January 8, 2021

Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: **Notice of Exempt Modification for T-Mobile:**
826053 - T-Mobile Site ID: CT11215A
88 Main St. Monroe, CT 06468
Latitude: 41° 18′ 6.06″/ Longitude: -73° 15′ 2.92″

Dear Ms. Bachman:

T-Mobile currently maintains 9 total antennas at the 195-foot mount on the existing 195-foot Monopole Tower, located at 88 Main Street, Monroe, CT. The tower is owned by Crown Castle. The property is owned by Stepney Volunteer Fire Co. T-Mobile now intends to replace three (3) antennas and ancillary equipment. This modification/proposal includes hardware that is both 4G(LTE) and 5G capable through remote software configuration and either or both services may be turned on or off at various times. T-Mobile is also proposing sector mount modifications as shown on the enclosed mount analysis.

Planned Modifications:
Tower:

Remove and Replace:
(3) AIR21 KRC118023-1_B2A_B4P Antennas **(REMOVE) –** (3) AIR6449_B41 5G 2500 MHz **(REPLACE)**

Install new:
(3) Radio 4415 B25
(3) SDX1926Q-43 diplexers
(1) RMQP-4096-HK platform mount
(1) hybrid cable

Remove:
(1) 1 5/8" Coax

Existing to Remain:
(10) 1 5/8" coax cables
(3) Radio 4449 B71+B85
(3) RFS-APXVAARR24_43-U-NA20 Antenna 600/700 MHz
(3) AIR32 KRD901146-1_B66A_B2A Antenna 1900/2100 MHz

Ground:

Install new:
(1) 6160 cabinet
(1) B160 battery cabinet
(1) BB 6630
(1) BB 6648
(1) PSU 4813 voltage booster
(1) iXRe router

The Facility was approved by the Monroe Planning and Zoning Commission on January 11, 2001. The approval included a tower height limitation of 195 ft. No changes to the approved height is proposed, hence this modification complies with the aforementioned approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j- 73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.S.C.A. § 16-50j-73, a copy of this letter is being sent to First Selectman, Kenneth Kellogg, Town of Monroe, Zoning Enforcement Officer Joe Chapman, Town of Monroe. Crown Castle owns both the property and the tower.

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

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

3. The proposed modification 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 Communication 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-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Richard Zajac
Site Acquisition Specialist
4545 East River Road, Suite 320
West Henrietta, NY 14586
585-445-5896
richard.zajac@crowncastle.com

cc:

First Selectman Kenneth Kellogg (*via email to kkellogg@monroect.org*)
Town of Monroe
7 Fan Hill Road
Monroe, CT 06468
203-452-2800

Zoning Enforcement Officer Joe Chapman (*via email to jchapman@monroect.org*)
Town of Monroe
7 Fan Hill Road
Monroe, CT 06468
203-452-2800

Stepney Volunteer Fire Company No.1 Inc.
88 Main Street
Monroe, CT 06468
203-268-5389

Zajac, Richard

From: Zajac, Richard
Sent: Friday, January 8, 2021 12:06 PM
To: kkellogg@monroect.org
Subject: Connecticut Siting Council exempt modification application notification
Attachments: CSC Exempt Modification Application - 88 Main St.pdf

Good afternoon Mr. Kellogg,
Please see the attached application to the Connecticut Siting Council regarding antenna work on the existing cell tower located at 88 Main Street in Monroe.

Should you have any questions/comments/concerns regarding this application, please do not hesitate to contact me.

Thank you,
RICH ZAJAC
Site Acquisition Specialist
T: (585) 445-5896 M: (607) 346-7212
F: (724) 416-4461
CROWN CASTLE
4545 East River Road, Suite 320
West Henrietta, NY 14586

Zajac, Richard

From: Zajac, Richard
Sent: Friday, January 8, 2021 12:07 PM
To: 'jchapman@monroect.org'
Subject: Connecticut Siting Council exempt modification application notification
Attachments: CSC Exempt Modification Application - 88 Main St.pdf

Good afternoon Mr. Chapman ,
Please see the attached application to the Connecticut Siting Council regarding antenna work on the existing cell tower located at 88 Main Street in Monroe.

Should you have any questions/comments/concerns regarding this application, please do not hesitate to contact me.

Thank you,
RICH ZAJAC
Site Acquisition Specialist
T: (585) 445-5896 M: (607) 346-7212
F: (724) 416-4461
CROWN CASTLE
4545 East River Road, Suite 320
West Henrietta, NY 14586

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

Exhibit A

Original Facility Approval

KNOW ALL MEN BY THESE PRESENTS, THAT THE TOWN PLANNING AND ZONING COMMISSION OF MONROE, CONNECTICUT, by its own vote on January 11, 2001, granted a **Special Exception Permit** to --

VoiceStream Wireless, Inc., for property at -

88 Main Street (DI-1 zone) - for construction of new wireless communication facility and associated site improvements as provided in Article XXV of the Zoning Regulations.

FURTHER, the approval is given subject to the following specific conditions:

1. The following plans presented at the hearing concluded November 16, 2000, including revisions and additions herein specified by the Commission, shall be the approved plans of record and basis of approval:

   "Site Plan (site address) Stepney Vol. Fire Dept., 88 Main Street, Monroe, CT, SITE #CT 11-215A," by ARCNET Architects, Inc. and Diversified Technology Consultants, Last Revised 10-24-00; Sheet Nos. S-1 (Record Exhibit A), and Z-1 (dated 6-19-00).

2. The final installation tower height be erected at the height proposed in the formal application/presentation (195') above finished grade to accommodate co-location and applicant needs.

3. Adequate area and location shall be reserved on the tower to accommodate the needs of municipal emergency services.

4. The exterior of the westerly and southerly facing sides of the fence enclosure shall be screened with dense evergreen ornamentals approximating the height of the enclosure of a type and nature to be approved by the Commission.

5. Provide copies of relevant final approvals or authorizations of state or federal authorities to the Planning and Zoning Department as a matter of information.

6. Before initiation of the work, final revised plans, based upon the plans of record, shall be filed in the Planning and Zoning Department.

7. The plans shall be revised to incorporate and address all comments in the reviewing reports submitted as part of the application and not previously incorporated into the plans.

8. Final plans shall bear an endorsement block stating:

These plans are the final construction plans and have been reviewed by the Director of Public Works and Town Planner.

_____
Town Planner

_____
Director of Public Works

Said block must appear in the lower right corner of each plan page near the title block.

9. No signs of any nature, other than normal temporary construction signs, are approved by this application. The installation of signs shall be approved only through the normal permit procedure of the Commission.

10. Submittal of all bonds and insurances as required by local and state laws and by the Commission at such times as may be required during the term of construction of the overall project until such time as the improvements or work covered by the applicable bond or insurances is deemed to be acceptably complete by the Commission.

11. A pre-construction conference is to be held with the developer and/or general contractor, engineer and architect, and Town staff, including Town Planner, Director of Public Works, Sanitarian, Building Inspector, Fire Marshal, and police representative prior to any work on the premises.

12. As-built construction plans shall be provided promptly in accordance with Chapter 44 of the Code of the Town of Monroe.

13. Provision of copies of plans, details and/or specifications, as may be required by Town and State agencies from time to time.

14. Should this action be the subject of appeal to the courts, no time limit specified herein shall begin to run until such litigation is fully concluded (date of final court action).

15. The effective date of the special exception permit shall be the date of recording in the Monroe Land Records. It shall be the responsibility of the applicant to record the special exception permit document (prepared by the Planning and Zoning Department) in the Monroe Land Records. Failure to record said document within ninety (90) days of the date of approval shall render the approval null and void.

Re: Special Exception Permit
VoiceStream Wireless, Inc.
88 Main Street - Monroe, CT

16. Failure to meet any specified condition of this approval or maintain compliance with applicable local, state or federal ordinance, regulation or laws may result in the ordered suspension of construction authorizations until such time as such failure or noncompliance has been satisfactorily resolved.

17. Should any changes in site plan be contemplated, they shall be submitted to the Commission for review. Should any changes be considered as major or substantial changes, they shall be applied for under a special exception permit application to modify the approved site plan. Minor changes are considered by the Commission as those which do not change the substance, impact or general locations involved in the proposal and may be authorized by the Commission after appropriate review.

18. It is the responsibility of the owner/developer to notify the Planning and Zoning Department of any change in the status of ownership and/or contractor(s) and/or professional design or inspection consultant involved in the proposal. Additionally, it is the responsibility of the owner/developer to notify any new owner and/or contractor(s) and/or consultants of all construction requirements including all job meeting notes and inspection notes produced up to the date of any such change in project related personnel.

19. This permit and all conditions specified herein shall be binding in perpetuity upon the applicant and property owner and his (their) heirs, assigns and successors unless otherwise amended by a subsequent act of the Commission.

20. This permit and all conditions specified herein shall be binding in perpetuity upon this parcel and premises unless otherwise amended or invalidated under the terms of this approval or a subsequent act of the Commission.

Dated at Monroe, Connecticut, this 16th day of January, 2001.

TOWN PLANNING & ZONING COMMISSION

Witness:

Mary E. Mennilli

Daniel A. Tuba
Clerk of Commission

REC'D. FOR RECORD Oct 4 2001
AT 1:28P M. ATTEST Theresa A. DiGiovanni
Asst. MONROE TOWN CLERK

Exhibit B

Property Card

88 MAIN ST

Location	88 MAIN ST	**Map/Lot**	012/ 019/ 0Z/ /
Acct#	0120190Z	**Owner**	STEPNEY VOLUNTEER FIRE CO
Assessment	$915,200	**Appraisal**	$1,307,400
PID	16246	**Building Count**	1
Survey		**Affordable**	

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$1,088,900	$218,500	$1,307,400

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$762,200	$153,000	$915,200

Owner of Record

Owner	STEPNEY VOLUNTEER FIRE CO	**Sale Price**	$0
Co-Owner	DEBORAH HEIM, TREASURER	**Certificate**	1
Address	88 MAIN ST MONROE, CT 06468-1637	**Book & Page**	
		Sale Date	
		Instrument	

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
STEPNEY VOLUNTEER FIRE CO	$0	1			

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0

Building Attributes

Field	Description
Style	Vacant Land
Model	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Fireplaces	
Wdstv Flues	
Basement Gar.	
Attic	
Basement	
In Law Apt	

Building Photo

(http://images.vgsi.com/photos/MonroeCTPhotos/\00\01\35/63.jpg)

Building Layout

(http://images.vgsi.com/photos/MonroeCTPhotos//Sketches/16246_16246.

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

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	431
Description	TEL REL TW
Zone	I1

Land Line Valuation

Size (Acres)	0.23
Appraised Value	$218,500

Neighborhood
Alt Land Approved No
Category

Outbuildings

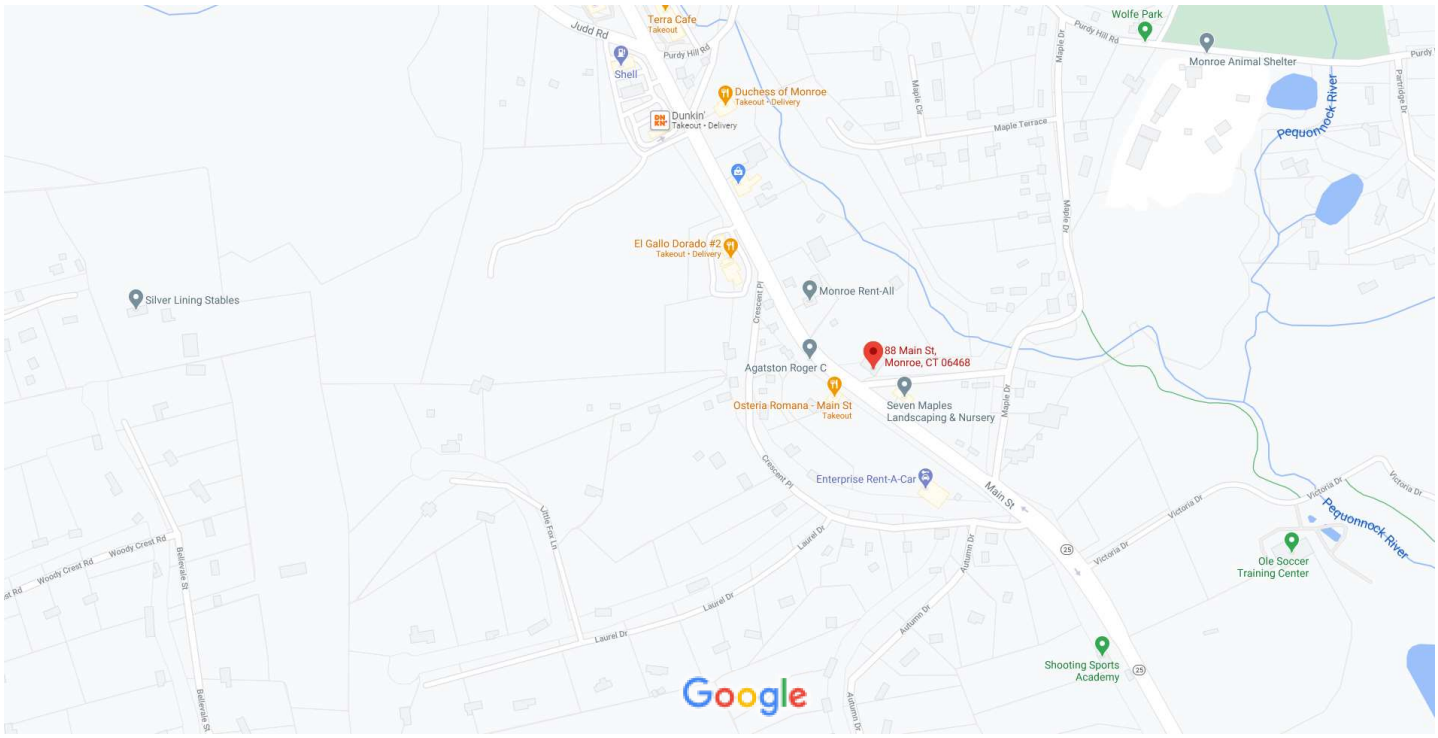
Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
RS1	Frame Utility Shed			360 S.F.	$3,600	1
FN1	FENCE CHAIN			2520 L.F.	$35,300	1
CCTM	CELL TOWER			3 UNITS	$1,050,000	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$1,088,900	$218,500	$1,307,400
2019	$1,088,900	$218,500	$1,307,400
2018	$163,900	$218,500	$382,400

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$762,200	$153,000	$915,200
2019	$762,200	$153,000	$915,200
2018	$114,700	$153,000	$267,700

Google Maps 88 Main St



Map data ©2021 200 ft

88 Main St

Monroe, CT 06468
Building

Directions Save Nearby Send to your phone Share

Photos

Exhibit C

Construction Drawings

T-Mobile

T-MOBILE SITE NUMBER: CT11215A
T-MOBILE SITE NAME: MONROE-1/RT 25
SITE TYPE: MONOPOLE
TOWER HEIGHT: 195'-0"

BUSINESS UNIT #: 826053
SITE ADDRESS: 88 MAIN STREET MONROE, CT 06468
COUNTY: FAIRFIELD
JURISDICTION: NA

T-MOBILE ANCHOR SITE CONFIGURATION: 67D5997DB_2XAIR+1OP

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	MONROE-1/RT 25
SITE ADDRESS:	88 MAIN STREET MONROE, CT 06468
COUNTY:	FAIRFIELD
MAP/PARCEL #:	NA
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.30209213 (41° 18' 6.06")
LONGITUDE:	-73.25163555 (-73° 15' 2.92")
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	328.0 FT
CURRENT ZONING:	NA
JURISDICTION:	NA
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	NA NA NA
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	T-MOBILE 35 GRIFFIN ROAD BLOOMFIELD, CT 06002
ELECTRIC PROVIDER:	---- ----
TELCO PROVIDER:	---- ----

PROJECT TEAM

A&E FIRM:	INFINIGY 1033 WATERVLIET SHAKER RD. ALBANY, NY 12205
CROWN CASTLE USA INC. DISTRICT CONTACTS:	3 CORPORATE PARK DRIVE, SUITE 101 CLIFTON PARK, NY 12065
	---- - PROJECT MANAGER ----
	---- - CONSTRUCTION MANAGER ----

NOTE:
PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN NOC AT (800) 788-7011 & CROWN CONSTRUCTION MANAGER.

DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1	SITE PLAN & ENLARGED SITE PLAN
C-2	FINAL ELEVATION & ANTENNA PLANS
C-3	ANTENNA & CABLE SCHEDULE
C-4	PLUMBING DIAGRAM
C-5	EQUIPMENT SPECS
E-1	AC PANEL SCHEDULES & ONE LINE DIAGRAM
G-1	ANTENNA GROUNDING DIAGRAM
G-2	GROUNDING DETAILS

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR ----. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

PROJECT DESCRIPTION

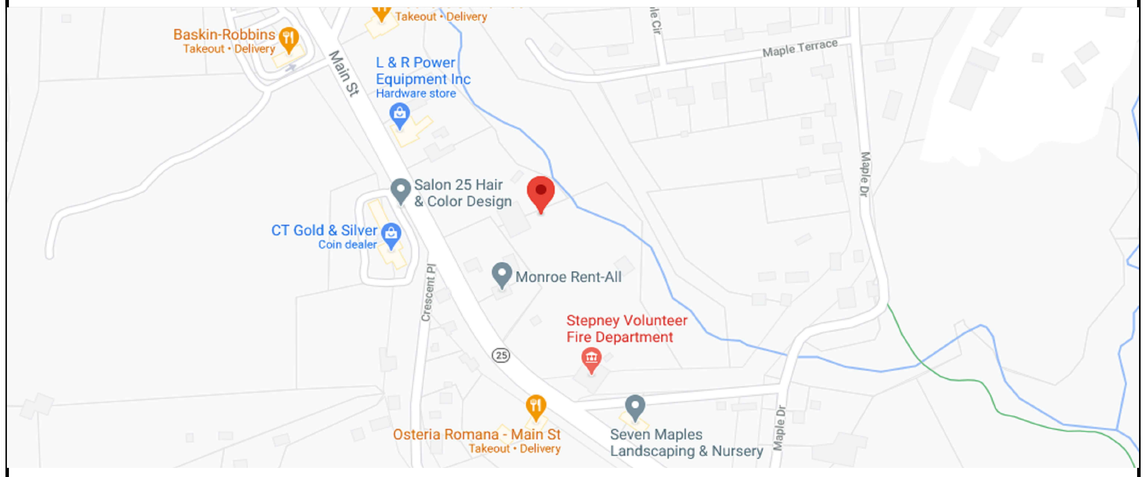
THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.

TOWER SCOPE OF WORK:
- REMOVE (3) ANTENNAS
- REMOVE (1) COAX CABLE
- INSTALL (3) ANTENNAS
- INSTALL (3) RRHs
- INSTALL (3) DIPLEXERS
- INSTALL (1) HYBRID CABLE
- REPLACE PLATFORM

GROUND SCOPE OF WORK:
- INSTALL (1) 6160 & (1) B160 BATTERY CABINETS
- INSTALL (1) iXRe ROUTER IN (P) CABINET
- INSTALL (1) PSU4813 BOOSTER IN (P) CABINET
- INSTALL (1) BB6630 IN (P) CABINET
- INSTALL (1) BB6648 IN (P) CABINET

NOTE:
THE POWER DESIGN FOR ANY AC ELECTRICAL POWER CHANGES IS TO BE PERFORMED BY OTHERS AND IS SHOWN HERE FOR REFERENCE PURPOSES ONLY. T-MOBILE IS SOLELY RESPONSIBLE FOR THE ELECTRICAL POWER DESIGN.

LOCATION MAP



NO SCALE

APPLICABLE CODES/REFERENCE DOCUMENTS

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

CODE TYPE	CODE
BUILDING	2018 CT STATE BUILDING CODE
MECHANICAL	2015 IMC
ELECTRICAL	2017 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	BY OTHERS
DATED:	
MOUNT ANALYSIS:	BY KIMLEY HORN
DATED:	10/09/2020
RFDS REVISION:	7
DATED:	9/22/2020
ORDER ID:	529713
REVISION:	0

CALL CONNECTICUT ONE CALL
(800) 922-4455 CBYD.COM
CALL 2 WORKING DAYS BEFORE YOU DIG!

APPROVALS

APPROVAL	SIGNATURE	DATE
PROPERTY OWNER OR REP.		
LAND USE PLANNER		
T-MOBILE		
OPERATIONS		
RF		
NETWORK		
BACKHAUL		
CONSTRUCTION MANAGER		

THE PARTIES ABOVE HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL CONSTRUCTION DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND ANY CHANGES AND MODIFICATIONS THEY MAY IMPOSE.

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1033 Watervliet Shaker Rd | Albany, NY 12205
Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com

T-MOBILE SITE NUMBER:
CT11215A

BU #: **826053**
MONROE-1/RT 25

88 MAIN STREET
MONROE, CT 06468

EXISTING 195'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	11/04/20	RCD	PRELIMINARY	SS
0	11/12/20	BMM	FOR CONSTRUCTION	SS
1	12/16/20	BMM	UPDATED LAYOUT	SS

STATE OF CONNECTICUT · SUSHIL SAKARIA · 34916 · LICENSED PROFESSIONAL ENGINEER

12/17/20

SHEET NUMBER: T-1
REVISION: 1

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED– NO WORK SHALL COMMENCE PRIOR TO CROWN CASTLE USA INC. WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN CASTLE USA INC. NOC AT 800–788–7011 & THE CROWN CASTLE USA INC. CONSTRUCTION MANAGER.
2. "LOOK UP" – CROWN CASTLE USA INC. SAFETY CLIMB REQUIREMENT: THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR CROWN CASTLE USA INC. POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.
3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND CROWN CASTLE USA INC. STANDARD CED–STD–10253, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA–322 (LATEST EDITION).
5. ALL SITE WORK TO COMPLY WITH QAS–STD–10068 "INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON CROWN CASTLE USA INC. TOWER SITE," CED–STD–10294 "STANDARD FOR INSTALLATION OF MOUNTS AND APPURTENANCES," AND LATEST VERSION OF ANSI/TIA–1019–A–2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY CROWN CASTLE USA INC. PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF THE CONTRACTOR, TOWER OWNER, CROWN CASTLE USA INC., AND/OR LOCAL UTILITIES.
14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.
16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR: GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
   CARRIER: T–MOBILE
   TOWER OWNER: CROWN CASTLE USA INC.
2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CROWN CASTLE.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND CROWN CASTLE PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION AND IS TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF CROWN CASTLE USA INC.
13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST–IN–PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.
4. CONCRETE EXPOSED TO FREEZE–THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER–TO–CEMENT RATIO (W/C) OF 0.45.
5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
   #4 BARS AND SMALLER.......40 ksi
   #5 BARS AND LARGER.......60 ksi
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
   CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.......3"
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 BARS AND LARGER.......2"
   #5 BARS AND SMALLER.......1–1/2"
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
   SLAB AND WALLS.......3/4"
   BEAMS AND COLUMNS.......1–1/2"
7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
   4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
   4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERYIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).
7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
8. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI–CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI–CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP–STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
16. ELECTRICAL METALLIC TUBING (EMT) OR METAL–CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID–TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION–TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON–PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER–ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY–COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3R (OR BETTER) FOR EXTERIOR LOCATIONS.
25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY–COATED OR NON–CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR CROWN CASTLE USA INC. BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "T–MOBILE".
30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

CONDUCTOR COLOR CODE

SYSTEM	CONDUCTOR	COLOR
120/240V, 1Ø	A PHASE	BLACK
	B PHASE	RED
	NEUTRAL	WHITE
	GROUND	GREEN
120/208V, 3Ø	A PHASE	BLACK
	B PHASE	RED
	C PHASE	BLUE
	NEUTRAL	WHITE
	GROUND	GREEN
277/480V, 3Ø	A PHASE	BROWN
	B PHASE	ORANGE OR PURPLE
	C PHASE	YELLOW
	NEUTRAL	GREY
	GROUND	GREEN
DC VOLTAGE	POS (+)	RED**
	NEG (–)	BLACK**

* SEE NEC 210.5(C)(1) AND (2)
** POLARITY MARKED AT TERMINATION

APWA UNIFORM COLOR CODE:

WHITE	PROPOSED EXCAVATION
PINK	TEMPORARY SURVEY MARKINGS
RED	ELECTRIC POWER LINES, CABLES, CONDUIT, AND LIGHTING CABLES
YELLOW	GAS, OIL, STEAM, PETROLEUM, OR GASEOUS MATERIALS
ORANGE	COMMUNICATION, ALARM OR SIGNAL LINES, CABLES, OR CONDUIT AND TRAFFIC LOOPS
BLUE	POTABLE WATER
PURPLE	RECLAIMED WATER, IRRIGATION, AND SLURRY LINES
GREEN	SEWERS AND DRAIN LINES

ABBREVIATIONS:

ANT	ANTENNA
(E)	EXISTING
FIF	FACILITY INTERFACE FRAME
GEN	GENERATOR
GPS	GLOBAL POSITIONING SYSTEM
GSM	GLOBAL SYSTEM FOR MOBILE
LTE	LONG TERM EVOLUTION
MGB	MASTER GROUND BAR
MW	MICROWAVE
(N)	NEW
NEC	NATIONAL ELECTRIC CODE
(P)	PROPOSED
PP	POWER PLANT
QTY	QUANTITY
RECT	RECTIFIER
RBS	RADIO BASE STATION
RET	REMOTE ELECTRIC TILT
RFDS	RADIO FREQUENCY DATA SHEET
RRH	REMOTE RADIO HEAD
RRU	REMOTE RADIO UNIT
SIAD	SMART INTEGRATED DEVICE
TMA	TOWER MOUNTED AMPLIFIER
TYP	TYPICAL
UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
W.P.	WORK POINT

GREENFIELD GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL–OF–POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS. THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.
7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON–ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON–METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON–METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD–WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY).

