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

February 14, 2017

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: 806354**
T-Mobile Site ID: CT11123A
Located at: 21 Berkshire Road, Newtown, CT 06482
Latitude: 41° 24' 45.53"/ Longitude: -73° 16' 12.34"

Dear Ms. Bachman,

T-Mobile currently maintains six (6) antennas at the 148-foot level of the existing 185-foot monopole at 21 Berkshire Road, Newtown, CT. The tower is owned by Crown Castle. The property is owned by The Carmine Renzulli. T-Mobile now intends to add three (3) antennas at the same 148-foot level, three (3) RRUs, and one (1) equipment cabinet on the ground; and, remove six (6) lines of coaxial.

This facility was approved by the Connecticut Siting Council, Docket Number 89 on March 3, 1988. This approval included the condition(s) that:

1. The monopole tower at the Newtown site shall be no taller than necessary to provide the proposed service, and in no event shall exceed a total height of 193 feet, including antennas and associated equipment.
2. The facility shall be constructed in accordance with all applicable federal, state, and municipal laws and regulations.
3. Unless necessary to comply with condition number 2, above, no lights shall be installed on the tower.
4. The Certificate Holder shall prepare a development and management (D&M) plan for the Newtown site in compliance with sections 16-50j-75 through 16-50j-77 of the Regulations of

State Agencies. The D&M plan shall provide for permanent evergreen screening around the outside perimeter of the eight-foot chain link fence, which will surround the site.

5. The Certificate Holder or its successor shall notify the Council if and when directional antennas or any equipment other than that listed in this application is added to this facility.
6. The Certificate Holder or its successor shall permit public or private entities to share space on the tower for due consideration, or shall provide the requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
7. If this facility does not provide, or permanently ceases to provide, cellular service following completion of construction, this Decision and Order shall be void, and the tower and all associated equipment in this application shall be dismantled and removed or reapplication for any new use shall be made to the Council before any such new use is made.
8. The Certificate Holder shall comply with any future radio frequency (RF) standards promulgated by State or Federal regulatory agencies. Upon the establishment of any new governmental RF standards, the facility granted in the Decision and Order shall be brought into compliance with such standards.
9. Unless otherwise approved by the Council, this Decision and Order shall be void if all construction authorized herein is not completed within three years of the issuance of this Decision and Order.

This modification complies with the aforementioned condition(s).

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 the First Selectman E. Patricia Llodra for the Town of Newtown, George Benson, Director of Planning, 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 Goodall.

Sincerely,

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

Tab 1: Exhibit-1: Compound plan and elevation depicting the planned changes
Tab 2: Exhibit-2: Structural Modification Report
Tab 3: Exhibit-3: General Power Density Table report (RF Emissions Analysis Report)

cc: First Selectman E. Patricia Llodra
Newtown Municipal Center
3 Primrose Street
Newtown, CT 06470

George Benson-Director of Planning Office
Newtown Municipal Center
3 Primrose Street
Newtown, CT 06470

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

Carmine Renzulli (Property Owner)
505 Westport Ave, Lot 31
Norwalk, CT 06851

DOCKET NO. 89 - An application of Metro Mobile CTS of Fairfield County, Inc., for a Certificate of Environmental Compatibility and Public Need for cellular telephone antennas and associated equipment in the Town of Newtown, Connecticut	:	CONNECTICUT SITING COUNCIL
	:	March 3, 1988

D E C I S I O N A N D O R D E R

Pursuant to the forgoing opinion, the Connecticut Siting Council hereby directs that a Certificate of Environmental Compatibility and Public Need, as provided by Section 16-50k of the General Statutes of Connecticut (CGS) be issued to Metro Mobile CTS of Fairfield County, Inc., for the construction, operation, and maintenance of a cellular telephone tower site and associated equipment at the "LM/A-Newtown" alternative site off of Route 34 in the Town of Newtown, Connecticut.

The "LM-Newtown" site off of Commerce Road is hereby denied.

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

1. The monopole tower at the Newtown site shall be no taller than necessary to provide the proposed service, and in no event shall exceed a total height of 193 feet, including antennas and associated equipment.

2. The facility shall be constructed in accordance with all applicable federal, state, and municipal laws and regulations.

3. Unless necessary to comply with condition number 2, above, no lights shall be installed on this tower.

4. The Certificate Holder shall prepare a development and management (D&M) plan for the Newtown site in compliance with sections 16-50j-75 through 16-50j-77 of the Regulations of State Agencies. The D&M plan shall provide for permanent evergreen screening around the outside perimeter of the eight-foot chain link fence which will surround the site.

5. The Certificate Holder or its successor shall notify the Council if and when directional antennas or any equipment other than that listed in this application is added to this facility.

6. The Certificate Holder or its successor shall permit public or private entities to share space on the tower for due consideration, or shall provide the requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

7. If this facility does not provide, or permanently ceases to provide, cellular service following completion of construction, this Decision and Order shall be void, and the tower and all associated equipment in this application shall be dismantled and removed or reapplication for any new use shall be made to the Council before any such new use is made.

8. The Certificate Holder shall comply with any future radio frequency (RF) standards promulgated by State or federal regulatory agencies. Upon the establishment of any new governmental RF standards, the facility granted in the Decision and Order shall be brought into compliance with such standards.

9. Unless otherwise approved by the Council, this Decision and Order shall be void if all construction authorized herein is not completed within three years of the the issuance of this Decision and Order.

Pursuant to CGS Section 16-50p, we hereby direct that a copy of this Decision and Order be served on each person listed below. A notice of the issuance shall be published in the Danbury News-Times and Newtown Bee.

By this Decison and Order the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of State Agencies.

The parties or intervenors to this proceeding are:

Metro Mobile CTS of Fairfield County, Inc. (applicant)
50 Rockland Road
South Norwalk, CT 06854
ATTN: Peter Kelley
Vice President

Howard L. Slater, Esq. (its representative)
Jennifer Young Gaudet, Esq.
Byrne, Slater, Sandler, Shulman & Rouse, P.C.
330 Main Street
P.O. Box 3216
Hartford, CT 06103

Fleishman and Walsh, P.C. (party)
1725 N Street, N.W.
Washington, D.C. 20036
ATTN: Richard Rubin, Esq.

Theodore G. Whippie (party)
Chairman
Planning & Zoning Comm.
Edmond Town Hall
45 Main Street
Newtown, CT 06470

CERTIFICATION

The undersigned members of the Connecticut Siting Council hereby certify that they have heard this case in Docket 89 or read the record thereof, and that we voted as follows:

Dated at New Britain, Connecticut the 3rd day of March, 1988.

Council Members	Vote Cast
Gloria Dibble Pond Chairperson	Yes
Commissioner Peter Boucher Designee: Roland Miller	Yes
Commissioner Leslie Carothers Designee: Brian Emerick	Yes
Owen L. Clark	Absent
Fred J. Dodcy	Yes
Mortimer A. Gelston	Yes
James G. Horsfall	Yes
William H. Smith	Yes
Colin C. Tait	Absent

1058E-2

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William H. Smith	Yes
Colin C. Tait	Absent

21 BERKSHIRE ROAD

Location	21 BERKSHIRE ROAD	**M/B/L**	38/ 10/ 3/C /
Acct#	00428200C	**Owner**	RENZULLI CARMINE V
Assessment	$319,200	**Appraisal**	$456,000
PID	15220	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$96,000	$360,000	$456,000
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$67,200	$252,000	$319,200

Owner of Record

Owner	RENZULLI CARMINE V	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	505 WESTPORT AVE LT 31 NORWALK, CT 06851	**Book & Page**	0306/0377
		Sale Date	12/25/2009

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
RENZULLI CARMINE V	$0		0306/0377	12/25/2009

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0

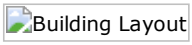
Building Attributes	
Field	**Description**
Style	Outbuildings
Model	
Grade:	
Stories	

Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Full Bthrms:	
Half Baths:	
Extra Fixtures	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Extra Kitchens	
Fireplace(s)	
Extra Opening(s)	
Gas Fireplace(s)	
Blocked FPL(s)	
Woodstove(s)	
SF Fin Bsmt	
Fin Bsmt Qual	
Bsmt Garage	
Int Millwork	
Foundation	
Dormer LF	

Building Photo

(http://images.vgsi.com/photos/NewtownCTPhotos//default.jpg)

Building Layout



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

Land Line Valuation

Use Code	1060	**Size (Acres)**	0.25
Description	Vacant W/ OB	**Frontage**	
Zone	B-3	**Depth**	
Neighborhood		**Assessed Value**	$252,000
Alt Land Appr	No	**Appraised Value**	$360,000
Category			

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
CELL	Cell Tower			1 Units	$96,000	1

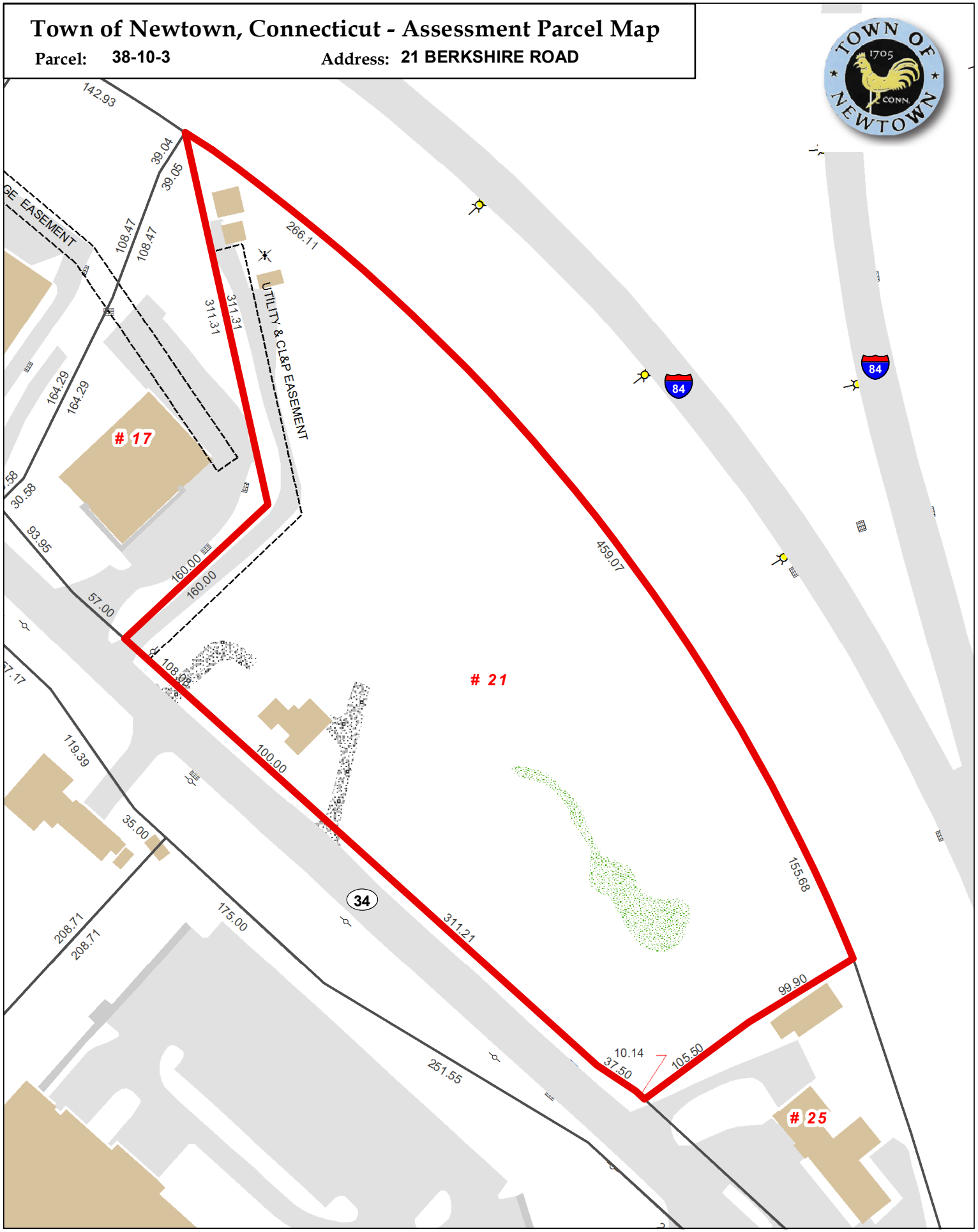
Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$96,000	$360,000	$456,000
2014	$96,000	$360,000	$456,000

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$67,200	$252,000	$319,200
2014	$67,200	$252,000	$319,200

Town of Newtown, Connecticut - Assessment Parcel Map

Parcel: 38-10-3 **Address:** 21 BERKSHIRE ROAD



Approximate Scale:

0 25 50 75 100 Feet

N W E S

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

Map Produced Oct 2016

T-Mobile

T-MOBILE SITE NUMBER: CT11123A
T-MOBILE SITE NAME: NEWTOWN/I-84 EX 10-11
SITE TYPE: MONOPOLE
TOWER HEIGHT: 185'-0"

CROWN CASTLE BU #: 806354
SITE ADDRESS: 21 BERKSHIRE ROAD NEWTOWN
NEWTOWN, CT 06482
COUNTY: FAIRFIELD
JURISDICTION: CONNECTICUT SITING COUNCIL

T-MOBILE L700 SITE CONFIGURATION: 702Cu

SITE INFORMATION

CROWN CASTLE SITE NAME:	BRG 123 943084
SITE ADDRESS:	21 BERKSHIRE ROAD NEWTOWN NEWTOWN, CT 06482
COUNTY:	FAIRFIELD
MAP/PARCEL #:	NEWT-000042-008200
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41° 24' 45.53"
LONGITUDE:	-73° 16' 12.34"
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	354.0 FT.
CURRENT ZONING:	N/A
JURISDICTION:	CONNECTICUT SITING COUNCIL
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	VB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	RENZULLI, CARMINE V. 505 WESTPORT AVE, LOT 31 NORWALK, CT 06851
TOWER OWNER:	CROWN ATLANTIC COMPANY LLC 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	T-MOBILE NORTHEAST 35 GRIFFIN RD S BLOOMFIELD CT 06002
CROWN CASTLE APPLICATION ID:	373689
ELECTRIC PROVIDER:	EVERSOURCE (800-340-9822)
TELCO PROVIDER:	FRONTIER (800) 921-8101

PROJECT TEAM

CROWN CASTLE A&E FIRM:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317 CROWNAE.APPROVAL@CROWNCASTLE.COM
CROWN CASTLE CONTACTS:	3 CORPORATE PARK DRIVE, SUITE 101 CLIFTON PARK, NY 12065 TRICIA PELON - PROJECT MANAGER (518) 373-3507 JASON D'AMICO - CONSTRUCTION MANAGER (860) 209-0104 AMANDA BROWN - A&E PROJECT MANAGER AMANDA.BROWN@CROWNCASTLE.COM (502) 318-1341 SCOTT M. JOHNSON AICP - REAL ESTATE SERVICES SCOTT.JOHNSON@CROWNCASTLE.COM (804) 330-3316

DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1	OVERALL SITE PLAN
C-2	EQUIPMENT PLAN
C-3	FINAL ELEVATION AND ANTENNA PLANS
C-4	ANTENNA AND CABLE SCHEDULE
C-5	EQUIPMENT SPECIFICATIONS
G-1	ANTENNA GROUNDING DETAIL
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS

