Crown Castle
12 Gill Street, Suite 5800
Woburn, MA 01801

April 24, 2018

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

RE: **Notice of Exempt Modification for T-Mobile / L700 Crown Site BU: 876355**
T-Mobile Site ID: CT11264C
Located at: 474-480 Main St., Monroe, CT 06468
Latitude: 41° 19′ 31.99″ / Longitude: -73° 15′ 57.05″

Dear Ms. Bachman,

T-Mobile currently maintains twelve (12) antennas at the 194-foot level of the existing 194-foot monopole at 474-480 Main St., Monroe, CT. The tower is owned by Crown Castle. The property is owned by Sprint PCS and Global Signal Acq. II LLC (Crown Castle). T-Mobile now intends to remove and replace six (6) antennas, move three (3) of the antennas to the 192-foot level, replace six (6) TMAs, add three (3) BiasTs, and replace current T-Arm mounts with a new full platform mount for all antennas. They also propose to add one equipment cabinet to the ground. All work will be completed within the existing area.

This facility was approved by the Town of Monroe on October 17, 2000 in No. 10461. The approval did not include any conditions.

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; Zoning Enforcement Officer, Joe Chapman; as well as the property owner and the tower owner.

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

2. The proposed modification 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-referenced telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn: Amanda Cornwall.

Sincerely,

Amanda Cornwall
Real Estate Specialist
12 Gill Street, Suite 5800, Woburn, MA 01801
339-205-7017
Amanda.Cornwall@crowncastle.com

Attachments:

Tab 1: Exhibit-1: Compound plan and elevation depicting the planned changes

Tab 2: Exhibit-2: Structural Modification Report
Tab 4: Exhibit-3: General Power Density Table report (RF Emissions Analysis Report)

cc: Kenneth Kellogg, First Selectman
Town of Monroe
7 Fan Hill Road
Monroe, CT 06468

Joe Chapman, Zoning Enforcement Officer
7 Fan Hill Road
Monroe, CT 06468

Crown Castle (Tower Owner & Property Owner)
12 Gill Street, Suite 5800
Woburn, Ma 01801

IMPORTANT!
FedEx is closely monitoring the winter storms across portions of the U.S. Learn More

772070282560

Ship date:
Tue 4/24/2018

Crown Castle
Amanda Cornwall
Suite 5800
12 Gill St
Woburn, MA US 01801
339 205-7017

Delivered
Signed for by: B.KRADUSKI

Actual delivery:
Wed 4/25/2018 10:21 am

Zoning Enforcement Officer
Joe Chapman
7 Fan Hill Road
MONROE, CT US 06468
203 452-2816

Travel History

Date/Time	Activity	Location
- 4/25/2018 - Wednesday		
10:21 am	Delivered	MONROE, CT
9:25 am	On FedEx vehicle for delivery	STRATFORD, CT
7:55 am	At local FedEx facility	STRATFORD, CT
3:55 am	Departed FedEx location	NEWARK, NJ
- 4/24/2018 - Tuesday		
11:20 pm	Arrived at FedEx location	NEWARK, NJ
9:05 pm	Left FedEx origin facility	WILMINGTON, MA
6:27 pm	Picked up	WILMINGTON, MA
2:38 pm	Shipment information sent to FedEx	

Shipment Facts

Tracking Number	772070282560	**Service**	FedEx Priority Overnight
Reference	1766.6680	**Weight**	0.5 lbs / 0.23 kgs
Delivery attempts	1	**Delivered To**	Receptionist/Front Desk
Total pieces	1	**Total shipment weight**	0.5 lbs / 0.23 kgs
Terms	Not Available	**Invoice number**	907651
Shipper reference	1766.6680	**Packaging**	FedEx Envelope
Special handling section	Deliver Weekday	**Standard transit**	4/25/2018 by 10:30 am

Ask FedEx

Ex. Shipping Tracking Printing Services Locations Support Amanda

IMPORTANT!
FedEx is closely monitoring the winter storms across portions of the U.S. Learn More

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Total pieces	1	**Total shipment weight**	0.5 lbs / 0.23 kgs
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Ask FedEx

Town of Monroe

OFFICE OF THE TOWN
ENGINEERING DEPARTMENT
Town Hall
7 Fan Hill Road
Monroe, Connecticut 06468
Phone: (203) 452-5437
(203) 452-5438

July 10,2000

Paul T. Tusch
Cacase, Tusch, Santagam
777 Summer Street
P.O. Box 15859
Stamford, CT. 06901-0859

Re: Sprint PCS
474-480 Main Street
Special Exception Permit

Dear Mr. Tusch:

Please be advised that this department has reviewed the plans (4 pages) submitted for the above project and, although the design concept is generally acceptable, the following item should be addressed:

1) if the access roadway is to have a gravel surface (ie; not asphalt paved), construct the road using a minimum 6" depth of 3/4" medium coarse process gravel, shaped and crowned to control water runoff and compacted to 95%. Construct sufficient riprap leak offs to control erosion in road shoulder areas.

It is required that installation of the security fencing commence immediately following erection of the tower and continue non stop (without interruption) until completely installed.

If you have any questions, please contact my office at (203) 452-5438.

Very Truly Yours,

Sherwood Lovejoy, P.E.
Director of Public Works
Town Engineer

SL/fjm

Town Hall
7 Fan Hill Road
Monroe, Connecticut 06468-1800

Phone (203) 452-5489
Pager (203) 396-7778

TOWN OF MONROE

OFFICE OF THE FIRE MARSHAL

June 27, 2000

Attorney Paul T. Tusch
Cacase, Tusch, Santagata
777 Summer Street
P. O. Box 15859
Stamford, CT 06901-0859

RE: Sprint PCS Tower , 474-480 Main Street

Dear Attorney Tusch,

I have reviewed the proposed Sprint PCS Tower located at TLC, 474-480 Main Street, and my only requirements would be:

- Knox box system
- Access road be at least 20' wide

If you have any questions, please call me.

Sincerely,

Anthony Carpenter
Fire Marshal

cd

TOWN OF MONROE, CONNECTICUT
PROVISIONAL CERTIFICATE
OF
ZONING COMPLIANCE

This is to certify that the proposed Communication Tower – equipment compound
(structure, ~~addition, use~~)

located at No. 480 (Lot No. ____) Main (Street, ~~Road, Drive~~)

Application dated 10/17 2000, made by Andrew Schoettle

has been examined and based on the information contained in said application the proposal conforms to the Zoning Regulations of the Town of Monroe, dated 7-31-00.
(Effective date of last amendment)

This provisional certificate expires one year from the date herein, or upon issuance of a permanent certificate of zoning compliance, whichever is first. Failure to obtain said permanent certificate prior to use shall constitute a violation of the Zoning Regulations of the Town of Monroe.

Dated at Monroe, Connecticut this 27th day of October, 2000

№ 10461

By: _____
(Zoning Enforcement Officer) (~~Planning Administrator~~)

Town of Monroe
conservation and
water resources
commission/inland
wetland
commission

TOWN HALL
7 Fan Hill Road
Monroe, Connecticut 06468
Phone (203) 452-5467
Fax (203) 261-6197

November 16, 2000

CERTIFIED MAIL RETURN RECEIPT REQUESTED **7009 3400 0007 9991 7695**

Sprint PCS
1 International Blvd
Suite 800
Mahwah, NJ 07495

CONDITIONAL APPROVAL
Inland Wetlands Permit No. 00-23

Applicant: Sprint PCS

Property Owner " "

Property Location: 474-480 Main Street Assessor's Map No. 45 Parcel No. 21A & 22B

Plans & Preparer: URS Corporation AES 500 Enterprise Drive, Rocky Hill CT

PERMIT APPROVED (date): October 25, 2000. All appropriate conditions must be satisfied prior to site disturbance. THIS APPROVAL IS NOT AN AUTHORIZATION TO START CONSTRUCTION.

PERMIT EXPIRES: October 25, 2005
Permit duration is five (5) years. Additional extensions must be requested prior to expiration. A renewal fee will be required. **THIS PERMIT CANNOT BE REINSTATED IF IT EXPIRES.**

THIS PERMIT IS NOT TRANSFERABLE UNLESS THE NEW OWNER PROVIDES THE COMMISSION WITH A SIGNED ACKNOWLEDGMENT THAT HE UNDERSTANDS AND ACCEPTS THE CONDITIONS OF APPROVAL.

Commission's findings and resolution: The following resolution was adopted by the Inland Wetlands Commission.

Be it resolved that Inland Wetland Permit Application No. 00-23 is hereby approved based upon the findings and subject to the modifications and conditions hereinafter set forth.

The Commission reviewed the application and the site plan and determined there will be no significant impact and the application does not warrant a public hearing. There was also no public interest demonstrated.

The Commission finds that the proposed activities are located entirely within the regulated setback and there will be no direct wetland disturbance.

MODIFICATIONS AND CONDITIONS:

1) The excavated trench shall be refilled, seeded and stabilized immediately after completion of the utility installation.
2) Access to the construction area will be by existing roads.

STANDARD CONDITIONS:

1) Regulated activities herein shall be implemented by the permittee in accordance with the timing, location, duration and intent proposed and approved by the Commission.
2) Notice of assignment or transfer of the permit must be given to the Commission immediately. Failure to do so may invalidate your permit.
3) Install sediment and erosion controls prior to soil disturbance and maintain them during construction and remove them prior to requesting final inspection.
4) Any changes in the approved plans must be approved by the Commission. This includes changes required by any other agency.
5) The posting of a cash or passbook savings account may be required at any time during construction by the Inland Wetlands Commission for erosion controls or any required wetland mitigation measures, in an amount to be determined by the Commission or its agent.
6) For the purpose of making site inspections of sediment and erosion controls, the permittee shall provide forty-eight (48) hours notice prior to site disturbance.
7) Anti tracking aprons shall be installed on all road and driveway exits with six (6) inches in depth of crushed stone spread to the traveled width, forty (40) feet long and underlain with construction fabric.
8) In the event an appeal is taken from this decision the applicant shall provide the Commission with three (3) sets of all plans, reports and documents in support of the application within thirty (30) days.
9) Heating oil tanks will not be buried anywhere on the property.

This application is approved with the above conditions and/or modifications. This decision and these conditions are consistent with the purposes of the wetland regulations which are designed to protect the citizens of Monroe by providing a balance between the need for growth, development and enjoyment of the Town's natural resources with the need to protect its' environment and ecological stability.

cc: Dean Gustafson, Applicants Agent

James P. White, Jr.
Chairman of the Commission

Town of Monroe
conservation and
water resources
commission/inland
wetland
commission

TOWN HALL
7 Fan Hill Road
Monroe, Connecticut 06468
Phone (203) 452-5467
Fax (203) 261-6197

July 11, 2000

URS Greiner Woodward Clyde
500 Enterprise Drive
Rocky Hill, CT 06067

RE: Sprint PCS Upper Stepney

Dear Mr. Clyde:

Based on my review of the site plan for Sprint PCS Upper Stepney dated June 29, 2000. An Inland Wetland permit will not be required for this project.

Please contact me if you have any questions.

Yours truly,

Richard Jacobson

Richard B. Jacobson
Wetland Consultant

gw
cc: Planning and Zoning

Rjclyde

474 MAIN ST

Location	474 MAIN ST	**Map/Lot**	045/ 022/ 0Z/ /
Acct#	0450220Z	**Owner**	SPRINT PCS
Assessment	$239,700	**Appraisal**	$342,400
PID	16240	**Building Count**	1
Survey	1676 B	**Affordable**	

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2014	$125,000	$217,400	$342,400
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2014	$87,500	$152,200	$239,700

Owner of Record

Owner	SPRINT PCS	**Sale Price**	$0
Co-Owner	GLOBAL SIGNAL ACQ II LLC	**Certificate**	1
Address	PMB 331 4017 WASHINGTON RD MCMURRAY, PA 15317	**Book & Page**	943/ 187
		Sale Date	04/27/2001

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
SPRINT PCS	$0	1	943/ 187	04/27/2001

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0

Building Attributes	
Field	**Description**
Style	Vacant Land
Model	

Stories:	
Occupancy	
Exterior Wall 1	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Rooms:	
Fireplaces	
Basement Gar.	
Basement	
In Law Apt	

Building Photo

(http://images.vgsi.com/photos/MonroeCTPhotos//\00\00\64/02.

Building Layout

(http://images.vgsi.com/photos/MonroeCTPhotos//Sketches/162

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	B1
Neighborhood	
Alt Land Approved	No
Category	

Land Line Valuation

Size (Acres)	0.06
Appraised Value	$217,400

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
TT4	TOWER MONOPOLE			1 UNITS	$125,000	1

Valuation History

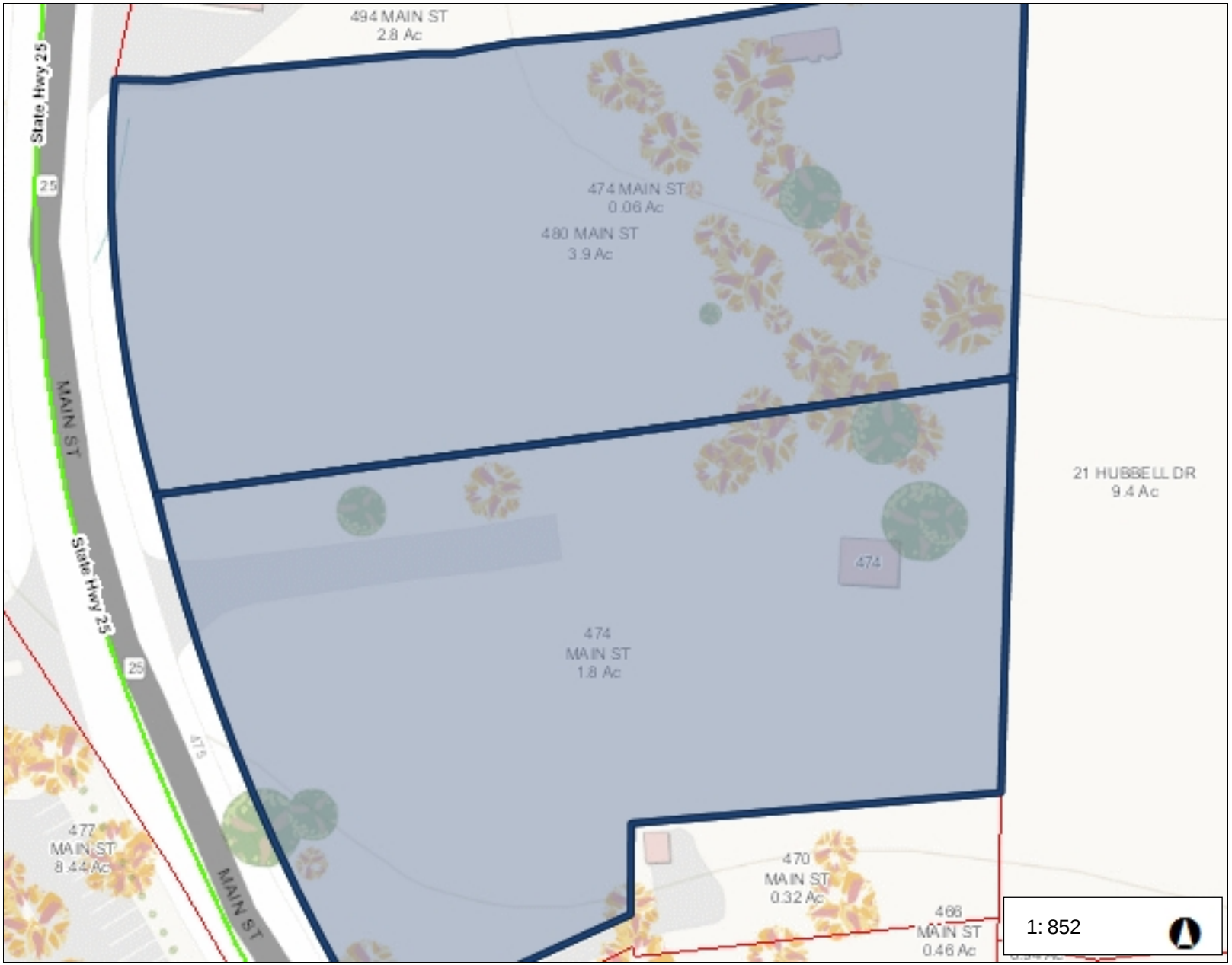
Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**

2017	$125,000	$217,400	$342,400
2015	$125,000	$217,400	$342,400

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$87,500	$152,200	$239,700
2015	$87,500	$152,200	$239,700

Town of Monroe

Map Title



Legend

- Parcels
- Streetname
- Roadways
  - Local
  - Collector
  - Minor Collector
  - Minor Arterial
  - Major Collector
  - PA Other
  - PA Other Expwy
  - PA Interstate

141.9 0 70.97 141.9 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere
Created by Greater Bridgeport Regional Council

METROCOG
Connecticut Metropolitan Council of Governments

SITE NAME: MONROE/ RT 59/ RT 25

474-480 MAIN STREET
MONROE, CT 06468
FAIRFIELD COUNTY

T-MOBILE SITE NUMBER: CT11264C

CROWN BU NUMBER: 876355

RF DESIGN GUIDELINE: 704G

CONTRACTOR TO NOTIFY CROWN CM PRIOR TO CONSTRUCTION START

T-MOBILE TECHNICIAN SITE SAFETY NOTES

LOCATION	SPECIAL RESTRICTIONS
SECTOR A: ANTENNA/TMA/RRH	ACCESS NOT PERMITTED
SECTOR B: ANTENNA/TMA/RRH	ACCESS NOT PERMITTED
SECTOR C: ANTENNA/TMA/RRH	ACCESS NOT PERMITTED
GPS/LMU:	UNRESTRICTED CAUTION: OSHA-APPROVED PORTABLE 8' STEP-LADDER REQUIRED
RADIO CABINETS:	UNRESTRICTED
PPC DISCONNECT:	UNRESTRICTED
MAIN CIRCUIT D/C:	UNRESTRICTED
NIU/T DEMARC:	UNRESTRICTED
OTHER/SPECIAL:	NONE

GENERAL NOTES

THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.