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MONROE-1/RT 25

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MONROE, CT 06468

EXISTING 195'-0" MONOPOLE

ISSUED FOR:

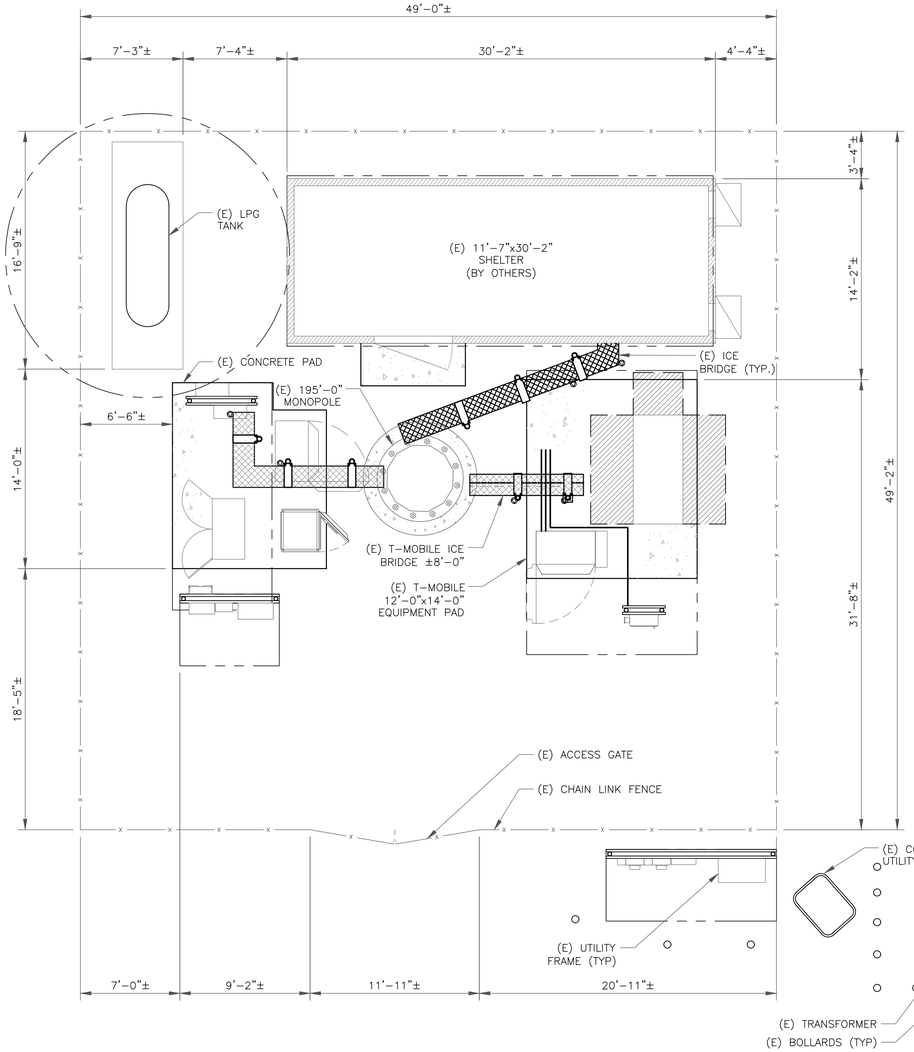
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	11/04/20	RCD	PRELIMINARY	SS
0	11/12/20	BMM	FOR CONSTRUCTION	SS
1	12/16/20	BMM	UPDATED LAYOUT	SS

12/17/20

SHEET NUMBER: **T-2**
REVISION: **1**

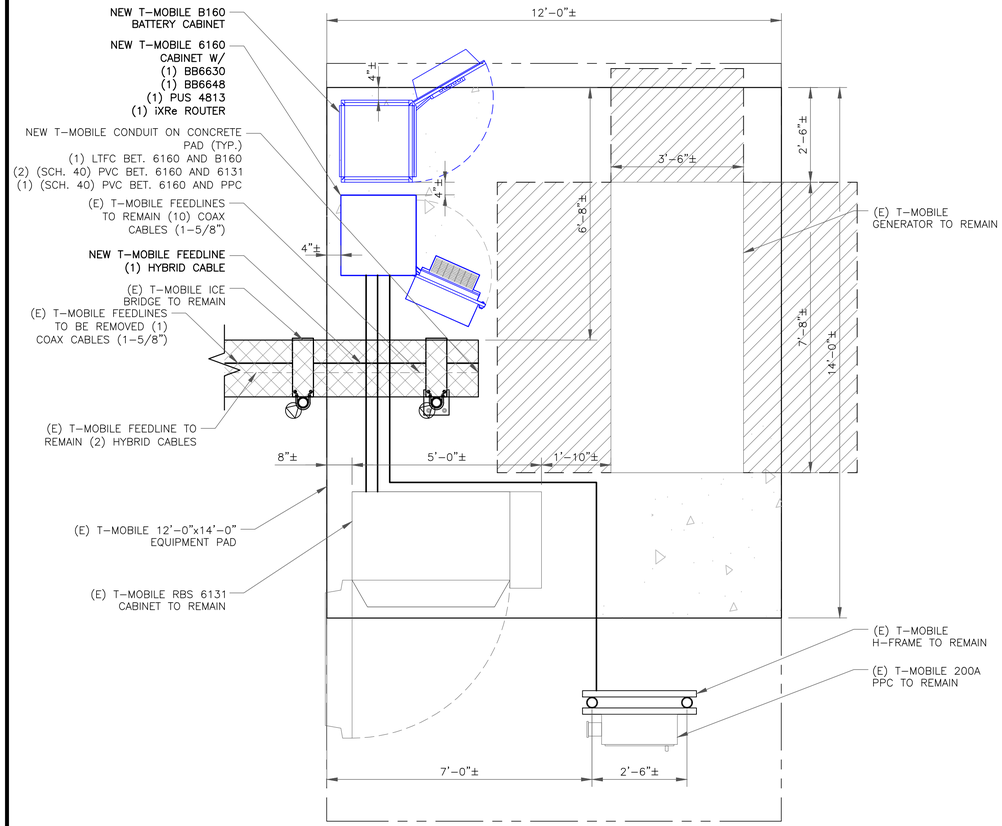
NOTE:

1. PLANS BASED ON SITE PLAN PROVIDED BY TOWER OWNER AND SITE VISIT PERFORMED BY INFINIGY. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LOCATION/ORIENTATION OF EXISTING T–MOBILE EQUIPMENT.



1 SITE PLAN
SCALE: 2' 1' 0 2' 3/8"=1'–0" (FULL SIZE) 3/16"=1'–0" (11x17)

N



2 ENLARGED SITE PLAN
SCALE: 1' 6" 0 1' 1"=1'–0" (FULL SIZE) 1/2"=1'–0" (11x17)

N

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T-MOBILE SITE NUMBER:
CT11215A

BU #: **826053**
MONROE-1/RT 25

88 MAIN STREET
MONROE, CT 06468

EXISTING 195'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	11/04/20	RCD	PRELIMINARY	SS
0	11/12/20	BMM	FOR CONSTRUCTION	SS
1	12/16/20	BMM	UPDATED LAYOUT	SS

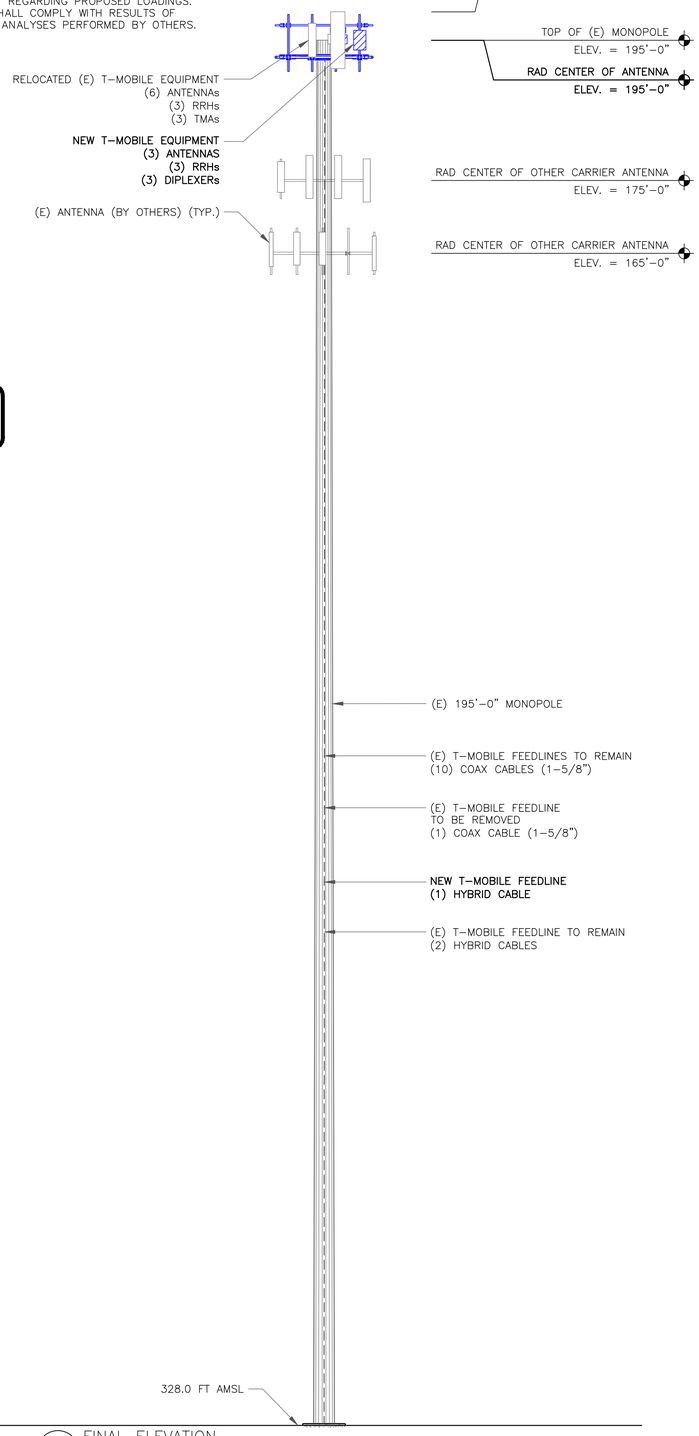
12/17/20

SHEET NUMBER: C-1

REVISION: 1

NOTES:

1. ELEVATION BASED ON DRAWING PROVIDED BY TOWER OWNER. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LOCATION/ORIENTATION OF EXISTING EQUIPMENT.
2. INFINIGY HAS NOT EVALUATED THE TOWER OR MOUNT STRUCTURE AND ASSUMES NO RESPONSIBILITY FOR THEIR STRUCTURAL INTEGRITY REGARDING PROPOSED LOADINGS. FINAL INSTALLATION SHALL COMPLY WITH RESULTS OF PASSING STRUCTURAL ANALYSES PERFORMED BY OTHERS.

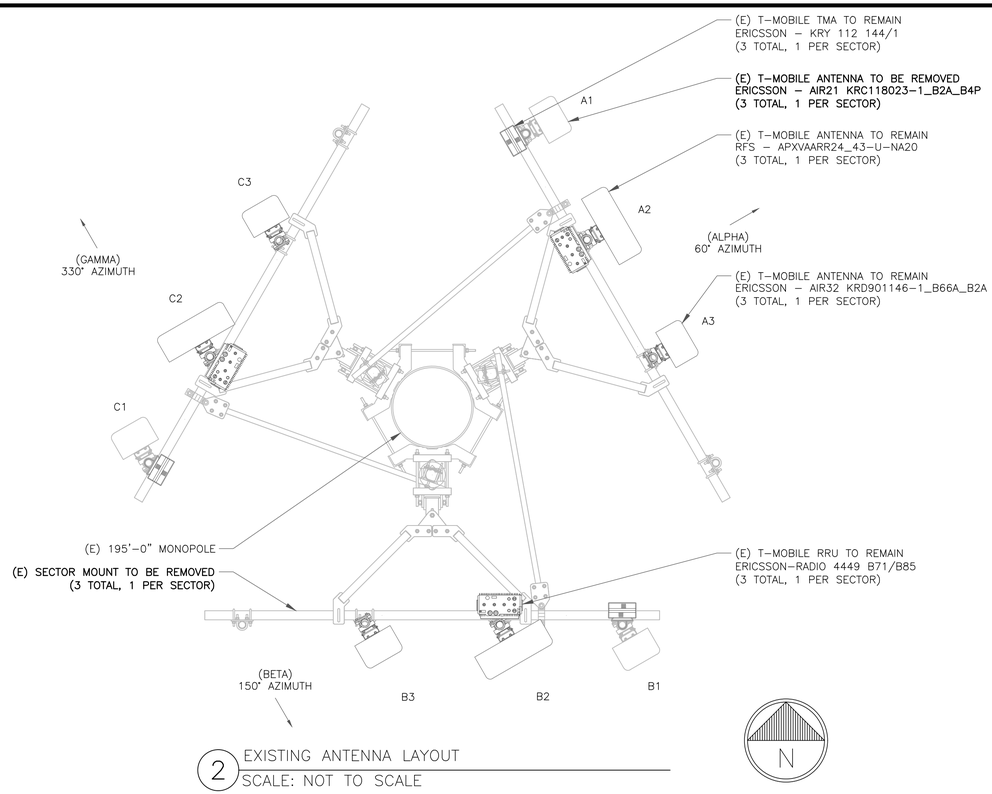


1 FINAL ELEVATION
SCALE: NOT TO SCALE

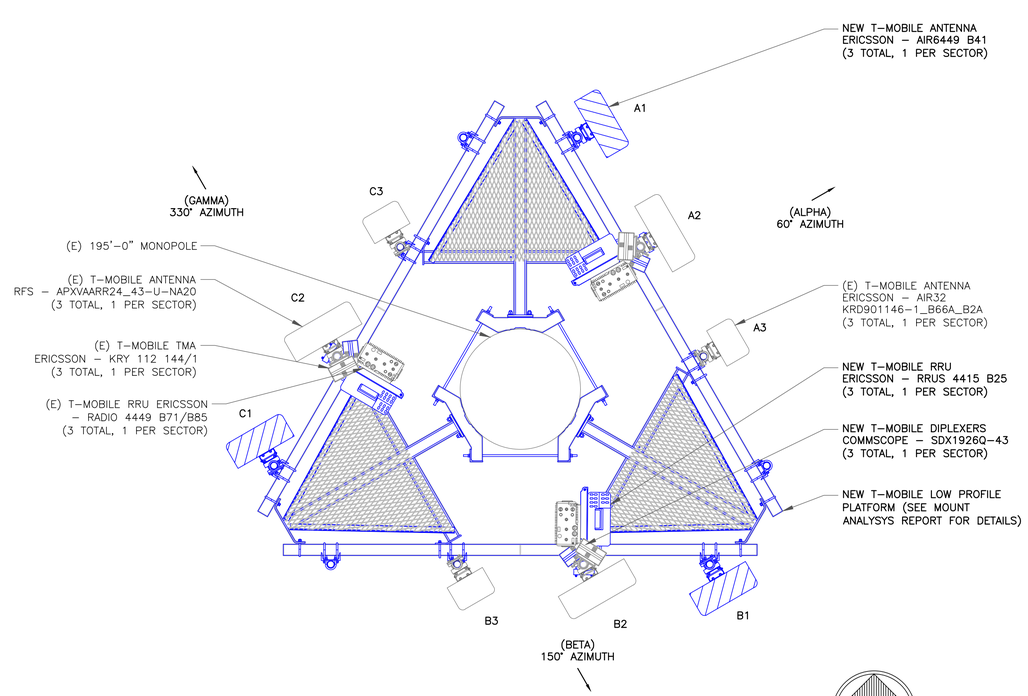
T-MOBILE EQUIPMENT

ANTENNA CL: 195
MOUNT CL: 195

ANY AND ALL TOWER MOUNTED EQUIPMENT MUST NOT TRAP OR INTERFERE W/ EXISTING SAFETY CLIMB



2 EXISTING ANTENNA LAYOUT
SCALE: NOT TO SCALE



3 FINAL ANTENNA LAYOUT
SCALE: NOT TO SCALE

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MONROE-1/RT 25

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MONROE, CT 06468

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12/17/20

SHEET NUMBER: C-2

REVISION: 1

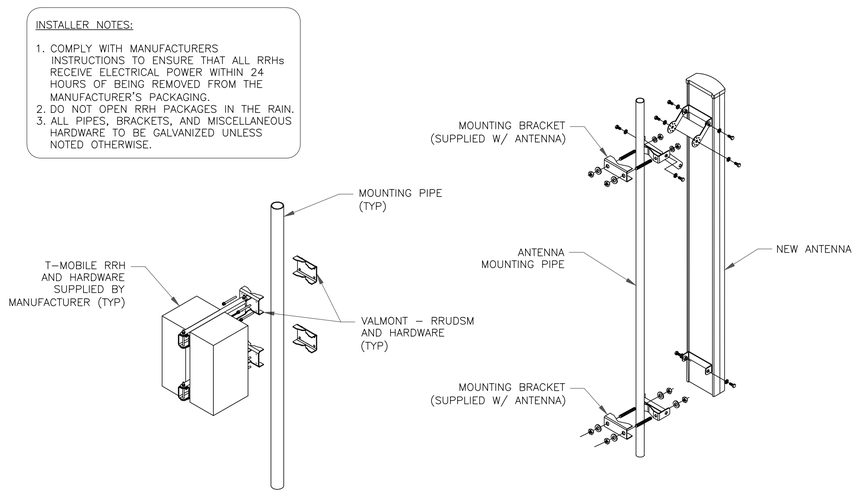
ANTENNA SCHEDULE

SECTOR	POS.	TECHNOLOGY	RAD CENTER	AZIMUTH	ANTENNA MANUFACTURER	ANTENNA MODEL	MECH. TILT	ELECT. TILT	TOWER MOUNTED EQUIPMENT	FEEDLINE TYPE
ALPHA	**A1**	**L2500, N2500**	**195**	**60°**	**ERICSSON**	**AIR6449 B41**	**0°**	**–**	–	**(1) 6X12 HCS HYBRID (SHARED)**
ALPHA	A2	L600, N600, L700, L1900, U2100	195	60°	RFS	APXVAARR24_43–UNA20	0°	–	(1) ERICSSON – RRUS 4449 B71+B85 **(1) ERICSSON – RRUS 4415 B25** (1) ERICSSON – KRY 112 144/1 **(1) COMMSCOPE – SDX1926Q–43**	(3) 1–5/8" COAX (1) 6X12 HCS HYBRID (SHARED)
ALPHA	A3	L2100, L1900, G1900	195	60°	ERICSSON	AIR32 KRD901146–1_B66A_B2A	0°	–	–	(1) 9X18 HCS HYBRID (SHARED)
BETA	**B1**	**L2500, N2500**	**195**	**150**	**ERICSSON**	**AIR6449 B41**	**0°**	**–**	–	**(1) 6X12 HCS HYBRID (SHARED)**
BETA	B2	L600, N600, L700, L1900, U2100	195	150	RFS	APXVAARR24_43–UNA20	0°	–	(1) ERICSSON – RRUS 4449 B71+B85 **(1) ERICSSON – RRUS 4415 B25** (1) ANDREW – ETW200VS12UB **(1) COMMSCOPE – SDX1926Q–43**	(3) 1–5/8" COAX (1) 6X12 HCS HYBRID (SHARED)
BETA	B3	L2100, L1900, G1900	195	150	ERICSSON	AIR32 KRD901146–1_B66A_B2A	0°	–	–	(1) 9X18 HCS HYBRID (SHARED)
GAMMA	**C1**	**L2500, N2500**	**195**	**330**	**ERICSSON**	**AIR6449 B41**	**0°**	**–**	–	**(1) 6X12 HCS HYBRID (SHARED)**
GAMMA	C2	L600, N600, L700, L1900, U2100	195	330	RFS	APXVAARR24_43–UNA20	0°	–	(1) ERICSSON – RRUS 4449 B71+B85 **(1) ERICSSON – RRUS 4415 B25** (1) ANDREW – ETW200VS12UB **(1) COMMSCOPE – SDX1926Q–43**	(4) 1–5/8" COAX (1) 6X12 HCS HYBRID (SHARED)
GAMMA	C3	L2100, L1900, G1900	195	330	ERICSSON	AIR32 KRD901146–1_B66A_B2A	0°	–	–	(1) 9X18 HCS HYBRID (SHARED)

1 ANTENNA AND CABLE SCHEDULE
SCALE: NOT TO SCALE

INSTALLER NOTES:

1. COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRHs RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING.
2. DO NOT OPEN RRH PACKAGES IN THE RAIN.
3. ALL PIPES, BRACKETS, AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE.