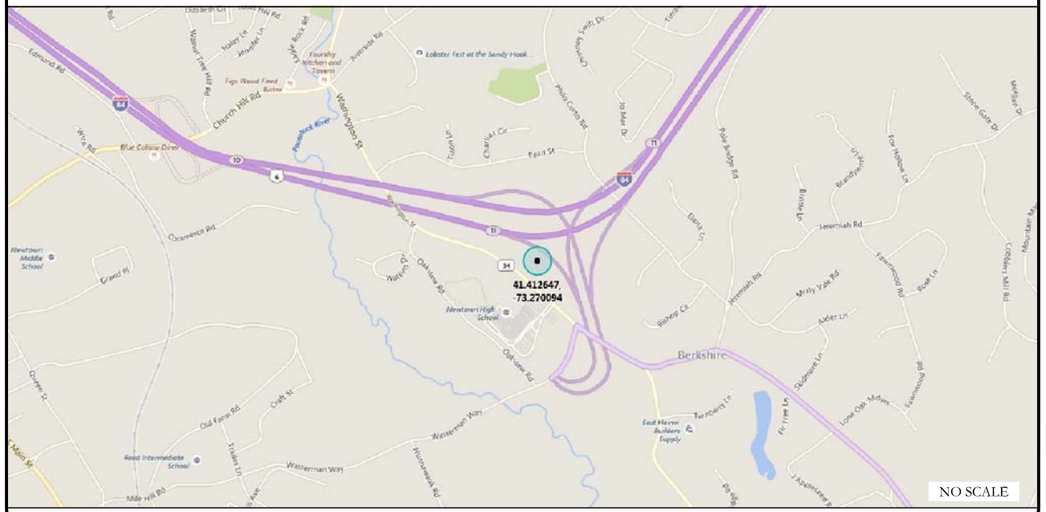
ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 11x17. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

APPROVALS

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

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

LOCATION MAP



APPLICABLE CODES/REFERENCE DOCUMENTS

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

CODE TYPE	CODE
BUILDING	2016 CT STATE BUILDING CODE/2012 IBC W/ CT AMENDMENTS
MECHANICAL	2016 CT STATE BUILDING CODE/2012 IMC W/ CT AMENDMENTS
ELECTRICAL	2016 CT STATE BUILDING CODE/2014 NEC W/ CT AMENDMENTS

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS: JACOBS ENGINEERING GROUP, INC. DATED FEBRUARY 1, 2017

MOUNT ANALYSIS: BY OTHERS

PROJECT DESCRIPTION

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

TOWER SCOPE OF WORK:
- REMOVE EQUIPMENT & MOUNTS @ ELEVATION 135'-0"
- REMOVE (6) COAX CABLES (1-5/8")
- RELOCATE (3) ANTENNAS
- INSTALL (3) ANTENNAS
- INSTALL (3) RRHs

GROUND SCOPE OF WORK:
- UPGRADE RBS 3106 CABINT TO RBS 6131 CABINET

DESIGN PACKAGE BASED ON THE APPLICATION
ID: 373689
REVISION: 2

DESIGN PACKAGE BASED ON RF DATA SHEET
VERSION: 1.1
ISSUED: 11/21/16

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

CALL CONNECTICUT ONE CALL
(800) 922-4455
CALL 3 WORKING DAYS
BEFORE YOU DIG!
CBYD.COM

T-Mobile
35 GRIFFIN RD S
BLOOMFIELD CT 06002

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

T-MOBILE SITE NUMBER:
CT11123A

BU #: **806354**
BRG 123 943084

21 BERKSHIRE ROAD
NEWTOWN
NEWTOWN, CT 06482

EXISTING 185'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	1/30/17	ZTK	PRELIMINARY	ZTK
0	2/8/17	ZTK	CONSTRUCTION	ZTK
1	2/10/17	ZTK	CONSTRUCTION	ZTK

DocuSigned by:
Justin Linette
1B4005B8527C4FD...

STATE OF CONNECTICUT
JUSTIN PETER LINETTE
No. 31965
LICENSED
PROFESSIONAL ENGINEER

2/10/2017 | 2:58:32 PM EST

Justin Peter Linette, P.E.
Professional Engineer License: 31965
Crown Castle USA, Inc. Certificate Of Registration #: PEC.0001101

SHEET NUMBER: T-1
REVISION: 1

SITE WORK GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES, SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION.
3. ALL SITE WORK TO COMPLY WITH QAS-STD-10068 "INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON CROWN CASTLE TOWER SITE" AND LATEST VERSION OF TIA 1019 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
4. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS.
5. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
6. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.
7. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.
8. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
9. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
10. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
11. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE PROJECT SPECIFICATIONS.
12. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
13. NOTICE TO PROCEED- NO WORK TO COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED AND THE ISSUANCE OF A PURCHASE ORDER.
14. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN AND SHALL MEET ANSI/TIA 1019 (LATEST EDITION), OSHA, AND GENERAL INDUSTRY STANDARDS. ALL RIGGING PLANS SHALL ADHERE TO ANSI/TIA-1019 (LATEST EDITION) INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION.

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND IN ACCORDANCE WITH ASTM A36 UNLESS OTHERWISE NOTED.
2. BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE (3/4"ø) CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
3. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8"ø ASTM A307 BOLTS UNLESS NOTED OTHERWISE.
4. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. SLAB FOUNDATION DESIGN ASSUMING ALLOWABLE SOIL BEARING PRESSURE OF 2000 PSF.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

   CONCRETE CAST AGAINST EARTH.....3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER.....2 IN.
   #5 AND SMALLER & WWF.....1 1/2 IN.
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
   SLAB AND WALLS.....3/4 IN.
   BEAMS AND COLUMNS.....1 1/2 IN.
5. A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE. IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

MASONRY NOTES:

1. HOLLOW CONCRETE MASONRY UNITS SHALL MEET A.S.T.M. SPECIFICATION C90, GRADE N. TYPE 1. THE SPECIFIED DESIGN COMPRESSIVE STRENGTH OF CONCRETE MASONRY (F'm) SHALL BE 1500 PSI.
2. MORTAR SHALL MEET THE PROPERTY SPECIFICATION OF A.S.T.M. C270 TYP. "S" MORTAR AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI.
3. GROUT SHALL MEET A.S.T.M. SPECIFICATION C475 AND HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2000 PSI.
4. CONCRETE MASONRY SHALL BE LAID IN RUNNING (COMMON) BOND.
5. WALL SHALL RECEIVE TEMPORARY BRACING. TEMPORARY BRACING SHALL NOT BE REMOVED UNTIL GROUT IS FULLY CURED.

GENERAL NOTES:

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

CONTRACTOR-	
SUBCONTRACTOR-	GENERAL CONTRACTOR (CONSTRUCTION)
CARRIER-	T-MOBILE
TOWER OWNER-	CROWN CASTLE
OEM-	ORIGINAL EQUIPMENT MANUFACTURER

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 AND CROWN CASTLE.
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 SCALE 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 CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR AND CROWN CASTLE PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWINGS.
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. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

ABBREVIATIONS AND SYMBOLS:

ABBREVIATIONS:

AGL	ABOVE GRADE LEVEL
BTS	BASE TRANSCEIVER STATION
(E)	EXISTING
MIN.	MINIMUM
REF	REFERENCE
RF	RADIO FREQUENCY
T.B.D.	TO BE DETERMINED
T.B.R.	TO BE RESOLVED
TYP	TYPICAL
REQ	REQUIRED
EGR	EQUIPMENT GROUND RING
AWG	AMERICAN WIRE GAUGE
MGB	MASTER GROUND BAR
EG	EQUIPMENT GROUND
BCW	BARE COPPER WIRE
SIAD	SMART INTEGRATED ACCESS DEVICE
GEN	GENERATOR
IGR	INTERIOR GROUND RING (HALO)
RBS	RADIO BASE STATION

SYMBOLS:

- SOLID GROUND BUS BAR
- SOLID NEUTRAL BUS BAR
- SUPPLEMENTAL GROUND CONDUCTOR
- 2-POLE THERMAL-MAGNETIC CIRCUIT BREAKER
- SINGLE-POLE THERMAL-MAGNETIC CIRCUIT BREAKER
- CHEMICAL GROUND ROD
- TEST WELL
- DISCONNECT SWITCH
- METER
- EXOTHERMIC WELD (CADWELD) (UNLESS OTHERWISE NOTED)
- MECHANICAL CONNECTION
- GROUNDING WIRE

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC. HILTI EPOXY ANCHORS ARE REQUIRED BY CROWN CASTLE.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
5. CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
6. EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH PLASTIC TAPE PER COLOR SCHEDULE. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (I.E. PANEL BOARD AND CIRCUIT ID'S).
8. PANEL BOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
9. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
10. POWER, CONTROL AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#14 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET & DRY) OPERATION LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED UNLESS OTHERWISE SPECIFIED.
11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION WITH OUTER JACKET LISTED OR LABELED FOR THE LOCATION USED UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E. RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
16. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT) OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
21. WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER).
22. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHIN ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
23. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL; SHALL MEET OR EXCEED UL 50 AND RATED NEMA 1 (OR BETTER) INDOORS OR NEMA 3R (OR BETTER) OUTDOORS.
24. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
25. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
26. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
27. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
28. INSTALL PLASTIC LABEL ON THE METER CENTER TO SHOW "T-MOBILE".
29. ALL CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

GREENFIELD GROUNDING NOTES:

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

NEC INSULATOR COLOR CODE

DESCRIPTION	PHASE/CODE LETTER	WIRE COLOR
240/120 1Ø	LEG 1	BLACK
	LEG 2	RED
AC NEUTRAL	N	WHITE
GROUND (EGC)	G	GREEN
VDC POS	+	*RED-POLARITY MARK AT TERMINATION
VDC NEG	-	*BLACK-POLARITY MARK AT TERMINATION
240V OR 208V, 3Ø	PHASE A	BLACK
	PHASE B	RED(ORG. IF HI LEG)
	PHASE C	BLUE
480V, 3Ø	PHASE A	BROWN
	PHASE B	ORANGE
	PHASE C	YELLOW

* SEE NEC 210.5(C)(1) AND (2)

T-Mobile
35 GRIFFIN RD S
BLOOMFIELD CT 06002

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

T-MOBILE SITE NUMBER:
CT11123A

BU #: **806354**
BRG 123 943084

21 BERKSHIRE ROAD
NEWTOWN
NEWTOWN, CT 06482

EXISTING 185'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	1/30/17	ZTK	PRELIMINARY	ZTK
0	2/8/17	ZTK	CONSTRUCTION	ZTK
1	2/10/17	ZTK	CONSTRUCTION	ZTK

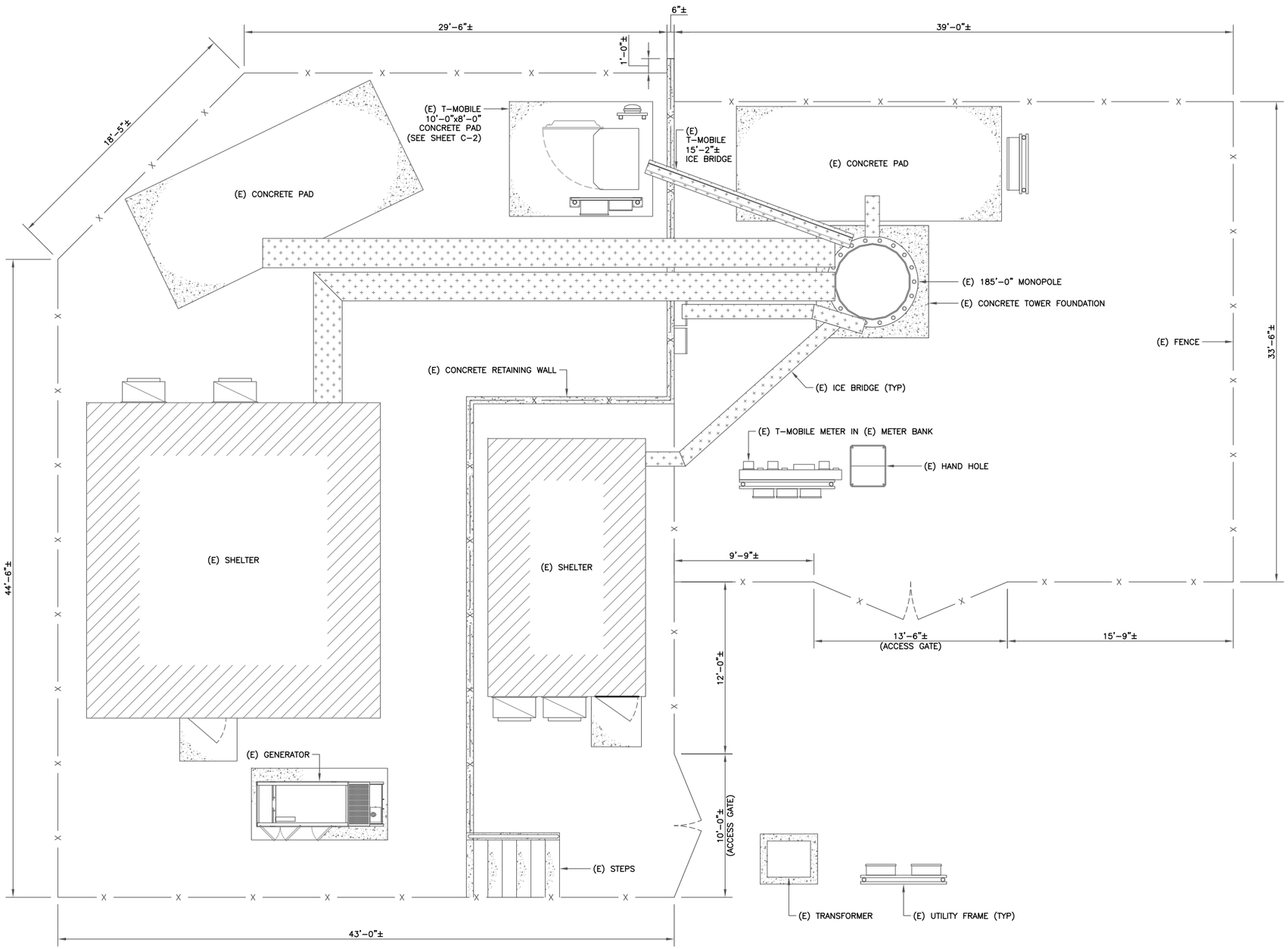
DocuSigned by:
Justin Linette
1B4005B2547C41D...