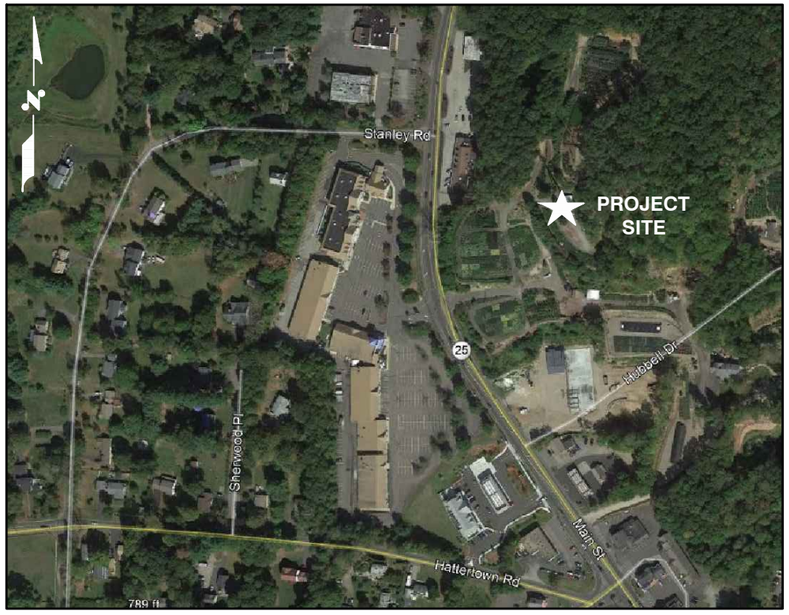
CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE T-MOBILE NORTHEAST, LLC REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SPECIAL STRUCTURAL NOTES

CONTRACTOR SCOPE OF WORK SHALL INCLUDE ALL REQUIRED STRUCTURAL MODIFICATIONS, RE-BUNDLING OF COAXIAL CABLES OR OTHER SPECIAL MODIFICATIONS AS OUTLINED THEREIN.

STRUCTURAL DESIGNS AND DETAILS FOR ANTENNA MOUNTS AND GLOBAL STRUCTURAL STABILITY ANALYSIS COMPLETED ON BEHALF OF T-MOBILE ARE INCLUSIVE OF THE ENTIRE SUPPORT STRUCTURE, EXISTING ANTENNA MOUNTS AND ALL OTHER ASPECTS OF THE STRUCTURE THAT WILL SUPPORT THE T-MOBILE L700 EQUIPMENT DEPLOYMENT AS DEPICTED HEREIN.

HUDSON DESIGN ASSUMES THAT THE EQUIPMENT IS PROPERLY CONSTRUCTED AND MAINTAINED. ALL STRUCTURAL MEMBERS AND THEIR CONNECTION ARE ASSUMED TO BE IN GOOD CONDITION AND ARE FREE FROM DEFECTS WITH NO DETERIORATION TO ITS MEMBER CAPACITIES



PROJECT SUMMARY

SCOPE OF WORK:	UNMANNED TELECOMMUNICATIONS FACILITY T-MOBILE EQUIPMENT MODERNIZATION
ZONING JURISDICTION: (TOWN OF MONROE)	BASED ON INFORMATION PROVIDED BY T-MOBILE, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS AN ELIGIBLE FACILITY UNDER THE TAX RELIEF ACT OF 2012, 47 USC 1455(A), AND IS SUBJECT TO AN EXPEDITED ELIGIBLE FACILITIES REQUEST/REVIEW AND ZONING PRE-EMPTION FOR LOCAL DISCRETIONARY PERMITS (VARIANCE, SPECIAL PERMIT, SITE PLAN REVIEW).
SITE ADDRESS:	474-480 MAIN STREET MONROE, CT 06468
LATITUDE:	41° 19' 31.99" N
LONGITUDE:	73° 15' 57.05" W
JURISDICTION:	FAIRFIELD COUNTY
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY
CROWN CASTLE CM:	**CHRIS MILLER (585) 739-1780**
CROWN CASTLE SITE NAME:	**UPPER STEPNEY-TLC**
CROWN CASTLE SITE ID:	**876355**

APPROVALS

PROJECT MANAGER	DATE
CONSTRUCTION	DATE
RF ENGINEERING	DATE
ZONING / SITE ACQ.	DATE
OPERATIONS	DATE
TOWER OWNER	DATE

72 HOURS

CALL
BEFORE YOU DIG
CALL TOLL FREE 1-800-922-4455
OR CALL 811

UNDERGROUND SERVICE ALERT

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	0
GN-1	GENERAL NOTES	0
A-1	COMPOUND & EQUIPMENT PLANS	0
A-2	ANTENNA LAYOUTS & ELEVATION	0
A-3	ANTENNA DETAILS	0
A-4	EQUIPMENT DETAILS	0
A-5	ANTENNA AND COAX SCHEDULE & PLUMBING DIAGRAM	0
E-1	ONE-LINE DIAGRAM AND GROUNDING DETAILS	0

T-MOBILE NORTHEAST LLC
103 MONARCH DRIVE
LIVERPOOL, NY 13088
(315) 265-1882

CROWN CASTLE
12 GILL STREET, SUITE 5800
WOBURN, MA 01801

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

STATE OF CONNECTICUT
DEREK J. CREASER
No. 28355
LICENSED PROFESSIONAL ENGINEER

CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN

CHECKED BY: BB

APPROVED BY: DJC

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	03/28/18	ISSUED FOR CONSTRUCTION	GA

SITE NUMBER:
CT11264C
CROWN CASTLE SITE ID:
876355
SITE NAME:
MONROE/ RT 59/ RT 25
SITE ADDRESS:
474-480 MAIN STREET
MONROE, CT 06468
FAIRFIELD COUNTY

SHEET TITLE
TITLE SHEET
(L700)

SHEET NUMBER
T-1

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

2. 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.

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

4. 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.

5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.

6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

   CONTRACTOR – CROWN CASTLE INTERNATIONAL
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – T-MOBILE

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR 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 CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR 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.

4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

11. SUBCONTRACTOR 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.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

16. CONSTRUCTION SHALL COMPLY WITH L700 SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF T-MOBILE SITES."

17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

20. APPLICABLE BUILDING CODES:
    SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
    BUILDING CODE: IBC 2012 WITH 2016 CT STATE BUILDING CODE AMENDMENTS
    ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS

    SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

    AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;

    AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

    MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;

    TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G, STRUCTURAL STANDARDS FOR STEEL

    EQUIPMENT AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BTCW	BARE TINNED SOLID COPPER WIRE	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BGR	BURIED GROUND RING	MIN	MINIMUM	TBRR	TO BE REMOVED AND REPLACED
BTS	BASE TRANSCEIVER STATION	P	PROPOSED	TYP	TYPICAL
E	EXISTING	NTS	NOT TO SCALE	UG	UNDER GROUND
EGB	EQUIPMENT GROUND BAR	RAD	RADIATION CENTER LINE (ANTENNA)	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		

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STATE OF CONNECTICUT
DEREK J. CREASER
No. 28351
LICENSED PROFESSIONAL ENGINEER

CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN

CHECKED BY: BB

APPROVED BY: DJC

SUBMITTALS

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SITE NUMBER:
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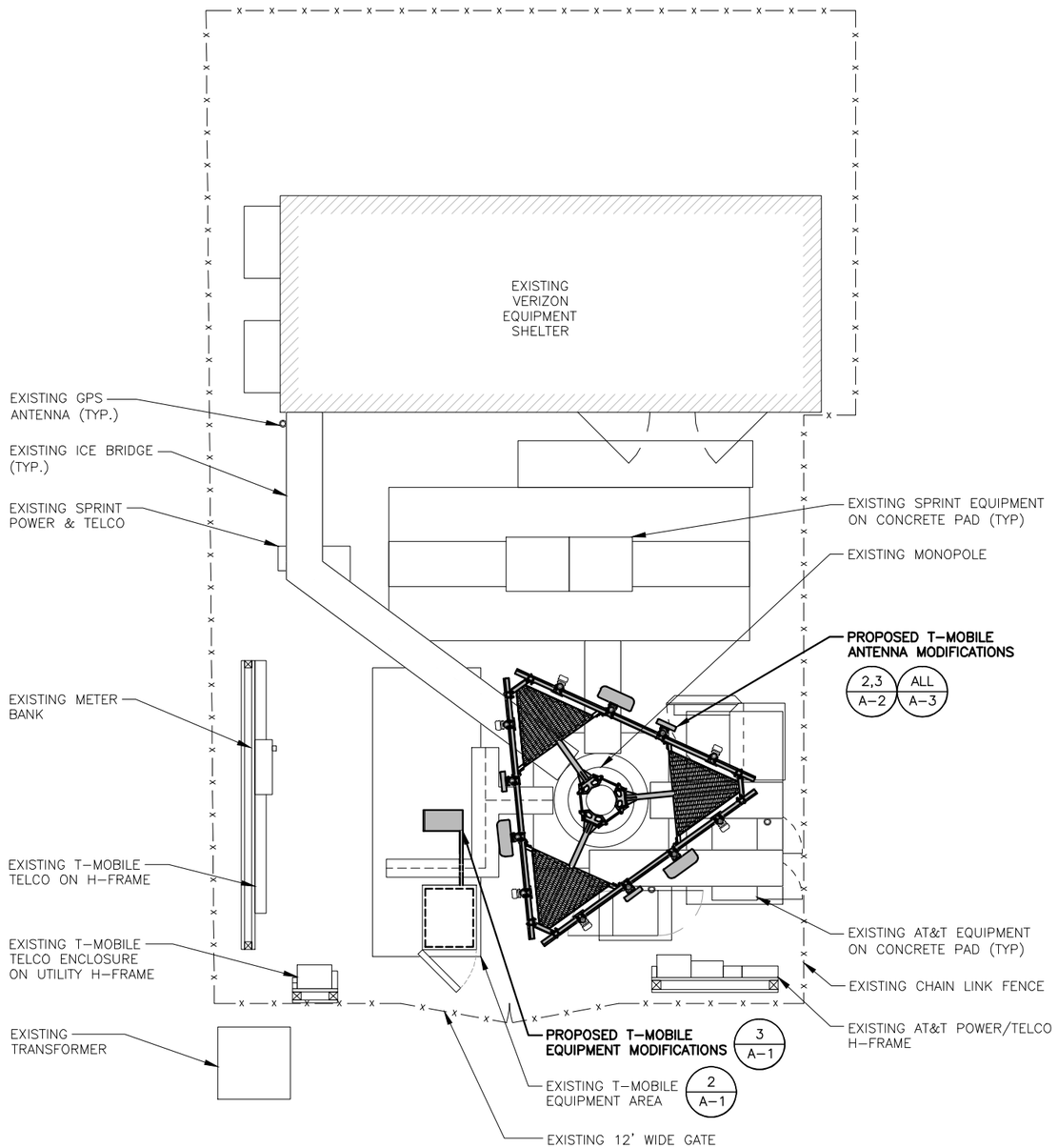
CROWN CASTLE SITE ID:
876355
SITE NAME:
MONROE/ RT 59/ RT 25
SITE ADDRESS:
474-480 MAIN STREET
MONROE, CT 06468
FAIRFIELD COUNTY

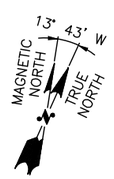
SHEET TITLE
GENERAL NOTES
(L700)

SHEET NUMBER
GN-1

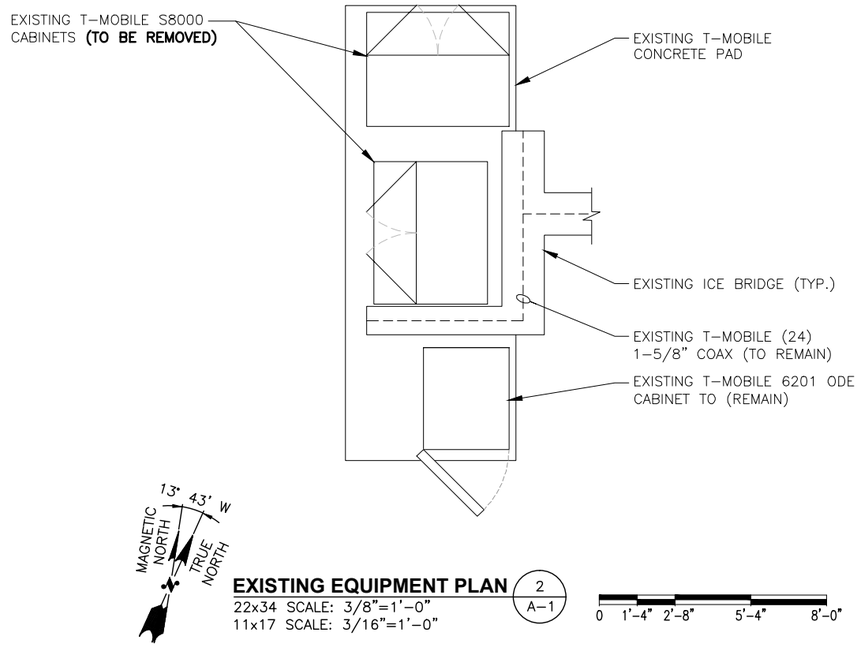
STRUCTURAL NOTES:
PRIOR TO COMMENCING CONSTRUCTION, GC SHALL REFER TO STRUCTURAL ANALYSIS PROVIDED BY JACOBS ENGINEERING GROUP, INC. DATED 12/27/17 TO DETERMINE IF THERE ANY SUPPLEMENTAL OR SPECIAL INSTALLATION REQUIREMENTS, OR RELOCATION ARRANGEMENTS.

NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

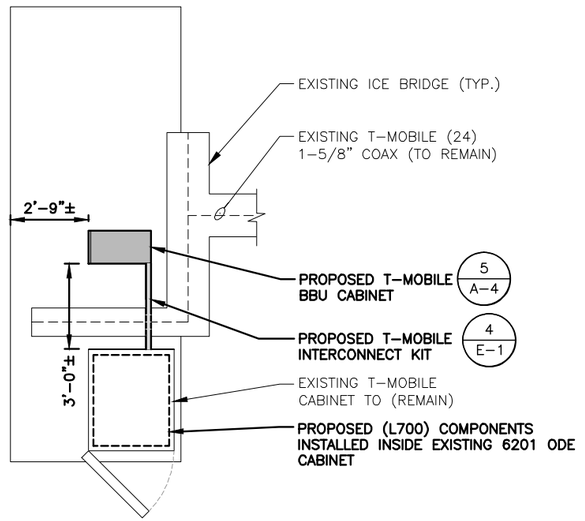




COMPOUND PLAN 1 / A-1
22x34 SCALE: 1/4"=1'-0"
11x17 SCALE: 1/8"=1'-0"
0 2'-0" 4'-0" 8'-0" 12'-0"



EXISTING EQUIPMENT PLAN 2 / A-1
22x34 SCALE: 3/8"=1'-0"
11x17 SCALE: 3/16"=1'-0"
0 1'-4" 2'-8" 5'-4" 8'-0"



PROPOSED EQUIPMENT PLAN 3 / A-1
22x34 SCALE: 3/8"=1'-0"
11x17 SCALE: 3/16"=1'-0"
0 1'-4" 2'-8" 5'-4" 8'-0"

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SHEET TITLE
COMPOUND & EQUIPMENT PLAN
(L700)