2 ANTENNA WITH RRHs MOUNTING DETAIL
SCALE: NOT TO SCALE

NOTE:

1. CONTRACTOR SHALL INSTALL 3RD DUAL RRH MOUNT TO ACCOMMODATE ALL RRH BRACKETS HOLES IF NECESSARY.

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T-MOBILE SITE NUMBER:
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BU #: **826053**
MONROE-1/RT 25

88 MAIN STREET
MONROE, CT 06468

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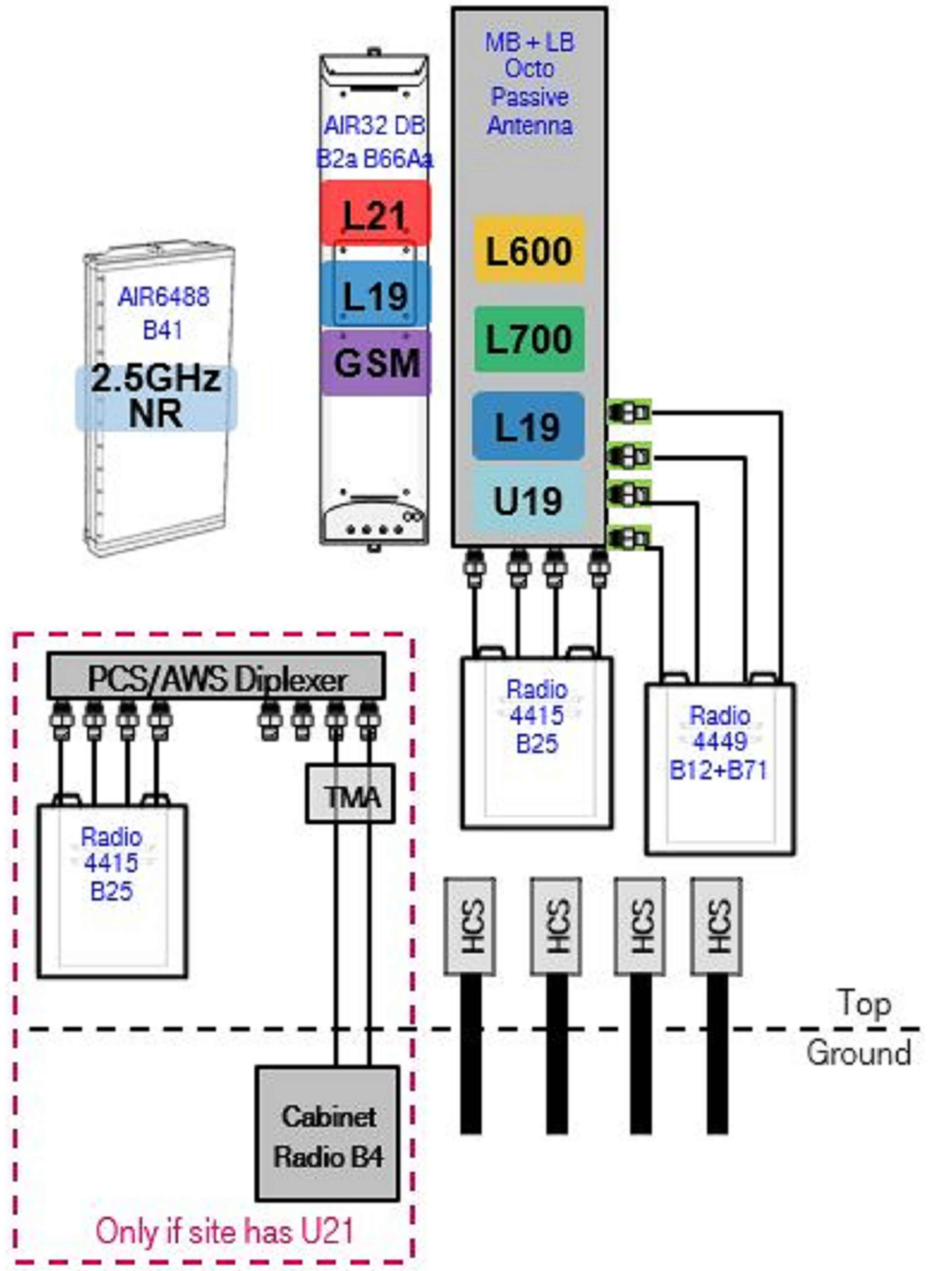
1	12/16/20	BMM	UPDATED LAYOUT	SS

12/17/20

SHEET NUMBER: C-3

REVISION: 1



1 PLUMBING DIAGRAM
SCALE: NOT TO SCALE

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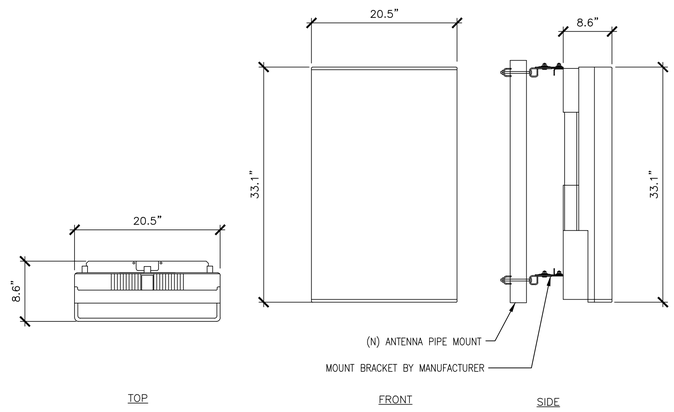
STATE OF CONNECTICUT
MICHAEL SAKAI MORRIS
34916
LICENSED PROFESSIONAL ENGINEER

12/17/20

SHEET NUMBER: C-4

REVISION: 1

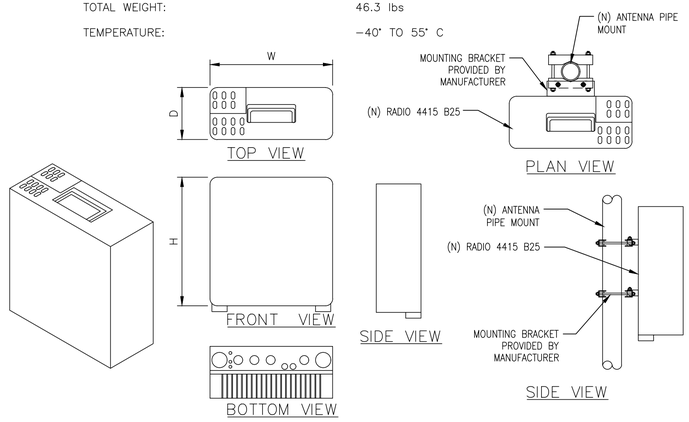
MANUFACTURER: ERICSSON
MODEL: AIR6449 B41
WEIGHT: 104 LBS (W/ MOUNT BRACKET 113)
DIMENSIONS: 33.1"H. X 20.5"W. X 8.6"D.
FREQUENCY: REFER TO RF DATA SHEET



1 (N) AIR6449 B41 ANTENNA SPEC
SCALE: NOT TO SCALE

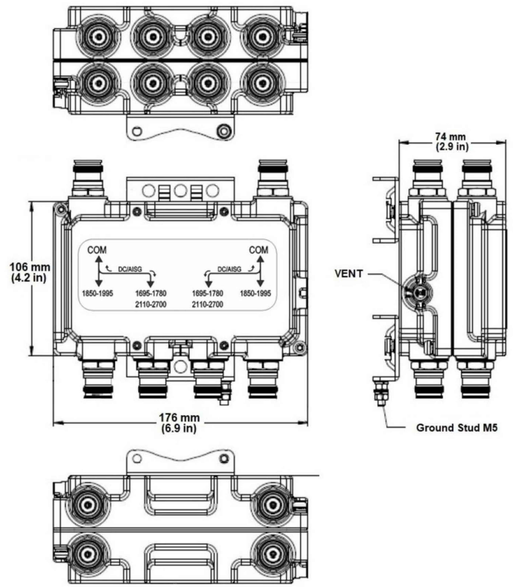
ERICSSON RADIO-4415 B25

DIMENSIONS, WxDxH:	13.2"x5.4"x14.9"
POWER CONSUMPTION:	660 WATTS
TOTAL WEIGHT:	46.3 lbs
TEMPERATURE:	-40° TO 55° C

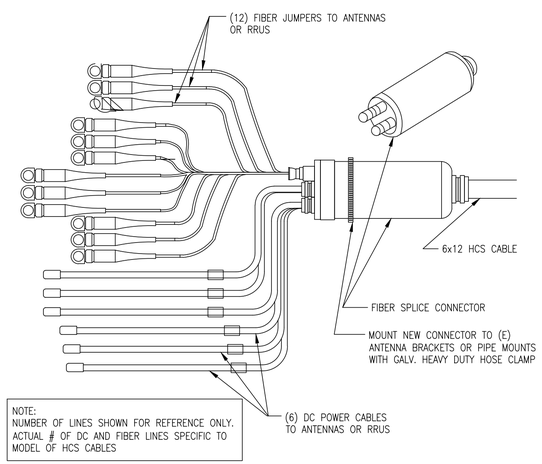


2 (N) RADIO 4415 B25 SPEC
SCALE: NOT TO SCALE

MANUFACTURER: COMMSCOPE
MODEL: SDX1926Q-43
WEIGHT: 6.17 LBS
DIMENSIONS: 6.9" X 4.2" X 2.9"
FREQUENCY: REFER TO RF DATA SHEET

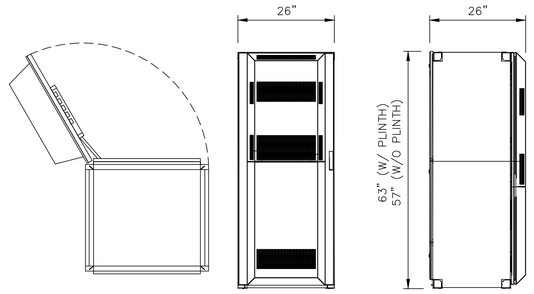


3 (N) DIPLEX SDX1926Q-43 SPEC
SCALE: NOT TO SCALE



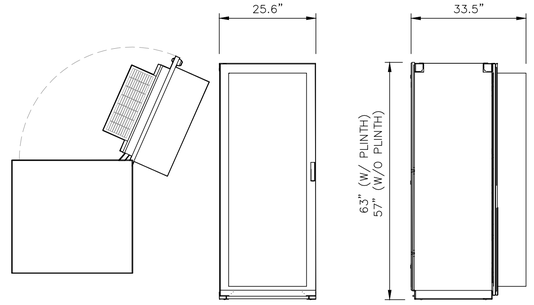
NOTE:
NUMBER OF LINES SHOWN FOR REFERENCE ONLY. ACTUAL # OF DC AND FIBER LINES SPECIFIC TO MODEL OF HCS CABLES

4 (N) 6X12 HCS CABLE DETAIL
SCALE: NOT TO SCALE



ERICSSON MODEL NO.:	B160
RACK SPACE:	19U
DIMENSIONS, HxWxD:	63"x26"x26" (W/ 6" PLINTH)
CABINET WEIGHT, EMPTY:	485 LBS
MAXIMUM WEIGHT:	2100± LBS

5 B160 CABINET DETAIL
SCALE: NOT TO SCALE



ERICSSON MODEL NO.:	6160
RACK SPACE:	19U
DIMENSIONS, HxWxD:	63"x25.6"x25.6" (W/ 6" PLINTH)
CABINET WEIGHT, EMPTY:	410 LBS
MAXIMUM WEIGHT:	770± LBS

6 6160 CABINET DETAIL
SCALE: NOT TO SCALE

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T-MOBILE SITE NUMBER:
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BU #: **826053**
MONROE-1/RT 25

88 MAIN STREET
MONROE, CT 06468

EXISTING 195'-0" MONOPOLE

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STATE OF CONNECTICUT
SHUNEI SAKAI
34946
LICENSED PROFESSIONAL ENGINEER

12/17/20

SHEET NUMBER: C-5

REVISION: 1

T-MOBILE PANEL SCHEDULE

MAIN: 200A MAIN BREAKER	**VOTAGE/PHASE:** 120/240V, 1-PHASE, 3-WIRE	**SHORT CIRCUIT CURRENT RATING:** --
MOUNTING: INSIDE PPC ENCLOSURE	**ENCLOSURE:** NEMA 3R	**SURGE PROTECTION DEVICE:** YES

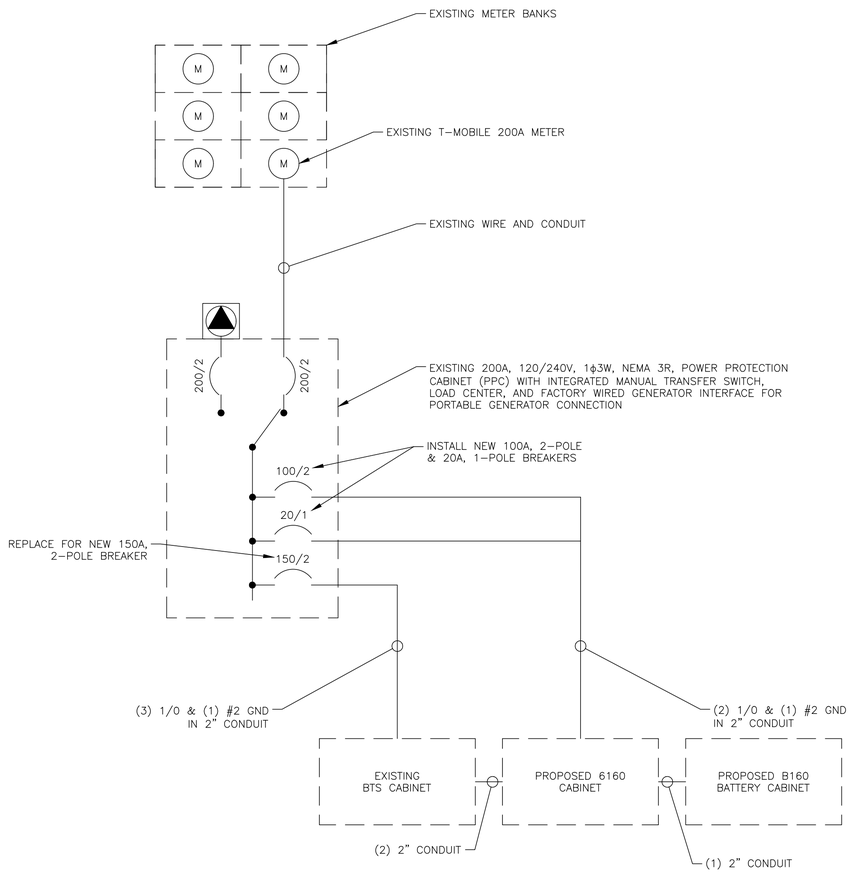
DESCRIPTION	LOAD (VA)	C or NC	C/B	CIR No.	PHASE LOADS (VA) A	PHASE LOADS (VA) B	CIR No.	C/B	C or NC	LOAD (VA)	DESCRIPTION
RBS6131	6250	C	150	1	6250		2				ALPHA
	6250	C		3		6250	4				
6160**	**2500**	**C**	**100**	**5**	2680		6	20	NC	180	GFI
	2500	**C**		**7**		2680	8	20	NC	180	GFI (TELCO)
6160 FGCI**	**180**	**NC**	**20**	**9**	180		10				
BLANK				11		0	12				BLANK
				13	0		14				
				15		0	16				
				17	0		18				
				19		0	20				
				21	0		22				
				23		0	24				
BASE LOAD (VA) =					9110	8930					
25% OF CONTINUOUS LOAD (VA) =					2188	2188					
TOTAL LOAD (VA) =					11298	11118					
TOTAL LOAD (A) =					95	93					

C = CONTINUOUS LOAD; NC = NON-CONTINUOUS LOAD
* REMOVE WIRE TO EXISTING BREAKER AND MARK AS SPARE
**INDICATES NEW LOAD. ALL OTHER LOADS ARE EXISTING.
NEW BREAKER TO BE SAME TYPE AND HAVE SAME AIC RATING AS EXISTING. CUSTOMER HAS NOT PROVIDED LOADS FOR EQUIPMENT CABINETS THEREFORE THE CABINET LOADS SHOWN ARE ESTIMATED

1 AC PANEL SCHEDULE
SCALE: NOT TO SCALE

NOTES:

1. ALL NEW CONDUCTORS TO BE INSTALLED SHALL BE COPPER. ALL CONDUCTORS SHALL BE THHW, THWN, THWN–2, XHHW, OR XHHW–2 UNLESS NOTED OTHERWISE.
2. CONTRACTOR IS TO FIELD VERIFY ALL EXISTING ITEMS SHOWN ON THE ELECTRICAL ONE–LINE DIAGRAM AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
3. ALL GROUNDING AND BONDING PER THE NEC.



2 ONE LINE DIAGRAM
SCALE: NOT TO SCALE

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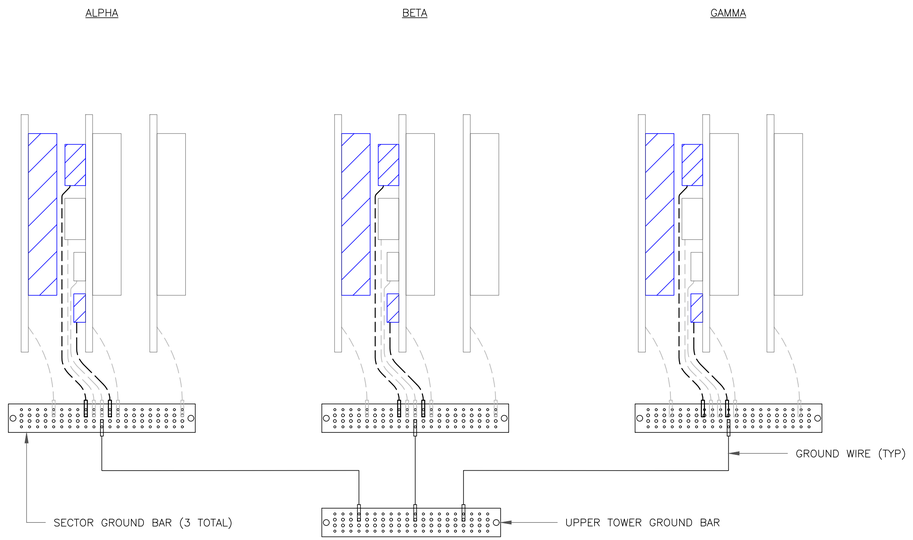
STATE OF CONNECTICUT
ASHUTOSH SAKARKAR
34916
LICENSED PROFESSIONAL ENGINEER

12/17/20

SHEET NUMBER: E-1
REVISION: 1



NOTE:

ALL NEW GROUNDS TO BE #6 STRANDED COPPER WITH GREEN INSULATION UNLESS NOTED OTHERWISE.

1 ANTENNA GROUNDING DIAGRAM
SCALE: NOT TO SCALE

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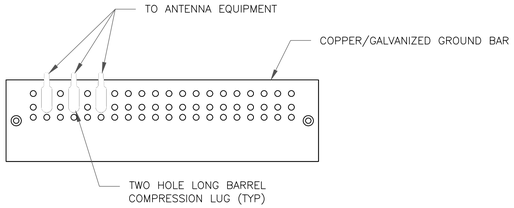
STATE OF CONNECTICUT
STEVEN SARANDOS
34916
LICENSED PROFESSIONAL ENGINEER

12/17/20

SHEET NUMBER: G-1

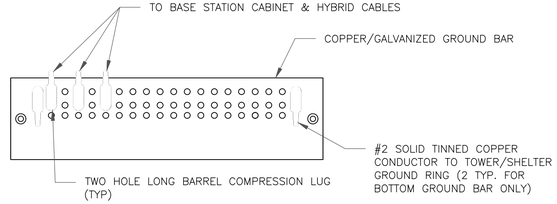
REVISION: 1



NOTES:

1. DOUBLING UP "OR STACKING" OF CONNECTIONS IS NOT PERMITTED.
2. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
3. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO ANTENNA MOUNT STEEL.

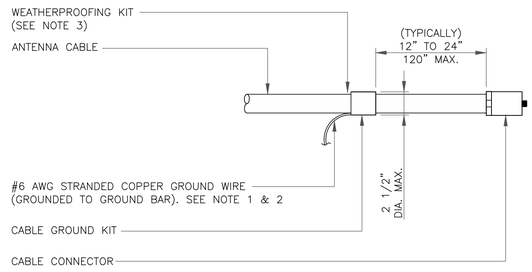
1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

1. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
2. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL (TOWER ONLY).
3. GROUND BAR SHALL BE ISOLATED FROM BUILDING OR SHELTER.

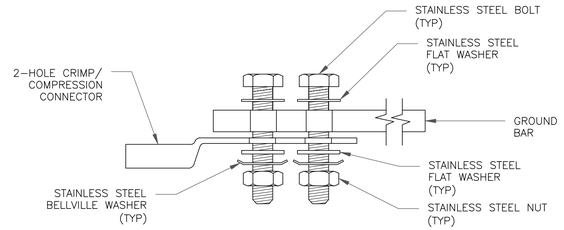
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



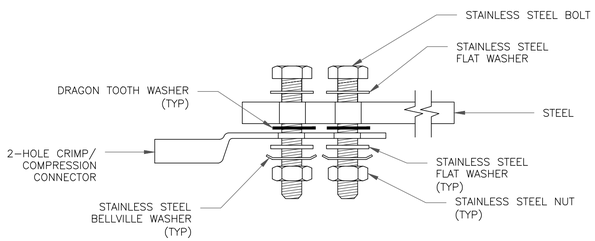
NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
3. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.

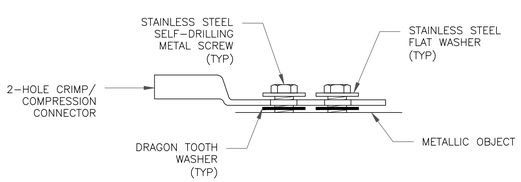
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS

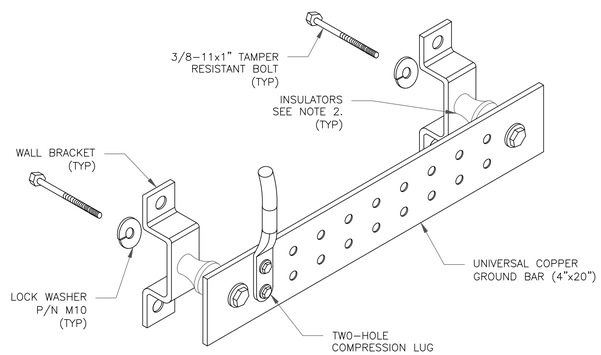


SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

4 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.
2. OMIT INSULATOR WHEN MOUNTING TO TOWER STEEL OR PLATFORM STEEL USE INSULATORS WHEN ATTACHING TO BUILDING OR SHELTERS.

5 GROUND BAR DETAIL
SCALE: NOT TO SCALE

6 NOT USED
SCALE: NOT TO SCALE

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T-MOBILE SITE NUMBER:
CT11215A

BU #: **826053**
MONROE-1/RT 25

88 MAIN STREET
MONROE, CT 06468

EXISTING 195'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	11/04/20	RCD	PRELIMINARY	SS
0	11/12/20	BMM	FOR CONSTRUCTION	SS
1	12/16/20	BMM	UPDATED LAYOUT	SS

12/17/20

SHEET NUMBER: G-2

REVISION: 1

Exhibit D

Structural Analysis Report

Date: **October 17, 2020**

Elisha Divinity
Crown Castle
1220 Augusta Drive Suite 500
Houston, TX 77057

Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
(724) 416-2000

Subject:	**Structural Analysis Report**	
Carrier Designation:	***T-Mobile* Co-Locate**	
	Carrier Site Number:	CT11215A
	Carrier Site Name:	Monroe-1/Rt 25
Crown Castle Designation:	**Crown Castle BU Number:**	826053
	Crown Castle Site Name:	Monroe-1/Rt 25
	Crown Castle JDE Job Number:	620140
	Crown Castle Work Order Number:	1890912
	Crown Castle Order Number:	529713 Rev. 0
Engineering Firm Designation:	**Crown Castle Project Number:**	1890912
Site Data:	**88 Main Street, Monroe, Fairfield County, CT** **Latitude *41° 18' 6.06"*, Longitude *-73° 15' 2.92"*** **195 Foot - Monopole Tower**	

Dear Elisha Divinity,

Crown Castle is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC5: Proposed Equipment Configuration **Sufficient Capacity – 65.5%**

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Daniel Chen

Respectfully submitted by:

Digitally signed by Maham Barimani
Date: 2020.10.19 13:25:39 -04'00'

STATE OF CONNECTICUT
MAHAM BARIMANI
30501
LICENSED
PROFESSIONAL ENGINEER

Maham Barimani, P.E.
Senior Project Engineer

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 195 ft Monopole tower designed by Summit Manufacturing, Inc.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Seismic Ss:	0.215
Seismic S1:	0.065
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
195.0	195.0	3	commscope	SDX1926Q-43	13	1-5/8
		3	ericsson	AIR 32 B2A/B66AA w/ Mount Pipe		
		3	ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe		
		3	ericsson	KRY 112 144/1		
		3	ericsson	RADIO 4449 B12/B71		
		3	ericsson	RRUS 4415 B25_CCIV2		
		3	rfs celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
		1	site pro 1	RMQP-4096-HK		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
175.0	175.0	3	cci antennas	OPA-65R-LCUU-H6 w/ Mount Pipe	3 8 6	3/8 7/8 1-5/8
		3	ericsson	RRUS 32 B2		
		3	ericsson	RRUS 32 B30		
		3	ericsson	RRUS 4426 B66		
		3	ericsson	RRUS 4478 B5		
		3	ericsson	RRUS-11		
		6	powerwave technologies	7020.00		
		3	powerwave technologies	7770.00 w/ Mount Pipe		
		6	powerwave technologies	LGP21401		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		3	quintel technology	QS66512-2 w/ Mount Pipe		
		2	raycap	DC6-48-60-18-8C		
		1	raycap	DC6-48-60-18-8F		
		1	tower mounts	Miscellaneous [NA 507-1]		
		1	tower mounts	Platform Mount [LP 303-1]		
165.0	165.0	3	alcatel lucent	B13 RRH 4X30	2 13	1-1/4 1-5/8
		3	alcatel lucent	B25 RRH4X30		
		3	alcatel lucent	RRH4X45-AWS4 B66		
		6	andrew	SBNHH-1D65B w/ Mount Pipe		
		6	antel	LPA-80080/6CF w/ Mount Pipe		
		2	raycap	RRFDC-3315-PF-48		
		1	tower mounts	Miscellaneous [NA 510-1]		
		1	tower mounts	Platform Mount [LP 403-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Jaworski Geotech, Inc.	3488965	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Summit Manufacturing, Inc.	3950063	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Summit Manufacturing, Inc.	3488966	CCISITES

3.1) Analysis Method

tnxTower (version 8.0.7.5), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 Standard.

