858	0.016	18	261
CCI HPA-65R-BUU-H6	152.1	153	3,540	0.012	13	190
Generic Round Side Arm	150	562	12,656	0.043	48	699
Flat Platform w/ Handrails	150	2,000	45,000	0.153	170	2,485
Ericsson Radio 4449 B71 B85A	130	225	3,802	0.013	14	280
Ericsson 4460 BAND 2/25	130	327	5,526	0.019	21	406
Ericsson Air6449 B41	130	312	5,273	0.018	20	388
Generic Mount Reinforcement	130	200	3,380	0.012	13	249
RFS APXVAARR24_43-U-NA20	130	384	6,485	0.022	24	477
Generic Round Platform with Handrails	130	2,500	42,250	0.144	159	3,107
RFS FD9R6004/1C-3L	119	19	263	0.001	1	23
Andrew PCS1900 Dual Duplex TMA	119	120	1,699	0.006	6	149
ADC ClearGain Dual Band 800/1900 MHz	119	172	2,439	0.008	9	214
Alcatel-Lucent RRH2x40-AWS.	119	132	1,869	0.006	7	164
Amphenol Antel BXA-171063-8BF-EDIN-X	119	32	446	0.002	2	39
Amphenol Antel BXA-171085-8CF-EDIN-X	119	32	446	0.002	2	39
Antel BXA-80063/4CF	119	30	421	0.001	2	37
RFS DB-T1-6Z-8AB-0Z	119	44	623	0.002	2	55
Antel BXA-70063/6CF_	119	51	722	0.002	3	63
Generic Round T-Arm	119	938	13,276	0.045	50	1,165
Generic GPS	107	10	114	0.000	0	12
		36,960	294,275	1.000	1,109	45,929

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

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
46	151.05	116	2,642	0.009	10	99
45	147.5	283	6,159	0.021	23	243
44	142.5	294	5,960	0.020	22	252
43	137.5	304	5,746	0.020	22	261
42	132.5	314	5,519	0.019	21	269
41	127.5	349	5,677	0.019	21	299
40	122.5	360	5,397	0.018	20	308
39	119.5	73	1,045	0.004	4	63
38	117	341	4,674	0.016	18	293
37	112.907	364	4,646	0.016	18	312
36	110.407	72	874	0.003	3	61
35	108.5	267	3,140	0.011	12	229
34	106	180	2,025	0.007	8	154
33	102.5	458	4,809	0.016	18	392
32	97.5	468	4,450	0.015	17	401
31	92.5	553	4,736	0.016	18	474
30	88.615	321	2,524	0.009	10	276

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
29	86.115	410	3,041	0.010	11	352
28	82.7286	842	5,761	0.020	22	722
27	80.2286	125	801	0.003	3	107
26	79.815	101	643	0.002	2	87
25	78.312	866	5,312	0.018	20	743
24	75.997	516	2,979	0.010	11	442
23	73.44	811	4,375	0.015	16	695
22	70.94	491	2,472	0.008	9	421
21	69.065	490	2,339	0.008	9	420
20	66.565	825	3,655	0.012	14	707
19	62.5	1,328	5,189	0.018	20	1,139
18	57.5	1,341	4,435	0.015	17	1,150
17	54.065	505	1,476	0.005	6	433
16	51.565	679	1,805	0.006	7	582
15	49.125	382	921	0.003	3	327
14	46.625	890	1,935	0.007	7	763
13	42.5	1,380	2,493	0.008	9	1,184
12	38.3685	908	1,337	0.004	5	778
11	35.9935	606	785	0.003	3	519
10	35.125	89	109	0.000	0	76
9	33.7271	905	1,030	0.004	4	776
8	31.2271	606	591	0.002	2	520
7	27.5	1,247	943	0.003	4	1,069
6	22.5	1,262	639	0.002	2	1,082
5	17.5	1,278	391	0.001	1	1,096
4	12.5	1,293	202	0.001	1	1,109
3	9.5	261	24	0.000	0	223
2	7	1,048	51	0.000	0	899
1	2.5	1,325	8	0.000	0	1,136
Generic 22' Omni	152.1	70	1,619	0.006	6	60
Generic 20' Dipole	152.1	60	1,388	0.005	5	51
Powerwave Allgon LGP13519	152.1	32	736	0.002	3	27
LGP Allgon TMA-DD 1900	152.1	62	1,444	0.005	5	53
Raycap DC6-48-60-18-8F ("Squid")	152.1	32	736	0.002	3	27
Ericsson RRUS 11 (Band 12) (55 lb)	152.1	165	3,817	0.013	14	141
Ericsson RRUS 32 B2	152.1	159	3,678	0.012	14	136
Powerwave Allgon 7770.00	152.1	210	4,858	0.016	18	180
CCI HPA-65R-BUU-H6	152.1	153	3,540	0.012	13	131
Generic Round Side Arm	150	562	12,656	0.043	48	482
Flat Platform w/ Handrails	150	2,000	45,000	0.153	170	1,715
Ericsson Radio 4449 B71 B85A	130	225	3,802	0.013	14	193
Ericsson 4460 BAND 2/25	130	327	5,526	0.019	21	280
Ericsson Air6449 B41	130	312	5,273	0.018	20	267
Generic Mount Reinforcement	130	200	3,380	0.012	13	171
RFS APXVAARR24_43-U-NA20	130	384	6,485	0.022	24	329
Generic Round Platform with Handrails	130	2,500	42,250	0.144	159	2,143
RFS FD9R6004/1C-3L	119	19	263	0.001	1	16
Andrew PCS1900 Dual Duplex TMA	119	120	1,699	0.006	6	103
ADC ClearGain Dual Band 800/1900 MHz	119	172	2,439	0.008	9	148
Alcatel-Lucent RRH2x40-AWS.	119	132	1,869	0.006	7	113
Amphenol Antel BXA-171063-8BF-EDIN-X	119	32	446	0.002	2	27
Amphenol Antel BXA-171085-8CF-EDIN-X	119	32	446	0.002	2	27
Antel BXA-80063/4CF	119	30	421	0.001	2	25
RFS DB-T1-6Z-8AB-0Z	119	44	623	0.002	2	38
Antel BXA-70063/6CF_	119	51	722	0.002	3	44
Generic Round T-Arm	119	938	13,276	0.045	50	804
Generic GPS	107	10	114	0.000	0	9
		36,960	294,275	1.000	1,109	31,687

**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	-44.28	-1.11	0.00	-142.95	0.00	142.95	3,136.53	776.14	2,682	2,336.59	0.00	0.00	0.05