SHEET NUMBER
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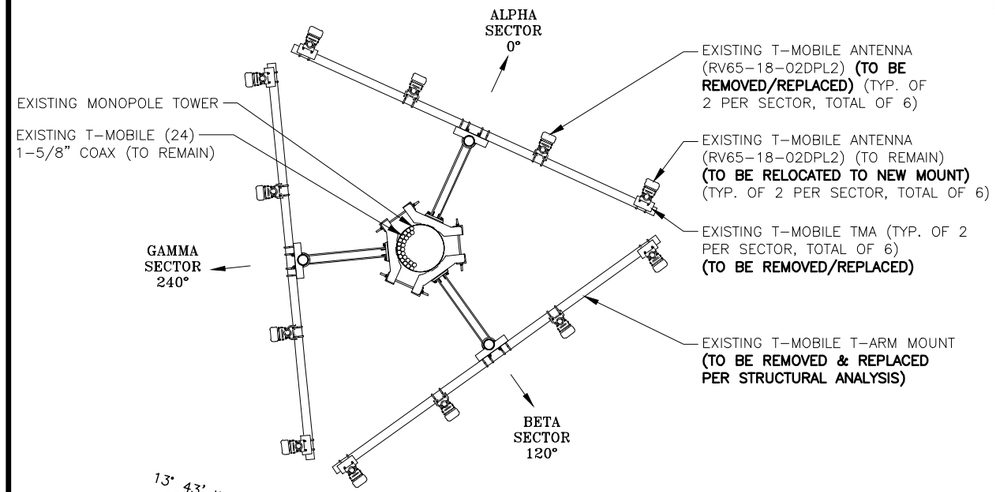
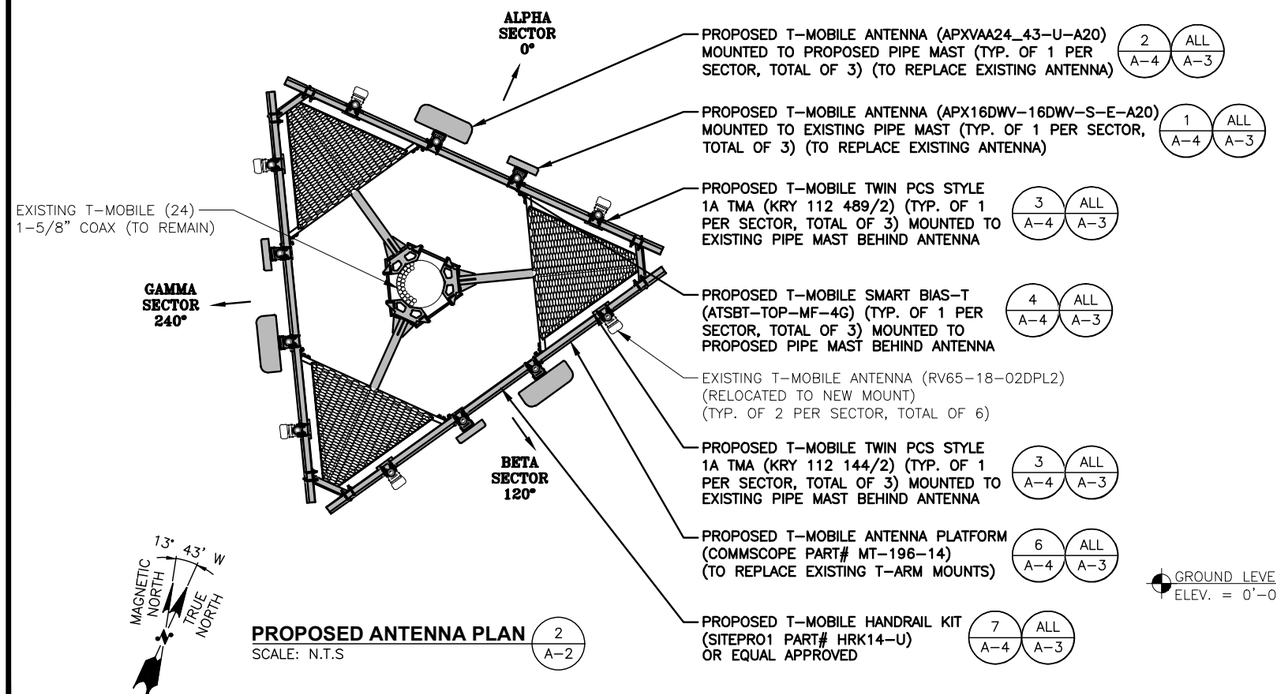
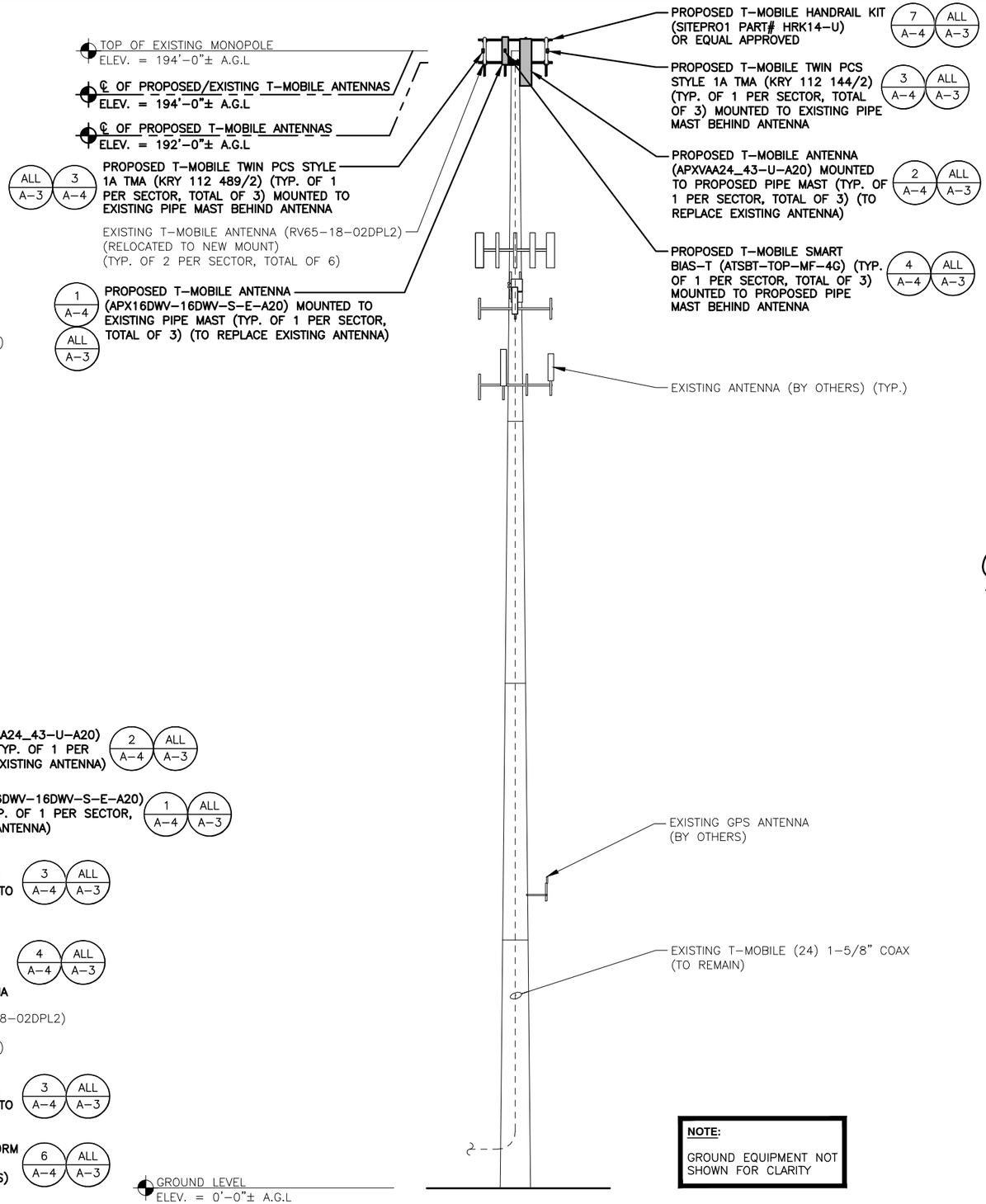


EXISTING ANTENNA PLAN (1 / A-2)
SCALE: N.T.S



PROPOSED ANTENNA PLAN (2 / A-2)
SCALE: N.T.S



ELEVATION (3 / A-2)
22x34 SCALE: 3/32"=1'-0"
11x17 SCALE: 3/64"=1'-0"

0 5'-4" 10'-8" 21'-4" 32'-0"

NOTE:
GROUND EQUIPMENT NOT SHOWN FOR CLARITY

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FAIRFIELD COUNTY

SHEET TITLE
ANTENNA LAYOUTS & ELEVATION
(L700)

SHEET NUMBER
A-2

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NOTE:
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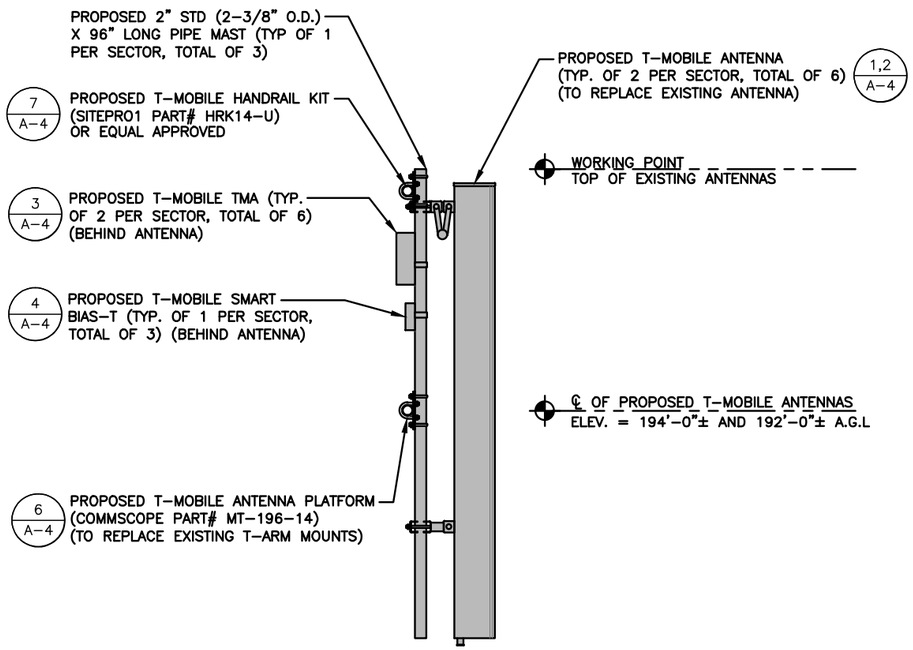
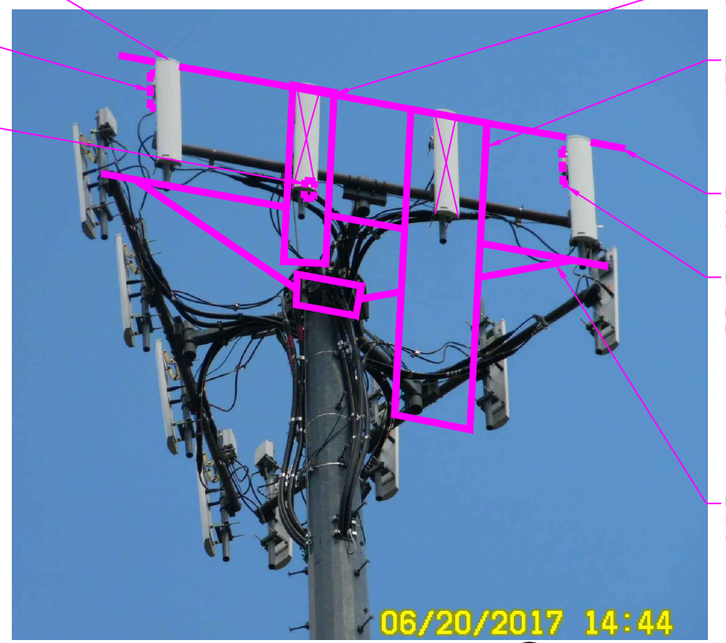


ANTENNA MOUNTING DETAIL 1 A-3
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"

0 8" 1'-4" 2'-8" 4'-0"



T-MOBILE ELEVATION PHOTO DETAIL 2 A-3
SCALE: N.T.S

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FAIRFIELD COUNTY

SHEET TITLE
ANTENNA DETAILS
(L700)

SHEET NUMBER
A-3

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NOTE:
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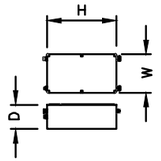
TMA DIMENSIONS	
MODEL #	KRY 112 489/2
MANUF.	ERICSSON
HEIGHT	11"
WIDTH	6.1"
DEPTH	3.9"
WEIGHT	15.4 LBS

TMA DIMENSIONS	
MODEL #	KRY 112 144/2
MANUF.	ERICSSON
HEIGHT	8.65"
WIDTH	6.65"
DEPTH	3.19"
WEIGHT	9.70 LBS

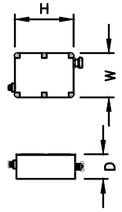
L19/G19 ANTENNA DIMENSIONS	
MODEL #	APX16DWV-16DWV-S-E-A20
MANUF.	RFS/CELWAVE
HEIGHT	55.9"
WIDTH	13.3"
DEPTH	3.15"
WEIGHT	40.7 LBS

L700 ANTENNA DIMENSIONS	
MODEL #	APXVAA24_43-U-A20
MANUF.	RFS/CELWAVE
HEIGHT	96"
WIDTH	24"
DEPTH	8.5"
WEIGHT	101.4 LBS

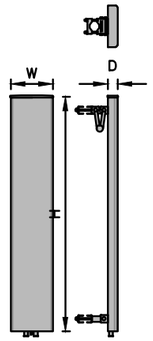


TWIN TMA (3 / A-4)
SCALE: N.T.S

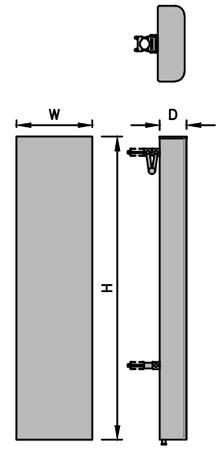
SMART BIAS TEE DIMENSIONS	
MODEL #	ATSBT-TOP-MF-4G
MANUF.	COMMSCOPE
HEIGHT	5.63"
WIDTH	3.7"
DEPTH	2"
WEIGHT	1.8 LBS



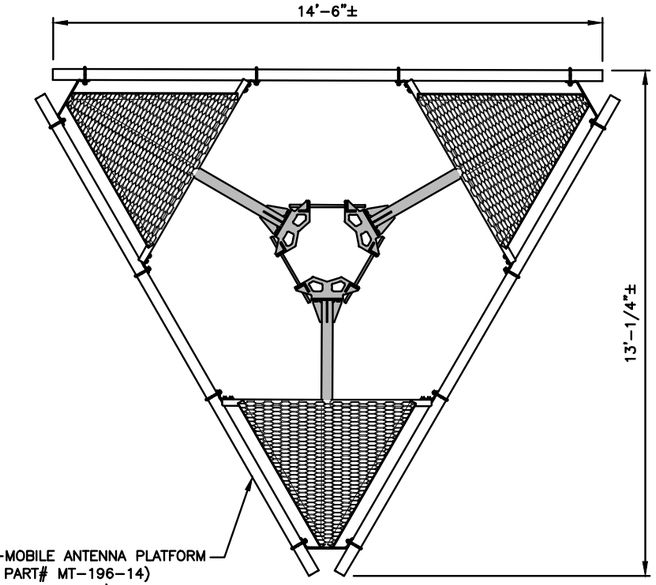
SMART BIAS-TEE (4 / A-4)
SCALE: N.T.S



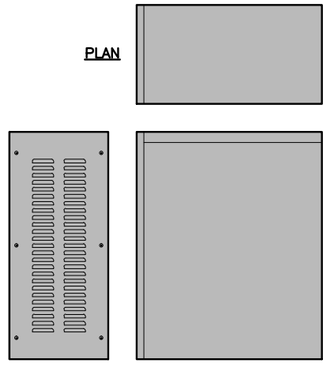
L19/G19 ANTENNA DETAIL (1 / A-4)
SCALE: N.T.S



L700 ANTENNA DETAIL (2 / A-4)
SCALE: N.T.S

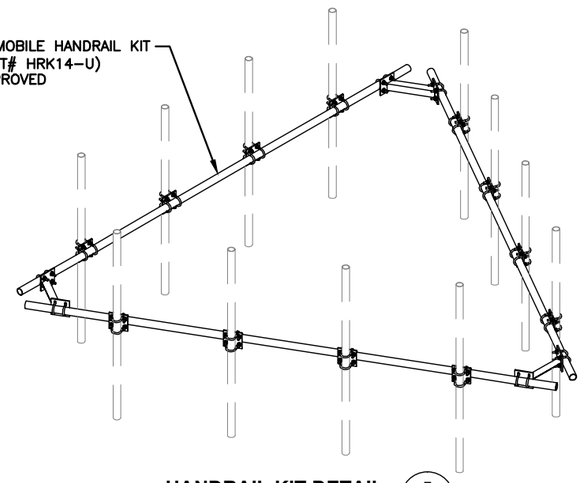


LOW PROFILE PLATFORM DETAIL (6 / A-4)
SCALE: N.T.S



BBU DIMENSIONS	
MODEL #	PTS8003
MANUF.	PTS
WIDTH	14.0"
DEPTH	26.3"
HEIGHT	32.3"
WEIGHT W/O BATTERIES	60 LBS
MOUNT BASE WITH (4) 1/2" DROP IN ANCHORS WITH 2" MINIMUM EMBEDMENT (INSTALL PER MANUFACTURER'S INSTALLATION GUIDELINES)	

BATTERY BACKUP UNIT CABINET (BBU) (5 / A-4)
SCALE: N.T.S



HANDRAIL KIT DETAIL (7 / A-4)
SCALE: N.T.S

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SHEET TITLE
EQUIPMENT DETAILS
(L700)