3.2) Assumptions

1) Tower and structures were maintained in accordance with the TIA-222 Standard.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

This analysis may be affected if any assumptions are not valid or have been made in error. Crown Castle should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	195 - 157.5	Pole	TP33.351x26x0.25	1	-14.67	1572.76	25.9	Pass
L2	157.5 - 116.75	Pole	TP40.839x32.0179x0.3125	2	-22.61	2406.41	48.5	Pass
L3	116.75 - 77	Pole	TP48.006x39.1849x0.375	3	-33.57	3396.36	53.7	Pass
L4	77 - 38	Pole	TP54.901x46.0798x0.375	4	-46.26	3886.13	65.5	Pass
L5	38 - 0	Pole	TP61.6x52.7788x0.4375	5	-65.25	5216.94	61.4	Pass
							Summary	
						Pole (L4)	65.5	Pass
						Rating =	65.5	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	58.3	Pass
1	Base Plate	0	50.9	Pass
1	Base Foundation (Structural)	0	56.2	Pass
1	Base Foundation (Soil Interaction)	0	38.9	Pass

Structure Rating (max from all components) =	65.5%

Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

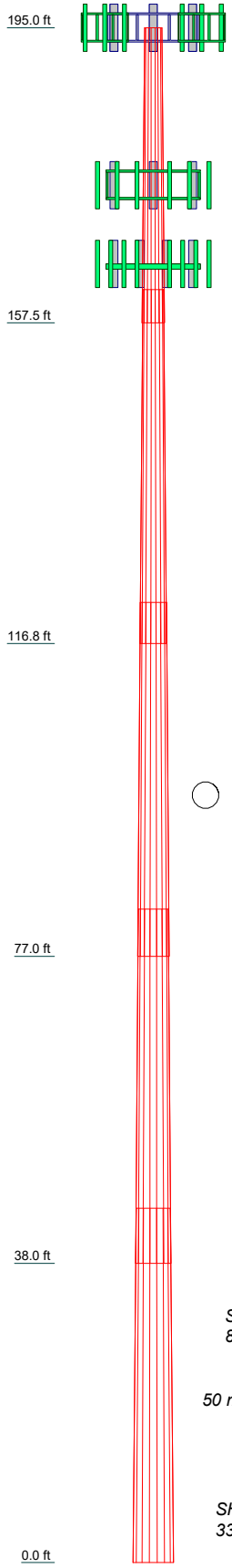
4.1) Recommendations

The tower and its foundation have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	37.50	18	0.2500	4.25	26.0000	33.3510		3.0
2	45.00	18	0.3125	5.25	32.0179	40.8390		5.5
3	45.00	18	0.3750	6.00	39.1849	48.0060	A607-65	7.9
4	45.00	18	0.3750	7.00	46.0798	54.9010		9.1
5	45.00	18	0.4375		52.7788	61.6000		12.1
								37.5



ALL REACTIONS ARE FACTORED

AXIAL 98 K

SHEAR 8 K

MOMENT 1195 kip-ft

TORQUE 0 kip-ft

50 mph WIND - 1.5000 in ICE

AXIAL 65 K

SHEAR 33 K

MOMENT 4453 kip-ft

TORQUE 2 kip-ft

REACTIONS - 125 mph WIND

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A607-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 65.5%

CROWN CASTLE
The Pathway to Possible

Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
Phone: (724) 416-2000
FAX:

Job: ***BU# 826053***			
Project:			
Client: Crown Castle	Drawn by: Daniel Chen		App'd:
Code: TIA-222-H	Date: 10/17/20		Scale: NTS
Path: C:\Users\dchen\Documents\Work Area - DChen\826053\WO 1890912 - SA\Prod\826053.eri			Dwg No. E-1

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

1) Tower is located in Fairfield County, Connecticut.
2) Tower base elevation above sea level: 324.00 ft.
3) Basic wind speed of 125 mph.
4) Risk Category II.
5) Exposure Category B.
6) Simplified Topographic Factor Procedure for wind speed-up calculations is used.
7) Topographic Category: 1.
8) Crest Height: 0.00 ft.
9) Nominal ice thickness of 1.5000 in.
10) Ice thickness is considered to increase with height.
11) Ice density of 56 pcf.
12) A wind speed of 50 mph is used in combination with ice.
13) Temperature drop of 50 °F.
14) Deflections calculated using a wind speed of 60 mph.
15) A non-linear (P-delta) analysis was used.
16) Pressures are calculated at each section.
17) Stress ratio used in pole design is 1.05.
18) Tower analysis based on target reliabilities in accordance with Annex S.
19) Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
20) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	*Elevation*	*Section Length*	*Splice Length*	*Number of Sides*	*Top Diameter*	*Bottom Diameter*	*Wall Thickness*	*Bend Radius*	*Pole Grade*
	ft	*ft*	*ft*		*in*	*in*	*in*	*in*	
L1	195.00-157.50	37.50	4.25	18	26.0000	33.3510	0.2500	1.0000	A607-65 (65 ksi)

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
L2	157.50-116.75	45.00	5.25	18	32.0179	40.8390	0.3125	1.2500	A607-65 (65 ksi)
L3	116.75-77.00	45.00	6.00	18	39.1849	48.0060	0.3750	1.5000	A607-65 (65 ksi)
L4	77.00-38.00	45.00	7.00	18	46.0798	54.9010	0.3750	1.5000	A607-65 (65 ksi)
L5	38.00-0.00	45.00		18	52.7788	61.6000	0.4375	1.7500	A607-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	26.3625	20.4326	1711.6544	9.1412	13.2080	129.5922	3425.5610	10.2183	4.1360	16.544
	33.8269	26.2656	3635.8648	11.7509	16.9423	214.6027	7276.5137	13.1353	5.4298	21.719
L2	33.3096	31.4478	3993.8666	11.2554	16.2651	245.5484	7992.9885	15.7269	5.0851	16.272
	41.4208	40.1972	8340.8765	14.3869	20.7462	402.0433	16692.7281	20.1024	6.6377	21.241
L3	40.7765	46.1934	8790.2699	13.7775	19.9059	441.5909	17592.1062	23.1011	6.2365	16.631
	48.6887	56.6928	16249.6772	16.9090	24.3870	666.3241	32520.7362	28.3518	7.7891	20.771
L4	47.9272	54.4002	14356.9598	16.2252	23.4086	613.3208	28732.8109	27.2053	7.4501	19.867
	55.6901	64.8996	24377.3537	19.3567	27.8897	874.0627	48786.7837	32.4560	9.0026	24.007
L5	54.9189	72.6825	25156.8620	18.5812	26.8116	938.2813	50346.8261	36.3481	8.5191	19.472
	62.4828	84.9318	40140.0691	21.7127	31.2928	1282.7254	80332.9556	42.4740	10.0716	23.021

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 195.00-157.50				1	1	1			
L2 157.50-116.75				1	1	1			
L3 116.75-77.00				1	1	1			
L4 77.00-38.00				1	1	1			
L5 38.00-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
****											

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
*** 195 ***									
LDF7-50A(1-5/8)	B	No	No	Inside Pole	195.00 - 0.00	12	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	B	No	No	Inside Pole	195.00 - 0.00	1	No Ice	0.00	1.07
							1/2" Ice	0.00	1.07
							1" Ice	0.00	1.07
							2" Ice	0.00	1.07
*** 175 ***									
LDF7-50A(1-5/8)	C	No	No	Inside Pole	175.00 - 0.00	6	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
FB-L98B-034-XXX(3/8)	C	No	No	Inside Pole	175.00 - 0.00	1	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
							2" Ice	0.00	0.06
WR-VG66ST-BRD(7/8)	C	No	No	Inside Pole	175.00 - 0.00	4	No Ice	0.00	0.91
							1/2" Ice	0.00	0.91
							1" Ice	0.00	0.91
							2" Ice	0.00	0.91
FB-L98B-034-XXX(3/8)	C	No	No	Inside Pole	175.00 - 0.00	2	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
							2" Ice	0.00	0.06
WR-VG66ST-BRD(7/8)	C	No	No	Inside Pole	175.00 - 0.00	4	No Ice	0.00	0.91
							1/2" Ice	0.00	0.91
							1" Ice	0.00	0.91
							2" Ice	0.00	0.91
*** 165 ***									
LDF7-50A(1-5/8)	A	No	No	Inside Pole	165.00 - 0.00	13	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
RFF-24SM-1206-618-APE(1-1/4)	A	No	No	Inside Pole	165.00 - 0.00	2	No Ice	0.00	1.48
							1/2" Ice	0.00	1.48
							1" Ice	0.00	1.48
							2" Ice	0.00	1.48
****									

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	195.00-157.50	A	0.000	0.000	0.000	0.000	0.10
		B	0.000	0.000	0.000	0.000	0.41
		C	0.000	0.000	0.000	0.000	0.22
L2	157.50-116.75	A	0.000	0.000	0.000	0.000	0.55
		B	0.000	0.000	0.000	0.000	0.44
		C	0.000	0.000	0.000	0.000	0.50
L3	116.75-77.00	A	0.000	0.000	0.000	0.000	0.54
		B	0.000	0.000	0.000	0.000	0.43
		C	0.000	0.000	0.000	0.000	0.49
L4	77.00-38.00	A	0.000	0.000	0.000	0.000	0.53
		B	0.000	0.000	0.000	0.000	0.43
		C	0.000	0.000	0.000	0.000	0.48
L5	38.00-0.00	A	0.000	0.000	0.000	0.000	0.52
		B	0.000	0.000	0.000	0.000	0.41
		C	0.000	0.000	0.000	0.000	0.47

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	195.00-157.50	A	1.507	0.000	0.000	0.000	0.000	0.10
		B		0.000	0.000	0.000	0.000	0.41
		C		0.000	0.000	0.000	0.000	0.22
L2	157.50-116.75	A	1.470	0.000	0.000	0.000	0.000	0.55
		B		0.000	0.000	0.000	0.000	0.44
		C		0.000	0.000	0.000	0.000	0.50
L3	116.75-77.00	A	1.420	0.000	0.000	0.000	0.000	0.54
		B		0.000	0.000	0.000	0.000	0.43
		C		0.000	0.000	0.000	0.000	0.49
L4	77.00-38.00	A	1.348	0.000	0.000	0.000	0.000	0.53
		B		0.000	0.000	0.000	0.000	0.43
		C		0.000	0.000	0.000	0.000	0.48
L5	38.00-0.00	A	1.204	0.000	0.000	0.000	0.000	0.52
		B		0.000	0.000	0.000	0.000	0.41
		C		0.000	0.000	0.000	0.000	0.47

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	195.00-157.50	0.0000	0.0000	0.0000	0.0000
L2	157.50-116.75	0.0000	0.0000	0.0000	0.0000
L3	116.75-77.00	0.0000	0.0000	0.0000	0.0000
L4	77.00-38.00	0.0000	0.0000	0.0000	0.0000
L5	38.00-0.00	0.0000	0.0000	0.0000	0.0000

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

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Top Hat - 1.5ft. OD x 2ft Tall	C	None		0.0000	195.00	No Ice	1.50	1.50	0.10
						1/2" Ice	2.31	2.31	0.13
						1" Ice	2.53	2.53	0.17
						2" Ice	2.99	2.99	0.25
*** 195***									
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	195.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.19 0.31 0.46 0.79
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	195.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.19 0.31 0.46 0.79
APXVAARR24_43-U-NA20	C	From Leg	4.00	0.0000	195.00	No Ice	14.69	6.87	0.19

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
w/ Mount Pipe			0.00 0.00			1/2" Ice 1" Ice 2" Ice	15.46 16.23 17.82	7.55 8.25 9.67	0.31 0.46 0.79
AIR 32 B2A/B66AA w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	195.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	6.75 7.20 7.65 8.57	6.07 6.87 7.58 9.06	0.15 0.21 0.28 0.44
AIR 32 B2A/B66AA w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	195.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	6.75 7.20 7.65 8.57	6.07 6.87 7.58 9.06	0.15 0.21 0.28 0.44
AIR 32 B2A/B66AA w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	195.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	6.75 7.20 7.65 8.57	6.07 6.87 7.58 9.06	0.15 0.21 0.28 0.44
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	195.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	5.87 6.23 6.61 7.38	3.27 3.73 4.20 5.20	0.13 0.18 0.23 0.36
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	195.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	5.87 6.23 6.61 7.38	3.27 3.73 4.20 5.20	0.13 0.18 0.23 0.36
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	195.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	5.87 6.23 6.61 7.38	3.27 3.73 4.20 5.20	0.13 0.18 0.23 0.36
KRY 112 144/1	A	From Leg	4.00 0.00 0.00	0.0000	195.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	0.35 0.43 0.51 0.70	0.17 0.23 0.30 0.46	0.01 0.01 0.02 0.03
KRY 112 144/1	B	From Leg	4.00 0.00 0.00	0.0000	195.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	0.35 0.43 0.51 0.70	0.17 0.23 0.30 0.46	0.01 0.01 0.02 0.03
KRY 112 144/1	C	From Leg	4.00 0.00 0.00	0.0000	195.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	0.35 0.43 0.51 0.70	0.17 0.23 0.30 0.46	0.01 0.01 0.02 0.03
RADIO 4449 B12/B71	B	From Leg	4.00 0.00 0.00	0.0000	195.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	1.65 1.81 1.98 2.34	1.16 1.30 1.45 1.76	0.07 0.09 0.11 0.16
(2) RADIO 4449 B12/B71	C	From Leg	4.00 0.00 0.00	0.0000	195.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	1.65 1.81 1.98 2.34	1.16 1.30 1.45 1.76	0.07 0.09 0.11 0.16
SDX1926Q-43	A	From Leg	4.00 0.00 0.00	0.0000	195.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	0.24 0.31 0.38 0.55	0.10 0.14 0.19 0.32	0.01 0.01 0.01 0.02
(2) SDX1926Q-43	B	From Leg	4.00	0.0000	195.00	No Ice	0.24	0.10	0.01

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00 0.00			1/2" Ice	0.31 0.38	0.14 0.19	0.01 0.01
						1" Ice 2" Ice	0.55	0.32	0.02
(2) RRUS 4415 B25_CCIV2	B	From Leg	4.00 0.00 0.00	0.0000	195.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.84 2.01 2.19 2.57	0.82 0.94 1.07 1.37	0.05 0.06 0.08 0.12
RRUS 4415 B25_CCIV2	C	From Leg	4.00 0.00 0.00	0.0000	195.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.84 2.01 2.19 2.57	0.82 0.94 1.07 1.37	0.05 0.06 0.08 0.12
Platform Mount [LP 303-1_KCKR-HR-1]	C	None		0.0000	195.00	No Ice 1/2" Ice 1" Ice 2" Ice	28.31 35.69 43.11 58.21	28.31 35.69 43.11 58.21	1.77 2.30 2.94 4.60
8' x 2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	195.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.90 2.73 3.40 4.40	1.90 2.73 3.40 4.40	0.03 0.04 0.06 0.12
8' x 2" Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	195.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.90 2.73 3.40 4.40	1.90 2.73 3.40 4.40	0.03 0.04 0.06 0.12
8' x 2" Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	195.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.90 2.73 3.40 4.40	1.90 2.73 3.40 4.40	0.03 0.04 0.06 0.12
*** 175 R ***									
OPA-65R-LCUU-H6 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	9.19 9.94 10.71 12.30	6.21 6.93 7.66 9.17	0.11 0.18 0.26 0.45
OPA-65R-LCUU-H6 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	9.19 9.94 10.71 12.30	6.21 6.93 7.66 9.17	0.11 0.18 0.26 0.45
OPA-65R-LCUU-H6 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	9.19 9.94 10.71 12.30	6.21 6.93 7.66 9.17	0.11 0.18 0.26 0.45
7770.00 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.75 6.18 6.61 7.49	4.25 5.01 5.71 7.16	0.06 0.10 0.16 0.29
7770.00 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.75 6.18 6.61 7.49	4.25 5.01 5.71 7.16	0.06 0.10 0.16 0.29
7770.00 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.75 6.18 6.61 7.49	4.25 5.01 5.71 7.16	0.06 0.10 0.16 0.29

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) 7020.00	A	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.10 0.15 0.20 0.33	0.17 0.24 0.31 0.48	0.00 0.01 0.01 0.02
(2) 7020.00	B	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.10 0.15 0.20 0.33	0.17 0.24 0.31 0.48	0.00 0.01 0.01 0.02
(2) 7020.00	C	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.10 0.15 0.20 0.33	0.17 0.24 0.31 0.48	0.00 0.01 0.01 0.02
(2) LGP21401	A	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.10 1.24 1.38 1.69	0.21 0.27 0.35 0.52	0.01 0.02 0.03 0.05
(2) LGP21401	B	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.10 1.24 1.38 1.69	0.21 0.27 0.35 0.52	0.01 0.02 0.03 0.05
(2) LGP21401	C	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.10 1.24 1.38 1.69	0.21 0.27 0.35 0.52	0.01 0.02 0.03 0.05
RRUS-11	A	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.78 2.99 3.21 3.66	1.19 1.33 1.49 1.83	0.05 0.07 0.09 0.15
RRUS-11	B	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.78 2.99 3.21 3.66	1.19 1.33 1.49 1.83	0.05 0.07 0.09 0.15
RRUS-11	C	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.78 2.99 3.21 3.66	1.19 1.33 1.49 1.83	0.05 0.07 0.09 0.15
DC6-48-60-18-8F	A	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.21 1.89 2.11 2.57	1.21 1.89 2.11 2.57	0.02 0.04 0.07 0.13
DC6-48-60-18-8C	A	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.14 1.79 2.00 2.45	1.14 1.79 2.00 2.45	0.03 0.05 0.07 0.13
DC6-48-60-18-8C	C	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.14 1.79 2.00 2.45	1.14 1.79 2.00 2.45	0.03 0.05 0.07 0.13
QS66512-2 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.04 4.42 4.82 5.63	4.18 4.57 4.97 5.79	0.14 0.21 0.29 0.48

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
QS66512-2 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.04 4.42 4.82 5.63	4.18 4.57 4.97 5.79	0.14 0.21 0.29 0.48
QS66512-2 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.04 4.42 4.82 5.63	4.18 4.57 4.97 5.79	0.14 0.21 0.29 0.48
RRUS 4478 B5	A	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.84 2.01 2.19 2.57	1.06 1.20 1.34 1.66	0.06 0.08 0.09 0.14
RRUS 4478 B5	B	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.84 2.01 2.19 2.57	1.06 1.20 1.34 1.66	0.06 0.08 0.09 0.14
RRUS 4478 B5	C	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.84 2.01 2.19 2.57	1.06 1.20 1.34 1.66	0.06 0.08 0.09 0.14
(2) RRUS 4426 B66	A	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.64 1.80 1.97 2.33	0.73 0.84 0.97 1.24	0.05 0.06 0.08 0.11
RRUS 4426 B66	B	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.64 1.80 1.97 2.33	0.73 0.84 0.97 1.24	0.05 0.06 0.08 0.11
(3) RRUS 32 B2	B	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.73 2.95 3.18 3.66	1.67 1.86 2.05 2.46	0.05 0.07 0.10 0.16
(3) RRUS 32 B30	C	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.69 2.91 3.14 3.61	1.57 1.76 1.95 2.35	0.06 0.08 0.10 0.16
Platform Mount [LP 303-1]	C	None		0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 18.01 21.34 28.08	14.69 18.01 21.34 28.08	1.25 1.57 1.94 2.85
Miscellaneous [NA 507-1]	C	None		0.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.56 6.39 8.18 11.66	4.56 6.39 8.18 11.66	0.25 0.31 0.40 0.66
*** 165 I ***									
(2) SBNHH-1D65B w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.09 4.49 4.89 5.72	3.30 3.68 4.07 4.87	0.07 0.13 0.20 0.39
(2) SBNHH-1D65B w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	4.09 4.49 4.89 5.72	3.30 3.68 4.07 4.87	0.07 0.13 0.20 0.39

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice			
(2) SBNHH-1D65B w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.09 4.49 4.89 5.72	3.30 3.68 4.07 4.87	0.07 0.13 0.20 0.39
(2) LPA-80080/6CF w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.56 5.11 5.61 6.65	10.26 11.43 12.31 14.13	0.05 0.11 0.19 0.36
(2) LPA-80080/6CF w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.56 5.11 5.61 6.65	10.26 11.43 12.31 14.13	0.05 0.11 0.19 0.36
(2) LPA-80080/6CF w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.56 5.11 5.61 6.65	10.26 11.43 12.31 14.13	0.05 0.11 0.19 0.36
RRH4X45-AWS4 B66	A	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.66 2.88 3.10 3.58	1.59 1.77 1.96 2.36	0.06 0.08 0.11 0.17
(2) RRH4X45-AWS4 B66	B	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.66 2.88 3.10 3.58	1.59 1.77 1.96 2.36	0.06 0.08 0.11 0.17
B13 RRH 4X30	A	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.06 2.24 2.43 2.84	1.32 1.48 1.64 2.00	0.06 0.07 0.09 0.14
B13 RRH 4X30	B	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.06 2.24 2.43 2.84	1.32 1.48 1.64 2.00	0.06 0.07 0.09 0.14
B13 RRH 4X30	C	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.06 2.24 2.43 2.84	1.32 1.48 1.64 2.00	0.06 0.07 0.09 0.14
B25 RRH4X30	A	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.20 2.39 2.59 3.01	1.74 1.92 2.11 2.50	0.06 0.08 0.10 0.16
B25 RRH4X30	B	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.20 2.39 2.59 3.01	1.74 1.92 2.11 2.50	0.06 0.08 0.10 0.16
B25 RRH4X30	C	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.20 2.39 2.59 3.01	1.74 1.92 2.11 2.50	0.06 0.08 0.10 0.16
RRFDC-3315-PF-48	B	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice Ice 1" Ice	3.36 3.60 3.84 4.34	2.19 2.39 2.61 3.05	0.03 0.06 0.09 0.17

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
							2" Ice			
RRFDC-3315-PF-48	C	From Leg	4.00	0.00	0.0000	165.00	No Ice	3.36	2.19	0.03
			0.00				1/2" Ice	3.60	2.39	0.06
			0.00				1" Ice	3.84	2.61	0.09
							2" Ice	4.34	3.05	0.17
(2) 6' x 2" Mount Pipe	A	From Leg	4.00	0.00	0.0000	165.00	No Ice	1.43	1.43	0.02
			0.00				1/2" Ice	1.92	1.92	0.03
			0.00				1" Ice	2.29	2.29	0.05
							2" Ice	3.06	3.06	0.09
(2) 6' x 2" Mount Pipe	B	From Leg	4.00	0.00	0.0000	165.00	No Ice	1.43	1.43	0.02
			0.00				1/2" Ice	1.92	1.92	0.03
			0.00				1" Ice	2.29	2.29	0.05
							2" Ice	3.06	3.06	0.09
(2) 6' x 2" Mount Pipe	C	From Leg	4.00	0.00	0.0000	165.00	No Ice	1.43	1.43	0.02
			0.00				1/2" Ice	1.92	1.92	0.03
			0.00				1" Ice	2.29	2.29	0.05
							2" Ice	3.06	3.06	0.09
Miscellaneous [NA 510-1]	C	None			0.0000	165.00	No Ice	6.36	6.36	0.26
							1/2" Ice	8.52	8.52	0.34
							1" Ice	10.62	10.62	0.46
							2" Ice	14.64	14.64	0.77
Platform Mount [LP 403-1]	C	None			0.0000	165.00	No Ice	18.94	18.94	1.50
							1/2" Ice	23.31	23.31	1.90
							1" Ice	27.74	27.74	2.37
							2" Ice	36.77	36.77	3.53
****										

