



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

August 25, 2020

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

RE: Notice of Exempt Modification  
23 Kelleher Court, Wethersfield CT 06109  
Latitude: 41.715275  
Longitude: -72.690275  
T-Mobile Site#: CTHA014A\_Anchor

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 151-foot level of the existing 179-foot monopole tower at 23 Kelleher Court, Wethersfield CT. The 179-foot tower and property are both owned by the Town of Wethersfield. T-Mobile now intends to replace three (3) of its existing antennas with three (3) new 2500 MHz antenna. The new antennas would be installed at the 151-foot level of the tower.

Planned Modifications:

Remove: (6) 1-5/8" Coax

Remove and Replace:

(3)AIR21 B2A/B4P 1900/2100 MHz (REMOVE) - (3) AIR6449 B41 Antenna 2500 MHz (REPLACE)  
(2) 9x18 Fiber lines (REMOVE) – (2) 6x12 Fiber Lines (REPLACE)

Install New:

(3) RRU 4415 B25  
(3) Diplexers

Existing to Remain:

(3) APXVAARR24\_43U-NA20 Antenna 600/700/1900/2100 MHz  
(3) AIR32 KRD901146-1 B66A\_B2A 1900/2100 MHz  
(6) 1-5/8" Coax  
(2) Fiber Hybrid Line  
(3) Twin TMA  
(3) RRU 4449 B12/B71



Ground:

- Upgrade Existing 6131 Cabinet (Internally)
- New 6160 Cabinet
- New B160 Cabinet
- New 11x12 Concrete pad within existing 225 Sq. ft. lease area

This facility was approved by the Wethersfield ZBA—on April 17, 2002 Town of Wethersfield was approved to erect two (2) tower shelters and a tower in the side yard of 23 Kelleher CT. Please see attached minutes provided by the Town of Wethersfield Zoning Department.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-SOj-73, a copy of this letter is being sent to Mayor Michael L Rell, Elected Official and Peter Gillespie, Zoning Director for the Town of Wethersfield, as well as the property owner and the tower owner.

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

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

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

Sincerely,

Victoria Masse

Mobile: 860-306-2326

Fax: 413-521-0558

Office: 420 Main Street, Unit 2, Sturbridge MA 01566

Email: victoria@northeastitesolutions.com



**NSS** **NORTHEAST**  
SITE SOLUTIONS  
*Turnkey Wireless Development*

Attachments

cc: Mayor Michael L. Rell -Wethersfield elected official  
Peter Gillespie – Director of Planning and Zoning  
Town of Wethersfield - as property and tower owner

NORTHEAST SITE SOLUTIONS, LLC  
420 MAIN ST. BUILDING #4, 2nd FLOOR  
Sturbridge, MA 01566

WEBSTER BANK  
51-7010/2111

4116

08/27/2020

PAY TO THE ORDER OF Connecticut Siting Council

\*625.00

\$

EXACTLY SIX HUNDRED TWENTY-FIVE DOLLARS

DOLLARS

Connecticut Siting Council  
10 Franklin Square  
New Britain CT 06051

*Lisa Linn Allen*  
AUTHORIZED SIGNATURE

MEMO

CTHA014A Anchor

⑈004116⑈ ⑆211170101⑆10 0010608887⑈

Check#: 4116	Date: 08/27/2020	Vendor#: 10023 Connecticut Siting Co	Check Total: *625.00	4116		
Invoice#	Invoice Date	Job/Description	Balance	Retain	Discount	This Check
CTHA014A CSC Zoning	08/27/2020	2 TMO Anchor Program	625.00			625.00

Check#: 4116	Date: 08/27/2020	Vendor#: 10023 Connecticut Siting Co	Check Total: *625.00	4116		
Invoice#	Invoice Date	Job/Description	Balance	Retain	Discount	This Check
CTHA014A CSC Zoning	08/27/2020	2 TMO Anchor Program	625.00			625.00

# Exhibit A



Town of Wethersfield  
505 SILAS DEANE HIGHWAY  
WETHERSFIELD, CONNECTICUT 06109



17 April 2002

Mr. Michael J. Turner  
Town Engineer  
Town of Wethersfield  
505 Silas Deane Highway  
Wethersfield, Connecticut 06109

Dear Mr. Turner:

Re: Application No. 5694-2002

At a meeting of the Zoning Board of Appeals held on Monday, April 15, 2002, it was unanimously voted that the application seeking variance to erect two equipment shelters and tower in the side yard at 23 Kelleher Court, east side, A-1 Residence Zone, **BE APPROVED AS SUBMITTED.**

A building permit must be obtained from, and all construction is done under the supervision of the Building Inspection Division, Town of Wethersfield.

The effective date of this permission is **April 19, 2002.** This variance must be recorded with the Town Clerk, Town of Wethersfield immediately after the 15 days from the effective date of this permission. Please come to the Building Department first to pick up the form to be recorded in the Town Clerk's Office.

Very truly yours,

TOWN OF WETHERSFIELD  
ZONING BOARD OF APPEALS  
MORRIS R. BOREA, CHAIRMAN

*Nancy Azeredo*  
Nancy Azeredo, Duly Authorized for  
Bruce T. Bockstael, Clerk

na  
Enc.

Cc: Lee C. Erdmann, Town Manager

**WETHERSFIELD ZONING BOARD OF APPEALS  
PUBLIC HEARING**

**April 15, 2002**

The Wethersfield Zoning Board of Appeals held a public hearing on April 15, 2002 at 7:30 PM in the Town Hall, 505 Silas Deane Highway, Wethersfield, Connecticut.

**PRESENT:** Morris R. Borea, Chairman  
Bruce T. Bockstael, Clerk  
Frank A. Falvo, Jr.  
Thomas J. Vaughan, Jr.  
Cynthia Clancy, Alternate

**ABSENT:** J. Edward Brymer, Jr., Vice Chairman

**Also Present:** Brian O'Connor, Assistant Building & Zoning Official

Chairman Borea opened the meeting. Before the meeting started, the public was welcomed to speak regarding anything except specific cases in the past or on the night's agenda. There was no one present who wished to speak.

Mr. O'Connor requested that the agenda be taken out of order as the last applicant, (Application No. 5694-2002), has to be at the Town Council Meeting being held in the Council Chambers at the same time as this meeting. Commissioner Bockstael stated that at the end of the meeting the public would again be asked if they would like to speak regarding Application No. 5694-2002 in case there were any late arrivals.

Commissioner Bockstael read the legal notice into the record.

---

**APPLICATION NO. 5694-2002. Town of Wethersfield** seeking variance to erect two equipment shelters and tower in the side yard at 23 Kelleher Court, east side, A-1 Residence Zone. (Section 167-75)

Mike Turner, Town Engineer appeared before the Board of behalf of the Town of Wethersfield, seeking variance for the location of the two equipment shelters and antenna tower that they would like to locate at Fire House #3 at 23 Kelleher Court. He stated that this is one of three tower sites that the Town is pursuing as part of the new town wide radio system that they are constructing. Mr. Turner stated that this tower site would be the main tower site where most of the radio equipment would be located.



April 15, 2002

Mr. Turner stated that the regulations require that any tower be located in the rear yard. He stated that the upper portion of the site by the parking lot is around elevation 130 to 131, the site drops off in the rear to about elevation 102. Therefore the rear portion of the property would require an antenna tower to be built around 29 to 30 feet taller. He stated that this tower site needs to have a clear line of site to the Newington tower, around 30 to 40 feet above of the tree line. Therefore what they are proposing is that the construction of the tower be in the south west corner of the property, with the equipment shelter adjacent to the tower, generally around 10 feet from the tower.

Chairman Borea questioned how high the tower is going to be. Mr. Turner stated 190 feet. Chairman Borea verified that if it were to be put in the rear yard the tower would have to be around 220 feet. Mr. Turner stated that this was correct, adding that anything over 199 feet needs flashing lights, strobe lights, etc.

There were no further questions or comments from the Board.

There was no one in the audience who wished to speak in favor of this application.

The following audience member wished to speak in opposition to this application:

1. Mr. Robert Young, 20 Coppermill Road, Wethersfield, CT – Stated that he feels this location is a bad site and feels that it will bring down the property value of homes in this area, which will in turn bring down his property value. He stated that he also feels that not all the facts were presented to the public.

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**APPLICATION NO. 5689-2002. Jeannine Steucek** seeking variance to erect a 24'X26' detached garage over the building line at 931 Prospect Street, north side, A-1 Residence Zone. (Section 167-114)

Jeannine Steucek, 931 Prospect Street, Wethersfield, CT, appeared before the Board seeking variance to erect a detached garage over the building line. She stated that she has never had a garage but would like a garage for the protection of her car.



April 15, 2002

**APPLICATION NO. 5693-2002. Sebastian A. Panioto** seeking variance to construct a single car garage and attached entry having less than the required side yard at 95 Mohawk Lane, north side, A Residence Zone. (Section 167-172)

Upon motion made by Commissioner Falvo, Jr., seconded by Chairman Borea and a poll of the Board it was unanimously voted that the above application **BE APPROVED** as submitted.

---

**APPLICATION NO. 5694-2002. Town of Wethersfield** seeking variance to erect two equipment shelters and tower in the side yard at 23 Kelleher Court, east side, A-1 Residence Zone. (Section 167-75)

Upon motion made Chairman Borea, seconded by Commissioner Falvo, Jr., and a poll of the Board it was unanimously voted that the above application **BE APPROVED** as submitted.

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**APPROVAL OF MINUTES**

Tabled until next meeting.

**ADJOURNMENT**

The meeting was adjourned at 8:30PM.

# Exhibit B

CURRENT OWNER		TOPO.	UTILITIES	STRT./ROAD	LOCATION	CURRENT ASSESSMENT			
WETHERSFIELD TOWN OF FIREHOUSE #3 23 KELLEHER CT WETHERSFIELD, CT 06109 Additional Owners:		1 Level	1 All Public			Description	Code	Appraised Value	Assessed Value
						EXEMPT	BAAX	642,900	450,000
						EXEMPT	BAAX	117,400	82,200
						EXEMPT	BAAX	1,371,600	960,100
SUPPLEMENTAL DATA						Total 2,131,900 1,492,300			
Other ID:		SIDE E1		SEQ NO 470400					
LOT NO 7-18		CALLBACK		PENALTY					
CENSUS 4923		SECTION 1		Notice 1 Val					
DISBLD EX		ASSOC PID#		GIS ID: 073060					

6159  
WETHERSFIELD, CT  
**VISION**

RECORD OF OWNERSHIP	BK-VOL/PAGE	SALE DATE	q/u	v/i	SALE PRICE	V.C.	PREVIOUS ASSESSMENTS (HISTORY)								
WETHERSFIELD TOWN OF	0169/0075	06/25/1956	U		0		Yr.	Code	Assessed Value	Yr.	Code	Assessed Value	Yr.	Code	Assessed Value
							2012	100	1,629,500	2010	BAAX	467,300	2008	BAAX	467,300
							2012	100	84,700	2010	BAAX	84,700	2008	BAAX	84,700
										2010	BAAX	1,162,200	2008	BAAX	1,162,200
							Total:		1,714,200	Total:		1,714,200	Total:		1,714,200

EXEMPTIONS				OTHER ASSESSMENTS			
Year	Type	Description	Amount	Code	Description	Number	Amount
Total:							

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD				
NBHD/ SUB	NBHD NAME	STREET INDEX NAME	TRACING	BATCH
0001/A				

APPRAISED VALUE SUMMARY	
Appraised Bldg. Value (Card)	642,900
Appraised XF (B) Value (Bldg)	0
Appraised OB (L) Value (Bldg)	1,371,600
Appraised Land Value (Bldg)	117,400
Special Land Value	0
Total Appraised Parcel Value	2,131,900
Valuation Method:	C
Adjustment:	0
<b>Net Total Appraised Parcel Value</b>	<b>2,131,900</b>

NOTES				
CELL TOWER + EQUIP ON SITE				
2000 GAL DIESEL TANK		METRO PCS LEASE		
CELL TOWER VALUE= 5 SITES@ 3000/MONTH				
5 X 3000 X 12= 180,000		FIREHOUSE 3		
LESS 25% EXP= 135,000/.11= 1,227,250				

BUILDING PERMIT RECORD									
Permit ID	Issue Date	Type	Description	Amount	Insp. Date	% Comp.	Date Comp.	Comments	
M-13-170	08/14/2013	HA	HVAC	21,165	10/07/2013	100	10/01/2013	REPL ONE ROOFTOP A	
B-13-46	03/26/2013	CM	Commercial	20,000	05/01/2013	100	10/01/2013	LEASE AREA EXPANDI	
B-10-152	08/12/2010	BP		15,000	05/11/2012	100	03/02/2012	Install 3 antnmas, 3 dishes	
BP0097	05/11/2009	BP		5,000	10/05/2009	100		Add antenna's and cabine	
BP-0093	04/29/2009	BP		15,000	10/05/2009	100		Install antennas and radi	
EP-0320	11/25/2008	CM	Commercial	15,000	10/05/2009	100		100 amp service & shutof	
EP07225	07/27/2007	EL	Electric	6,400		100		200 amp svce for T-Mobil	

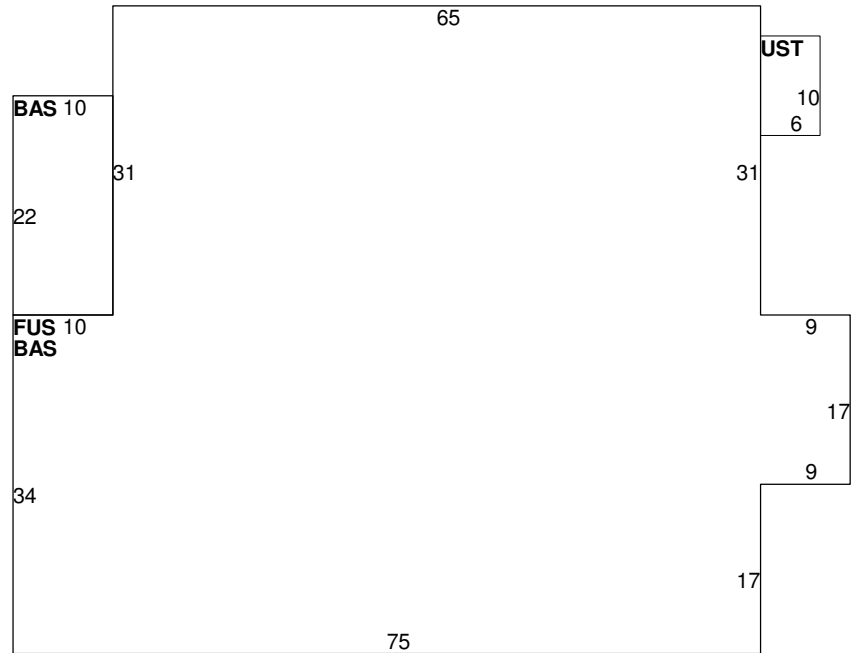
VISIT/ CHANGE HISTORY									
Date	Type	IS	ID	Cd.	Purpose/Result				
10/7/2013			CR	49	No Change After Inspe				
5/1/2013			CR	49	No Change After Inspe				
5/11/2012			CR	49	No Change After Inspe				
10/5/2009			CR	49	No Change After Inspe				
7/25/2008			JL	51	Field review				

LAND LINE VALUATION SECTION																	
B #	Use Code	Use Description	Zone	D	Frontage	Depth	Units	Unit Price	I. Factor	S.A.	C. Factor	ST. Idx	Adj.	Notes- Adj	Special Pricing	Adj. Unit Price	Land Value
1	901C	Municipal MDL-94	A1				1.00	AC	118,800.00	1.00	F		0.90			106,920.00	106,900
1	901C	Municipal MDL-94	A1				1.30	AC	9,000.00	1.00	0		0.90			8,100.00	10,500
Total Card Land Units:							2.30	AC	Parcel Total Land Area: 2.3 AC			Total Land Value: 117,400					

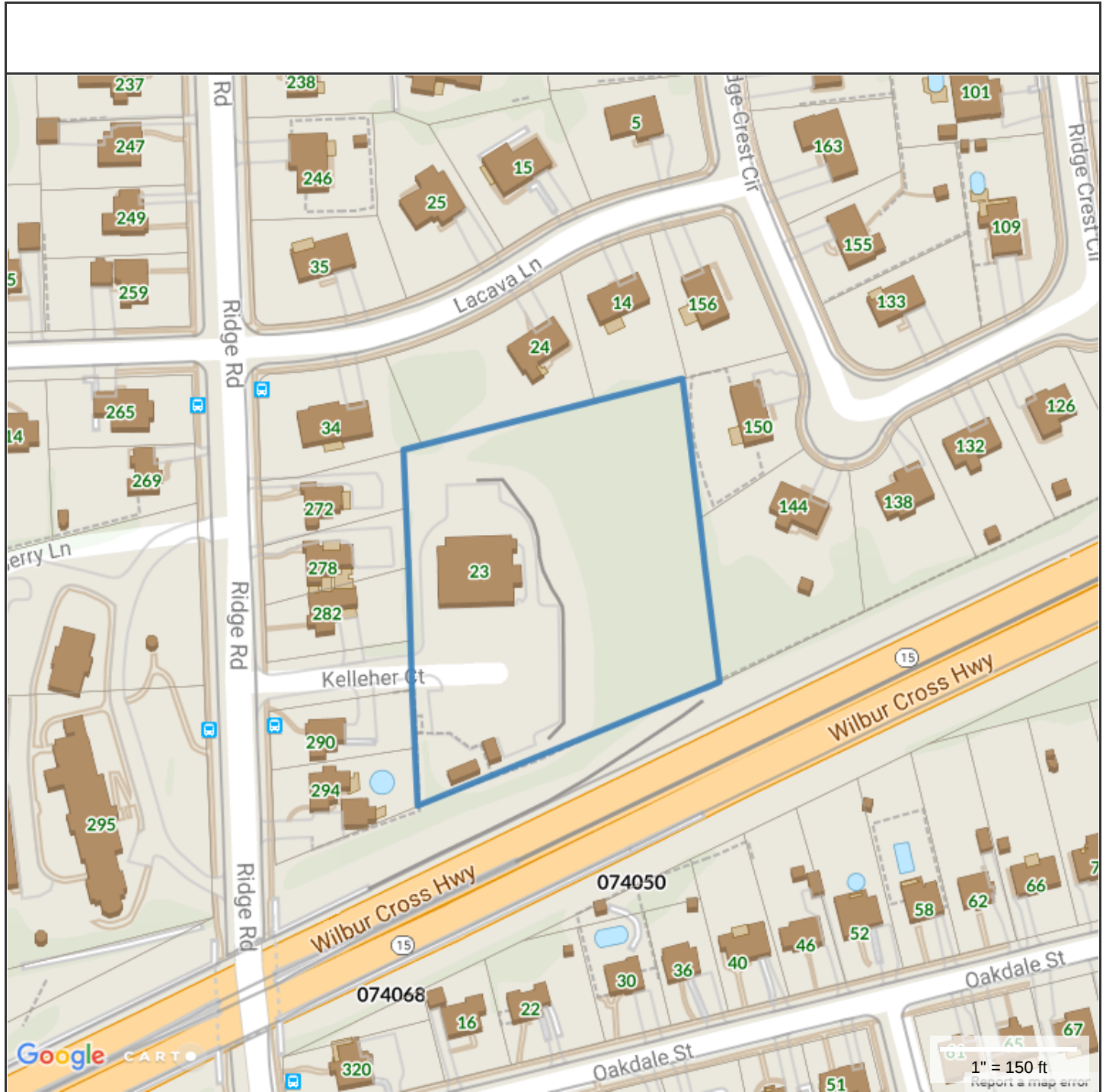
CONSTRUCTION DETAIL				CONSTRUCTION DETAIL (CONTINUED)			
Element	Cd.	Ch.	Description	Element	Cd.	Ch.	Description
Style	59		Fire Station				
Model	96		Ind/Comm				
Grade	06		Good				
Occupancy	1			<b>MIXED USE</b>			
Exterior Wall 1	20		Brick	<i>Code</i>	<i>Description</i>		<i>Percentage</i>
Exterior Wall 2				901C	Municipal MDL-94		100
Roof Structure	03		Gable/Hip	<b>COST/MARKET VALUATION</b>			
Roof Cover	03		Asphalt Shingl	Adj. Base Rate:			85.19
Interior Wall 1	05		Drywall				
Interior Wall 2	03		Plaster				
Interior Floor 1	05		Vinyl/Asphalt	AYB			1969
Interior Floor 2	03		Concr-Finished	Dep Code			G
Heating Fuel	03		Oil/Gas	Remodel Rating			
Heating Type	05		Hot Water	Year Remodeled			
AC Type	03		Central	Dep %			22
Bldg Use	907		Fire-Vol	Functional Obslnc			0
Total Rooms				External Obslnc			0
Total Bedrms	00			Cost Trend Factor			
Total Baths	0			Condition			
Heat/AC	02		HEAT/AC SPLIT	% Complete			
Frame Type	03		MASONRY	Overall % Cond			78
Baths/Plumbing	02		AVERAGE	Apprais Val			642,900
Ceiling/Wall	06		CEIL & WALLS	Dep % Ovr			0
Rooms/Prtns	02		AVERAGE	Dep Ovr Comment			
Wall Height	12			Misc Imp Ovr			0
% Conn Wall	0			Misc Imp Ovr Comment			
				Cost to Cure Ovr			0
				Cost to Cure Ovr Comment			

OB-OUTBUILDING & YARD ITEMS(L) / XF-BUILDING EXTRA FEATURES(B)												
Code	Description	Sub	Sub Descript	L/B	Units	Unit Price	Yr	Gde	Dp Rt	Cnd	%Cnd	Apr Value
PAV1	Asphalt Paving			L	3,600	1.60	1999			G	75	4,300
CB3	PreCastConCel			L	200	350.00	2008			A	50	35,000
CB3	PreCastConCel			L	240	350.00	2008			A	50	42,000
CB3	PreCastConCel			L	360	350.00	2008			A	50	63,000
	CELL SITES			L	5	245,450.00	2008					1,227,300

BUILDING SUB-AREA SUMMARY SECTION							
Code	Description	Living Area	Gross Area	Eff. Area	Unit Cost	Undeprec. Value	
BAS	First Floor	4,938	4,938				
FUS	Finished Upper Story	4,718	4,718				
UST	Unfinished Storage	0	60				
<b>Ttl. Gross Liv/Lease Area:</b>		<b>9,656</b>	<b>9,716</b>				







**Property Information**

Property ID 073060  
 Location 23 KELLEHER CT  
 Owner WETHERSFIELD TOWN OF



**MAP FOR REFERENCE ONLY  
NOT A LEGAL DOCUMENT**

Town of Wethersfield, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Parcels updated 11/14/17  
 Properties updated daily

# Exhibit C



MODIFICATION OF EXISTING WIRELESS FACILITY



**T-MOBILE NORTHEAST LLC**

**PROJECT: ANCHOR**  
**SITE NUMBER: CTHA014A**  
**SITE NAME: HA014/T OF WETHERSFIELD\_MP**  
**SITE ADDRESS: 23 KELLEHER COURT**  
**WETHERSFIELD, CT 06109**  
**(RF CONFIGURATION 67D5997DB\_2xAIR+1OP)**

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

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

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



THIS DOCUMENT IS THE DESIGN PROPERTY AND COPYRIGHT OF FORESITE, LLC. AND FOR THE EXCLUSIVE USE BY THE TITLE CLIENT. DUPLICATION OR USE WITHOUT THE EXPRESS WRITTEN CONSENT OF THE CREATOR IS STRICTLY PROHIBITED. DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

REV	DESCRIPTION	DATE
A	PRELIMINARY	07/30/20
0	FINAL ISSUED	08/24/20
1	REVISED CABLE COUNT	08/25/20

**SITE NUMBER: CTHA014A**  
**SITE NAME: HA014/T OF WETHERSFIELD\_MP**  
**SITE ADDRESS: 23 KELLEHER COURT**  
**WETHERSFIELD, CT 06109**

**SHEET TITLE:**  
 T-1: TITLE SHEET

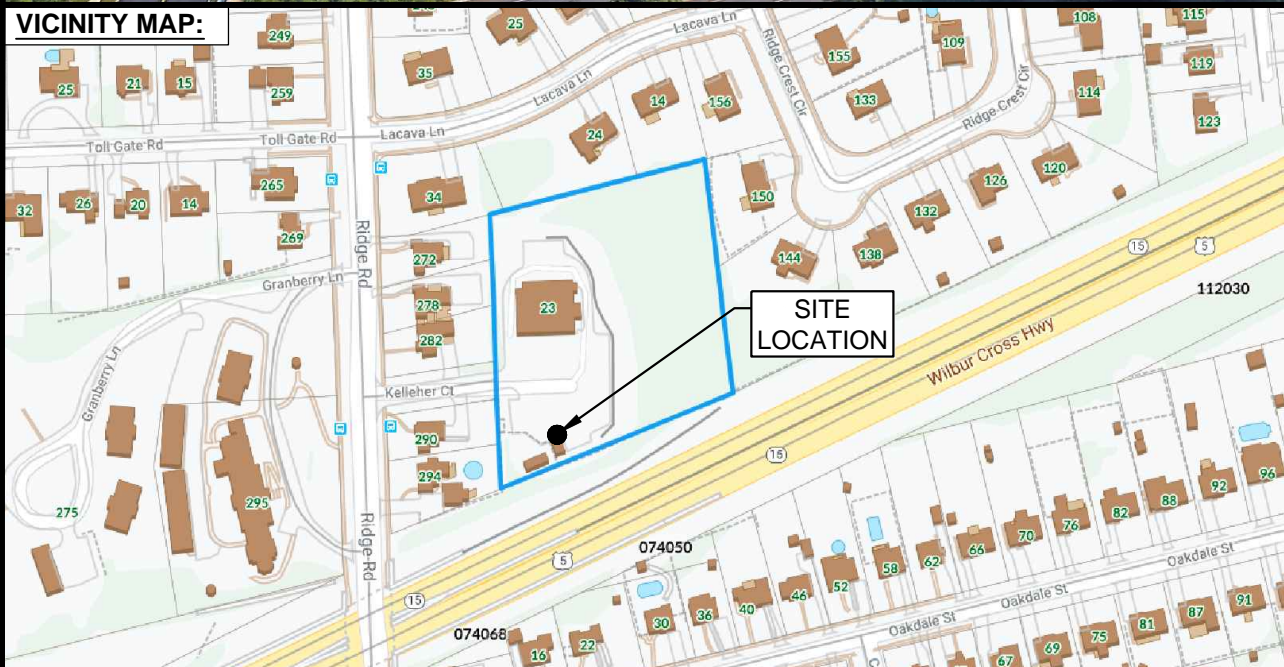
**PROJECT SCOPE:**  
 UPGRADE OF EXISTING WIRELESS FACILITY AS FOLLOWS:

REMOVE (1) NORTEL CABINET.  
 UPGRADE EXISTING RBS 6131 CABINET INTERNALLY.  
 ADD (1) ENCLOSURE 6160 TO EXISTING CONCRETE PAD.  
 ADD (1) BATTERY CABINET B160 TO EXISTING CONCRETE PAD.  
 REPLACE (3) EXISTING ANTENNAS OF TOTAL (9) ANTENNAS.  
 ADD (3) RADIO REMOTE UNITS AND (3) DIPLEXERS AT ANTENNA.  
 REMOVE (6) OF (12) EXISTING 1-5/8" COAX, REMOVE (2) 9X18 HCS LINES, ADD (2) 6X12 HCS LINES FOR FINAL COUNT OF (6) 1-5/8" COAX CABLES AND (4) 6X12 HCS LINES.

**PROJECT INFORMATION:**  
 ADDRESS: 23 KELLEHER COURT  
 WETHERSFIELD, CT 06109  
 STRUCTURE TYPE: MONOPOLE TOWER  
 MAP/LOT: 073 060  
 ZONING DISTRICT: A1  
 COORDINATES: 41°42'55.6"N 72°41'26.3"W  
 AVERAGE GROUND ELEV.: 130'±(AMSL)

**PROJECT TEAM:**  
 APPLICANT: T-MOBILE NORTHEAST, LLC.  
 35 GRIFFIN ROAD SOUTH  
 BLOOMFIELD, CT 06002  
 860-692-7100  
 LANDLORD: WETHERSFIELD TOWN OF  
 FIREHOUSE #3  
 23 KELLEHER CT  
 WETHERSFIELD, CT 06109  
 PROJECT MANAGER: NORTHEAST SITE SOLUTIONS  
 420 MAIN STREET, BLDG 4  
 STURBRIDGE, MA 01566  
 SHELDON FREINCLE  
 SHELDON@NORTHEASTSITESOLUTIONS.COM  
 201-776-8521  
 CONSULTANTS: FORESITE LLC  
 462 WALNUT ST  
 NEWTON, MA 02460  
 SAEED MOSSAVAT  
 SMOSSAVAT@FORESITELLC.COM  
 617-212-3123

**SHEET INDEX:**  
 T-1: TITLE SHEET  
 N-1: GENERAL NOTES  
 A-1: WETLANDS LOCATION PLAN  
 A-2: COMPOUND PLAN  
 A-3: ELEVATION AND ANTENNAS PLAN  
 A-4: EQUIPMENT LAYOUT PLANS  
 A-5: EQUIPMENT AND ANTENNA SPECIFICATIONS  
 A-6: CONCRETE PAD DETAILS  
 E-1: ELECTRICAL DETAILS



**PROJECT NOTES:**

1. THIS IS AN UNMANNED TELECOMMUNICATION FACILITY AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS IS NOT REQUIRED. POTABLE WATER OR SANITARY SERVICE IS NOT REQUIRED. NO OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES REQUIRED.
2. CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON THE JOB SITE. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. FAILURE TO NOTIFY THE ARCHITECT/ENGINEER PLACES THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.
3. DEVELOPMENT AND USE OF THE SITE WILL CONFORM TO ALL APPLICABLE CODES, ORDINANCES AND SPECIFICATIONS.
4. REFER TO TOWER STRUCTURAL ANALYSIS REPORT AND MOUNT STRUCTURAL ANALYSIS REPORT - MONOPOLE \* SITE ID: CTHA014A, DATED JULY 29, 2020, PREPARED EFI GLOBAL INC.

**CODE COMPLIANCE:**

ALL WORK SHALL COMPLY WITH THE CURRENT NATIONAL AND CONNECTICUT STATE BUILDING AND LIFE SAFETY CODES, SUPPLEMENTS AND AMENDMENTS INCLUDING BUT NOT LIMITED TO THE LATEST EDITION OF:  
 CONNECTICUT STATE BUILDING CODE (CSBC).  
 ANSI/TIA-222-G STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.  
 NATIONAL ELECTRICAL CODE (NEC) FOR POWER AND GROUNDING REQUIREMENTS.  
 OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA).  
 NFPA - NATIONAL FIRE PROTECTION ASSOCIATION.

**APPROVALS:**

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



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**GENERAL NOTES:**


1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAS MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE CLIENT'S REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK.
5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS.
6. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S / VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
7. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS DURING CONSTRUCTION.
8. THE CONTRACTOR SHALL COMPLY WITH ALL PERTINENT SECTIONS OF THE BASIC STATE BUILDING CODE, LATEST EDITION, AND ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJEC
9. THE CONTRACTOR SHALL NOTIFY THE CLIENT'S REPRESENTATIVE IN WRITING WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE CLIENT'S REPRESENTATIVE.
10. THE WORK SHALL CONFORM TO THE CODES AND STANDARDS OF THE FOLLOWING AGENCIES AS FURTHER CITED HEREIN:
  - A. ASTM: AMERICAN SOCIETY FOR TESTING AND MATERIALS, AS PUBLISHED IN "COMPILATION OF ASTM STANDARDS BUILDING CODES" OR LATEST EDITION.
  - B. AWS: AMERICAN WELDING SOCIETY INC. AS PUBLISHED IN "STANDARD D1.1-08, STRUCTURAL WELDING CODE" OR LATEST EDITION.
  - C. AISC: AMERICAN INSTITUTE FOR STEEL CONSTRUCTION AS PUBLISHED IN "CODE FOR STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES"; "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" (LATEST EDITION).
11. BOLTING:
  - A. BOLTS SHALL BE CONFORMING TO ASTM A325 HIGH STRENGTH, HOT DIP GALVANIZED WITH ASTM A153 HEAVY HEX TYPE NUTS.
  - B. BOLTS SHALL BE 3/4"Ø MINIMUM (UNLESS OTHERWISE NOTED)
  - C. ALL CONNECTIONS SHALL BE 2 BOLTS MINIMUM.
12. FABRICATION:
  - A. FABRICATION OF STEEL SHALL CONFORM TO THE AISC AND AWS STANDARDS AND CODES (LATEST EDITION).
  - B. ALL STRUCTURAL STEEL SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 (LATEST EDITION), UNLESS OTHERWISE NOTED.
13. ERECTION OF STEEL:
  - A. PROVIDE ALL ERECTION EQUIPMENT, BRACING, PLANKING, FIELD BOLTS, NUTS, WASHERS, DRIFT PINS, AND SIMILAR MATERIALS WHICH DO NOT FORM A PART OF THE COMPLETED CONSTRUCTION BUT ARE NECESSARY FOR ITS PROPER ERECTION.
  - B. ERECT AND ANCHOR ALL STRUCTURAL STEEL IN ACCORDANCE WITH AISC REFERENCE STANDARDS. ALL WORK SHALL BE ACCURATELY SET TO ESTABLISHED LINES AND ELEVATIONS AND RIGIDLY FASTENED IN PLACE WITH SUITABLE ATTACHMENTS TO THE CONSTRUCTION OF THE BUILDING.
  - C. TEMPORARY BRACING, GUYING AND SUPPORT SHALL BE PROVIDED TO KEEP THE STRUCTURE SAFE AND ALIGNED AT ALL TIMES DURING CONSTRUCTION, AND TO PREVENT DANGER TO PERSONS AND PROPERTY. CHECK ALL TEMPORARY LOADS AND STAY WITHIN SAFE CAPACITY OF ALL BUILDING COMPONENTS.
14. ANTENNA INSTALLATION:
  - A. INSTALL ANTENNAS AS INDICATED ON DRAWINGS AND CLIENT'S REPRESENTATIVE SPECIFICATIONS.
  - B. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS.