STATE OF CONNECTICUT
JUSTIN PETER LINETTE
No. 31965
LICENSED PROFESSIONAL ENGINEER

2/10/2017 | 2:58:32 PM EST

Justin Peter Linette, P.E.
Professional Engineer License: 31965
Crown Castle USA, Inc. Certificate Of Registration #: PEC.0001101

SHEET NUMBER: T-2
REVISION: 1



1 OVERALL SITE PLAN

SCALE: 4' 3' 2' 1' 0 4' 1/4"=1'-0" (FULL SIZE) 1/8"=1'-0" (11x17)

N

T-Mobile
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LICENSED
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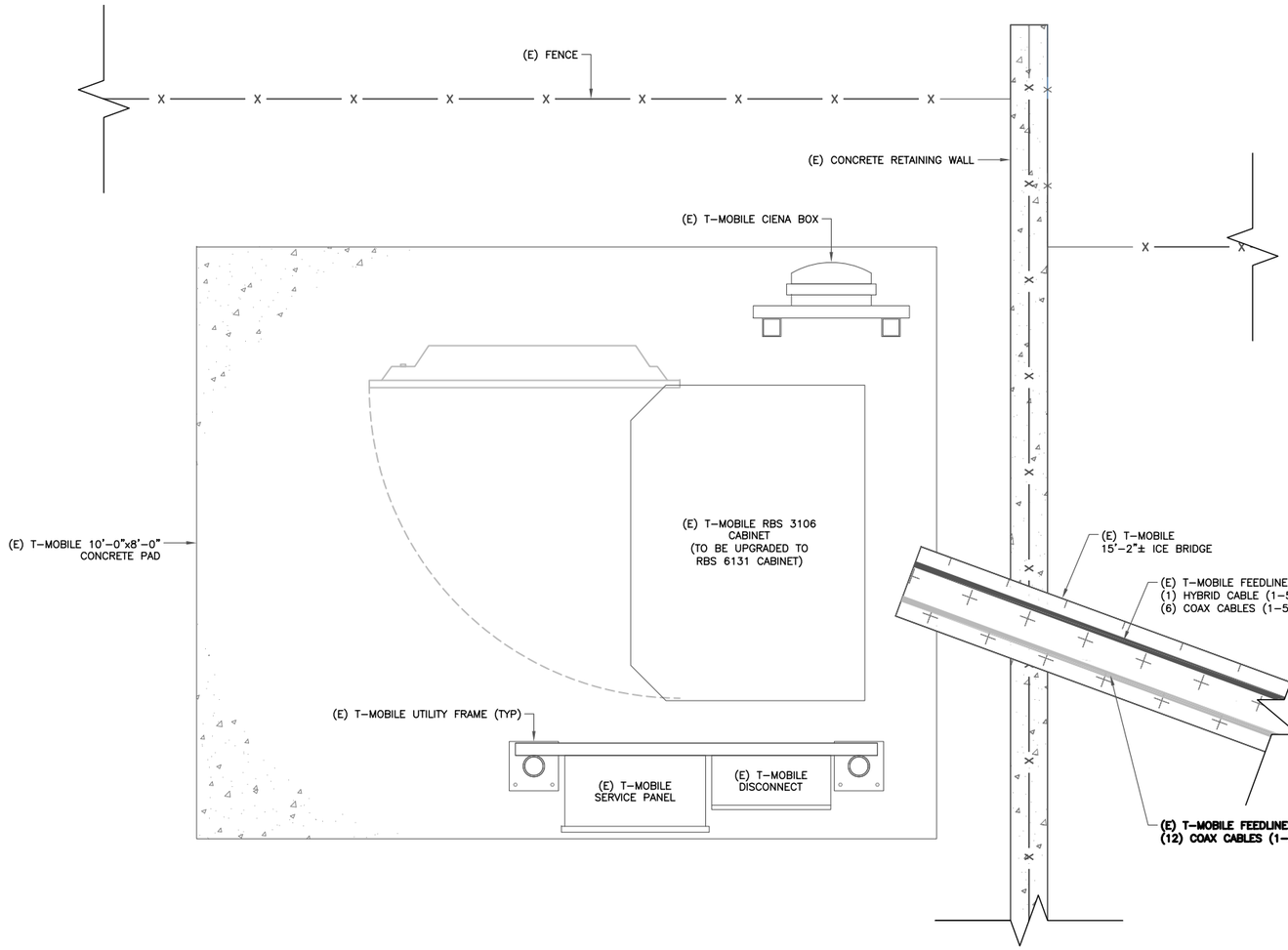
Justin Peter Linette, P.E.
Professional Engineer License: 31965
Crown Castle USA, Inc. Certificate Of
Registration #: PEC.0001101

SHEET NUMBER: C-1

REVISION: 1



1 EQUIPMENT PLAN
SCALE: 1" 6" 0 1' 1"=1'-0" (FULL SIZE) 1/2"=1'-0" (11x17)

N

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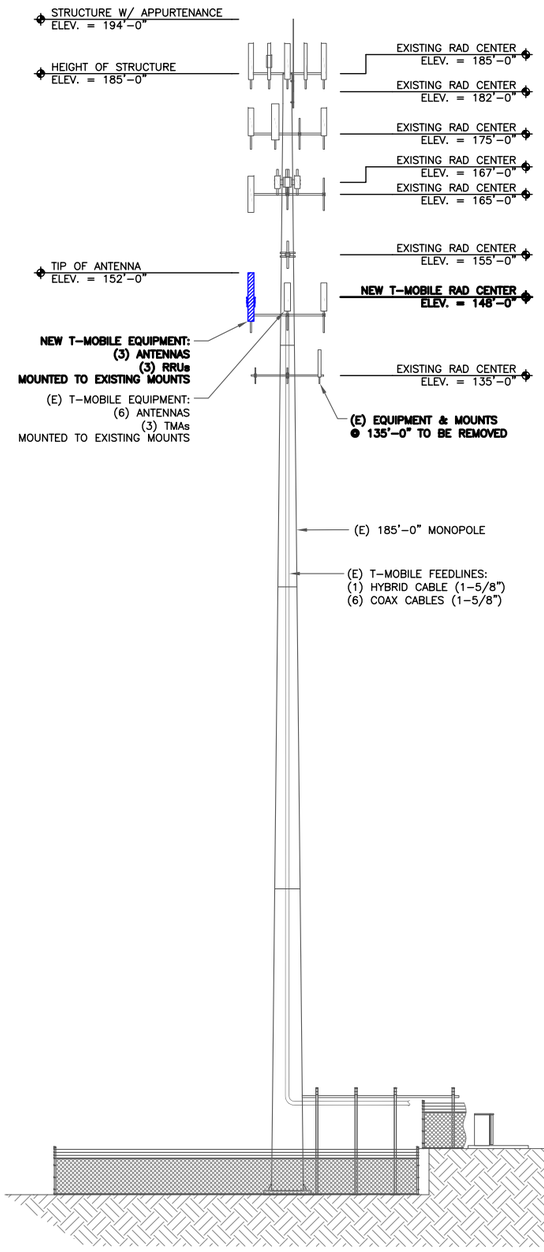
SHEET NUMBER: C-2

REVISION: 1



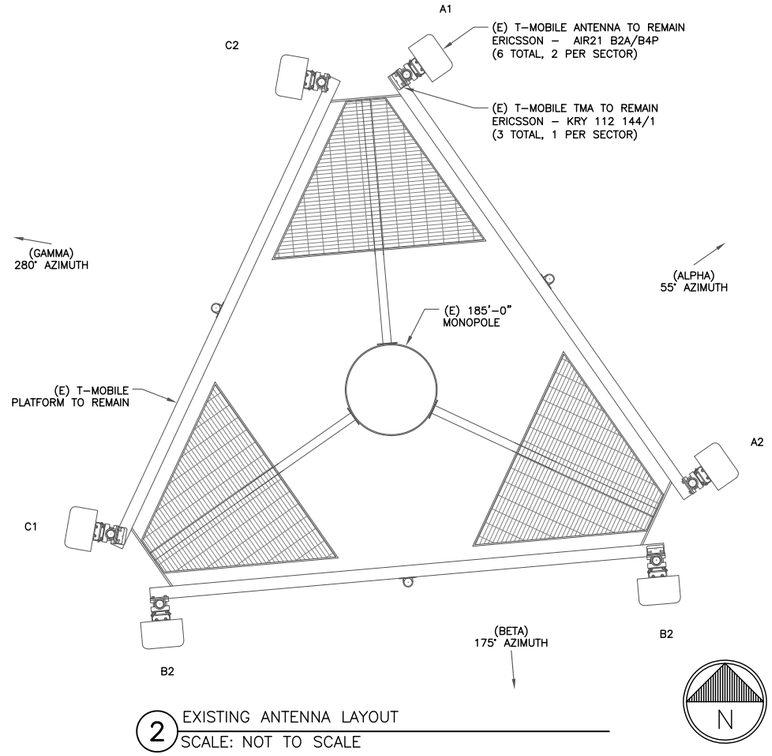
T-MOBILE EQUIPMENT

ANTENNA CL: 148'-0"
MOUNT CL: 145'-0"

INSTALLER NOTE:

DIRECT TOWER MOUNTED EQUIPMENT MUST NOT TRAP OR INTERFERE W/ CLIMBING PEGS/STEPS AND SAFETY CLIMB.

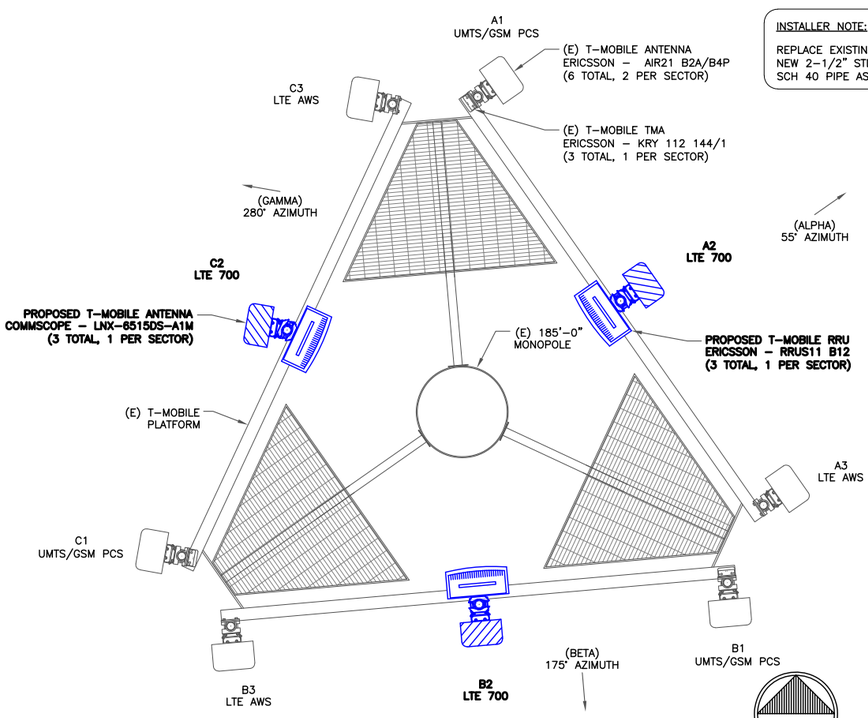
1 FINAL ELEVATION
SCALE: NOT TO SCALE



2 EXISTING ANTENNA LAYOUT
SCALE: NOT TO SCALE

INSTALLER NOTE:

REPLACE EXISTING PIPE MOUNTS WITH NEW 2-1/2" STD (2-7/8" O.D.) GALV. SCH 40 PIPE AS REQ'D.



3 FINAL ANTENNA LAYOUT
SCALE: NOT TO SCALE

T-Mobile
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SHEET NUMBER: C-3
REVISION: 1

ANTENNA SCHEDULE

SECTOR	POS.	TECHNOLOGY	RAD CENTER	AZIMUTH	ANTENNA MANUFACTURER	ANTENNA MODEL	MECH. TILT	ELECT. TILT	TOWER MOUNTED EQUIPMENT	FEEDLINE TYPE
ALPHA	A1	UMTS/GSM PCS	148'-0"	55°	ERICSSON	AIR21 B2A/B4P	0°	2°	ERICSSON – KRY 112 144/1	COAX/HYBRID
ALPHA	**A2**	**LTE 700**	**148'-0"**	**55°**	**COMMSCOPE**	**LNX-6515DS-A1M**	0°	2°	**ERICSSON – RRUS11 B12**	HYBRID
ALPHA	A3	LTE AWS	148'-0"	55°	ERICSSON	AIR21 B2A/B4P	0°	2°	–	HYBRID
BETA	B1	UMTS/GSM PCS	148'-0"	175°	ERICSSON	AIR21 B2A/B4P	0°	2°	ERICSSON – KRY 112 144/1	COAX/HYBRID
BETA	**B2**	**LTE 700**	148'-0"	175°	**COMMSCOPE**	**LNX-6515DS-A1M**	0°	2°	**ERICSSON – RRUS11 B12**	HYBRID
BETA	B3	LTE AWS	**148'-0"**	**175°**	ERICSSON	AIR21 B2A/B4P	0°	2°	–	HYBRID
GAMMA	C1	UMTS/GSM PCS	148'-0"	280°	ERICSSON	AIR21 B2A/B4P	0°	2°	ERICSSON – KRY 112 144/1	COAX/HYBRID
GAMMA	**C2**	**LTE 700**	148'-0"	280°	**COMMSCOPE**	**LNX-6515DS-A1M**	0°	2°	**ERICSSON – RRUS11 B12**	HYBRID
GAMMA	C3	LTE AWS	**148'-0"**	**280°**	ERICSSON	AIR21 B2A/B4P	0°	2°	–	HYBRID

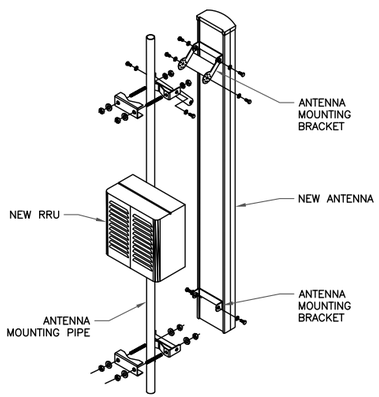
CABLE SCHEDULE

STATUS	CABLE TYPE	SIZE	QUANTITY
EXISTING	COAX	1-5/8"	6
EXISTING	HYBRID	1-5/8"	1
–	–	–	1
–	–	–	–
FINAL CABLE QUANTITY			7

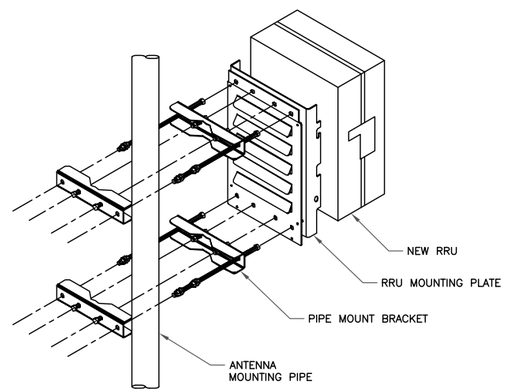
1 ANTENNA AND CABLE SCHEDULE
SCALE: NOT TO SCALE

INSTALLER NOTES:

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



NOTE:
ANTENNA NOT SHOWN FOR CLARITY



2 MOUNTING DETAIL
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN RD S
BLOOMFIELD CT 06002

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

T-MOBILE SITE NUMBER:
CT11123A

BU #: **806354**
BRG 123 943084

21 BERKSHIRE ROAD
NEWTOWN
NEWTOWN, CT 06482

EXISTING 185'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	1/30/17	ZTK	PRELIMINARY	ZTK
0	2/8/17	ZTK	CONSTRUCTION	ZTK
1	2/10/17	ZTK	CONSTRUCTION	ZTK

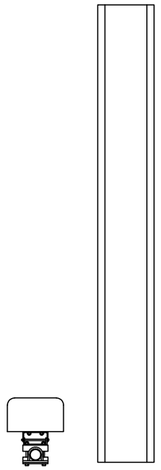
DocuSigned by:
Justin Linette
1B4008B256C94D...