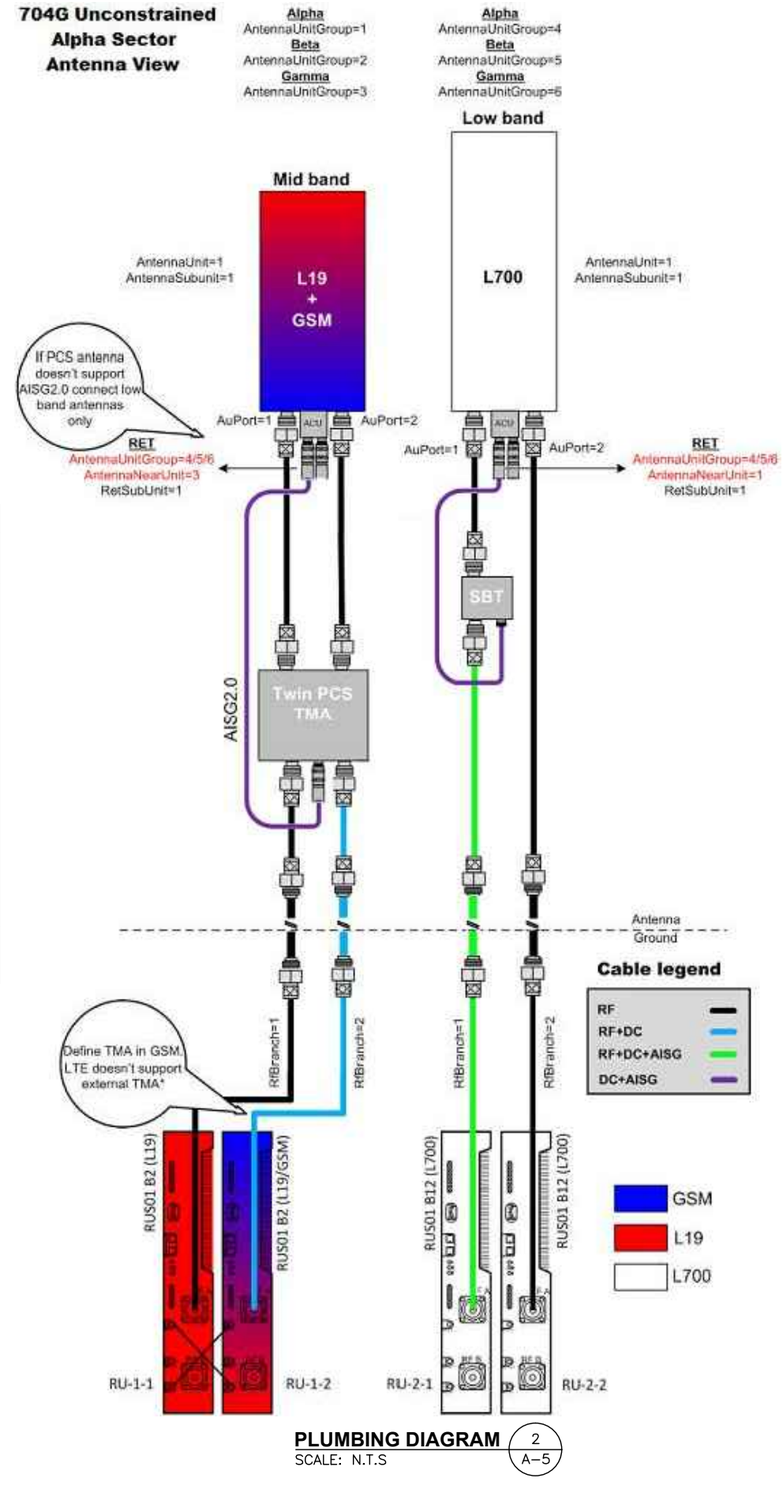
SHEET NUMBER
A-4

PROPOSED ANTENNA AND COAXIAL CABLE SCHEDULE

SECTOR MARK	ANTENNA MODEL	AZIMUTH	E-TILT	M-TILT	ANTENNA CENTERLINE	SECTOR	TMA/SBiasT/RRU	TX/RX	CABLE FEED LINES	JUMPER TYPE	CABLE LENGTH
A–1 L19/G19	RFS/CELWAVE APX16DWV–16DWV–S–E–A20 (55.9x13.3x3.15)	0°	0	0	194'	RIGHT ALPHA	0/1/0	TX–RX–1 TX–RX–2	(2) (E) 1–5/8" COAX	–	260'±
A–2 L700	RFS/CELWAVE APXVAA24_43–U–A20 (96x24x8.5)	0°	0	0	192'	LEFT ALPHA	0/0/0	TX–RX–1 TX–RX–2	(2) (E) 1–5/8" COAX	–	260'±
B–1 L19/G19	RFS/CELWAVE APX16DWV–16DWV–S–E–A20 (55.9X13.3X3.15)	120°	0	0	194'	RIGHT BETA	0/1/0	TX–RX–1 TX–RX–2	(2) (E) 1–5/8" COAX	–	260'±
B–2 L700	RFS/CELWAVE APXVAA24_43–U–A20 (96X24X8.5)	120°	0	0	192'	LEFT BETA	0/0/0	TX–RX–1 TX–RX–2	(2) (E) 1–5/8" COAX	–	260'±
C–1 L19/G19	RFS/CELWAVE APX16DWV–16DWV–S–E–A20 (55.9X13.3X3.15)	240°	0	0	194'	RIGHT GAMMA	0/1/0	TX–RX–1 TX–RX–2	(2) (E) 1–5/8" COAX	–	260'±
C–2 L700	RFS/CELWAVE APXVAA24_43–U–A20 (96X24X8.5)	240°	0	0	192'	LEFT GAMMA	0/0/0	TX–RX–1 TX–RX–2	(2) (E) 1–5/8" COAX	–	260'±

NOTES:
INFORMATION BASED ON CCI APP. REVISION #0 DATED 11/30/2017. CHECK WITH RF ENGINEER FOR LATEST RFDS.

PROPOSED ANTENNA AND COAXIAL CABLE SCHEDULE (1 / A–5)
SCALE: N.T.S



PLUMBING DIAGRAM (2 / A–5)
SCALE: N.T.S

T-MOBILE NORTHEAST LLC
103 MONARCH DRIVE
LIVERPOOL, NY 13088
(315) 265-1882

CROWN CASTLE
CROWN CASTLE
12 GILL STREET, SUITE 5800
WOBURN, MA 01801

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

STATE OF CONNECTICUT
DEREK J. CREASER
No. 28351
LICENSED PROFESSIONAL ENGINEER

CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN

CHECKED BY: BB

APPROVED BY: DJC

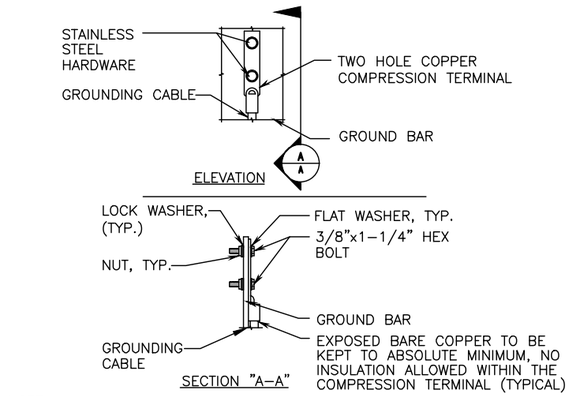
SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	03/28/18	ISSUED FOR CONSTRUCTION	GA

SITE NUMBER:
CT11264C
CROWN CASTLE SITE ID:
876355
SITE NAME:
MONROE/ RT 59/ RT 25
SITE ADDRESS:
474–480 MAIN STREET
MONROE, CT 06468
FAIRFIELD COUNTY

SHEET TITLE
ANTENNA AND COAX SCHEDULE & PLUMBING DIAGRAM (L700)

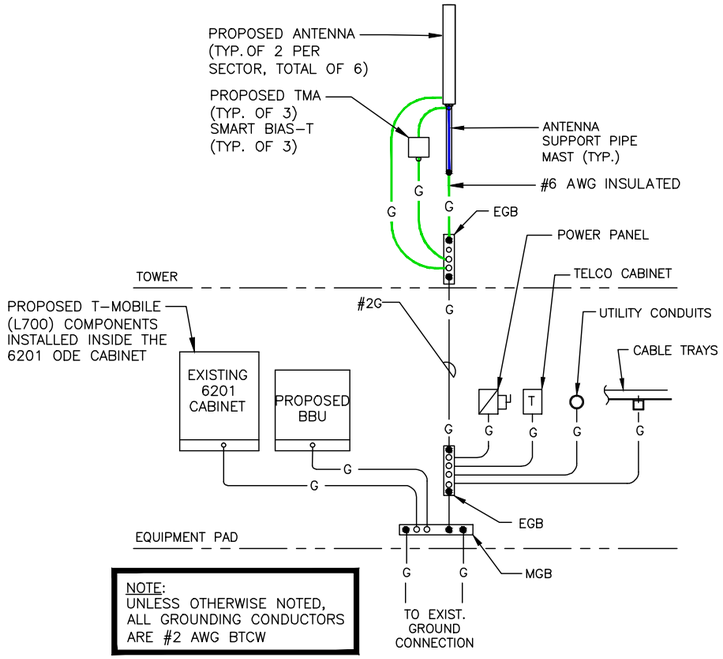
SHEET NUMBER
A-5



NOTE:
1. "DOUBLING UP" OR "STACKING " OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER AGB/EGB, LOWER EGB, AND MGB.

TYPICAL GROUND BAR CONNECTION DETAIL (1 / E-1)

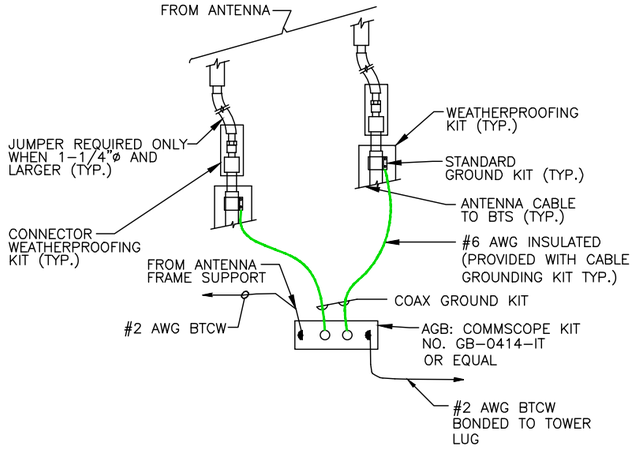
SCALE: N.T.S



NOTE:
UNLESS OTHERWISE NOTED, ALL GROUNDING CONDUCTORS ARE #2 AWG BTCW

GROUNDING RISER DIAGRAM (2 / E-1)

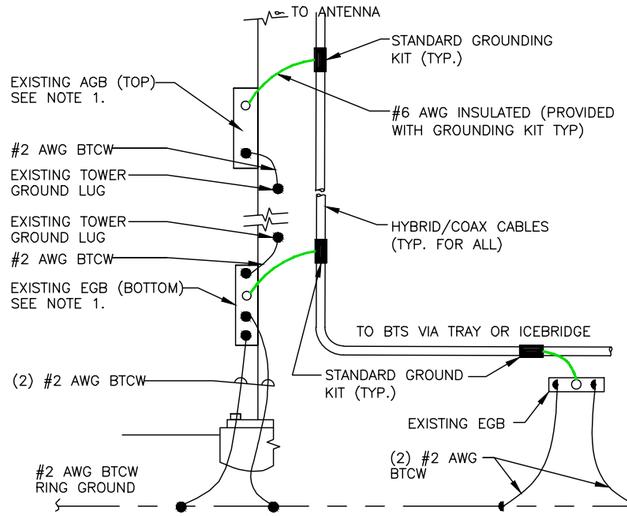
SCALE: N.T.S



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

TOWER TOP CABLE GROUNDING DETAIL (3 / E-1)

SCALE: N.T.S

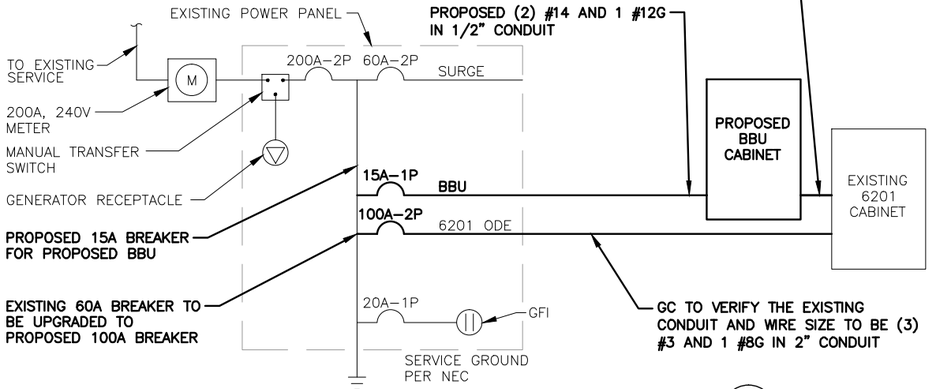


NOTE:
1. NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER. ANTENNA LOCATION AND CONNECTION ORIENTATION. PROVIDE ADDITIONAL AGB/EGB AS REQUIRED.
2. A SEPARATE GROUND BAR TO BE USED FOR GPS ANTENNA IF REQUIRED.

TOWER BOTTOM CABLE GROUNDING DETAIL (5 / E-1)

SCALE: N.T.S

NOTE:
G.C. TO VERIFY THAT THE EXISTING CONDUITS AND WIRE SIZES ARE ADEQUATE FOR THE PROPOSED LOADING AND INCLUDE ELECTRICAL UPGRADES IN THE SCOPE OF WORK AS REQUIRED.



ONE LINE POWER DIAGRAM (4 / E-1)

SCALE: N.T.S

NOTE:
EXISTING T-MOBILE ELECTRICAL PANEL NOT ACCESSIBLE, CONDITIONS SHOWN ABOVE ARE ASSUMED AND ANY DISCREPANCIES SHOULD BE RELAYED TO ENGINEER.

ELECTRICAL LEGEND

A	AMPERE
V	VOLT
KWH	KILOWATT - HOUR
C	CONDUIT
GRC	GALVANIZED RIGID CONDUIT
BTCW	BARE TINNED (SOLID) COPPER WIRE (#2 AWG, UNLESS NOTES OTHERWISE)
G	GROUND
	GROUND
MGB	MASTER GROUND BAR; ○ MECHANICAL CONNECTION; ◖ CADWELD CONNECTION
AGB/EGB	EQUIPMENT GROUND BAR/ANTENNA GROUND BAR
G	GROUND COPPER WIRE, SIZE AS NOTED
	EXPOSED WIRING
	INSULATED GROUNDING CONDUCTOR(#6 AWG STRANDED, UNLESS NOTED OTHERWISE)
	5/8"x8' COPPER CLAD STAINLESS STEEL GROUND ROD
	◖ EXOTHERMIC (CAD WELD) OR ○ MECHANICAL (COMPRESSION TYPE) CONNECTION
PPC	POWER PROTECTION CABINET
	OMNI-DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALL

ELECTRICAL & GROUNDING NOTES

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

T-MOBILE NORTHEAST LLC
103 MONARCH DRIVE
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(315) 265-1882

CROWN CASTLE
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STATE OF CONNECTICUT
DEREK J. CREASER
No. 28351
LICENSED PROFESSIONAL ENGINEER

CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN

CHECKED BY: BB

APPROVED BY: DJC

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	03/28/18	ISSUED FOR CONSTRUCTION	GA

SITE NUMBER:
CT11264C
CROWN CASTLE SITE ID:
876355
SITE NAME:
MONROE/ RT 59/ RT 25
SITE ADDRESS:
474-480 MAIN STREET
MONROE, CT 06468
FAIRFIELD COUNTY

SHEET TITLE
ONE-LINE DIAGRAM & GROUNDING DETAILS
(L700)

SHEET NUMBER
E-1

Date: **December 27, 2017**

Charles McGuirt
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277

JACOBS
Jacobs Engineering Group, Inc.
5449 Bells Ferry Road
Acworth, GA 30102
(770)701-2500

Subject: **Structural Analysis Report**

Carrier Designation: ***T-Mobile* Co-Locate**
Carrier Site Number: CT11264C
Carrier Site Name: Monroe/ Rt 59/ Rt 25

Crown Castle Designation:
Crown Castle BU Number: 876355
Crown Castle Site Name: UPPER STEPNEY - TLC
Crown Castle JDE Job Number: 474072
Crown Castle Work Order Number: 1503489
Crown Castle Application Number: 418243 Rev. 0

Engineering Firm Designation: **Jacobs Engineering Group, Inc. Project Number:** 1503489

Site Data: **474-480 Main St., MONROE, Fairfield County, CT**
Latitude *41° 19' 31.99"*, Longitude *-73° 15' 57.05"*
191.5 Foot - Monopole Tower

Dear Charles McGuirt,

Jacobs Engineering Group, Inc. is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 1121179, in accordance with application 418243, revision 0.