- C. INSTALL COAXIAL / FIBER CABLES AND TERMINATIONS BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTORS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS.
15. ANTENNA AND COAXIAL / FIBER CABLE GROUNDING:
  - A. ALL EXTERIOR #6 GREEN GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH ANDREWS CONNECTOR/SPLICE WEATHERPROOFING KIT TYPE #221213 OR EQUAL.
  - B. ALL COAXIAL / FIBER CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL / FIBER CABLE (NOT WITHIN BENDS).
16. RELATED WORK, FURNISH THE FOLLOWING WORK AS SPECIFIED UNDER CONSTRUCTION DOCUMENTS, BUT COORDINATE WITH OTHER TRADES PRIOR TO BID:
  - A. FLASHING OF OPENING INTO OUTSIDE WALLS
  - B. SEALING AND CAULKING ALL OPENINGS
  - C. PAINTING
  - D. CUTTING AND PATCHING
17. REQUIREMENTS OF REGULATORY AGENCIES:
  - A. FURNISH U.L. LISTED EQUIPMENT WHERE SUCH LABEL IS AVAILABLE. INSTALL IN CONFORMANCE WITH U.L. STANDARDS WHERE APPLICABLE.
  - B. INSTALL ANTENNA, ANTENNA CABLES, GROUNDING SYSTEM IN ACCORDANCE WITH DRAWINGS AND SPECIFICATION IN EFFECT AT PROJECT LOCATION AND RECOMMENDATIONS OF STATE AND LOCAL BUILDING CODES, AND SPECIAL CODES HAVING JURISDICTION OVER SPECIFIC PORTIONS OF WORK. THIS WORK INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:
    - C. TIA-EIA - 222 (LATEST EDITION). STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES.
    - D. FAA - FEDERAL AVIATION ADMINISTRATION ADVISORY CIRCULAR AC 70/7460-IH, OBSTRUCTION MARKING AND LIGHTING.
    - E. FCC - FEDERAL COMMUNICATIONS COMMISSION RULES AND REGULATIONS FORM 715, OBSTRUCTION MARKING AND LIGHTING SPECIFICATION FOR ANTENNA STRUCTURES AND FORM 715A, HIGH INTENSITY OBSTRUCTION LIGHTING SPECIFICATIONS FOR ANTENNA STRUCTURES.
  - F. AISC - AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 BOLTS (LATEST EDITION).
  - G. NEC - NATIONAL ELECTRICAL CODE - ON TOWER LIGHTING KITS.
  - H. UL - UNDERWRITER'S LABORATORIES APPROVED ELECTRICAL PRODUCTS.
  - I. IN ALL CASES, PART 77 OF THE FAA RULES AND PARTS 17 AND 22 OF THE FCC RULES ARE APPLICABLE AND IN THE EVENT OF CONFLICT, SUPERSEDE ANY OTHER STANDARDS OR SPECIFICATIONS.
  - J. 2009 LIFE SAFETY CODE NFPA - 101.

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

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

**CONSULTANT:**  
  
**Architects . Engineers . Surveyors**  
 462 WALNUT STREET  
 NEWTON, MA 02460  
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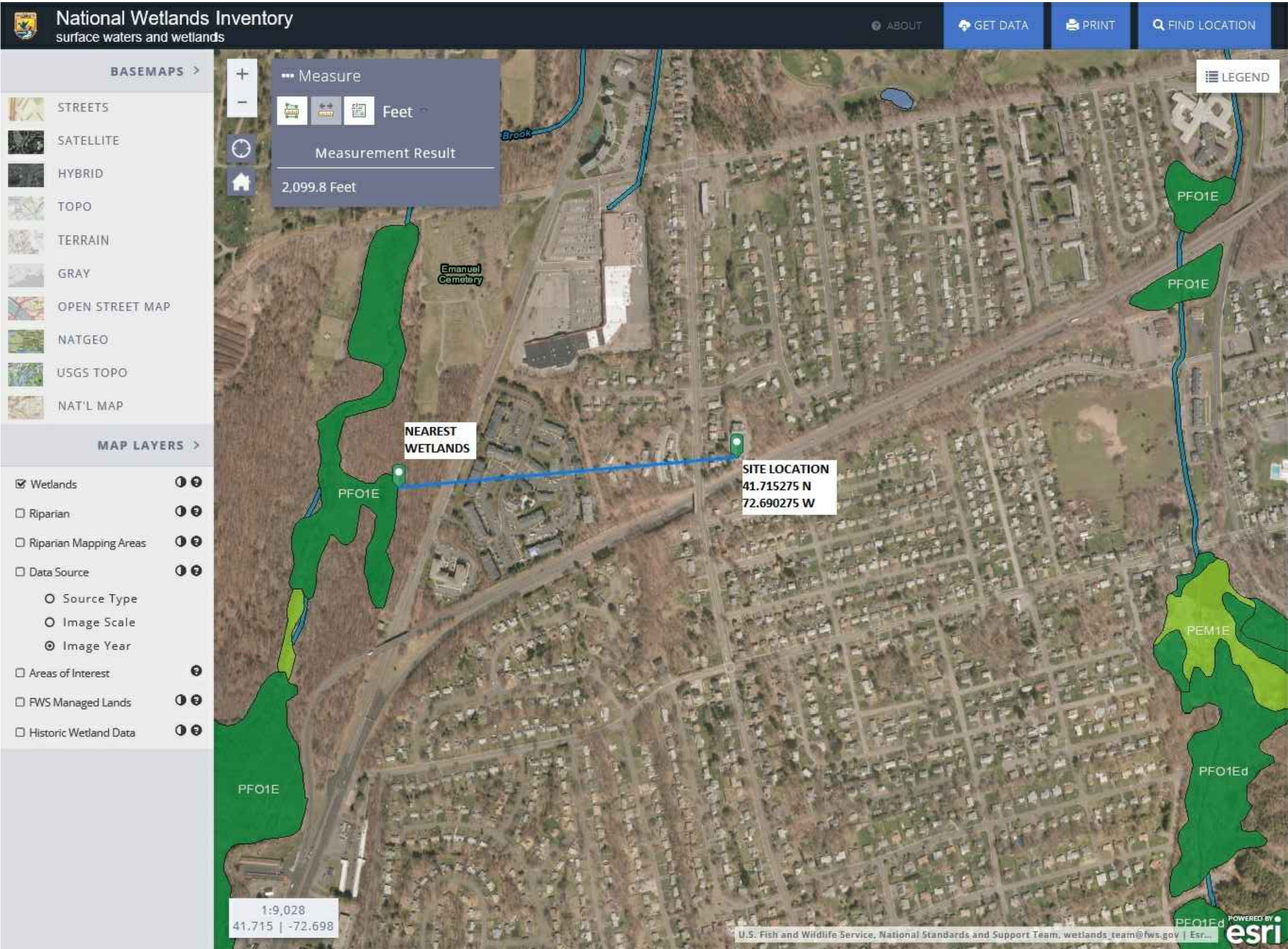
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1	REVISED CABLE COUNT	08/25/20

**SITE NUMBER: CTHA014A**  
**SITE NAME: HA014/T OF WETHERSFIELD\_MP**  
 SITE ADDRESS: 23 KELLEHER COURT  
 WETHERSFIELD, CT 06109

**SHEET TITLE:**  
 N-1: NOTES AND DISCLAIMERS



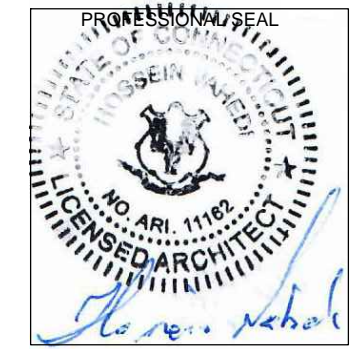
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**APPLICANT:**  
**T-Mobile**  
**T-MOBILE NORTHEAST LLC**  
35 GRIFFIN ROAD SOUTH  
BLOOMFIELD, CT 06002  
860-692-7100

**PROJECT MANAGER**  
**NSS NORTHEAST**  
SITE SOLUTIONS  
Turnkey Wireless Development  
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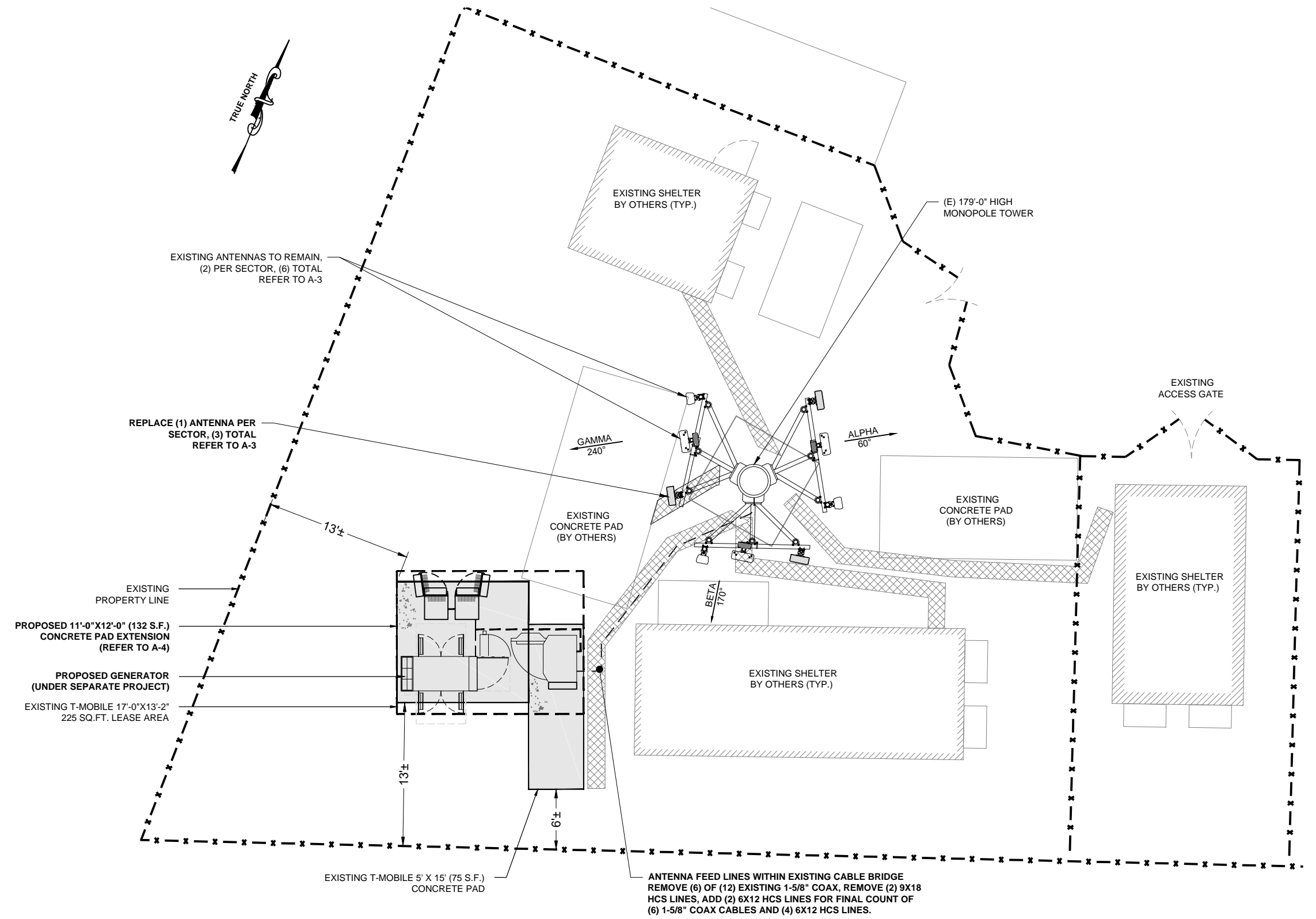
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**A-1: WETLANDS LOCATION**



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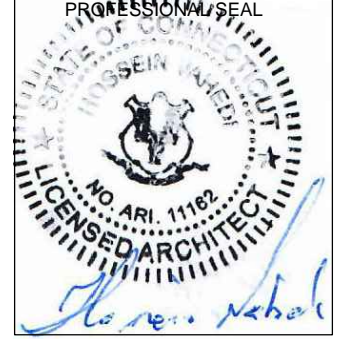


**COMPOUND PLAN** 1  
 SCALE: 1" = 10' A-2

**APPLICANT:**  
**T-Mobile**  
**T-MOBILE NORTHEAST LLC**  
 35 GRIFFIN ROAD SOUTH  
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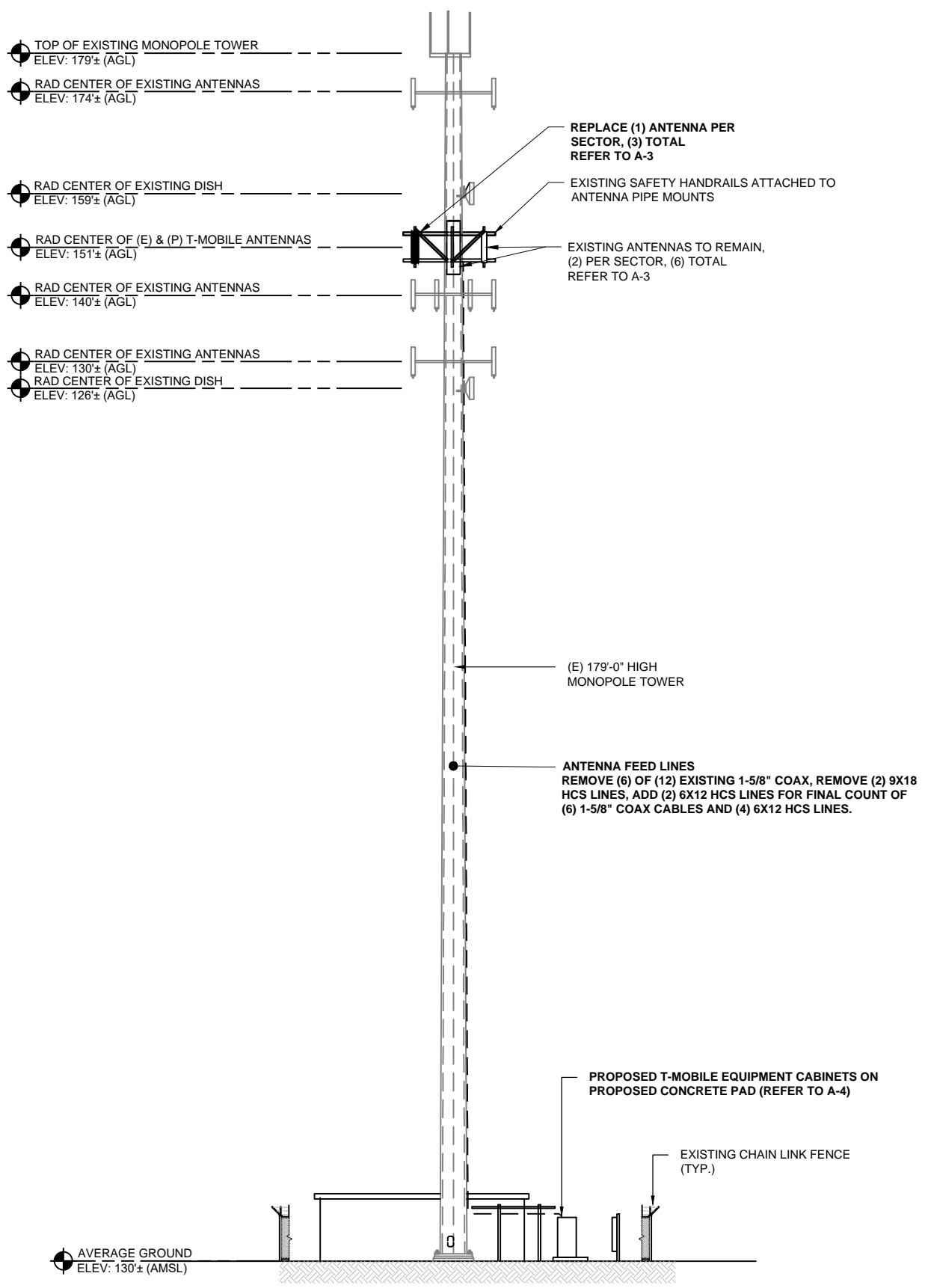
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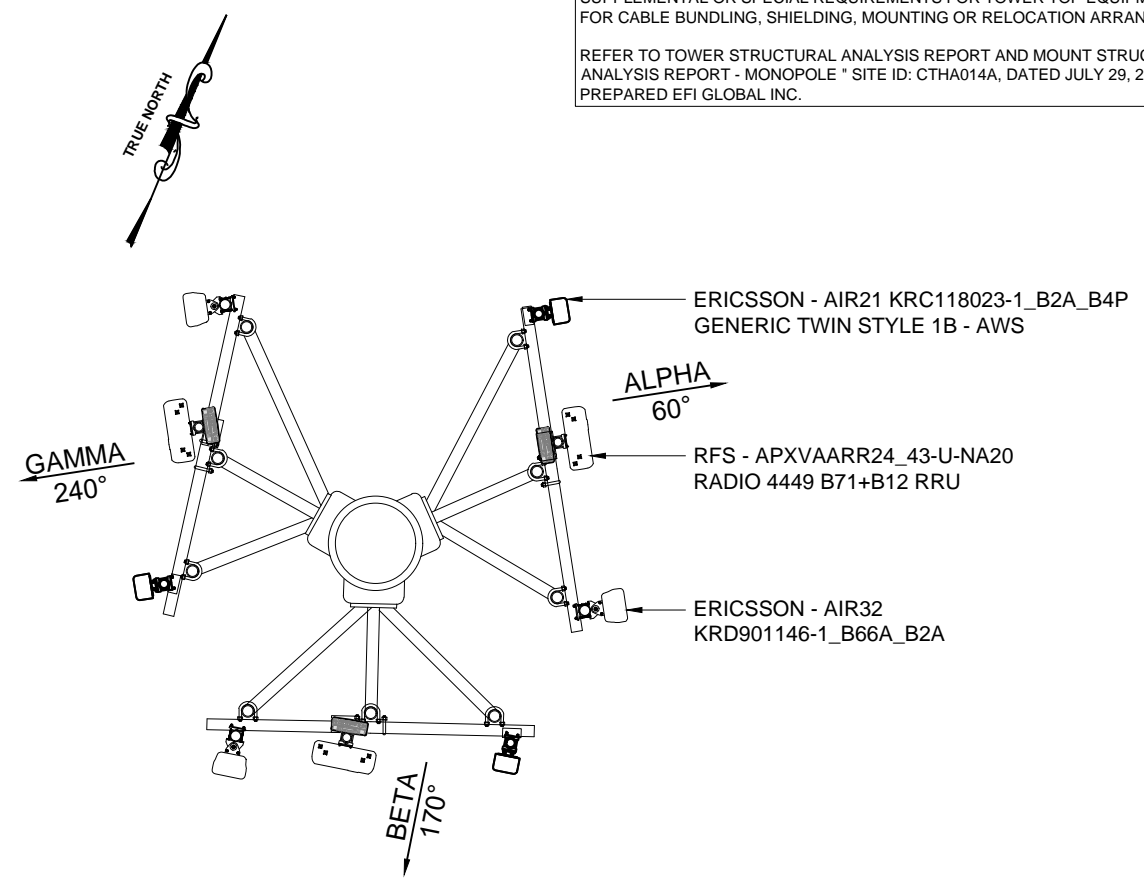
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 WETHERSFIELD, CT 06109

**SHEET TITLE:**  
 A-2: COMPOUND PLAN

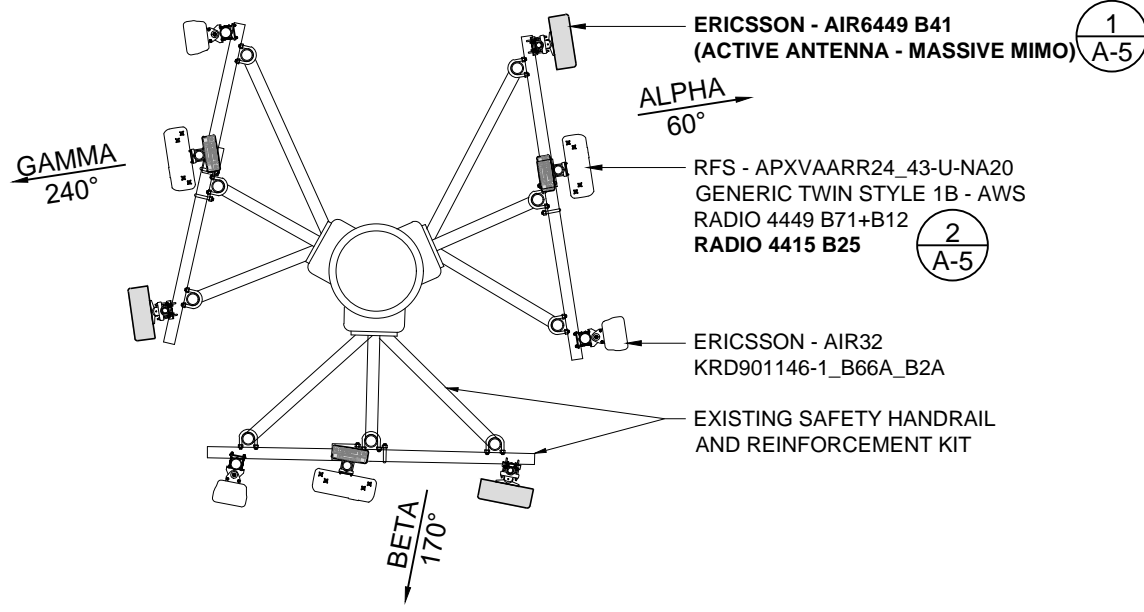
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**SITE ELEVATION**  
SCALE: NTS 1  
A-3



**EXISTING ANTENNAS PLAN**  
SCALE: NTS 2  
A-3



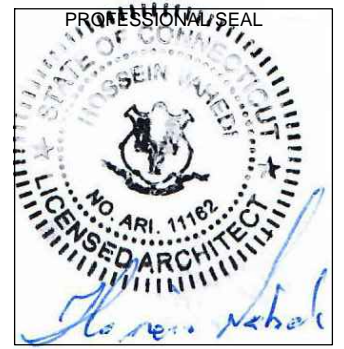
**FINAL ANTENNAS PLAN**  
SCALE: NTS 3  
A-3

**STRUCTURAL NOTES:**  
PRIOR TO COMMENCING CONSTRUCTION, GC SHALL REFER TO TOWER STRUCTURAL ANALYSIS PROVIDED BY DESTEK TO DETERMINE IF THERE ARE ANY SUPPLEMENTAL OR SPECIAL REQUIREMENTS FOR TOWER TOP EQUIPMENT AND FOR CABLE BUNDLING, SHIELDING, MOUNTING OR RELOCATION ARRANGEMENTS.  
REFER TO TOWER STRUCTURAL ANALYSIS REPORT AND MOUNT STRUCTURAL ANALYSIS REPORT - MONOPOLE \* SITE ID: CTHA014A, DATED JULY 29, 2020, PREPARED EFI GLOBAL INC.

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

**PROJECT MANAGER**  
**NSS NORTHEAST**  
SITE SOLUTIONS  
Turnkey Wireless Development  
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STURBRIDGE, MA 01566  
203-275-6669

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



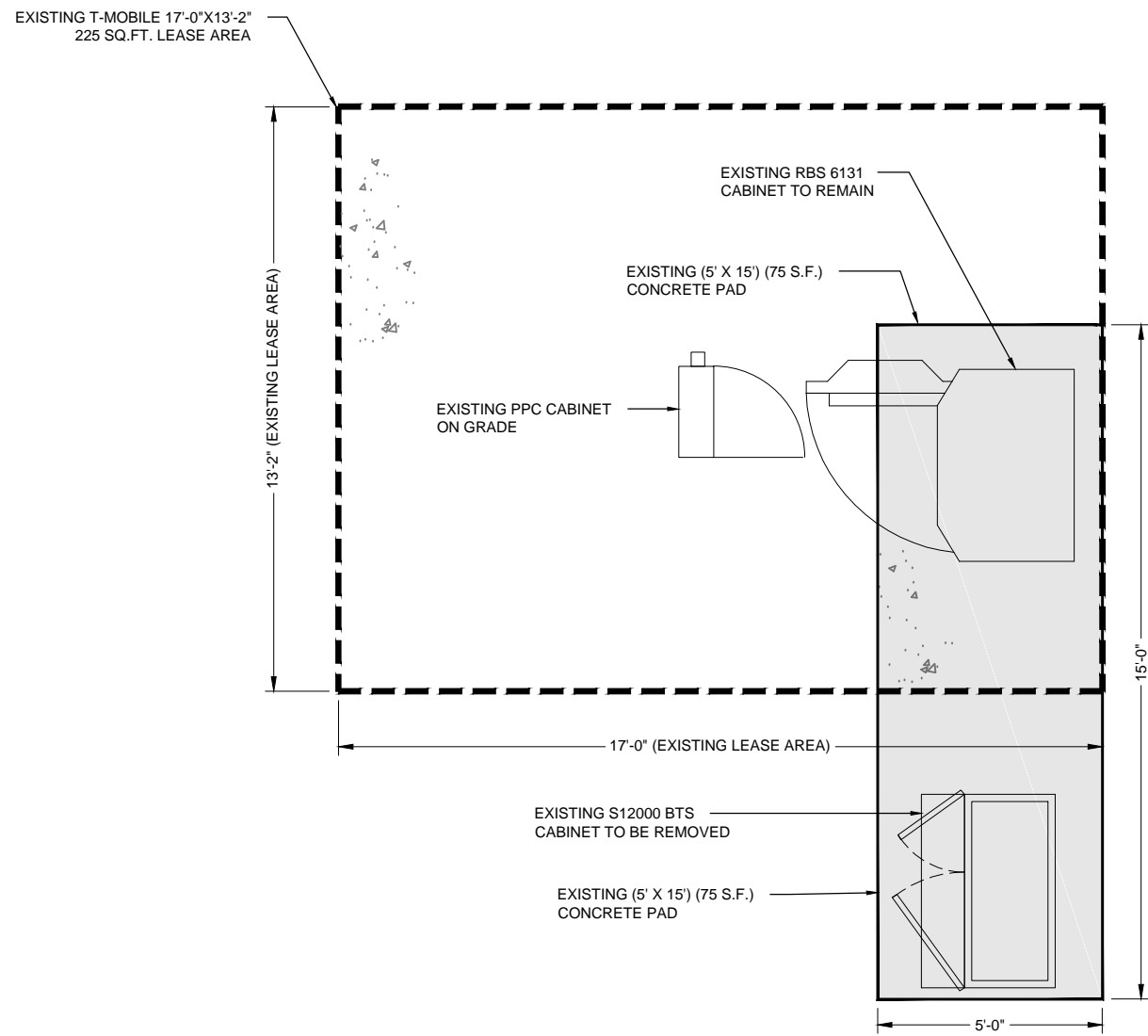
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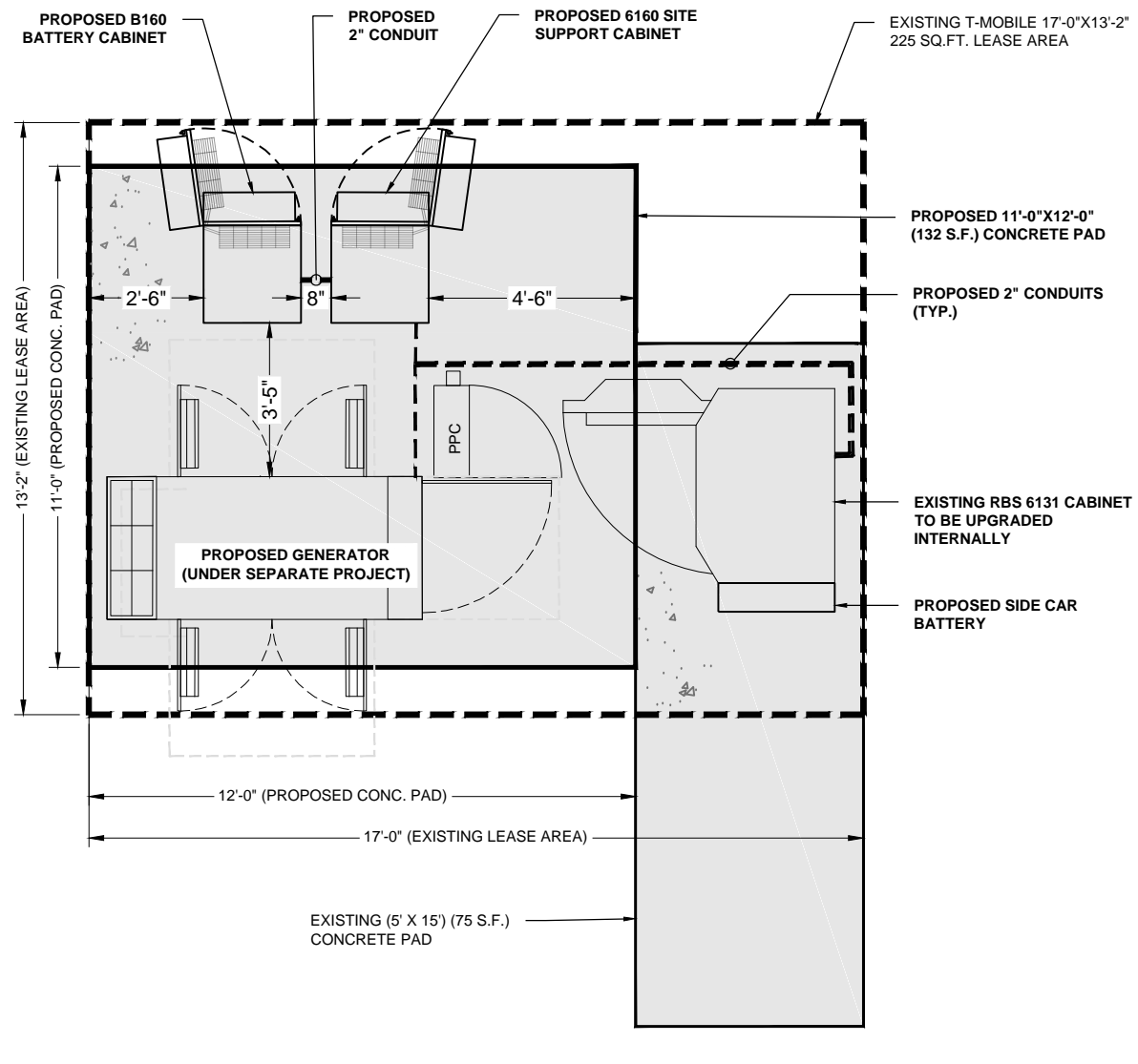
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WETHERSFIELD, CT 06109

**SHEET TITLE:**  
A-3: ELEVATION AND ANTENNA PLAN

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**EXISTING EQUIPMENT LAYOUT PLAN** 1  
SCALE: 1/4"=1'-0" A-4