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
5.00	-42.98	-1.12	0.00	-137.38	0.00	137.38	3,094.52	760.03	2,572	2,256.96	0.01	-0.02	0.05
9.00	-42.66	-1.13	0.00	-132.89	0.00	132.89	3,060.21	747.15	2,485	2,193.69	0.03	-0.03	0.05
9.00	-42.66	-1.13	0.00	-132.89	0.00	132.89	3,060.21	747.15	2,485	2,193.69	0.03	-0.03	0.05
10.00	-41.05	-1.14	0.00	-131.76	0.00	131.76	3,051.53	743.92	2,464	2,177.94	0.03	-0.03	0.05
15.00	-39.46	-1.14	0.00	-126.08	0.00	126.08	3,007.56	727.81	2,358	2,099.58	0.08	-0.05	0.04
20.00	-37.89	-1.15	0.00	-120.36	0.00	120.36	2,962.61	711.70	2,255	2,021.93	0.14	-0.07	0.04
25.00	-36.34	-1.16	0.00	-114.60	0.00	114.60	2,916.68	695.59	2,154	1,945.03	0.21	-0.08	0.04
30.00	-35.59	-1.16	0.00	-108.82	0.00	108.82	2,853.84	679.49	2,056	1,858.55	0.31	-0.10	0.04
32.45	-34.46	-1.16	0.00	-105.97	0.00	105.97	2,820.63	671.58	2,008	1,815.30	0.36	-0.11	0.04
35.00	-34.35	-1.16	0.00	-103.02	0.00	103.02	2,786.18	663.38	1,959	1,770.97	0.42	-0.12	0.04
35.25	-33.60	-1.16	0.00	-102.73	0.00	102.73	2,782.79	662.57	1,955	1,766.64	0.43	-0.12	0.04
36.74	-32.47	-1.16	0.00	-101.01	0.00	101.01	2,231.82	560.29	1,677	1,440.82	0.46	-0.12	0.04
40.00	-30.76	-1.15	0.00	-97.23	0.00	97.23	2,210.04	551.53	1,625	1,404.24	0.55	-0.13	0.03
45.00	-29.65	-1.14	0.00	-91.49	0.00	91.49	2,175.87	538.10	1,547	1,348.54	0.69	-0.14	0.03
48.25	-29.17	-1.14	0.00	-87.77	0.00	87.77	2,153.13	529.38	1,497	1,312.58	0.79	-0.15	0.03
48.25	-29.17	-1.14	0.00	-87.77	0.00	87.77	2,153.13	529.38	1,497	1,312.58	0.79	-0.15	0.04
50.00	-28.33	-1.14	0.00	-85.77	0.00	85.77	2,140.71	524.68	1,471	1,293.31	0.85	-0.16	0.04
53.13	-27.70	-1.14	0.00	-82.21	0.00	82.21	2,118.21	516.28	1,424	1,259.01	0.96	-0.17	0.04
55.00	-26.04	-1.12	0.00	-80.08	0.00	80.08	2,104.58	511.26	1,396	1,238.61	1.03	-0.18	0.03
60.00	-24.39	-1.10	0.00	-74.49	0.00	74.49	2,067.46	497.83	1,324	1,184.48	1.22	-0.19	0.03
65.00	-23.36	-1.09	0.00	-69.00	0.00	69.00	2,029.37	484.41	1,254	1,130.96	1.42	-0.20	0.03
68.13	-22.75	-1.08	0.00	-65.59	0.00	65.59	1,999.21	476.00	1,211	1,094.60	1.56	-0.21	0.03
68.13	-22.75	-1.08	0.00	-65.59	0.00	65.59	1,999.21	476.00	1,211	1,094.60	1.56	-0.21	0.03
70.00	-22.14	-1.07	0.00	-63.58	0.00	63.58	1,978.12	470.98	1,185	1,071.50	1.64	-0.22	0.03
71.88	-21.13	-1.05	0.00	-61.57	0.00	61.57	1,956.92	465.93	1,160	1,048.52	1.73	-0.22	0.03
71.88	-21.13	-1.05	0.00	-61.57	0.00	61.57	1,956.92	465.93	1,160	1,048.52	1.73	-0.22	0.03
75.00	-20.49	-1.04	0.00	-58.29	0.00	58.29	1,921.74	457.56	1,119	1,010.94	1.88	-0.23	0.02
76.99	-19.41	-1.02	0.00	-56.22	0.00	56.22	1,899.25	452.20	1,093	987.29	1.98	-0.23	0.02
79.63	-19.29	-1.02	0.00	-53.54	0.00	53.54	1,869.52	445.12	1,059	956.44	2.11	-0.24	0.02
79.63	-19.29	-1.02	0.00	-53.54	0.00	53.54	1,869.52	445.12	1,059	956.44	2.11	-0.24	0.03
80.00	-19.13	-1.01	0.00	-53.16	0.00	53.16	1,865.35	444.13	1,054	952.15	2.13	-0.24	0.03
80.46	-18.09	-0.99	0.00	-52.70	0.00	52.70	1,437.38	362.27	876	750.06	2.15	-0.24	0.03
85.00	-17.58	-0.98	0.00	-48.21	0.00	48.21	1,413.26	352.51	830	717.42	2.39	-0.26	0.03
87.23	-17.18	-0.97	0.00	-46.03	0.00	46.03	1,401.12	347.72	807	701.49	2.51	-0.26	0.03
87.23	-17.18	-0.97	0.00	-46.03	0.00	46.03	1,401.12	347.72	807	701.49	2.51	-0.26	0.08
90.00	-16.49	-0.96	0.00	-43.34	0.00	43.34	1,385.77	341.77	780	681.82	2.67	-0.27	0.08
95.00	-15.91	-0.95	0.00	-38.57	0.00	38.57	1,357.31	331.03	732	646.62	2.97	-0.31	0.07
100.00	-15.34	-0.94	0.00	-33.84	0.00	33.84	1,327.87	320.29	685	611.85	3.32	-0.35	0.07
105.00	-15.11	-0.93	0.00	-29.16	0.00	29.16	1,297.46	309.55	640	577.57	3.71	-0.39	0.06
107.00	-14.77	-0.92	0.00	-27.30	0.00	27.30	1,282.08	305.26	622	562.72	3.88	-0.40	0.06
110.00	-14.68	-0.92	0.00	-24.53	0.00	24.53	1,255.02	298.81	596	539.08	4.14	-0.43	0.06
110.81	-14.23	-0.91	0.00	-23.78	0.00	23.78	1,247.67	297.07	589	532.75	4.21	-0.43	0.06
110.81	-14.23	-0.91	0.00	-23.78	0.00	23.78	1,247.67	297.07	589	532.75	4.21	-0.43	0.06
115.00	-13.80	-0.89	0.00	-19.98	0.00	19.98	1,209.91	288.07	554	500.81	4.60	-0.46	0.05
119.00	-11.77	-0.79	0.00	-16.42	0.00	16.42	1,173.82	279.48	522	471.20	5.00	-0.48	0.05
120.00	-11.32	-0.77	0.00	-15.63	0.00	15.63	1,164.80	277.33	514	463.94	5.10	-0.49	0.04
125.00	-10.88	-0.75	0.00	-11.78	0.00	11.78	1,119.69	266.59	475	428.49	5.63	-0.51	0.04
130.00	-5.59	-0.43	0.00	-8.04	0.00	8.04	1,074.59	255.85	437	394.44	6.18	-0.53	0.03
135.00	-5.21	-0.41	0.00	-5.90	0.00	5.90	1,029.48	245.11	401	361.81	6.74	-0.55	0.02
140.00	-4.85	-0.38	0.00	-3.87	0.00	3.87	984.37	234.37	367	330.58	7.33	-0.56	0.02
145.00	-4.50	-0.35	0.00	-1.97	0.00	1.97	939.27	223.63	334	300.77	7.92	-0.57	0.01
150.00	-1.17	-0.09	0.00	-0.20	0.00	0.20	894.16	212.90	303	272.36	8.53	-0.58	0.00
152.10	0.00	-0.08	0.00	0.00	0.00	0.00	875.21	208.38	290	260.85	8.78	-0.58	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	-30.55	-1.11	0.00	-139.40	0.00	139.40	3,136.53	776.14	2,682	2,336.59	0.00	0.00	0.04
5.00	-29.65	-1.12	0.00	-133.85	0.00	133.85	3,094.52	760.03	2,572	2,256.96	0.01	-0.02	0.04
9.00	-29.43	-1.12	0.00	-129.37	0.00	129.37	3,060.21	747.15	2,485	2,193.69	0.03	-0.03	0.04
9.00	-29.43	-1.12	0.00	-129.37	0.00	129.37	3,060.21	747.15	2,485	2,193.69	0.03	-0.03	0.04
10.00	-28.32	-1.13	0.00	-128.25	0.00	128.25	3,051.53	743.92	2,464	2,177.94	0.03	-0.03	0.04
15.00	-27.22	-1.13	0.00	-122.62	0.00	122.62	3,007.56	727.81	2,358	2,099.58	0.07	-0.05	0.04
20.00	-26.14	-1.14	0.00	-116.96	0.00	116.96	2,962.61	711.70	2,255	2,021.93	0.13	-0.06	0.04
25.00	-25.07	-1.14	0.00	-111.28	0.00	111.28	2,916.68	695.59	2,154	1,945.03	0.21	-0.08	0.04
30.00	-24.55	-1.14	0.00	-105.59	0.00	105.59	2,853.84	679.49	2,056	1,858.55	0.30	-0.10	0.04