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:

LC7: Existing + Reserved + Proposed Equipment **Sufficient Capacity**
Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 120 mph converted to a nominal 3-second gust wind speed of 93 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category B with a maximum topographic factor, Kzt, of 1.000 and Risk Category II were used in this analysis.

All modifications and equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

We at *Jacobs Engineering Group, Inc.* appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects, please give us a call.

Structural analysis prepared by:

Nikhil Sharma
Structural Engineer

Reviewed by:

Paul L. Mucci, PE
Senior Project Engineer

STATE OF CONNECTICUT
PAUL L MUCCI
24103
LICENSED PROFESSIONAL ENGINEER
2017-12-29T08:52:16-05:00

tnxTower Report - version 7.0.7.0

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 191.5 ft Monopole tower designed by Engineered Endeavors, Inc. in October of 2000. The tower was originally designed for a wind speed of 90 mph per TIA/EIA-222-F.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA-222-G Structural Standard for Antenna Supporting Structures and Antennas using a 3-second gust wind speed of 93 mph with no ice, 50 mph with 0.75-inch ice thickness and 60 mph under service loads, exposure category B with topographic category 1.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
192.0	194.0	3	commscope	ATSBT-TOP-MF-4G	-	-	-
		3	rfs celwave	APX16DWV-16DWV-S-E-A20			
	192.0	3	ericsson	KRY 112 144/2			
		3	ericsson	KRY 112 489/2			
		3	rfs celwave	APXVAA24_43-U-A20			
		1	commscope	MT-196-14			
		1	commscope	MT-195-14 Handrail Kit			

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
192.0	194.0	6	ems wireless	RV65-18-02DPL2	24	1-5/8	1
		6	ems wireless	RV65-18-02DPL2 w/ Mount Pipe	-	-	3
		6	ericsson	KRY 112 144/1			
	192.0	1	tower mounts (crown)	T-Arm Mount [TA 602-3]			
160.0	160.0	3	alcatel lucent	RRH2x60-700	1	1-5/8	2
		6	commscope	JAHH-65B-R3B w/ Mount Pipe			
		1	rfs celwave	DB-B1-6C-8AB-0Z			
		3	alcatel lucent	AWS4 (B66) 4x45 RRH	13	1-5/8	1
		2	antel	BXA-171063-12BF w/ Mount Pipe			
		1	antel	BXA-171063-8BF-2 w/ Mount Pipe			
		4	antel	LPA-80063/6CF w/ Mount Pipe			
		2	antel	LPA-80080/4CF w/ Mount Pipe			
		1	rfs celwave	DB-B1-6C-8AB-0Z			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
		1	tower mounts (crown)	Platform Mount [LP 303-1]			
154.0	154.0	3	alcatel lucent	PCS 1900MHz 4x45W-65MHz	-	-	1
		1	tower mounts (crown)	Side Arm Mount [SO 102-3]			
		3	alcatel lucent	800 EXTERNAL NOTCH FILTER			
		3	alcatel lucent	800MHZ 2X50W RRH			
150.0	154.0	3	alcatel lucent	TD-RRH8x20-25	1	1-1/4	2
	152.0	1	rfs celwave	APXVTM14-C-120 w/ Mount Pipe			
		3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe	3	1-1/4	1
	150.0	9	rfs celwave	ACU-A20-N			
		1	tower mounts (crown)	Platform Mount [LP 712-1]			
137.0	140.0	3	ericsson	RRUS-11	1 2 6	3/8 5/8 1-1/4	1
		3	powerwave technologies	7770.00 w/ Mount Pipe			
		3	powerwave technologies	P65-16-XLH-RR w/ Mount Pipe			
		1	raycap	DC6-48-60-18-8F			
		6	powerwave technologies	LGP21401			
	137.0	1	tower mounts (crown)	Platform Mount [LP 303-1]			
50.0	52.0	1	kathrein	OG-860/1920/GPS-A	1	1/2	1
	50.0	1	tower mounts (crown)	Side Arm Mount [SO 701-1]			

Notes:
1) Existing Equipment
2) Reserved Equipment
3) Equipment to Be Removed; Not considered in this analysis

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
191.5	191.5	12	dapa	48000	-	-
181.5	181.5	12	dapa	48000	-	-
171.5	171.5	12	dapa	48000	-	-
161.5	161.5	12	dapa	48000	-	-
150.0	150.0	12	dapa	48000	-	-
140.0	140.0	12	dapa	48000	-	-

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
50.0	50.0	1	generic	GPS Antenna	-	-

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Clarence Welti Associates, Inc.	1531885	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Engineered Endeavors, Inc.	1631625	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Engineered Endeavors, Inc.	1631582	CCISITES

3.1) Analysis Method

tnxTower (version 7.0.7.0), 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.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) 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. Jacobs Engineering Group, Inc. should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	191.5 - 172.46	Pole	TP20.46x15.5x0.188	1	-3.222	852.683	27.3	Pass
L2	172.46 - 127.753	Pole	TP31.6x19.282x0.313	2	-17.008	2220.140	47.3	Pass
L3	127.753 - 83.0833	Pole	TP42.19x29.815x0.438	3	-28.691	4156.060	46.4	Pass
L4	83.0833 - 40.4567	Pole	TP52.59x39.847x0.5	4	-38.689	5432.330	43.2	Pass
L5	40.4567 - 0	Pole	TP62x49.727x0.5	5	-66.977	6834.140	46.1	Pass
							Summary	
						Pole (L2)	47.3	Pass
						RATING =	47.3	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	44.2	Pass
1	Base Plate	0	55.5	Pass
1	Base Foundation (Structural)	0	57.5	Pass
1	Base Foundation (Soil Interaction)	0	48.5	Pass

Structure Rating (max from all components) =	57.5%

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

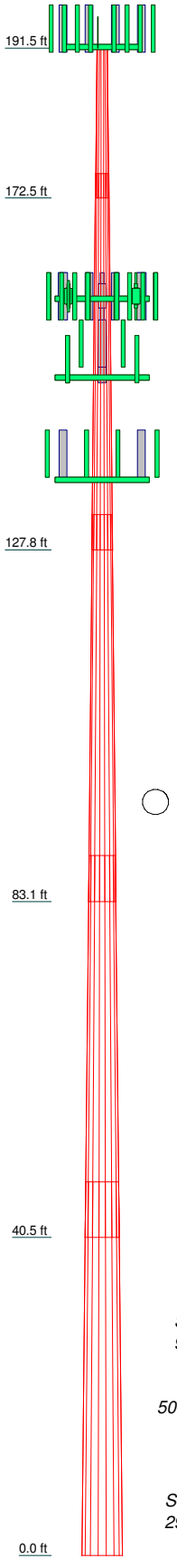
4.1) Recommendations

The tower and its base 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	19.040	18	0.188	3.083	15.500	20.460		0.7
2	47.790	18	0.313	4.500	19.282	31.600		4.1
3	49.170	18	0.438	5.833	29.815	42.190		8.3
4	48.460	18	0.500	7.083	39.847	52.590		12.0
5	47.540	18	0.500		49.727	62.000		14.2
							A572-65	39.2



ALL REACTIONS ARE FACTORED

AXIAL 103 K

SHEAR 9 K — *MOMENT 1253 kip-ft*

TORQUE 0 kip-ft

50 mph WIND - 0.750 in ICE

AXIAL 67 K

SHEAR 29 K — *MOMENT 3898 kip-ft*

TORQUE 0 kip-ft

REACTIONS - 93 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(2) RV65-18-02DPL2	192	800 EXTERNAL NOTCH FILTER	154
(2) RV65-18-02DPL2	192	800 EXTERNAL NOTCH FILTER	154
(2) RV65-18-02DPL2	192	800 EXTERNAL NOTCH FILTER	154
APX16DWV-16DWV-S-E-A20	192	800MHZ 2X50W RRH	154
APX16DWV-16DWV-S-E-A20	192	800MHZ 2X50W RRH	154
APX16DWV-16DWV-S-E-A20	192	800MHZ 2X50W RRH	154
APXVAA24_43-U-A20	192	Side Arm Mount [SO 102-3]	154
APXVAA24_43-U-A20	192	APXVSPP18-C-A20 w/ Mount Pipe	150
APXVAA24_43-U-A20	192	APXVSPP18-C-A20 w/ Mount Pipe	150
(2) KRY 112 489/2	192	APXVSPP18-C-A20 w/ Mount Pipe	150
KRY 112 489/2	192	APXVTM14-C-120 w/ Mount Pipe	150
ATSBT-TOP-MF-4G	192	TD-RRH8x20-25	150
ATSBT-TOP-MF-4G	192	TD-RRH8x20-25	150
ATSBT-TOP-MF-4G	192	TD-RRH8x20-25	150
KRY 112 144/2	192	(3) ACU-A20-N	150
(2) KRY 112 144/2	192	(3) ACU-A20-N	150
Platform Mount [LP 302-1]	192	(3) ACU-A20-N	150
Lightning Rod 5/8" x 5'	191.5	(2) 6' x 2" Mount Pipe	150
(2) LPA-80063/6CF w/ Mount Pipe	160	(2) 6' x 2" Mount Pipe	150
(2) LPA-80063/6CF w/ Mount Pipe	160	(2) 6' x 2" Mount Pipe	150
(2) LPA-80080/4CF w/ Mount Pipe	160	Transition Ladder	150
BXA-171063-12BF w/ Mount Pipe	160	Platform Mount [LP 712-1]	150
BXA-171063-12BF w/ Mount Pipe	160	7770.00 w/ Mount Pipe	137
BXA-171063-8BF-2 w/ Mount Pipe	160	7770.00 w/ Mount Pipe	137
AWS4 (B66) 4x45 RRH	160	7770.00 w/ Mount Pipe	137
AWS4 (B66) 4x45 RRH	160	P65-16-XLH-RR w/ Mount Pipe	137
AWS4 (B66) 4x45 RRH	160	P65-16-XLH-RR w/ Mount Pipe	137
DB-B1-6C-8AB-0Z	160	P65-16-XLH-RR w/ Mount Pipe	137
(2) JAHH-65B-R3B w/ Mount Pipe	160	(2) LGP21401	137
(2) JAHH-65B-R3B w/ Mount Pipe	160	(2) LGP21401	137
(2) JAHH-65B-R3B w/ Mount Pipe	160	(2) LGP21401	137
RRH2x60-700	160	RRUS-11	137
RRH2x60-700	160	RRUS-11	137
RRH2x60-700	160	RRUS-11	137
DB-B1-6C-8AB-0Z	160	DC6-48-60-18-8F	137
Platform Mount [LP 303-1]	160	Platform Mount [LP 303-1]	137
PCS 1900MHz 4x45W-65MHz	154	OG-860/1920/GPS-A	50
PCS 1900MHz 4x45W-65MHz	154	Side Arm Mount [SO 701-1]	50
PCS 1900MHz 4x45W-65MHz	154		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	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-G Standard.
3. Tower designed for a 93 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TOWER RATING: 47.3%

Jacobs Engineering Group, Inc.
JACOBS
5449 Bells Ferry Road
Acworth, GA 30102
Phone: 770-701-2500
FAX: 770-701-2501

Job: ***UPPER STEPNEY - TLC***		
Project: ***BU#876355 WO#1503489***		
Client: Crown Castle	Drawn by: HolderKG	App'd:
Code: TIA-222-G	Date: 12/27/17	Scale: NTS
Path: \\RALFIL03\Telecom\876355 UPPER STEPNEY-TLC\WO 1503489\Analysis\Models\BU#876355 WO#1503489.eri		Dwg No. E-1

Tower Input Data

There is a pole section.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in Fairfield County, Connecticut.
Basic wind speed of 93 mph.
Structure Class II.
Exposure Category B.
Topographic Category 1.
Crest Height 0.000 ft.
Nominal ice thickness of 0.750 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned		Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression
√	Use Code Stress Ratios		Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice	√	Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-G Bracing Resist. Exemption
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-G Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
	Secondary Horizontal Braces Leg		Sort Capacity Reports By Component	√	Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric				

Tapered Pole Section Geometry

Section	*Elevation* *ft*	*Section Length* *ft*	*Splice Length* *ft*	*Number of Sides*	*Top Diameter* *in*	*Bottom Diameter* *in*	*Wall Thickness* *in*	*Bend Radius* *in*	*Pole Grade*
L1	191.500-172.460	19.040	3.083	18	15.500	20.460	0.188	0.750	A572-65 (65 ksi)
L2	172.460-127.753	47.790	4.500	18	19.282	31.600	0.313	1.250	A572-65 (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
L3	127.753-83.083	49.170	5.833	18	29.815	42.190	0.438	1.750	A572-65 (65 ksi)
L4	83.083-40.457	48.460	7.083	18	39.847	52.590	0.500	2.000	A572-65 (65 ksi)
L5	40.457-0.000	47.540		18	49.727	62.000	0.500	2.000	A572-65 (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	15.739	9.113	269.950	5.436	7.874	34.284	540.256	4.557	2.398	12.789
	20.776	12.065	626.423	7.197	10.394	60.270	1253.670	6.033	3.271	17.445
L2	20.386	18.815	855.356	6.734	9.795	87.324	1711.837	9.409	2.844	9.099
	32.087	31.033	3838.018	11.107	16.053	239.087	7681.086	15.520	5.012	16.037
L3	31.425	40.794	4448.064	10.429	15.146	293.678	8901.981	20.401	4.477	10.234
	42.841	57.979	12769.382	14.822	21.433	595.795	25555.567	28.995	6.655	15.212
L4	42.019	62.444	12213.654	13.968	20.242	603.375	24443.379	31.228	6.133	12.266
	53.401	82.667	28338.539	18.492	26.716	1060.744	56714.366	41.341	8.376	16.752
L5	52.351	78.124	23918.500	17.476	25.261	946.836	47868.472	39.069	7.872	15.744
	62.956	97.600	46637.979	21.833	31.496	1480.759	93337.326	48.810	10.032	20.064

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 191.500-172.460				1	1	1			
L2 172.460-127.753				1	1	1			
L3 127.753-83.083				1	1	1			
L4 83.083-40.457				1	1	1			
L5 40.457-0.000				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
AVA7-50(1-5/8")	B	Surface Ar (CaAa)	160.000 - 0.000	2	2	0.350 0.370	2.010		0.001
*									
Safety Line 3/8	C	Surface Ar (CaAa)	191.500 - 0.000	1	1	0.000 0.000	0.375		0.000

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
*								
LDF7-50A(1-5/8")	A	No	Inside Pole	191.500 - 0.000	24	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
*								
AVA7-50(1-5/8")	B	No	Inside Pole	160.000 - 0.000	12	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
*								
HB114-1-0813U4-M5J(1 -1/4)	A	No	Inside Pole	150.000 - 0.000	3	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
HB114-21U3M12-XXX F(1-1/4)	A	No	Inside Pole	150.000 - 0.000	1	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
*								
LDF6-50A(1-1/4")	B	No	Inside Pole	137.000 - 0.000	6	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
FB-L98B-002-75000(3/8")	B	No	Inside Pole	137.000 - 0.000	1	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
WR-VG82ST-BRDA(5/8")	C	No	Inside Pole	137.000 - 0.000	2	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
2" Rigid Conduit	C	No	Inside Pole	137.000 - 0.000	1	No Ice	0.000	0.003
						1/2" Ice	0.000	0.003
						1" Ice	0.000	0.003
*								
LDF4-50A(1/2")	A	No	Inside Pole	50.000 - 0.000	1	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000

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	191.500-172.460	A	0.000	0.000	0.000	0.000	0.375
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.714	0.000	0.004
L2	172.460-127.753	A	0.000	0.000	0.000	0.000	0.987
		B	0.000	0.000	12.963	0.000	0.353
		C	0.000	0.000	1.677	0.000	0.041
L3	127.753-83.083	A	0.000	0.000	0.000	0.000	1.094
		B	0.000	0.000	17.957	0.000	0.617
		C	0.000	0.000	1.675	0.000	0.162
L4	83.083-40.457	A	0.000	0.000	0.000	0.000	1.046
		B	0.000	0.000	17.136	0.000	0.589
		C	0.000	0.000	1.599	0.000	0.155
L5	40.457-0.000	A	0.000	0.000	0.000	0.000	0.997
		B	0.000	0.000	16.264	0.000	0.559

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
		C	0.000	0.000	1.517	0.000	0.147

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	191.500-172.460	A	1.779	0.000	0.000	0.000	0.000	0.375
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	7.488	0.000	0.093
L2	172.460-127.753	A	1.744	0.000	0.000	0.000	0.000	0.987
		B		0.000	0.000	30.544	0.000	0.719
		C		0.000	0.000	17.582	0.000	0.251
L3	127.753-83.083	A	1.683	0.000	0.000	0.000	0.000	1.094
		B		0.000	0.000	41.919	0.000	1.111
		C		0.000	0.000	17.253	0.000	0.364
L4	83.083-40.457	A	1.596	0.000	0.000	0.000	0.000	1.046
		B		0.000	0.000	39.360	0.000	1.039
		C		0.000	0.000	15.950	0.000	0.335
L5	40.457-0.000	A	1.424	0.000	0.000	0.000	0.000	0.997
		B		0.000	0.000	36.474	0.000	0.958
		C		0.000	0.000	14.433	0.000	0.303