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice

Comb. No.	Description
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 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
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 K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	195 - 157.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33.94	-1.34	-3.44
			Max. Mx	8	-14.67	-300.28	-2.40
			Max. My	14	-14.70	-1.38	-296.88
			Max. Vy	8	17.73	-300.28	-2.40
			Max. Vx	14	17.51	-1.38	-296.88
			Max. Torque	18			1.57
L2	157.5 - 116.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44.80	-1.44	-3.71
			Max. Mx	8	-22.61	-1085.08	-5.09
			Max. My	14	-22.64	-3.99	-1072.87
			Max. Vy	8	21.74	-1085.08	-5.09
			Max. Vx	14	21.52	-3.99	-1072.87
			Max. Torque	18			1.57
L3	116.75 - 77	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.94	-1.48	-3.79
			Max. Mx	8	-33.57	-2012.68	-7.69
			Max. My	14	-33.59	-6.54	-1991.78
			Max. Vy	8	25.75	-2012.68	-7.69
			Max. Vx	14	25.52	-6.54	-1991.78
			Max. Torque	6			-1.56
L4	77 - 38	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.91	-1.48	-3.79
			Max. Mx	8	-46.26	-3059.97	-10.16
			Max. My	14	-46.27	-8.99	-3030.71
			Max. Vy	8	29.20	-3059.97	-10.16
			Max. Vx	14	28.99	-8.99	-3030.71
			Max. Torque	6			-1.56
L5	38 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-97.78	-1.48	-3.79
			Max. Mx	8	-65.25	-4452.42	-12.96
			Max. My	14	-65.25	-11.77	-4413.59

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	8	32.54	-4452.42	-12.96
			Max. Vx	14	32.34	-11.77	-4413.59
			Max. Torque	6			-1.56

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	31	97.78	-7.34	-4.23
	Max. H_x	20	65.27	32.51	0.06
	Max. H_z	3	48.95	0.06	32.30
	Max. M_x	2	4409.95	0.06	32.30
	Max. M_z	8	4452.42	-32.51	-0.06
	Max. Torsion	18	1.56	28.12	-16.10
	Min. Vert	5	48.95	-16.20	27.94
	Min. H_x	8	65.27	-32.51	-0.06
	Min. H_z	15	48.95	-0.06	-32.30
	Min. M_x	14	-4413.59	-0.06	-32.30
	Min. M_z	20	-4451.16	32.51	0.06
	Min. Torsion	6	-1.56	-28.12	16.10

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	54.39	0.00	0.00	1.39	-0.48	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	65.27	-0.06	-32.30	-4409.95	10.52	0.49
0.9 Dead+1.0 Wind 0 deg - No Ice	48.95	-0.06	-32.30	-4344.93	10.50	0.48
1.2 Dead+1.0 Wind 30 deg - No Ice	65.27	16.20	-27.94	-3813.31	-2216.94	1.18
0.9 Dead+1.0 Wind 30 deg - No Ice	48.95	16.20	-27.94	-3757.18	-2183.85	1.16
1.2 Dead+1.0 Wind 60 deg - No Ice	65.27	28.12	-16.10	-2194.38	-3850.48	1.56
0.9 Dead+1.0 Wind 60 deg - No Ice	48.95	28.12	-16.10	-2162.29	-3793.10	1.53
1.2 Dead+1.0 Wind 90 deg - No Ice	65.27	32.51	0.06	12.96	-4452.42	1.52
0.9 Dead+1.0 Wind 90 deg - No Ice	48.95	32.51	0.06	12.28	-4386.09	1.49
1.2 Dead+1.0 Wind 120 deg - No Ice	65.27	28.18	16.20	2217.28	-3861.58	1.07
0.9 Dead+1.0 Wind 120 deg - No Ice	48.95	28.18	16.20	2183.89	-3804.01	1.05
1.2 Dead+1.0 Wind 150 deg - No Ice	65.27	16.31	28.00	3828.04	-2236.22	0.34
0.9 Dead+1.0 Wind 150 deg - No Ice	48.95	16.31	28.00	3770.74	-2202.81	0.33
1.2 Dead+1.0 Wind 180 deg - No Ice	65.27	0.06	32.30	4413.59	-11.77	-0.48
0.9 Dead+1.0 Wind 180 deg - No Ice	48.95	0.06	32.30	4347.58	-11.42	-0.48
1.2 Dead+1.0 Wind 210 deg - No Ice	65.27	-16.20	27.94	3816.95	2215.69	-1.18
0.9 Dead+1.0 Wind 210 deg - No Ice	48.95	-16.20	27.94	3759.83	2182.94	-1.16
1.2 Dead+1.0 Wind 240 deg	65.27	-28.12	16.10	2198.01	3849.23	-1.56

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
- No Ice 0.9 Dead+1.0 Wind 240 deg	48.95	-28.12	16.10	2164.93	3792.19	-1.53
- No Ice 1.2 Dead+1.0 Wind 270 deg	65.27	-32.51	-0.06	-9.33	4451.16	-1.52
- No Ice 0.9 Dead+1.0 Wind 270 deg	48.95	-32.51	-0.06	-9.64	4385.17	-1.49
- No Ice 1.2 Dead+1.0 Wind 300 deg	65.27	-28.18	-16.20	-2213.65	3860.31	-1.07
- No Ice 0.9 Dead+1.0 Wind 300 deg	48.95	-28.18	-16.20	-2181.24	3803.09	-1.05
- No Ice 1.2 Dead+1.0 Wind 330 deg	65.27	-16.31	-28.00	-3824.40	2234.96	-0.34
- No Ice 0.9 Dead+1.0 Wind 330 deg	48.95	-16.31	-28.00	-3768.09	2201.88	-0.33
- No Ice 1.2 Dead+1.0 Ice+1.0 Temp	97.78	0.00	0.00	3.79	-1.48	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	97.78	-0.01	-8.44	-1180.02	0.59	0.11
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	97.78	4.23	-7.30	-1020.29	-595.51	0.26
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	97.78	7.33	-4.21	-586.09	-1032.47	0.34
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	97.78	8.47	0.01	6.24	-1193.20	0.33
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	97.78	7.34	4.23	597.99	-1034.65	0.23
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	97.78	4.25	7.31	1030.60	-599.28	0.07
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	97.78	0.01	8.44	1188.15	-3.76	-0.11
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	97.78	-4.23	7.30	1028.42	592.34	-0.26
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	97.78	-7.33	4.21	594.22	1029.30	-0.34
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	97.78	-8.47	-0.01	1.89	1190.04	-0.33
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	97.78	-7.34	-4.23	-589.86	1031.48	-0.23
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	97.78	-4.25	-7.31	-1022.47	596.11	-0.07
Dead+Wind 0 deg - Service	54.39	-0.01	-7.01	-947.64	1.88	0.11
Dead+Wind 30 deg - Service	54.39	3.52	-6.06	-819.28	-477.33	0.26
Dead+Wind 60 deg - Service	54.39	6.10	-3.49	-471.00	-828.78	0.34
Dead+Wind 90 deg - Service	54.39	7.05	0.01	3.90	-958.30	0.33
Dead+Wind 120 deg - Service	54.39	6.12	3.52	478.15	-831.18	0.23
Dead+Wind 150 deg - Service	54.39	3.54	6.08	824.68	-481.48	0.07
Dead+Wind 180 deg - Service	54.39	0.01	7.01	950.64	-2.92	-0.11
Dead+Wind 210 deg - Service	54.39	-3.52	6.06	822.28	476.29	-0.26
Dead+Wind 240 deg - Service	54.39	-6.10	3.49	474.00	827.74	-0.34
Dead+Wind 270 deg - Service	54.39	-7.05	-0.01	-0.90	957.26	-0.33
Dead+Wind 300 deg - Service	54.39	-6.12	-3.52	-475.15	830.14	-0.23
Dead+Wind 330 deg - Service	54.39	-3.54	-6.08	-821.68	480.44	-0.07

Solution Summary

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
1	0.00	-54.39	0.00	0.00	54.39	0.00	0.000%
2	-0.06	-65.27	-32.30	0.06	65.27	32.30	0.000%
3	-0.06	-48.95	-32.30	0.06	48.95	32.30	0.000%
4	16.20	-65.27	-27.94	-16.20	65.27	27.94	0.000%
5	16.20	-48.95	-27.94	-16.20	48.95	27.94	0.000%
6	28.12	-65.27	-16.10	-28.12	65.27	16.10	0.000%
7	28.12	-48.95	-16.10	-28.12	48.95	16.10	0.000%
8	32.51	-65.27	0.06	-32.51	65.27	-0.06	0.000%
9	32.51	-48.95	0.06	-32.51	48.95	-0.06	0.000%
10	28.18	-65.27	16.20	-28.18	65.27	-16.20	0.000%
11	28.18	-48.95	16.20	-28.18	48.95	-16.20	0.000%
12	16.31	-65.27	28.00	-16.31	65.27	-28.00	0.000%
13	16.31	-48.95	28.00	-16.31	48.95	-28.00	0.000%
14	0.06	-65.27	32.30	-0.06	65.27	-32.30	0.000%
15	0.06	-48.95	32.30	-0.06	48.95	-32.30	0.000%
16	-16.20	-65.27	27.94	16.20	65.27	-27.94	0.000%
17	-16.20	-48.95	27.94	16.20	48.95	-27.94	0.000%
18	-28.12	-65.27	16.10	28.12	65.27	-16.10	0.000%
19	-28.12	-48.95	16.10	28.12	48.95	-16.10	0.000%
20	-32.51	-65.27	-0.06	32.51	65.27	0.06	0.000%
21	-32.51	-48.95	-0.06	32.51	48.95	0.06	0.000%
22	-28.18	-65.27	-16.20	28.18	65.27	16.20	0.000%
23	-28.18	-48.95	-16.20	28.18	48.95	16.20	0.000%
24	-16.31	-65.27	-28.00	16.31	65.27	28.00	0.000%
25	-16.31	-48.95	-28.00	16.31	48.95	28.00	0.000%
26	0.00	-97.78	0.00	-0.00	97.78	-0.00	0.000%
27	-0.01	-97.78	-8.44	0.01	97.78	8.44	0.000%
28	4.23	-97.78	-7.30	-4.23	97.78	7.30	0.000%
29	7.33	-97.78	-4.21	-7.33	97.78	4.21	0.000%
30	8.47	-97.78	0.01	-8.47	97.78	-0.01	0.000%
31	7.34	-97.78	4.23	-7.34	97.78	-4.23	0.000%
32	4.25	-97.78	7.31	-4.25	97.78	-7.31	0.000%
33	0.01	-97.78	8.44	-0.01	97.78	-8.44	0.000%
34	-4.23	-97.78	7.30	4.23	97.78	-7.30	0.000%
35	-7.33	-97.78	4.21	7.33	97.78	-4.21	0.000%
36	-8.47	-97.78	-0.01	8.47	97.78	0.01	0.000%
37	-7.34	-97.78	-4.23	7.34	97.78	4.23	0.000%
38	-4.25	-97.78	-7.31	4.25	97.78	7.31	0.000%
39	-0.01	-54.39	-7.01	0.01	54.39	7.01	0.000%
40	3.52	-54.39	-6.06	-3.52	54.39	6.06	0.000%
41	6.10	-54.39	-3.49	-6.10	54.39	3.49	0.000%
42	7.05	-54.39	0.01	-7.05	54.39	-0.01	0.000%
43	6.12	-54.39	3.52	-6.12	54.39	-3.52	0.000%
44	3.54	-54.39	6.08	-3.54	54.39	-6.08	0.000%
45	0.01	-54.39	7.01	-0.01	54.39	-7.01	0.000%
46	-3.52	-54.39	6.06	3.52	54.39	-6.06	0.000%
47	-6.10	-54.39	3.49	6.10	54.39	-3.49	0.000%
48	-7.05	-54.39	-0.01	7.05	54.39	0.01	0.000%
49	-6.12	-54.39	-3.52	6.12	54.39	3.52	0.000%
50	-3.54	-54.39	-6.08	3.54	54.39	6.08	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00000001	0.00004650
3	Yes	4	0.00000001	0.00057949
4	Yes	6	0.00000001	0.00030297
5	Yes	6	0.00000001	0.00010318
6	Yes	6	0.00000001	0.00029345
7	Yes	6	0.00000001	0.00009951
8	Yes	5	0.00000001	0.00020085
9	Yes	5	0.00000001	0.00009574
10	Yes	6	0.00000001	0.00030885

11	Yes	6	0.00000001	0.00010477
12	Yes	6	0.00000001	0.00030196
13	Yes	6	0.00000001	0.00010233
14	Yes	5	0.00000001	0.00008944
15	Yes	4	0.00000001	0.00092174
16	Yes	6	0.00000001	0.00029480
17	Yes	6	0.00000001	0.00010002
18	Yes	6	0.00000001	0.00030658
19	Yes	6	0.00000001	0.00010430
20	Yes	5	0.00000001	0.00014286
21	Yes	5	0.00000001	0.00006777
22	Yes	6	0.00000001	0.00029877
23	Yes	6	0.00000001	0.00010122
24	Yes	6	0.00000001	0.00030337
25	Yes	6	0.00000001	0.00010304
26	Yes	4	0.00000001	0.00004812
27	Yes	6	0.00000001	0.00015030
28	Yes	6	0.00000001	0.00019868
29	Yes	6	0.00000001	0.00019741
30	Yes	6	0.00000001	0.00015321
31	Yes	6	0.00000001	0.00020388
32	Yes	6	0.00000001	0.00020236
33	Yes	6	0.00000001	0.00015263
34	Yes	6	0.00000001	0.00019929
35	Yes	6	0.00000001	0.00020166
36	Yes	6	0.00000001	0.00015230
37	Yes	6	0.00000001	0.00019774
38	Yes	6	0.00000001	0.00019815
39	Yes	4	0.00000001	0.00012921
40	Yes	4	0.00000001	0.00080465
41	Yes	4	0.00000001	0.00072228
42	Yes	4	0.00000001	0.00017641
43	Yes	4	0.00000001	0.00083310
44	Yes	4	0.00000001	0.00077827
45	Yes	4	0.00000001	0.00013262
46	Yes	4	0.00000001	0.00073859
47	Yes	4	0.00000001	0.00083402
48	Yes	4	0.00000001	0.00016985
49	Yes	4	0.00000001	0.00074386
50	Yes	4	0.00000001	0.00078538

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	195 - 157.5	28.281	43	1.2438	0.0024
L2	161.75 - 116.75	19.829	43	1.1559	0.0016
L3	122 - 77	11.196	43	0.8841	0.0008
L4	83 - 38	5.087	43	0.5918	0.0004
L5	45 - 0	1.471	43	0.2963	0.0002

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
195.00	Top Hat - 1.5ft. OD x 2ft Tall	43	28.281	1.2438	0.0024	74691
175.00	OPA-65R-LCUU-H6 w/ Mount Pipe	43	23.122	1.2037	0.0019	18672
165.00	(2) SBNHH-1D65B w/ Mount Pipe	43	20.622	1.1701	0.0017	12456

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	195 - 157.5	131.309	8	5.7746	0.0112
L2	161.75 - 116.75	92.118	8	5.3720	0.0071
L3	122 - 77	52.033	8	4.1117	0.0035
L4	83 - 38	23.641	8	2.7522	0.0018
L5	45 - 0	6.837	10	1.3774	0.0007

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
195.00	Top Hat - 1.5ft. OD x 2ft Tall	8	131.309	5.7746	0.0113	16548
175.00	OPA-65R-LCUU-H6 w/ Mount Pipe	8	107.389	5.5918	0.0090	4134
165.00	(2) SBNHH-1D65B w/ Mount Pipe	8	95.797	5.4373	0.0078	2755

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	195 - 157.5 (1)	TP33.351x26x0.25	37.50	0.00	0.0	25.6046	-14.67	1497.87	0.010
L2	157.5 - 116.75 (2)	TP40.839x32.0179x0.3125	45.00	0.00	0.0	39.1765	-22.61	2291.82	0.010
L3	116.75 - 77 (3)	TP48.006x39.1849x0.375	45.00	0.00	0.0	55.2929	-33.57	3234.63	0.010
L4	77 - 38 (4)	TP54.901x46.0798x0.375	45.00	0.00	0.0	63.2663	-46.26	3701.08	0.012
L5	38 - 0 (5)	TP61.6x52.7788x0.4375	45.00	0.00	0.0	84.9318	-65.25	4968.51	0.013

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	195 - 157.5 (1)	TP33.351x26x0.25	300.63	1154.72	0.260	0.00	1154.72	0.000
L2	157.5 - 116.75 (2)	TP40.839x32.0179x0.3125	1085.47	2178.16	0.498	0.00	2178.16	0.000
L3	116.75 - 77 (3)	TP48.006x39.1849x0.375	2013.09	3639.87	0.553	0.00	3639.87	0.000
L4	77 - 38 (4)	TP54.901x46.0798x0.375	3060.41	4539.82	0.674	0.00	4539.82	0.000
L5	38 - 0 (5)	TP61.6x52.7788x0.4375	4452.88	7050.74	0.632	0.00	7050.74	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	195 - 157.5 (1)	TP33.351x26x0.25	17.74	449.36	0.039	1.08	1269.83	0.001
L2	157.5 - 116.75 (2)	TP40.839x32.0179x0.3125	21.74	687.55	0.032	1.08	2378.21	0.000
L3	116.75 - 77 (3)	TP48.006x39.1849x0.375	25.75	970.39	0.027	1.07	3947.82	0.000
L4	77 - 38 (4)	TP54.901x46.0798x0.375	29.20	1110.32	0.026	1.07	5168.50	0.000
L5	38 - 0 (5)	TP61.6x52.7788x0.4375	32.55	1490.55	0.022	1.07	7983.85	0.000

Pole Interaction Design Data

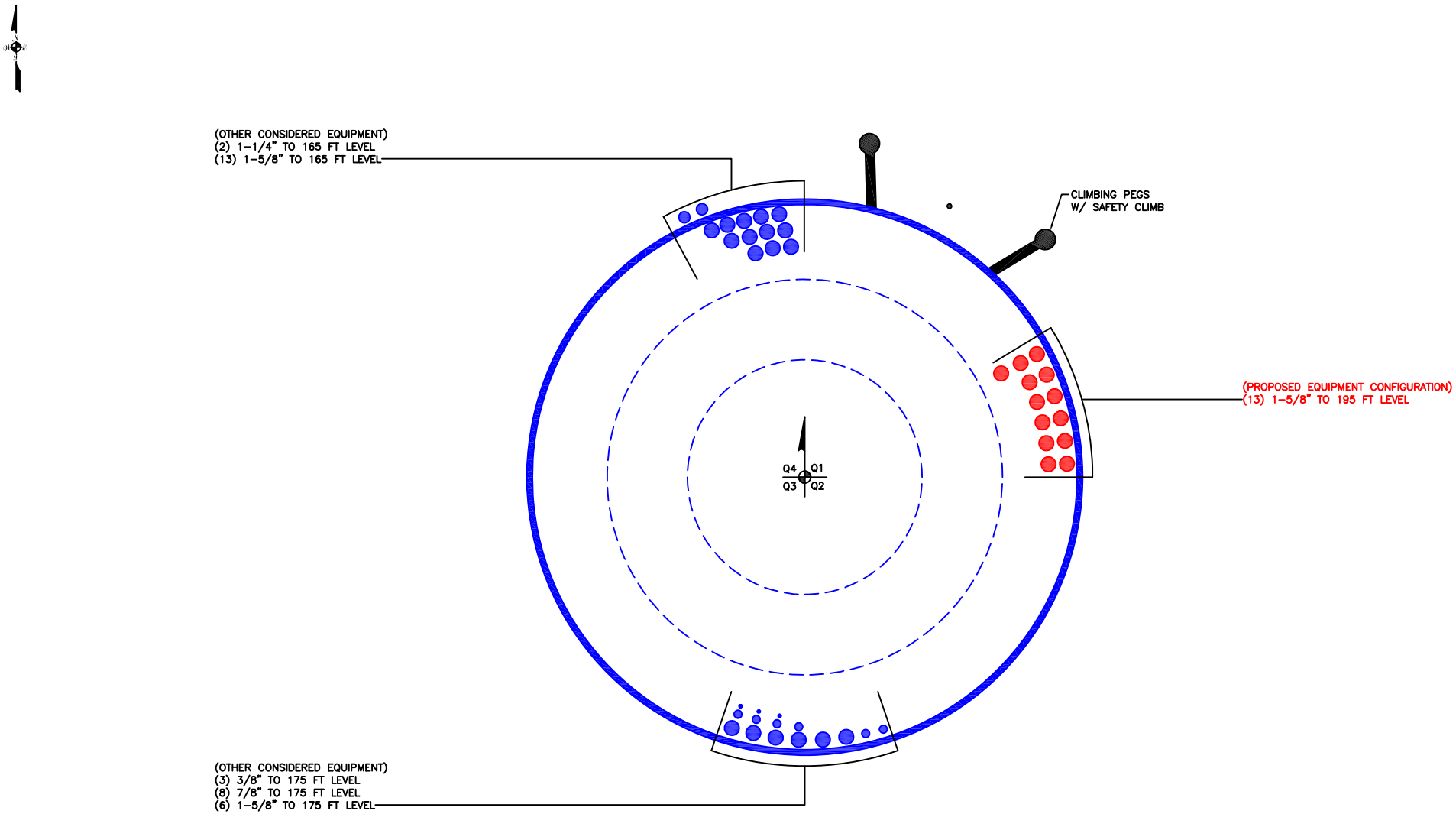
Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	195 - 157.5 (1)	0.010	0.260	0.000	0.039	0.001	0.272	1.050	4.8.2
L2	157.5 - 116.75 (2)	0.010	0.498	0.000	0.032	0.000	0.509	1.050	4.8.2
L3	116.75 - 77 (3)	0.010	0.553	0.000	0.027	0.000	0.564	1.050	4.8.2
L4	77 - 38 (4)	0.012	0.674	0.000	0.026	0.000	0.687	1.050	4.8.2
L5	38 - 0 (5)	0.013	0.632	0.000	0.022	0.000	0.645	1.050	4.8.2

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	195 - 157.5	Pole	TP33.351x26x0.25	1	-14.67	1572.76	25.9	Pass
L2	157.5 - 116.75	Pole	TP40.839x32.0179x0.3125	2	-22.61	2406.41	48.5	Pass
L3	116.75 - 77	Pole	TP48.006x39.1849x0.375	3	-33.57	3396.36	53.7	Pass
L4	77 - 38	Pole	TP54.901x46.0798x0.375	4	-46.26	3886.13	65.5	Pass
L5	38 - 0	Pole	TP61.6x52.7788x0.4375	5	-65.25	5216.94	61.4	Pass
							Summary	
						Pole (L4)	65.5	Pass
						RATING =	**65.5**	**Pass**

APPENDIX B

BASE LEVEL DRAWING


(OTHER CONSIDERED EQUIPMENT)
(2) 1-1/4" TO 165 FT LEVEL
(13) 1-5/8" TO 165 FT LEVEL
CLIMBING PEGS
W/ SAFETY CLIMB
(PROPOSED EQUIPMENT CONFIGURATION)
(13) 1-5/8" TO 195 FT LEVEL
Q4
Q1
Q3
Q2
(OTHER CONSIDERED EQUIPMENT)
(3) 3/8" TO 175 FT LEVEL
(8) 7/8" TO 175 FT LEVEL
(6) 1-5/8" TO 175 FT LEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

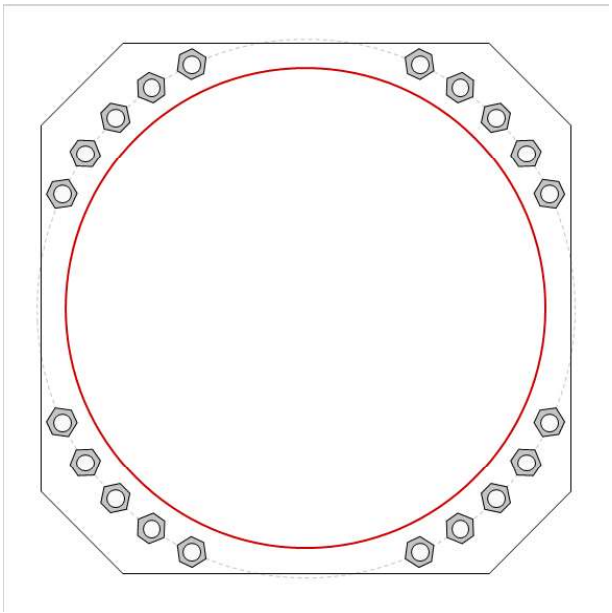
Monopole Base Plate Connection

Site Info	
BU #	826053
Site Name	Monroe-1/Rt 25
Order #	529713 Rev 0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	2.75