ASSET: 302480, Woodbridge CT 1  
 CUSTOMER: T-MOBILE

CODE: ANSI/TIA-222-H  
 ENG NO: 13732458\_C3\_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
32.45	-23.78	-1.14	0.00	-102.80	0.00	102.80	2,820.63	671.58	2,008	1,815.30	0.35	-0.10	0.04
35.00	-23.70	-1.14	0.00	-99.90	0.00	99.90	2,786.18	663.38	1,959	1,770.97	0.41	-0.11	0.04
35.25	-23.18	-1.14	0.00	-99.62	0.00	99.62	2,782.79	662.57	1,955	1,766.64	0.42	-0.11	0.04
36.74	-22.40	-1.13	0.00	-97.93	0.00	97.93	2,231.82	560.29	1,677	1,440.82	0.45	-0.12	0.03
40.00	-21.22	-1.12	0.00	-94.23	0.00	94.23	2,210.04	551.53	1,625	1,404.24	0.54	-0.13	0.03
45.00	-20.45	-1.12	0.00	-88.61	0.00	88.61	2,175.87	538.10	1,547	1,348.54	0.67	-0.14	0.03
48.25	-20.13	-1.12	0.00	-84.97	0.00	84.97	2,153.13	529.38	1,497	1,312.58	0.77	-0.15	0.03
48.25	-20.13	-1.12	0.00	-84.97	0.00	84.97	2,153.13	529.38	1,497	1,312.58	0.77	-0.15	0.04
50.00	-19.55	-1.11	0.00	-83.01	0.00	83.01	2,140.71	524.68	1,471	1,293.31	0.83	-0.15	0.04
53.13	-19.11	-1.11	0.00	-79.53	0.00	79.53	2,118.21	516.28	1,424	1,259.01	0.93	-0.16	0.04
55.00	-17.96	-1.09	0.00	-77.46	0.00	77.46	2,104.58	511.26	1,396	1,238.61	1.00	-0.17	0.03
60.00	-16.82	-1.07	0.00	-72.01	0.00	72.01	2,067.46	497.83	1,324	1,184.48	1.18	-0.18	0.03
65.00	-16.12	-1.06	0.00	-66.65	0.00	66.65	2,029.37	484.41	1,254	1,130.96	1.38	-0.20	0.03
68.13	-15.69	-1.05	0.00	-63.33	0.00	63.33	1,999.21	476.00	1,211	1,094.60	1.52	-0.21	0.03
68.13	-15.69	-1.05	0.00	-63.33	0.00	63.33	1,999.21	476.00	1,211	1,094.60	1.52	-0.21	0.02
70.00	-15.27	-1.04	0.00	-61.37	0.00	61.37	1,978.12	470.98	1,185	1,071.50	1.60	-0.21	0.02
71.88	-14.58	-1.02	0.00	-59.41	0.00	59.41	1,956.92	465.93	1,160	1,048.52	1.68	-0.22	0.02
71.88	-14.58	-1.02	0.00	-59.41	0.00	59.41	1,956.92	465.93	1,160	1,048.52	1.68	-0.22	0.02
75.00	-14.14	-1.01	0.00	-56.22	0.00	56.22	1,921.74	457.56	1,119	1,010.94	1.83	-0.22	0.02
76.99	-13.39	-0.99	0.00	-54.20	0.00	54.20	1,899.25	452.20	1,093	987.29	1.92	-0.23	0.02
79.63	-13.31	-0.99	0.00	-51.59	0.00	51.59	1,869.52	445.12	1,059	956.44	2.05	-0.23	0.02
79.63	-13.31	-0.99	0.00	-51.59	0.00	51.59	1,869.52	445.12	1,059	956.44	2.05	-0.23	0.03
80.00	-13.20	-0.99	0.00	-51.22	0.00	51.22	1,865.35	444.13	1,054	952.15	2.06	-0.23	0.03
80.46	-12.48	-0.96	0.00	-50.77	0.00	50.77	1,437.38	362.27	876	750.06	2.09	-0.24	0.03
85.00	-12.13	-0.95	0.00	-46.40	0.00	46.40	1,413.26	352.51	830	717.42	2.32	-0.25	0.03
87.23	-11.85	-0.94	0.00	-44.28	0.00	44.28	1,401.12	347.72	807	701.49	2.44	-0.26	0.03
87.23	-11.85	-0.94	0.00	-44.28	0.00	44.28	1,401.12	347.72	807	701.49	2.44	-0.26	0.07
90.00	-11.38	-0.93	0.00	-41.67	0.00	41.67	1,385.77	341.77	780	681.82	2.59	-0.26	0.07
95.00	-10.97	-0.92	0.00	-37.03	0.00	37.03	1,357.31	331.03	732	646.62	2.89	-0.30	0.07
100.00	-10.58	-0.90	0.00	-32.46	0.00	32.46	1,327.87	320.29	685	611.85	3.22	-0.34	0.06
105.00	-10.43	-0.90	0.00	-27.95	0.00	27.95	1,297.46	309.55	640	577.57	3.60	-0.38	0.06
107.00	-10.19	-0.89	0.00	-26.15	0.00	26.15	1,282.08	305.26	622	562.72	3.76	-0.39	0.05
110.00	-10.13	-0.89	0.00	-23.49	0.00	23.49	1,255.02	298.81	596	539.08	4.01	-0.41	0.05
110.81	-9.81	-0.87	0.00	-22.77	0.00	22.77	1,247.67	297.07	589	532.75	4.08	-0.42	0.05
110.81	-9.81	-0.87	0.00	-22.77	0.00	22.77	1,247.67	297.07	589	532.75	4.08	-0.42	0.05
115.00	-9.52	-0.85	0.00	-19.13	0.00	19.13	1,209.91	288.07	554	500.81	4.46	-0.44	0.05
119.00	-8.12	-0.76	0.00	-15.72	0.00	15.72	1,173.82	279.48	522	471.20	4.84	-0.47	0.04
120.00	-7.81	-0.74	0.00	-14.96	0.00	14.96	1,164.80	277.33	514	463.94	4.94	-0.47	0.04
125.00	-7.51	-0.71	0.00	-11.28	0.00	11.28	1,119.69	266.59	475	428.49	5.45	-0.50	0.03
130.00	-3.86	-0.41	0.00	-7.71	0.00	7.71	1,074.59	255.85	437	394.44	5.98	-0.51	0.02
135.00	-3.60	-0.39	0.00	-5.65	0.00	5.65	1,029.48	245.11	401	361.81	6.52	-0.53	0.02
140.00	-3.34	-0.36	0.00	-3.71	0.00	3.71	984.37	234.37	367	330.58	7.09	-0.54	0.02
145.00	-3.10	-0.34	0.00	-1.88	0.00	1.88	939.27	223.63	334	300.77	7.66	-0.55	0.01
150.00	-0.81	-0.09	0.00	-0.19	0.00	0.19	894.16	212.90	303	272.36	8.24	-0.55	0.00
152.10	0.00	-0.08	0.00	0.00	0.00	0.00	875.21	208.38	290	260.85	8.48	-0.55	0.00