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	191.500-172.460	0.000	0.055	0.000	0.408
L2	172.460-127.753	0.413	0.146	0.603	0.459
L3	127.753-83.083	0.534	0.174	0.816	0.522
L4	83.083-40.457	0.543	0.178	0.884	0.563
L5	40.457-0.000	0.548	0.180	0.924	0.582

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	18	Safety Line 3/8	172.46 - 191.50	1.0000	1.0000
L1	5	AVA7-50(1-5/8")	172.46 - 160.00	1.0000	1.0000
L2	5	AVA7-50(1-5/8")	127.75 - 160.00	1.0000	1.0000
L2	18	Safety Line 3/8	127.75 - 172.46	1.0000	1.0000
L3	5	AVA7-50(1-5/8")	83.08 - 127.75	1.0000	1.0000
L3	18	Safety Line 3/8	83.08 - 127.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L4	5	AVA7-50(1-5/8")	40.46 - 83.08	1.0000	1.0000
L4	18	Safety Line 3/8	40.46 - 83.08	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Lightning Rod 5/8" x 5'	C	From Leg	0.000 0.000 2.000	0.000	191.500	No Ice 1/2" Ice 1" Ice	0.313 0.826 1.322	0.313 0.826 1.322	0.006 0.010 0.016
level 192									
(2) RV65-18-02DPL2	A	From Leg	4.000 0.000 2.000	0.000	192.000	No Ice 1/2" Ice 1" Ice	3.300 3.644 3.996	1.987 2.316 2.651	0.011 0.029 0.052
(2) RV65-18-02DPL2	B	From Leg	4.000 0.000 2.000	0.000	192.000	No Ice 1/2" Ice 1" Ice	3.300 3.644 3.996	1.987 2.316 2.651	0.011 0.029 0.052
(2) RV65-18-02DPL2	C	From Leg	4.000 0.000 2.000	0.000	192.000	No Ice 1/2" Ice 1" Ice	3.300 3.644 3.996	1.987 2.316 2.651	0.011 0.029 0.052
APX16DWV-16DWV-S-E-A20	A	From Leg	4.000 0.000 2.000	0.000	192.000	No Ice 1/2" Ice 1" Ice	6.586 6.962 7.344	2.150 2.490 2.837	0.041 0.074 0.113
APX16DWV-16DWV-S-E-A20	B	From Leg	4.000 0.000 2.000	0.000	192.000	No Ice 1/2" Ice 1" Ice	6.586 6.962 7.344	2.150 2.490 2.837	0.041 0.074 0.113
APX16DWV-16DWV-S-E-A20	C	From Leg	4.000 0.000 2.000	0.000	192.000	No Ice 1/2" Ice 1" Ice	6.586 6.962 7.344	2.150 2.490 2.837	0.041 0.074 0.113
APXVAA24_43-U-A20	A	From Leg	4.000 0.000 0.000	0.000	192.000	No Ice 1/2" Ice 1" Ice	20.267 20.915 21.570	8.744 9.342 9.947	0.101 0.213 0.334
APXVAA24_43-U-A20	B	From Leg	4.000 0.000 0.000	0.000	192.000	No Ice 1/2" Ice 1" Ice	20.267 20.915 21.570	8.744 9.342 9.947	0.101 0.213 0.334
APXVAA24_43-U-A20	C	From Leg	4.000 0.000 0.000	0.000	192.000	No Ice 1/2" Ice 1" Ice	20.267 20.915 21.570	8.744 9.342 9.947	0.101 0.213 0.334
(2) KRY 112 489/2	A	From Leg	4.000 0.000 0.000	0.000	192.000	No Ice 1/2" Ice 1" Ice	0.559 0.658 0.764	0.365 0.448 0.542	0.015 0.020 0.027
KRY 112 489/2	B	From Leg	4.000 0.000 0.000	0.000	192.000	No Ice 1/2" Ice 1" Ice	0.559 0.658 0.764	0.365 0.448 0.542	0.015 0.020 0.027
ATSBT-TOP-MF-4G	A	From Leg	4.000 0.000 2.000	0.000	192.000	No Ice 1/2" Ice 1" Ice	0.174 0.229 0.292	0.095 0.140 0.193	0.002 0.003 0.006
ATSBT-TOP-MF-4G	B	From Leg	4.000 0.000 2.000	0.000	192.000	No Ice 1/2" Ice 1" Ice	0.174 0.229 0.292	0.095 0.140 0.193	0.002 0.003 0.006

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
ATSBT-TOP-MF-4G	C	From Leg	4.000 0.000 2.000	0.000	192.000	No Ice 1/2" Ice 1" Ice	0.174 0.229 0.292	0.095 0.140 0.193	0.002 0.003 0.006
KRY 112 144/2	B	From Leg	4.000 0.000 0.000	0.000	192.000	No Ice 1/2" Ice 1" Ice	0.479 0.568 0.664	0.232 0.299 0.376	0.010 0.014 0.019
(2) KRY 112 144/2	C	From Leg	4.000 0.000 0.000	0.000	192.000	No Ice 1/2" Ice 1" Ice	0.479 0.568 0.664	0.232 0.299 0.376	0.010 0.014 0.019
Platform Mount [LP 302-1]	C	None		0.000	192.000	No Ice 1/2" Ice 1" Ice	33.030 44.600 56.170	33.030 44.600 56.170	1.709 2.193 2.678
level 160									
(2) LPA-80063/6CF w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	160.000	No Ice 1/2" Ice 1" Ice	9.831 10.400 10.933	10.215 11.384 12.269	0.052 0.145 0.246
(2) LPA-80063/6CF w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	160.000	No Ice 1/2" Ice 1" Ice	9.831 10.400 10.933	10.215 11.384 12.269	0.052 0.145 0.246
(2) LPA-80080/4CF w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	160.000	No Ice 1/2" Ice 1" Ice	2.856 3.220 3.592	6.569 7.195 7.837	0.030 0.076 0.128
BXA-171063-12BF w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	160.000	No Ice 1/2" Ice 1" Ice	4.971 5.521 6.036	5.228 6.389 7.261	0.040 0.086 0.139
BXA-171063-12BF w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	160.000	No Ice 1/2" Ice 1" Ice	4.971 5.521 6.036	5.228 6.389 7.261	0.040 0.086 0.139
BXA-171063-8BF-2 w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	160.000	No Ice 1/2" Ice 1" Ice	3.179 3.555 3.930	3.353 3.971 4.595	0.029 0.061 0.099
AWS4 (B66) 4x45 RRH	A	From Leg	4.000 0.000 0.000	0.000	160.000	No Ice 1/2" Ice 1" Ice	2.660 2.878 3.104	1.586 1.769 1.959	0.064 0.084 0.108
AWS4 (B66) 4x45 RRH	B	From Leg	4.000 0.000 0.000	0.000	160.000	No Ice 1/2" Ice 1" Ice	2.660 2.878 3.104	1.586 1.769 1.959	0.064 0.084 0.108
AWS4 (B66) 4x45 RRH	C	From Leg	4.000 0.000 0.000	0.000	160.000	No Ice 1/2" Ice 1" Ice	2.660 2.878 3.104	1.586 1.769 1.959	0.064 0.084 0.108
DB-B1-6C-8AB-0Z	C	From Leg	4.000 0.000 0.000	0.000	160.000	No Ice 1/2" Ice 1" Ice	4.800 5.070 5.348	2.000 2.193 2.393	0.044 0.080 0.120
(2) JAHH-65B-R3B w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	160.000	No Ice 1/2" Ice 1" Ice	9.351 9.921 10.455	7.646 8.833 9.734	0.086 0.163 0.247
(2) JAHH-65B-R3B w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	160.000	No Ice 1/2" Ice 1" Ice	9.351 9.921 10.455	7.646 8.833 9.734	0.086 0.163 0.247
(2) JAHH-65B-R3B w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	160.000	No Ice 1/2" Ice 1" Ice	9.351 9.921 10.455	7.646 8.833 9.734	0.086 0.163 0.247
RRH2x60-700	A	From Leg	4.000 0.000 0.000	0.000	160.000	No Ice 1/2" Ice 1" Ice	3.500 3.761 4.029	1.816 2.052 2.289	0.060 0.083 0.109
RRH2x60-700	B	From Leg	4.000 0.000	0.000	160.000	No Ice 1/2" Ice	3.500 3.761	1.816 2.052	0.060 0.083

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1" Ice	4.029	2.289	0.109
RRH2x60-700	C	From Leg	4.000	0.000	160.000	No Ice	3.500	1.816	0.060
			0.000			1/2" Ice	3.761	2.052	0.083
			0.000			1" Ice	4.029	2.289	0.109
DB-B1-6C-8AB-0Z	B	From Leg	4.000	0.000	160.000	No Ice	4.800	2.000	0.044
			0.000			1/2" Ice	5.070	2.193	0.080
			0.000			1" Ice	5.348	2.393	0.120
Platform Mount [LP 303-1]	C	None		0.000	160.000	No Ice	14.660	14.660	1.250
						1/2" Ice	18.870	18.870	1.481
						1" Ice	23.080	23.080	1.713
level 154									
PCS 1900MHz	A	From Leg	2.000	0.000	154.000	No Ice	2.322	2.238	0.060
4x45W-65MHz			0.000			1/2" Ice	2.527	2.441	0.083
			0.000			1" Ice	2.739	2.651	0.110
PCS 1900MHz	B	From Leg	2.000	0.000	154.000	No Ice	2.322	2.238	0.060
4x45W-65MHz			0.000			1/2" Ice	2.527	2.441	0.083
			0.000			1" Ice	2.739	2.651	0.110
PCS 1900MHz	C	From Leg	2.000	0.000	154.000	No Ice	2.322	2.238	0.060
4x45W-65MHz			0.000			1/2" Ice	2.527	2.441	0.083
			0.000			1" Ice	2.739	2.651	0.110
800 EXTERNAL NOTCH	A	From Leg	2.000	0.000	154.000	No Ice	0.660	0.321	0.011
FILTER			0.000			1/2" Ice	0.763	0.398	0.017
			0.000			1" Ice	0.873	0.483	0.024
800 EXTERNAL NOTCH	B	From Leg	2.000	0.000	154.000	No Ice	0.660	0.321	0.011
FILTER			0.000			1/2" Ice	0.763	0.398	0.017
			0.000			1" Ice	0.873	0.483	0.024
800 EXTERNAL NOTCH	C	From Leg	2.000	0.000	154.000	No Ice	0.660	0.321	0.011
FILTER			0.000			1/2" Ice	0.763	0.398	0.017
			0.000			1" Ice	0.873	0.483	0.024
800MHZ 2X50W RRH	A	From Leg	2.000	0.000	154.000	No Ice	2.134	1.773	0.053
			0.000			1/2" Ice	2.320	1.946	0.074
			0.000			1" Ice	2.512	2.127	0.098
800MHZ 2X50W RRH	B	From Leg	2.000	0.000	154.000	No Ice	2.134	1.773	0.053
			0.000			1/2" Ice	2.320	1.946	0.074
			0.000			1" Ice	2.512	2.127	0.098
800MHZ 2X50W RRH	C	From Leg	2.000	0.000	154.000	No Ice	2.134	1.773	0.053
			0.000			1/2" Ice	2.320	1.946	0.074
			0.000			1" Ice	2.512	2.127	0.098
Side Arm Mount [SO 102-3]	C	None		0.000	154.000	No Ice	3.000	3.000	0.081
						1/2" Ice	3.480	3.480	0.111
						1" Ice	3.960	3.960	0.141
level 150									
APXVSPP18-C-A20 w/	A	From Leg	4.000	0.000	150.000	No Ice	8.262	6.946	0.083
Mount Pipe			0.000			1/2" Ice	8.822	8.127	0.151
			2.000			1" Ice	9.346	9.021	0.227
APXVSPP18-C-A20 w/	B	From Leg	4.000	0.000	150.000	No Ice	8.262	6.946	0.083
Mount Pipe			0.000			1/2" Ice	8.822	8.127	0.151
			2.000			1" Ice	9.346	9.021	0.227
APXVSPP18-C-A20 w/	C	From Leg	4.000	0.000	150.000	No Ice	8.262	6.946	0.083
Mount Pipe			0.000			1/2" Ice	8.822	8.127	0.151
			2.000			1" Ice	9.346	9.021	0.227
APXVTM14-C-120 w/	C	From Leg	4.000	0.000	150.000	No Ice	6.580	4.959	0.077
Mount Pipe			0.000			1/2" Ice	7.031	5.754	0.131
			2.000			1" Ice	7.473	6.472	0.193
TD-RRH8x20-25	A	From Leg	4.000	0.000	150.000	No Ice	4.045	1.533	0.070
			0.000			1/2" Ice	4.298	1.712	0.097
			4.000			1" Ice	4.557	1.899	0.128

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
TD-RRH8x20-25	B	From Leg	4.000 0.000 4.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	4.045 4.298 4.557	1.533 1.712 1.899	0.070 0.097 0.128
TD-RRH8x20-25	C	From Leg	4.000 0.000 4.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	4.045 4.298 4.557	1.533 1.712 1.899	0.070 0.097 0.128
(3) ACU-A20-N	A	From Leg	4.000 0.000 0.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	0.067 0.104 0.148	0.117 0.162 0.215	0.001 0.002 0.004
(3) ACU-A20-N	B	From Leg	4.000 0.000 0.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	0.067 0.104 0.148	0.117 0.162 0.215	0.001 0.002 0.004
(3) ACU-A20-N	C	From Leg	4.000 0.000 0.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	0.067 0.104 0.148	0.117 0.162 0.215	0.001 0.002 0.004
(2) 6' x 2" Mount Pipe	A	From Leg	4.000 0.000 2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	1.425 1.925 2.294	1.425 1.925 2.294	0.022 0.033 0.048
(2) 6' x 2" Mount Pipe	B	From Leg	4.000 0.000 2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	1.425 1.925 2.294	1.425 1.925 2.294	0.022 0.033 0.048
(2) 6' x 2" Mount Pipe	C	From Leg	4.000 0.000 2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	1.425 1.925 2.294	1.425 1.925 2.294	0.022 0.033 0.048
Transition Ladder	C	From Leg	2.000 0.000 -4.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	6.000 8.000 10.000	6.000 8.000 10.000	0.160 0.240 0.320
Platform Mount [LP 712-1]	C	None		0.000	150.000	No Ice 1/2" Ice 1" Ice	24.530 29.940 35.350	24.530 29.940 35.350	1.335 1.646 1.956
level 137									
7770.00 w/ Mount Pipe	A	From Leg	4.000 0.000 3.000	0.000	137.000	No Ice 1/2" Ice 1" Ice	5.746 6.179 6.607	4.254 5.014 5.711	0.055 0.103 0.157
7770.00 w/ Mount Pipe	B	From Leg	4.000 0.000 3.000	0.000	137.000	No Ice 1/2" Ice 1" Ice	5.746 6.179 6.607	4.254 5.014 5.711	0.055 0.103 0.157
7770.00 w/ Mount Pipe	C	From Leg	4.000 0.000 3.000	0.000	137.000	No Ice 1/2" Ice 1" Ice	5.746 6.179 6.607	4.254 5.014 5.711	0.055 0.103 0.157
P65-16-XLH-RR w/ Mount Pipe	A	From Leg	4.000 0.000 3.000	0.000	137.000	No Ice 1/2" Ice 1" Ice	8.371 8.931 9.457	6.362 7.538 8.427	0.079 0.144 0.218
P65-16-XLH-RR w/ Mount Pipe	B	From Leg	4.000 0.000 3.000	0.000	137.000	No Ice 1/2" Ice 1" Ice	8.371 8.931 9.457	6.362 7.538 8.427	0.079 0.144 0.218
P65-16-XLH-RR w/ Mount Pipe	C	From Leg	4.000 0.000 3.000	0.000	137.000	No Ice 1/2" Ice 1" Ice	8.371 8.931 9.457	6.362 7.538 8.427	0.079 0.144 0.218
(2) LGP21401	A	From Leg	4.000 0.000 3.000	0.000	137.000	No Ice 1/2" Ice 1" Ice	1.104 1.239 1.381	0.207 0.274 0.348	0.014 0.021 0.030
(2) LGP21401	B	From Leg	4.000 0.000 3.000	0.000	137.000	No Ice 1/2" Ice 1" Ice	1.104 1.239 1.381	0.207 0.274 0.348	0.014 0.021 0.030
(2) LGP21401	C	From Leg	4.000 0.000	0.000	137.000	No Ice 1/2" Ice	1.104 1.239	0.207 0.274	0.014 0.021