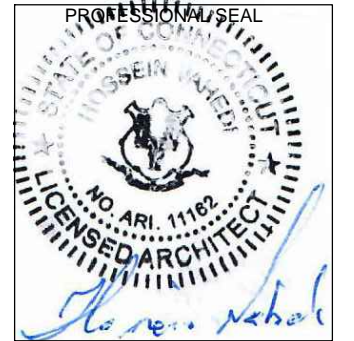
**PROPOSED EQUIPMENT LAYOUT PLAN** 2  
SCALE: 1/4"=1'-0" A-4

**APPLICANT:**  
**T-Mobile**  
**T-MOBILE NORTHEAST LLC**

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BLOOMFIELD, CT 06002  
860-692-7100

**PROJECT MANAGER**  
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**CONSULTANT:**  
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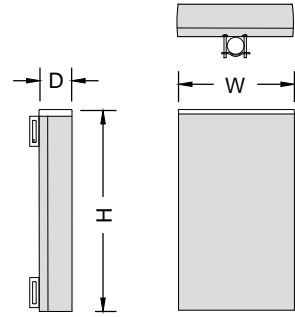
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SHEET TITLE:  
**A-4: EQUIPMENT LAYOUT**

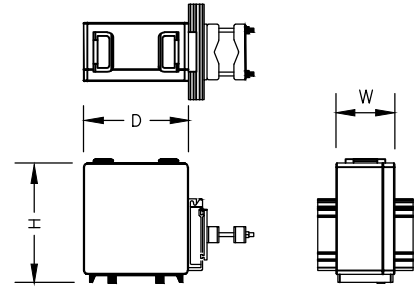


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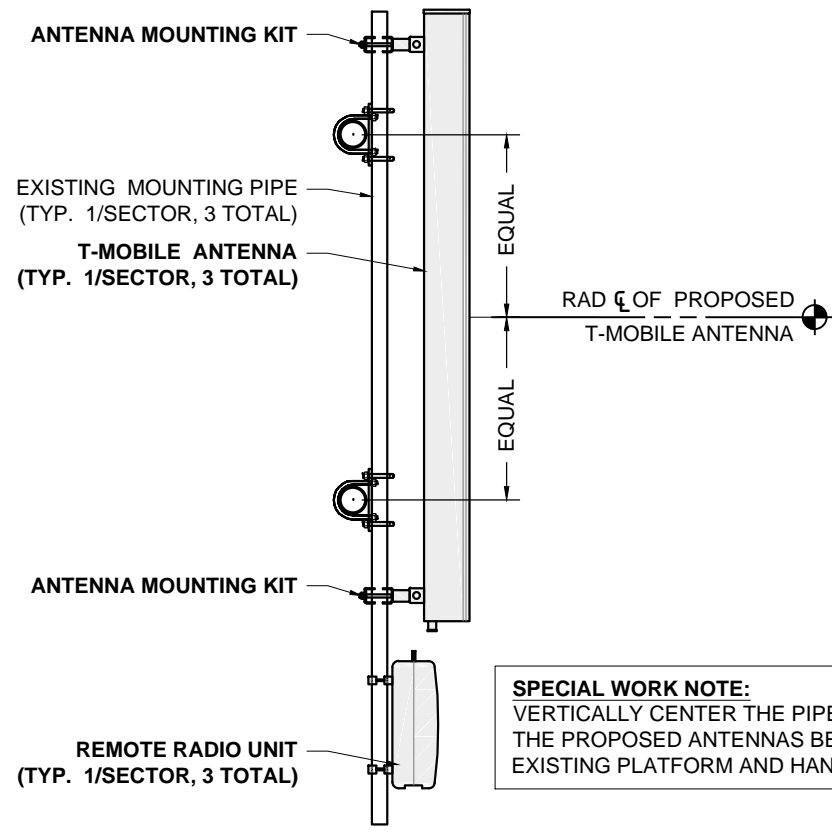
ERICSSON ANTENNA SPECIFICATIONS	
MODEL #	AIR6449 B41
MANUF.	ERICSSON
HEIGHT	33.1"
WIDTH	20.5"
DEPTH	8.3"
WEIGHT	103 LB

**ERICSSON ANTENNA** 1  
N.T.S. A-5



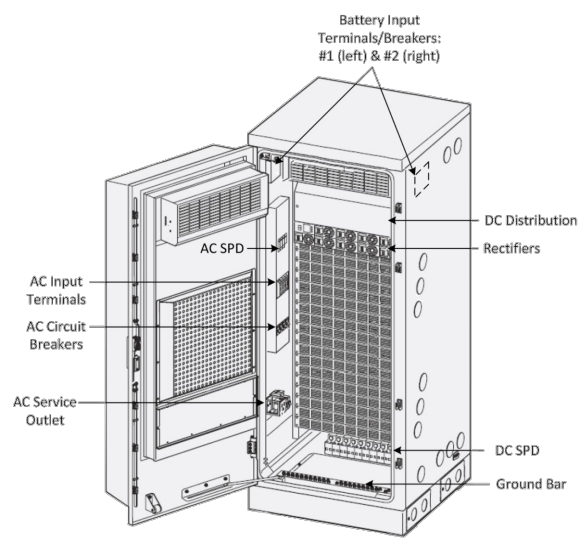
REMOTE RADIO UNIT SPECIFICATIONS	
MODEL #	RADIO 4415 B25
MANUF.	ERICSSON
HEIGHT	14.9"
WIDTH	13.2"
DEPTH	5.4"
WEIGHT	46.3 LB

**REMOTE RADIO UNIT** 2  
N.T.S. A-5



**ANTENNA MOUNT** 3  
N.T.S. A-5

**SPECIAL WORK NOTE:**  
VERTICALLY CENTER THE PIPE MAST AND THE PROPOSED ANTENNAS BETWEEN THE EXISTING PLATFORM AND HANDRAIL



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

**SITE SUPPORT CABINET** 4  
N.T.S. A-5



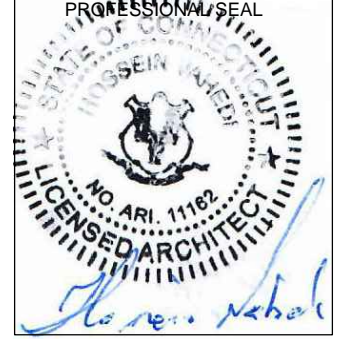
BATTERY CABINET SPECIFICATIONS	
MODEL #	B160
MANUF.	ERICSSON
HEIGHT	63"
WIDTH	26"
DEPTH	26"
WEIGHT	1883 lbs

**BATTERY CABINET** 5  
N.T.S. A-5

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

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

**CONSULTANT:**  
**FORESITE** LLC  
Architects . Engineers . Surveyors  
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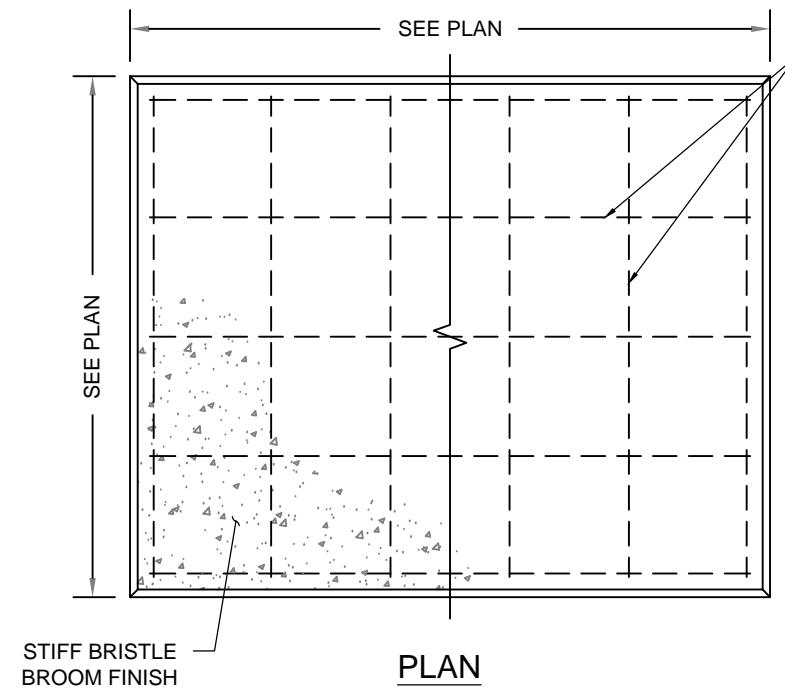
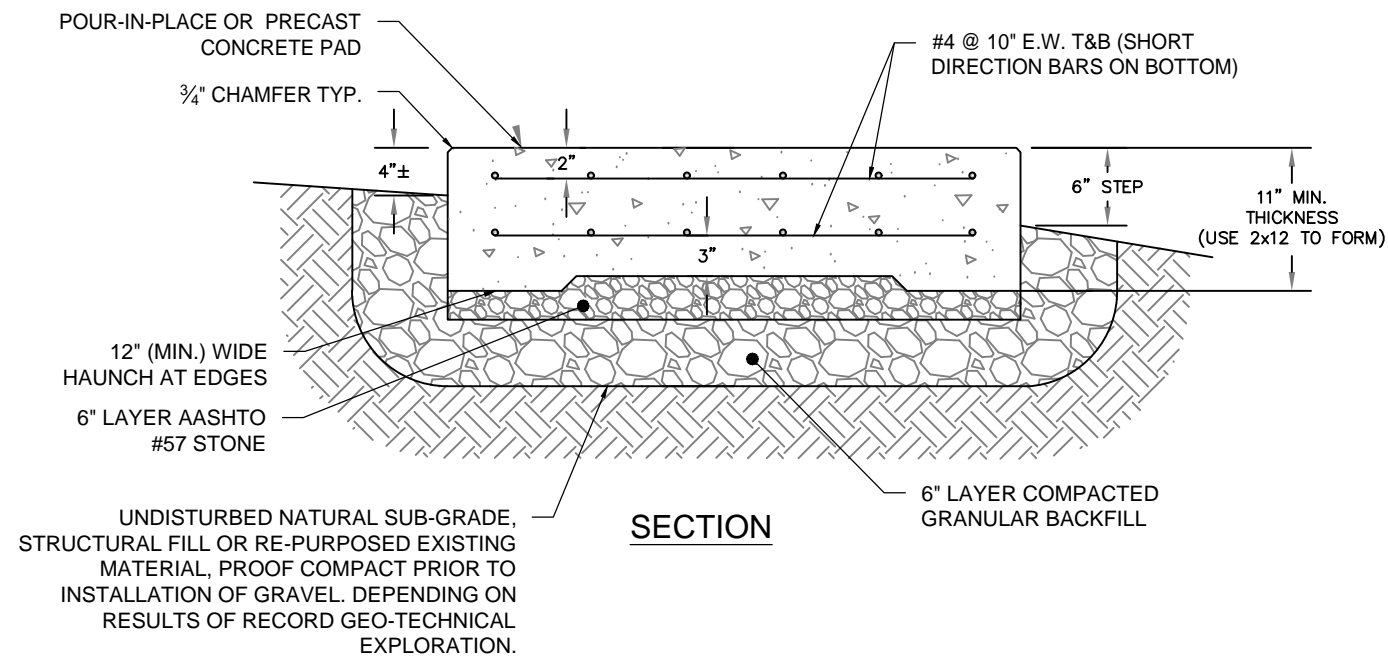
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SHEET TITLE:  
A-5: EQUIPMENT AND ANTENNA SPECIFICATIONS

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**CONSTRUCTION NOTES:**  
 - (HAND-DUG UTILITY TRENCH EXCAVATION REQUIRED):  
 - EXISTING UNDERGROUND UTILITY LOCATIONS ARE UNKNOWN. GENERAL CONTRACTOR SHALL HAND-EXCAVATE TO REQUIRED SUB-GRADE DEPTH, SUFFICIENT TEST HOLES.  
 ALL PROPOSED UNDERGROUND UTILITY TRENCHES SHALL BE HAND-EXCAVATE AS REQUIRED.  
 - GENERAL CONTRACTOR IS RESPONSIBLE FOR ANY REQUIRED SPECIAL TEMPORARY PROTECTION OF, PHYSICAL DAMAGE TO, OR REPAIR OF EXISTING UNDERGROUND CONDUIT INCLUDING RESTORATION OF SERVICE.

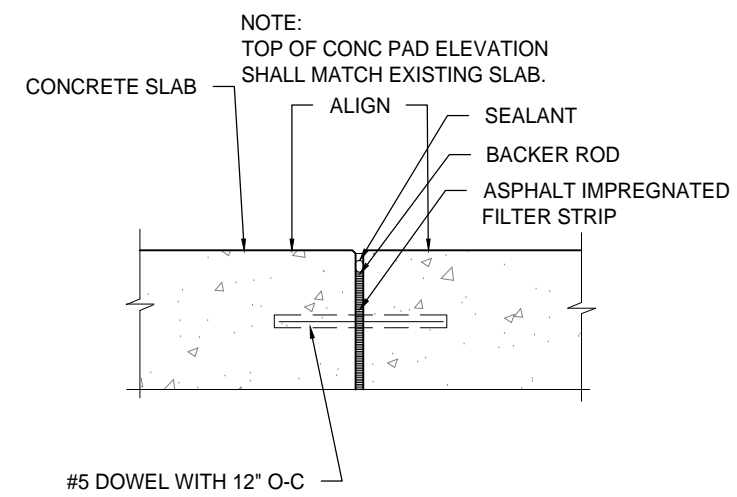


#4 @ 10" E.W. T&B (SHORT DIRECTION BARS ON BOTTOM)

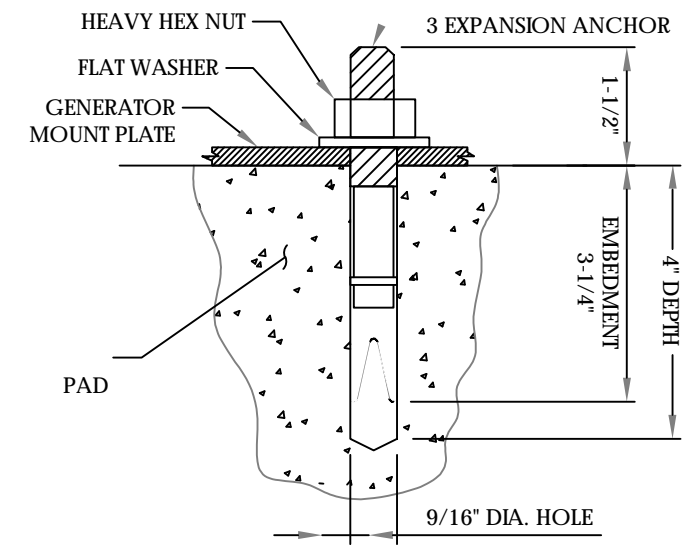
**NOTES:**  
 1. BEARING STRATA MEDIUM TO DENSE INSET GRANULAR MATERIAL OR COMPACTED FILL. 95% COMPACTION.  
 2. SUBGRADE AND FILL SHALL CONSIST OF CLEAN SOIL. NO DELETERIOUS MATERIALS OR ORGANICS TO BE USED.  
 3. CONCRETE FORM WORK SHALL BE CONSTRUCTED USING MINIMUM 2"x8" NOMINAL SIZE LUMBER. STRIP AND REMOVE UPON COMPLETION.  
 4. CONCRETE SHALL HAVE 4000PSI 28-DAY COMPRESSIVE STRENGTH WITH 5(±1)% AIR ENTRAINMENT, 4(±1)" SLUMP AND BRISTLE BROOM FINISH.

**CONCRETE PAD DETAILS**  
 SCALE: N.T.S.

1  
 A-6



**ISOLATION JOINT**



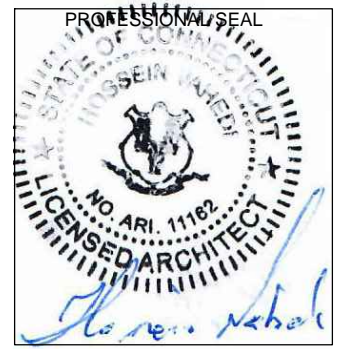
**NOTES:**  
 1. BOLTS CAN BE INSTALLED 2 DAYS AFTER POURING CONCRETE PROVIDED THE KWIK BOLTS ARE ONLY TIGHTENED TO A SNUG TIGHT CONDITION.  
 2. APPLY "HILTI" HIT-RE 500-SD EPOXY TO ALL GAPS TO PREVENT WATER/MOISTURE BUILD-UP.  
 3. PROVIDE 6 (SEE MANUFACTURERS INSTALLATION DRAWINGS) ANCHOR BOLTS PER SIDE.

**ANCHORAGE DETAIL**

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

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 NEWTON, MA 02460  
 617-212-3123



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REV	DESCRIPTION	DATE
A	PRELIMINARY	07/30/20
0	FINAL ISSUED	08/24/20
1	REVISED CABLE COUNT	08/25/20

**SITE NUMBER: CTHA014A**  
**SITE NAME: HA014/T OF WETHERSFIELD\_MP**  
 SITE ADDRESS: 23 KELLEHER COURT  
 WETHERSFIELD, CT 06109

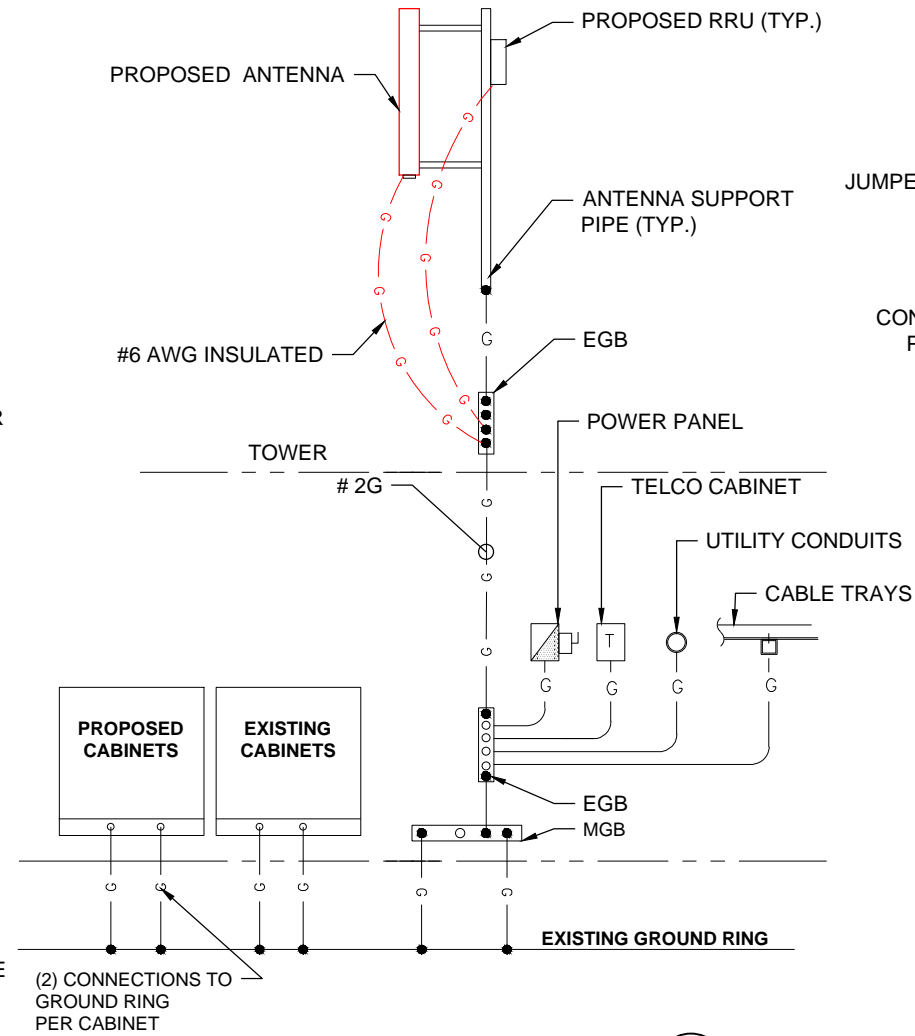
SHEET TITLE:  
 A-6: CONCRETE BAD DETAILS



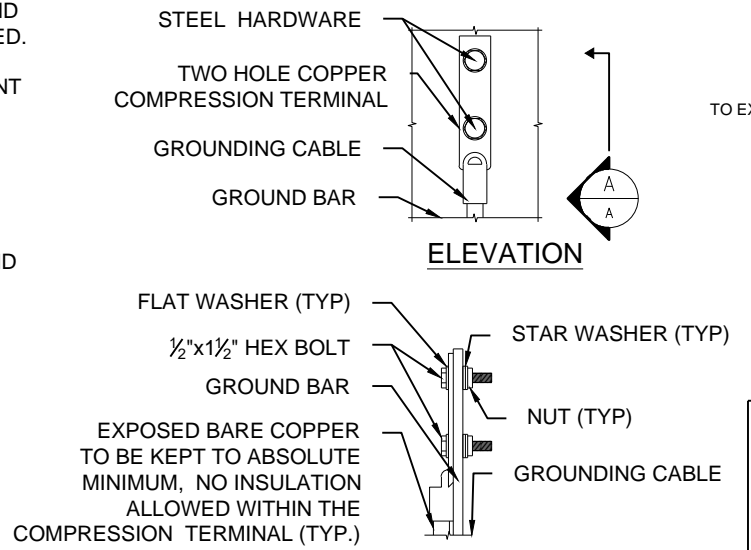
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**ELECTRICAL & GROUNDING NOTES**

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

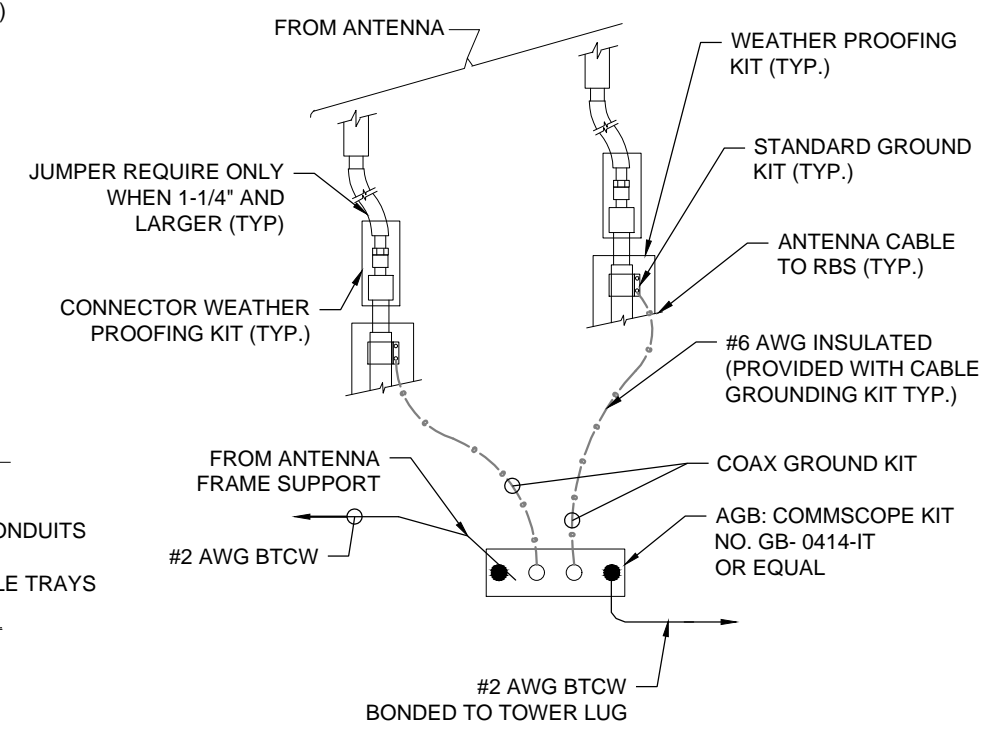


**GROUNDING RISER DIAGRAM**  
SCALE: N.T.S. 1  
E-1



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

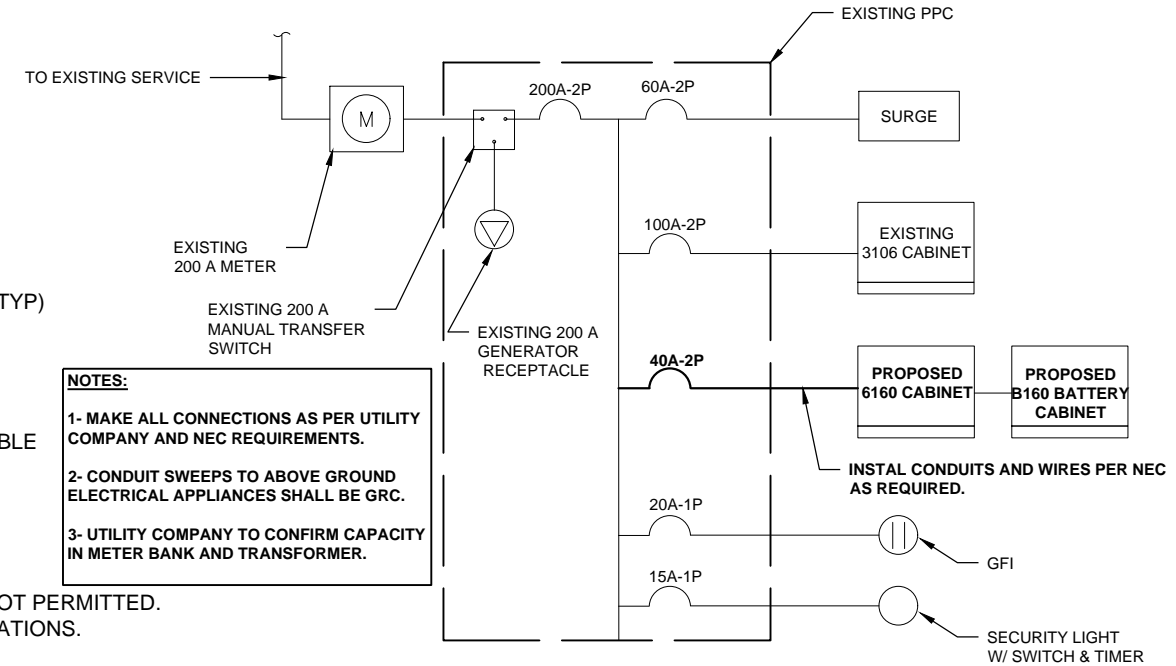
**TYPICAL GROUND BAR CONNECTIONS DETAIL**  
SCALE: N.T.S. 3  
E-1



**NOTES:**  
INSTALL CABLE GROUND KIT ABOVE HORIZONTAL BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO AGB/EGB

**TOWER TOP CABLE GROUNDING DETAIL**  
SCALE: N.T.S. 2  
E-1

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



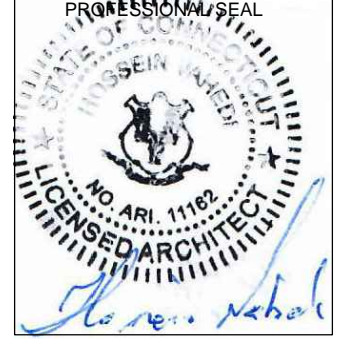
**NOTES:**  
1- MAKE ALL CONNECTIONS AS PER UTILITY COMPANY AND NEC REQUIREMENTS.  
2- CONDUIT SWEEPS TO ABOVE GROUND ELECTRICAL APPLIANCES SHALL BE GRC.  
3- UTILITY COMPANY TO CONFIRM CAPACITY IN METER BANK AND TRANSFORMER.

**ONE LINE DIAGRAM**  
N.T.S. 4  
E-1

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

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

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



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SITE ADDRESS: 23 KELLEHER COURT  
WETHERSFIELD, CT 06109

**SHEET TITLE:**  
E-1: ELECTRICAL DETAILS

# Exhibit D



Prepared For:



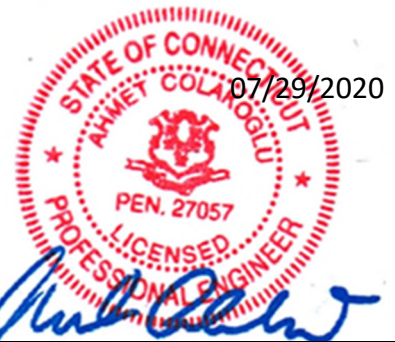
**T-Mobile Northeast, LLC  
35 Griffin Road South  
Bloomfield, CT 06002**



**Structure Rating**

<b>Monopole:</b>	<b>Pass (79.1%)</b>
<b>Anchor Rods:</b>	<b>Pass (84.2%)</b>
<b>Base Plate:</b>	<b>Pass (85.5%)</b>
<b>Foundation:</b>	<b>Pass (67.7%)</b>

Sincerely,  
EFI Global, Inc.  
License No: PEC0001245



Ahmet Colakoglu, PE  
Connecticut Professional Engineer  
License No: 27057

**Site ID: CTHA014A  
Site Name: HA014/TofWethersfield\_MP  
23 Kelleher Court  
Wethersfield, CT 06109**

## **CONTENTS**

1.0 – SUBJECT AND REFERENCES

1.1 – STRUCTURE

2.0 – EXISTING AND PROPOSED APPURTENANCES

3.0 - CODES AND LOADING

4.0 - STANDARD CONDITIONS FOR ENGINEERING SERVICES ON EXISTING  
STRUCTURES

5.0 - ANALYSIS AND ASSUMPTIONS

6.0 – RESULTS AND CONCLUSION

APPENDIX

A – CALCULATIONS

## 1.0 **SUBJECT AND REFERENCES**

The purpose of this analysis is to evaluate the structural capacity of the existing 179 feet tall monopole tower, located at 23 Kelleher Court, Wethersfield, CT 06109 for the additions and alterations proposed by T-Mobile.

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

- Structural Analysis Report prepared by EFI Global, Inc, dated 02/21/2020.
- Construction Drawings prepared by ForeSite, LLC, dated 08/14/2018.
- RFDS prepared by T-Mobile, dated 07/06/2020.
- Site Audit pictures, dated 06/16/2020.
- Monopole Feasibility Study prepared by Maser Consulting Connecticut, dated 03/02/2018.

## 1.1 **STRUCTURE**

The structure is a 179'-0" tall, (18) sided monopole, which is attached to the foundation with anchor bolts and a base plate. Please refer to the software output in Appendix A, for tower geometry, member sizes, and other details.

ELEVATION (FEET)	SECTION LENGTH (FEET)	LAP SPLICE (FT)	SHAFT THICKNESS (IN)	TOP DIAMETER (IN)	BOTTOM DIAMETER (IN)	YIELD STRENGTH (KSI)
179.00-141.25	37.75	4.33	0.250	23.100	33.249	65
141.25-92.58	53.00	5.92	0.375	31.585	45.834	65
92.58-45.50	53.00	7.50	0.375	43.492	57.742	65
45.50-0.0	53.00	-	0.375	54.976	69.225	65

\*Does not include description of existing monopole modifications.

## 2.0 EXISTING AND PROPOSED APPURTENANCES

This analysis was based on the following existing and proposed appurtenances:

### Existing Configuration of T-MOBILE Appurtenances:

RAD CENTER (FT)	ANTENNA & TMA	COAX	MOUNT
151	(3) APXVAARR24_43-U-NA20 (3) AIR32 KRD901146-1_B66A_B2A (3) AIR21 KRC118023-1_B2A_B4P (3) Radio 4449 B71 + B85 (3) Generic Twin Style 1B-AWS TMA	*(12) 1-5/8" + *(2) 9x18 + *(2) 6x12 Hybrid Cables	(3) Existing Sector Mounts + VSK-MHD + Handrails

\*Outside monopole.

### Proposed and Final Configuration of T-MOBILE Appurtenances:

RAD CENTER (FT)	ANTENNA & TMA	COAX	MOUNT
151	(3) APXVAARR24_43-U-NA20 (3) AIR32 KRD901146-1_B66A_B2A (3) AIR6449 B41 (3) Radio 4449 B71 + B85 (3) Radio 4415 B25 (3) SDX1926Q-43(E14F05P86) (3) Generic Twin Style 1B-AWS TMA	*(6) 1-5/8" + *(4) 6x12 Hybrid Cables	(3) ** Existing Sector Mounts + VSK-MHD + Handrails

\*Outside monopole.

\*\*Refer to the Mount Analysis Report by EFI Global, Inc, dated 07/29/2020.