ANALYSIS SUMMARY

Load Case	Reactions						Max Usage	
	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	23.09	0.00	44.30	0.00	0.00	2359.41	87.23	0.96
0.9D + 1.0W Normal	23.07	0.00	33.21	0.00	0.00	2314.97	87.23	0.93
1.2D + 1.0Di + 1.0Wi Normal	4.61	0.00	54.44	0.00	0.00	529.77	87.23	0.25
1.2D + 1.0Ev + 1.0Eh Normal	1.16	0.00	44.28	0.00	0.00	142.95	87.23	0.08
0.9D - 1.0Ev + 1.0Eh Normal	1.14	0.00	30.55	0.00	0.00	139.40	87.23	0.07
1.0D + 1.0W Service Normal	5.52	0.00	36.96	0.00	0.00	558.96	87.23	0.23

ADDITIONAL STEEL SUMMARY

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors				Max member			
			VQ/I	Shear Applied (kips)	Shear (phiVn) (kips)	Ratio	Pu (kip)	PhiPn (kip)	Ratio	
0.00	9.00	SOL #20 All Thread Bar	210.5	8.2	16.8	0.4883	252.0	315.5	0.7990	
9.00	87.23	SOL #20 All Thread Bar	281.8	8.5	16.8	0.503	244.7	330.5	0.7404	
35.25	48.25	PL PL 4" x 1"	134.0	1.2	25.3	0.0477	121.1	137.1	0.8835	
53.13	68.13	PL PL 4" x 1"	143.9	2.6	25.3	0.1025	116.0	137.0	0.8467	
68.13	71.88	PL PL 4" x 1"	140.3	2.1	25.3	0.0833	97.9	137.1	0.7144	
71.88	79.63	PL PL 4" x 1"	135.0	2.4	25.3	0.0961	90.7	137.0	0.6623	

Elev From (ft)	Elev To (ft)	Member	Upper Termination Connectors				Lower Termination Connectors					
			MQ/I	phiVn (kips)	Num Reqd	Num Actual	Ratio	MQ/I (kips)	phiVn (kip)	Num Reqd	Num Actual	Ratio
0.00	9.00	SOL #20 All Thread Bar	0	12	0	0	0.0000	0	12	0	0	0.0000
9.00	87.23	SOL #20 All Thread Bar	154.728	12	13	14	0.9210	0	12	0	0	0.0000
35.25	48.25	PL PL 4" x 1"	112.0481	25.27	5	6	0.7390	117.3285	25.27	5	9	0.5159
53.13	68.13	PL PL 4" x 1"	0	25.27	0	6	0.0000	0	25.27	0	6	0.0000
68.13	71.88	PL PL 4" x 1"	92.7222	25.27	4	6	0.6115	96.5709	25.27	4	6	0.6369
71.88	79.63	PL PL 4" x 1"	81.1624	25.27	4	6	0.5353	89.4297	25.27	4	6	0.5898



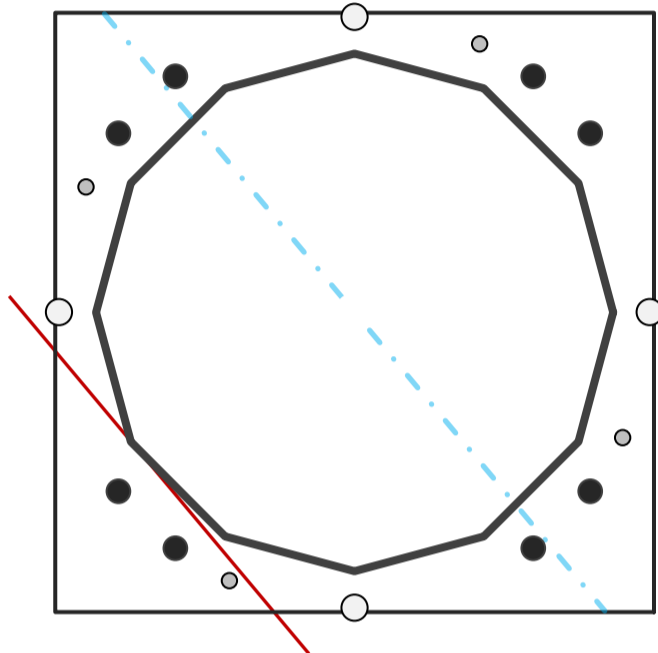
## Base Plate & Anchor Rod Analysis

Pole Dimensions		
Number of Sides	12	-
Diameter	37	in
Thickness	3/8	in
Orientation Offset		°

Base Reactions		
Moment, Mu	2,359.4	k-ft
Axial, Pu	44.3	k
Shear, Vu	23.1	k
Neutral Axis	130	°

Report Capacities		
Component	Capacity	Result
Base Plate	59%	Pass
Anchor Rods	66%	Pass
Dwyidag	55%	Pass

Base Plate		
Shape	Square	-
Width	44.5	in
Thickness	2 1/2	in
Grade	A572-50	
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	0	in
Orientation Offset		°
Anchor Rod Detail	c	$\eta=0.55$
Clear Distance	N/A	in
Applied Moment, Mu	1087.8	k
Bending Stress, $\phi Mn$	1849.7	k



Dwyidag Reinforcement		
Quantity	4	-
Bar Size	#20	in
Diameter, $\phi$	2.5	in
Bracket Type	Angle	-
Circle	43.88	in
Orientation Offset	0	°
Applied Force, Pu	200.9	k
Dwyidag Bar, $\phi Pn$	368.2	k

Original Anchor Rods		
Arrangement	Cluster	-
Quantity	8	-
Diameter, $\phi$	2 1/4	in
Bolt Circle	44	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	6.0	in
Orientation Offset	0	°
Applied Force, Pu	160.7	k
Anchor Rods, $\phi Pn$	243.6	k

Additional Anchor Rods		
Quantity	4	-
Diameter, $\phi$	1 1/2	in
Bolt Circle	44	in
Grade	Other	
Yield Strength, Fy	109	ksi
Tensile Strength, Fu	125	ksi
Bypass Base?	No	
Orientation Offset	65	°
Applied Force, Pu	62.8	k
Additional Rod, $\phi Pn$	131.7	k



# Calculations for Monopole Base Plate & Anchor Rod Analysis

## Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	23.1	1420.0	0.60
Anchor Rod Forces	21.0	1167.5	0.49
Additional Bolt (Grp1) Forces	2.1	252.4	0.11
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	939.5	0.40
Stiffener Forces	0.0	0.0	0.00

## Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in <sup>2</sup>	in <sup>2</sup>	in <sup>4</sup>	#	in <sup>4</sup>
Pole	42.6566	3.5547	0.1675		7154.41
Bolt	3.9761	3.2477	0.8393	4.5	6294.24
Bolt1	1.7671	1.4053	0.1571	6	1360.91
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	4.9087	4.9087	1.9175		4733.45
Stiffener	0.0000	0.0000	0.0000		0.00

### Base Plate

Shape	Square	-
Width, W	44.5	in
Thickness, t	2.5	in
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Base Plate Chord	24.723	in
Detail Type	c	-
Detail Factor	0.55	-
Clear Distance	N/A	-

### Anchor Rods

Anchor Rod Quantity, N	8	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	44	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	160.7	k
Applied Shear, Vu	0.2	k
Compressive Capacity, φPn	243.6	k
Tensile Capacity, φRnt	0.660	OK
Interaction Capacity	0.661	OK