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			3.000			1" Ice	1.381	0.348	0.030
RRUS-11	A	From Leg	4.000	0.000	137.000	No Ice	2.522	1.068	0.055
			0.000			1/2" Ice	2.719	1.211	0.074
			3.000			1" Ice	2.923	1.361	0.097
RRUS-11	B	From Leg	4.000	0.000	137.000	No Ice	2.522	1.068	0.055
			0.000			1/2" Ice	2.719	1.211	0.074
			3.000			1" Ice	2.923	1.361	0.097
RRUS-11	C	From Leg	4.000	0.000	137.000	No Ice	2.522	1.068	0.055
			0.000			1/2" Ice	2.719	1.211	0.074
			3.000			1" Ice	2.923	1.361	0.097
DC6-48-60-18-8F	C	From Leg	4.000	0.000	137.000	No Ice	0.917	0.917	0.033
			0.000			1/2" Ice	1.458	1.458	0.051
			3.000			1" Ice	1.643	1.643	0.071
Platform Mount [LP 303-1]	C	None		0.000	137.000	No Ice	14.660	14.660	1.250
						1/2" Ice	18.870	18.870	1.481
						1" Ice	23.080	23.080	1.713
***									
OG-860/1920/GPS-A	A	From Leg	2.000	0.000	50.000	No Ice	0.308	0.367	0.002
			0.000			1/2" Ice	0.395	0.457	0.005
			2.000			1" Ice	0.490	0.555	0.010
Side Arm Mount [SO 701-1]	A	From Leg	1.500	0.000	50.000	No Ice	0.850	1.670	0.065
			0.000			1/2" Ice	1.140	2.340	0.079
			0.000			1" Ice	1.430	3.010	0.093
******									

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice

Comb. No.	Description
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
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	191.5 - 172.46	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-8.799	-0.033	-0.018
			Max. Mx	8	-3.221	-91.799	0.029
			Max. My	2	-3.222	-0.021	91.754
			Max. Vy	20	-5.827	91.762	0.027
			Max. Vx	14	5.823	-0.018	-91.686
			Max. Torque	10			0.045
L2	172.46 - 127.753	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-39.209	0.612	-2.147
			Max. Mx	20	-17.016	636.599	1.533
			Max. My	14	-17.018	-1.513	-636.278
			Max. Vy	20	-19.826	636.599	1.533
			Max. Vx	14	19.811	-1.513	-636.278
			Max. Torque	25			-1.383
L3	127.753 - 83.0833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-54.824	-0.219	-2.701
			Max. Mx	20	-28.696	1563.044	4.736
			Max. My	14	-28.697	-4.874	-1562.235
			Max. Vy	20	-22.943	1563.044	4.736
			Max. Vx	14	22.928	-4.874	-1562.235
			Max. Torque	22			0.491
L4	83.0833 - 40.4567	Pole	Max Tension	1	0.000	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	26	-75.455	-1.200	-2.778
			Max. Mx	20	-44.648	2577.178	8.054
			Max. My	14	-44.649	-8.097	-2575.589
			Max. Vy	20	-26.054	2577.178	8.054
			Max. Vx	14	26.013	-8.097	-2575.589
			Max. Torque	22			0.490
L5	40.4567 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-103.461	-2.486	-3.538
			Max. Mx	20	-66.977	3888.258	11.442
			Max. My	14	-66.977	-11.745	-3884.996
			Max. Vy	20	-29.020	3888.258	11.442
			Max. Vx	14	28.980	-11.745	-3884.996
			Max. Torque	12			-0.309

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	31	103.461	-7.980	-4.605
	Max. H_x	20	66.990	28.990	0.071
	Max. H_z	2	66.990	0.071	28.950
	Max. M_x	2	3883.679	0.071	28.950
	Max. M_z	8	3887.550	-28.990	-0.071
	Max. Torsion	24	0.306	14.557	25.107
	Min. Vert	5	50.242	-14.434	25.036
	Min. H_x	8	66.990	-28.990	-0.071
	Min. H_z	14	66.990	-0.071	-28.950
	Min. M_x	14	-3884.996	-0.071	-28.950
	Min. M_z	20	-3888.258	28.990	0.071
	Min. Torsion	12	-0.309	-14.557	-25.107

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	55.825	0.000	0.000	0.499	0.255	0.000
1.2 Dead+1.6 Wind 0 deg - No Ice	66.990	-0.071	-28.950	-3883.679	12.459	-0.232
0.9 Dead+1.6 Wind 0 deg - No Ice	50.242	-0.071	-28.950	-3837.812	12.207	-0.214
1.2 Dead+1.6 Wind 30 deg - No Ice	66.990	14.434	-25.036	-3357.274	-1933.147	-0.099
0.9 Dead+1.6 Wind 30 deg - No Ice	50.242	14.434	-25.036	-3317.632	-1910.328	-0.087
1.2 Dead+1.6 Wind 60 deg - No Ice	66.990	25.071	-14.413	-1931.056	-3360.669	0.058
0.9 Dead+1.6 Wind 60 deg - No Ice	50.242	25.071	-14.413	-1908.332	-3320.921	0.061
1.2 Dead+1.6 Wind 90 deg - No Ice	66.990	28.990	0.071	12.762	-3887.550	0.200
0.9 Dead+1.6 Wind 90 deg - No	50.242	28.990	0.071	12.431	-3841.572	0.194

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
Ice						
1.2 Dead+1.6 Wind 120 deg - No Ice	66.990	25.142	14.537	1953.308	-3372.722	0.292
0.9 Dead+1.6 Wind 120 deg - No Ice	50.242	25.142	14.537	1929.966	-3332.824	0.278
1.2 Dead+1.6 Wind 150 deg - No Ice	66.990	14.557	25.107	3370.646	-1954.079	0.309
0.9 Dead+1.6 Wind 150 deg - No Ice	50.242	14.557	25.107	3330.499	-1930.997	0.290
1.2 Dead+1.6 Wind 180 deg - No Ice	66.990	0.071	28.950	3884.996	-11.745	0.241
0.9 Dead+1.6 Wind 180 deg - No Ice	50.242	0.071	28.950	3838.774	-11.691	0.223
1.2 Dead+1.6 Wind 210 deg - No Ice	66.990	-14.434	25.036	3358.589	1933.858	0.106
0.9 Dead+1.6 Wind 210 deg - No Ice	50.242	-14.434	25.036	3318.593	1910.842	0.094
1.2 Dead+1.6 Wind 240 deg - No Ice	66.990	-25.071	14.413	1932.372	3361.378	-0.060
0.9 Dead+1.6 Wind 240 deg - No Ice	50.242	-25.071	14.413	1909.294	3321.433	-0.063
1.2 Dead+1.6 Wind 270 deg - No Ice	66.990	-28.990	-0.071	-11.442	3888.258	-0.209
0.9 Dead+1.6 Wind 270 deg - No Ice	50.242	-28.990	-0.071	-11.467	3842.083	-0.202
1.2 Dead+1.6 Wind 300 deg - No Ice	66.990	-25.142	-14.537	-1951.987	3373.433	-0.299
0.9 Dead+1.6 Wind 300 deg - No Ice	50.242	-25.142	-14.537	-1929.001	3333.337	-0.284
1.2 Dead+1.6 Wind 330 deg - No Ice	66.990	-14.557	-25.107	-3369.326	1954.793	-0.306
0.9 Dead+1.6 Wind 330 deg - No Ice	50.242	-14.557	-25.107	-3329.535	1931.513	-0.287
1.2 Dead+1.0 Ice+1.0 Temp	103.461	0.000	0.000	3.538	-2.486	0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	103.461	-0.011	-9.190	-1241.949	-0.635	-0.260
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	103.461	4.594	-7.954	-1074.069	-624.644	-0.164
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	103.461	7.969	-4.586	-617.372	-1081.975	-0.024
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	103.461	9.208	0.011	5.771	-1250.085	0.123
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	103.461	7.980	4.605	628.388	-1083.931	0.236
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	103.461	4.614	7.965	1083.652	-628.035	0.287
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	103.461	0.011	9.190	1249.574	-4.551	0.261
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	103.461	-4.594	7.954	1081.697	619.459	0.165
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	103.461	-7.969	4.586	625.000	1076.792	0.025
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	103.461	-9.208	-0.011	1.855	1244.903	-0.122
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	103.461	-7.980	-4.605	-620.764	1078.749	-0.235
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	103.461	-4.614	-7.965	-1076.028	622.850	-0.286
Dead+Wind 0 deg - Service	55.825	-0.017	-6.738	-897.421	3.086	-0.052
Dead+Wind 30 deg - Service	55.825	3.360	-5.827	-775.719	-446.685	-0.022
Dead+Wind 60 deg - Service	55.825	5.836	-3.355	-446.017	-776.689	0.015

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
Dead+Wind 90 deg - Service	55.825	6.748	0.017	3.340	-898.502	0.047
Dead+Wind 120 deg - Service	55.825	5.852	3.384	451.948	-779.485	0.067
Dead+Wind 150 deg - Service	55.825	3.388	5.844	779.602	-451.528	0.069
Dead+Wind 180 deg - Service	55.825	0.017	6.738	898.509	-2.506	0.053
Dead+Wind 210 deg - Service	55.825	-3.360	5.827	776.806	447.264	0.022
Dead+Wind 240 deg - Service	55.825	-5.836	3.355	447.105	777.269	-0.015
Dead+Wind 270 deg - Service	55.825	-6.748	-0.017	-2.252	899.082	-0.048
Dead+Wind 300 deg - Service	55.825	-5.852	-3.384	-450.860	780.065	-0.067
Dead+Wind 330 deg - Service	55.825	-3.388	-5.844	-778.514	452.108	-0.069

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.000	-55.825	0.000	0.000	55.825	0.000	0.000%
2	-0.071	-66.990	-28.950	0.071	66.990	28.950	0.000%
3	-0.071	-50.242	-28.950	0.071	50.242	28.950	0.000%
4	14.434	-66.990	-25.036	-14.434	66.990	25.036	0.000%
5	14.434	-50.242	-25.036	-14.434	50.242	25.036	0.000%
6	25.071	-66.990	-14.413	-25.071	66.990	14.413	0.000%
7	25.071	-50.242	-14.413	-25.071	50.242	14.413	0.000%
8	28.990	-66.990	0.071	-28.990	66.990	-0.071	0.000%
9	28.990	-50.242	0.071	-28.990	50.242	-0.071	0.000%
10	25.142	-66.990	14.537	-25.142	66.990	-14.537	0.000%
11	25.142	-50.242	14.537	-25.142	50.242	-14.537	0.000%
12	14.557	-66.990	25.107	-14.557	66.990	-25.107	0.000%
13	14.557	-50.242	25.107	-14.557	50.242	-25.107	0.000%
14	0.071	-66.990	28.950	-0.071	66.990	-28.950	0.000%
15	0.071	-50.242	28.950	-0.071	50.242	-28.950	0.000%
16	-14.434	-66.990	25.036	14.434	66.990	-25.036	0.000%
17	-14.434	-50.242	25.036	14.434	50.242	-25.036	0.000%
18	-25.071	-66.990	14.413	25.071	66.990	-14.413	0.000%
19	-25.071	-50.242	14.413	25.071	50.242	-14.413	0.000%
20	-28.990	-66.990	-0.071	28.990	66.990	0.071	0.000%
21	-28.990	-50.242	-0.071	28.990	50.242	0.071	0.000%
22	-25.142	-66.990	-14.537	25.142	66.990	14.537	0.000%
23	-25.142	-50.242	-14.537	25.142	50.242	14.537	0.000%
24	-14.557	-66.990	-25.107	14.557	66.990	25.107	0.000%
25	-14.557	-50.242	-25.107	14.557	50.242	25.107	0.000%
26	0.000	-103.461	0.000	-0.000	103.461	-0.000	0.000%
27	-0.011	-103.461	-9.190	0.011	103.461	9.190	0.000%
28	4.594	-103.461	-7.953	-4.594	103.461	7.954	0.000%
29	7.969	-103.461	-4.586	-7.969	103.461	4.586	0.000%
30	9.208	-103.461	0.011	-9.208	103.461	-0.011	0.000%
31	7.980	-103.461	4.605	-7.980	103.461	-4.605	0.000%
32	4.614	-103.461	7.965	-4.614	103.461	-7.965	0.000%
33	0.011	-103.461	9.190	-0.011	103.461	-9.190	0.000%
34	-4.594	-103.461	7.953	4.594	103.461	-7.954	0.000%
35	-7.969	-103.461	4.586	7.969	103.461	-4.586	0.000%
36	-9.208	-103.461	-0.011	9.208	103.461	0.011	0.000%
37	-7.980	-103.461	-4.605	7.980	103.461	4.605	0.000%
38	-4.614	-103.461	-7.965	4.614	103.461	7.965	0.000%
39	-0.017	-55.825	-6.738	0.017	55.825	6.738	0.000%
40	3.360	-55.825	-5.827	-3.360	55.825	5.827	0.000%
41	5.836	-55.825	-3.355	-5.836	55.825	3.355	0.000%
42	6.748	-55.825	0.017	-6.748	55.825	-0.017	0.000%
43	5.852	-55.825	3.384	-5.852	55.825	-3.384	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
44	3.388	-55.825	5.844	-3.388	55.825	-5.844	0.000%
45	0.017	-55.825	6.738	-0.017	55.825	-6.738	0.000%
46	-3.360	-55.825	5.827	3.360	55.825	-5.827	0.000%
47	-5.836	-55.825	3.355	5.836	55.825	-3.355	0.000%
48	-6.748	-55.825	-0.017	6.748	55.825	0.017	0.000%
49	-5.852	-55.825	-3.384	5.852	55.825	3.384	0.000%
50	-3.388	-55.825	-5.844	3.388	55.825	5.844	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	4	0.00000001	0.00050100
3	Yes	4	0.00000001	0.00020672
4	Yes	6	0.00000001	0.00005574
5	Yes	5	0.00000001	0.00047950
6	Yes	6	0.00000001	0.00005538
7	Yes	5	0.00000001	0.00047616
8	Yes	4	0.00000001	0.00055543
9	Yes	4	0.00000001	0.00026032
10	Yes	6	0.00000001	0.00005663
11	Yes	5	0.00000001	0.00048661
12	Yes	6	0.00000001	0.00005637
13	Yes	5	0.00000001	0.00048457
14	Yes	4	0.00000001	0.00050599
15	Yes	4	0.00000001	0.00021904
16	Yes	6	0.00000001	0.00005561
17	Yes	5	0.00000001	0.00047778
18	Yes	6	0.00000001	0.00005597
19	Yes	5	0.00000001	0.00048112
20	Yes	4	0.00000001	0.00046880
21	Yes	4	0.00000001	0.00017392
22	Yes	6	0.00000001	0.00005628
23	Yes	5	0.00000001	0.00048365
24	Yes	6	0.00000001	0.00005653
25	Yes	5	0.00000001	0.00048570
26	Yes	4	0.00000001	0.00001680
27	Yes	5	0.00000001	0.00050161
28	Yes	5	0.00000001	0.00066110
29	Yes	5	0.00000001	0.00066131
30	Yes	5	0.00000001	0.00050537
31	Yes	5	0.00000001	0.00067580
32	Yes	5	0.00000001	0.00067068
33	Yes	5	0.00000001	0.00050678
34	Yes	5	0.00000001	0.00066831
35	Yes	5	0.00000001	0.00066850
36	Yes	5	0.00000001	0.00050421
37	Yes	5	0.00000001	0.00066125
38	Yes	5	0.00000001	0.00066581
39	Yes	4	0.00000001	0.00004316
40	Yes	4	0.00000001	0.00027996
41	Yes	4	0.00000001	0.00027434
42	Yes	4	0.00000001	0.00004393
43	Yes	4	0.00000001	0.00028768
44	Yes	4	0.00000001	0.00028403

45	Yes	4	0.00000001	0.00004341
46	Yes	4	0.00000001	0.00027875
47	Yes	4	0.00000001	0.00028448
48	Yes	4	0.00000001	0.00004333
49	Yes	4	0.00000001	0.00028210
50	Yes	4	0.00000001	0.00028566

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	191.5 - 172.46	27.410	44	1.473	0.000
L2	175.543 - 127.753	22.639	44	1.358	0.000
L3	132.253 - 83.0833	11.950	44	0.952	0.000
L4	88.9167 - 40.4567	5.034	49	0.559	0.000
L5	47.54 - 0	1.398	49	0.272	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
192.000	(2) RV65-18-02DPL2	44	27.410	1.473	0.000	20699
191.500	Lightning Rod 5/8" x 5'	44	27.410	1.473	0.000	20699
160.000	(2) LPA-80063/6CF w/ Mount Pipe	44	18.372	1.223	0.000	6129
154.000	PCS 1900MHz 4x45W-65MHz	44	16.850	1.167	0.000	5991
150.000	APXVSPP18-C-A20 w/ Mount Pipe	44	15.875	1.128	0.000	5903
137.000	7770.00 w/ Mount Pipe	44	12.934	0.999	0.000	5634
50.000	OG-860/1920/GPS-A	49	1.537	0.287	0.000	7508

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	191.5 - 172.46	118.489	22	6.376	0.002
L2	175.543 - 127.753	97.905	22	5.877	0.002
L3	132.253 - 83.0833	51.723	22	4.123	0.001
L4	88.9167 - 40.4567	21.795	22	2.424	0.000
L5	47.54 - 0	6.050	22	1.176	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
192.000	(2) RV65-18-02DPL2	22	118.489	6.376	0.002	4909
191.500	Lightning Rod 5/8" x 5'	22	118.489	6.376	0.002	4909
160.000	(2) LPA-80063/6CF w/ Mount Pipe	22	79.481	5.297	0.002	1442
154.000	PCS 1900MHz 4x45W-65MHz	22	72.905	5.052	0.001	1408
150.000	APXVSPP18-C-A20 w/ Mount Pipe	22	68.693	4.884	0.001	1386
137.000	7770.00 w/ Mount Pipe	22	55.981	4.327	0.001	1319
50.000	OG-860/1920/GPS-A	22	6.655	1.242	0.000	1735