STATE OF CONNECTICUT
JUSTIN PETER LINETTE
No. 31965
LICENSED
PROFESSIONAL ENGINEER

2/10/2017 | 2:58:32 PM EST

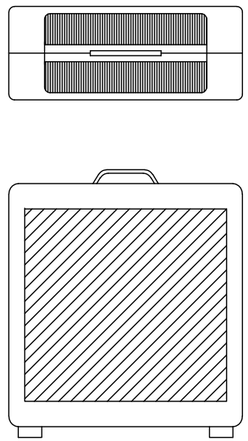
Justin Peter Linette, P.E.
Professional Engineer License: 31965
Crown Castle USA, Inc. Certificate Of
Registration #: PEC.0001101

SHEET NUMBER: C-4
REVISION: 1



ANDREW – LNX–6515DS–A1M
WEIGHT (WITHOUT MOUNTING HARDWARE): 43.7 LBS
SIZE (HxWxD): 96.60x11.90x7.10 IN.
MOUNTING HARDWARE P/N: DB380–3 & DB5083D
RATED WIND VELOCITY: 149.8 MPH

1 ANDREW – LNX–6515DS–A1M
SCALE: NOT TO SCALE



ERICSSON – RRUS 11 B12
WEIGHT (FULLY EQUIPPED): 50.7 LBS
SIZE (HxWxD): 19.7x17x7.2 IN.
OUTPUT POWER: 2x30W
TYPICAL POWER CONSUMPTION: 022kW
HIGH LOAD POWER CONSUMPTION: 0.38kW

2 ERICSSON – RRUS 11 B12
SCALE: NOT TO SCALE

3 NOT USED
SCALE: NOT TO SCALE

4 NOT USED
SCALE: NOT TO SCALE

5 NOT USED
SCALE: NOT TO SCALE

6 NOT USED
SCALE: NOT TO SCALE

T-Mobile

35 GRIFFIN RD S
BLOOMFIELD CT 06002

CROWN CASTLE

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

T-MOBILE SITE NUMBER:
CT11123A

BU #: **806354**
BRG 123 943084

21 BERKSHIRE ROAD
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EXISTING 185'-0" MONOPOLE

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1	2/10/17	ZTK	CONSTRUCTION	ZTK

DocuSigned by:
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JUSTIN PETER LINETTE
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LICENSED
PROFESSIONAL ENGINEER

2/10/2017 | 2:58:32 PM EST

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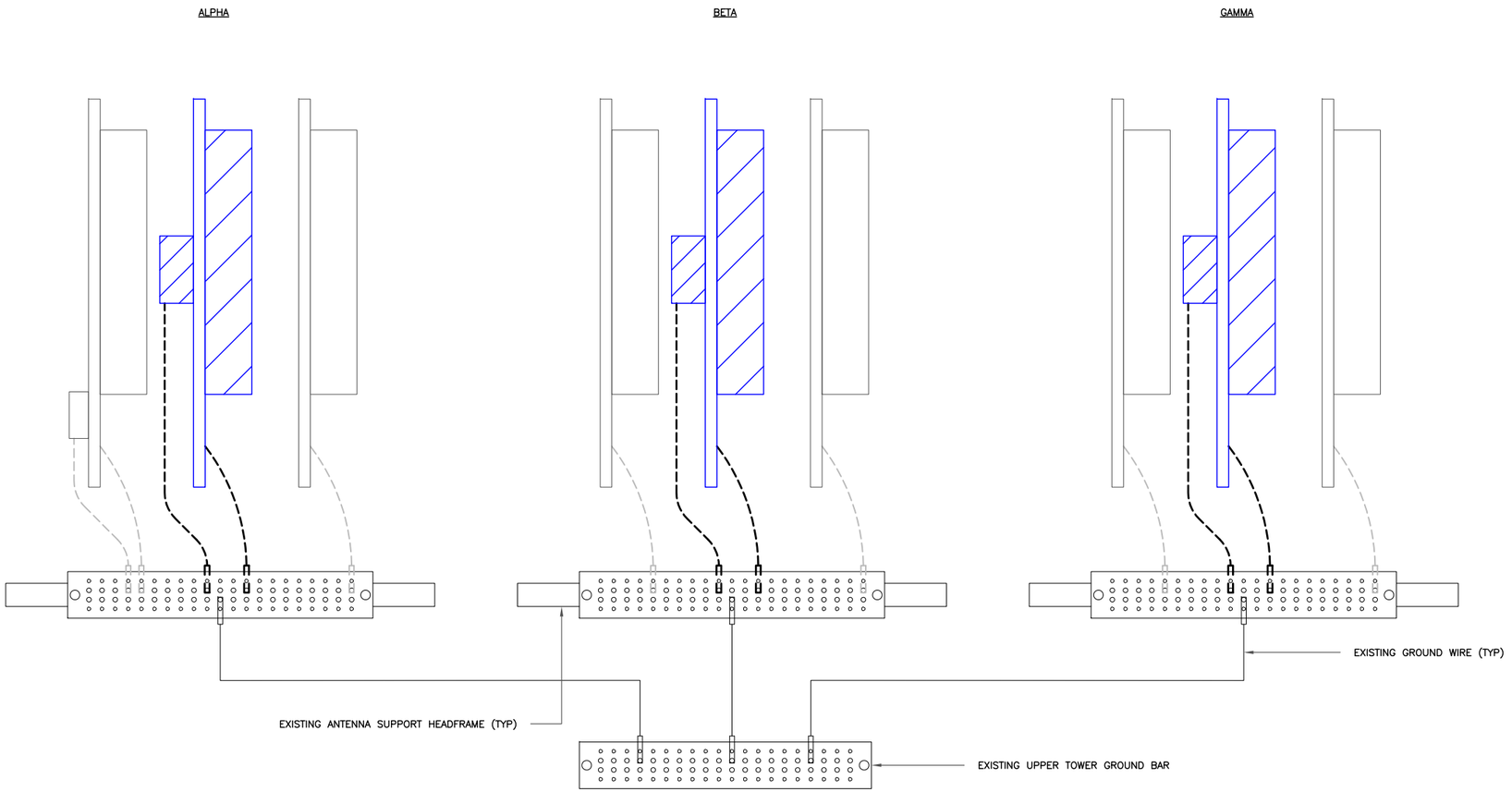
SHEET NUMBER: C-5

REVISION: 1



1 ANTENNA GROUNDING DIAGRAM
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN RD S
BLOOMFIELD CT 06002

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
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T-MOBILE SITE NUMBER:
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BU #: **806354**
BRG 123 943084

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NEWTOWN, CT 06482

EXISTING 185'-0" MONOPOLE

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0	2/8/17	ZTK	CONSTRUCTION	ZTK
1	2/10/17	ZTK	CONSTRUCTION	ZTK

DocuSigned by:
Justin Linette
1B400BB2567C41D...

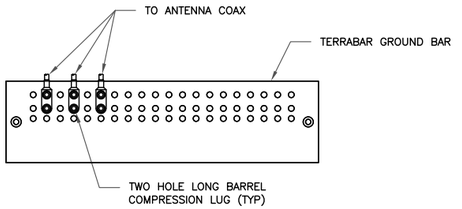
STATE OF CONNECTICUT
JUSTIN PETER LINETTE
No. 31965
LICENSED PROFESSIONAL ENGINEER

2/10/2017 | 2:58:32 PM EST

Justin Peter Linette, P.E.
Professional Engineer License: 31965
Crown Castle USA, Inc. Certificate Of
Registration #: PEC.0001101

SHEET NUMBER: G-1

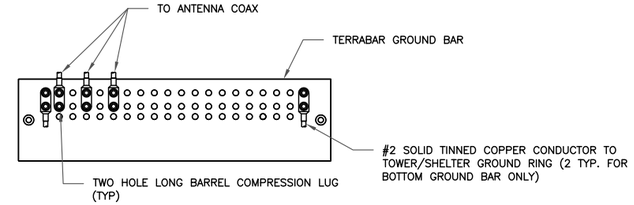
REVISION: 1



NOTES:

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

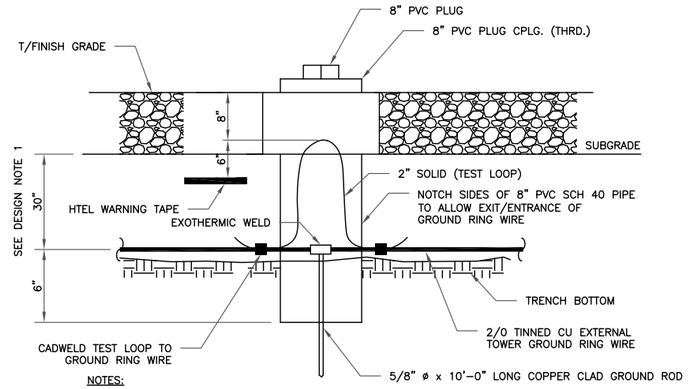
1 ANTENNA GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

1. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
2. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL (TOWER ONLY).
3. INSTALL GROUND BARS AT 75 FT. INTERVAL MAXIMUM.
4. GROUND BAR SHALL BE ISOLATED FROM BUILDING OR SHELTER.

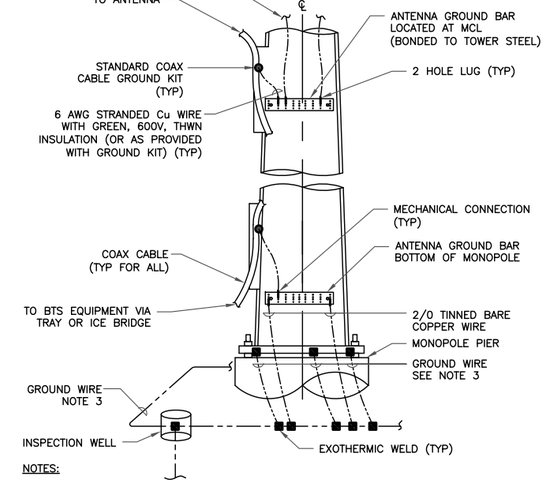
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL
2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D)

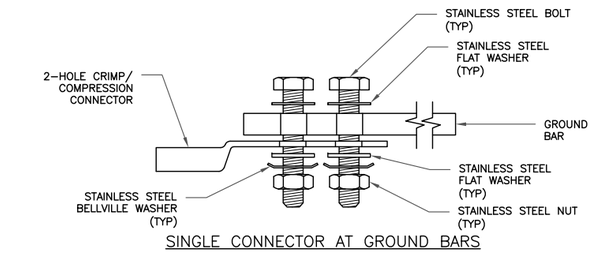
3 INSPECTION PORT DETAIL
SCALE: NOT TO SCALE



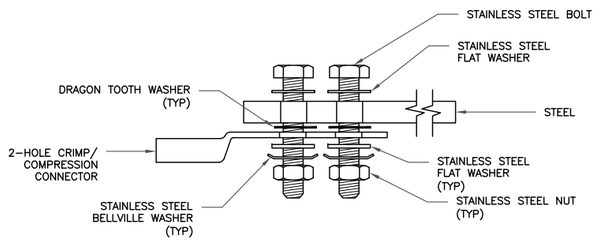
NOTES:

1. NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATIONS AND CONNECTION ORIENTATION. COAXIAL CABLES EXCEEDING 200 FEET ON THE TOWER SHALL HAVE GROUND KITS AT THE MIDPOINT. PROVIDE AS REQUIRED.
2. ONLY MECHANICAL CONNECTIONS ARE ALLOWED TO BE MADE TO CROWN CASTLE TOWERS. ALL MECHANICAL CONNECTIONS SHALL BE TREATED WITH AN ANTI-OXIDANT COATING.
3. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF THE RECOGNIZED EDITION OF ANSI/TIA 222 AND NFPA 780.

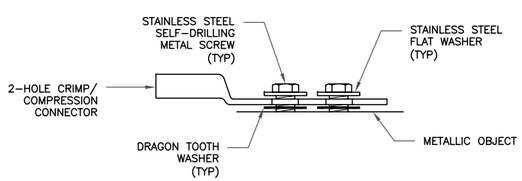
4 TYPICAL ANTENNA CABLE GROUNDING
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS

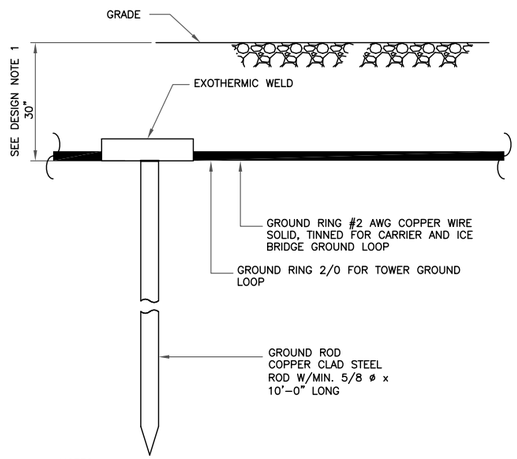


SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

5 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL
2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D)

6 GROUND ROD DETAIL
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN RD S
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CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

T-MOBILE SITE NUMBER:
CT11123A

BU #: **806354**
BRG 123 943084

21 BERKSHIRE ROAD
NEWTOWN
NEWTOWN, CT 06482

EXISTING 185'-0" MONOPOLE

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0	2/8/17	ZTK	CONSTRUCTION	ZTK
1	2/10/17	ZTK	CONSTRUCTION	ZTK

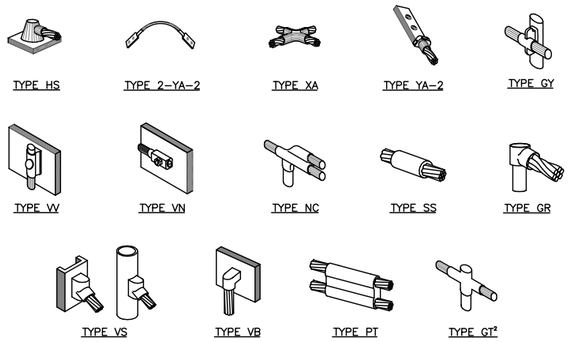
DocuSigned by:
Justin Linette
1B400BB2547C41D...

STATE OF CONNECTICUT
JUSTIN PETER LINETTE
No. 31965
LICENSED PROFESSIONAL ENGINEER

2/10/2017 | 2:58:32 PM EST

Justin Peter Linette, P.E.
Professional Engineer License: 31965
Crown Castle USA, Inc. Certificate Of Registration #: PEC.0001101

SHEET NUMBER: G-2
REVISION: 1

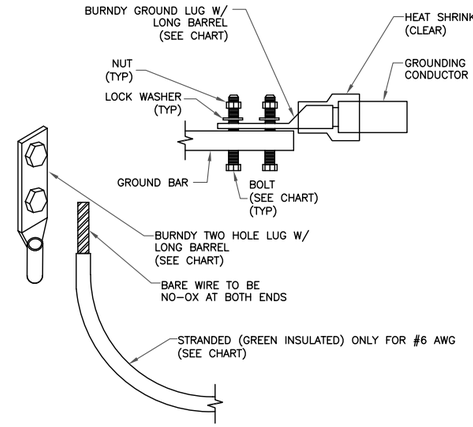


NOTE:

1. ERICO EXOTHERMIC "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH CONSTRUCTION MANAGER FOR SPECIFIC MOLDS TO BE USED FOR THIS PROJECT.
2. MOLD TYPE ONLY TO BE USED BELOW GRADE WHEN CONNECTING GROUND RING TO GROUND ROD.