### External Base Plate

Chord Length AA	25.808	in
Additional AA	0.500	in
Section Modulus, Z	41.105	in <sup>3</sup>
Applied Moment, Mu	1087.8	k-ft
Bending Capacity, φMn	1849.7	k-ft
Capacity, Mu/φMn	0.588	OK
Chord Length AB	24.498	in
Additional AB	0.500	in
Section Modulus, Z	39.059	in <sup>3</sup>
Applied Moment, Mu	838.8	k-ft
Bending Capacity, φMn	1757.7	k-ft
Capacity, Mu/φMn	0.477	OK

### Additional Bolt Group 1

Bolt Quantity, N	4	-
Bolt Diameter, d	1.5	in
Bolt Circle, BC	44	in
Yield Strength, Fy	109	ksi
Tensile Strength, Fu	125	ksi
Applied Axial, Pu	62.8	k
Applied Shear, Vu	1.6	k
Compressive Capacity, φPn	131.7	k
Compressive Capacity, φPn	0.476	OK
Interaction Capacity	0.499	OK

Bend Line Length	0.000	in
Additional Bend Line	0.000	in
Section Modulus, Z	0.000	in <sup>3</sup>
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 <sup>3</sup>
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, φMn	0.0	k-ft
Capacity, Mu/φMn		

### Dywidag Reinforcement

Dywidag Quantity, N	4	-
Dywidag Diameter, d	2.5	in
Bolt Circle, BC	43.88	in
Yield Strength, Fy	80	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	200.9	k
Compressive Capacity, φPn	368.2	k
Capacity, Pu/φPn	0.546	OK

# Flange Plate Analysis

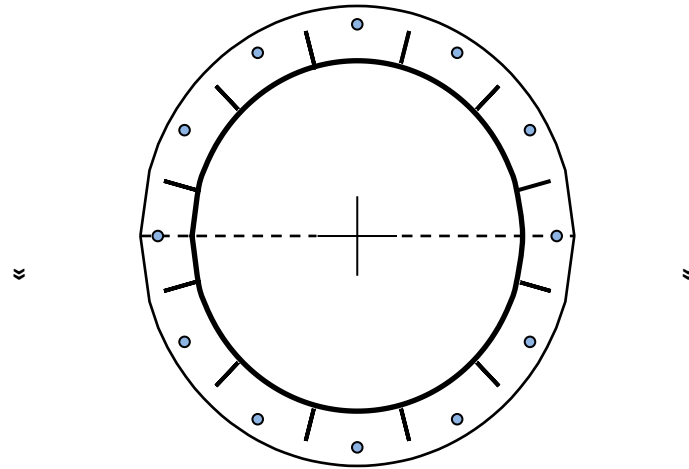
Flange Plate	Plate Type	<b>Flange</b>	<b>@ 111 ft</b>
	Pole Diameter	21.33	in
	Pole Thickness	0.25	in
	Plate Diameter	28	in
	Plate Thickness	1	in
	Plate Fy	36	ksi
	Weld Length	0.1875	in
	f <sub>s</sub> Resistance	114.35	k-in
	Applied	75.66	k-in

Code Rev.	<b>H</b>
Moment	340.7 k-ft
Axial	12.8 k

Date	10/15/2021
Engineer	Sammie.Brown
Site #	302480
Carrier	T-Mobile

Stiffeners	#	<b>12</b>	<b>Show</b>
	Thickness	0.5	in
	Length	3	in
	Height	4	in
	Chamfer	1	in
	Offset Angle	0	°
	Fy	36	ksi

Bolts	#	<b>12</b>	
	Bolt Circle (R)adial / (S)quare	25.75	in
	Bolt Gap	R	
	Diameter	6	in
	Hole Diameter	1	in
	Type	1.125	in
	Fy	A325	
	Fu	92	ksi
	f <sub>s</sub> Resistance	120	ksi
Applied	54.52	k	
	51.82	k	



Reinforcement	#		
---------------	---	--	--

**Plate Stress Ratio:**  
66% Pass

**Bolt Stress Ratio:**  
95% Pass

Extra Bolts	O	#	
-------------	---	---	--

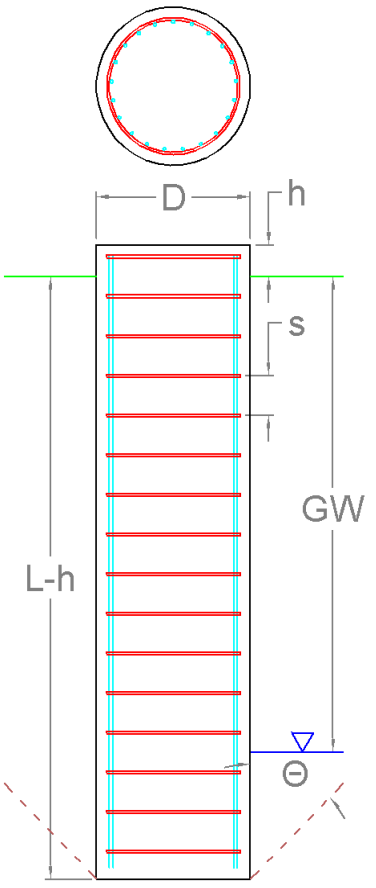
# Pier Foundation Analysis (ANSI/TIA-222-H)

Foundation Analysis Parameters			
Pier Diameter	<i>D</i>	5.00	ft
Pier Embedment	<i>L-h</i>	30.8	ft
Pier Height above Ground	<i>H</i>	0.25	ft
Water Table Depth [BGL]	<i>GW</i>	2	ft
Pullout Angle	$\Theta$	30	°
Unit Weight of Concrete		150	pcf
Uplift Skin Friction Factor		0.960	

Reactions		
Moment, $M_u$	2,359.4	k-ft
Shear, $V_u$	23.1	k
Axial, $P_u$	44.3	k
Uplift, $T_u$	0.0	k

Soil Properties						
Layer Depth (ft)		Unit Weight	Cohesion	Friction Angle	Ultimate Skin Friction	Ultimate Bearing Pressure
TOP	BTM	pcf	psf	°	psf	psf
0.0	2.0	105	0	0	0	0
2.0	4.0	106	0	29	0	0
4.0	6.0	120	0	33	488	0
6.0	8.0	116	0	31	516	0
8.0	10.0	117	0	31	684	0
10.0	15.0	129	0	39	783	0
15.0	20.0	139	0	40	1,173	0
20.0	25.0	140	15,996	0	7,198	0
25.0	30.0	140	16,437	0	7,397	0
30.0	35.0	140	16,499	0	7,424	127,385

Soil Strength Capacities		
Volume of Concrete	608.7	ft <sup>3</sup>
Weight of Concrete [Buoyancy Considered]	56.1	k
Average Soil Unit Weight	70.9	pcf
Skin Friction Resistance	1,440.4	k
Compressive Bearing Resistance	2,501.2	k
Pullout Weight [Minus Concrete Weight]	1,023.0	k
Compressive Force, $P_u$	59.4	k
Nominal Compressive Capacity, $\phi_s P_n$	2,956.2	k
$P_u / \phi_s P_n$	<b>2.0%</b>	
Total Lateral Resistance	7,046.1	k
Inflection Point [BGL]	25.0	ft
Moment at Inflection Point, $M_D$	2,942.3	k-ft
Nominal Moment Capacity, $\phi_s M_n$	19,046.2	k-ft
$M_D / \phi_s M_n$	<b>15.4%</b>	



<b>RAN Template:</b> 67D5A998E Outdoor	<b>A&amp;L Template:</b> 67D5998E_1xAIR+1OP
-------------------------------------------	------------------------------------------------

### Section 1 - Site Information

**Site ID:** CTNH521A  
**Status:** Draft  
**Version:** 8  
**Project Type:** Anchor  
**Approved:** Not Approved  
**Approved By:** Not Approved  
**Last Modified:** 8/16/2021 4:23:37 PM  
**Last Modified By:** Hansraj.Rana4@T-Mobile.com