### Existing and Remaining Appurtenances by Others:

Rad. Center (ft)	Antenna & TMA	Mount	Feedlines
188	(1) 10' Omni	(1) Pipe Mount	*(1) 1-1/4"
186	(2) 6' Omni	(2) Pipe Mounts	*(2) 7/8"
185	(2) 4' Omni (1) 4' Dipole	(3) Pipe Mounts	*(4) 1-5/8"
181	(1) Distribution Box	-	*(2) 1/2"
174	(2) APXVSP18-C w/Mount Pipe (1) ET-X-TU-42-15 w/Mount Pipe (3) APXV9TM14 w/Mount Pipe (3) RRH 8X20-25	(3) Sector Mounts	*(3) 1-1/4" **(1) 1-1/4"
170	(3) RRH 800 (3) RRH 1900	(1) Ring Mount	-

**Existing and Remaining Appurtenances by Others (Continued):**

<b>Rad. Center (ft)</b>	<b>Antenna &amp; TMA</b>	<b>Mount</b>	<b>Feedlines</b>
159	(1) 2' Dish	(1) Pipe Mount	*(1) 1/4"
142	(3) Ericsson RRUS 11 (3) Ericsson RRUS 32 B2	(1) Ring Mount	
140	(3) 7770.00 w/Mount Pipe (2) SBNHH-1D65A w/Mount Pipe (2) HPA-65R-BUU-H8 w/Mount Pipe (2) TPA-65R-LCUUUU-H8 w/Mount Pipe (2) Kathrein 80010966 w/Mount Pipe (1) Kathrein 80010964 w/Mount Pipe (3) Ericsson RRUS 4478 B14 (3) Ericsson RRUS 32 B66 (3) Ericsson RRUS 32 (6) Powerwave LGP 21401 (3) Raycap DC6-48-60-0-8C	(3) Sector Mounts	*(12) 1-5/8" *(2) DC Cable *(1) Fiber Cable
130	(3) BXA-171063-12CF w/Mount Pipe (3) BXA-70063-4CF w/Mount Pipe (3) BXA-70063-6CF w/Mount Pipe (3) MGD3-900 w/Mount Pipe (3) RRH2X40 AWS (1) RXXDC-3315-PF-48	(1) Platform Mount	*(12) 1-5/8" **(6) 1-5/8" **(1) 1/4"
126	(1) 2' Dish	(1) Pipe Mount	*(1) 1/4"

\*Inside monopole.

\*\*Outside monopole.



### 3.0 CODES AND LOADING

The tower was analyzed per *TIA/EIA-222-G* as referenced by the *2018 Connecticut State Building Code* with all of the adopted Addendums and Supplements. The following wind loading was used in compliance with the standard for Hartford, CT:

- Basic wind speed 125 mph (equivalent to 97 mph ASD) without ice ( $W_0$ )
- Basic wind speed 50 mph with 1" escalating ice ( $W_i$ )
- Exposure Category C
- Topographic Category 1
- Structure Class II

The following load combinations were used with wind blowing at 0°, 30°, 45°, 60°, and 90° measured from a line normal to the face of the monopole tower.

- $1.2 D + 1.6 W_0$
- $0.9 D + 1.6 W_0$
- $1.2 D + 1.0 D_i + 1.0 W_i$

D: Dead Load of structure and appurtenances

$W_0$ : Wind Load, without ice

$W_i$ : Wind Load, with ice

$D_i$ : Weight of Ice

### 4.0 STANDARD CONDITIONS FOR ENGINEERING SERVICES ON EXISTING STRUCTURES

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

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

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

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

## 5.0 **ANALYSIS AND ASSUMPTIONS**

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

It has been assumed that the modifications shown in the Structural Analysis Report by EFI Global, Inc., dated 02/21/2020 have been or will be installed prior to the equipment upgrade described herein. EFI should be immediately notified if these assumptions are discovered to be incorrect.

## 6.0 **RESULTS AND CONCLUSION**

The structural modifications detailed in the Structural Modification Drawings prepared by Hudson Design Group, dated 8/23/2016, have been incorporated into our analysis. After analyzing the upgraded structure, EFI has deemed the modifications to be **ineffective** due to the inadequate thickness of the reinforcement plates. The added wind area of the reinforcement has been considered in this analysis.

Based on a structural analysis per ANSI/TIA-222-G, the existing monopole tower has **adequate** structural capacity for the proposed changes by T-Mobile. For the code specified load combinations and as a maximum, the monopole shaft between the elevation 0' and 45.5' is stressed to **79.1%** of its structural capacity. The anchor rods and base plate are stressed to **84.2%** and **85.5%** of their structural capacities.

The existing foundation has **adequate** capacity for the proposed changes by T-Mobile. For the code specified load combinations and as a maximum, the foundation is stressed to **67.7%** of its structural capacity.

Therefore, the proposed additions and alterations by T-Mobile **can** be implemented as intended with the conditions outlined in this report.

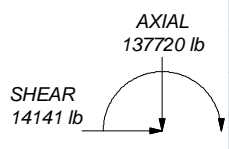
Should you have any questions about this report, please contact EFI at [telecom@efiglobal.com](mailto:telecom@efiglobal.com).

**APPENDIX A  
CALCULATIONS**

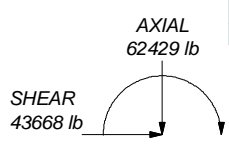
**DESIGNED APPURTENANCE LOADING**

TYPE	ELEVATION	TYPE	ELEVATION
(3) 6' x 2" Mount Pipe	181	Pipe 2.0STD Handrail	151
(3) 6' x 2" Mount Pipe	181	(2) Pipe 2.5STD Vertical	151
(3) 6' x 2" Mount Pipe	181	(2) Pipe 2.5STD Vertical	151
Omni 4"x6'	181	(2) Pipe 2.5STD Vertical	151
Omni 2"x6'	181	Side Arm Mount [SO 102-3]	151
Distribution Box	181	TA 602-3	151
Omni 3"x4'	181	Gen TMA	151
Omni 3"x10'	181	RRUS-11	142
Distribution Box	181	RRUS-11	142
Omni 3" x 4'	181	RRUS 32 B2	142
4' Dipole	181	RRUS 32 B2	142
TA 702-3	181	RRUS 32 B2	142
ET-X-TU-42-15-37-18-iR-ST w/ Mount Pipe	174	RRUS-11	142
APXVSP18-C w/ Mount Pipe	174	7770.00 w/ Mount Pipe	140
APXVSP18-C w/ Mount Pipe	174	7770.00 w/ Mount Pipe	140
APXV9TM14 w/ Mount Pipe	174	TPA-65R-LCUUUU-H8 w/ Mount Pipe	140
APXV9TM14 w/ Mount Pipe	174	CCI HPA-65R-BUU-H8 with pipe	140
APXV9TM14 w/ Mount Pipe	174	CCI HPA-65R-BUU-H8 with pipe	140
RRH8x20-25	174	(2) SBNHH-1D65A w/ Mount Pipe	140
RRH8x20-25	174	RRUS 32	140
RRH8x20-25	174	RRUS 32	140
6'-P2x0.154	174	RRUS 32	140
6'-P2x0.154	174	(2) LGP21401	140
6'-P2x0.154	174	(2) LGP21401	140
6'-P2x0.154	174	(2) LGP21401	140
TA 602-3	174	(2) LGP21401	140
RRH1900MHz	170	800 10966 w/mount pipe	140
RRH1900MHz	170	800 10966 w/mount pipe	140
RRH1900MHz	170	800 10964 w/ Mount Pipe	140
RRH800MHz	170	RRUS 4478 B14	140
RRH800MHz	170	RRUS 4478 B14	140
RRH800MHz	170	RRUS 4478 B14	140
Ring Mount	170	RRUS 32 B66	140
HP2-102	159	RRUS 32 B66	140
Gen TMA	151	RRUS 32 B66	140
Gen TMA	151	DC6-48-60-0-8C	140
AIR -32 B2A/B66AA w/ Mount Pipe	151	DC6-48-60-0-8C	140
AIR -32 B2A/B66AA w/ Mount Pipe	151	DC6-48-60-0-8C	140
AIR -32 B2A/B66AA w/ Mount Pipe	151	Sector Mount [SM 502-3]	140
APXVAARR24_43-U-NA20 w/ Mount Pipe	151	7770.00 w/ Mount Pipe	140
APXVAARR24_43-U-NA20 w/ Mount Pipe	151	BXA-70080-4CF-EDIN w/ Mount Pipe	130
APXVAARR24_43-U-NA20 w/ Mount Pipe	151	BXA-70080-6CF-EDIN w/ Mount Pipe	130
APXVAARR24_43-U-NA20 w/ Mount Pipe	151	Rymsa MGD3-900	130
Ericsson Radio4449 B71 + B85	151	RRH2x40-AWS	130
Ericsson Radio4449 B71 + B85	151	BXA-171063-12CF-EDIN w/ Mount Pipe	130
Ericsson Radio4449 B71 + B85	151	BXA-171063-12CF-EDIN w/ Mount Pipe	130
Ericsson AIR6449 B41/Mountpipe	151	BXA-70080-4CF-EDIN w/ Mount Pipe	130
Ericsson AIR6449 B41/Mountpipe	151	BXA-70080-6CF-EDIN w/ Mount Pipe	130
Ericsson AIR6449 B41/Mountpipe	151	Rymsa MGD3-900	130
Ericsson AIR6449 B41/Mountpipe	151	RRH2x40-AWS	130
RRUS 4415 B25	151	BXA-171063-12CF-EDIN w/ Mount Pipe	130
RRUS 4415 B25	151	BXA-70080-4CF-EDIN w/ Mount Pipe	130
RRUS 4415 B25	151	BXA-70080-6CF-EDIN w/ Mount Pipe	130
Commscope SDX19260-43 (E14F05P86)	151	Rymsa MGD3-900	130
Commscope SDX19260-43 (E14F05P86)	151	RRH2x40-AWS	130
Commscope SDX19260-43 (E14F05P86)	151	RxxDC-3315-PF-48	130
Pipe 2.0STD Handrail	151	Piord 13' Low Profile Platform	130
Pipe 2.0STD Handrail	151	BXA-171063-12CF-EDIN w/ Mount Pipe	130
Pipe 2.0STD Handrail	151	HP2-102	126

ALL REACTIONS ARE FACTORED



TORQUE 1 kip-ft  
50 mph WIND - 1.000C



TORQUE 3 kip-ft  
REACTIONS - 97 mph

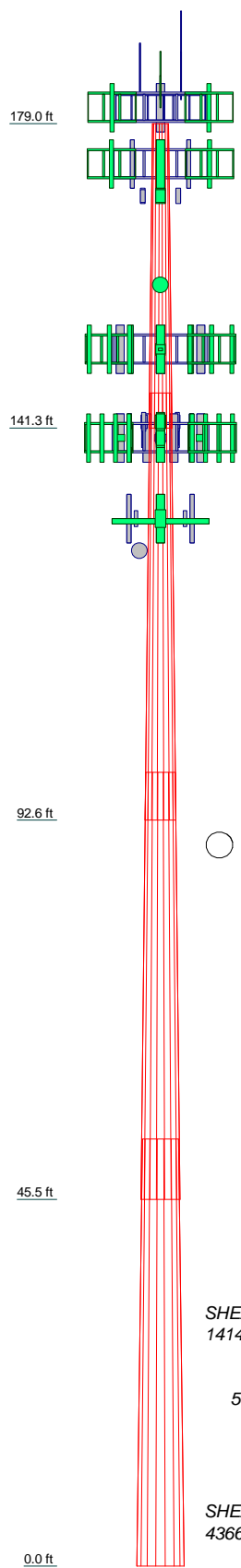
**MATERIAL STRENGTH**

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

**TOWER DESIGN NOTES**

1. Tower designed for Exposure C to the TIA-222-G Standard.
2. Tower designed for a 97 mph basic wind in accordance with the TIA-222-G Standard.
3. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Structure Class II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. TOWER RATING: 79.1%

Section	1	2	3	4
Length (ft)	37.75	53.00	53.00	53.00
Number of Sides	18	18	18	18
Thickness (in)	0.2500	0.3750	0.3750	0.3750
Socket Length (ft)	4.33	5.92	7.50	
Top Dia (in)	23.1000	31.5849	43.4924	54.9765
Bot Dia (in)	33.2490	45.8340	57.7420	69.2250
Grade		A572-65		
Weight (lb)	2846.3	8228.8	10784.9	13249.9

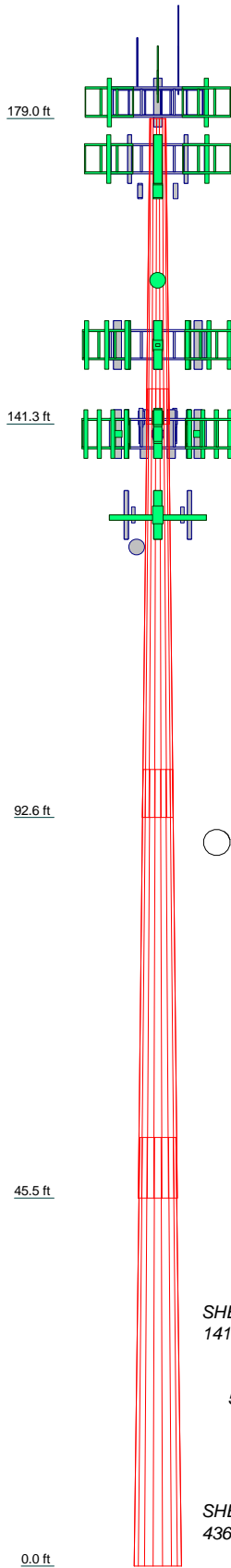


**EFI Global, INC**  
 efi global 1117 Perimeter Center West, Ste E500  
 Atlanta, GA  
 Phone: 770-693-0835  
 FAX:

Job: **CTHA014A**  
 Project: **049.00094 - 2075004**  
 Client: T-Mobile  
 Code: TIA-222-G  
 Path:  
 Drawn by: Ahmet Colakoglu  
 Date: 07/27/20  
 App'd:  
 Scale: NTS  
 Dwg No. E-1



Section	1	2	3	4
Length (ft)	37.75	53.00	53.00	53.00
Number of Sides	18	18	18	18
Thickness (in)	0.2500	0.3750	0.3750	0.3750
Socket Length (ft)	4.33	5.92	7.50	54.9765
Top Dia (in)	23.1000	31.5849	43.4924	69.2250
Bot Dia (in)	33.2490	45.8340	57.7420	132.49.9
Grade		A572-65		
Weight (lb)	2846.3	8228.8	10784.9	13249.9



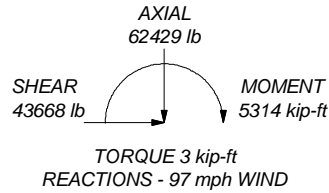
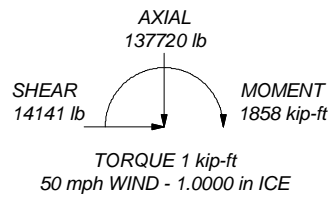
**MATERIAL STRENGTH**

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

**TOWER DESIGN NOTES**

1. Tower designed for Exposure C to the TIA-222-G Standard.
2. Tower designed for a 97 mph basic wind in accordance with the TIA-222-G Standard.
3. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Structure Class II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. TOWER RATING: 79.1%

ALL REACTIONS ARE FACTORED



**EFI Global, INC**  
 efi global 1117 Perimeter Center West, Ste E500  
 Atlanta, GA  
 Phone: 770-693-0835  
 FAX:

Job: **CTHA014A**  
 Project: **049.00094 - 2075004**  
 Client: T-Mobile  
 Code: TIA-222-G  
 Path:  
 Drawn by: Ahmet Colakoglu  
 Date: 07/27/20  
 App'd:  
 Scale: NTS  
 Dwg No. E-1

<b>tnxTower</b>  <b>EFI Global, INC</b> 1117 Perimeter Center West, Ste E500 Atlanta, GA Phone: 770-693-0835 FAX:	<b>Job</b> CTHA014A	<b>Page</b> 1 of 20
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## Tower Input Data

The tower is a monopole.

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

The following design criteria apply:

Basic wind speed of 97 mph.

Structure Class II.

Exposure Category C.

Topographic Category 1.

Crest Height 0.00 ft.

Nominal ice thickness of 1.0000 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

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

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

Stress ratio used in pole design is 1.

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

## Options

<ul style="list-style-type: none"> <li>Consider Moments - Legs</li> <li>Consider Moments - Horizontals</li> <li>Consider Moments - Diagonals</li> <li>Use Moment Magnification</li> <li>√ Use Code Stress Ratios</li> <li>√ Use Code Safety Factors - Guys</li> <li>Escalate Ice</li> <li>Always Use Max Kz</li> <li>Use Special Wind Profile</li> <li>Include Bolts In Member Capacity</li> <li>Leg Bolts Are At Top Of Section</li> <li>Secondary Horizontal Braces Leg</li> <li>Use Diamond Inner Bracing (4 Sided)</li> <li>SR Members Have Cut Ends</li> <li>SR Members Are Concentric</li> </ul>	<ul style="list-style-type: none"> <li>Distribute Leg Loads As Uniform</li> <li>Assume Legs Pinned</li> <li>√ Assume Rigid Index Plate</li> <li>√ Use Clear Spans For Wind Area</li> <li>Use Clear Spans For KL/r</li> <li>Retention Guys To Initial Tension</li> <li>√ Bypass Mast Stability Checks</li> <li>√ Use Azimuth Dish Coefficients</li> <li>√ Project Wind Area of Appurt.</li> <li>Autocalc Torque Arm Areas</li> <li>Add IBC .6D+W Combination</li> <li>√ Sort Capacity Reports By Component</li> <li>Triangulate Diamond Inner Bracing</li> <li>Treat Feed Line Bundles As Cylinder</li> <li>Ignore KL/ry For 60 Deg. Angle Legs</li> </ul>	<ul style="list-style-type: none"> <li>Use ASCE 10 X-Brace Ly Rules</li> <li>Calculate Redundant Bracing Forces</li> <li>Ignore Redundant Members in FEA</li> <li>SR Leg Bolts Resist Compression</li> <li>All Leg Panels Have Same Allowable</li> <li>Offset Girt At Foundation</li> <li>√ Consider Feed Line Torque</li> <li>Include Angle Block Shear Check</li> <li>Use TIA-222-G Bracing Resist. Exemption</li> <li>Use TIA-222-G Tension Splice Exemption</li> <li style="text-align: center;">Poles</li> <li>√ Include Shear-Torsion Interaction</li> <li>Always Use Sub-Critical Flow</li> <li>Use Top Mounted Sockets</li> <li>Pole Without Linear Attachments</li> <li>Pole With Shroud Or No Appurtenances</li> <li>Outside and Inside Corner Radii Are Known</li> </ul>
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## Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	179.00-141.25	37.75	4.33	18	23.1000	33.2490	0.2500	1.0000	A572-65 (65 ksi)
L2	141.25-92.58	53.00	5.92	18	31.5849	45.8340	0.3750	1.5000	A572-65 (65 ksi)

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Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L3	92.58-45.50	53.00	7.50	18	43.4924	57.7420	0.3750	1.5000	A572-65 (65 ksi)
L4	45.50-0.00	53.00		18	54.9755	69.2250	0.3750	1.5000	A572-65 (65 ksi)

### Tapered Pole Properties

Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	I/C in <sup>3</sup>	J in <sup>4</sup>	It/Q in <sup>2</sup>	w in	w/t
L1	23.4178	18.1315	1196.0325	8.1118	11.7348	101.9219	2393.6388	9.0675	3.6256	14.502
	33.7234	26.1847	3602.3567	11.7146	16.8905	213.2772	7209.4536	13.0948	5.4118	21.647
L2	33.1964	37.1476	4571.4330	11.0795	16.0451	284.9110	9148.8811	18.5773	4.8989	13.064
	46.4832	54.1076	14126.5228	16.1379	23.2837	606.7137	28271.6336	27.0589	7.4068	19.751
L3	45.7217	51.3205	12054.0604	15.3067	22.0941	545.5773	24123.9819	25.6651	6.9947	18.652
	58.5749	68.2811	28389.7820	20.3653	29.3329	967.8466	56816.9200	34.1470	9.5026	25.34
L4	57.8133	64.9883	24477.4753	19.3832	27.9276	876.4625	48987.1587	32.5003	9.0157	24.042
	70.2351	81.9487	49078.0698	24.4417	35.1663	1395.5995	98220.7178	40.9821	11.5236	30.73

Tower Elevation ft	Gusset Area (per face) ft <sup>2</sup>	Gusset Thickness in	Gusset Grade	Adjust. Factor A <sub>f</sub>	Adjust. Factor A <sub>r</sub>	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 179.00-141.25				1	1	1			
L2 141.25-92.58				1	1	1			
L3 92.58-45.50				1	1	1			
L4 45.50-0.00				1	1	1			

### Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
AVA6-50(1-1/4)	B	No	Surface Ar (CaAa)	6.00 - 174.00	1	1	0.000 0.000	1.5600		0.46
****										
**151 T-Mobile**										
AL7-50(1-5/8")	C	No	Surface Ar (CaAa)	6.00 - 151.00	6	6	-0.100 -0.100	1.9600		0.52
AVA6-50(1-1/4)	C	No	Surface Af (CaAa)	6.00 - 151.00	2	2	-0.125 -0.125	1.5600	4.9009	0.46
HB114-13U6-S12F18(1-1/4")	C	No	Surface Af (CaAa)	6.00 - 151.00	2	2	-0.123 -0.123	1.5400	4.8381	1.51
AL7-50(1-5/8")	C	No	Surface Ar (CaAa)	6.00 - 130.00	6	6	0.100 0.300	1.9600		0.52
ATCB-B01(1/4")	C	No	Surface Ar (CaAa)	6.00 - 130.00	1	1	0.313 0.313	0.3150		0.07
*****										
Step Pegs (Surface Ar)	C	No	Surface Ar	6.00 -	1	1	0.000	0.8000		2.72

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Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
****			(CaAa)	179.00			0.000			
8x0.5	A	No	Surface Af (CaAa)	30.00 - 0.00	1	1	0.000 0.000	8.0000	17.0000	13.61
8x0.5	B	No	Surface Af (CaAa)	30.00 - 0.00	1	1	0.000 0.000	8.0000	17.0000	13.61
8x0.5	C	No	Surface Af (CaAa)	30.00 - 0.00	1	1	0.000 0.000	8.0000	17.0000	13.61

### Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C <sub>A</sub> A <sub>A</sub> ft <sup>2</sup> /ft	Weight plf
AL7-50(1-5/8")	B	No	No	Inside Pole	6.00 - 179.00	4	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.52 0.52 0.52
AVA6-50(1-1/4)	B	No	No	Inside Pole	6.00 - 179.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.46 0.46 0.46
AL5-50(7/8")	B	No	No	Inside Pole	6.00 - 179.00	2	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.26 0.26 0.26
HJ4-50(1/2")	B	No	No	Inside Pole	6.00 - 179.00	2	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.25 0.25 0.25
****									
AVA6-50(1-1/4)	B	No	No	Inside Pole	6.00 - 174.00	3	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.46 0.46 0.46
****									
ATCB-B01(1/4")	B	No	No	Inside Pole	6.00 - 159.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.07 0.07 0.07
****									
****									
AL7-50(1-5/8")	A	No	No	Inside Pole	6.00 - 140.00	12	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.52 0.52 0.52
FB-L98-002-XXX(3/8")	A	No	No	Inside Pole	6.00 - 140.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.06 0.06 0.06
WR-VG122ST-BRD A(7/16")	A	No	No	Inside Pole	6.00 - 140.00	2	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.25 0.25 0.25
****									
AL7-50(1-5/8")	C	No	No	Inside Pole	6.00 - 130.00	12	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.52 0.52 0.52
****									
ATCB-B01(1/4")	B	No	No	Inside Pole	6.00 - 126.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.07 0.07 0.07



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### Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>	Weight lb
L1	179.00-141.25	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	5.109	0.000	195.98
		C	0.000	0.000	24.561	0.000	171.51
L2	141.25-92.58	A	0.000	0.000	0.000	0.000	322.67
		B	0.000	0.000	7.593	0.000	268.97
		C	0.000	0.000	156.607	0.000	829.05
L3	92.58-45.50	A	0.000	0.000	0.000	0.000	320.36
		B	0.000	0.000	7.344	0.000	261.29
		C	0.000	0.000	164.631	0.000	904.64
L4	45.50-0.00	A	0.000	0.000	40.000	0.000	677.08
		B	0.000	0.000	46.162	0.000	627.52
		C	0.000	0.000	178.125	0.000	1167.29

### Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>	Weight lb
L1	179.00-141.25	A	2.341	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	20.441	0.000	561.30
		C		0.000	0.000	40.730	0.000	1118.80
L2	141.25-92.58	A	2.268	0.000	0.000	0.000	0.000	322.67
		B		0.000	0.000	30.377	0.000	811.88
		C		0.000	0.000	222.305	0.000	5774.39
L3	92.58-45.50	A	2.152	0.000	0.000	0.000	0.000	320.36
		B		0.000	0.000	28.696	0.000	760.52
		C		0.000	0.000	239.746	0.000	5897.22
L4	45.50-0.00	A	1.929	0.000	0.000	52.909	0.000	1308.23
		B		0.000	0.000	76.068	0.000	1644.04
		C		0.000	0.000	249.930	0.000	5702.11

### Feed Line Center of Pressure

Section	Elevation ft	CP <sub>x</sub> in	CP <sub>z</sub> in	CP <sub>x</sub> Ice in	CP <sub>z</sub> Ice in
L1	179.00-141.25	2.1421	3.9114	1.5894	2.2296
L2	141.25-92.58	1.7775	10.9480	0.0999	6.3723
L3	92.58-45.50	1.5668	13.0387	-0.2995	7.9607
L4	45.50-0.00	1.1511	9.5266	-0.2594	6.7172

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

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### Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L1	7	AVA6-50(1-1/4)	141.25 - 174.00	1.0000	1.0000
L1	12	AL7-50(1-5/8")	141.25 - 151.00	1.0000	1.0000
L1	13	AVA6-50(1-1/4)	141.25 - 151.00	1.0000	1.0000
L1	14	HB114-13U6-S12F18(1-1/4")	141.25 - 151.00	1.0000	1.0000
L1	28	Step Pegs (Surface Ar)	141.25 - 179.00	1.0000	1.0000
L1	23	AL7-50(1-5/8")	141.25 - 130.00	1.0000	1.0000
L1	24	ATCB-B01(1/4")	141.25 - 130.00	1.0000	1.0000
L2	7	AVA6-50(1-1/4)	92.58 - 141.25	1.0000	1.0000
L2	12	AL7-50(1-5/8")	92.58 - 141.25	1.0000	1.0000
L2	13	AVA6-50(1-1/4)	92.58 - 141.25	1.0000	1.0000
L2	14	HB114-13U6-S12F18(1-1/4")	92.58 - 141.25	1.0000	1.0000
L2	23	AL7-50(1-5/8")	92.58 - 130.00	1.0000	1.0000
L2	24	ATCB-B01(1/4")	92.58 - 130.00	1.0000	1.0000
L2	28	Step Pegs (Surface Ar)	92.58 - 141.25	1.0000	1.0000
L3	7	AVA6-50(1-1/4)	45.50 - 92.58	1.0000	1.0000
L3	12	AL7-50(1-5/8")	45.50 - 92.58	1.0000	1.0000
L3	13	AVA6-50(1-1/4)	45.50 - 92.58	1.0000	1.0000
L3	14	HB114-13U6-S12F18(1-1/4")	45.50 - 92.58	1.0000	1.0000
L3	23	AL7-50(1-5/8")	45.50 - 92.58	1.0000	1.0000
L3	24	ATCB-B01(1/4")	45.50 - 92.58	1.0000	1.0000
L3	28	Step Pegs (Surface Ar)	45.50 - 92.58	1.0000	1.0000
L3	30	8x0.5	45.50 - 30.00	1.0000	1.0000
L3	31	8x0.5	45.50 - 30.00	1.0000	1.0000
L3	32	8x0.5	45.50 - 30.00	1.0000	1.0000

### Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight	
			ft ft ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	lb	
(3) 6' x 2" Mount Pipe	A	From Face	2.00	0.0000	181.00	No Ice	1.43	1.43	22.00
			0.00			1/2" Ice	1.92	1.92	32.83
			0.00			1" Ice	2.29	2.29	47.71
(3) 6' x 2" Mount Pipe	B	From Face	2.00	0.0000	181.00	No Ice	1.43	1.43	22.00
			0.00			1/2" Ice	1.92	1.92	32.83
			0.00			1" Ice	2.29	2.29	47.71
(3) 6' x 2" Mount Pipe	C	From Face	2.00	0.0000	181.00	No Ice	1.43	1.43	22.00
			0.00			1/2" Ice	1.92	1.92	32.83
			0.00			1" Ice	2.29	2.29	47.71
Omni 4"x6'	A	From Face	2.00	0.0000	181.00	No Ice	2.09	2.09	20.00

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	CAAA Front	CAAA Side	Weight
			Horz	Lateral					
			0.00						
			5.00						
Omni 2"x6'	A	From Face	2.00	0.0000	181.00	1/2" Ice	2.46	2.46	37.13
			0.00			1" Ice	2.83	2.83	54.26
			0.00			No Ice	1.20	1.20	25.00
			5.00			1/2" Ice	1.80	1.80	34.39
Distribution Box	A	From Face	2.00	0.0000	181.00	1" Ice	2.40	2.40	43.78
			0.00			No Ice	2.33	1.36	10.00
			0.00			1/2" Ice	2.55	1.54	26.33
			0.00			1" Ice	2.77	1.50	42.66
Omni 3"x4'	B	From Face	2.00	0.0000	181.00	No Ice	1.00	1.00	15.00
			0.00			1/2" Ice	1.25	1.25	23.96
			4.00			1" Ice	1.50	5.06	32.92
Omni 3"x10'	B	From Face	2.00	0.0000	181.00	No Ice	3.00	3.00	20.00
			0.00			1/2" Ice	4.03	4.03	41.79
			7.00			1" Ice	5.06	1.72	63.58
Distribution Box	B	From Face	2.00	0.0000	181.00	No Ice	2.33	1.36	10.00
			0.00			1/2" Ice	2.55	1.54	26.33
			0.00			1" Ice	2.77	1.50	42.66
Omni 3" x 4'	C	From Face	2.00	0.0000	181.00	No Ice	1.00	1.00	15.00
			0.00			1/2" Ice	1.25	1.25	23.96
			4.00			1" Ice	1.50	2.18	32.92
4' Dipole	C	From Face	2.00	0.0000	181.00	No Ice	1.64	1.64	15.00
			0.00			1/2" Ice	1.91	1.91	32.13
			2.00			1" Ice	2.18	2.18	49.26
TA 702-3	A	None		0.0000	181.00	No Ice	5.64	5.64	339.00
						1/2" Ice	6.55	6.55	429.00
						1" Ice	7.46	7.46	519.00
<b>**Sprint**</b>									
ET-X-TU-42-15-37-18-iR-ST w/ Mount Pipe	A	From Face	3.00	0.0000	174.00	No Ice	8.68	4.50	68.25
			0.00			1/2" Ice	9.18	5.17	127.30
			0.00			1" Ice	9.68	5.84	192.77
APXVSPP18-C w/ Mount Pipe	B	From Face	3.00	0.0000	174.00	No Ice	4.60	4.01	90.09
			0.00			1/2" Ice	5.05	4.45	154.53
			0.00			1" Ice	5.50	4.89	229.77
APXVSPP18-C w/ Mount Pipe	C	From Face	3.00	0.0000	174.00	No Ice	4.60	4.01	90.09
			0.00			1/2" Ice	5.05	4.45	154.53
			0.00			1" Ice	5.50	4.89	229.77
APXV9TM14 w/ Mount Pipe	A	From Face	3.00	0.0000	174.00	No Ice	7.21	5.03	91.90
			0.00			1/2" Ice	7.77	5.89	147.31
			0.00			1" Ice	8.33	6.75	202.72
APXV9TM14 w/ Mount Pipe	B	From Face	3.00	0.0000	174.00	No Ice	7.21	5.03	91.90
			0.00			1/2" Ice	7.77	5.89	147.31
			0.00			1" Ice	8.33	6.75	202.72
APXV9TM14 w/ Mount Pipe	C	From Face	3.00	0.0000	174.00	No Ice	7.21	5.03	91.90
			0.00			1/2" Ice	7.77	5.89	147.31
			0.00			1" Ice	8.33	6.75	202.72
RRH8x20-25	A	From Face	1.50	0.0000	174.00	No Ice	4.72	1.70	70.00
			0.00			1/2" Ice	5.01	1.92	97.14
			0.00			1" Ice	5.30	2.14	124.28
RRH8x20-25	B	From Face	1.50	0.0000	174.00	No Ice	4.72	1.70	70.00
			0.00			1/2" Ice	5.01	1.92	97.14
			0.00			1" Ice	5.30	2.14	124.28
RRH8x20-25	C	From Face	1.50	0.0000	174.00	No Ice	4.72	1.70	70.00
			0.00			1/2" Ice	5.01	1.92	97.14
			0.00			1" Ice	5.30	2.14	124.28
6'-P2x0.154	A	From Face	3.00	0.0000	174.00	No Ice	1.43	1.43	21.96
			0.00			1/2" Ice	1.92	1.92	32.79
			0.00			1" Ice	2.29	2.29	47.67