1 CADWELD GROUNDING CONNECTIONS
SCALE: NOT TO SCALE

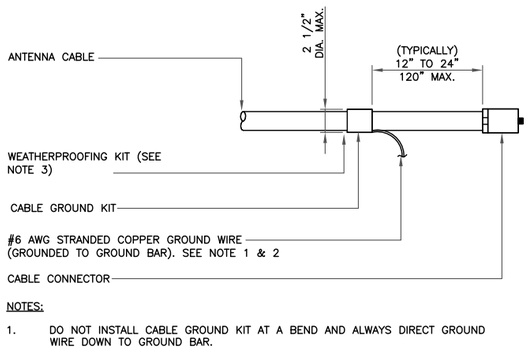
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT



NOTES:

1. ALL GROUNDING LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL HARDWARE BOLTS, NUTS, LOCK WASHERS SHALL BE STAINLESS STEEL. ALL HARDWARE ARE TO BE AS FOLLOWS: BOLT, FLAT WASHER,GROUND BAR, GROUND LUG, FLAT WASHER AND NUT.

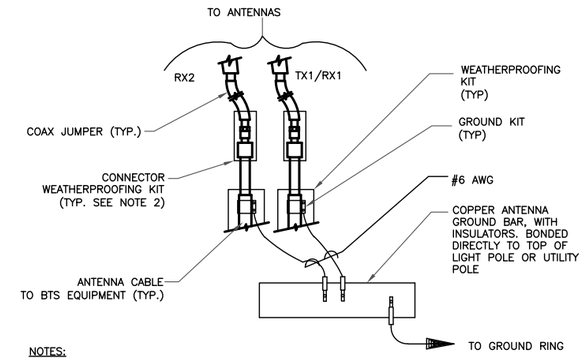
2 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



NOTES:

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

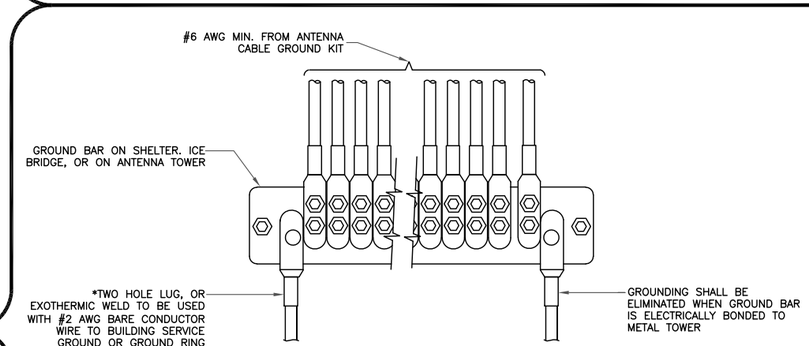
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



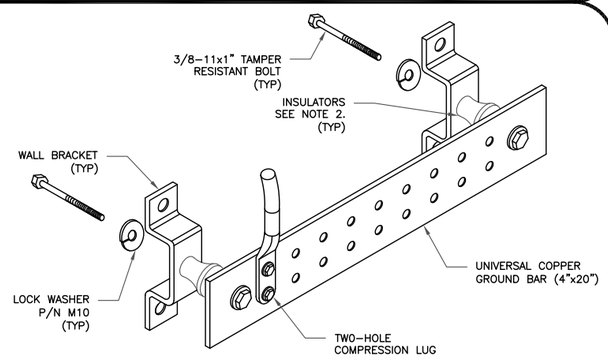
NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.

4 GROUND CABLE CONNECTION
SCALE: NOT TO SCALE



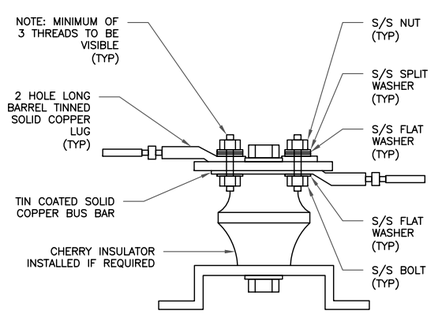
5 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



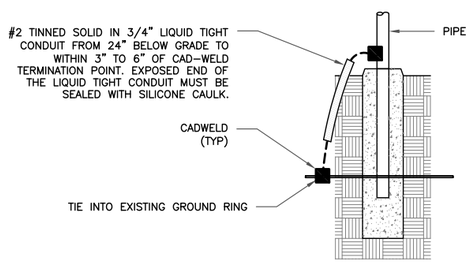
NOTES:

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

6 GROUND BAR DETAIL
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE



8 TRANSITIONING GROUND DETAIL
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN RD S
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STATE OF CONNECTICUT
JUSTIN PETER LINETTE
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2/10/2017 | 2:58:32 PM EST

Justin Peter Linette, P.E.
Professional Engineer License: 31965
Crown Castle USA, Inc. Certificate Of
Registration #: PEC.0001101

SHEET NUMBER: G-3
REVISION: 1

Date: **February 1, 2017**

Charles Trask
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:	CT11123A
	Carrier Site Name:	Newtown/I-84 ex 10-11
Crown Castle Designation:	**Crown Castle BU Number:**	806354
	Crown Castle Site Name:	BRG 123 943084
	Crown Castle JDE Job Number:	414770
	Crown Castle Work Order Number:	1354011
	Crown Castle Application Number:	373689 Rev. 2
Engineering Firm Designation:	**Jacobs Engineering Group, Inc. Project Number:**	1354011
Site Data:	**21 BERKSHIRE ROAD NEWTOWN, NEWTOWN, Fairfield County, CT** **Latitude *41° 24' 45.53"*, Longitude *-73° 16' 12.34"*** **185 Foot - Monopole Tower**	

Dear Charles Trask,

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 994518, in accordance with 373689, revision 2.

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 C with a maximum topographic factor, Kzt, of 1.0 and Risk Category II were used in this analysis.

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.

Respectfully submitted by:

Philip Lin
Tower Structural Engineer

Reviewed By:

Matthew E. Watkins, P.E.
Engineering Project Manager

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 185 ft Monopole tower designed by Engineered Endeavors, Inc. in August of 1999. The tower was originally designed for a wind speed of 90 mph per TIA/EIA-222-F. The tower has been modified per reinforcement drawings prepared by Vertical Structures, Inc., in February of 2009.

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 C with topographic category 1 and crest height of 0 feet.

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
145.0	148.0	3	commscope	LNX-6515DS-A1M w/ Mount Pipe	-	-	-
		3	ericsson	RRUS 11 B12			

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
185.0	187.0	3	alcatel lucent	RRH2X60-PCS	1	1-5/8	2
		3	alcatel lucent	RRH2x60-700			
		3	alcatel lucent	RRH4X45-AWS4 B66			
		6	commscope	SBNHH-1D85C w/ Mount Pipe			
		1	rfs celwave	DB-T1-6Z-8AB-0Z			
		6	decibel	DB846F65ZAXY w/ Mount Pipe	13	1-5/8	1
		1	rfs celwave	DB-T1-6Z-8AB-0Z			
	185.0	1	tower mounts (crown)	Platform Mount [LP 712-1]			
		1	tower mounts (crown)	Side Arm Mount [SO 202-3]			
182.0	188.0	1	decibel	ASP-601	1	1/2	1
	182.0	1	tower mounts (crown)	Side Arm Mount [SO 104-3]			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
175.0	177.0	3	cci antennas	OPA-65R-LCUU-H6 w/ Mount Pipe	1 2 12	3/8 5/8 1-5/8	1
		3	ericsson	RRUS-11			
		3	ericsson	RRUS12/RRUS A2			
		12	powerwave technologies	7020.00			
		6	powerwave technologies	7770.00 w/ Mount Pipe			
		6	powerwave technologies	LGP2140X			
	175.0	3	cci antennas	DTMABP7819VG12A			
		1	raycap	DC6-48-60-18-8F			
		1	tower mounts (crown)	Platform Mount [LP 712-1]			
167.0	167.0	3	alcatel lucent	TME-1900MHz RRH (65MHz)	-	-	1
		3	alcatel lucent	TME-800MHZ RRH			
		1	tower mounts (crown)	Side Arm Mount [SO 104-3]			
165.0	165.0	3	alcatel lucent	800 EXTERNAL NOTCH FILTER	3	1-1/4	1
		9	rfs celwave	ACU-A20-N			
		3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe			
		1	tower mounts (crown)	Platform Mount [LP 712-1]			
155.0	155.0	1	tower mounts (crown)	Side Arm Mount [SO 102-1]	-	-	4
145.0	148.0	6	ericsson	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	7	1-5/8	1
		3	ericsson	KRY 112 144/1			
	145.0	1	tower mounts (crown)	Platform Mount [LP 712-1]			
		-	-	-	6	1-5/8	3
135.0	137.0	3	kathrein	800 10504 w/ Mount Pipe	6	1-5/8	3
		3	kathrein	860 10025			
	135.0	1	tower mounts (crown)	T-Arm Mount [TA 602-3]			

Notes:
1) Existing Equipment
2) Reserved Equipment
3) Equipment To Be Removed; Not Considered In This Analysis
4) Empty Mount; 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)
185	185	12	swedcom	ALP 9212	-	-
175	175	12	swedcom	ALP 11011	-	-
165	165	9	decibel	DB 980	-	-
155	155	12	swedcom	ALP 9011	-	-
145	145	6	ems wireless	RR65-18	-	-
		1	scala	OGB9-900		
110	110	1	generic	GPS	-	-
50	50	1	generic	GPS	-	-

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Dr. Clarence Welti, P.E., P.C.	2297011	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Engineered Endeavors, Inc.	822037	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Engineered Endeavors, Inc.	822035	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	Vertical Structures, Inc.	2381114	CCISITES
4-POST MODIFICATION INSPECTION	Vertical Structures, Inc.	2447231	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	185 - 149.622	Pole	TP36.0404x29x0.25	1	-12.3	1850.0	37.9	Pass
L2	149.622 - 114.221	Pole	TP42.4605x34.5443x0.3125	2	-22.4	2785.9	61.0	Pass
L3	114.221 - 76.8021	Pole	TP49.157x40.6978x0.375	3	-33.8	3919.2	68.2	Pass
L4	76.8021 - 38.3802	Pole	TP55.9285x47.1064x0.4375	4	-48.9	5246.2	68.3	Pass
L5	38.3802 - 0	Pole	TP62.5x53.5869x0.5	5	-71.7	6871.4	66.7	Pass
							Summary	
						Pole (L4)	68.3	Pass
						Rating =	68.3	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	63.1	Pass
1	Base Plate	0	73.8	Pass
1	Base Foundation (Structural)	0	59.9	Pass
1	Base Foundation Soil Interaction	0	68.8	Pass

Structure Rating (max from all components) =	73.8%

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

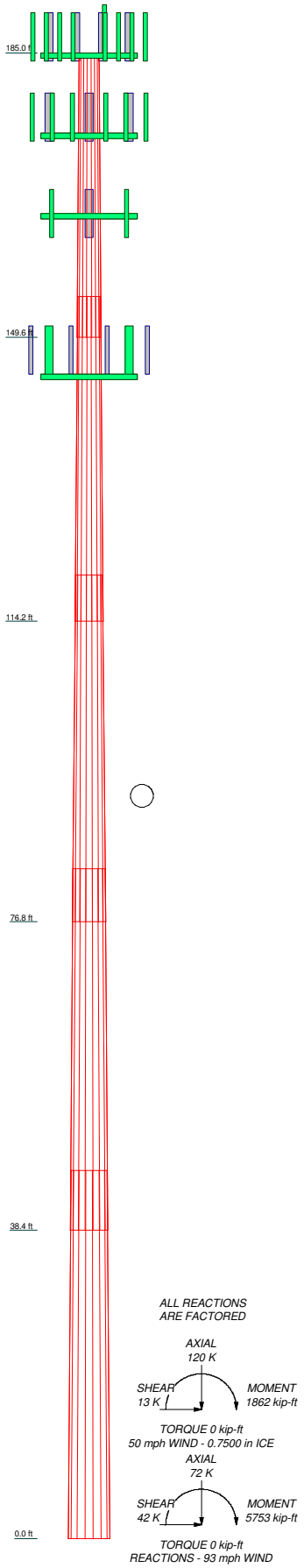
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	35.38	18	0.2500	5.01	29.0000	36.0404		3.1
2	40.41	18	0.3125	5.81	34.5443	42.4605		5.2
3	43.23	18	0.3750	6.65	40.6978	49.1570	A572-65	7.8
4	45.07	18	0.4375	7.49	47.1064	55.9285		10.9
5	45.87	18	0.5000		53.5869	62.5000		14.3
								41.2