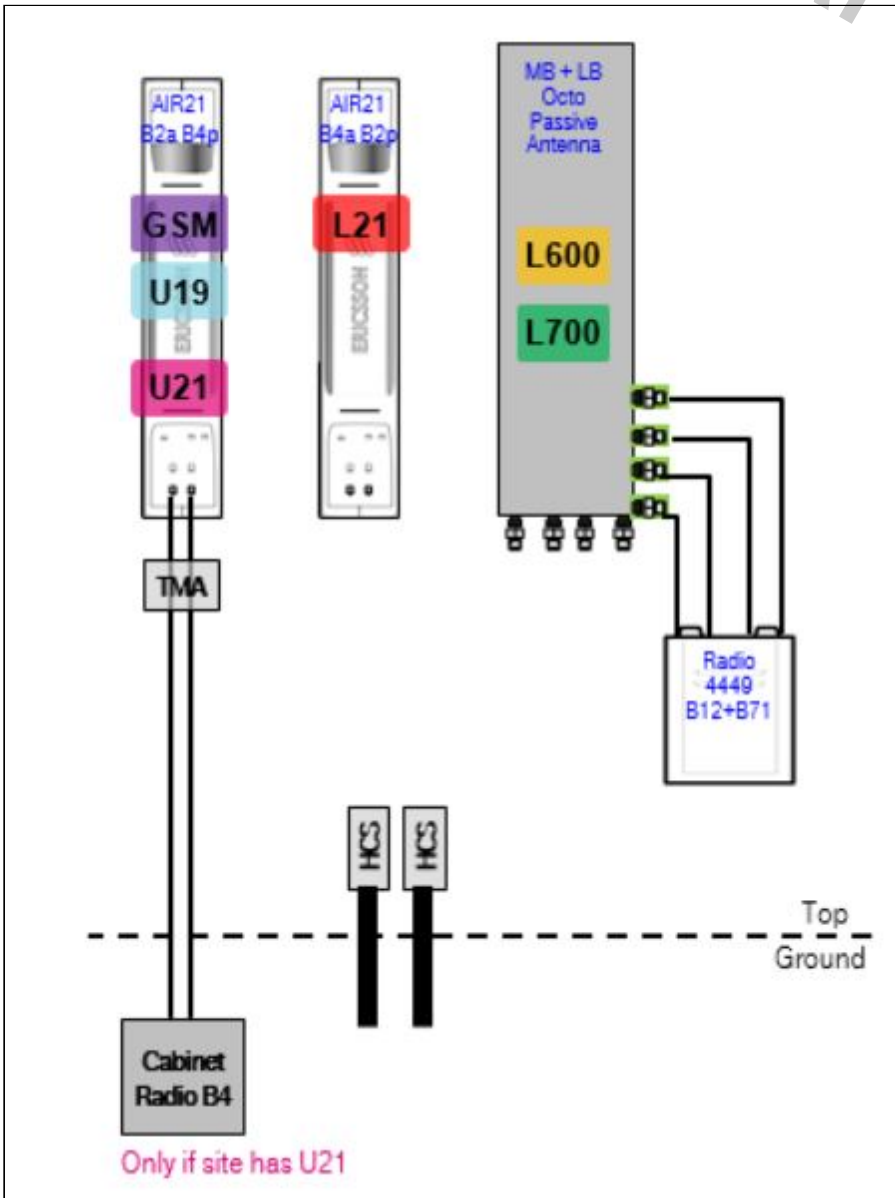
**Site Name:** ATC Woodbridge Monopole  
**Site Class:** Monopole  
**Site Type:** Structure Non Building  
**Plan Year:** 2021  
**Market:** CONNECTICUT CT  
**Vendor:** Ericsson  
**Landlord:** <undefined>

**Latitude:** 41.34139000  
**Longitude:** -72.99361000  
**Address:** 77 Pease Rd  
**City, State:** Woodbridge, CT  
**Region:** NORTHEAST

<b>RAN Template:</b> 67D5A998E Outdoor		<b>AL Template:</b> 67D5998E_1xAIR+1OP		
<b>Sector Count:</b> 3	<b>Antenna Count:</b> 6	<b>Coax Line Count:</b> 0	<b>TMA Count:</b> 0	<b>RRU Count:</b> 6

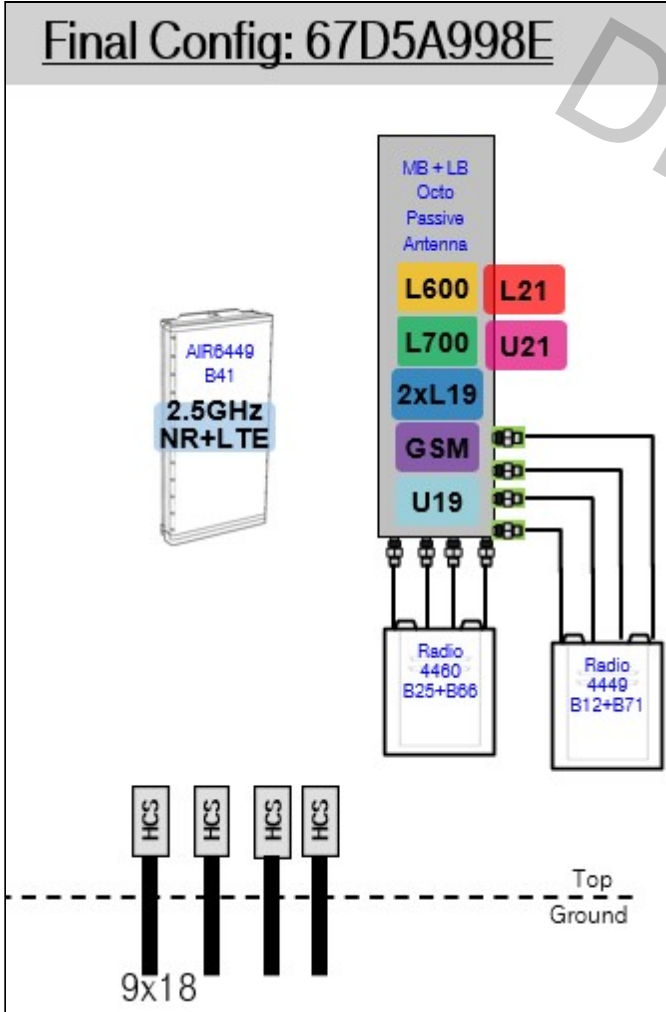
### Section 2 - Existing Template Images

67D02C.JPG



Notes:

67D5A998E.jpg



Notes:

DRAFT

Section 4 - Siteplan Images

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

DRAFT

### Section 5 - RAN Equipment

#### Existing RAN Equipment

Template: 67D02C Outdoor

<b>Enclosure</b>	1		
<b>Enclosure Type</b>	RBS 6131		
<b>Baseband</b>	DUW30 U1900	BB 6630 L2100	BB 6630 L700 L600 N600
<b>Hybrid Cable System</b>	Ericsson 9x18 HCS *Select Length*	Ericsson 6x12 HCS *Select AWG & Length*	Ericsson 6x12 HCS *Select Length & AWG* (x 2)

#### Proposed RAN Equipment

Template: 67D5A998E Outdoor

Enclosure	1	2	3
<b>Enclosure Type</b>	RBS 6131	Enclosure 6160	B160
<b>Baseband</b>	DUW30 U1900	BB 6630 L700 L600 N600	BB 6630 L2100 L1900
<b>Hybrid Cable System</b>	Ericsson 6x12 HCS *Select Length & AWG* (x 3)	PSU 4813 Ericsson Hybrid Trunk 6/24 4AWG 100m	
<b>Transport System</b>		CSR IXRe V2 (Gen2)	

#### RAN Scope of Work:

- Remove and return all cabinet radios from existing base station cabinet.
- Add (1) Enclosure 6160.
- Add (1) iXRe Router to new Enclosure 6160.
- Add (1) BB6648 for L2500 and N2500 (MMBB - Mixed Mode Baseband) to new Enclosure 6160.
- Add (1) PSU4813 Voltage Booster to new Enclosure 6160.
- Add (1) Battery Cabinet B160.
- Existing : (3) 6X12 (1) 9x18 - Remove (1) 9x18
- Add (1) 6X24 HCS terminating at the Enclosure 6160. Connect DC for the AIR6449 B41 to the PSU4813 Voltage Booster.