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	CAAA		Weight
			Horz	Vert			Front	Side	
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	lb
6'-P2x0.154	B	From Face	3.00	0.0000	174.00	No Ice	1.43	1.43	21.96
			0.00			1/2" Ice	1.92	1.92	32.79
			0.00			1" Ice	2.29	2.29	47.67
6'-P2x0.154	C	From Face	3.00	0.0000	174.00	No Ice	1.43	1.43	21.96
			0.00			1/2" Ice	1.92	1.92	32.79
			0.00			1" Ice	2.29	2.29	47.67
TA 602-3	C	None		0.0000	174.00	No Ice	11.59	11.59	774.00
						1/2" Ice	15.44	15.44	990.00
						1" Ice	19.29	19.29	1206.00
***									
RRH1900MHz	A	From Face	1.50	0.0000	170.00	No Ice	2.60	3.72	59.13
			0.00			1/2" Ice	2.84	4.10	97.16
			0.00			1" Ice	3.09	4.50	139.81
RRH1900MHz	B	From Face	1.50	0.0000	170.00	No Ice	2.60	3.72	59.13
			0.00			1/2" Ice	2.84	4.10	97.16
			0.00			1" Ice	3.09	4.50	139.81
RRH1900MHz	C	From Face	1.50	0.0000	170.00	No Ice	2.60	3.72	59.13
			0.00			1/2" Ice	2.84	4.10	97.16
			0.00			1" Ice	3.09	4.50	139.81
RRH800MHz	A	From Face	1.50	0.0000	170.00	No Ice	2.24	2.41	49.43
			0.00			1/2" Ice	2.49	2.75	78.53
			0.00			1" Ice	2.74	3.11	111.69
RRH800MHz	B	From Face	1.50	0.0000	170.00	No Ice	2.24	2.41	49.43
			0.00			1/2" Ice	2.49	2.75	78.53
			0.00			1" Ice	2.74	3.11	111.69
RRH800MHz	C	From Face	1.50	0.0000	170.00	No Ice	2.24	2.41	49.43
			0.00			1/2" Ice	2.49	2.75	78.53
			0.00			1" Ice	2.74	3.11	111.69
Ring Mount	C	None		0.0000	170.00	No Ice	1.40	1.40	90.00
						1/2" Ice	2.40	2.40	130.00
						1" Ice	3.40	3.40	170.00
**151ft T Mobile**									
Gen TMA	A	From Face	2.00	0.0000	151.00	No Ice	0.68	0.45	13.20
			0.00			1/2" Ice	0.80	0.56	18.38
			0.00			1" Ice	0.92	0.67	23.56
Gen TMA	B	From Face	2.00	0.0000	151.00	No Ice	0.68	0.45	13.20
			0.00			1/2" Ice	0.80	0.56	18.38
			0.00			1" Ice	0.92	0.67	23.56
Gen TMA	C	From Face	2.00	0.0000	151.00	No Ice	0.68	0.45	13.20
			0.00			1/2" Ice	0.80	0.56	18.38
			0.00			1" Ice	0.92	0.67	23.56
AIR -32 B2A/B66AA w/ Mount Pipe	A	From Leg	3.00	0.0000	151.00	No Ice	6.75	6.07	153.07
			0.00			1/2" Ice	7.20	6.87	214.04
			0.00			1" Ice	7.65	7.58	281.89
AIR -32 B2A/B66AA w/ Mount Pipe	B	From Leg	3.00	0.0000	151.00	No Ice	6.75	6.07	153.07
			0.00			1/2" Ice	7.20	6.87	214.04
			0.00			1" Ice	7.65	7.58	281.89
AIR -32 B2A/B66AA w/ Mount Pipe	C	From Leg	3.00	0.0000	151.00	No Ice	6.75	6.07	153.07
			0.00			1/2" Ice	7.20	6.87	214.04
			0.00			1" Ice	7.65	7.58	281.89
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	3.00	0.0000	151.00	No Ice	14.69	6.87	186.18
			0.00			1/2" Ice	15.46	7.55	314.71
			0.00			1" Ice	16.23	8.25	457.66
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	3.00	0.0000	151.00	No Ice	14.69	6.87	186.18
			0.00			1/2" Ice	15.46	7.55	314.71
			0.00			1" Ice	16.23	8.25	457.66
APXVAARR24_43-U-NA20	C	From Leg	3.00	0.0000	151.00	No Ice	14.69	6.87	186.18



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T-Mobile						Ahmet Colakoglu		

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	CAAA Front	CAAA Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	lb
w/ Mount Pipe			0.00			1/2" Ice	15.46	7.55	314.71
			0.00			1" Ice	16.23	8.25	457.66
Ericson Radio4449 B71 + B85	A	From Face	3.00		0.0000	No Ice	1.97	1.40	74.90
			0.00			1/2" Ice	2.15	1.56	93.38
			0.00			1" Ice	2.33	1.72	114.67
Ericson Radio4449 B71 + B85	B	From Face	3.00		0.0000	No Ice	1.97	1.40	74.90
			0.00			1/2" Ice	2.15	1.56	93.38
			0.00			1" Ice	2.33	1.72	114.67
Ericson Radio4449 B71 + B85	C	From Face	3.00		0.0000	No Ice	1.97	1.40	74.90
			0.00			1/2" Ice	2.15	1.56	93.38
			0.00			1" Ice	2.33	1.72	114.67
Ericsson AIR6449 B41/Mountpipe	A	From Face	3.00		0.0000	No Ice	6.91	4.32	79.20
			0.00			1/2" Ice	7.76	5.37	138.84
			0.00			1" Ice	8.51	6.28	204.77
Ericsson AIR6449 B41/Mountpipe	B	From Face	3.00		0.0000	No Ice	6.91	4.32	79.20
			0.00			1/2" Ice	7.76	5.37	138.84
			0.00			1" Ice	8.51	6.28	204.77
Ericsson AIR6449 B41/Mountpipe	C	From Face	3.00		0.0000	No Ice	6.91	4.32	79.20
			0.00			1/2" Ice	7.76	5.37	138.84
			0.00			1" Ice	8.51	6.28	204.77
RRUS 4415 B25	A	From Face	3.00		0.0000	No Ice	1.64	0.68	44.00
			0.00			1/2" Ice	1.80	0.79	56.43
			0.00			1" Ice	1.97	0.91	71.23
RRUS 4415 B25	B	From Face	3.00		0.0000	No Ice	1.64	0.68	44.00
			0.00			1/2" Ice	1.80	0.79	56.43
			0.00			1" Ice	1.97	0.91	71.23
RRUS 4415 B25	C	From Face	3.00		0.0000	No Ice	1.64	0.68	44.00
			0.00			1/2" Ice	1.80	0.79	56.43
			0.00			1" Ice	1.97	0.91	71.23
Commscope SDX19260-43 (E14F05P86)	A	From Face	3.00		0.0000	No Ice	0.24	0.10	6.17
			0.00			1/2" Ice	0.31	0.14	8.64
			0.00			1" Ice	0.38	0.19	12.21
Commscope SDX19260-43 (E14F05P86)	B	From Face	3.00		0.0000	No Ice	0.24	0.10	6.17
			0.00			1/2" Ice	0.31	0.14	8.64
			0.00			1" Ice	0.38	0.19	12.21
Commscope SDX19260-43 (E14F05P86)	C	From Face	3.00		0.0000	No Ice	0.24	0.10	6.17
			0.00			1/2" Ice	0.31	0.14	8.64
			0.00			1" Ice	0.38	0.19	12.21
Pipe 2.0STD Handrail	A	From Leg	3.00		0.0000	No Ice	2.98	2.98	45.75
			0.00			1/2" Ice	7.04	7.04	64.97
			0.00			1" Ice	9.13	9.13	84.19
Pipe 2.0STD Handrail	B	From Leg	3.00		0.0000	No Ice	2.98	2.98	45.75
			0.00			1/2" Ice	7.04	7.04	64.97
			0.00			1" Ice	9.13	9.13	84.19
Pipe 2.0STD Handrail	C	From Leg	3.00		0.0000	No Ice	2.98	2.98	45.75
			0.00			1/2" Ice	7.04	7.04	64.97
			0.00			1" Ice	9.13	9.13	84.19
(2) Pipe 2.5STD Vertical	A	From Leg	3.00		0.0000	No Ice	2.01	2.01	40.60
			0.00			1/2" Ice	4.52	4.52	54.72
			0.00			1" Ice	5.69	5.69	68.84
(2) Pipe 2.5STD Vertical	B	From Leg	3.00		0.0000	No Ice	2.01	2.01	40.60
			0.00			1/2" Ice	4.52	4.52	54.72
			0.00			1" Ice	5.69	5.69	68.84
(2) Pipe 2.5STD Vertical	C	From Leg	3.00		0.0000	No Ice	2.01	2.01	40.60
			0.00			1/2" Ice	4.52	4.52	54.72
			0.00			1" Ice	5.69	5.69	68.84
Side Arm Mount [SO 102-3]	C	None			0.0000	No Ice	3.60	3.60	75.00

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment °	Placement ft	CAAA Front ft <sup>2</sup>	CAAA Side ft <sup>2</sup>	Weight lb	
			Horz Lateral ft	Vert ft						
TA 602-3	C	None			0.0000	151.00	1/2" Ice	4.18	4.18	105.00
							1" Ice	4.75	4.75	135.00
							No Ice	11.59	11.59	774.00
							1/2" Ice	15.44	15.44	990.00
							1" Ice	19.29	19.29	1206.00
****										
RRUS-11	A	From Face	1.00	0.00	0.0000	142.00	No Ice	2.78	1.19	47.62
							1/2" Ice	2.99	1.33	68.42
							1" Ice	3.21	1.49	92.25
RRUS-11	B	From Face	1.00	0.00	0.0000	142.00	No Ice	2.78	1.19	47.62
							1/2" Ice	2.99	1.33	68.42
							1" Ice	3.21	1.49	92.25
RRUS-11	C	From Face	1.00	0.00	0.0000	142.00	No Ice	2.78	1.19	47.62
							1/2" Ice	2.99	1.33	68.42
							1" Ice	3.21	1.49	92.25
RRUS 32 B2	A	From Face	1.00	0.00	0.0000	142.00	No Ice	2.73	1.67	52.90
							1/2" Ice	2.95	1.86	73.96
							1" Ice	3.18	2.05	98.21
RRUS 32 B2	B	From Face	1.00	0.00	0.0000	142.00	No Ice	2.73	1.67	52.90
							1/2" Ice	2.95	1.86	73.96
							1" Ice	3.18	2.05	98.21
RRUS 32 B2	C	From Face	1.00	0.00	0.0000	142.00	No Ice	2.73	1.67	52.90
							1/2" Ice	2.95	1.86	73.96
							1" Ice	3.18	2.05	98.21
**140ft AT&T**										
7770.00 w/ Mount Pipe	A	From Face	3.00	0.00	0.0000	140.00	No Ice	5.75	4.25	55.38
							1/2" Ice	6.18	5.01	102.81
							1" Ice	6.61	5.71	156.64
7770.00 w/ Mount Pipe	B	From Face	3.00	0.00	0.0000	140.00	No Ice	5.75	4.25	55.38
							1/2" Ice	6.18	5.01	102.81
							1" Ice	6.61	5.71	156.64
7770.00 w/ Mount Pipe	C	From Face	3.00	0.00	0.0000	140.00	No Ice	5.75	4.25	55.38
							1/2" Ice	6.18	5.01	102.81
							1" Ice	6.61	5.71	156.64
TPA-65R-LCUUUU-H8 w/ Mount Pipe	A	From Face	3.00	0.00	0.0000	140.00	No Ice	11.85	8.99	114.51
							1/2" Ice	12.77	9.88	209.92
							1" Ice	13.71	10.79	319.13
TPA-65R-LCUUUU-H8 w/ Mount Pipe	B	From Face	3.00	0.00	0.0000	140.00	No Ice	11.85	8.99	114.51
							1/2" Ice	12.77	9.88	209.92
							1" Ice	13.71	10.79	319.13
CCI HPA-65R-BUU-H8 with pipe	A	From Face	3.00	0.00	0.0000	140.00	No Ice	13.28	9.65	122.85
							1/2" Ice	14.00	11.15	220.33
							1" Ice	14.73	12.68	327.71
CCI HPA-65R-BUU-H8 with pipe	B	From Face	3.00	0.00	0.0000	140.00	No Ice	13.28	9.65	122.85
							1/2" Ice	14.00	11.15	220.33
							1" Ice	14.73	12.68	327.71
(2) SBNHH-1D65A w/ Mount Pipe	C	From Face	3.00	0.00	0.0000	140.00	No Ice	3.04	2.45	54.10
							1/2" Ice	3.34	2.75	103.56
							1" Ice	3.65	3.05	161.89
RRUS 32	A	From Face	1.00	0.00	0.0000	140.00	No Ice	2.86	1.78	55.12
							1/2" Ice	3.08	1.97	77.39
							1" Ice	3.32	2.17	102.93
RRUS 32	B	From Face	1.00	0.00	0.0000	140.00	No Ice	2.86	1.78	55.12
							1/2" Ice	3.08	1.97	77.39
							1" Ice	3.32	2.17	102.93
RRUS 32	C	From Face	1.00	0.00	0.0000	140.00	No Ice	2.86	1.78	55.12
							1/2" Ice	3.08	1.97	77.39

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T-Mobile						Ahmet Colakoglu			

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	CAAA Front	CAAA Side	Weight	
			Horz	Vert						
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	lb	
(2) LGP21401	A	From Face	0.00	2.00	0.0000	140.00	1" Ice	3.32	2.17	102.93
			0.00	0.00			No Ice	1.10	0.21	14.10
			0.00	0.00			1/2" Ice	1.24	0.27	21.26
(2) LGP21401	B	From Face	0.00	2.00	0.0000	140.00	1" Ice	1.38	0.35	30.32
			0.00	0.00			No Ice	1.10	0.21	14.10
			0.00	0.00			1/2" Ice	1.24	0.27	21.26
(2) LGP21401	C	From Face	0.00	2.00	0.0000	140.00	1" Ice	1.38	0.35	30.32
			0.00	0.00			No Ice	1.10	0.21	14.10
			0.00	0.00			1/2" Ice	1.24	0.27	21.26
800 10966 w/mount pipe	A	From Leg	0.00	3.00	0.0000	140.00	1" Ice	1.38	0.35	30.32
			0.00	0.00			No Ice	17.36	9.40	154.90
			0.00	0.00			1/2" Ice	17.99	10.82	268.18
800 10966 w/mount pipe	B	From Leg	0.00	3.00	0.0000	140.00	1" Ice	18.63	12.09	391.69
			0.00	0.00			No Ice	17.36	9.40	154.90
			0.00	0.00			1/2" Ice	17.99	10.82	268.18
800 10964 w/ Mount Pipe	C	From Leg	0.00	3.00	0.0000	140.00	1" Ice	18.63	12.09	391.69
			0.00	0.00			No Ice	7.14	3.68	35.00
			0.00	0.00			1/2" Ice	7.52	4.03	79.18
RRUS 4478 B14	A	From Leg	0.00	3.00	0.0000	140.00	1" Ice	7.90	4.38	123.36
			0.00	0.00			No Ice	1.84	1.06	59.90
			0.00	0.00			1/2" Ice	2.01	1.20	75.78
RRUS 4478 B14	B	From Leg	0.00	3.00	0.0000	140.00	1" Ice	2.19	1.34	94.29
			0.00	0.00			No Ice	1.84	1.06	59.90
			0.00	0.00			1/2" Ice	2.01	1.20	75.78
RRUS 4478 B14	C	From Leg	0.00	3.00	0.0000	140.00	1" Ice	2.19	1.34	94.29
			0.00	0.00			No Ice	1.84	1.06	59.90
			0.00	0.00			1/2" Ice	2.01	1.20	75.78
RRUS 32 B66	A	From Leg	0.00	3.00	0.0000	140.00	1" Ice	2.19	1.34	94.29
			0.00	0.00			No Ice	2.74	1.67	53.00
			0.00	0.00			1/2" Ice	2.96	1.86	74.11
RRUS 32 B66	B	From Leg	0.00	3.00	0.0000	140.00	1" Ice	3.19	2.05	98.42
			0.00	0.00			No Ice	2.74	1.67	53.00
			0.00	0.00			1/2" Ice	2.96	1.86	74.11
RRUS 32 B66	C	From Leg	0.00	3.00	0.0000	140.00	1" Ice	3.19	2.05	98.42
			0.00	0.00			No Ice	2.74	1.67	53.00
			0.00	0.00			1/2" Ice	2.96	1.86	74.11
DC6-48-60-0-8C	A	From Face	0.00	1.00	0.0000	140.00	1" Ice	3.19	2.05	98.42
			0.00	0.00			No Ice	0.85	0.85	18.90
			0.00	0.00			1/2" Ice	1.36	1.36	35.59
DC6-48-60-0-8C	B	From Face	0.00	1.00	0.0000	140.00	1" Ice	1.53	1.53	54.69
			0.00	0.00			No Ice	0.85	0.85	18.90
			0.00	0.00			1/2" Ice	1.36	1.36	35.59
DC6-48-60-0-8C	C	From Face	0.00	1.00	0.0000	140.00	1" Ice	1.53	1.53	54.69
			0.00	0.00			No Ice	0.85	0.85	18.90
			0.00	0.00			1/2" Ice	1.36	1.36	35.59
Sector Mount [SM 502-3]	C	None	0.00		0.0000	140.00	1" Ice	1.53	1.53	54.69
			0.00				No Ice	29.82	29.82	1673.10
			0.00				1/2" Ice	42.21	42.21	2266.26
**130ft Verizon** BXA-171063-12CF-EDIN w/ Mount Pipe	A	From Face	0.00	3.00	0.0000	130.00	1" Ice	54.43	54.43	3051.51
			0.00	0.00			No Ice	5.04	5.30	38.50
			0.00	0.00			1/2" Ice	5.59	6.47	84.59
BXA-70080-4CF-EDIN w/ Mount Pipe	A	From Face	0.00	3.00	0.0000	130.00	1" Ice	6.11	7.36	138.12
			0.00	0.00			No Ice	5.41	3.70	28.25
			0.00	0.00			1/2" Ice	5.86	4.32	70.71
BXA-70080-6CF-EDIN w/ Mount Pipe	A	From Face	0.00	3.00	0.0000	130.00	1" Ice	6.31	4.94	113.17
			0.00	0.00			No Ice	7.99	5.82	42.55
			0.00	0.00			1/2" Ice			

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Description	Face or Leg	Offset Type	Offsets:			Azimuth Adjustment	Placement	CAAA Front	CAAA Side	Weight
			Horz	Lateral	Vert					
Mount Pipe			0.00				1/2" Ice	8.64	6.99	103.53
			0.00				1" Ice	9.29	8.16	164.51
Rymsa MGD3-900	A	From Face	3.00	0.0000	130.00	No Ice	5.37	3.60	22.00	
			0.00			1/2" Ice	5.83	4.04	51.69	
			0.00			1" Ice	6.29	4.48	81.38	
RRH2x40-AWS	A	From Face	2.00	0.0000	130.00	No Ice	2.16	1.42	44.00	
			0.00			1/2" Ice	2.36	1.59	61.40	
			0.00			1" Ice	2.57	1.77	81.69	
BXA-171063-12CF-EDIN w/ Mount Pipe	B	From Face	3.00	0.0000	130.00	No Ice	5.04	5.30	38.50	
			0.00			1/2" Ice	5.59	6.47	84.59	
			0.00			1" Ice	6.11	7.36	138.12	
BXA-70080-4CF-EDIN w/ Mount Pipe	B	From Face	3.00	0.0000	130.00	No Ice	5.41	3.70	28.25	
			0.00			1/2" Ice	5.86	4.32	70.71	
			0.00			1" Ice	6.31	4.94	113.17	
BXA-70080-6CF-EDIN w/ Mount Pipe	B	From Face	3.00	0.0000	130.00	No Ice	7.99	5.82	42.55	
			0.00			1/2" Ice	8.64	6.99	103.53	
			0.00			1" Ice	9.29	8.16	164.51	
Rymsa MGD3-900	B	From Face	3.00	0.0000	130.00	No Ice	5.37	3.60	22.00	
			0.00			1/2" Ice	5.83	4.04	51.69	
			0.00			1" Ice	6.29	4.48	81.38	
RRH2x40-AWS	B	From Face	2.00	0.0000	130.00	No Ice	2.16	1.42	44.00	
			0.00			1/2" Ice	2.36	1.59	61.40	
			0.00			1" Ice	2.57	1.77	81.69	
BXA-171063-12CF-EDIN w/ Mount Pipe	C	From Face	3.00	0.0000	130.00	No Ice	5.04	5.30	38.50	
			0.00			1/2" Ice	5.59	6.47	84.59	
			0.00			1" Ice	6.11	7.36	138.12	
BXA-70080-4CF-EDIN w/ Mount Pipe	C	From Face	3.00	0.0000	130.00	No Ice	5.41	3.70	28.25	
			0.00			1/2" Ice	5.86	4.32	70.71	
			0.00			1" Ice	6.31	4.94	113.17	
BXA-70080-6CF-EDIN w/ Mount Pipe	C	From Face	3.00	0.0000	130.00	No Ice	7.99	5.82	42.55	
			0.00			1/2" Ice	8.64	6.99	103.53	
			0.00			1" Ice	9.29	8.16	164.51	
Rymsa MGD3-900	C	From Face	3.00	0.0000	130.00	No Ice	5.37	3.60	22.00	
			0.00			1/2" Ice	5.83	4.04	51.69	
			0.00			1" Ice	6.29	4.48	81.38	
RRH2x40-AWS	C	From Face	2.00	0.0000	130.00	No Ice	2.16	1.42	44.00	
			0.00			1/2" Ice	2.36	1.59	61.40	
			0.00			1" Ice	2.57	1.77	81.69	
RxxDC-3315-PF-48	C	From Face	2.00	0.0000	130.00	No Ice	3.49	2.19	21.40	
			0.00			1/2" Ice	3.73	2.39	50.67	
			0.00			1" Ice	3.98	2.61	83.51	
Pirod 13' Low Profile Platform	C	None		0.0000	130.00	No Ice	15.70	15.70	1300.00	
						1/2" Ice	20.10	20.10	1765.00	
						1" Ice	24.50	24.50	2230.00	
*****										
*****										

**Dishes**



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Description	Face or Leg	Dish Type	Offset Type	Offsets:		Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight	
				Horz Lateral ft	Vert °							
HP2-102	C	Paraboloid w/Shroud (HP)	From Face	1.50	0.0000	159.00	°	ft	2.00	No Ice	3.14	25.00
				0.00						1/2" Ice	3.41	42.49
				0.00						1" Ice	3.68	59.98
HP2-102	A	Paraboloid w/Shroud (HP)	From Face	1.50	0.0000	126.00	°	ft	2.00	No Ice	3.14	25.00
				0.00						1/2" Ice	3.41	42.49
				0.00						1" Ice	3.68	59.98

### Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service

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Comb. No.	Description
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

### Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	179 - 141.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-28081.98	-0.92	-1.47
			Max. Mx	8	-8941.82	-259.89	-2.64
			Max. My	2	-8952.03	2.01	256.62
			Max. Vy	8	14594.86	-259.89	-2.64
			Max. Vx	2	-14563.96	2.01	256.62
			Max. Torque	8			0.46
L2	141.25 - 92.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-73858.77	-4.67	-7.12
			Max. Mx	8	-25580.16	-1534.25	-13.05
			Max. My	2	-25602.37	10.59	1522.85
			Max. Vy	8	32172.51	-1534.25	-13.05
			Max. Vx	2	-31986.39	10.59	1522.85
			Max. Torque	23			-3.42
L3	92.58 - 45.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-100183.78	-6.76	-19.39
			Max. Mx	8	-40133.52	-3127.64	-26.08
			Max. My	2	-40145.94	21.00	3106.16
			Max. Vy	8	37813.64	-3127.64	-26.08
			Max. Vx	2	-37629.44	21.00	3106.16
			Max. Torque	23			-3.13
L4	45.5 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-137719.78	-8.92	-33.18
			Max. Mx	8	-62400.95	-5294.00	-41.15
			Max. My	14	-62401.25	-40.25	-5262.64
			Max. Vy	8	43591.54	-5294.00	-41.15
			Max. Vx	2	-43414.74	32.88	5260.87
			Max. Torque	23			-3.12

### Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Pole	Max. Vert	32	137719.78	-7084.24	-12224.77
	Max. H <sub>x</sub>	20	62429.11	43509.35	192.10
	Max. H <sub>z</sub>	2	62429.11	223.27	43374.67
	Max. M <sub>x</sub>	2	5260.87	223.27	43374.67
	Max. M <sub>z</sub>	8	5294.00	-43551.22	-243.50
	Max. Torsion	11	3.06	-37790.37	-21881.36
	Min. Vert	5	46821.83	-21564.86	37499.41
	Min. H <sub>x</sub>	8	62429.11	-43551.22	-243.50
	Min. H <sub>z</sub>	14	62429.11	-263.28	-43340.70
	Min. M <sub>x</sub>	14	-5262.64	-263.28	-43340.70

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Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
	Min. M <sub>z</sub>	20	-5286.41	43509.35	192.10
	Min. Torsion	23	-3.12	37742.15	21902.04

### Tower Mast Reaction Summary

Load Combination	Vertical lb	Shear <sub>x</sub> lb	Shear <sub>z</sub> lb	Overturning Moment, M <sub>x</sub> kip-ft	Overturning Moment, M <sub>z</sub> kip-ft	Torque kip-ft
Dead Only	52024.25	0.00	0.00	3.12	-0.86	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	62429.11	-223.27	-43374.67	-5260.87	32.88	0.70
0.9 Dead+1.6 Wind 0 deg - No Ice	46821.83	-223.27	-43374.66	-5215.02	32.84	0.70
1.2 Dead+1.6 Wind 30 deg - No Ice	62429.10	21564.86	-37499.41	-4545.50	-2615.45	-1.05
0.9 Dead+1.6 Wind 30 deg - No Ice	46821.83	21564.86	-37499.41	-4506.01	-2591.92	-1.05
1.2 Dead+1.6 Wind 60 deg - No Ice	62429.10	37606.19	-21519.54	-2604.36	-4567.10	-2.35
0.9 Dead+1.6 Wind 60 deg - No Ice	46821.83	37606.19	-21519.54	-2582.15	-4526.18	-2.35
1.2 Dead+1.6 Wind 90 deg - No Ice	62429.11	43551.22	243.50	41.15	-5294.00	-3.03
0.9 Dead+1.6 Wind 90 deg - No Ice	46821.83	43551.21	243.50	39.80	-5246.61	-3.03
1.2 Dead+1.6 Wind 120 deg - No Ice	62429.10	37790.37	21881.36	2666.18	-4596.28	-3.05
0.9 Dead+1.6 Wind 120 deg - No Ice	46821.83	37790.37	21881.36	2641.48	-4555.09	-3.06
1.2 Dead+1.6 Wind 150 deg - No Ice	62429.10	21945.64	37646.88	4575.64	-2673.07	-2.24
0.9 Dead+1.6 Wind 150 deg - No Ice	46821.83	21945.64	37646.88	4533.98	-2648.99	-2.25
1.2 Dead+1.6 Wind 180 deg - No Ice	62429.11	263.28	43340.70	5262.64	-40.25	-0.76
0.9 Dead+1.6 Wind 180 deg - No Ice	46821.83	263.28	43340.69	5214.88	-39.60	-0.77
1.2 Dead+1.6 Wind 210 deg - No Ice	62429.10	-21586.35	37436.23	4543.43	2615.71	1.05
0.9 Dead+1.6 Wind 210 deg - No Ice	46821.83	-21586.35	37436.23	4502.07	2592.72	1.05
1.2 Dead+1.6 Wind 240 deg - No Ice	62429.10	-37590.40	21508.10	2609.16	4563.30	2.35
0.9 Dead+1.6 Wind 240 deg - No Ice	46821.83	-37590.40	21508.10	2585.01	4522.96	2.36
1.2 Dead+1.6 Wind 270 deg - No Ice	62429.11	-43509.35	-192.10	-25.35	5286.41	3.03
0.9 Dead+1.6 Wind 270 deg - No Ice	46821.83	-43509.34	-192.10	-26.07	5239.62	3.03
1.2 Dead+1.6 Wind 300 deg - No Ice	62429.10	-37742.15	-21902.04	-2662.58	4587.44	3.11
0.9 Dead+1.6 Wind 300 deg - No Ice	46821.83	-37742.15	-21902.04	-2639.82	4546.86	3.12
1.2 Dead+1.6 Wind 330 deg - No Ice	62429.10	-21923.95	-37661.83	-4571.44	2668.47	2.24
0.9 Dead+1.6 Wind 330 deg - No Ice	46821.83	-21923.95	-37661.83	-4531.70	2644.96	2.25

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Load Combination	Vertical lb	Shear <sub>x</sub> lb	Shear <sub>z</sub> lb	Overturning Moment, M <sub>x</sub> kip-ft	Overturning Moment, M <sub>z</sub> kip-ft	Torque kip-ft
1.2 Dead+1.0 Ice+1.0 Temp	137719.78	0.01	0.03	33.18	-8.92	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	137719.78	-29.90	-14106.28	-1787.50	-4.31	0.20
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	137719.78	7033.84	-12212.47	-1542.94	-916.67	-0.27
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	137719.78	12220.15	-7033.24	-874.38	-1586.76	-0.64
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	137719.78	14127.56	34.62	38.82	-1833.80	-0.83
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	137719.78	12241.02	7079.22	947.94	-1590.26	-0.84
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	137719.78	7084.24	12224.77	1611.42	-924.43	-0.62
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	137719.78	39.16	14098.36	1852.67	-14.89	-0.21
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	137719.78	-7038.80	12197.79	1607.17	899.34	0.28
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	137719.78	-12216.51	7030.54	940.32	1568.45	0.64
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	137719.78	-14117.87	-22.65	29.87	1814.56	0.83
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	137719.78	-12229.84	-7084.06	-882.31	1570.71	0.85
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	137719.78	-7079.24	-12228.29	-1545.65	905.93	0.62
Dead+Wind 0 deg - Service	52024.25	-47.77	-9280.48	-1117.64	6.33	0.15
Dead+Wind 30 deg - Service	52024.25	4614.04	-8023.41	-965.33	-557.48	-0.23
Dead+Wind 60 deg - Service	52024.25	8046.26	-4604.34	-552.08	-972.98	-0.51
Dead+Wind 90 deg - Service	52024.25	9318.26	52.10	11.13	-1127.75	-0.65
Dead+Wind 120 deg - Service	52024.25	8085.66	4681.76	570.00	-979.21	-0.66
Dead+Wind 150 deg - Service	52024.25	4695.51	8054.96	976.52	-569.76	-0.48
Dead+Wind 180 deg - Service	52024.25	56.33	9273.21	1122.77	-9.23	-0.17
Dead+Wind 210 deg - Service	52024.25	-4618.64	8009.89	969.64	556.20	0.23
Dead+Wind 240 deg - Service	52024.25	-8042.88	4601.89	557.85	970.83	0.51
Dead+Wind 270 deg - Service	52024.25	-9309.30	-41.10	-3.02	1124.79	0.65
Dead+Wind 300 deg - Service	52024.25	-8075.34	-4686.18	-564.48	975.99	0.67
Dead+Wind 330 deg - Service	52024.25	-4690.87	-8058.16	-970.87	567.44	0.49

## Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
1	0.00	-52024.25	0.00	0.00	52024.25	0.00	0.000%
2	-223.27	-62429.10	-43374.65	223.27	62429.11	43374.67	0.000%
3	-223.27	-46821.83	-43374.65	223.27	46821.83	43374.66	0.000%
4	21564.86	-62429.10	-37499.41	-21564.86	62429.10	37499.41	0.000%
5	21564.86	-46821.83	-37499.41	-21564.86	46821.83	37499.41	0.000%
6	37606.19	-62429.10	-21519.54	-37606.19	62429.10	21519.54	0.000%
7	37606.19	-46821.83	-21519.54	-37606.19	46821.83	21519.54	0.000%
8	43551.20	-62429.10	243.50	-43551.22	62429.11	-243.50	0.000%
9	43551.20	-46821.83	243.50	-43551.21	46821.83	-243.50	0.000%
10	37790.37	-62429.10	21881.36	-37790.37	62429.10	-21881.36	0.000%
11	37790.37	-46821.83	21881.36	-37790.37	46821.83	-21881.36	0.000%
12	21945.64	-62429.10	37646.88	-21945.64	62429.10	-37646.88	0.000%
13	21945.64	-46821.83	37646.88	-21945.64	46821.83	-37646.88	0.000%
14	263.28	-62429.10	43340.68	-263.28	62429.11	-43340.70	0.000%
15	263.28	-46821.83	43340.68	-263.28	46821.83	-43340.69	0.000%