ALL REACTIONS ARE FACTORED

AXIAL 120 K

SHEAR 13 K *MOMENT 1862 kip-ft*

TORQUE 0 kip-ft

50 mph WIND - 0.7500 in ICE

AXIAL 72 K

SHEAR 42 K *MOMENT 5753 kip-ft*

TORQUE 0 kip-ft

REACTIONS - 93 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod 2"x10'	185	DC6-48-60-18-8F	175
(2) DB846F65ZAXY w/ Mount Pipe	185	Platform Mount [LP 712-1]	175
(2) DB846F65ZAXY w/ Mount Pipe	185	6' x 2" Mount Pipe	175
(2) DB846F65ZAXY w/ Mount Pipe	185	6' x 2" Mount Pipe	175
(2) SBNHH-1D85C w/ Mount Pipe	185	6' x 2" Mount Pipe	175
(2) SBNHH-1D85C w/ Mount Pipe	185	TME-1900MHz RRH (65MHz)	167
(2) SBNHH-1D85C w/ Mount Pipe	185	TME-1900MHz RRH (65MHz)	167
RRH2x60-700	185	TME-1900MHz RRH (65MHz)	167
RRH2x60-700	185	TME-800MHZ RRH	167
RRH2x60-700	185	TME-800MHZ RRH	167
RRH2X60-PCS	185	TME-800MHZ RRH	167
RRH2X60-PCS	185	Side Arm Mount [SO 104-3]	167
RRH2X60-PCS	185	APXVSPP18-C-A20 w/ Mount Pipe	165
RRH4X45-AWS4 B66	185	APXVSPP18-C-A20 w/ Mount Pipe	165
RRH4X45-AWS4 B66	185	APXVSPP18-C-A20 w/ Mount Pipe	165
RRH4X45-AWS4 B66	185	(3) ACU-A20-N	165
DB-T1-6Z-8AB-0Z	185	(3) ACU-A20-N	165
DB-T1-6Z-8AB-0Z	185	(3) ACU-A20-N	165
6' x 2" Mount Pipe	185	800 EXTERNAL NOTCH FILTER	165
6' x 2" Mount Pipe	185	800 EXTERNAL NOTCH FILTER	165
6' x 2" Mount Pipe	185	800 EXTERNAL NOTCH FILTER	165
Climbing Ladder - 5'	185	Climbing Ladder - 5'	165
Platform Mount [LP 712-1]	185	6' x 2" Mount Pipe	165
Side Arm Mount [SO 202-3]	185	6' x 2" Mount Pipe	165
ASP-601	182	6' x 2" Mount Pipe	165
Side Arm Mount [SO 104-3]	182	Platform Mount [LP 712-1]	165
(2) 7770.00 w/ Mount Pipe	175	Side Arm Mount [SO 102-1]	155
(2) 7770.00 w/ Mount Pipe	175	(2) ERICSSON AIR 21 B2A B4P w/ Mount Pipe	145
(2) 7770.00 w/ Mount Pipe	175	(2) ERICSSON AIR 21 B2A B4P w/ Mount Pipe	145
OPA-65R-LCUU-H6 w/ Mount Pipe	175	(2) ERICSSON AIR 21 B2A B4P w/ Mount Pipe	145
OPA-65R-LCUU-H6 w/ Mount Pipe	175	KRY 112 144/1	145
OPA-65R-LCUU-H6 w/ Mount Pipe	175	KRY 112 144/1	145
(2) LGP2140X	175	KRY 112 144/1	145
(2) LGP2140X	175	LNX-6515DS-A1M w/ Mount Pipe	145
(2) LGP2140X	175	LNX-6515DS-A1M w/ Mount Pipe	145
RRUS-11	175	LNX-6515DS-A1M w/ Mount Pipe	145
RRUS-11	175	RRUS 11 B12	145
RRUS-11	175	RRUS 11 B12	145
DTMABP7819VG12A	175	RRUS 11 B12	145
DTMABP7819VG12A	175	Platform Mount [LP 712-1]	145
DTMABP7819VG12A	175	GPS	108
(4) 7020.00	175	Side Arm Mount [SO 901-1]	108
(4) 7020.00	175	GPS	107
(4) 7020.00	175	Side Arm Mount [SO 901-1]	107
RRUS12/RRUS A2	175	GPS	51
RRUS12/RRUS A2	175	Side Arm Mount [SO 901-1]	51
RRUS12/RRUS A2	175		

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 C 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 0.00 ft
8. TOWER RATING: 68.3%

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

Job:	***BRG 123 943084***		
Project:	***BU806354_WO1354011***		
Client: CROWN CASTLE		Drawn by: LinP	App'd:
Code: TIA-222-G		Date: 01/31/17	Scale: NTS
Path:			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 C.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 0.7500 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	185.00-149.62	35.38	5.01	18	29.0000	36.0404	0.2500	1.0000	A572-65 (65 ksi)
L2	149.62-114.22	40.41	5.81	18	34.5443	42.4605	0.3125	1.2500	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	114.22-76.80	43.23	6.65	18	40.6978	49.1570	0.3750	1.5000	A572-65 (65 ksi)
L4	76.80-38.38	45.07	7.49	18	47.1064	55.9285	0.4375	1.7500	A572-65 (65 ksi)
L5	38.38-0.00	45.87		18	53.5869	62.5000	0.5000	2.0000	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	29.4474	22.8131	2382.3081	10.2063	14.7320	161.7098	4767.7509	11.4087	4.6640	18.656
	36.5964	28.3997	4596.0425	12.7056	18.3085	251.0329	9198.1326	14.2025	5.9031	23.612
L2	36.0729	33.9537	5026.7193	12.1523	17.5485	286.4469	10060.0528	16.9801	5.5298	17.695
	43.1155	41.8055	9382.6455	14.9625	21.5699	434.9872	18777.6370	20.9067	6.9230	22.154
L3	42.4796	47.9942	9858.8582	14.3146	20.6745	476.8616	19730.6889	24.0016	6.5028	17.341
	49.9153	58.0628	17456.3904	17.3176	24.9718	699.0454	34935.7504	29.0369	7.9916	21.311
L4	49.1541	64.8057	17832.2562	16.5675	23.9301	745.1819	35687.9766	32.4090	7.5207	17.19
	56.7913	77.0562	29977.1322	19.6993	28.4117	1055.0990	59993.7092	38.5354	9.0734	20.739
L5	55.8918	84.2489	29996.8983	18.8458	27.2221	1101.9301	60033.2673	42.1325	8.5513	17.103
	63.4642	98.3940	47784.7640	22.0100	31.7500	1505.0319	95632.4044	49.2063	10.1200	20.24

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 185.00-149.62				1	1	1			
L2 149.62-114.22				1	1	1			
L3 114.22-76.80				1	1	1			
L4 76.80-38.38				1	1	1			
L5 38.38-0.00				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 plf
HB158-1-08U8-S8J18(1-5/8")	A	Surface Ar (CaAa)	185.00 - 0.00	2	2	0.460 0.470	1.9800		1.30
CR 50 1873PE(1-5/8") *** *** ***B***	A	Surface Ar (CaAa)	175.00 - 0.00	12	12	-0.150 0.150	1.9800		0.83
MLE Hybrid 9Power/18Fiber RL 2(1 5/8) ***C*** ***	B	Surface Ar (CaAa)	145.00 - 0.00	1	1	-0.100 -0.100	1.6250		1.07

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
***									
Safety Line 3/8	C	Surface Ar (CaAa)	185.00 - 0.00	1	1	-0.500 -0.500	0.3750		0.22
***									

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 plf
A								
LDF4P-50A(1/2")	A	No	Inside Pole	182.00 - 0.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
HJ7-50A(1-5/8")	A	No	Inside Pole	185.00 - 0.00	12	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
						1" Ice	0.00	1.04
2" Rigid Conduit	A	No	Inside Pole	175.00 - 0.00	1	No Ice	0.00	2.80
						1/2" Ice	0.00	2.80
						1" Ice	0.00	2.80
FB-L98B-002-75000(3/8")	A	No	Inside Pole	175.00 - 0.00	1	No Ice	0.00	0.06
						1/2" Ice	0.00	0.06
						1" Ice	0.00	0.06
WR-VG82ST-BRDA(5/8")	A	No	Inside Pole	175.00 - 0.00	2	No Ice	0.00	0.31
						1/2" Ice	0.00	0.31
						1" Ice	0.00	0.31
***								
***								
B								
***								
HB114-1-08U4-M5J(1-1/4)	B	No	Inside Pole	165.00 - 0.00	3	No Ice	0.00	1.08
						1/2" Ice	0.00	1.08
						1" Ice	0.00	1.08
LDF7-50A(1-5/8")	B	No	Inside Pole	145.00 - 0.00	6	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
CR 50 1873(1-5/8")	B	No	Inside Pole	135.00 - 0.00	6	No Ice	0.00	0.83
						1/2" Ice	0.00	0.83
						1" Ice	0.00	0.83
C								
***								
GPS								
LDF4P-50A(1/2")	B	No	Inside Pole	40.00 - 0.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
LDF4P-50A(1/2")	C	No	Inside Pole	100.00 - 0.00	2	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
***								

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

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	185.00-149.62	A	0.000	0.000	74.307	0.000	0.9
		B	0.000	0.000	0.000	0.000	0.0
		C	0.000	0.000	1.327	0.000	0.0
L2	149.62-114.22	A	0.000	0.000	98.132	0.000	1.0
		B	0.000	0.000	5.002	0.000	0.4
		C	0.000	0.000	1.328	0.000	0.0
L3	114.22-76.80	A	0.000	0.000	103.726	0.000	1.1
		B	0.000	0.000	6.081	0.000	0.5
		C	0.000	0.000	1.403	0.000	0.0
L4	76.80-38.38	A	0.000	0.000	106.505	0.000	1.1
		B	0.000	0.000	6.244	0.000	0.5
		C	0.000	0.000	1.441	0.000	0.0
L5	38.38-0.00	A	0.000	0.000	106.390	0.000	1.1
		B	0.000	0.000	6.237	0.000	0.6
		C	0.000	0.000	1.439	0.000	0.0

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	185.00-149.62	A	1.764	0.000	0.000	119.674	0.000	2.3
		B		0.000	0.000	0.000	0.000	0.0
		C		0.000	0.000	13.807	0.000	0.2
L2	149.62-114.22	A	1.722	0.000	0.000	153.885	0.000	2.9
		B		0.000	0.000	15.859	0.000	0.6
		C		0.000	0.000	13.816	0.000	0.2
L3	114.22-76.80	A	1.668	0.000	0.000	161.884	0.000	3.0
		B		0.000	0.000	18.971	0.000	0.8
		C		0.000	0.000	14.294	0.000	0.2
L4	76.80-38.38	A	1.586	0.000	0.000	165.169	0.000	3.0
		B		0.000	0.000	19.058	0.000	0.8
		C		0.000	0.000	14.256	0.000	0.2
L5	38.38-0.00	A	1.423	0.000	0.000	163.415	0.000	2.9
		B		0.000	0.000	18.408	0.000	0.8
		C		0.000	0.000	13.610	0.000	0.2

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	185.00-149.62	-1.3376	-1.1058	-1.0383	-1.0813
L2	149.62-114.22	-1.5980	-1.3600	-1.1922	-1.3878
L3	114.22-76.80	-1.6837	-1.4552	-1.2853	-1.5382
L4	76.80-38.38	-1.7733	-1.5328	-1.4048	-1.6654
L5	38.38-0.00	-1.8495	-1.5988	-1.5213	-1.7771

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	4	HB158-1-08U8-S8J18(1-5/8")	149.62 - 185.00	1.0000	1.0000
L1	6	CR 50 1873PE(1-5/8")	149.62 - 175.00	1.0000	1.0000
L1	24	Safety Line 3/8	149.62 - 185.00	1.0000	1.0000
L1	16	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	149.62 - 145.00	1.0000	1.0000
L2	4	HB158-1-08U8-S8J18(1-5/8")	114.22 - 149.62	1.0000	1.0000
L2	6	CR 50 1873PE(1-5/8")	114.22 - 149.62	1.0000	1.0000
L2	16	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	114.22 - 145.00	1.0000	1.0000
L2	24	Safety Line 3/8	114.22 - 149.62	1.0000	1.0000
L3	4	HB158-1-08U8-S8J18(1-5/8")	76.80 - 114.22	1.0000	1.0000
L3	6	CR 50 1873PE(1-5/8")	76.80 - 114.22	1.0000	1.0000
L3	16	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	76.80 - 114.22	1.0000	1.0000
L3	24	Safety Line 3/8	76.80 - 114.22	1.0000	1.0000
L4	4	HB158-1-08U8-S8J18(1-5/8")	38.38 - 76.80	1.0000	1.0000
L4	6	CR 50 1873PE(1-5/8")	38.38 - 76.80	1.0000	1.0000
L4	16	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	38.38 - 76.80	1.0000	1.0000
L4	24	Safety Line 3/8	38.38 - 76.80	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Lightning Rod 2"x10'	B	From Leg	0.00 0.00 5.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	2.00 3.02 4.07	2.00 3.02 4.07	0.1 0.1 0.1
185' Verizon Wireless									
185' Verizon Wireless									
(2) DB846F65ZAXY w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	7.15 7.66 8.14	7.70 8.78 9.64	0.0 0.1 0.2
(2) DB846F65ZAXY w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	7.15 7.66 8.14	7.70 8.78 9.64	0.0 0.1 0.2
(2) DB846F65ZAXY w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	7.15 7.66 8.14	7.70 8.78 9.64	0.0 0.1 0.2

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) SBNHH-1D85C w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	11.63 12.35 13.07	9.79 11.31 12.85	0.1 0.2 0.3
(2) SBNHH-1D85C w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	11.63 12.35 13.07	9.79 11.31 12.85	0.1 0.2 0.3
(2) SBNHH-1D85C w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	11.63 12.35 13.07	9.79 11.31 12.85	0.1 0.2 0.3
RRH2x60-700	A	From Leg	4.00 0.00 2.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	3.50 3.76 4.03	1.82 2.05 2.29	0.1 0.1 0.1
RRH2x60-700	B	From Leg	4.00 0.00 2.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	3.50 3.76 4.03	1.82 2.05 2.29	0.1 0.1 0.1
RRH2x60-700	C	From Leg	4.00 0.00 2.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	3.50 3.76 4.03	1.82 2.05 2.29	0.1 0.1 0.1
RRH2X60-PCS	A	From Leg	4.00 0.00 2.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	2.20 2.39 2.59	1.72 1.90 2.09	0.1 0.1 0.1
RRH2X60-PCS	B	From Leg	4.00 0.00 2.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	2.20 2.39 2.59	1.72 1.90 2.09	0.1 0.1 0.1
RRH2X60-PCS	C	From Leg	4.00 0.00 2.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	2.20 2.39 2.59	1.72 1.90 2.09	0.1 0.1 0.1
RRH4X45-AWS4 B66	A	From Leg	4.00 0.00 2.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	2.66 2.88 3.10	1.59 1.77 1.96	0.1 0.1 0.1
RRH4X45-AWS4 B66	B	From Leg	4.00 0.00 2.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	2.66 2.88 3.10	1.59 1.77 1.96	0.1 0.1 0.1
RRH4X45-AWS4 B66	C	From Leg	4.00 0.00 2.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	2.66 2.88 3.10	1.59 1.77 1.96	0.1 0.1 0.1
DB-T1-6Z-8AB-0Z	A	From Leg	4.00 0.00 2.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	4.80 5.07 5.35	2.00 2.19 2.39	0.0 0.1 0.1
DB-T1-6Z-8AB-0Z	C	From Leg	4.00 0.00 2.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	4.80 5.07 5.35	2.00 2.19 2.39	0.0 0.1 0.1
6' x 2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.0 0.0 0.0
6' x 2" Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.0 0.0 0.0
6' x 2" Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.0 0.0 0.0
Climbing Ladder - 5'	B	From Leg	3.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	2.05 2.41 2.78	2.05 2.41 2.78	0.1 0.1 0.1
Platform Mount [LP 712-1]	C	None		0.0000	185.00	No Ice 1/2" Ice 1" Ice	24.53 29.94 35.35	24.53 29.94 35.35	1.3 1.6 2.0