Applied Loads	
Moment (kip-ft)	4452.88
Axial Force (kips)	65.25
Shear Force (kips)	32.55

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

(20) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 69" BC

Anchor Spacing: 6 in

Base Plate Data

68" OD x 3" Plate (A572-55; Fy=55 ksi, Fu=70 ksi)

Stiffener Data

N/A

Pole Data

61.6" x 0.4375" 18-sided pole (A607-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Anchor Rod Summary *(units of kips, kip-in)*

Pu_c = 158.08	ϕPn_c = 268.39	**Stress Rating**
Vu = 1.63	ϕVn = 120.77	**58.3%**
Mu = 2.91	ϕMn = 128.14	**Pass**

Base Plate Summary

Max Stress (ksi):	26.48	(Flexural)
Allowable Stress (ksi):	49.5	
Stress Rating:	**50.9%**	**Pass**

Drilled Pier Foundation

BU # :	826053
Site Name:	Monroe-1/Rt 25
Order Number:	529713 Rev 0

TIA-222 Revison:	H
Tower Type:	Monopole

Applied Loads	Comp.	Uplift
Moment (kip-ft)	4453	
Axial Force (kips)	65	
Shear Force (kips)	33	

Material Properties		
Concrete Strength, f'c:	4.5	ksi
Rebar Strength, Fy:	60	ksi
Tie Yield Strength, Fyt:	40	ksi

Pier Design Data		
Depth	37	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
From 0.5' above grade to 37' below grade		
Pier Diameter	8	ft
Rebar Quantity	28	
Rebar Size	11	
Clear Cover to Ties	4	in
Tie Size	5	
Tie Spacing		in

Rebar & Pier Options

Embedded Pole Inputs

Belled Pier Inputs

Analysis Results		
Soil Lateral Check	*Compression*	*Uplift*
$D_{V=0}$ (ft from TOC)	14.93	-
Soil Safety Factor	3.25	-
Max Moment (kip-ft)	4932.43	-
Rating*	*38.9%*	-
Soil Vertical Check	*Compression*	*Uplift*
Skin Friction (kips)	678.58	-
End Bearing (kips)	1130.97	-
Weight of Concrete (kips)	211.27	-
Total Capacity (kips)	1809.56	-
Axial (kips)	276.27	-
Rating*	*14.5%*	-
Reinforced Concrete Flexure	*Compression*	*Uplift*
Critical Depth (ft from TOC)	14.94	-
Critical Moment (kip-ft)	4932.42	-
Critical Moment Capacity	8354.56	-
Rating*	*56.2%*	-
Reinforced Concrete Shear	*Compression*	*Uplift*
Critical Depth (ft from TOC)	28.31	-
Critical Shear (kip)	443.81	-
Critical Shear Capacity	787.62	-
Rating*	*53.7%*	-

Soil Interaction Rating*	**38.9%**
Structural Foundation Rating*	**56.2%**

*Rating per TIA-222-H Section 15.5

Check Limitation	
Apply TIA-222-H Section 15.5:	☑
N/A	☐
Shear Design Options	
Check Shear along Depth of Pier:	☑
Utilize Shear-Friction Methodology:	☐

Go to Soil Calculations

Soil Profile

Groundwater Depth	3	# of Layers	3

Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	3	3	115	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	3	13	10	52.6	87.6	0	0	0.000	0.000	0.00	0.00			Cohesionless
3	13	37	24	52.6	87.6	0	34	0.000	0.000	1.50	1.50	30		Cohesionless

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-10	**Elevation:**	323.94 ft (NAVD 88)
Risk Category:	II	**Latitude:**	41.301683
Soil Class:	D - Stiff Soil	**Longitude:**	-73.250811

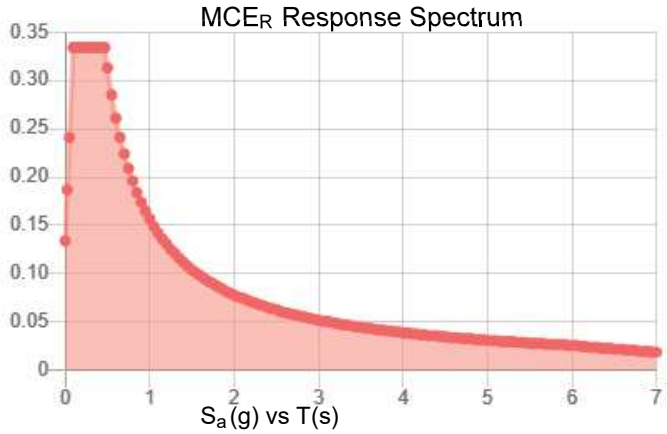
Seismic

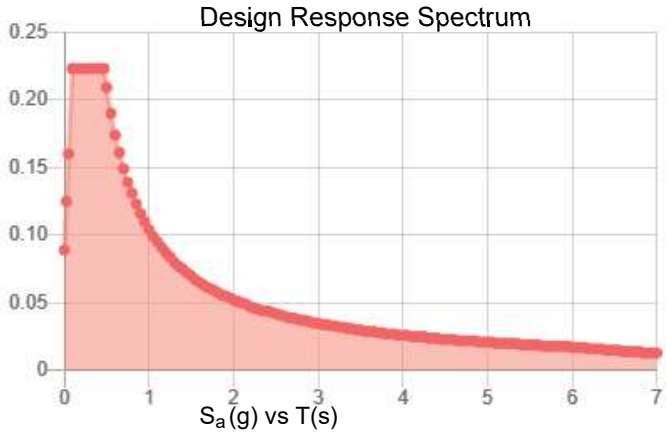
Site Soil Class: D - Stiff Soil

Results:

		S_{DS} :	0.223
		S_{D1} :	0.104
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.113
S_{MS} :	0.334	PGA_M :	0.178
S_{M1} :	0.157	F_{PGA} :	1.574
		I_e :	1

Seismic Design Category B





Data Accessed: Thu Oct 15 2020

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

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Thu Oct 15 2020

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Exhibit E

Mount Analysis

Date: **October 9, 2020**

Darcy Tarr
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277
(704) 405-6589

Kimley-Horn and Associates, Inc.
421 Fayetteville Street, Suite 600
Raleigh, NC 27601
(919) 677-2000
CrownMounts@kimley-horn.com

Subject:	**Mount Replacement Analysis Report**	
Carrier Designation:	**T-Mobile Equipment Change-Out**	
	Carrier Site Number:	CT11215A
	Carrier Site Name:	Monroe-1/Rt 25
Crown Castle Designation:	**Crown Castle BU Number:**	826053
	Crown Castle Site Name:	Monroe-1/Rt 25
	Crown Castle JDE Job Number:	620140
	Crown Castle Order Number:	529713, Rev. 0
Engineering Firm Designation:	**Kimley-Horn Report Designation:**	01955051
Site Data:	**88 Main Street, Monroe, Fairfield County, CT 06468** **Latitude 41° 18′ 6.06″ Longitude -73° 15′ 2.92″**	
Structure Information:	**Tower Height & Type:**	**195 ft Monopole**
	Mount Elevation:	**195 ft**
	Mount Type:	**12.5 ft Platform w/ Support Rails**

Dear Darcy Tarr,

Kimley-Horn is pleased to submit this **"Mount Replacement Analysis Report"** to determine the structural integrity of T-Mobile's antenna mounting system with the proposed appurtenance and equipment addition on the abovementioned supporting tower structure. Analysis of the existing supporting tower structure is to be completed by others and therefore is not part of this analysis. Analysis of the antenna mounting system as a tie-off point for fall protection or rigging is not part of this document.

The purpose of the analysis is to determine acceptability of the mount stress level. Based on our analysis we have determined the mount stress level to be:

Platform w/ Support Rails **Sufficient**

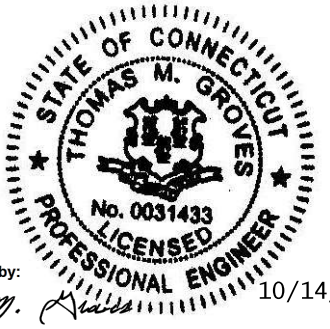
This analysis utilizes an ultimate 3-second gust wind speed of 120 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Rich Lam, E.I.

Respectfully Submitted by:

Thomas M. Groves, P.E.

Lic. #PEN.0031433, Exp. 1/31/2021
Kimley-Horn and Associates, Inc. COA #PEC.0000738



DocuSigned by:
Thomas M. Groves
BFCCD43111F54D2...
10/14/2020

TABLE OF CONTENTS

1) INTRODUCTION

The mounting configuration consists of a proposed 12.5 ft Platform w/ Support Rails designed by Site Pro 1.

2) ANALYSIS CRITERIA

Building Code:	2015 IBC and 2018 Connecticut State Building Code
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	120 mph
Exposure Category:	B
Topographic Factor at Base:	1.0
Topographic Factor at Mount:	1.0
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Live Loading Wind Speed:	30 mph
Man Live Load at Mount Pipes:	500 lb

Table 1 – Proposed Equipment Configuration

Elevation (ft)		Antennas	
Mount	**Centerline**	**#**	**Name**
195	195	3	RFS APXVAARR24_43-U-NA20
		3	Ericsson AIR 32 B2A/B66AA
		3	Ericsson AIR6449 B41_T-MOBILE
		3	Ericsson RRUS 4415 B25_CCIV2
		3	Ericsson RADIO 4449 B12/B71
		3	Ericsson KRY 112 144/1
		3	CommScope SDX1926Q-43

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Site Photos	-	-	CCISites
Mount Info	Site Pro 1	RMQP-4096-HK	On File
Supplemental Loading	T-Mobile RFDS	09/23/2020	TSA

3.1) Analysis Method

RISA-3D (version 17.02.00), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

A proprietary tool internally developed by Kimley-Horn was used to calculate wind loading on all appurtenances, dishes and mount members for various load cases. Selected output from the analysis is included in Appendix B.

This analysis was performed in accordance with Crown Castle's ENG-SOW-10208 *Mount Analysis* (Revision B).

3.2) Assumptions

1) The antenna mounting system (including any considered modifications) was properly fabricated, installed and maintained in good condition in accordance with its original design, TIA standards, and manufacturer's specifications.
2) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and the provided reference information.
3) 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.
4) The analysis will be required to be revised if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members that could not be verified at this time.
5) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (Gr. 36)
HSS (Rectangular)	ASTM A36 (Gr. 36)
Pipe	ASTM A53 (Gr. B-35)
Threaded Rods	ASTM A36 (Gr. 36)
Connection Bolts	ASTM A325

This analysis may be affected if any assumptions are not valid or have been made in error. Kimley-Horn should be notified to determine the effect on the structural integrity of the antenna mounting system.

4) ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity

Component	% Capacity	Pass / Fail
Corner Plates	63%	Pass
Mount Pipes	26%	Pass
Support Rails	25%	Pass
Reinforcements	18%	Pass
Stand Off Horizontals	17%	Pass
Connections	16%	Pass
Platform Base	15%	Pass
Face Horizontals	13%	Pass

Structure Rating (max from all components) =	63%

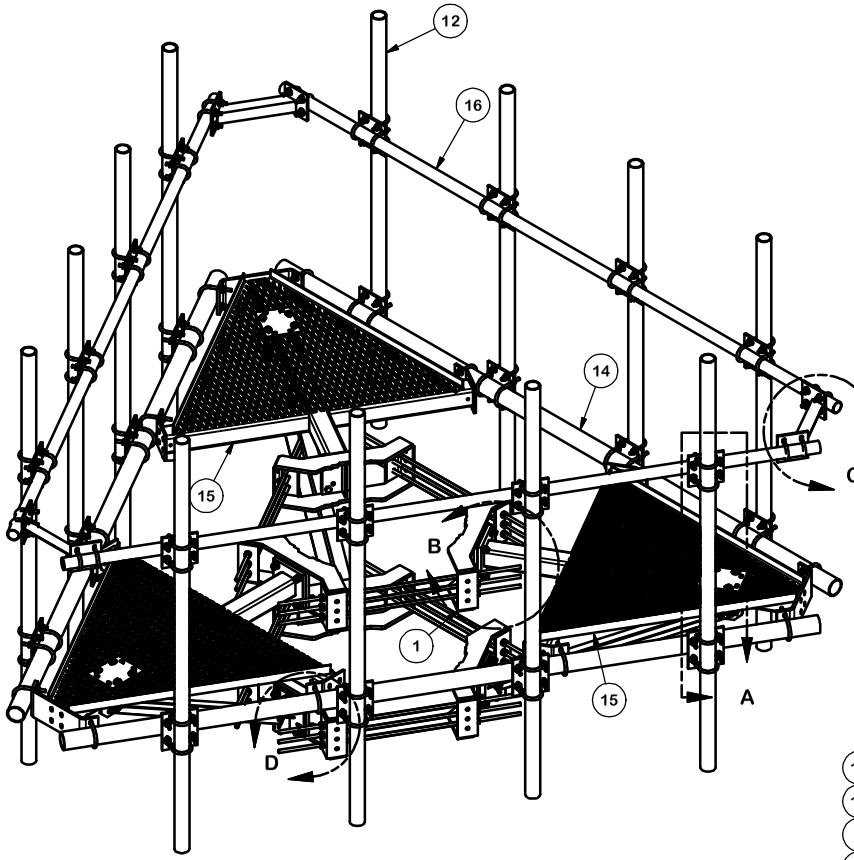
Notes:
1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
2) Rating per TIA-222-H, Section 15.5.

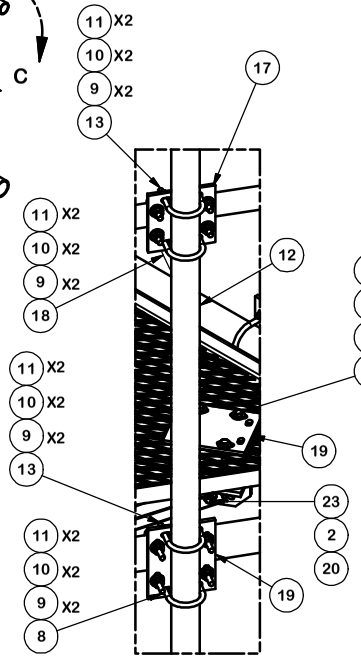
4.1) Recommendations

The proposed mounting configuration will have sufficient capacity to carry the referenced loading. In order for the results of this analysis to be considered valid, the following mounting configuration shall be installed:

- **Remove the existing T-Arm and replace with Site Pro 1 RMQP-4096-HK. T-Arm offset arms will need to be field cut to make room for the installation of the new platform.**

Beyond the mount replacement, no structural modifications are required at this time, provided that the above-listed changes are implemented.





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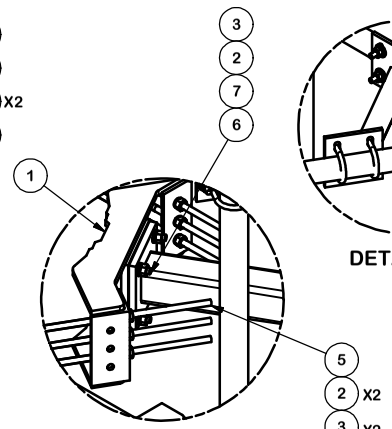

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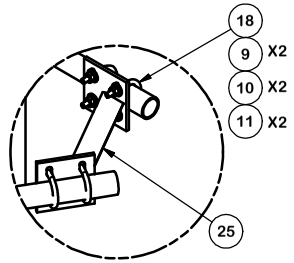

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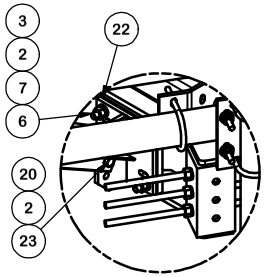

DETAIL D

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	6	X-LWRM	RING MOUNT WELDMENT		68.81	412.85
2	66	G58LW	5/8" HDG LOCKWASHER		0.03	1.72
3	60	A58NUT	5/8" HDG A325 HEX NUT		0.13	7.79
4	18	G58R-24	5/8" x 24" THREADED ROD (HDG.)		2.09	37.63
5	18	G58R-48	5/8" x 48" THREADED ROD (HDG.)		4.18	75.27
6	24	A58234	5/8" x 2-3/4" HDG A325 HEX BOLT	2 3/4 in	0.36	8.54
7	24	A58FW	5/8" HDG A325 FLATWASHER		0.03	0.82
8	36	X-UB1306	1/2" X 3-5/8" X 6" X 3" U-BOLT (HDG.)		0.83	29.82
9	264	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	9.00
10	252	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	3.50
11	252	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	18.05
12	12	P3096	2-7/8" OD X 96" SCH 40 GALVANIZED PIPE	96 in	49.24	590.88
13	48	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.67	32.11
14	3	P3150	3-1/2" X 150" (3" SCH 40) GALVANIZED PIPE	150 in	94.80	284.40
15	3	X-SV196	LOW PROFILE PLATFORM CORNER		212.10	636.31
16	3	P2150	2-3/8" O.D. X 150" SCH 40 GALVANIZED PIPE	150 in	45.77	137.31
17	12	SCX2	CROSSOVER PLATE	7 in	4.80	57.56
18	36	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.60	21.50
19	15	SCX4	CROSSOVER PLATE	8 1/2 in	6.02	90.32
20	6	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	0.78
21	6	X-253993	PLATFORM REINFORCEMENT KIT ANGLE	52 25/32 in	14.33	85.99
22	6	X-TBW	T-BRACKET WELDMENT		13.60	81.60
23	6	G5802	5/8" x 2" HDG HEX BOLT GR5		0.27	1.62
24	12	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	5 1/2 in	0.41	4.91
25	3	X-AHCP	ANGLE HANDRAIL CORNER PLATE		12.92	38.76
					TOTAL WT. #	2669.03

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

REVISION HISTORY				
REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
B	CHANGED X-253992 TO X-TBW		CEK	9/20/2018
A	REPLACED HCP WITH X-AHCP	4488	CEK	7/14/2014

DESCRIPTION
12' 6" LOW PROFILE PLATFORM
WITH TWELVE 2-7/8" ANTENNA MOUTING
PIPES, AND HANDRAIL

SITE PRO 1 — A valmont COMPANY

Engineering Support Team: 1-888-753-7446

Locations:
New York, NY
Atlanta, GA
Los Angeles, CA
Plymouth, IN
Salem, OR
Dallas, TX

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
4488	CEK 3/24/2014		RMQP-4096-HK	1 OF 3

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
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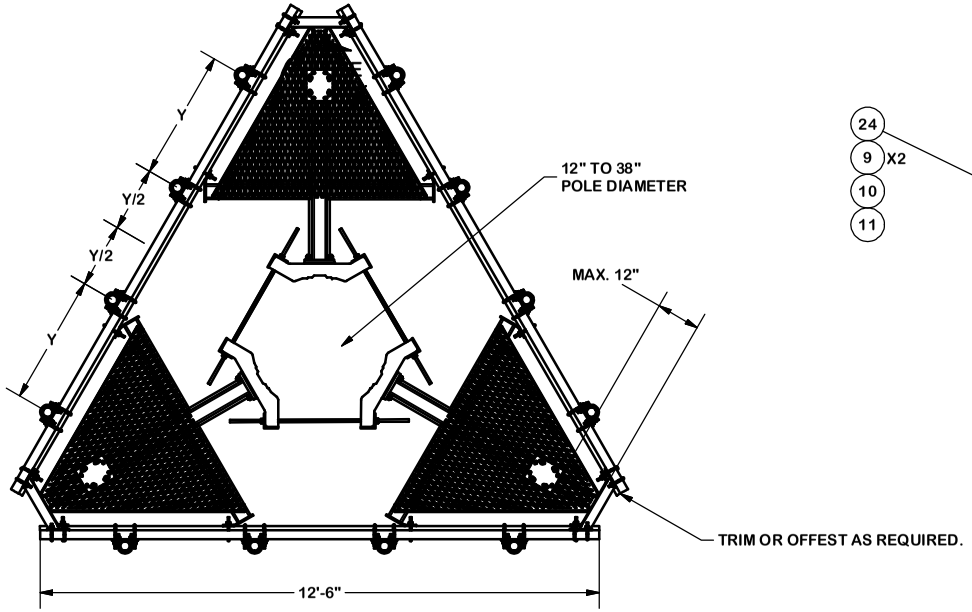

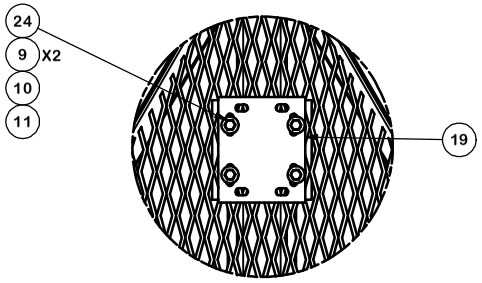

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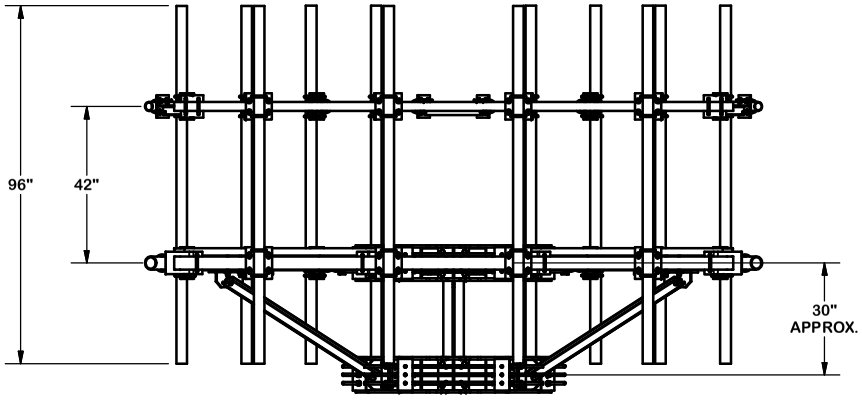

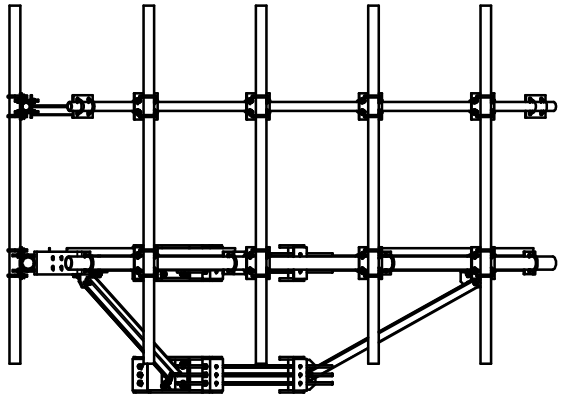

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REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
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REVISION HISTORY

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12' 6" LOW PROFILE PLATFORM
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PIPES, AND HANDRAIL

SITE PRO 1 — A valmont COMPANY

Engineering Support Team: 1-888-753-7446

Locations:
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4488	CEK 3/24/2014		RMQP-4096-HK