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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
16	-21586.35	-62429.10	37436.23	21586.35	62429.10	-37436.23	0.000%
17	-21586.35	-46821.83	37436.23	21586.35	46821.83	-37436.23	0.000%
18	-37590.40	-62429.10	21508.10	37590.40	62429.10	-21508.10	0.000%
19	-37590.40	-46821.83	21508.10	37590.40	46821.83	-21508.10	0.000%
20	-43509.33	-62429.10	-192.10	43509.33	62429.11	192.10	0.000%
21	-43509.33	-46821.83	-192.10	43509.34	46821.83	192.10	0.000%
22	-37742.15	-62429.10	-21902.04	37742.15	62429.10	21902.04	0.000%
23	-37742.15	-46821.83	-21902.04	37742.15	46821.83	21902.04	0.000%
24	-21923.95	-62429.10	-37661.83	21923.95	62429.10	37661.83	0.000%
25	-21923.95	-46821.83	-37661.83	21923.95	46821.83	37661.83	0.000%
26	0.00	-137719.78	0.00	-0.01	137719.78	-0.03	0.000%
27	-29.90	-137719.78	-14106.04	29.90	137719.78	14106.28	0.000%
28	7033.72	-137719.78	-12212.26	-7033.84	137719.78	12212.47	0.000%
29	12219.94	-137719.78	-7033.13	-12220.15	137719.78	7033.24	0.000%
30	14127.32	-137719.78	34.61	-14127.56	137719.78	-34.62	0.000%
31	12240.81	-137719.78	7079.09	-12241.02	137719.78	-7079.22	0.000%
32	7084.12	-137719.78	12224.55	-7084.24	137719.78	-12224.77	0.000%
33	39.16	-137719.78	14098.11	-39.16	137719.78	-14098.36	0.000%
34	-7038.68	-137719.78	12197.57	7038.80	137719.78	-12197.79	0.000%
35	-12216.30	-137719.78	7030.42	12216.51	137719.78	-7030.54	0.000%
36	-14117.63	-137719.78	-22.66	14117.87	137719.78	22.65	0.000%
37	-12229.64	-137719.78	-7083.94	12229.84	137719.78	7084.06	0.000%
38	-7079.12	-137719.78	-12228.08	7079.24	137719.78	12228.29	0.000%
39	-47.77	-52024.25	-9280.48	47.77	52024.25	9280.48	0.000%
40	4614.04	-52024.25	-8023.41	-4614.04	52024.25	8023.41	0.000%
41	8046.25	-52024.25	-4604.34	-8046.26	52024.25	4604.34	0.000%
42	9318.25	-52024.25	52.10	-9318.26	52024.25	-52.10	0.000%
43	8085.66	-52024.25	4681.75	-8085.66	52024.25	-4681.76	0.000%
44	4695.51	-52024.25	8054.96	-4695.51	52024.25	-8054.96	0.000%
45	56.33	-52024.25	9273.21	-56.33	52024.25	-9273.21	0.000%
46	-4618.63	-52024.25	8009.89	4618.64	52024.25	-8009.89	0.000%
47	-8042.88	-52024.25	4601.89	8042.88	52024.25	-4601.89	0.000%
48	-9309.29	-52024.25	-41.10	9309.30	52024.25	41.10	0.000%
49	-8075.34	-52024.25	-4686.18	8075.34	52024.25	4686.18	0.000%
50	-4690.87	-52024.25	-8058.16	4690.87	52024.25	8058.16	0.000%

## Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.0000001	0.0000001
2	Yes	4	0.0000001	0.00016807
3	Yes	4	0.0000001	0.00006891
4	Yes	5	0.0000001	0.00046553
5	Yes	5	0.0000001	0.00020575
6	Yes	5	0.0000001	0.00048686
7	Yes	5	0.0000001	0.00021592
8	Yes	4	0.0000001	0.00056602
9	Yes	4	0.0000001	0.00035805
10	Yes	5	0.0000001	0.00047105
11	Yes	5	0.0000001	0.00020669
12	Yes	5	0.0000001	0.00049886
13	Yes	5	0.0000001	0.00022038
14	Yes	4	0.0000001	0.00045980
15	Yes	4	0.0000001	0.00027774
16	Yes	5	0.0000001	0.00047665

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17	Yes	5	0.00000001	0.00021121
18	Yes	5	0.00000001	0.00045940
19	Yes	5	0.00000001	0.00020264
20	Yes	4	0.00000001	0.00094112
21	Yes	4	0.00000001	0.00059556
22	Yes	5	0.00000001	0.00050481
23	Yes	5	0.00000001	0.00022332
24	Yes	5	0.00000001	0.00047235
25	Yes	5	0.00000001	0.00020777
26	Yes	4	0.00000001	0.00007467
27	Yes	5	0.00000001	0.00049842
28	Yes	5	0.00000001	0.00069535
29	Yes	5	0.00000001	0.00070072
30	Yes	5	0.00000001	0.00051213
31	Yes	5	0.00000001	0.00072427
32	Yes	5	0.00000001	0.00073224
33	Yes	5	0.00000001	0.00051433
34	Yes	5	0.00000001	0.00071109
35	Yes	5	0.00000001	0.00070888
36	Yes	5	0.00000001	0.00050496
37	Yes	5	0.00000001	0.00069677
38	Yes	5	0.00000001	0.00068601
39	Yes	4	0.00000001	0.00002946
40	Yes	4	0.00000001	0.00014969
41	Yes	4	0.00000001	0.00017330
42	Yes	4	0.00000001	0.00004836
43	Yes	4	0.00000001	0.00014935
44	Yes	4	0.00000001	0.00017848
45	Yes	4	0.00000001	0.00003157
46	Yes	4	0.00000001	0.00016212
47	Yes	4	0.00000001	0.00014460
48	Yes	4	0.00000001	0.00005188
49	Yes	4	0.00000001	0.00018464
50	Yes	4	0.00000001	0.00014926

### Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	179 - 141.25	22.272	43	1.0356	0.0027
L2	145.58 - 92.58	15.237	43	0.9489	0.0022
L3	98.5 - 45.5	7.023	43	0.6790	0.0009
L4	53 - 0	2.029	43	0.3509	0.0003

### Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
181.00	(3) 6' x 2" Mount Pipe	43	22.272	1.0356	0.0027	86142
174.00	ET-X-TU-42-15-37-18-iR-ST w/ Mount Pipe	43	21.194	1.0256	0.0027	86142
170.00	RRH1900MHz	43	20.334	1.0173	0.0026	47856
159.00	HP2-102	43	17.996	0.9915	0.0025	21535
151.00	Gen TMA	43	16.335	0.9681	0.0024	15382

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Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
142.00	RRUS-11	43	14.527	0.9346	0.0022	12411
140.00	7770.00 w/ Mount Pipe	43	14.135	0.9260	0.0021	12154
130.00	BXA-171063-12CF-EDIN w/ Mount Pipe	43	12.239	0.8773	0.0018	11029
126.00	HP2-102	43	11.510	0.8555	0.0017	10636

### Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	179 - 141.25	104.432	10	4.8611	0.0128
L2	145.58 - 92.58	71.468	10	4.4553	0.0104
L3	98.5 - 45.5	32.951	10	3.1879	0.0043
L4	53 - 0	9.521	10	1.6470	0.0016

### Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
181.00	(3) 6' x 2" Mount Pipe	10	104.432	4.8611	0.0128	18663
174.00	ET-X-TU-42-15-37-18-iR-ST w/ Mount Pipe	10	99.382	4.8144	0.0125	18663
170.00	RRH1900MHz	10	95.353	4.7758	0.0123	10368
159.00	HP2-102	10	84.395	4.6551	0.0116	4663
151.00	Gen TMA	10	76.612	4.5451	0.0109	3329
142.00	RRUS-11	10	68.139	4.3881	0.0100	2683
140.00	7770.00 w/ Mount Pipe	10	66.303	4.3478	0.0098	2626
130.00	BXA-171063-12CF-EDIN w/ Mount Pipe	10	57.412	4.1195	0.0085	2378
126.00	HP2-102	10	53.995	4.0169	0.0079	2291

### Compression Checks

### Pole Design Data

Section No.	Elevation ft	Size	L ft	$L_u$ ft	$Kl/r$	A in <sup>2</sup>	$P_u$ lb	$\phi P_n$ lb	Ratio $\frac{P_u}{\phi P_n}$
L1	179 - 141.25 (1)	TP33.249x23.1x0.25	37.75	0.00	0.0	25.2610	-8933.84	1748390.00	0.005
L2	141.25 - 92.58 (2)	TP45.834x31.5849x0.375	53.00	0.00	0.0	52.2132	-25566.50	3714610.00	0.007
L3	92.58 - 45.5 (3)	TP57.742x43.4924x0.375	53.00	0.00	0.0	65.8810	-40125.80	4311140.00	0.009
L4	45.5 - 0 (4)	TP69.225x54.9755x0.375	53.00	0.00	0.0	81.9487	-62400.80	4812990.00	0.013

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Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> lb	φP <sub>n</sub> lb	Ratio $\frac{P_u}{\phi P_n}$
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### Pole Bending Design Data

Section No.	Elevation ft	Size	M <sub>ux</sub> kip-ft	φM <sub>ux</sub> kip-ft	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	M <sub>uy</sub> kip-ft	φM <sub>uy</sub> kip-ft	Ratio $\frac{M_{uy}}{\phi M_{uy}}$
L1	179 - 141.25 (1)	TP33.249x23.1x0.25	260.99	1144.56	0.228	0.00	1144.56	0.000
L2	141.25 - 92.58 (2)	TP45.834x31.5849x0.375	1540.32	3348.51	0.460	0.00	3348.51	0.000
L3	92.58 - 45.5 (3)	TP57.742x43.4924x0.375	3139.98	4912.18	0.639	0.00	4912.18	0.000
L4	45.5 - 0 (4)	TP69.225x54.9755x0.375	5313.59	6830.50	0.778	0.00	6830.50	0.000

### Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V <sub>u</sub> lb	φV <sub>n</sub> lb	Ratio $\frac{V_u}{\phi V_n}$	Actual T <sub>u</sub> kip-ft	φT <sub>n</sub> kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	179 - 141.25 (1)	TP33.249x23.1x0.25	14644.90	874196.00	0.017	0.17	2294.63	0.000
L2	141.25 - 92.58 (2)	TP45.834x31.5849x0.375	32295.50	1857310.00	0.017	3.06	6713.85	0.000
L3	92.58 - 45.5 (3)	TP57.742x43.4924x0.375	37934.90	2155570.00	0.018	3.05	9846.42	0.000
L4	45.5 - 0 (4)	TP69.225x54.9755x0.375	43708.60	2406490.00	0.018	3.05	13689.00	0.000

### Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	Ratio $\frac{M_{uy}}{\phi M_{uy}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	179 - 141.25 (1)	0.005	0.228	0.000	0.017	0.000	0.233	1.000	4.8.2
L2	141.25 - 92.58 (2)	0.007	0.460	0.000	0.017	0.000	0.467	1.000	4.8.2
L3	92.58 - 45.5 (3)	0.009	0.639	0.000	0.018	0.000	0.649	1.000	4.8.2
L4	45.5 - 0 (4)	0.013	0.778	0.000	0.018	0.000	0.791	1.000	4.8.2

### Section Capacity Table



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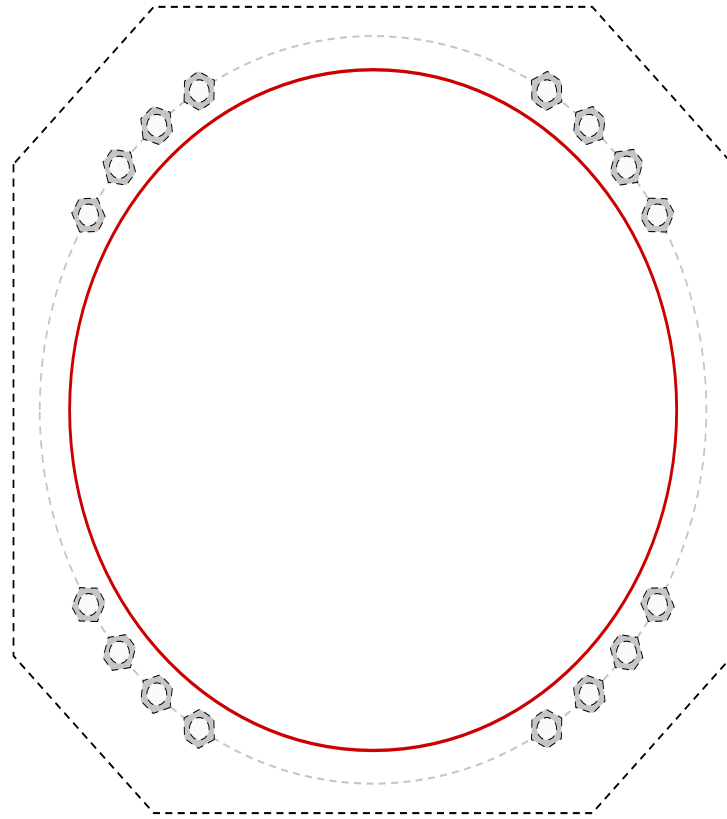
Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$\phi P_{allow}$ lb	% Capacity	Pass Fail	
L1	179 - 141.25	Pole	TP33.249x23.1x0.25	1	-8933.84	1748390.00	23.3	Pass	
L2	141.25 - 92.58	Pole	TP45.834x31.5849x0.375	2	-25566.50	3714610.00	46.7	Pass	
L3	92.58 - 45.5	Pole	TP57.742x43.4924x0.375	3	-40125.80	4311140.00	64.9	Pass	
L4	45.5 - 0	Pole	TP69.225x54.9755x0.375	4	-62400.80	4812990.00	79.1	Pass	
							Summary		
							Pole (L4)	79.1	Pass
							<b>RATING =</b>	<b>79.1</b>	<b>Pass</b>

# Monopole Base Plate Connection

Site Info	
BU #	
Site Name	CTHA014A
Order #	

Analysis Considerations	
TIA-222 Revision	G
Grout Considered:	No
$l_{ar}$ (in)	0
Eta Factor, $\eta$	0.5

Applied Loads	
Moment (kip-ft)	5313.60
Axial Force (kips)	62.40
Shear Force (kips)	43.71



Connection Properties		Analysis Results	
<b>Anchor Rod Data</b>		<b>Anchor Rod Summary</b> <i>(units of kips, kip-in)</i>	
(16) 2-1/4" $\phi$ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 76" BC <i>Anchor Spacing: 6 in</i>		$P_{u,c} = 213.57$	$\phi P_{n,t} = 260$ <b>Stress Rating</b>
<b>Base Plate Data</b>		$V_u = 2.73$	$\phi V_n = n/a$ <b>84.2%</b>
82" OD x 2.25" Plate (A572-60; $F_y=60$ ksi, $F_u=75$ ksi)		$M_u = n/a$	$\phi M_n = n/a$ <b>Pass</b>
<b>Stiffener Data</b>		<b>Base Plate Summary</b>	
N/A		Max Stress (ksi):	46.17 (Flexural)
<b>Pole Data</b>		Allowable Stress (ksi):	54
69.225" x 0.375" 18-sided pole (A572-65; $F_y=65$ ksi, $F_u=80$ ksi)		Stress Rating:	<b>85.5%</b> <b>Pass</b>

# Pier and Pad Foundation

BU # :   
 Site Name: CTHA014A  
 App. Number:

TIA-222 Revision:   
 Tower Type:

Top & Bot. Pad Rein. Different?:   
 Block Foundation?:

Superstructure Analysis Reactions		
Compression, $P_{comp}$ :	62.4	kips
Base Shear, $Vu_{comp}$ :	43.7	kips
Moment, $M_u$ :	5314	ft-kips
Tower Height, $H$ :	179	ft
BP Dist. Above Fdn, $bp_{dist}$ :	3	in

Foundation Analysis Checks				
	Capacity	Demand	Rating	Check
<i>Lateral (Sliding) (kips)</i>	299.87	43.70	14.6%	Pass
<i>Bearing Pressure (ksf)</i>	4.99	1.93	38.7%	Pass
<i>Overtuning (kip*ft)</i>	9414.04	5630.83	59.8%	Pass
<i>Pier Flexure (Comp.) (kip*ft)</i>	8142.54	5510.65	67.7%	Pass
<i>Pier Compression (kip)</i>	27087.80	108.36	0.4%	Pass
<i>Pad Flexure (kip*ft)</i>	3598.09	1998.08	55.5%	Pass
<i>Pad Shear - 1-way (kips)</i>	748.54	277.87	37.1%	Pass
<i>Pad Shear - 2-way (Comp) (ksi)</i>	0.164	0.057	34.6%	Pass

Pier Properties		
Pier Shape:	Circular	
Pier Diameter, $dpier$ :	8.5	ft
Ext. Above Grade, $E$ :	0.5	ft
Pier Rebar Size, $Sc$ :	9	
Pier Rebar Quantity, $mc$ :	41	
Pier Tie/Spiral Size, $St$ :	4	
Pier Tie/Spiral Quantity, $mt$ :	14	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, $cc_{pier}$ :	3	in

Soil Rating:	59.8%
Structural Rating:	67.7%

Pad Properties		
Depth, $D$ :	6.5	ft
Pad Width, $W$ :	30	ft
Pad Thickness, $T$ :	2.5	ft
Pad Rebar Size (Bottom), $Sp$ :	9	
Pad Rebar Quantity (Bottom), $mp$ :	33	
Pad Clear Cover, $cc_{pad}$ :	3	in

Material Properties		
Rebar Grade, $Fy$ :	60	ksi
Concrete Compressive Strength, $F'c$ :	3	ksi
Dry Concrete Density, $\delta c$ :	150	pcf

Soil Properties		
Total Soil Unit Weight, $\gamma$ :	100	pcf
Ultimate Net Bearing, $Q_{net}$ :	6.000	ksf
Cohesion, $Cu$ :	0.000	ksf
Friction Angle, $\phi$ :	30	degrees
SPT Blow Count, $N_{blows}$ :		
Base Friction, $\mu$ :	0.4	
Neglected Depth, $N$ :	3.33	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, $gw$ :	N/A	ft

<--Toggle between Gross and Net

# Exhibit E





## 1) ANALYSIS CRITERIA

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

**Table 1 – Loading and Analysis Criteria**

<b>Rad Center</b>	151'
<b>Structure Type</b>	Monopole
<b>Exposure Category</b>	C
<b>Basic Wind Speed (3-Second Gust)</b>	125 * $\sqrt{0.6}$ = 97 mph (ASD)
<b>Ice Loading</b>	1.00" with 50 mph Wind
<b>Risk Category</b>	II
<b>Topographic Factor</b>	Kzt = 1.0

**Table 1.1 – Existing Appurtenance Configuration**

Qty	Model
3	Ericsson AIR21 KRC118023-1 B2A B4P – Antennas
3	RFS APXVAARR24-43-U-NA20 – Antennas
3	Ericsson AIR32 KRD901146-1 B66A B2A – Antennas
3	Generic Twin Style 1B AWS – TMAs
3	Radio 4449 B71 + B85 – RRHs

**Table 1.2 – Proposed and Final Appurtenance Configuration**

Qty	Model
3	Ericsson AIR6449 B41– Antennas
3	RFS APXVAARR24-43-U-NA20 – Antennas
3	Ericsson AIR32 KRD901146-1 B66A B2A – Antennas
3	Generic Twin Style 1B AWS – TMAs*
3	Radio 4449 B71 + B85 – RRHs*
3	Radio 4415 B25 – RRHs*
3	SDX1926Q-43 – Diplexers*

\*To be mounted behind antennas

**Table 1.3 – Assumed Material Properties**

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

## 2) ANALYSIS PROCEDURE

The analysis is based on the following information:

**Table 2 – Documents**

Document	Provided By	Date
RFDS	T-Mobile	07/06/2020
Structural Analysis Report	EFI Global, Inc.	02/21/2020
Structural Analysis Report	EBI Consulting	11/19/2014
Specification Sheet	Valmont - Site Pro 1	08/29/2019

### 2.1) Analysis Method

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

## 2.2) Analysis Conditions and Assumptions

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

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

### 3) ANALYSIS RESULTS AND CONCLUSION

The analysis results are shown on the table below.

**Table 3.1 – Mount Component Stresses vs. Capacity**

Component	% Capacity	Pass / Fail
Standoff Tube Arm	50.0	Pass
Antenna Mount Pipe	48.4	Pass
Pipe Face Horizontal	59.6	Pass
Pipe Face Support Rail	25.3	Pass
Pipe Support Rail Bracing	< 20.0	Pass

**Sector Mounts:** The *modified sector mounts* have **adequate** capacity for the proposed changes by T-Mobile. For the code specified load combinations and as a maximum, the mount members are stressed to **50.0%** of their structural capacity.



**APPENDIX**

**INPUT LOADS**  
**ANALYSIS OUTPUT**

CLIENT: ForeSite LLC - T-Mobile  
 PROJECT: CTHA014A  
 SUBJECT: Antenna Loads -TIA 222 G Stanadard (chapter 16 revisions)

Tower Height 179.00 ft Type of Mount Sector  
 Basic Wind Speed, V 97 mph (=Ultimate Speed\*sqrt(0.6))  
 Basic Wind Speed with Ice, V<sub>i</sub> 50 mph  
 Maintenance Load Factor, L<sub>FM</sub> 0.0957 Load Factor for Maint. Load Cases (Basic Wind Speed=30 mph)  
 Design Ice Thickness, t<sub>i</sub> 1 inches

Table 2-3 Importance Factors

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

Table 2-4 Exposure Category Coefficients

Exposure Category	Z <sub>g</sub>	α	K <sub>zmin</sub>	K <sub>e</sub>	m
C	900	9.5	0.85	1	0.6

Table 2-5 Topographic Categories  
 K<sub>zt</sub> 1.000

Table 2-2 Wind Directionality Factor, K<sub>d</sub>

Structure Type	K <sub>d</sub>
Monopole	0.95 DOES NOT CHANGE

Gust Effect Factor G<sub>h</sub>

Structure Type	G <sub>h</sub>
Monopole	1.00 DOES NOT CHANGE

Shielding Factor, K<sub>a</sub>

Structure Type	K <sub>a</sub>
Monopole	0.90 DOES NOT CHANGE

Seismic Factors

S <sub>s</sub>	0.181
S <sub>1</sub>	0.064
F <sub>a</sub>	16
F <sub>v</sub>	24
R	1.5 Truss or Pole

CLIENT: ForeSite LLC - T-Mobile  
 PROJECT: CTHA014A  
 SUBJECT: Antenna Loads -TIA 222 G Stanadard (chapter 16 revisions)

Rad Center 151.00 ft

**Antenna AND Mount Without Ice**

Mounting Pole	Height (ft)	Model Number	#	Weight (lbs)	H (in)	*W (in)	D (in)	Ka	**A <sub>N</sub> (ft2)	***A <sub>T</sub> (ft2)	Aspect (FRONT)	Aspect (SIDE)	Ca (FRONT)	Ca (SIDE)	K <sub>z</sub>	q <sub>z</sub> (psf)	Pounds								
																	Wind Load (Front)	Wind Load (Side)	Dead Load	Total Wind Load (Front)	Total Wind Load (Side)	Total Dead Load	Lateral Load (Seismic)	Vertical Load (Seismic)	
Pos. 1	151.00	AIR6449 B41	1	114.6	33.1	20.5	8.5	0.90	4.72	1.96	1.61	3.88	1.20	1.26	1.380	31.6	160.9	70.4	114.63	161	70	115	80	44	
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	-	0.0	0.0	0					
Pos.2	151.00	RFS APXVAARR24-43-U-NA20	1	153.3	95.9	24.0	8.7	0.90	15.98	5.79	4.00	11.02	1.27	1.53	1.380	31.6	575.4	252.7	153.3	575	342	301	210	116	
		Radio 4449 B71 + B85	1	73.2	17.9	N/A	10.6	0.90	-	1.32	-	1.68	-	1.20	1.380	31.6	0.0	45.1	73.21						
		Radio 4415 B25	1	44.0	15.0	N/A	5.4	0.90	-	0.56	-	2.78	-	1.21	1.380	31.6	0.0	19.3	44						
		E15Z01P13	1	24.0	13.0	N/A	7.2	0.90	-	0.65	-	1.81	-	1.20	1.380	31.6	0.0	22.2	24						
		SDX1926Q-43	1	6.2	4.2	N/A	2.9	0.90	-	0.08	-	1.43	-	1.20	1.380	31.6	0.0	2.9	6.17						
Pos.3	151.00	Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0	0	0	0	0	0	
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	-	0.0	0.0	0					
Pos.4	151.00	Ericsson AIR32 KRD 901 146-1 B66A	1	143.0	59.3	12.9	8.7	0.90	5.30	3.56	4.60	6.84	1.29	1.39	1.380	31.6	194.7	141.1	143	195	141	143	100	55	
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	-	0.0	0.0	0					

\* Enter N/A in the W column for front shielded apertures.

\*\* A<sub>N</sub> is the product of H and W

\*\*\* A<sub>T</sub> is the product of H and D

DL 558

Mount	Height (ft)	Member	*L (in)	**W (in)	D (in)	Weight (lb/ft)	*** Ca	K <sub>z</sub>	q <sub>z</sub> (psf)	Wind Load (PLF)	Lateral Load (Seismic)	Vertical Load (Seismic)
	151.00	2 STD Pipe	12.00	2.38	0.00		1.20	1.380	28.4	7	-	-
	151.00	2.5 STD Pipe	12.00	2.88	0.00		1.20	1.380	28.4	8	-	-
	151.00	3 STD Pipe	12.00	3.50	0.00		1.20	1.380	28.4	10	-	-
	151.00	Angle Horizontal	0.00	0.00	0.00		-	-	-	-	-	-
	151.00	Angle Vertical	0.00	0.00	0.00		-	-	-	-	-	-
	151.00	Angle Diagonal	0.00	0.00	0.00		-	-	-	-	-	-
	151.00	Tube Standoff (4x4)	12.00	4.00	4.00		2.00	1.380	28.4	19	-	-
	151.00	Tube Horizontal	0.00	0.00	0.00		-	-	-	-	-	-
	151.00	Plate	0.00	0.00	0.00		-	-	-	-	-	-
	151.00	Double Angle	0.00	0.00	0.00		-	-	-	-	-	-
	151.00	Double Angle	0.00	0.00	0.00		-	-	-	-	-	-
	151.00	Channel (Weak Axis Bending)	0.00	0.00	0.00		-	-	-	-	-	-
	151.00	Channel (Strong Axis Bending)	0.00	0.00	0.00		-	-	-	-	-	-

\* The dimension L is the longest dimension of the member

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

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

CLIENT: ForeSite LLC - T-Mobile  
 PROJECT: CTHA014A  
 SUBJECT: Antenna Loads -TIA 222 G Stanadard (chapter 16 revisions)

ti (in) 2.3285 Kiz 1.1642501 reduction 0.2657

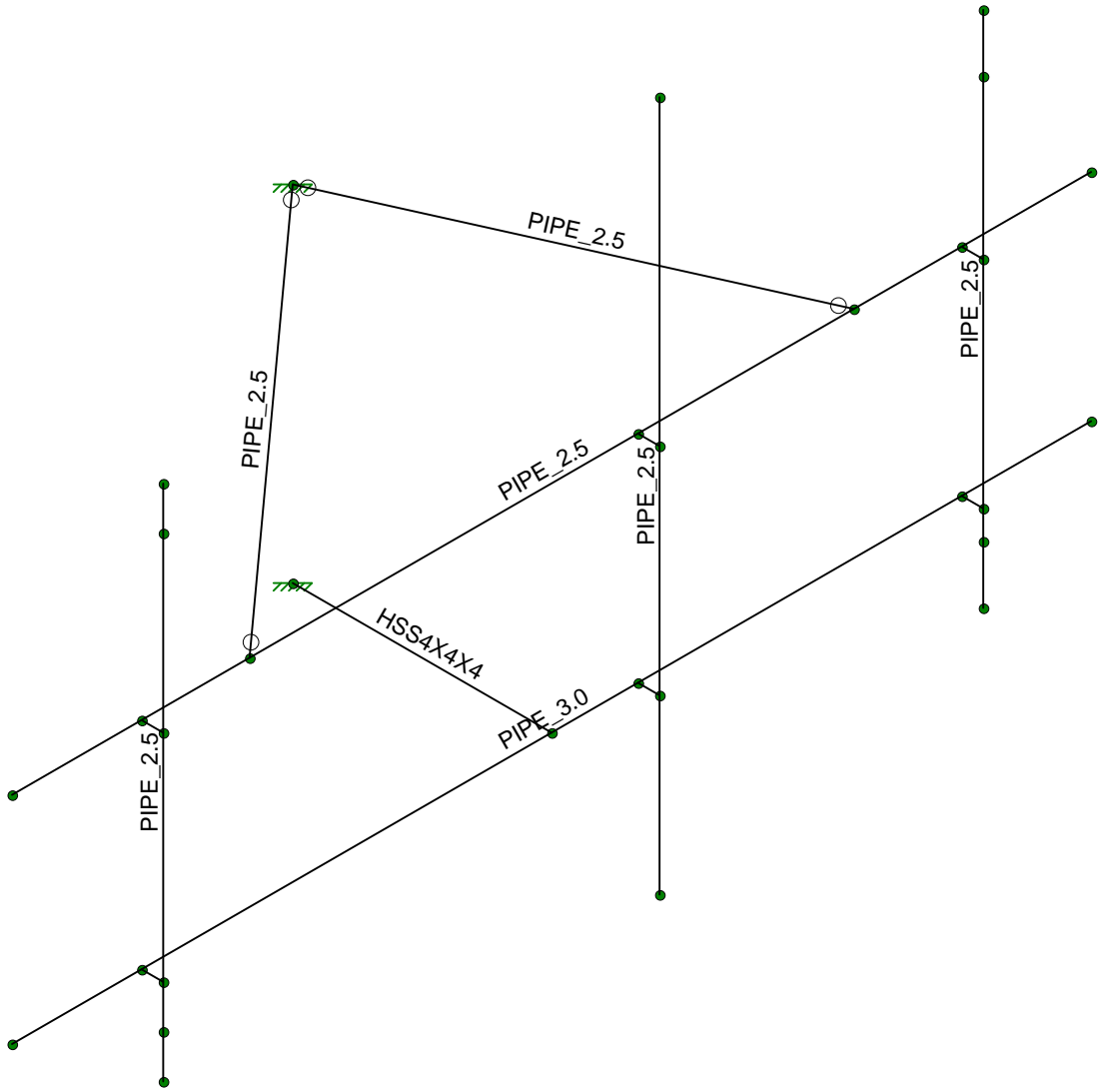
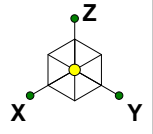
**Antenna AND Mount With Ice**

Mounting Pole	Height (ft)	Model Number	#	H (in)	W (in)	D (in)	Ka	*A <sub>N</sub> (ft2)	*A <sub>T</sub> (ft2)	*Volume Ice (ft3)	*Weight Ice (lbs)	**Ca (FRONT)	**Ca (SIDE)	Kz	q <sub>z</sub> (psf)	Pounds							
																Ice Wind Load (Front)	Ice Wind Load (Side)	Combined Wind Load (Front)	Combined Wind Load (Side)	Ice Dead Load	**Total Wind Load (Front)	**Total Wind Load (Side)	Total Ice Load
Pos. 1	151.00	AIR6449 B41	1	33.1	20.5	8.5	0.90	1.88	1.50	3.90	218.56	0.70	0.71	1.380	8.4	10.0	8.0	52.7	26.7	219	53	27	219
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
Pos.2 on standoff	151.00	RFS APXVAARR24-43-U-NA20	1	95.9	24.0	8.7	0.90	4.03	3.53	10.69	598.45	0.72	0.81	1.380	8.4	22.0	21.7	174.9	88.8	598	175	129	871
	151.00	Radio 4449 B71 + B85	1	17.9	13.2	10.6	0.90	-	1.07	2.11	118.20	0.70	0.70	1.380	8.4	0.0	5.7	0.0	17.7	118			
	151.00	Radio 4415 B25	1	15.0	13.2	5.4	0.90	-	0.81	1.42	79.53	0.70	0.70	1.380	8.4	0.0	4.3	0.0	9.4	80			
	151.00	E15Z01P13	1	13.0	5.5	7.2	0.90	-	0.80	0.93	52.23	0.70	0.70	1.380	8.4	0.0	4.3	0.0	10.1	52			
	151.00	SDX1926Q-43	1	4.2	6.9	2.9	0.90	-	0.38	0.40	22.37	0.70	0.70	1.380	8.4	0.0	2.0	0.0	2.8	22			
Pos.3		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0	0	0	0
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
Pos.4	151.00	Ericsson AIR32 KRD 901 146-1 B66A	1	59.3	12.9	8.7	0.90	2.48	2.35	4.81	269.39	0.73	0.75	1.380	8.4	13.6	13.3	65.3	50.8	269	65	51	269
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
																					33	26	135