Section 6 - A&L Equipment

Existing Template: 67D02C\_2xAIR+10P  
Proposed Template: 67D5998E\_1xAIR+10P

Sector 1 (Existing) view from behind

<b>Coverage Type</b>	A - Outdoor Macro							
<b>Antenna</b>	1		2			3		
<b>Antenna Model</b>	Ericsson - AIR21 KRC118023-1_B2A_B4P (Quad)		RFS - APXVAARR24_43-U-NA20 (Octo)			Ericsson - AIR21 B4A/B12P 4ft (Quad)		
<b>Azimuth</b>	(30)		(30)			(30)		
<b>M. Tilt</b>	(0)		(0)			(0)		
<b>Height</b>	(130)		(130)			(130)		
<b>Ports</b>	P1	P2	P3	P4	P5	P6	P7	P8
<b>Active Tech.</b>	U1900		L700 L600 N600	L700 L600 N600			L2100	
<b>Dark Tech.</b>								
<b>Restricted Tech.</b>								
<b>Decomm. Tech.</b>								
<b>E. Tilt</b>	(2)		(2)	(2)			(2)	
<b>Cables</b>	Fiber Jumper - 15 ft.		Coax Jumper - 15 ft. Fiber Jumper - 15 ft.	Coax Jumper - 15 ft.			Fiber Jumper - 15 ft.	
<b>TMA's</b>								
<b>Diplexers / Combiners</b>								
<b>Radio</b>			Radio 4449 B71+B8 5 (At Antenna)	SHARED Radio 4449 B71+B8 5 (At Antenna)				
<b>Sector Equipment</b>								

Unconnected Equipment:

Scope of Work:

New platform with handrails.  
AIR21 B2A/B4P for U1900 will be placed in New Position 1.  
Remove RRUS11 B12.  
Add (1) LB/MB Octo to New Position 2.  
Add (1) Radio 4449 B71+B8 to New Position 2 for L600 and L700.  
AIR21 B4A/B12P for L2100 will be placed in New Position 3.

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



Sector 1 (Proposed) view from behind						
<b>Coverage Type</b>	A - Outdoor Macro					
<b>Antenna</b>	1			2		
<b>Antenna Model</b>	Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)			RFS - APXVAARR24_43-U-NA20 (Octo)		
<b>Azimuth</b>	30			30		
<b>M. Tilt</b>	0			0		
<b>Height</b>	130			130		
<b>Ports</b>	<b>P1</b>	<b>P2</b>	<b>P3</b>	<b>P4</b>	<b>P5</b>	<b>P6</b>
<b>Active Tech.</b>	L2500 N2500	L2500 N2500	L700 L600 N600	L700 L600 N600	L2100 L1900 U1900	L2100 L1900 U1900
<b>Dark Tech.</b>						
<b>Restricted Tech.</b>						
<b>Decomm. Tech.</b>						
<b>E. Tilt</b>	2	2	2	2	2	2
<b>Cables</b>	Fiber Jumper	Fiber Jumper	Coax Jumper (x2) Fiber Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2) Fiber Jumper (x2)	Coax Jumper (x2) Fiber Jumper (x2)
<b>TMAs</b>						
<b>Diplexers / Combiners</b>						
<b>Radio</b>			Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)
<b>Sector Equipment</b>						

**Unconnected Equipment:**

**Scope of Work:**

There will be Two antennae per sector.  
 Remove all TMAs.  
 Remove all Coaxial Lines.  
 Remove AIR21 B2P/B4A from Position 1.  
 Install (1) AIR6449 B41 for L2500 and N2500 in Position 1.  
 Add (1) Radio 4460 B25+B66 for L2100, L1900, U1900 to Position 2 at antenna.  
 Remove AIR21 from Position 3.  
 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.

Sector 2 (Existing) view from behind								
Coverage Type	A - Outdoor Macro							
Antenna	1		2				3	
Antenna Model	Ericsson - AIR21 KRC118023-1_B2A_B4P (Quad)		RFS - APXVAARR24_43-U-NA20 (Octo)				Ericsson - AIR21 B4A/B12P 4ft (Quad)	
Azimuth	180		180				180	
M. Tilt	0		0				0	
Height	130		130				130	
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	U1900		L700 L600 N600	L700 L600 N600			L2100	
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt	2		2	2			2	
Cables	Fiber Jumper - 15 ft.		Coax Jumper - 15 ft. Fiber Jumper - 15 ft.	Coax Jumper - 15 ft.			Fiber Jumper - 15 ft.	
TMA's								
Diplexers / Combiners								
Radio			Radio 4449 B71+B8 5 (At Antenna)	SHARED Radio 4449 B71+B8 5 (At Antenna)				
Sector Equipment								

**Unconnected Equipment:**

**Scope of Work:**

New platform with handrails.  
 AIR21 B2A/B4P for U1900 will be placed in New Position 1.  
 Remove RRUS11 B12.  
 Add (1) LB/MB Octo to New Position 2.  
 Add (1) Radio 4449 B71+B12 to New Position 2 for L600 and L700.  
 AIR21 B4A/B12P for L2100 will be placed in New Position 3.

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

Sector 2 (Proposed) view from behind						
<b>Coverage Type</b>	A - Outdoor Macro					
<b>Antenna</b>	1			2		
<b>Antenna Model</b>	Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)			RFS - APXVAARR24_43-U-NA20 (Octo)		
<b>Azimuth</b>	180			180		
<b>M. Tilt</b>	0			0		
<b>Height</b>	130			130		
<b>Ports</b>	<b>P1</b>	<b>P2</b>	<b>P3</b>	<b>P4</b>	<b>P5</b>	<b>P6</b>
<b>Active Tech.</b>	L2500 N2500	L2500 N2500	L700 L600 N600	L700 L600 N600	L2100 L1900 U1900	L2100 L1900 U1900
<b>Dark Tech.</b>						
<b>Restricted Tech.</b>						
<b>Decomm. Tech.</b>						
<b>E. Tilt</b>	2	2	2	2	2	2
<b>Cables</b>	Fiber Jumper	Fiber Jumper	Coax Jumper (x2) Fiber Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2) Fiber Jumper (x2)	Coax Jumper (x2) Fiber Jumper (x2)
<b>TMAs</b>						
<b>Diplexers / Combiners</b>						
<b>Radio</b>			Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)
<b>Sector Equipment</b>						

**Unconnected Equipment:**

**Scope of Work:**

There will be Two antennae per sector.  
 Remove all TMAs.  
 Remove all Coaxial Lines.  
 Remove AIR21 B2P/B4A from Position 1.  
 Install (1) AIR6449 B41 for L2500 and N2500 in Position 1.  
 Add (1) Radio 4460 B25+B66 for L2100, L1900, U1900 to Position 2 at antenna.  
 Remove AIR21 from Position 3.  
 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.