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
Side Arm Mount [SO 202-3]	C	None		0.0000	185.00	No Ice	6.18	6.18	0.3
						1/2" Ice	8.56	8.56	0.4
						1" Ice	10.94	10.94	0.5
182' NEWTOWN									
ASP-601	B	From Leg	1.00 0.00 6.00	0.0000	182.00	No Ice 1/2" Ice 1" Ice	2.34 4.21 6.08	2.34 4.21 6.08	0.0 0.0 0.0
Side Arm Mount [SO 104-3]	C	None		0.0000	182.00	No Ice	3.30	3.30	0.3
						1/2" Ice	4.13	4.13	0.3
						1" Ice	4.96	4.96	0.3
175' AT&T Mobility									
(2) 7770.00 w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice	5.75 6.18 6.61	4.25 5.01 5.71	0.1 0.1 0.2
(2) 7770.00 w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice	5.75 6.18 6.61	4.25 5.01 5.71	0.1 0.1 0.2
(2) 7770.00 w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice	5.75 6.18 6.61	4.25 5.01 5.71	0.1 0.1 0.2
OPA-65R-LCUU-H6 w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice	9.90 10.47 11.01	7.18 8.36 9.26	0.1 0.2 0.3
OPA-65R-LCUU-H6 w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice	9.90 10.47 11.01	7.18 8.36 9.26	0.1 0.2 0.3
OPA-65R-LCUU-H6 w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice	9.90 10.47 11.01	7.18 8.36 9.26	0.1 0.2 0.3
(2) LGP2140X	A	From Leg	4.00 0.00 2.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice	1.08 1.21 1.35	0.36 0.45 0.56	0.0 0.0 0.0
(2) LGP2140X	B	From Leg	4.00 0.00 2.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice	1.08 1.21 1.35	0.36 0.45 0.56	0.0 0.0 0.0
(2) LGP2140X	C	From Leg	4.00 0.00 2.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice	1.08 1.21 1.35	0.36 0.45 0.56	0.0 0.0 0.0
RRUS-11	A	From Leg	4.00 0.00 2.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice	2.52 2.72 2.92	1.07 1.21 1.36	0.1 0.1 0.1
RRUS-11	B	From Leg	4.00 0.00 2.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice	2.52 2.72 2.92	1.07 1.21 1.36	0.1 0.1 0.1
RRUS-11	C	From Leg	4.00 0.00 2.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice	2.52 2.72 2.92	1.07 1.21 1.36	0.1 0.1 0.1
DTMABP7819VG12A	A	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice	0.98 1.10 1.23	0.34 0.42 0.51	0.0 0.0 0.0
DTMABP7819VG12A	B	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice	0.98 1.10 1.23	0.34 0.42 0.51	0.0 0.0 0.0
DTMABP7819VG12A	C	From Leg	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice 1" Ice	0.98 1.10 1.23	0.34 0.42 0.51	0.0 0.0 0.0
(4) 7020.00	A	From Leg	4.00	0.0000	175.00	No Ice	0.10	0.17	0.0

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
			0.00			1/2" Ice	0.15	0.24	0.0
			2.00			1" Ice	0.20	0.31	0.0
(4) 7020.00	B	From Leg	4.00	0.0000	175.00	No Ice	0.10	0.17	0.0
			0.00			1/2" Ice	0.15	0.24	0.0
			2.00			1" Ice	0.20	0.31	0.0
(4) 7020.00	C	From Leg	4.00	0.0000	175.00	No Ice	0.10	0.17	0.0
			0.00			1/2" Ice	0.15	0.24	0.0
			2.00			1" Ice	0.20	0.31	0.0
RRUS12/RRUS A2	A	From Leg	4.00	0.0000	175.00	No Ice	3.14	1.84	0.1
			0.00			1/2" Ice	3.36	2.01	0.1
			2.00			1" Ice	3.59	2.20	0.1
RRUS12/RRUS A2	B	From Leg	4.00	0.0000	175.00	No Ice	3.14	1.84	0.1
			0.00			1/2" Ice	3.36	2.01	0.1
			2.00			1" Ice	3.59	2.20	0.1
RRUS12/RRUS A2	C	From Leg	4.00	0.0000	175.00	No Ice	3.14	1.84	0.1
			0.00			1/2" Ice	3.36	2.01	0.1
			2.00			1" Ice	3.59	2.20	0.1
DC6-48-60-18-8F	C	From Leg	4.00	0.0000	175.00	No Ice	0.92	0.92	0.0
			0.00			1/2" Ice	1.46	1.46	0.1
			0.00			1" Ice	1.64	1.64	0.1
Platform Mount [LP 712-1]	C	None		0.0000	175.00	No Ice	24.53	24.53	1.3
						1/2" Ice	29.94	29.94	1.6
						1" Ice	35.35	35.35	2.0
6' x 2" Mount Pipe	A	From Leg	4.00	0.0000	175.00	No Ice	1.43	1.43	0.0
			0.00			1/2" Ice	1.92	1.92	0.0
			0.00			1" Ice	2.29	2.29	0.0
6' x 2" Mount Pipe	B	From Leg	4.00	0.0000	175.00	No Ice	1.43	1.43	0.0
			0.00			1/2" Ice	1.92	1.92	0.0
			0.00			1" Ice	2.29	2.29	0.0
6' x 2" Mount Pipe	C	From Leg	4.00	0.0000	175.00	No Ice	1.43	1.43	0.0
			0.00			1/2" Ice	1.92	1.92	0.0
			0.00			1" Ice	2.29	2.29	0.0
167' SPRINT PCS*									
TME-1900MHz RRH (65MHz)	A	From Leg	4.00	0.0000	167.00	No Ice	2.31	2.38	0.1
			0.00			1/2" Ice	2.52	2.58	0.1
			0.00			1" Ice	2.73	2.79	0.1
TME-1900MHz RRH (65MHz)	B	From Leg	4.00	0.0000	167.00	No Ice	2.31	2.38	0.1
			0.00			1/2" Ice	2.52	2.58	0.1
			0.00			1" Ice	2.73	2.79	0.1
TME-1900MHz RRH (65MHz)	C	From Leg	4.00	0.0000	167.00	No Ice	2.31	2.38	0.1
			0.00			1/2" Ice	2.52	2.58	0.1
			0.00			1" Ice	2.73	2.79	0.1
TME-800MHZ RRH	A	From Leg	4.00	0.0000	167.00	No Ice	2.13	1.77	0.1
			0.00			1/2" Ice	2.32	1.95	0.1
			0.00			1" Ice	2.51	2.13	0.1
TME-800MHZ RRH	B	From Leg	4.00	0.0000	167.00	No Ice	2.13	1.77	0.1
			0.00			1/2" Ice	2.32	1.95	0.1
			0.00			1" Ice	2.51	2.13	0.1
TME-800MHZ RRH	C	From Leg	4.00	0.0000	167.00	No Ice	2.13	1.77	0.1
			0.00			1/2" Ice	2.32	1.95	0.1
			0.00			1" Ice	2.51	2.13	0.1
Side Arm Mount [SO 104-3]	C	None		0.0000	167.00	No Ice	3.30	3.30	0.3
						1/2" Ice	4.13	4.13	0.3
						1" Ice	4.96	4.96	0.3
165' Sprint PCS									
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.00	0.0000	165.00	No Ice	8.26	6.95	0.1
			0.00			1/2" Ice	8.82	8.13	0.2

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
			0.00			1" Ice	9.35	9.02	0.2
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	8.26 8.82 9.35	6.95 8.13 9.02	0.1 0.2 0.2
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	8.26 8.82 9.35	6.95 8.13 9.02	0.1 0.2 0.2
(3) ACU-A20-N	A	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	0.07 0.10 0.15	0.12 0.16 0.21	0.0 0.0 0.0
(3) ACU-A20-N	B	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	0.07 0.10 0.15	0.12 0.16 0.21	0.0 0.0 0.0
(3) ACU-A20-N	C	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	0.07 0.10 0.15	0.12 0.16 0.21	0.0 0.0 0.0
800 EXTERNAL NOTCH FILTER	A	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	0.66 0.76 0.87	0.32 0.40 0.48	0.0 0.0 0.0
800 EXTERNAL NOTCH FILTER	B	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	0.66 0.76 0.87	0.32 0.40 0.48	0.0 0.0 0.0
800 EXTERNAL NOTCH FILTER	C	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	0.66 0.76 0.87	0.32 0.40 0.48	0.0 0.0 0.0
Climbing Ladder - 5'	A	From Leg	3.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	2.05 2.41 2.78	2.05 2.41 2.78	0.1 0.1 0.1
6' x 2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.0 0.0 0.0
6' x 2" Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.0 0.0 0.0
6' x 2" Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.0 0.0 0.0
Platform Mount [LP 712-1]	C	None		0.0000	165.00	No Ice 1/2" Ice 1" Ice	24.53 29.94 35.35	24.53 29.94 35.35	1.3 1.6 2.0
155 Sprint PCS									
Side Arm Mount [SO 102-1]	A	From Leg	1.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice	1.50 1.74 1.98	1.50 1.75 2.00	0.0 0.0 0.0
145' T-Mobile									
(2) ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Face	4.00 0.00 3.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice	6.33 6.78 7.21	5.64 6.43 7.13	0.1 0.2 0.2
(2) ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Face	4.00 0.00 3.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice	6.33 6.78 7.21	5.64 6.43 7.13	0.1 0.2 0.2
(2) ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Face	4.00 0.00 3.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice	6.33 6.78 7.21	5.64 6.43 7.13	0.1 0.2 0.2
KRY 112 144/1	A	From Face	4.00 0.00 3.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice	0.35 0.43 0.51	0.16 0.22 0.28	0.0 0.0 0.0

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
KRY 112 144/1	B	From Face	4.00	0.0000	145.00	No Ice	0.35	0.16	0.0
			0.00			1/2" Ice	0.43	0.22	0.0
			3.00			1" Ice	0.51	0.28	0.0
KRY 112 144/1	C	From Face	4.00	0.0000	145.00	No Ice	0.35	0.16	0.0
			0.00			1/2" Ice	0.43	0.22	0.0
			3.00			1" Ice	0.51	0.28	0.0
LNX-6515DS-A1M w/ Mount Pipe	A	From Face	4.00	0.0000	145.00	No Ice	11.45	9.36	0.1
			0.00			1/2" Ice	12.06	10.68	0.2
			3.00			1" Ice	12.69	11.71	0.3
LNX-6515DS-A1M w/ Mount Pipe	B	From Face	4.00	0.0000	145.00	No Ice	11.45	9.36	0.1
			0.00			1/2" Ice	12.06	10.68	0.2
			3.00			1" Ice	12.69	11.71	0.3
LNX-6515DS-A1M w/ Mount Pipe	C	From Face	4.00	0.0000	145.00	No Ice	11.45	9.36	0.1
			0.00			1/2" Ice	12.06	10.68	0.2
			3.00			1" Ice	12.69	11.71	0.3
RRUS 11 B12	A	From Face	4.00	0.0000	145.00	No Ice	2.83	1.18	0.1
			0.00			1/2" Ice	3.04	1.33	0.1
			3.00			1" Ice	3.26	1.48	0.1
RRUS 11 B12	B	From Face	4.00	0.0000	145.00	No Ice	2.83	1.18	0.1
			0.00			1/2" Ice	3.04	1.33	0.1
			3.00			1" Ice	3.26	1.48	0.1
RRUS 11 B12	C	From Face	4.00	0.0000	145.00	No Ice	2.83	1.18	0.1
			0.00			1/2" Ice	3.04	1.33	0.1
			3.00			1" Ice	3.26	1.48	0.1
Platform Mount [LP 712-1]	C	None		0.0000	145.00	No Ice	24.53	24.53	1.3
						1/2" Ice	29.94	29.94	1.6
						1" Ice	35.35	35.35	2.0
135' METRO PCS *GPS*									
GPS	C	From Leg	2.00	0.0000	108.00	No Ice	0.08	0.08	0.0
			0.00			1/2" Ice	0.14	0.14	0.0
			0.00			1" Ice	0.22	0.22	0.0
GPS	C	From Leg	2.00	0.0000	107.00	No Ice	0.08	0.08	0.0
			0.00			1/2" Ice	0.14	0.14	0.0
			0.00			1" Ice	0.22	0.22	0.0
GPS	C	From Leg	2.00	0.0000	51.00	No Ice	0.08	0.08	0.0
			0.00			1/2" Ice	0.14	0.14	0.0
			0.00			1" Ice	0.22	0.22	0.0
Side Arm Mount [SO 901-1]	C	From Leg	1.00	0.0000	108.00	No Ice	0.50	0.88	0.1
			0.00			1/2" Ice	0.68	1.13	0.1
			0.00			1" Ice	0.86	1.38	0.1
Side Arm Mount [SO 901-1]	C	From Leg	1.00	0.0000	107.00	No Ice	0.50	0.88	0.1
			0.00			1/2" Ice	0.68	1.13	0.1
			0.00			1" Ice	0.86	1.38	0.1
Side Arm Mount [SO 901-1]	C	From Leg	1.00	0.0000	51.00	No Ice	0.50	0.88	0.1
			0.00			1/2" Ice	0.68	1.13	0.1
			0.00			1" Ice	0.86	1.38	0.1
***									

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	185 - 149.622 (1)	TP36.0404x29x0.25	35.38	0.00	0.0	27.6093	-12.3	1850.0	0.007
L2	149.622 - 114.221 (2)	TP42.4605x34.5443x0.3125	40.41	0.00	0.0	40.6771	-22.4	2785.9	0.008
L3	114.221 - 76.8021 (3)	TP49.157x40.6978x0.375	43.23	0.00	0.0	56.5148	-33.8	3919.2	0.009
L4	76.8021 - 38.3802 (4)	TP55.9285x47.1064x0.4375	45.07	0.00	0.0	75.0196	-48.9	5246.2	0.009
L5	38.3802 - 0 (5)	TP62.5x53.5869x0.5	45.87	0.00	0.0	98.3940	-71.7	6871.4	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	185 - 149.622 (1)	TP36.0404x29x0.25	492.2	1324.6	0.372	0.0	1324.6	0.000
L2	149.622 - 114.221 (2)	TP42.4605x34.5443x0.3125	1414.6	2349.9	0.602	0.0	2349.9	0.000
L3	114.221 - 76.8021 (3)	TP49.157x40.6978x0.375	2574.8	3826.4	0.673	0.0	3826.4	0.000
L4	76.8021 - 38.3802 (4)	TP55.9285x47.1064x0.4375	3922.8	5826.8	0.673	0.0	5826.8	0.000
L5	38.3802 - 0 (5)	TP62.5x53.5869x0.5	5753.1	8758.7	0.657	0.0	8758.7	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	185 - 149.622 (1)	TP36.0404x29x0.25	21.2	925.0	0.023	0.1	2652.4	0.000
L2	149.622 - 114.221 (2)	TP42.4605x34.5443x0.3125	29.6	1392.9	0.021	0.1	4705.6	0.000
L3	114.221 - 76.8021 (3)	TP49.157x40.6978x0.375	33.8	1959.6	0.017	0.2	7662.2	0.000
L4	76.8021 - 38.3802 (4)	TP55.9285x47.1064x0.4375	37.8	2623.1	0.014	0.3	11667.7	0.000
L5	38.3802 - 0 (5)	TP62.5x53.5869x0.5	41.6	3435.7	0.012	0.3	17538.8	0.000