\* A<sub>N</sub>, A<sub>T</sub>, Volume Ice and Weight Ice are calculated per unit  
 \*\* Ca will equal 1.2 for all ice load calculations

Mount	Height (ft)	Member	*L (in)	**W (in)	D (in)	***A <sub>N</sub> (ft2)	Volume Ice (ft3)	Weight Ice (lbs)	****Ca (FRONT)	Kz	q <sub>z</sub> (psf)	PLF		
												Ice Wind Load (Front)	Combined Wind Load (Front)	Ice Dead Load
	151.00	2 STD Pipe	12.00	2.38	0.00	0.62	0.24	13.39	1.20	1.380	7.6	5.6	7.4	13
	151.00	2.5 STD Pipe	12.00	2.88	0.00	0.63	0.26	14.80	1.20	1.380	7.6	5.7	7.9	15
	151.00	3 STD Pipe	12.00	3.50	0.00	0.65	0.30	16.58	1.20	1.380	7.6	5.9	8.6	17
	151.00	Angle Horizontal	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-
	151.00	Angle Vertical	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-
	151.00	Angle Diagonal	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-
	151.00	Tube Standoff (4x4)	12.00	4.00	4.00	0.67	0.61	34.23	1.20	1.380	7.6	6.1	11.1	34
	151.00	Tube Horizontal	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-
	151.00	Plate	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-
	151.00	Double Angle	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-
	151.00	Double Angle	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-
	151.00	Channel (Weak Axis Bending)	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-
	151.00	Channel (Strong Axis Bending)	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-

\* The dimension L is the longest dimension of the member  
 \*\* The dimension W is the height or width of the member that resists wind load  
 \*\*\* A<sub>N</sub> is the area of ice built up on the LW plane  
 \*\*\*\* Ca will equal 1.2 for all ice load calculations



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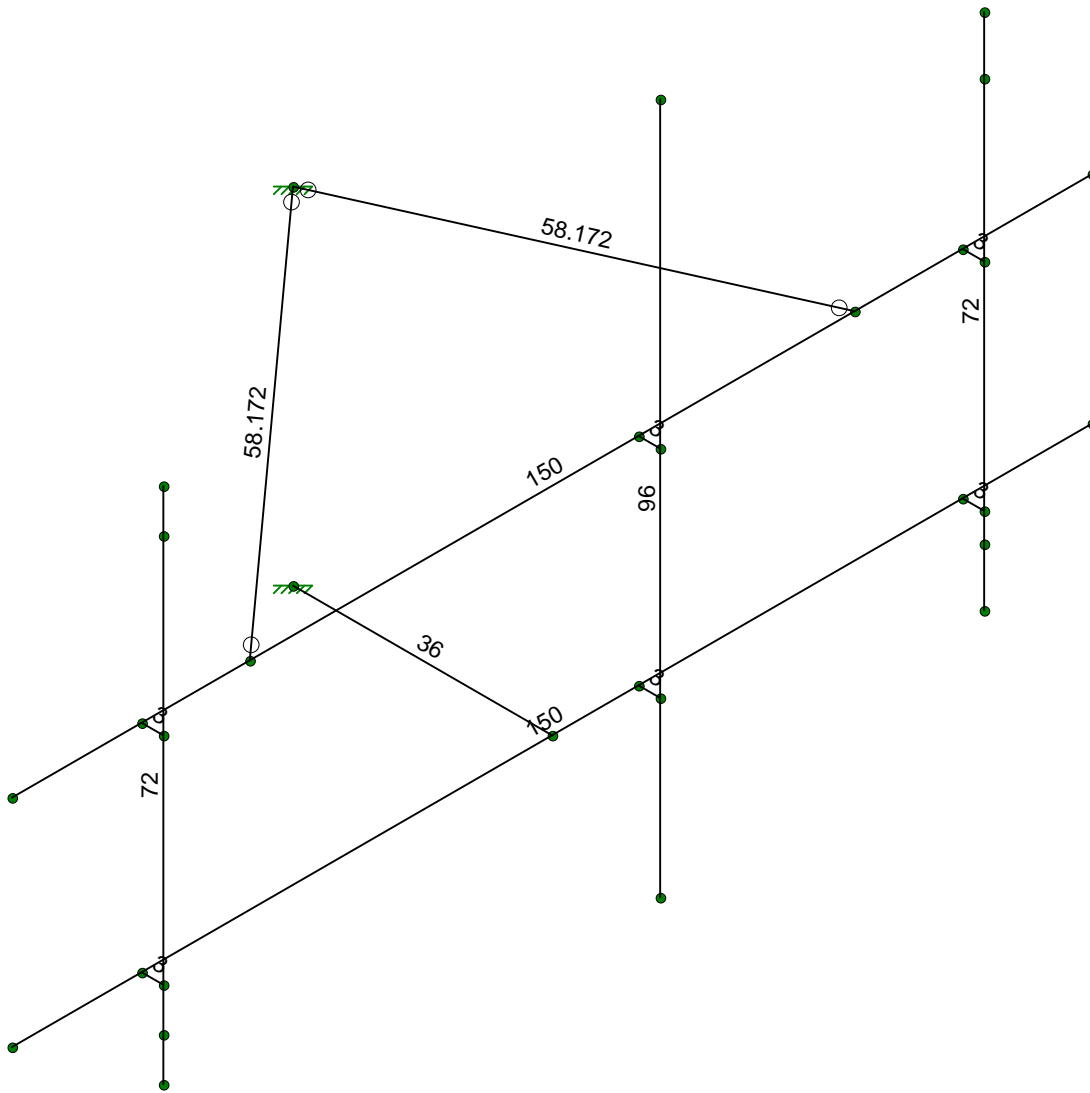
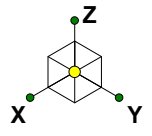
CTHA014A - Mount with Support rail

SK - 1

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CTHA014A Mount G-Code with Se...



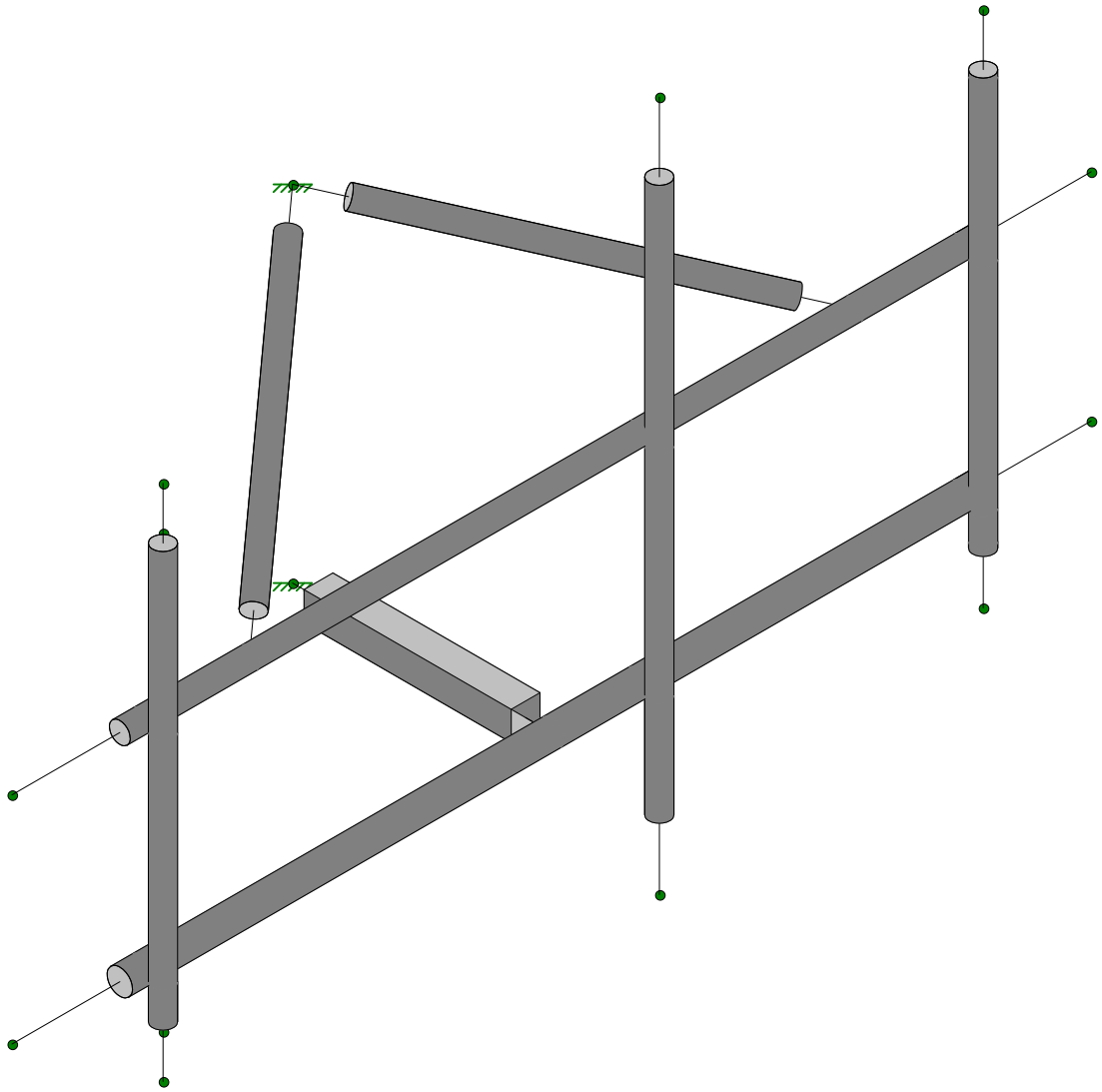
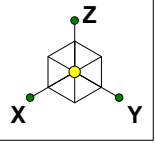


Member Length (in) Displayed  
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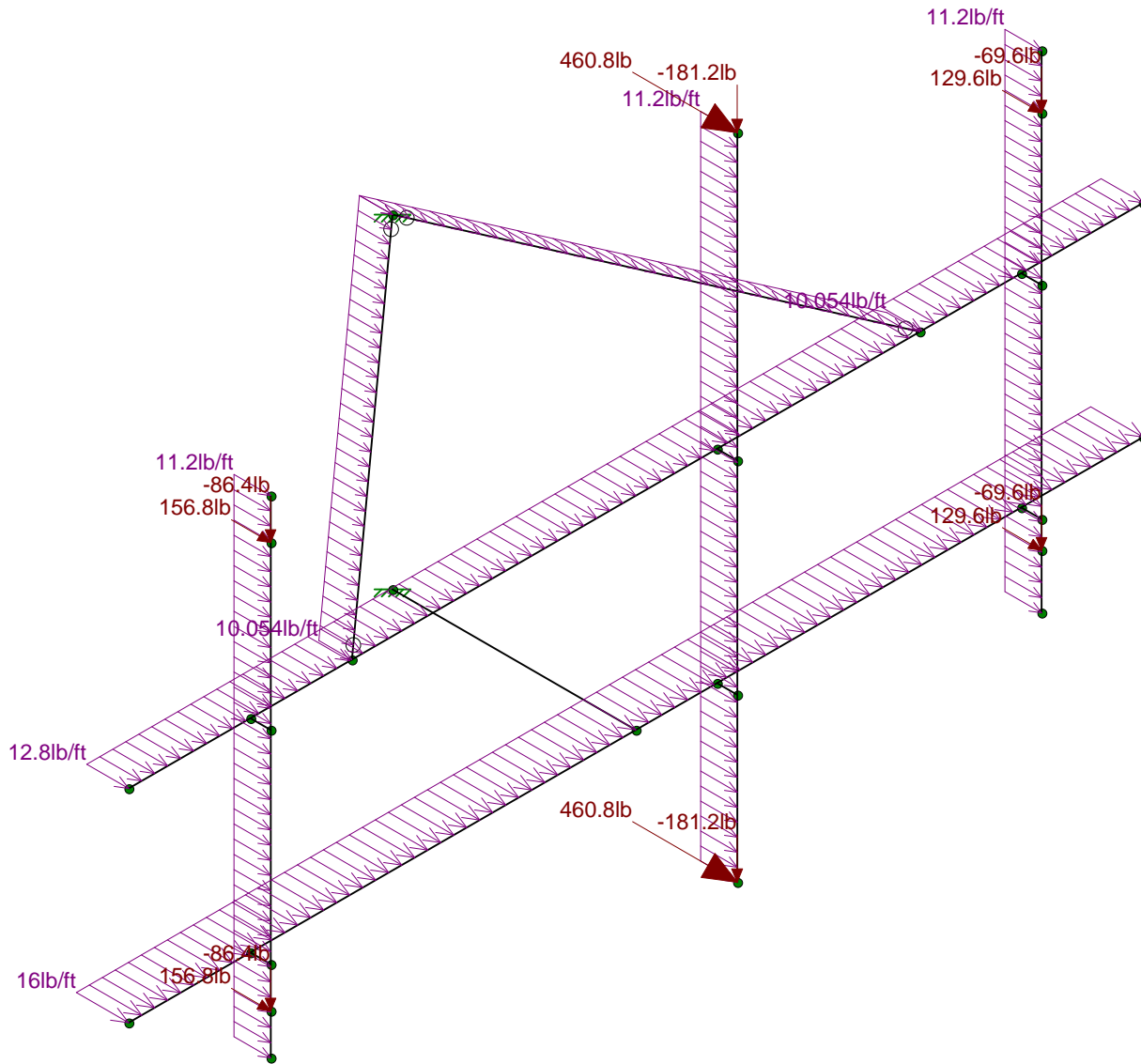
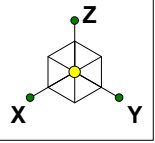
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CTHA014A - Mount with Support rail

SK - 3

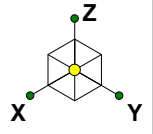
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CTHA014A Mount G-Code with Se...

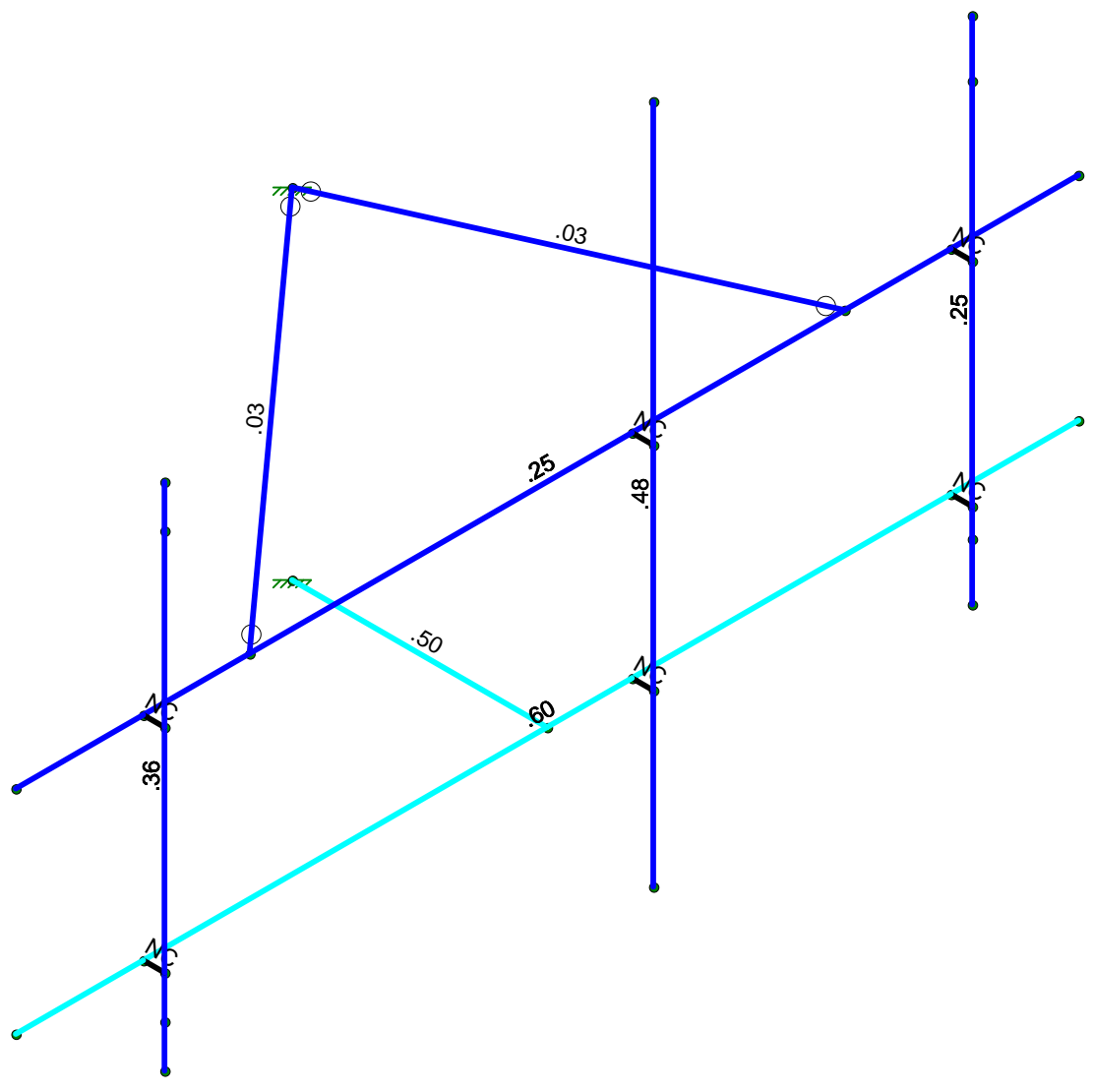


Loads: LC 1, DL + WL (NO ICE) 0 Degree  
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		July 28, 2020 at 2:58 PM
2075004		CTHA014A Mount G-Code with Se...

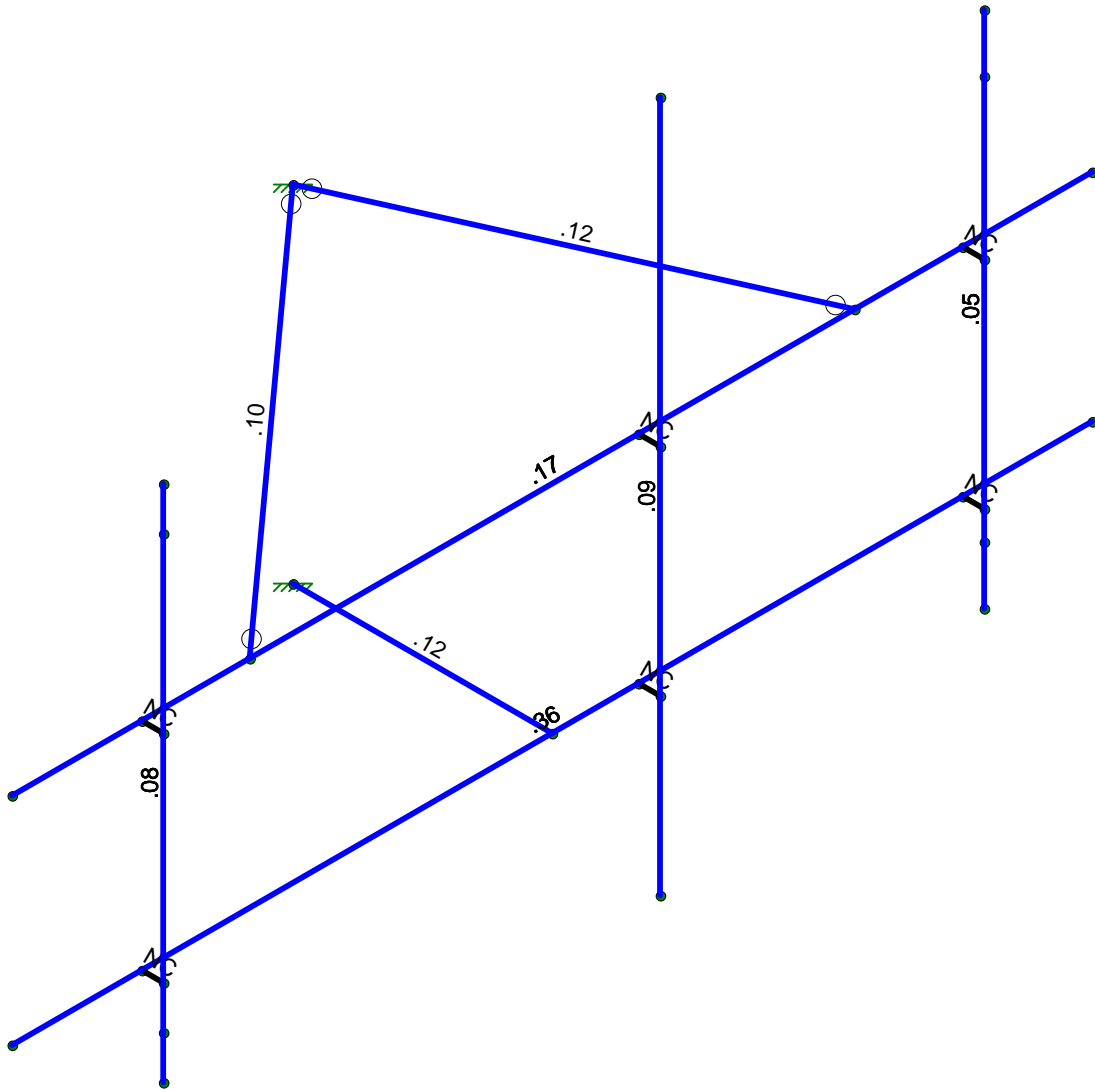
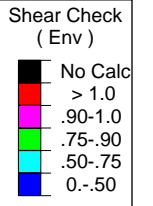
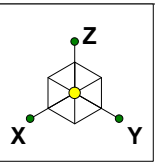


Code Check ( Env )	
	No Calc
	> 1.0
	.90-1.0
	.75-.90
	.50-.75
	0-.50



Member Code Checks Displayed (Enveloped)  
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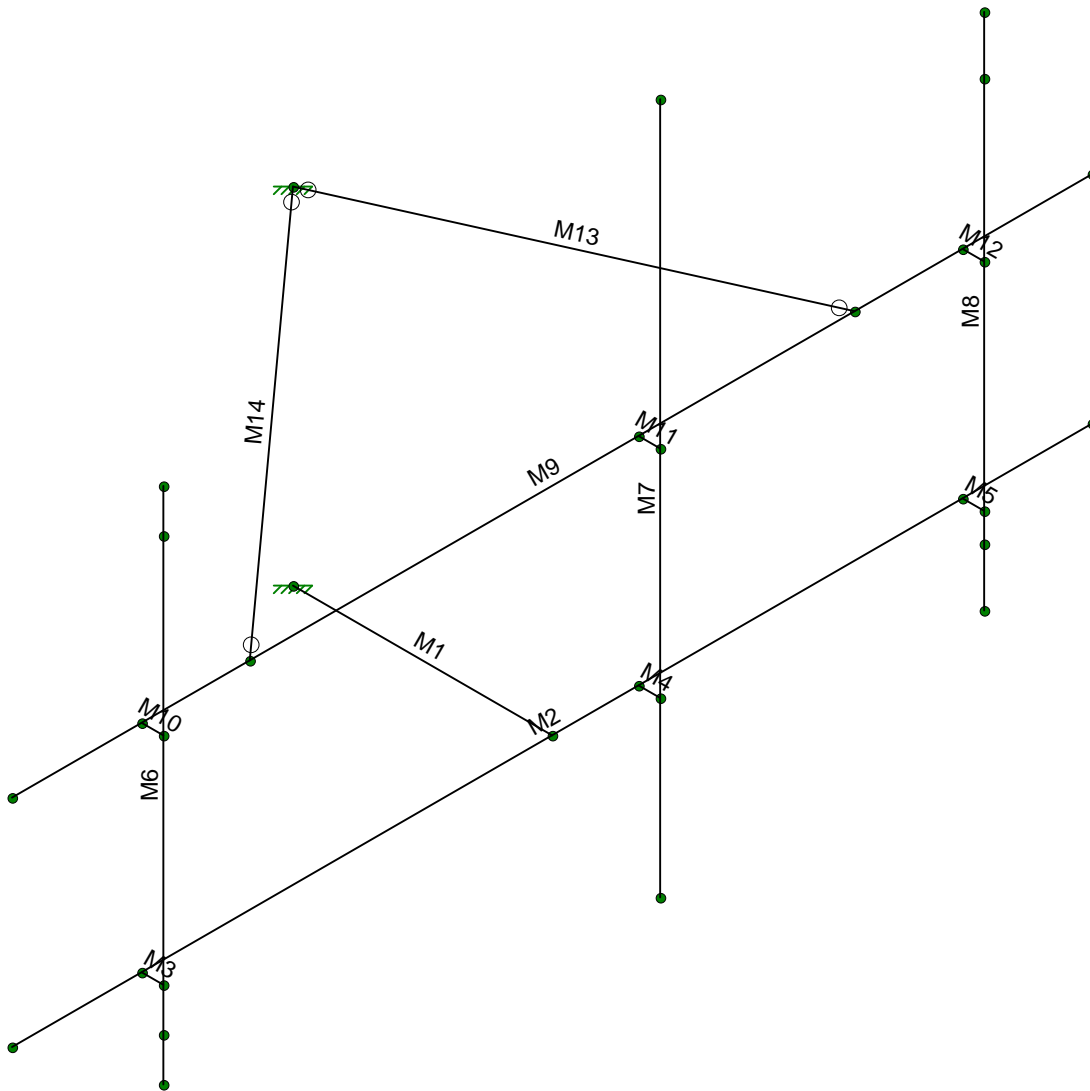
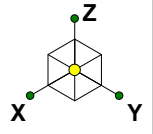
T-Mobile / EFI Global Inc		SK - 5
	CTHA014A - Mount with Support rail	July 28, 2020 at 2:58 PM
2075004		CTHA014A Mount G-Code with Se...



Member Shear Checks Displayed (Enveloped)  
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T-Mobile / EFI Global Inc	CTHA014A - Mount with Support rail	SK - 6
		July 28, 2020 at 2:58 PM
2075004		CTHA014A Mount G-Code with Se...



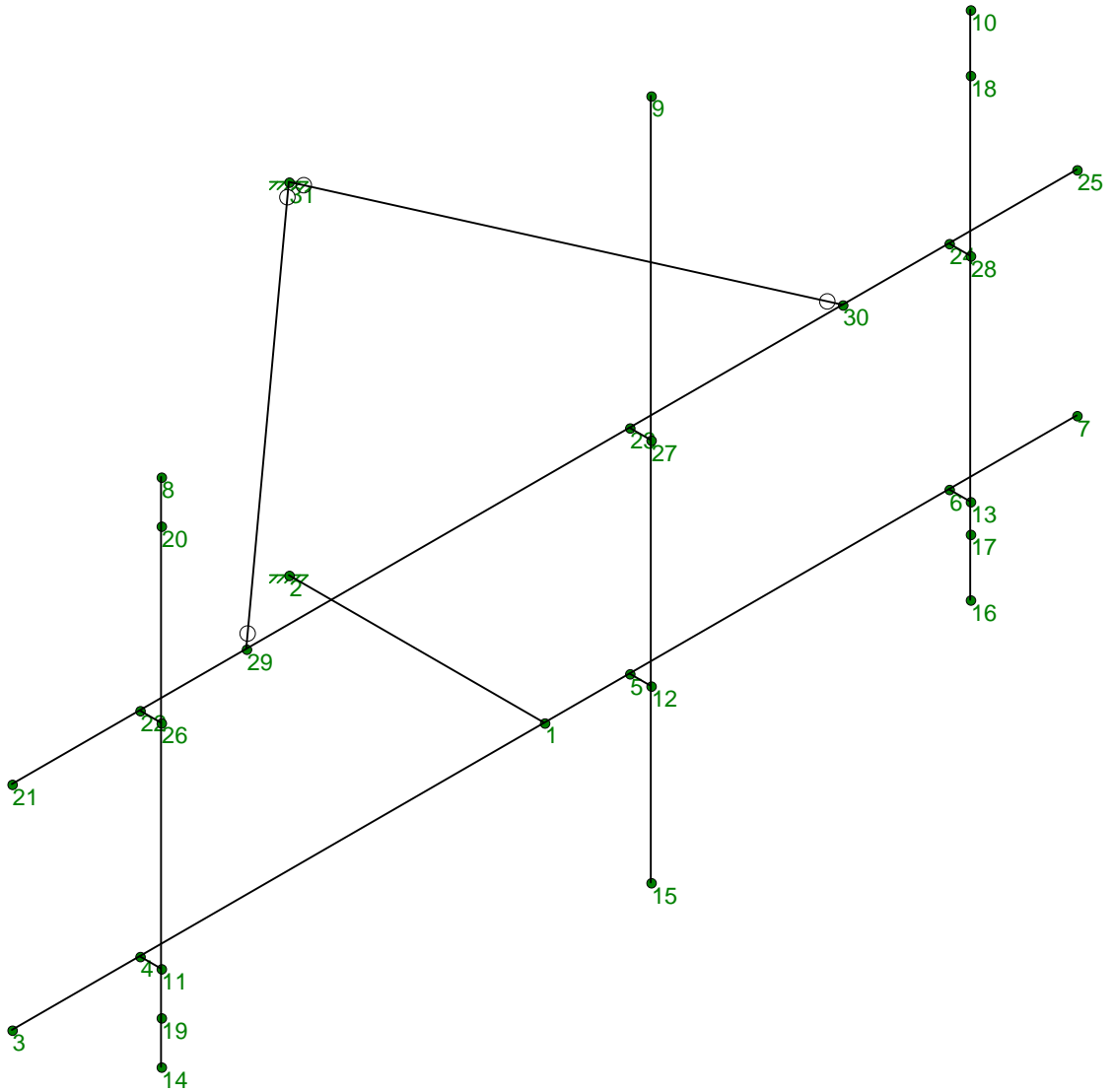
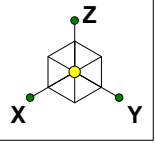


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CTHA014A - Mount with Support rail

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 CTHA014A Mount G-Code with Se...



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2075004

CTHA014A - Mount with Support rail

SK - 8

July 28, 2020 at 2:58 PM

CTHA014A Mount G-Code with Se...



Company : T-Mobile / EFI Global Inc  
 Designer :  
 Job Number : 2075004  
 Model Name : CTHA014A - Mount with Support rail

July 28, 2020  
 3:06 PM  
 Checked By: \_\_\_\_\_

**(Global) Model Settings**

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	No
Max Iterations for Wall Stiffness	3
Gravity Acceleration (in/sec^2)	386.4
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Z
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 14th(360-10): LRFD
Adjust Stiffness?	Yes(Iterative)
RISACONNECTION CODE	AISC 14th(360-10): LRFD
Cold Formed Steel Code	AISI NAS-01: ASD
Wood Code	AF&PA NDS-05/08: ASD
Wood Temperature	< 100F
Concrete Code	ACI 318-05
Masonry Code	ACI 530-05: ASD
Aluminum Code	AA ADM1-05: ASD - Building AISC 14th(360-10): ASD

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parame Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	No
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8



**(Global) Model Settings, Continued**

Seismic Code	ASCE 7-05
Seismic Base Elevation (in)	Not Entered
Add Base Weight?	Yes
Ct X	.035
Ct Z	.035
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	8.5
R Z	8.5
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	Not Entered
Occupancy Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	4
Cd X	4
Rho Z	1
Rho X	1

**Project Grid Lines**

Label	Start X [in]	End X [in]	Start Y [in]	End Y [in]	Start Bubble	End Bubble
No Data to Print ...						