Sector 3 (Existing) view from behind								
Coverage Type	A - Outdoor Macro							
Antenna	1		2				3	
Antenna Model	Ericsson - AIR21 KRC118023-1_B2A_B4P (Quad)		RFS - APXVAARR24_43-U-NA20 (Octo)				Ericsson - AIR21 B4A/B12P 4ft (Quad)	
Azimuth	270		270				270	
M. Tilt	0		0				0	
Height	130		130				130	
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	U1900		L700 L600 N600	L700 L600 N600			L2100	
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt	2		2	2			2	
Cables	Fiber Jumper - 15 ft.		Coax Jumper - 15 ft. Fiber Jumper - 15 ft.	Coax Jumper - 15 ft.			Fiber Jumper - 15 ft.	
TMA's								
Diplexers / Combiners								
Radio			Radio 4449 B71+B8 5 (At Antenna)	SHARED Radio 4449 B71+B8 5 (At Antenna)				
Sector Equipment								

**Unconnected Equipment:**

**Scope of Work:**

New platform with handrails.  
 AIR21 B2A/B4P for U1900 will be placed in New Position 1.  
 Remove RRUS11 B12.  
 Add (1) LB/MB Octo to New Position 2.  
 Add (1) Radio 4449 B71+B12 to New Position 2 for L600 and L700.  
 AIR21 B4A/B12P for L2100 will be placed in New Position 3.

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

Sector 3 (Proposed) view from behind						
<b>Coverage Type</b>	A - Outdoor Macro					
<b>Antenna</b>	1			2		
<b>Antenna Model</b>	Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)			RFS - APXVAARR24_43-U-NA20 (Octo)		
<b>Azimuth</b>	270			270		
<b>M. Tilt</b>	0			0		
<b>Height</b>	130			130		
<b>Ports</b>	<b>P1</b>	<b>P2</b>	<b>P3</b>	<b>P4</b>	<b>P5</b>	<b>P6</b>
<b>Active Tech.</b>	L2500 N2500	L2500 N2500	L700 L600 N600	L700 L600 N600	L2100 L1900 U1900	L2100 L1900 U1900
<b>Dark Tech.</b>						
<b>Restricted Tech.</b>						
<b>Decomm. Tech.</b>						
<b>E. Tilt</b>	2	2	2	2	2	2
<b>Cables</b>	Fiber Jumper	Fiber Jumper	Coax Jumper (x2) Fiber Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2) Fiber Jumper (x2)	Coax Jumper (x2) Fiber Jumper (x2)
<b>TMA's</b>						
<b>Diplexers / Combiners</b>						
<b>Radio</b>			Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)
<b>Sector Equipment</b>						

**Unconnected Equipment:**

**Scope of Work:**

There will be Two antennae per sector.  
 Remove all TMA's.  
 Remove all Coaxial Lines.  
 Remove AIR21 B2P/B4A from Position 1.  
 Install (1) AIR6449 B41 for L2500 and N2500 in Position 1.  
 Add (1) Radio 4460 B25+B66 for L2100, L1900, U1900 to Position 2 at antenna.  
 Remove AIR21 from Position 3.  
 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.

<b>RAN Template:</b> 67D5A998E Outdoor	<b>A&amp;L Template:</b> 67D5998E_1xAIR+1OP
-------------------------------------------	------------------------------------------------

<b>Section 7 - Power Systems Equipment</b>
--------------------------------------------

<b>Existing Power Systems Equipment</b>
----- This section is intentionally blank. -----

<b>Proposed Power Systems Equipment</b>	
<b>Enclosure</b>	1
<b>Enclosure Type</b>	Enclosure 6160

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

T-Mobile Existing Facility

Site ID: CTNH521A

ATC Woodbridge Monopole  
77 Pease Road  
Woodbridge, Connecticut 06525

**November 23, 2021**

**EBI Project Number: 6221007371**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general population allowable limit:	<b>17.59%</b>

November 23, 2021

T-Mobile

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

Emissions Analysis for Site: CTNH521A - ATC Woodbridge Monopole

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **77 Pease Road in Woodbridge, 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The number of  $\mu\text{W}/\text{cm}^2$  calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits; therefore, it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

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



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

Additional details can be found in FCC OET 65.

## **CALCULATIONS**

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 77 Pease Road in Woodbridge, 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) 2 UMTS 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 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.
- 7) 1 LTE Traffic channel (LTE IC and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 60 Watts.
- 8) 1 LTE Broadcast channel (LTE IC and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 20 Watts.
- 9) 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.
- 10) 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.
- 11) 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.
- 12) 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.
- 13) The antennas used in this modeling are the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector A, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector B, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied

specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

- 14) The antenna mounting height centerline of the proposed antennas is 130 feet above ground level (AGL).
- 15) 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.
- 16) 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 #:	I	Antenna #:	I	Antenna #:	I
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 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):	130 feet	Height (AGL):	130 feet	Height (AGL):	130 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 AI MPE %:	<b>8.50%</b>	Antenna BI MPE %:	<b>8.50%</b>	Antenna CI MPE %:	<b>8.50%</b>
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd / 16.35 dBd
Height (AGL):	130 feet	Height (AGL):	130 feet	Height (AGL):	130 feet
Channel Count:	11	Channel Count:	11	Channel Count:	11
Total TX Power (W):	500 Watts	Total TX Power (W):	500 Watts	Total TX Power (W):	500 Watts
ERP (W):	15,848.33	ERP (W):	15,848.33	ERP (W):	15,848.33
Antenna A2 MPE %:	<b>5.02%</b>	Antenna B2 MPE %:	<b>5.02%</b>	Antenna C2 MPE %:	<b>5.02%</b>

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	13.52%
AT&T	1.48%
Verizon	2.59%
<b>Site Total MPE % :</b>	<b>17.59%</b>

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	13.52%
T-Mobile Sector B Total:	13.52%
T-Mobile Sector C Total:	13.52%
<b>Site Total MPE % :</b>	<b>17.59%</b>

## 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 ( $\mu\text{W}/\text{cm}^2$ )	Frequency (MHz)	Allowable MPE ( $\mu\text{W}/\text{cm}^2$ )	Calculated % MPE
T-Mobile 2500 MHz LTE IC & 2C Traffic	1	11044.63	130.0	25.82	2500 MHz LTE IC & 2C Traffic	1000	2.58%
T-Mobile 2500 MHz LTE IC & 2C Broadcast	1	1074.06	130.0	2.51	2500 MHz LTE IC & 2C Broadcast	1000	0.25%
T-Mobile 2500 MHz NR Traffic	1	22089.26	130.0	51.65	2500 MHz NR Traffic	1000	5.16%
T-Mobile 2500 MHz NR Broadcast	1	2148.13	130.0	5.02	2500 MHz NR Broadcast	1000	0.50%
T-Mobile 600 MHz LTE	2	591.73	130.0	2.77	600 MHz LTE	400	0.69%
T-Mobile 600 MHz NR	1	1577.94	130.0	3.69	600 MHz NR	400	0.92%
T-Mobile 700 MHz LTE	2	648.82	130.0	3.03	700 MHz LTE	467	0.65%
T-Mobile 1900 MHz UMTS	2	1101.85	130.0	5.15	1900 MHz UMTS	1000	0.52%
T-Mobile 1900 MHz LTE	2	2203.69	130.0	10.31	1900 MHz LTE	1000	1.03%
T-Mobile 2100 MHz LTE	2	2589.11	130.0	12.11	2100 MHz LTE	1000	1.21%
						<b>Total:</b>	<b>13.52%</b>

• 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:	13.52%
Sector B:	13.52%
Sector C:	13.52%
T-Mobile Maximum MPE % (Sector A):	13.52%
Site Total:	17.59%
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **17.59%** 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.