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	191.5 - 172.46 (1)	TP20.46x15.5x0.188	19.040	0.000	0.0	11.587	-3.222	852.683	0.004
L2	172.46 - 127.753 (2)	TP31.6x19.282x0.313	47.790	0.000	0.0	29.883	-17.008	2220.140	0.008
L3	127.753 - 83.0833 (3)	TP42.19x29.815x0.438	49.170	0.000	0.0	55.940	-28.691	4156.060	0.007
L4	83.0833 - 40.4567 (4)	TP52.59x39.847x0.5	48.460	0.000	0.0	73.118	-38.689	5432.330	0.007
L5	40.4567 - 0 (5)	TP62x49.727x0.5	47.540	0.000	0.0	97.601	-66.977	6834.140	0.010

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	191.5 - 172.46 (1)	TP20.46x15.5x0.188	91.802	340.775	0.269	0.000	340.775	0.000
L2	172.46 - 127.753 (2)	TP31.6x19.282x0.313	638.001	1372.008	0.465	0.000	1372.008	0.000
L3	127.753 - 83.0833 (3)	TP42.19x29.815x0.438	1567.100	3432.575	0.457	0.000	3432.575	0.000
L4	83.0833 - 40.4567 (4)	TP52.59x39.847x0.5	2181.142	5131.458	0.425	0.000	5131.458	0.000
L5	40.4567 - 0 (5)	TP62x49.727x0.5	3897.517	8640.417	0.451	0.000	8640.417	0.000

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	191.5 - 172.46	TP20.46x15.5x0.188	5.826	426.342	0.014	0.027	682.383	0.000

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 $\frac{T_u}{\phi T_n}$
L2	172.46 - 127.753 (1) (2)	TP31.6x19.282x0.313	19.887	1110.070	0.018	0.492	2747.367	0.000
L3	127.753 - 83.0833 (3)	TP42.19x29.815x0.438	23.004	2078.030	0.011	0.490	6873.533	0.000
L4	83.0833 - 40.4567 (4)	TP52.59x39.847x0.5	25.087	2746.780	0.009	0.490	10275.500	0.000
L5	40.4567 - 0 (5)	TP62x49.727x0.5	29.072	3417.070	0.009	0.292	17302.000	0.000

Pole Interaction Design Data

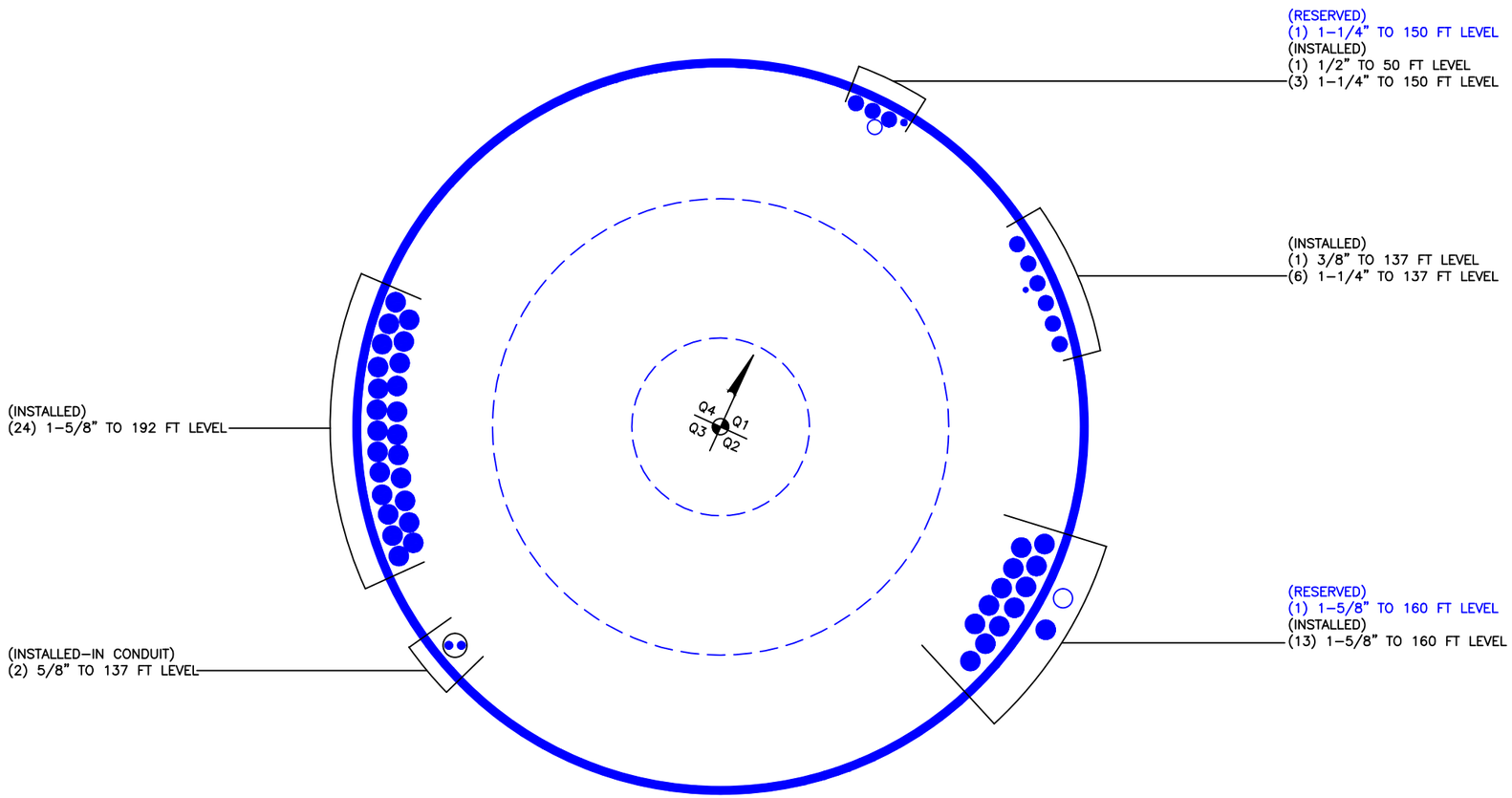
Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	191.5 - 172.46 (1)	0.004	0.269	0.000	0.014	0.000	0.273	1.000	4.8.2
L2	172.46 - 127.753 (2)	0.008	0.465	0.000	0.018	0.000	0.473	1.000	4.8.2
L3	127.753 - 83.0833 (3)	0.007	0.457	0.000	0.011	0.000	0.464	1.000	4.8.2
L4	83.0833 - 40.4567 (4)	0.007	0.425	0.000	0.009	0.000	0.432	1.000	4.8.2
L5	40.4567 - 0 (5)	0.010	0.451	0.000	0.009	0.000	0.461	1.000	4.8.2

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	191.5 - 172.46	Pole	TP20.46x15.5x0.188	1	-3.222	852.683	27.3	Pass
L2	172.46 - 127.753	Pole	TP31.6x19.282x0.313	2	-17.008	2220.140	47.3	Pass
L3	127.753 - 83.0833	Pole	TP42.19x29.815x0.438	3	-28.691	4156.060	46.4	Pass
L4	83.0833 - 40.4567	Pole	TP52.59x39.847x0.5	4	-38.689	5432.330	43.2	Pass
L5	40.4567 - 0	Pole	TP62x49.727x0.5	5	-66.977	6834.140	46.1	Pass
							Summary	
						Pole (L2)	47.3	Pass
						RATING =	**47.3**	**Pass**

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876355 TOWER ID: C_BASELEVEL

BASE LEVEL DRAWING

PLOT DATE: 9/29/2016 FILE NAME: 876355_BASELEVEL.DWG
ref R:\TEMPLATES\TYPICAL BLOCKS FOR TEMPLATES\TITLE BLOCK STD-VER 5.1.dwg

CROWN REGION ADDRESS

USA

19/11/13	UPDATED PER WORK ORDER # 678097	BMH
24/03/14	UPDATED PER WORK ORDER # 732936	EAN
29/5/2014	UPDATED PER WORK ORDER 773458	ZMK
15/10/2014	UPDATED PER WORK ORDER 900799	SAC
12/04/17	UPDATED PER WORK ORDER 1392509 1392576	WMW
28/07/17	UPDATED PER WORK ORDER 1436372	ROW
09/08/17	UPDATED PER WORK ORDER 1324194	CH
21/08/17	UPDATED PER WORK ORDER 1447844	CRM
18/12/17	UPDATED PER WORK ORDER 1503484	CJR

DRAWN BY: **JEP**
CHECKED BY: **JW**
DRAWING DATE: **08/08/07**

SITE NUMBER:
SITE NAME:

SITE NAME

UPPER STEPNEY-TLC

BUSINESS UNIT NUMBER

876355

SITE ADDRESS

474-480 MAIN ST.
MONROE, CT 06468
FAIRFILED COUNTY
USA

SHEET TITLE

BASE LEVEL

SHEET NUMBER

A1-0

APPENDIX C

ADDITIONAL CALCULATIONS

Stiffened or Unstiffened, Ungrouted, Circular Base Plate - Any Rod Material

TIA Rev G

Assumption: Clear space between bottom of leveling nut and top of concrete **not** exceeding (1)*(Rod Diameter)

Site Data

BU#:	*876355*
Site Name:	*UPPER STEPNEY - TLC*
App #:	*418243 Rev#0*
Pole Manufacturer:	*Other*

Reactions		
Mu:	3898	ft-kips
Axial, Pu:	67	kips
Shear, Vu:	29	kips
Eta Factor, ɳ	0.5	TIA G (Fig. 4-4)

If No stiffeners, Criteria:	AISC LRFD	<-Only Applcable to Unstiffened Cases

Anchor Rod Data		
Qty:	24	
Diam:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	71	in

Anchor Rod Results

Max Rod (Cu+ Vu/ɳ):	115.0 Kips	Rigid
Allowable Axial, Φ*Fu*Anet:	260.0 Kips	AISC LRFD
Anchor Rod Stress Ratio:	44.2% **Pass**	φ*Tn

Plate Data		
Diam:	77	in
Thick:	2.25	in
Grade:	60	ksi
Single-Rod B-eff:	8.20	in

Base Plate Results Flexural Check

Base Plate Stress:	30.0 ksi	Rigid
Allowable Plate Stress:	54.0 ksi	AISC LRFD
Base Plate Stress Ratio:	55.5% **Pass**	φ*Fy
		Y.L. Length: 34.60

Stiffener Data (Welding at both sides)		
Config:	0	*
Weld Type:		
Groove Depth:		in **
Groove Angle:		degrees
Fillet H. Weld:		<-- Disregard
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

n/a

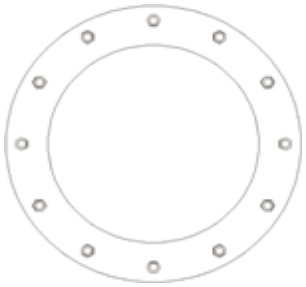
Stiffener Results

Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a

Pole Data		
Diam:	62	in
Thick:	0.5	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None



* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Pier and Pad Foundation

BU # :	876355
Site Name:	UPPER STEPNEY
App. Number:	418243 Rev#0

TIA-222 Revision:	G
Tower Type:	Monopole

Block Foundation?:	☐

Superstructure Analysis Reactions		
Compression, P_{comp}:	67	kips
Base Shear, Vu_comp:	29	kips
Moment, M_u:	3898	ft-kips
Tower Height, **H**:	191.5	ft
BP Dist. Above Fdn, bp_{dist}:	2	in

Pier Properties		
Pier Shape:	Square	
Pier Diameter, **dpier**:	7.5	ft
Ext. Above Grade, **E**:	1.00	ft
Pier Rebar Size, **Sc**:	8	
Pier Rebar Quantity, **mc**:	51	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	8	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	5	in

Pad Properties		
Depth, **D**:	5.0	ft
Pad Width, **W**:	30.0	ft
Pad Thickness, **T**:	3.0	ft
Pad Rebar Size, **Sp**:	8	
Pad Rebar Quantity, **mp**:	25	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties		
Rebar Grade, **Fy**:	60000	psi
Concrete Compressive Strength, **F'c**:	4000	psi
Dry Concrete Density, δc:	150	pcf

Soil Properties		
Total Soil Unit Weight, γ:	110	pcf
Ultimate Net Bearing, Qnet:	12.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	30	degrees
SPT Blow Count, N_{blows}:		
Base Friction, μ:	0.7	
Neglected Depth, **N**:	3.50	ft
Foundation Bearing on Rock?	Yes	
Groundwater Depth, **gw**:	N/A	ft

<--Toggle between Gross and Net

Foundation Analysis Checks				
	Capacity	**Demand**	**Rating**	**Check**
Lateral (Sliding) (kips)	364.75	29.00	**8.0%**	**Pass**
Bearing Pressure (ksf)	9.41	2.17	**23.1%**	**Pass**
*Overturning (kip*ft)*	8404.27	4076.83	**48.5%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	6931.00	3985.00	**57.5%**	**Pass**
Pier Compression (kip)	35802.00	97.38	**0.3%**	**Pass**
*Pad Flexure (kip*ft)*	2756.54	1476.68	**53.6%**	**Pass**
Pad Shear - 1-way (kips)	1075.81	191.70	**17.8%**	**Pass**
Pad Shear - 2-way (ksi)	0.19	0.04	**18.9%**	**Pass**

Soil Rating:	**48.5%**
Structural Rating:	**57.5%**

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: CT11264C

Monroe / Rt 59 / Rt 25
474-480 Main Street
Monroe, CT 06468

January 8, 2018

EBI Project Number: 6218000059

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	6.32 %

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

EBI Consulting
environmental | engineering | due diligence

January 8, 2018

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

Emissions Analysis for Site: **CT11264C – Monroe / Rt 59 / Rt 25**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **474-480 Main Street, Monroe, CT**, 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 (μW/cm2). 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 limit for the 700 MHz Band is approximately 467 $\mu W/cm^2$, and the general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (AWS) 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 **474-480 Main Street, Monroe, CT**, 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 manufactures supplied specifications, minus 10 dB, 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 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.

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

3) 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

4) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.

5) 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.

6) 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 manufactures supplied specifications minus 10 dB 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.

7) The antennas used in this modeling are the **RFS APX16DWV-16DWVS-E-A20** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **RFS APXVAA24-43-U-A20** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **RFS APX16DWV-16DWVS-E-A20** has a maximum gain of **16.3 dBd** at its main lobe at 1900 MHz and 2100 MHz. The **RFS APXVAA24-43-U-A20** has a maximum gain of **13.55 dBd** at its main lobe at 700 MHz. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, 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.

8) The antenna mounting height centerlines of the proposed antennas are **194 feet & 192 feet** above ground level (AGL).

9) 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.

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	RFS APX16DWV-16DWVS-E-A20	Make / Model:	RFS APX16DWV-16DWVS-E-A20	Make / Model:	RFS APX16DWV-16DWVS-E-A20
Gain:	16.3 dBd	Gain:	16.3 dBd	Gain:	16.3 dBd
Height (AGL):	194	Height (AGL):	194	Height (AGL):	194
Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)
Channel Count	6	Channel Count	6	Channel Count	6
Total TX Power(W):	300	Total TX Power(W):	300	Total TX Power(W):	300
ERP (W):	12,572.17	ERP (W):	12,572.17	ERP (W):	12,572.17
Antenna A1 MPE%	1.28	Antenna B1 MPE%	1.28	Antenna C1 MPE%	1.28
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVAA24-43-U-A20	Make / Model:	RFS APXVAA24-43-U-A20	Make / Model:	RFS APXVAA24-43-U-A20
Gain:	13.55 dBd	Gain:	13.55 dBd	Gain:	13.55 dBd
Height (AGL):	192	Height (AGL):	192	Height (AGL):	192
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power(W):	30	Total TX Power(W):	30	Total TX Power(W):	30
ERP (W):	679.39	ERP (W):	679.39	ERP (W):	679.39
Antenna A2 MPE%	0.15	Antenna B2 MPE%	0.15	Antenna C2 MPE%	0.15

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Per Sector Max)	**1.43 %**
AT&T	1.09 %
Sprint	0.58 %
Verizon Wireless	3.22 %
Site Total MPE %:	**6.32 %**

T-Mobile Sector A Total:	1.43 %
T-Mobile Sector B Total:	1.43 %
T-Mobile Sector C Total:	1.43 %
Site Total:	6.32 %

T-Mobile _Max Values per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile AWS - 2100 MHz LTE	2	2,559.48	194	5.21	AWS - 2100 MHz	1000	0.52%
T-Mobile PCS - 1900 MHz LTE	2	2,559.48	194	5.21	PCS - 1900 MHz	1000	0.52%
T-Mobile PCS - 1900 MHz GSM	2	1,167.14	194	2.37	PCS - 1900 MHz	1000	0.24%
T-Mobile 700 MHz LTE	1	679.39	192	0.71	700 MHz	467	0.15%
						Total:	**1.43%**

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:	1.43 %
Sector B:	1.43 %
Sector C:	1.43 %
T-Mobile Per Sector Maximum:	1.43 %
Site Total:	6.32 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **6.32%** 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.