**Hot Rolled Steel Properties**

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E...	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.2
3	A992	29000	11154	.3	.65	.49	50	1.1	65	1.2
4	A500 Gr.42	29000	11154	.3	.65	.49	42	1.3	58	1.1
5	A500 Gr.46	29000	11154	.3	.65	.49	46	1.2	58	1.1
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.5	60	1.2
7	A529 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.2

**Cold Formed Steel Properties**

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E5 F)	Density[k/ft^3]	Yield[ksi]	Fu[ksi]
1	A570 33	29500	11346	.3	.65	.49	33	52
2	A607 C1 55	29500	11346	.3	.65	.49	55	70

**Hot Rolled Steel Section Sets**

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Standoff Tub...	HSS4X4X4	Beam	None	A500 Gr.46	Typical	3.37	7.8	7.8	12.8
2	Face Pipe H...	PIPE 3.0	Beam	None	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
3	Antenna Pip...	PIPE 2.5	Column	None	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
4	Pipe Rail	PIPE 2.5	Beam	None	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
5	Pipe Rail Br...	PIPE 2.5	VBrace	None	A53 Gr.B	Typical	1.61	1.45	1.45	2.89



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### Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in <sup>2</sup> ]	I <sub>yy</sub> [in <sup>4</sup> ]	I <sub>zz</sub> [in <sup>4</sup> ]	J [in <sup>4</sup> ]
1	CF1A	1.5CU1.25X...	Beam	None	A570 33	Typical	.131	.022	.052	5.4e-5

### Member Primary Data

	Label	I Joint	J Joint	K Joint	Rota...	Section/Shape	Type	Design...	Material	Desig...
1	M1	2	1			Standoff Tube Arm	Bea...	None	A500 Gr.46	Typical
2	M3	4	11			RIGID	None	None	LINK	Typical
3	M4	5	12			RIGID	None	None	LINK	Typical
4	M5	6	13			RIGID	None	None	LINK	Typical
5	M10	22	26			RIGID	None	None	LINK	Typical
6	M11	23	27			RIGID	None	None	LINK	Typical
7	M12	24	28			RIGID	None	None	LINK	Typical
8	M13	30	31			Pipe Rail Brace	VBr...	None	A53 Gr.B	Typical
9	M14	29	31			Pipe Rail Brace	VBr...	None	A53 Gr.B	Typical
10	M9	21	25		180	Pipe Rail	Bea...	None	A53 Gr.B	Typical
11	M2	3	7		180	Face Pipe Horizontal	Bea...	None	A53 Gr.B	Typical
12	M6	8	14		270	Antenna Pipe Mount	Col...	None	A53 Gr.B	Typical
13	M7	9	15		270	Antenna Pipe Mount	Col...	None	A53 Gr.B	Typical
14	M8	10	16		270	Antenna Pipe Mount	Col...	None	A53 Gr.B	Typical

### Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Analysis ...	Inactive	Seismic Design ...
1	M1						Yes			None
2	M3						Yes			None
3	M4						Yes			None
4	M5						Yes			None
5	M10						Yes			None
6	M11						Yes			None
7	M12						Yes			None
8	M13	BenPIN	BenPIN				Yes			None
9	M14	BenPIN	BenPIN				Yes			None
10	M9						Yes			None
11	M2						Yes			None
12	M6						Yes			None
13	M7						Yes			None
14	M8						Yes			None

### Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	L <sub>byy</sub> [in]	L <sub>bzz</sub> [in]	L <sub>comp top</sub> [in]	L <sub>comp bot</sub> [in]	L-torq...	K <sub>yy</sub>	K <sub>zz</sub>	C <sub>b</sub>	Function
1	M1	Standoff Tu...	36			L <sub>byy</sub>						Lateral
2	M13	Pipe Rail Br...	58.172									Lateral
3	M14	Pipe Rail Br...	58.172									Lateral
4	M9	Pipe Rail	150			L <sub>byy</sub>						Lateral
5	M2	Face Pipe ...	150			L <sub>byy</sub>						Lateral
6	M6	Antenna Pip...	72									Lateral
7	M7	Antenna Pip...	96									Lateral
8	M8	Antenna Pip...	72									Lateral





### Cold Formed Steel Design Parameters

Label	Shape	Lengt...	Lbyy[in]	Lbzz[in]	Lcomp to..Lcomp b...	Kyy	Kzz	Cm-yyCm-zz	Cb	R	y swayz sway
No Data to Print ...											

### Joint Coordinates and Temperatures

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
1	1	-0.	36	0	0	
2	2	0	0	0	0	
3	3	75	36	0	0	
4	4	57	36	0	0	
5	5	-12	36	0	0	
6	6	-57	36	0	0	
7	7	-75	36	0	0	
8	8	57	39	60	0	
9	9	-12	39	72	0	
10	10	-57	39	60	0	
11	11	57	39	0	0	
12	12	-12	39	0	0	
13	13	-57	39	0	0	
14	14	57	39	-12	0	
15	15	-12	39	-24	0	
16	16	-57	39	-12	0	
17	17	-57	39	-4	0	
18	18	-57	39	52	0	
19	19	57	39	-6	0	
20	20	57	39	54	0	
21	21	75	36	30	0	
22	22	57	36	30	0	
23	23	-12	36	30	0	
24	24	-57	36	30	0	
25	25	-75	36	30	0	
26	26	57	39	30	0	
27	27	-12	39	30	0	
28	28	-57	39	30	0	
29	29	42	36	30	0	
30	30	-42	36	30	0	
31	31	0	0	48	0	

### Joint Boundary Conditions

	Joint 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	2	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	31	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

### Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribu...	Area(M...	Surface...
1	DEAD LOAD	None			-1	6				
2	DEAD LOAD ICE	None				6		8		
3	WIND LOAD (NO ICE) FRONT	None				6		8		
4	WIND LOAD (NO ICE) SIDE	None				6		8		
5	WIND LOAD (ICE) FRONT	None				6		8		
6	WIND LOAD (ICE) SIDE	None				6		8		
7	LIVE LOAD1	None				1				
8	LIVE LOAD2	None				1				



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**Basic Load Cases (Continued)**

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribu...	Area(M...	Surface...
9	LIVE LOAD3	None				1				
10	MAINTENANCE LOAD 1	None				1				
11	MAINTENANCE LOAD 2	None				1				
12	MAINTENANCE LOAD 3	None				1				
13	MAINTENANCE LOAD 4	None								

**Joint Loads and Enforced Displacements (BLC 1 : DEAD LOAD)**

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	18	L	Z	-58
2	17	L	Z	-58
3	9	L	Z	-151
4	15	L	Z	-151
5	20	L	Z	-72
6	19	L	Z	-72

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	18	L	Z	-110
2	17	L	Z	-110
3	9	L	Z	-436
4	15	L	Z	-436
5	20	L	Z	-135
6	19	L	Z	-135

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	18	L	Y	81
2	17	L	Y	81
3	9	L	Y	288
4	15	L	Y	288
5	20	L	Y	98
6	19	L	Y	98

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	18	L	X	36
2	17	L	X	36
3	9	L	X	172
4	15	L	X	172
5	20	L	X	71
6	19	L	X	71

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	18	L	Y	27
2	17	L	Y	27
3	9	L	Y	88
4	15	L	Y	88
5	20	L	Y	33
6	19	L	Y	33

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
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**Joint Loads and Enforced Displacements (BLC 6 : WIND LOAD (ICE SIDE) (Continued))**

	Joint Label	L,D,M	Direction	Magnitude[(lb.k-ft), (in.rad), (lb*s^2...
1	18	L	X	14
2	17	L	X	14
3	9	L	X	65
4	15	L	X	65
5	20	L	X	26
6	19	L	X	26

**Joint Loads and Enforced Displacements (BLC 7 : LIVE LOAD1)**

	Joint Label	L,D,M	Direction	Magnitude[(lb.k-ft), (in.rad), (lb*s^2...
1	3	L	Z	-250

**Joint Loads and Enforced Displacements (BLC 8 : LIVE LOAD2)**

	Joint Label	L,D,M	Direction	Magnitude[(lb.k-ft), (in.rad), (lb*s^2...
1	1	L	Z	-250

**Joint Loads and Enforced Displacements (BLC 9 : LIVE LOAD3)**

	Joint Label	L,D,M	Direction	Magnitude[(lb.k-ft), (in.rad), (lb*s^2...
1	7	L	Z	-250

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

	Joint Label	L,D,M	Direction	Magnitude[(lb.k-ft), (in.rad), (lb*s^2...
1	14	L	Z	-500

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

	Joint Label	L,D,M	Direction	Magnitude[(lb.k-ft), (in.rad), (lb*s^2...
1	15	L	Z	-500

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

	Joint Label	L,D,M	Direction	Magnitude[(lb.k-ft), (in.rad), (lb*s^2...
1	16	L	Z	-500

**Member Point Loads**

Member Label	Direction	Magnitude[(lb.k-ft)]	Location[in,%]
No Data to Print ...			

**Member Distributed Loads (BLC 2 : DEAD LOAD ICE)**

	Member Label	Direction	Start Magnitude[(lb/ft,...	End Magnitude[(lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M1	Z	-34	-34	0	%100
2	M2	Z	-17	-17	0	%100
3	M9	Z	-15	-15	0	%100
4	M13	Z	-15	-15	0	%100
5	M14	Z	-15	-15	0	%100
6	M6	Z	-13	-13	0	%100
7	M7	Z	-13	-13	0	%100
8	M8	Z	-13	-13	0	%100

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

	Member Label	Direction	Start Magnitude[(lb/ft,...	End Magnitude[(lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M1	PY	19	19	0	%100
2	M2	PY	10	10	0	%100



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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in, %]	End Location[in, %]
3	M9	PY	8	8	0	%100
4	M13	PY	8	8	0	%100
5	M14	PY	8	8	0	%100
6	M6	PY	7	7	0	%100
7	M7	PY	7	7	0	%100
8	M8	PY	7	7	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in, %]	End Location[in, %]
1	M1	PX	19	19	0	%100
2	M2	PX	10	10	0	%100
3	M9	PX	8	8	0	%100
4	M13	PX	8	8	0	%100
5	M14	PX	8	8	0	%100
6	M6	PX	7	7	0	%100
7	M7	PX	7	7	0	%100
8	M8	PX	7	7	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in, %]	End Location[in, %]
1	M1	PY	11.1	11.1	0	%100
2	M2	PY	8.6	8.6	0	%100
3	M9	PY	7.9	7.9	0	%100
4	M13	PY	7.9	7.9	0	%100
5	M14	PY	7.9	7.9	0	%100
6	M6	PY	7.4	7.4	0	%100
7	M7	PY	7.4	7.4	0	%100
8	M8	PY	7.4	7.4	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in, %]	End Location[in, %]
1	M1	PX	11.1	11.1	0	%100
2	M2	PX	8.6	8.6	0	%100
3	M9	PX	7.9	7.9	0	%100
4	M13	PX	7.9	7.9	0	%100
5	M14	PX	7.9	7.9	0	%100
6	M6	PX	7.4	7.4	0	%100
7	M7	PX	7.4	7.4	0	%100
8	M8	PX	7.4	7.4	0	%100

**Member Area Loads**

Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
No Data to Print ...						

**Load Combinations**

Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	
1 DL + WL (NO ICE) 0 Degree	Yes	Y		1	1.2			3	1.6														
2 DL + WL (NO ICE) 30 Degree	Yes	Y		1	1.2			3	1.3	4	.8												
3 DL + WL (NO ICE) 60 Degree	Yes	Y		1	1.2			3	.8	4	1.3												
4 DL + WL (NO ICE) 90 Degree	Yes	Y		1	1.2					4	1.6												
5 DL + WL (NO ICE) 120 Degree	Yes	Y		1	1.2			3	-.8	4	1.3												
6 DL + WL (NO ICE) 150 Degree	Yes	Y		1	1.2			3	-1.	4	.8												





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**Envelope Joint Displacements (Continued)**

Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation ...	LC	Y Rotation ...	LC	Z Rotation [...]	LC	
6		min	-.128	10	-.665	4	-.599	32	-2.334e-03	38	-3.328e-03	10	-9.763e-03	4
7	4	max	.125	4	.392	10	.094	11	1.531e-03	2	5.962e-03	32	7.433e-03	10
8		min	-.128	10	-.489	4	-.492	32	-2.334e-03	38	-3.339e-03	10	-9.763e-03	4
9	5	max	.125	4	.075	3	.007	2	5.965e-04	12	2.324e-03	32	8.374e-03	9
10		min	-.128	10	-.088	9	-.223	20	-3.986e-03	18	-5.308e-03	42	-6.752e-03	3
11	6	max	.126	4	.403	3	.142	3	1.805e-03	27	4.115e-03	3	1.063e-02	9
12		min	-.128	10	-.537	9	-.437	42	-1.719e-03	32	-5.485e-03	42	-7.57e-03	3
13	7	max	.126	4	.539	3	.216	3	1.805e-03	27	4.105e-03	3	1.064e-02	9
14		min	-.128	10	-.729	9	-.536	42	-1.719e-03	32	-5.552e-03	27	-7.58e-03	3
15	8	max	.416	3	.442	10	.092	11	4.514e-03	7	5.186e-03	3	6.932e-03	10
16		min	-.437	9	-.578	4	-.488	32	-3.656e-03	1	-5.487e-03	9	-8.893e-03	4
17	9	max	.714	4	.857	1	.007	2	2.314e-02	7	1.308e-02	4	9.564e-03	10
18		min	-.739	10	-.96	7	-.237	20	-2.137e-02	1	-1.317e-02	10	-8.057e-03	4
19	10	max	.378	4	.526	3	.14	3	5.148e-03	7	3.855e-03	4	1.01e-02	9
20		min	-.439	9	-.709	9	-.432	42	-4.258e-03	1	-5.107e-03	42	-7.149e-03	3
21	11	max	.154	4	.392	10	.092	11	1.531e-03	2	5.962e-03	32	7.433e-03	10
22		min	-.15	10	-.489	4	-.488	32	-2.334e-03	38	-3.339e-03	10	-9.763e-03	4
23	12	max	.145	4	.075	3	.008	2	5.965e-04	12	2.324e-03	32	8.374e-03	9
24		min	-.152	10	-.088	9	-.235	20	-3.986e-03	18	-5.308e-03	42	-6.752e-03	3
25	13	max	.147	4	.403	3	.14	3	1.805e-03	27	4.115e-03	3	1.063e-02	9
26		min	-.158	10	-.537	9	-.432	42	-1.719e-03	32	-5.485e-03	42	-7.57e-03	3
27	14	max	.101	4	.374	10	.092	11	1.611e-03	2	5.948e-03	32	7.433e-03	10
28		min	-.111	10	-.481	4	-.489	32	-2.407e-03	8	-3.27e-03	10	-9.763e-03	4
29	15	max	.143	4	.114	2	.008	2	4.58e-03	1	2.266e-03	28	8.374e-03	9
30		min	-.11	10	-.181	8	-.235	20	-6.813e-03	7	-5.247e-03	38	-6.752e-03	3
31	16	max	.103	4	.393	3	.14	3	1.805e-03	27	4.096e-03	3	1.063e-02	9
32		min	-.101	10	-.529	9	-.433	42	-1.719e-03	32	-5.475e-03	42	-7.57e-03	3
33	17	max	.133	4	.4	3	.14	3	1.805e-03	27	4.098e-03	3	1.063e-02	9
34		min	-.139	10	-.535	9	-.432	42	-1.719e-03	32	-5.479e-03	42	-7.57e-03	3
35	18	max	.347	4	.504	3	.14	3	5.145e-03	7	3.853e-03	4	1.01e-02	9
36		min	-.399	9	-.679	9	-.432	42	-4.256e-03	1	-5.107e-03	42	-7.149e-03	3
37	19	max	.128	4	.383	10	.092	11	1.61e-03	2	5.951e-03	32	7.433e-03	10
38		min	-.131	10	-.485	4	-.489	32	-2.406e-03	8	-3.271e-03	10	-9.763e-03	4
39	20	max	.384	3	.438	10	.092	11	4.513e-03	7	5.186e-03	3	6.932e-03	10
40		min	-.404	9	-.57	4	-.488	32	-3.655e-03	1	-5.486e-03	9	-8.893e-03	4
41	21	max	.245	4	.549	10	.153	10	3.193e-03	6	4.248e-03	3	6.932e-03	10
42		min	-.262	9	-.695	4	-.561	32	-2.341e-03	12	-4.516e-03	9	-8.893e-03	4
43	22	max	.245	4	.425	10	.097	11	3.193e-03	6	4.232e-03	3	6.932e-03	10
44		min	-.262	9	-.535	4	-.495	32	-2.341e-03	12	-4.532e-03	9	-8.893e-03	4
45	23	max	.245	4	.161	2	.033	1	1.062e-02	7	5.466e-03	4	9.564e-03	10
46		min	-.263	9	-.19	8	-.249	20	-8.863e-03	1	-5.56e-03	10	-8.057e-03	4
47	24	max	.245	3	.445	3	-.147	3	4.136e-03	8	3.318e-03	3	1.01e-02	9
48		min	-.263	9	-.601	9	-.439	42	-3.244e-03	2	-5.072e-03	42	-7.149e-03	3
49	25	max	.245	3	.574	3	.206	3	4.136e-03	8	3.302e-03	3	1.012e-02	9
50		min	-.263	9	-.783	9	-.53	42	-3.244e-03	2	-5.087e-03	42	-7.164e-03	3
51	26	max	.272	4	.425	10	.092	11	3.193e-03	6	4.232e-03	3	6.932e-03	10
52		min	-.281	10	-.535	4	-.488	32	-2.341e-03	12	-4.532e-03	9	-8.893e-03	4
53	27	max	.269	4	.161	2	.008	2	1.062e-02	7	5.466e-03	4	9.564e-03	10
54		min	-.291	9	-.19	8	-.236	20	-8.863e-03	1	-5.56e-03	10	-8.057e-03	4
55	28	max	.266	3	.445	3	.14	3	4.136e-03	8	3.318e-03	3	1.01e-02	9
56		min	-.293	9	-.601	9	-.432	42	-3.244e-03	2	-5.072e-03	42	-7.149e-03	3
57	29	max	.245	4	.321	10	.07	11	4.295e-03	7	5.768e-03	32	6.944e-03	10
58		min	-.262	9	-.405	4	-.421	32	-3.494e-03	1	-2.485e-03	42	-8.756e-03	4
59	30	max	.245	3	.341	3	.115	2	5.479e-03	7	2.28e-03	3	9.91e-03	10
60		min	-.263	9	-.454	9	-.347	20	-4.643e-03	1	-6.673e-03	42	-7.004e-03	4
61	31	max	0	32	0	1	0	7	0	7	0	32	0	42
62		min	0	42	0	7	0	1	0	1	0	42	0	32





Company : T-Mobile / EFI Global Inc  
 Designer :  
 Job Number : 2075004  
 Model Name : CTHA014A - Mount with Support rail

July 28, 2020  
 3:06 PM  
 Checked By: \_\_\_\_\_

**Envelope AISC 14th(360-10): LRFD Steel Code Checks**

Member	Shape	Code	Che...	Loc[in]	LC	Shear	Check	Loc[in]	Dir	LC	phi*Pnc	...	phi*Pnt	...	phi*Mn y	...	phi*Mn z	Cb	Eqn
1	M1	HSS4X4X4	.500	0	21	.119	0	z	42	134360.0...	139518	16.181	16.181	1...	H1-1b				
2	M13	PIPE 2.5	.028	29.086	13	.119	0	z	8	41842.3...	50715	3.596	3.596	1...	H1-1b				
3	M14	PIPE 2.5	.026	29.086	24	.095	58.172	z	32	41842.3...	50715	3.596	3.596	1...	H1-1b				
4	M9	PIPE 2.5	.253	87.5	16	.174	115.000	z	7	14558.7...	50715	3.596	3.596	2...	H1-1b				
5	M2	PIPE 3.0	.596	75	20	.356	75	z	20	28250.5...	65205	5.749	5.749	1...	H3-6				
6	M6	PIPE 2.5	.363	60	36	.081	30	z	32	37773.8...	50715	3.596	3.596	2...	H1-1b				
7	M7	PIPE 2.5	.484	42	7	.089	42	z	42	30038.4...	50715	3.596	3.596	2...	H1-1b				
8	M8	PIPE 2.5	.248	60	38	.049	60	z	38	37773.8...	50715	3.596	3.596	1...	H1-1b				

**Envelope AISI NAS-01: ASD Cold Formed Steel Code Checks**

Member	Shape	Code	...	Loc[in]	LC	Shear	...	Loc[in]	Dir	LC	Pn/Om	[lb]Tn/Om	[lb]Mnyy/O...	Mnzz/O...	Cb	Cmyy	Cmzz	Eqn
No Data to Print ...																		

# Exhibit F

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

T-Mobile Existing Facility

Site ID: CTHA014A

HA014/T Of Wethersfield\_MP  
23 Kelleher Court  
Wethersfield, Connecticut 06109

**August 10, 2020**

**EBI Project Number: 6220003719**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general population allowable limit:	<b>26.02%</b>

August 10, 2020

T-Mobile

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

Emissions Analysis for Site: CTHA014A - HA014/T Of Wethersfield\_MP

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **23 Kelleher Court in Wethersfield, 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 23 Kelleher Court in Wethersfield, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

- 1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.
- 3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 4) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 5) 4 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

- 6) 2 UMTS channels (AWS Band - 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 7) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 8) 2 LTE channels (BRS Band - 2500 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 9) 2 NR channels (BRS Band - 2500 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 10) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 11) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 12) The antennas used in this modeling are the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector A, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector B, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector 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.

- 13) The antenna mounting height centerline of the proposed antennas is 151 feet above ground level (AGL).
- 14) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 15) All calculations were done with respect to uncontrolled / general population threshold limits.

## T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz
Gain:	22.05 dBd / 22.05 dBd	Gain:	22.05 dBd / 22.05 dBd	Gain:	22.05 dBd / 22.05 dBd
Height (AGL):	151 feet	Height (AGL):	151 feet	Height (AGL):	151 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	160 Watts	Total TX Power (W):	160 Watts	Total TX Power (W):	160 Watts
ERP (W):	25,651.93	ERP (W):	25,651.93	ERP (W):	25,651.93
Antenna A1 MPE %:	4.04%	Antenna B1 MPE %:	4.04%	Antenna C1 MPE %:	4.04%
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 / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 16.35 dBd
Height (AGL):	151 feet	Height (AGL):	151 feet	Height (AGL):	151 feet
Channel Count:	9	Channel Count:	9	Channel Count:	9
Total TX Power (W):	380 Watts	Total TX Power (W):	380 Watts	Total TX Power (W):	380 Watts
ERP (W):	11,055.53	ERP (W):	11,055.53	ERP (W):	11,055.53
Antenna A2 MPE %:	2.63%	Antenna B2 MPE %:	2.63%	Antenna C2 MPE %:	2.63%
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32
Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz
Gain:	15.35 dBd / 15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.35 dBd / 15.85 dBd
Height (AGL):	151 feet	Height (AGL):	151 feet	Height (AGL):	151 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts
ERP (W):	12,841.53	ERP (W):	12,841.53	ERP (W):	12,841.53
Antenna A3 MPE %:	2.02%	Antenna B3 MPE %:	2.02%	Antenna C3 MPE %:	2.02%

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	8.70%
Town	0.17%
Clearwire	0.07%
AT&T	8.78%
Verizon	5.38%
Sprint	1.27%
Nextel	1.65%
<b>Site Total MPE % :</b>	<b>26.02%</b>

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	8.70%
T-Mobile Sector B Total:	8.70%
T-Mobile Sector C Total:	8.70%
Site Total MPE % :	26.02%

### 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	2	6412.98	151.0	20.22	2500 MHz LTE	1000	2.02%
T-Mobile 2500 MHz NR	2	6412.98	151.0	20.22	2500 MHz NR	1000	2.02%
T-Mobile 600 MHz LTE	2	591.73	151.0	1.87	600 MHz LTE	400	0.47%
T-Mobile 600 MHz NR	1	1577.94	151.0	2.49	600 MHz NR	400	0.62%
T-Mobile 700 MHz LTE	2	648.82	151.0	2.05	700 MHz LTE	467	0.44%
T-Mobile 1900 MHz LTE	2	2203.69	151.0	6.95	1900 MHz LTE	1000	0.69%
T-Mobile 2100 MHz UMTS	2	1294.56	151.0	4.08	2100 MHz UMTS	1000	0.41%
T-Mobile 1900 MHz GSM	4	1028.30	151.0	6.49	1900 MHz GSM	1000	0.65%
T-Mobile 1900 MHz LTE	2	2056.61	151.0	6.49	1900 MHz LTE	1000	0.65%
T-Mobile 2100 MHz LTE	2	2307.55	151.0	7.28	2100 MHz LTE	1000	0.73%
						<b>Total:</b>	<b>8.70%</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:	8.70%
Sector B:	8.70%
Sector C:	8.70%
T-Mobile Maximum MPE % (Sector A):	8.70%
Site Total:	26.02%
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **26.02%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

# Exhibit G




**UNITED STATES  
POSTAL SERVICE®**

**Click-N-Ship®**

**P**

usps.com  
US POSTAGE  
Flat Rate Env  
09/01/2020



Mailed from 01566 062S0000000313

**9405 5036 9930 0011 6462 89**

Expected Delivery Date: 09/04/20  
Ref#: HA014ANCH  
**0006**

**PRIORITY MAIL 2-DAY™**

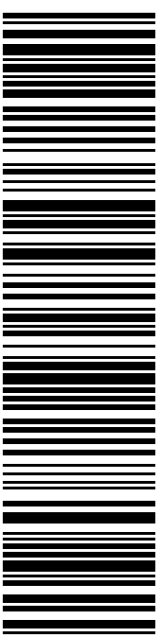
DEBORAH CHASE  
NORTHEAST SITE SOLUTIONS, LLC  
420 MAIN ST STE 2  
STURBRIDGE MA 01566-1359

SHIP TO: PETER GILLESPIE  
DIR. PLANNING & ZONING  
505 SILAS DEANE HWY  
WETHERSFIELD CT 06109-2216

**Carrier -- Leave if No Response**

C027

**USPS TRACKING #**



**9405 5036 9930 0011 6462 89**

Electronic Rate Approved #038555749



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### Instructions

1. Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.
2. Place your label so it does not wrap around the edge of the package.
3. Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.
4. To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
5. Mail your package on the "Ship Date" you selected when creating this label.

### Click-N-Ship® Label Record

**USPS TRACKING # :**  
**9405 5036 9930 0011 6462 89**

Trans. #: 504408074	Priority Mail® Postage: <b>\$7.75</b>
Print Date: 08/31/2020	Total: <b>\$7.75</b>
Ship Date: 09/01/2020	
Expected Delivery Date: 09/04/2020	

**From:** DEBORAH CHASE Ref#: HA014ANCH  
NORTHEAST SITE SOLUTIONS, LLC  
420 MAIN ST STE 2  
STURBRIDGE MA 01566-1359


**To:** PETER GILLESPIE  
DIR. PLANNING & ZONING  
505 SILAS DEANE HWY  
WETHERSFIELD CT 06109-2216

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



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





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**Click-N-Ship®**


**P**

usps.com  
**US POSTAGE**  
Flat Rate Env

09/01/2020

Mailed from 01566 062S0000000313

9405 5036 9930 0011 6462 96 5000 0010 6051



**PRIORITY MAIL 2-DAY™**

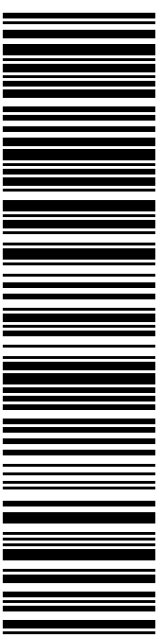
Expected Delivery Date: 09/04/20  
Ref#: HA014-ANCH  
**0006**

**Carrier -- Leave if No Response**

**C006**

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

**USPS TRACKING #**



**9405 5036 9930 0011 6462 96**

Electronic Rate Approved #038555749



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5. Mail your package on the "Ship Date" you selected when creating this label.

### Click-N-Ship® Label Record

**USPS TRACKING # :**  
**9405 5036 9930 0011 6462 96**

Trans. #: 504408074	Priority Mail® Postage: <b>\$7.75</b>
Print Date: 08/31/2020	Total: <b>\$7.75</b>
Ship Date: 09/01/2020	
Expected Delivery Date: 09/04/2020	


**From:** DEBORAH CHASE      Ref#: HA014-ANCH  
NORTHEAST SITE SOLUTIONS, LLC  
420 MAIN ST STE 2  
STURBRIDGE MA 01566-1359

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

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



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**Click-N-Ship®**

**P**

usps.com  
**US POSTAGE** \$7.75  
 Flat Rate Env  
 9405 5036 9930 0011 6463 19 0077 5000 0010 6109



09/01/2020 Mailed from 01566 062S0000001310

**PRIORITY MAIL 2-DAY™**

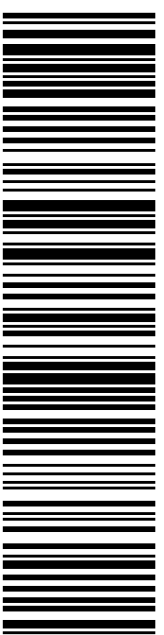
Expected Delivery Date: 09/04/20  
 Ref#: HA014-ANCH  
**0006**

SHIP TO: MICHAEL L RELL  
 MAYOR -TOWN OF WETHERSFIELD  
 505 SILAS DEANE HWY  
 WETHERSFIELD CT 06109-2216

**Carrier -- Leave if No Response**

**C027**

**USPS TRACKING #**



**9405 5036 9930 0011 6463 19**

Electronic Rate Approved #038555749



Cut on dotted line.

### Instructions

1. Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.
2. Place your label so it does not wrap around the edge of the package.
3. Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.
4. To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
5. Mail your package on the "Ship Date" you selected when creating this label.

### Click-N-Ship® Label Record

**USPS TRACKING # :**  
**9405 5036 9930 0011 6463 19**

Trans. #: 504408074	Priority Mail® Postage: <b>\$7.75</b>
Print Date: 08/31/2020	Total: <b>\$7.75</b>
Ship Date: 09/01/2020	
Expected Delivery Date: 09/04/2020	


**From:** DEBORAH CHASE Ref#: HA014-ANCH  
 NORTHEAST SITE SOLUTIONS, LLC  
 420 MAIN ST STE 2  
 STURBRIDGE MA 01566-1359

**To:** MICHAEL L RELL  
 MAYOR -TOWN OF WETHERSFIELD  
 505 SILAS DEANE HWY  
 WETHERSFIELD CT 06109-2216

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



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




**UNITED STATES  
POSTAL SERVICE®**

**Click-N-Ship®**

**P**

usps.com  
**US POSTAGE**  
 Flat Rate Env  
 \$7.75



9405 5036 9930 0011 6463 26 0077 5000 0010 6109

09/01/2020 Mailed from 01566 062S0000001310

**PRIORITY MAIL 2-DAY™**

Expected Delivery Date: 09/04/20  
 Ref#: HA014A-ANC  
**0006**

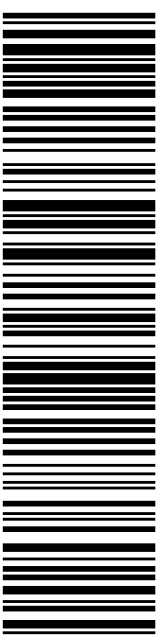
DEBORAH CHASE  
 NORTHEAST SITE SOLUTIONS, LLC  
 420 MAIN ST STE 2  
 STURBRIDGE MA 01566-1359

**Carrier -- Leave if No Response**

**C027**

SHIP TO: SUE SCHROEDER  
 ASST. TOWN CLERK- TOWN OF WETHERSFIELD  
 505 SILAS DEANE HWY  
 WETHERSFIELD CT 06109-2216

**USPS TRACKING #**



**9405 5036 9930 0011 6463 26**

Electronic Rate Approved #038555749



Cut on dotted line.

### Instructions

1. Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.
2. Place your label so it does not wrap around the edge of the package.
3. Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.
4. To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
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### Click-N-Ship® Label Record

**USPS TRACKING # :**  
**9405 5036 9930 0011 6463 26**

Trans. #: 504408074	Priority Mail® Postage: <b>\$7.75</b>
Print Date: 08/31/2020	Total: <b>\$7.75</b>
Ship Date: 09/01/2020	
Expected Delivery Date: 09/04/2020	

**From:** DEBORAH CHASE Ref#: HA014A-ANC  
 NORTHEAST SITE SOLUTIONS, LLC  
 420 MAIN ST STE 2  
 STURBRIDGE MA 01566-1359

**To:** SUE SCHROEDER  
 ASST. TOWN CLERK- TOWN OF WETHERSFIELD  
 505 SILAS DEANE HWY  
 WETHERSFIELD CT 06109-2216

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



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

# Exhibit H

## Deborah Chase

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**From:** Deborah Chase  
**Sent:** Monday, August 31, 2020 6:33 PM  
**To:** 'peter.gillespie@wethersfieldct.gov'; 'michael.rell@wethersfieldct.gov'  
**Cc:** 'town.clerk.office@wethersfieldct.gov'  
**Subject:** 23 KELLEHER COURT WETHERSFIELD CT 06109 T-MOBILE EM APPLICATION (CTHA014A)  
**Attachments:** 23 KELLEHER COURT WETHERSFIELD CT 06109 T-MOBILE EM APPLICATION (CTHA014A-Anchor).pdf

Good afternoon,

On behalf of our client, (T-Mobile), I am forwarding copies of T-Mobile's Exempt Modification Request to collocate on a wireless telecommunications facility located at 23 Kelleher Court Wethersfield, CT

Hard copies will be sent as well for your records.

Please do not hesitate to contact me with any questions regarding T-Mobile's Exempt Modification Request.

Thank you very much

### Deborah Chase

Senior Project Coordinator & Analyst

Mobile: 860-490-8839



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