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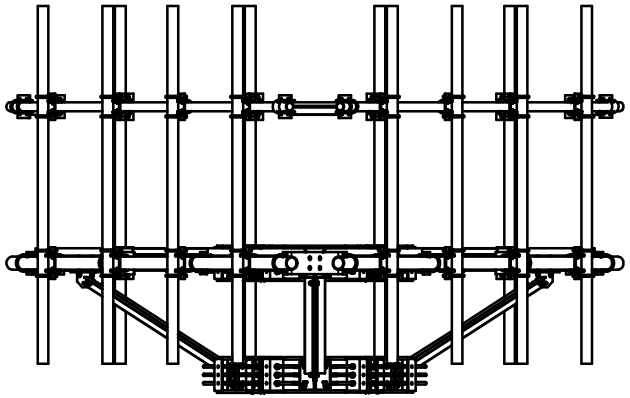
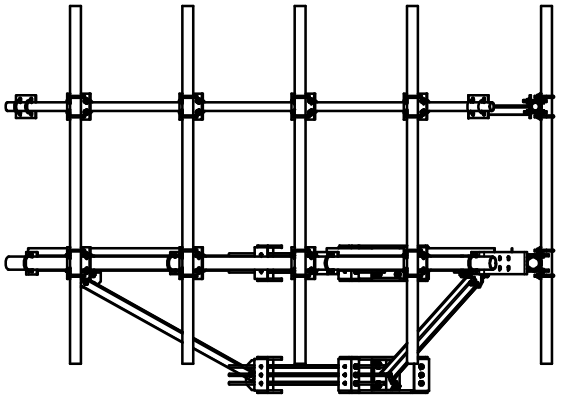
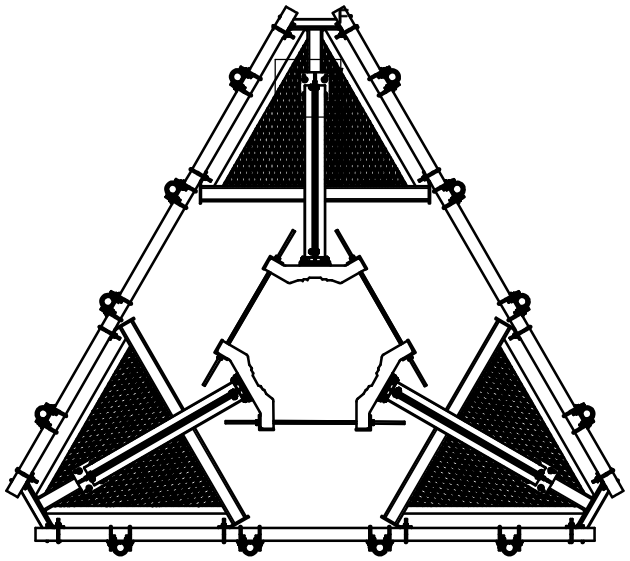
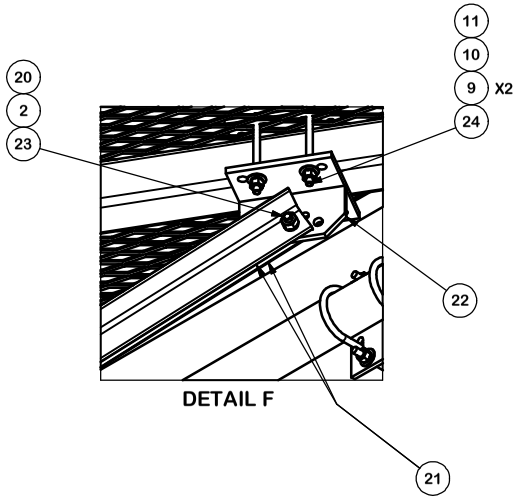








DETAIL F

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

DESCRIPTION
12' 6" LOW PROFILE PLATFORM
WITH TWELVE 2-7/8" ANTENNA MOUTING
PIPES, AND HANDRAIL

SITE PRO 1
A valmont COMPANY

Engineering
Support Team:
1-888-753-7446

Locations:
New York, NY
Atlanta, GA
Los Angeles, CA
Plymouth, IN
Salem, OR
Dallas, TX

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
4488	CEK 3/24/2014		RMQP-4096-HK

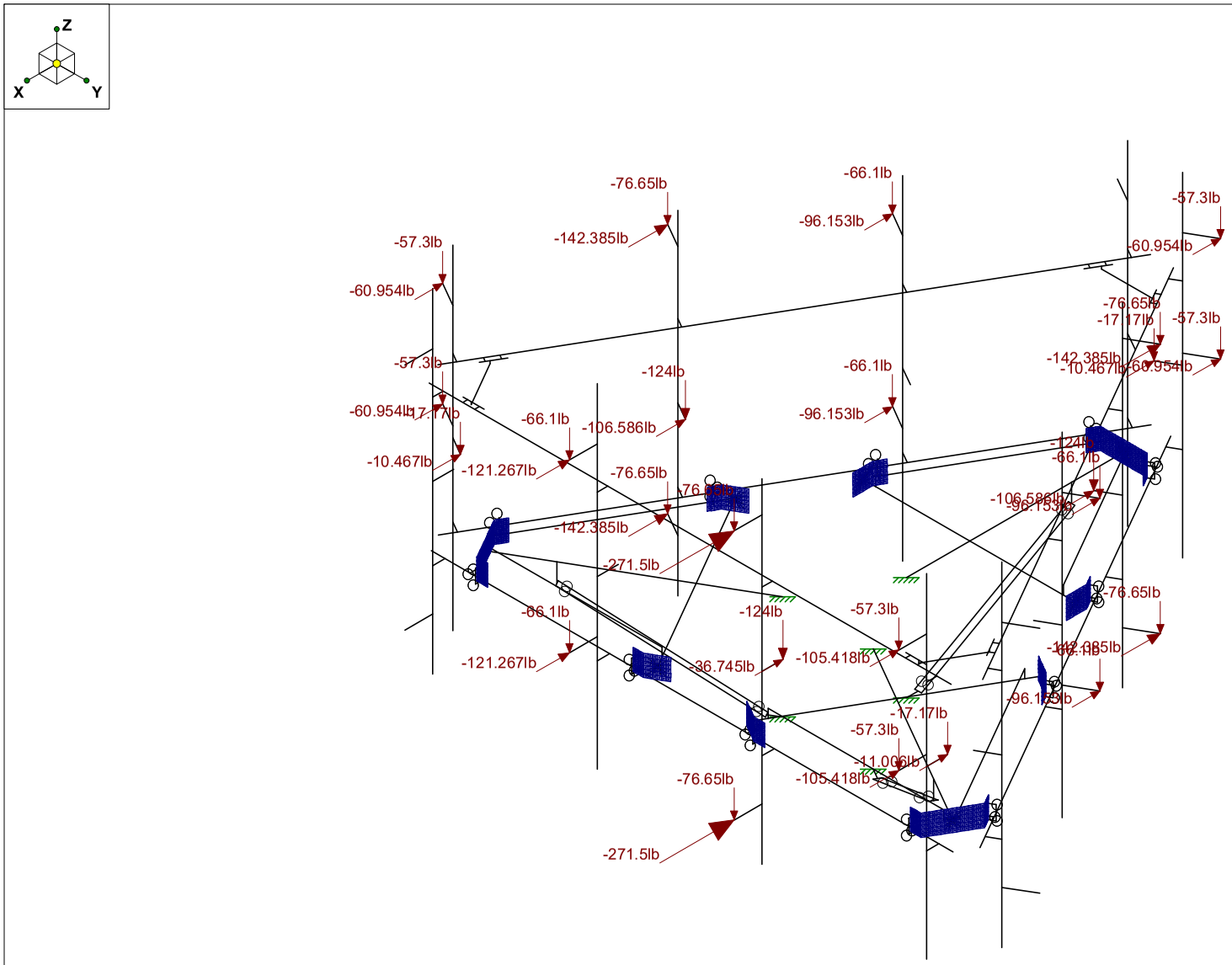
CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	02	CUSTOMER	BMC 7/14/2014	RMQP-4096-HK

REVISION HISTORY

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
B	CHANGED X-253992 TO X-TBW		CEK	9/20/2018
A	REPLACED HCP WITH X-AHCP	4488	CEK	7/14/2014

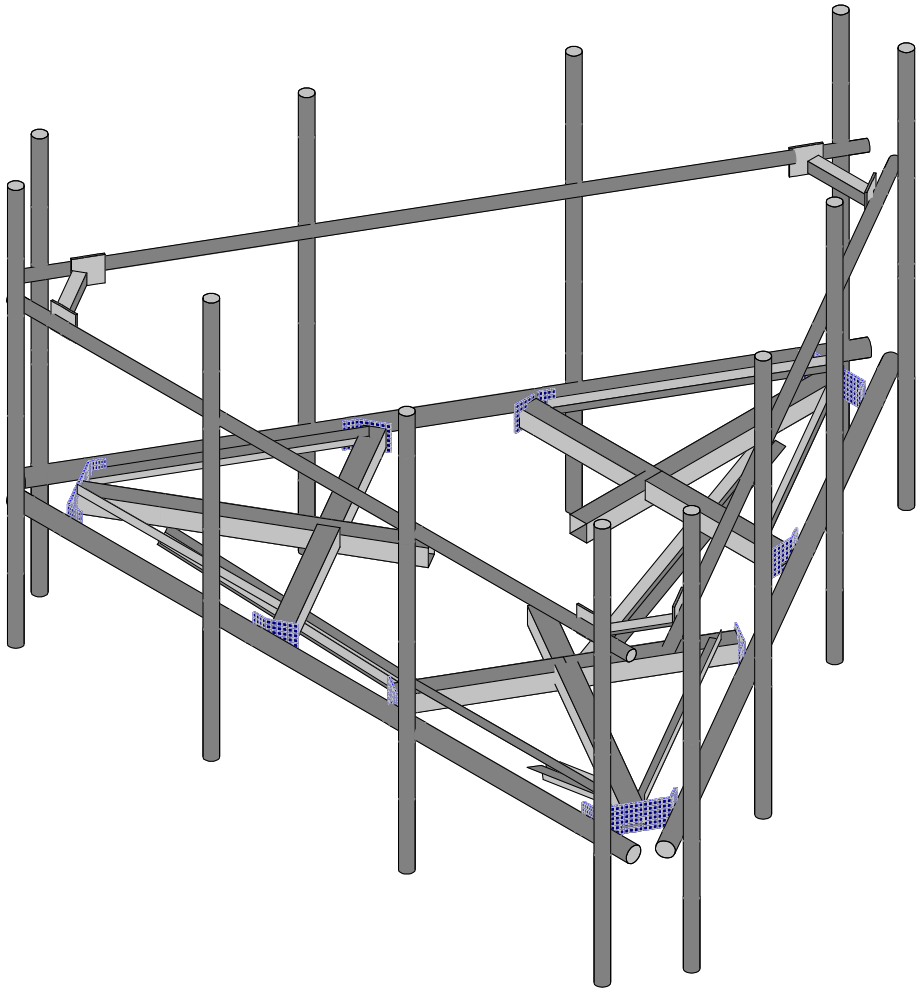
APPENDIX A

WIRE FRAME AND RENDERED MODELS



Loads: LC 1, Summary: 1.0D + 1.0W
Envelope Only Solution

Kimley-Horn and Associates, Inc.	826053	SK - 2
RJL		Oct 9, 2020 at 1:42 PM
019558051		826053.r3d



Envelope Only Solution

Kimley-Horn and Associates, Inc.	826053	SK - 1
RJL		Oct 9, 2020 at 1:42 PM
019558051		826053.r3d

APPENDIX B

SOFTWARE INPUT CALCULATIONS

General Criteria	
TIA Standard	H
IBC Edition	2015
Structure Class	-
Risk Category	II

Site-Specific Criteria	
Exposure Category	B
Topographic Factor, K_{zt}	1.00
Structure Base Elev. (AMSL), z_s (ft)	323.94
Ground Effect Factor, K_e	0.99

Mount & Structure Criteria	
Mount Elevation (AGL) (ft)	195.00
Structure Height (ft)	195.00
Structure Type	Monopole

Constants	
Wind Direction Probability Factor, K_d	0.95
Gust Effect Factor, G_h	1
Shielding Factor, K_a (antenna)	0.9
Shielding Factor, K_a (mount)	0.9

Wind Summary	
Basic Wind Speed w/o Ice, V (mph)	120.00
Velocity Pressure Coeff., K_z	1.20
Velocity Pressure, q_z (w/o Ice) (psf)	41.40

Ice Load Summary	
Basic Wind Speed w/ Ice, V_i (mph)	50.00
Design Ice Thick. (ASCE 7-10) , t_i (in)	0.75
Velocity Pressure, q_z (w/ Ice) (psf)	7.19
Escalated Ice Thick. @ Mount, t_{iz} (in)	1.79

Seismic Load Summary	
Spectral Response (Short Periods), S_s	-
Spectral Response (1-Sec. Period), S_1	-
Site Class	-
Seismic Design Category	-
Seismic Risk Category	-

Snow Load Summary	
Ground Snow Load, p_g (psf)	-
Snow Load on Flat Roofs, p_f (psf)	-

Kimley»Horn

Date	October 09, 2020
Client	Crown Castle
Site #	826053
Site Name	Monroe-1/Rt 25
Project #	1955051

Antenna Name	Qty	Shape	Dimensions (in)			Weight (lb)	Joint Labels								EPA (ft²)		Wind Force, F_A (lb)			
							Alpha		Beta		Gamma		Delta		No Ice				With Ice	
			H	W	D										Front	Side	Front	Side	Front	Side
AIR 32 B2A/B66AA	3	Flat	56.6	12.9	8.7	132.2	A3B	A3T	B3B	B3T	G3B	G3T			6.51	4.71	242.53	175.56	55.75	43.39
AIR6449 B41_T-MOBILE	3	Flat	33.1	20.5	8.5	114.6	A1B	A1T	B1B	B1T	G1B	G1T			5.66	2.48	210.84	92.27	47.65	24.45
APXVAARR24_43-U-NA20	3	Flat	95.9	24	8.7	153.3	A2B	A2T	B2B	B2T	G2B	G2T			14.57	5.33	543	198.69	110.86	47.31
SDX1926Q-43	3	Flat	4.2	6.9	2.9	6.2	A1R		B1R		G1R				0.12	0.1	4.49	3.77	2.2	2.71
KRY 112 144/1	3	Flat	7	6	3	11	A1R		B1R		G1R				0.18	0.18	6.52	6.52	2.73	3.76
RADIO 4449 B12/B71	3	Flat	15	13.2	9.3	78	A2R		B2R		G2R				0.58	1.64	21.47	61.22	6.41	16.76
RRUS 4415 B25_CCIV2	3	Flat	16.5	13.4	5.9	46	A2R		B2R		G2R				0.41	1.84	15.28	68.64	5.13	18.38

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\...	Density[lb/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	490	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	490	50	1.1	65	1.1
3	A992	29000	11154	.3	.65	490	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	490	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	490	50	1.4	65	1.3
8	Q235	29000	11154	.3	.65	490	35	1.5	58	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Face Horiz	PIPE_3.0	Beam	None	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	Stand-Off Horiz	HSS4X4X4	Beam	None	Q235	Typical	3.37	7.8	7.8	12.8
3	Offset Horiz	HSS4X4X4	Beam	None	Q235	Typical	3.37	7.8	7.8	12.8
4	Offset Side Plate	PL6x3/8	Beam	None	Q235	Typical	2.25	.026	6.75	.101
5	Grating Angle	L2x2x3	Beam	None	Q235	Typical	.722	.271	.271	.009
6	Mount Pipe	PIPE_2.5	Column	None	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
7	Offset End Plate	PL6x0.5	Beam	None	Q235	Typical	4.5	.094	30.375	.362
8	HRK12 Pipe	PIPE_2.0	Beam	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
9	HRK12 Plate	PL6x3/8	Beam	None	Q235	Typical	2.25	.026	6.75	.101
10	HRK12 Angle	L2.5x2.5x4	Beam	None	Q235	Typical	1.19	.692	.692	.026
11	PRK-1245 Angle	L2.5x2.5x3	Beam	None	A36 Gr.36	Typical	.901	.535	.535	.011

Hot Rolled Steel Design Parameters

	Label	Shape	Length[i...	Lbyy[in]	Lbzz[in]	Lcomp top[...	Lcomp bot[...	L-torq...	Kyy	Kzz	Cb	Functi...
1	M51	Offset Horiz	62.257									Lateral
2	M60	Offset Horiz	30.438			Lbyy						Lateral
3	M63	Offset Horiz	30.437			Lbyy						Lateral
4	M69	Face Horiz	150			Lbyy						Lateral
5	M72	Face Horiz	150			Lbyy						Lateral
6	M75	Face Horiz	150			Lbyy						Lateral
7	M92	Grating Angle	50.542			Lbyy						Lateral
8	M94	Grating Angle	50.542			Lbyy						Lateral
9	M98	Grating Angle	50.542			Lbyy						Lateral
10	M100	Grating Angle	50.542			Lbyy						Lateral
11	M104	Grating Angle	50.542			Lbyy						Lateral
12	M106	Grating Angle	50.542			Lbyy						Lateral
13	M109	HRK12 Angle	14.902			Lbyy						Lateral
14	M110	HRK12 Angle	14.902			Lbyy						Lateral
15	M111	HRK12 Angle	14.902			Lbyy						Lateral
16	M116	HRK12 Pipe	150			Lbyy						Lateral
17	M121	HRK12 Pipe	150			Lbyy						Lateral
18	M126	HRK12 Pipe	150			Lbyy						Lateral
19	M129	HRK12 Plate	6			Lbyy						Lateral
20	M133	HRK12 Plate	6			Lbyy						Lateral
21	M137	HRK12 Plate	6			Lbyy						Lateral
22	M141	HRK12 Plate	6			Lbyy						Lateral
23	M145	HRK12 Plate	6			Lbyy						Lateral
24	M149	HRK12 Plate	6			Lbyy						Lateral
25	M163	Mount Pipe	96			Lbyy						Lateral
26	M189A	Offset Horiz	62.257									Lateral
27	M209	Offset Horiz	62.257									Lateral
28	M245A	Offset Horiz	30.438			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[i...	Lbyy[in]	Lbzz[in]	Lcomp top[...	Lcomp bot[...	L-torq...	Kyy	Kzz	Cb	Functi...
29	M246A	Offset Horiz	30.437			Lbyy						Lateral
30	M279	Offset Horiz	30.438			Lbyy						Lateral
31	M280	Offset Horiz	30.437			Lbyy						Lateral
32	M261A	Mount Pipe	96			Lbyy						Lateral
33	M267A	Mount Pipe	96			Lbyy						Lateral
34	M273A	Mount Pipe	96			Lbyy						Lateral
35	M279A	Mount Pipe	96			Lbyy						Lateral
36	M288B	Mount Pipe	96			Lbyy						Lateral
37	M294A	Mount Pipe	96			Lbyy						Lateral
38	M300B	Mount Pipe	96			Lbyy						Lateral
39	M306B	Mount Pipe	96			Lbyy						Lateral
40	M315	Mount Pipe	96			Lbyy						Lateral
41	M321	Mount Pipe	96			Lbyy						Lateral
42	M327	Mount Pipe	96			Lbyy						Lateral
43	KM5	PRK-1245 Angle	50.531									Lateral
44	KM6	PRK-1245 Angle	50.531									Lateral
45	KM11	PRK-1245 Angle	50.531									Lateral
46	KM12	PRK-1245 Angle	50.531									Lateral
47	KM17	PRK-1245 Angle	50.531									Lateral
48	KM18	PRK-1245 Angle	50.531									Lateral

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribu...	Area(M...	Surface...
1	Dead	DL			-1	30				
2	Dead of Ice	RL				30		48		
4	Structure Wind (0)	None						96		
5	Structure Wind (30)	None						96		
6	Structure Wind (45)	None						96		
7	Structure Wind (60)	None						96		
8	Structure Wind (90)	None						96		
9	Structure Wind (120)	None						96		
10	Structure Wind (135)	None						96		
11	Structure Wind (150)	None						96		
12	Structure Wind w/ Ice (0)	None						96		
13	Structure Wind w/ Ice (30)	None						96		
14	Structure Wind w/ Ice (45)	None						96		
15	Structure Wind w/ Ice (60)	None						96		
16	Structure Wind w/ Ice (90)	None						96		
17	Structure Wind w/ Ice (120)	None						96		
18	Structure Wind w/ Ice (135)	None						96		
19	Structure Wind w/ Ice (150)	None						96		
20	Antenna Wind (0)	None				60				
21	Antenna Wind (30)	None				60				
22	Antenna Wind (45)	None				60				
23	Antenna Wind (60)	None				60				
24	Antenna Wind (90)	None				60				
25	Antenna Wind (120)	None				60				
26	Antenna Wind (135)	None				60				
27	Antenna Wind (150)	None				60				
28	Antenna Wind w/ Ice (0)	None				60				
29	Antenna Wind w/ Ice (30)	None				60				
30	Antenna Wind w/ Ice (45)	None				60				
31	Antenna Wind w/ Ice (60)	None				60				
32	Antenna Wind w/ Ice (90)	None				60				
33	Antenna Wind w/ Ice (120)	None				60				

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribu...	Area(M...	Surface...
34	Antenna Wind w/ Ice (135)	None				60				
35	Antenna Wind w/ Ice (150)	None				60				
36	Maintenance Live Lm (1)	OL1				1				
37	Maintenance Live Lm (2)	OL2				1				
38	Maintenance Live Lm (3)	OL3				1				
39	Maintenance Live Lm (4)	OL4				1				

Load Combinations

	Description	So..	PDe..	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..
1	Summary: 1.0D + 1....	Yes	Y		DL	1	20	1																
2	1.4D	Yes	Y		DL	1.4																		
3	1.2D + 1.0W(0)	Yes	Y		DL	1.2	4	1	20	1														
4	1.2D + 1.0W(30)	Yes	Y		DL	1.2	5	1	21	1														
5	1.2D + 1.0W(45)	Yes	Y		DL	1.2	6	1	22	1														
6	1.2D + 1.0W(60)	Yes	Y		DL	1.2	7	1	23	1														
7	1.2D + 1.0W(90)	Yes	Y		DL	1.2	8	1	24	1														
8	1.2D + 1.0W(120)	Yes	Y		DL	1.2	9	1	25	1														
9	1.2D + 1.0W(135)	Yes	Y		DL	1.2	10	1	26	1														
10	1.2D + 1.0W(150)	Yes	Y		DL	1.2	11	1	27	1														
11	1.2D + 1.0W(180)	Yes	Y		DL	1.2	4	-1	20	-1														
12	1.2D + 1.0W(210)	Yes	Y		DL	1.2	5	-1	21	-1														
13	1.2D + 1.0W(225)	Yes	Y		DL	1.2	6	-1	22	-1														
14	1.2D + 1.0W(240)	Yes	Y		DL	1.2	7	-1	23	-1														
15	1.2D + 1.0W(270)	Yes	Y		DL	1.2	8	-1	24	-1														
16	1.2D + 1.0W(300)	Yes	Y		DL	1.2	9	-1	25	-1														
17	1.2D + 1.0W(315)	Yes	Y		DL	1.2	10	-1	26	-1														
18	1.2D + 1.0W(330)	Yes	Y		DL	1.2	11	-1	27	-1														
19	1.2D + 1.0Di + 1.0W..	Yes	Y		DL	1.2	RL	1	12	1	28	1												
20	1.2D + 1.0Di + 1.0W..	Yes	Y		DL	1.2	RL	1	13	1	29	1												
21	1.2D + 1.0Di + 1.0W..	Yes	Y		DL	1.2	RL	1	14	1	30	1												
22	1.2D + 1.0Di + 1.0W..	Yes	Y		DL	1.2	RL	1	15	1	31	1												
23	1.2D + 1.0Di + 1.0W..	Yes	Y		DL	1.2	RL	1	16	1	32	1												
24	1.2D + 1.0Di + 1.0W..	Yes	Y		DL	1.2	RL	1	17	1	33	1												
25	1.2D + 1.0Di + 1.0W..	Yes	Y		DL	1.2	RL	1	18	1	34	1												
26	1.2D + 1.0Di + 1.0W..	Yes	Y		DL	1.2	RL	1	19	1	35	1												
27	1.2D + 1.0Di + 1.0W..	Yes	Y		DL	1.2	RL	1	12	-1	28	-1												
28	1.2D + 1.0Di + 1.0W..	Yes	Y		DL	1.2	RL	1	13	-1	39	-1												
29	1.2D + 1.0Di + 1.0W..	Yes	Y		DL	1.2	RL	1	14	-1	30	-1												
30	1.2D + 1.0Di + 1.0W..	Yes	Y		DL	1.2	RL	1	15	-1	31	-1												
31	1.2D + 1.0Di + 1.0W..	Yes	Y		DL	1.2	RL	1	16	-1	32	-1												
32	1.2D + 1.0Di + 1.0W..	Yes	Y		DL	1.2	RL	1	17	-1	33	-1												
33	1.2D + 1.0Di + 1.0W..	Yes	Y		DL	1.2	RL	1	18	-1	34	-1												
34	1.2D + 1.0Di + 1.0W..	Yes	Y		DL	1.2	RL	1	19	-1	35	-1												
35	1.2D + 1.5Lm(1) + 1...	Yes	Y		DL	1.2	4	.063	20	.063	OL1	1.5												
36	1.2D + 1.5Lm(1) + 1...	Yes	Y		DL	1.2	5	.063	21	.063	OL1	1.5												
37	1.2D + 1.5Lm(1) + 1...	Yes	Y		DL	1.2	6	.063	22	.063	OL1	1.5												
38	1.2D + 1.5Lm(1) + 1...	Yes	Y		DL	1.2	7	.063	23	.063	OL1	1.5												
39	1.2D + 1.5Lm(1) + 1...	Yes	Y		DL	1.2	8	.063	24	.063	OL1	1.5												
40	1.2D + 1.5Lm(1) + 1...	Yes	Y		DL	1.2	9	.063	25	.063	OL1	1.5												
41	1.2D + 1.5Lm(1) + 1...	Yes	Y		DL	1.2	10	.063	26	.063	OL1	1.5												
42	1.2D + 1.5Lm(1) + 1...	Yes	Y		DL	1.2	11	.063	27	.063	OL1	1.5												
43	1.2D + 1.5Lm(1) + 1...	Yes	Y		DL	1.2	4	-.063	20	-.063	OL1	1.5												
44	1.2D + 1.5Lm(1) + 1...	Yes	Y		DL	1.2	5	-.063	21	-.063	OL1	1.5												
45	1.2D + 1.5Lm(1) + 1...	Yes	Y		DL	1.2	6	-.063	22	-.063	OL1	1.5												
46	1.2D + 1.5Lm(1) + 1...	Yes	Y		DL	1.2	7	-.063	23	-.063	OL1	1.5												

Load Combinations (Continued)

	Description	So..	PDe..	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
47	1.2D + 1.5Lm(1) + 1...	Yes	Y		DL	1.2	8	-.063	24	-.063	OL1	1.5														
48	1.2D + 1.5Lm(1) + 1...	Yes	Y		DL	1.2	9	-.063	25	-.063	OL1	1.5														
49	1.2D + 1.5Lm(1) + 1...	Yes	Y		DL	1.2	10	-.063	26	-.063	OL1	1.5														
50	1.2D + 1.5Lm(1) + 1...	Yes	Y		DL	1.2	11	-.063	27	-.063	OL1	1.5														
51	1.2D + 1.5Lm(2) + 1...	Yes	Y		DL	1.2	4	.063	20	.063	OL2	1.5														
52	1.2D + 1.5Lm(2) + 1...	Yes	Y		DL	1.2	5	.063	21	.063	OL2	1.5														
53	1.2D + 1.5Lm(2) + 1...	Yes	Y		DL	1.2	6	.063	22	.063	OL2	1.5														
54	1.2D + 1.5Lm(2) + 1...	Yes	Y		DL	1.2	7	.063	23	.063	OL2	1.5														
55	1.2D + 1.5Lm(2) + 1...	Yes	Y		DL	1.2	8	.063	24	.063	OL2	1.5														
56	1.2D + 1.5Lm(2) + 1...	Yes	Y		DL	1.2	9	.063	25	.063	OL2	1.5														
57	1.2D + 1.5Lm(2) + 1...	Yes	Y		DL	1.2	10	.063	26	.063	OL2	1.5														
58	1.2D + 1.5Lm(2) + 1...	Yes	Y		DL	1.2	11	.063	27	.063	OL2	1.5														
59	1.2D + 1.5Lm(2) + 1...	Yes	Y		DL	1.2	4	-.063	20	-.063	OL2	1.5														
60	1.2D + 1.5Lm(2) + 1...	Yes	Y		DL	1.2	5	-.063	21	-.063	OL2	1.5														
61	1.2D + 1.5Lm(2) + 1...	Yes	Y		DL	1.2	6	-.063	22	-.063	OL2	1.5														
62	1.2D + 1.5Lm(2) + 1...	Yes	Y		DL	1.2	7	-.063	23	-.063	OL2	1.5														
63	1.2D + 1.5Lm(2) + 1...	Yes	Y		DL	1.2	8	-.063	24	-.063	OL2	1.5														
64	1.2D + 1.5Lm(2) + 1...	Yes	Y		DL	1.2	9	-.063	25	-.063	OL2	1.5														
65	1.2D + 1.5Lm(2) + 1...	Yes	Y		DL	1.2	10	-.063	26	-.063	OL2	1.5														
66	1.2D + 1.5Lm(2) + 1...	Yes	Y		DL	1.2	11	-.063	27	-.063	OL2	1.5														
67	1.2D + 1.5Lm(3) + 1...	Yes	Y		DL	1.2	4	.063	20	.063	OL3	1.5														
68	1.2D + 1.5Lm(3) + 1...	Yes	Y		DL	1.2	5	.063	21	.063	OL3	1.5														
69	1.2D + 1.5Lm(3) + 1...	Yes	Y		DL	1.2	6	.063	22	.063	OL3	1.5														
70	1.2D + 1.5Lm(3) + 1...	Yes	Y		DL	1.2	7	.063	23	.063	OL3	1.5														
71	1.2D + 1.5Lm(3) + 1...	Yes	Y		DL	1.2	8	.063	24	.063	OL3	1.5														
72	1.2D + 1.5Lm(3) + 1...	Yes	Y		DL	1.2	9	.063	25	.063	OL3	1.5														
73	1.2D + 1.5Lm(3) + 1...	Yes	Y		DL	1.2	10	.063	26	.063	OL3	1.5														
74	1.2D + 1.5Lm(3) + 1...	Yes	Y		DL	1.2	11	.063	27	.063	OL3	1.5														
75	1.2D + 1.5Lm(3) + 1...	Yes	Y		DL	1.2	4	-.063	20	-.063	OL3	1.5														
76	1.2D + 1.5Lm(3) + 1...	Yes	Y		DL	1.2	5	-.063	21	-.063	OL3	1.5														
77	1.2D + 1.5Lm(3) + 1...	Yes	Y		DL	1.2	6	-.063	22	-.063	OL3	1.5														
78	1.2D + 1.5Lm(3) + 1...	Yes	Y		DL	1.2	7	-.063	23	-.063	OL3	1.5														
79	1.2D + 1.5Lm(3) + 1...	Yes	Y		DL	1.2	8	-.063	24	-.063	OL3	1.5														
80	1.2D + 1.5Lm(3) + 1...	Yes	Y		DL	1.2	9	-.063	25	-.063	OL3	1.5														
81	1.2D + 1.5Lm(3) + 1...	Yes	Y		DL	1.2	10	-.063	26	-.063	OL3	1.5														
82	1.2D + 1.5Lm(3) + 1...	Yes	Y		DL	1.2	11	-.063	27	-.063	OL3	1.5														
83	1.2D + 1.5Lm(4) + 1...	Yes	Y		DL	1.2	4	.063	20	.063	OL4	1.5														
84	1.2D + 1.5Lm(4) + 1...	Yes	Y		DL	1.2	5	.063	21	.063	OL4	1.5														
85	1.2D + 1.5Lm(4) + 1...	Yes	Y		DL	1.2	6	.063	22	.063	OL4	1.5														
86	1.2D + 1.5Lm(4) + 1...	Yes	Y		DL	1.2	7	.063	23	.063	OL4	1.5														
87	1.2D + 1.5Lm(4) + 1...	Yes	Y		DL	1.2	8	.063	24	.063	OL4	1.5														
88	1.2D + 1.5Lm(4) + 1...	Yes	Y		DL	1.2	9	.063	25	.063	OL4	1.5														
89	1.2D + 1.5Lm(4) + 1...	Yes	Y		DL	1.2	10	.063	26	.063	OL4	1.5														
90	1.2D + 1.5Lm(4) + 1...	Yes	Y		DL	1.2	11	.063	27	.063	OL4	1.5														
91	1.2D + 1.5Lm(4) + 1...	Yes	Y		DL	1.2	4	-.063	20	-.063	OL4	1.5														
92	1.2D + 1.5Lm(4) + 1...	Yes	Y		DL	1.2	5	-.063	21	-.063	OL4	1.5														
93	1.2D + 1.5Lm(4) + 1...	Yes	Y		DL	1.2	6	-.063	22	-.063	OL4	1.5														
94	1.2D + 1.5Lm(4) + 1...	Yes	Y		DL	1.2	7	-.063	23	-.063	OL4	1.5														
95	1.2D + 1.5Lm(4) + 1...	Yes	Y		DL	1.2	8	-.063	24	-.063	OL4	1.5														
96	1.2D + 1.5Lm(4) + 1...	Yes	Y		DL	1.2	9	-.063	25	-.063	OL4	1.5														
97	1.2D + 1.5Lm(4) + 1...	Yes	Y		DL	1.2	10	-.063	26	-.063	OL4	1.5														
98	1.2D + 1.5Lm(4) + 1...	Yes	Y		DL	1.2	11	-.063	27	-.063	OL4	1.5														

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N35	max	1239.962	6	4053.404	14	1132.563	28	-240.2	10	235.451	18	1520.129	18
2		min	-2299.054	14	-2223.093	6	387.146	14	-1299.978	34	-820.701	74	-1523.294	10
3	N61	max	1367.05	3	2185.376	16	1122.597	32	1149.604	20	134.166	4	1520.057	12
4		min	-2419.899	11	-4017.804	8	387.157	8	169.276	12	-916.475	29	-1523.214	4
5	N88	max	4659.824	3	1341.77	15	1122.566	27	577.111	7	1341.695	28	1520.049	7
6		min	-2545.197	11	-1339.329	7	339.292	1	-472.555	15	451.13	53	-1523.241	15
7	KN5	max	90.055	11	64.845	15	2247.034	19	39.533	7	631.978	19	87.672	7
8		min	-3918.51	19	-64.92	7	-43.426	11	-34.613	15	-12.214	11	-79.136	15
9	KN13	max	1959.586	30	78.013	6	2247.072	30	8.898	6	9.022	6	87.673	18
10		min	-45.034	6	-3393.417	30	-43.439	6	-550.95	30	-309.705	30	-79.139	10
11	KN21	max	1959.054	24	3393.868	24	2247.142	24	543.704	24	3.194	16	87.673	12
12		min	-45.044	16	-78.007	16	-43.438	16	-12.263	16	-322.295	24	-79.136	4
13	Totals:	max	4781.542	3	4781.542	15	9328.226	23						
14		min	-4781.495	11	-4781.501	7	3157.772	1						

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

	Member	Shape	Code Check	Loc...	LC	She...	Loc[in]	Dir	LC	phi*...	phi*P...	phi*M...	phi*...	Cb	Eqn
1	M321	PIPE_2.5	.263	68....	13	.066	47.495		4	3003...	50715	3596.25	359...	2.657	H1-1b
2	M267A	PIPE_2.5	.263	68....	3	.067	47.495		9	3003...	50715	3596.25	359...	3.019	H1-1b
3	M294A	PIPE_2.5	.263	68....	8	.066	47.495		15	3003...	50715	3596.25	359...	3.019	H1-1b
4	M110	L2.5x2....	.253	14....	5	.056	14.902	y	6	3569...	37485	1082....	246...	2.25	H2-1
5	M116	PIPE_2.0	.252	13...	11	.155	138.947		11	6295...	32130	1871....	187...	2.892	H1-1a
6	M126	PIPE_2.0	.252	13...	16	.155	138.947		16	6295...	32130	1871....	187...	2.892	H1-1a
7	M121	PIPE_2.0	.252	13...	6	.155	138.947		6	6295...	32130	1871....	187...	2.892	H1-1a
8	M109	L2.5x2....	.242	14....	11	.056	14.902	y	11	3569...	37485	1082....	246...	2.26	H2-1
9	M111	L2.5x2....	.242	14....	16	.057	14.902	y	17	3569...	37485	1082....	246...	2.26	H2-1
10	M288B	PIPE_2.5	.233	68....	6	.091	68.716		18	3003...	50715	3596.25	359...	3.915	H1-1b
11	M315	PIPE_2.5	.233	68....	11	.091	68.716		7	3003...	50715	3596.25	359...	3.915	H1-1b
12	M261A	PIPE_2.5	.233	68....	16	.091	68.716		12	3003...	50715	3596.25	359...	3.915	H1-1b
13	KM5	L2.5x2....	.179	25....	21	.007	0	z	7	1625...	2919...	872.574	173...	1.14	H2-1
14	KM17	L2.5x2....	.179	25....	27	.007	0	z	12	1625...	2919...	872.574	173...	1.14	H2-1
15	KM11	L2.5x2....	.179	25....	32	.007	50.531	z	18	1625...	2919...	872.574	173...	1.14	H2-1
16	M189A	HSS4X...	.173	0	10	.101	0	z	18	9743...	1061...	12311...	123...	3.187	H1-1b
17	M51	HSS4X...	.173	0	15	.101	0	z	7	9743...	1061...	12311...	123...	3.187	H1-1b
18	M209	HSS4X...	.173	0	4	.101	0	z	12	9743...	1061...	12311...	123...	3.187	H1-1b
19	KM18	L2.5x2....	.167	25....	24	.007	0	y	12	1625...	2919...	872.574	173...	1.14	H2-1
20	KM12	L2.5x2....	.167	25....	30	.007	0	y	18	1625...	2919...	872.574	173...	1.14	H2-1
21	KM6	L2.5x2....	.167	25....	19	.007	0	y	7	1625...	2919...	872.574	173...	1.14	H2-1
22	M279	HSS4X...	.148	30....	23	.061	3.204	z	14	1040...	1061...	12311...	123...	1.602	H1-1b
23	M60	HSS4X...	.148	30....	34	.061	3.204	z	8	1040...	1061...	12311...	123...	1.602	H1-1b
24	M245A	HSS4X...	.147	30....	29	.061	3.204	z	3	1040...	1061...	12311...	123...	1.612	H1-1b
25	M280	HSS4X...	.145	0	26	.070	27.233	z	11	1040...	1061...	12311...	123...	1.642	H1-1b
26	M63	HSS4X...	.145	0	20	.070	27.233	z	6	1040...	1061...	12311...	123...	1.642	H1-1b
27	M246A	HSS4X...	.145	0	31	.070	27.233	z	16	1040...	1061...	12311...	123...	1.642	H1-1b
28	M106	L2x2x3	.139	0	5	.009	50.542	z	31	9585...	22743	542.224	120...	2.739	H2-1
29	M98	L2x2x3	.138	50....	27	.010	50.542	y	27	9585...	22743	542.224	120...	2.652	H2-1
30	M92	L2x2x3	.138	50....	32	.010	50.542	y	33	9585...	22743	542.224	120...	2.652	H2-1
31	M104	L2x2x3	.138	50....	22	.010	50.542	y	22	9585...	22743	542.224	120...	2.652	H2-1
32	M100	L2x2x3	.137	0	11	.009	50.542	z	21	9585...	22743	542.224	120...	2.819	H2-1
33	M94	L2x2x3	.137	0	16	.009	50.542	z	26	9585...	22743	542.224	120...	2.819	H2-1
34	M69	PIPE_3.0	.128	13...	8	.118	56.842		18	2825...	65205	5748.75	574...	3.605	H1-1b
35	M72	PIPE_3.0	.128	13...	3	.122	56.842		13	2825...	65205	5748.75	574...	3.605	H1-1b
36	M75	PIPE_3.0	.128	13...	14	.118	56.842		7	2825...	65205	5748.75	574...	3.605	H1-1b
37	M163	PIPE_2.5	.115	68....	16	.073	68.716		10	3003...	50715	3596.25	359...	3.864	H1-1b

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

	Member	Shape	Code Check	Loc...	LC	She...	Loc[in]	Dir	LC	phi*...	phi*P...	phi*M...	phi*...	Cb	Eqn
38	M279A	PIPE_2.5	.115	68....	6	.073	68.716		15	3003...	50715	3596.25	359...	3.864	H1-1b
39	M306B	PIPE_2.5	.115	68....	11	.073	68.716		4	3003...	50715	3596.25	359...	3.864	H1-1b
40	M273A	PIPE_2.5	.113	68....	6	.074	27.284		11	3003...	50715	3596.25	359...	3.924	H1-1b
41	M300B	PIPE_2.5	.113	68....	11	.074	27.284		16	3003...	50715	3596.25	359...	3.924	H1-1b
42	M327	PIPE_2.5	.113	68....	16	.074	27.284		6	3003...	50715	3596.25	359...	3.924	H1-1b

Envelope Plate/Shell Principal Stresses

	Plate		Surf...	Sigma1 [ksi]	LC	Sigma2 [ksi]	LC	Tau Max [ksi]	LC	Angle [rad]	LC	Von Mises [ksi]	LC
1	P798	max	T	22.577	6	5.164	6	8.706	6	1.843	12	20.489	6
2		min		-4.449	14	-21.435	14	.118	50	.253	7	.38	98
3		max	B	17.067	14	4.796	14	6.79	6	2.344	96	17.01	6
4		min		-5.499	6	-19.079	6	.04	44	-.734	78	.106	44
5	P655	max	T	22.576	16	5.164	16	8.706	16	1.843	7	20.488	16
6		min		-4.448	8	-21.434	8	.085	52	.253	18	.194	69
7		max	B	17.066	8	4.796	8	6.79	16	2.307	75	17.009	16
8		min		-5.499	16	-19.078	16	.066	54	-.751	43	.147	70
9	P726	max	T	22.576	11	5.164	11	8.706	11	2.291	75	20.488	11
10		min		-4.449	3	-21.434	3	.174	49	.253	12	.42	50
11		max	B	17.067	3	4.796	3	6.789	11	2.344	51	17.009	11
12		min		-5.499	11	-19.078	11	.144	51	-.256	21	.389	15
13	P828	max	T	18.997	13	4.14	13	7.791	5	1.29	3	18.398	5
14		min		-4.714	5	-20.296	5	.057	97	-.326	15	.165	96
15		max	B	17.135	5	4.997	5	6.069	5	2.288	42	15.263	5
16		min		-4.445	13	-15.381	13	.024	95	-.756	27	.073	95
17	P804	max	T	19.895	6	5.493	6	7.201	6	1.884	43	17.797	6
18		min		-4.991	14	-18.709	14	.035	49	.239	42	.137	97
19		max	B	16.444	14	4.915	14	6.791	6	2.17	94	16.973	6
20		min		-5.445	6	-19.028	6	.047	94	-.769	31	.114	94
21	P661	max	T	19.895	16	5.492	16	7.201	16	1.857	6	17.796	16
22		min		-4.991	8	-18.709	8	.03	53	.253	3	.074	69
23		max	B	16.443	8	4.915	8	6.791	16	2.346	55	16.973	16
24		min		-5.445	16	-19.027	16	.031	40	-.769	26	.126	55
25	P732	max	T	19.894	11	5.492	11	7.201	11	2.151	75	17.796	11
26		min		-4.991	3	-18.709	3	.088	64	.252	13	.203	35
27		max	B	16.444	3	4.915	3	6.791	11	2.009	21	16.972	11
28		min		-5.445	11	-19.027	11	.066	15	-.768	20	.182	15
29	P685	max	T	18.045	8	3.953	8	7.442	16	2.25	70	17.602	16
30		min		-4.545	16	-19.429	16	.013	70	-.686	74	.076	54
31		max	B	16.531	16	4.844	16	5.844	16	1.996	42	14.72	16
32		min		-4.275	8	-14.705	8	.012	42	-.756	22	.028	42
33	P756	max	T	18.046	3	3.953	3	7.442	11	2.345	73	17.602	11
34		min		-4.545	11	-19.428	11	.12	22	-.739	76	.431	53
35		max	B	16.531	11	4.844	11	5.844	11	1.558	15	14.72	11
36		min		-4.275	3	-14.706	3	.106	20	-.756	32	.208	20
37	P690	max	T	17.656	13	4.986	13	6.632	5	2.278	98	16.471	5
38		min		-5.172	5	-18.436	5	.055	81	-.785	50	.1	74
39		max	B	22.815	5	4.849	5	8.983	5	2.167	63	20.819	5
40		min		-4.655	13	-21.5	13	.037	49	-.634	32	.069	49
41	P696	max	T	17.49	13	5.422	14	6.474	5	2.351	50	16.339	5
42		min		-5.464	6	-18.357	5	.133	96	-.773	73	.255	97
43		max	B	20.271	5	5.733	6	7.293	5	2.277	80	18.111	5
44		min		-5.362	14	-19.41	13	.08	50	-.777	42	.157	42
45	P834	max	T	17.403	3	4.928	3	6.564	11	2.312	69	16.311	11
46		min		-5.132	11	-18.259	11	.1	68	-.702	98	.192	68
47		max	B	22.693	11	4.784	11	8.955	11	2.348	61	20.72	11

APPENDIX D

ADDITIONAL CALCUATIONS

CCI Mount Analysis Square Plate Connection 1.0.1

Location:	A	*Select*

TIA Revision:	TIA-222-H	*Select*

Normalizing to 100% per TIA-222-H Section 15.5

SITE DATA	
BU Number:	826053
Site Name:	Monroe-1/Rt 25
Order Number:	529713

REACTIONS		
Moment:	1.520	kip-ft
Axial:	1.222	kips
Shear:	1.338	kips

BOLT DATA		
Quantity:	4	
Diameter:	0.625	in
Material:	A325	*Select*
Fy:	92	ksi
Fu:	120	ksi
Bolt Spacing:	6	in

Load Combination	7

BOLT RESULTS		
Max Bolt (Cu+ Vu/η):	2.46	kips
Axial Design Strength:	21.70	kips
Stress Ratio	10.78%	

PLATE DATA		
Width:	8	in
Thickness:	0.75	in
Fy:	36	ksi

PLATE RESULTS		
Base Plate Stress:	5.35	ksi
Bending Strength:	32.40	ksi
Stress Ratio:	15.74%	

Controlling Load Combination	7

SUPPORT ARM DATA		
Type:	HSST	*Select*
Diameter/Width:	4	in
Thickness	0.25	in
Fy:	35	ksi
Number of Sides:	4	

Exhibit F

Power Density/RF Emissions Report

EBI Consulting

environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CT11215A

Monroe-1/Rt 25
88 Main Street
Monroe, Connecticut 06468

October 27, 2020

EBI Project Number: 6220005557

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**9.24%**

October 27, 2020

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

Emissions Analysis for Site: CT11215A - Monroe-1/Rt 25

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **88 Main Street** in **Monroe, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 88 Main Street in Monroe, 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 195 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):	195 feet	Height (AGL):	195 feet	Height (AGL):	195 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 %:	**2.43%**	Antenna B1 MPE %:	**2.43%**	Antenna C1 MPE %:	**2.43%**
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):	195 feet	Height (AGL):	195 feet	Height (AGL):	195 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 %:	**1.58%**	Antenna B2 MPE %:	**1.58%**	Antenna C2 MPE %:	**1.58%**
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):	195 feet	Height (AGL):	195 feet	Height (AGL):	195 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 %:	**1.21%**	Antenna B3 MPE %:	**1.21%**	Antenna C3 MPE %:	**1.21%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	5.22%
AT&T	2.47%
Verizon	1.55%
Site Total MPE % :	9.24%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	5.22%
T-Mobile Sector B Total:	5.22%
T-Mobile Sector C Total:	5.22%
Site Total MPE % :	9.24%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 2500 MHz LTE	2	6412.98	195.0	12.13	2500 MHz LTE	1000	1.21%
T-Mobile 2500 MHz NR	2	6412.98	195.0	12.13	2500 MHz NR	1000	1.21%
T-Mobile 600 MHz LTE	2	591.73	195.0	1.12	600 MHz LTE	400	0.28%
T-Mobile 600 MHz NR	1	1577.94	195.0	1.49	600 MHz NR	400	0.37%
T-Mobile 700 MHz LTE	2	648.82	195.0	1.23	700 MHz LTE	467	0.26%
T-Mobile 1900 MHz LTE	2	2203.69	195.0	4.17	1900 MHz LTE	1000	0.42%
T-Mobile 2100 MHz UMTS	2	1294.56	195.0	2.45	2100 MHz UMTS	1000	0.24%
T-Mobile 1900 MHz GSM	4	1028.30	195.0	3.89	1900 MHz GSM	1000	0.39%
T-Mobile 1900 MHz LTE	2	2056.61	195.0	3.89	1900 MHz LTE	1000	0.39%
T-Mobile 2100 MHz LTE	2	2307.55	195.0	4.36	2100 MHz LTE	1000	0.44%
						Total:	**5.22%**

• 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:	5.22%
Sector B:	5.22%
Sector C:	5.22%
T-Mobile Maximum MPE % (Sector A):	5.22%
Site Total:	9.24%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **9.24%** 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.