Pole Interaction Design Data

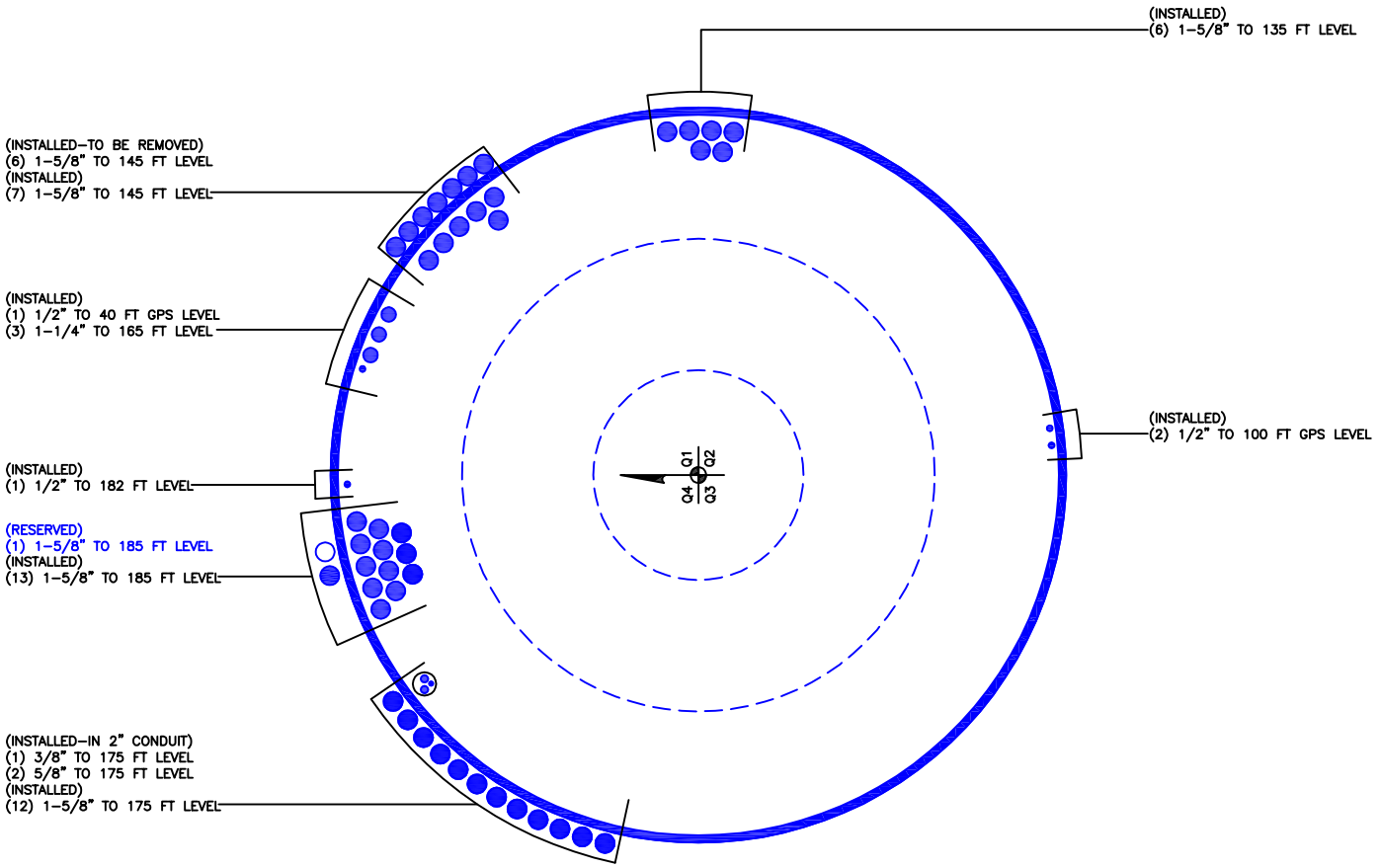
Section No.	Elevation ft	Ratio $P_u/\phi P_n$	Ratio $M_{ux}/\phi M_{nx}$	Ratio $M_{uy}/\phi M_{ny}$	Ratio $V_u/\phi V_n$	Ratio $T_u/\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	185 - 149.622 (1)	0.007	0.372	0.000	0.023	0.000	0.379 ✔	1.000	4.8.2 ✔
L2	149.622 - 114.221 (2)	0.008	0.602	0.000	0.021	0.000	0.610 ✔	1.000	4.8.2 ✔
L3	114.221 - 76.8021 (3)	0.009	0.673	0.000	0.017	0.000	0.682 ✔	1.000	4.8.2 ✔
L4	76.8021 - 38.3802 (4)	0.009	0.673	0.000	0.014	0.000	0.683 ✔	1.000	4.8.2 ✔
L5	38.3802 - 0 (5)	0.010	0.657	0.000	0.012	0.000	0.667 ✔	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	185 - 149.622	Pole	TP36.0404x29x0.25	1	-12.3	1850.0	37.9	Pass
L2	149.622 - 114.221	Pole	TP42.4605x34.5443x0.3125	2	-22.4	2785.9	61.0	Pass
L3	114.221 - 76.8021	Pole	TP49.157x40.6978x0.375	3	-33.8	3919.2	68.2	Pass
L4	76.8021 - 38.3802	Pole	TP55.9285x47.1064x0.4375	4	-48.9	5246.2	68.3	Pass
L5	38.3802 - 0	Pole	TP62.5x53.5869x0.5	5	-71.7	6871.4	66.7	Pass
							Summary	
						Pole (L4)	68.3	Pass
						RATING =	**68.3**	**Pass**

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 806354 TOWER ID: C_BASELEVEL

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#:	*806354*
Site Name:	*BRG 123 943084*
App #:	*373689 Rev. 2*
Pole Manufacturer:	*Other*

Anchor Rod Data		
Qty:	24	
Diam:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	73	in

Plate Data		
Diam:	79	in
Thick:	2.5	in
Grade:	60	ksi
Single-Rod B-eff:	8.27	in

Stiffener Data (Welding at both sides)		
Config:	1	*
Weld Type:	Fillet	
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:	0.5	in
Fillet V. Weld:	0.375	in
Width:	7	in
Height:	15	in
Thick:	0.75	in
Notch:	0.5	in
Grade:	50	ksi
Weld str.:	70	ksi

Pole Data		
Diam:	62.5	in
Thick:	0.5	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None

Reactions		
Mu:	5753	ft-kips
Axial, Pu:	72	kips
Shear, Vu:	42	kips
Eta Factor, ή	0.5	TIA G (Fig. 4-4)

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

Anchor Rod Results

		Stiffened
Max Rod (Cu+ Vu/ή):	164.1 Kips	AISC LRFD
Allowable Axial, Φ*Fu*Anet:	260.0 Kips	φ*Tn
Anchor Rod Stress Ratio:	63.1% **Pass**	

Base Plate Results Flexural Check

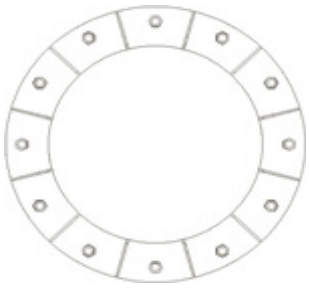
		Stiffened
Base Plate Stress:	19.4 ksi	AISC LRFD
Allowable Plate Stress:	54.0 ksi	φ*Fy
Base Plate Stress Ratio:	35.8% **Pass**	Y.L. Length: N/A, Roark

Stiffener Results

Horizontal Weld :	73.8% **Pass**
Vertical Weld:	51.0% **Pass**
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	26.4% **Pass**
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	53.7% **Pass**
Plate Comp. (AISC Bracket):	68.9% **Pass**

Pole Results

Pole Punching Shear Check:	14.3% **Pass**



* 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

(Bearing and Stability Checks) Tool for TIA Rev F or G - Application (MP, SST with unitbase)

Site Data

BU#: *806354*
Site Name: *BRG 123 943084*
App #: *373689 Rev. 2*

Loads Already Factored		
For P (DL)	1.2	<----Disregard
For P,V, and M (WL)	1.35	<----Disregard

Pad & Pier Data		
Base PL Dist. Above Pier:	4.5	in
Pier Dist. Above Grade:	12	in
Pad Bearing Depth, D:	6	ft
Pad Thickness, T:	3	ft
Pad Width=Length, L:	28	ft
Pier Cross Section Shape:	Square	<--Pull Down
Enter Pier Side Width:	8	ft
Concrete Density:	150.0	pcf
Pier Cross Section Area:	64.00	ft^2
Pier Height:	4.00	ft
Soil (above pad) Height:	3.00	ft

Soil Parameters		
Unit Weight, γ:	120.0	pcf
Ultimate Bearing Capacity, qn:	12.00	ksf
Strength Reduct. factor, ϕ:	0.75	
Angle of Friction, Φ:	34.0	degrees
Undrained Shear Strength, Cu:	0.00	ksf
Allowable Bearing: ϕ*qn:	9.00	ksf
Passive Pres. Coeff., Kp	3.54	

Forces/Moments due to Wind and Lateral Soil		
Minimum of (φ*Ultimate Pad Passive Force, Vu):	42.0	kips
Pad Force Location Above D:	1.33	ft
ϕ(Passive Pressure Moment):	56.00	ft-kips
Factored O.T. M(WL), "1.6W":	6062.8	ft-kips
Factored OT (MW-Msoil), M1	6006.75	ft-kips

Resistance due to Foundation Gravity		
Soil Wedge Projection grade, a:	2.02	ft
Sum of Soil Wedges Wt:	23.96	kips
Soil Wedges ecc, K1:	9.64	ft
Ftg+Soil above Pad wt:	650.4	kips
Unfactored (Total ftg-soil Wt):	674.36	kips
1.2D. **No Soil Wedges**.	852.48	kips
0.9D. **With Soil Wedges**	660.93	kips

Resistance due to Cohesion (Vertical)		
ϕ*(1/2*Cu)(Total Vert. Planes)	0.00	kips
Cohesion Force Eccentricity, K2	0.00	ft

Monopole Base Reaction Forces		
TIA Revision:	G	<--Pull Down
Factored DL Axial, PDu:	72	kips
Factored WL Axial, PWu:	0	kips
Factored WL Shear, Vu:	42	kips
Factored WL Moment, Mu:	5753	ft-kips

Load Factor	Shaft Factored Loads		
1.00	1.2D+1.6W, Pu:	72	kips
0.90	0.9D+1.6W, Pu:	54	kips
1.00	Vu:	42	kips
	Mu:	5753	ft-kips

1.2D+1.6W Load Combination, Bearing Results:

(**No Soil Wedges**) [Reaction+Conc+Soil]	852.48	P1="1.2D+1.6W" (Kips)
Factored "1.6W" Overturning Moment (MW-Msoil), M1	6006.75	ft-kips

Orthogonal Direction:

ecc1 = M1/P1 =	7.05	ft
Orthogonal qu=	2.19	ksf
qu/ϕ*qn Ratio=	**24.32%**	**Pass**

Diagonal Direction:

ecc2 = (0.707M1)/P1 =	4.98	ft
Diagonal qu=	2.62	ksf
qu/ϕ*qn Ratio=	**29.12%**	**Pass**

Run <-- Press Upon Completing All Input

Overturning Stability Check

0.9D+1.6W Load Combination, Bearing Results:

(**w/ Soil Wedges**) [Reaction+Conc+Soil]	660.93	P2="0.9D+1.6W" (Kips)
Factored "1.6W" Overturning Moment (MW-Msoil) - 0.9(M of Wedge + M of Cohesion), M2	5798.88	ft-kips

Orthogonal ecc3 = M2/P2 =	8.77	ft
Ortho Non Bearing Length,NBL=	17.55	ft
Orthogonal qu=	2.26	ksf
Diagonal qu=	2.72	ksf

Max Reaction Moment (ft-kips) so that qu=φ*qn = 100% Capacity Rating			
Actual M:	5753.00		
M Orthogonal:	8360.44	**68.81%**	**Pass**
M Diagonal:	8360.44	**68.81%**	**Pass**

Project Name:	BRG 123 943084	JACOBS® Jacobs Engineering Group, Inc.	Created On: 6/3/2014
Project Number:	BU 806354		Checked By: DW
Job Number:	WO 1354011		Revised On: 12/1/2016
Date:	1/31/2017		Revision No.: 1.7

Monopole Pad & Pier Foundation

Foundation Parameters

Load		
Code	G	
Axial	72	kips
Shear	42	kips
Moment	5753	k-ft
Soil Unit Weight	120	pcf
Friction Angle	34	
Cohesion	0	psf

Material		
Concrete Strength (F'c)	4000	psi
Concrete Density	150	pcf
Rebar Tensile (Fy)	60	ksi
Clear Cover	3	in

Pad		
Thickness	3	ft
Bearing Depth	6	ft
Width	28	ft
Rebar Size	9	
Rebar Quantity	45	

Pier		
Pier type	Square	
Width	8	ft
Height above Grade	1	ft
Rebar Size	9	
Rebar Quantity	48	
Tie Size	4	
Tie C/C Spacing	10.5	in

Structural Checks

Pad Beam Shear Capacity	998.0	kips
Pad Beam Shear	393.1	kips
Pad Beam Shear Check	39.4%	Pass

Pad Bending Moment Capacity	6100.6	k-ft
Pad Bending Moment	2455.4	k-ft
Pad Bending Moment Check	40.2%	Pass

Punching Shear Capacity	3025.0	kips
Punching Shear	463.7	kips
Punching Shear Check	15.3%	Pass

Pad-Pier Bearing Capacity	40734.7	kips
Pad-Pier Bearing	852.5	kips
Pad-Pier Bearing Check	2.1%	Pass

Pier Beam Shear Capacity	942.4	kips
Pier Beam Shear	42.0	kips
Pier Beam Shear Check	4.5%	Pass

Pier Bending Moment Capacity	9864.3	k-ft
Pier Bending Moment	5912.2	k-ft
Pier Bending Moment Check	59.9%	Pass

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: CT11123A

Newton / I-84 Ex 10-11
21 Berkshire Road
Newtown, CT 06482

February 3, 2017

EBI Project Number: 6217000379

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	7.13 %

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

EBI Consulting
environmental | engineering | due diligence

February 3, 2017

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

Emissions Analysis for Site: **CT11123A – Newton / I-84 Ex 10-11**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **21 Berkshire Road, Newtown, 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 public 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 public 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 **21 Berkshire Road, Newtown, 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 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

3) 2 UMTS channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 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

5) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.

6) Since the 2100 MHz UMTS radios are ground mounted there are additional cabling losses accounted for. For each ground mounted 2100 MHz UMTS RF path an additional 1.59 dB of cable loss was factored into the calculations used for this analysis. This is based on manufacturers Specifications for 150 feet of 1-5/8" coax cable on each path.

7) 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.

8) 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.

9) The antennas used in this modeling are the **Ericsson AIR21 B2P/B4A** & **Ericsson AIR21 B2A/B4P** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Commscope LNX-6515DS-A1M** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Ericsson AIR21 B2P/B4A** has a maximum gain of **15.9 dBd** at its main lobe at 1900 MHz and 2100 MHz. The **Ericsson AIR21 B2A/B4P** has a maximum gain of **15.9 dBd** at its main lobe at 1900 MHz and 2100 MHz. The **Commscope LNX-6515DS-A1M** has a maximum gain of **14.6 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.

10) The antenna mounting height centerline of the proposed antennas is **148 feet** above ground level (AGL).

11) 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.

12) All calculations were done with respect to uncontrolled / general public threshold limits.

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Ericsson AIR21 B2P/B4A	Make / Model:	Ericsson AIR21 B2P/B4A	Make / Model:	Ericsson AIR21 B2P/B4A
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	148	Height (AGL):	148	Height (AGL):	148
Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)
Channel Count	2	Channel Count	2	Channel Count	2
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A1 MPE%	0.83	Antenna B1 MPE%	0.83	Antenna C1 MPE%	0.83
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	148	Height (AGL):	148	Height (AGL):	148
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):	180	Total TX Power(W):	180	Total TX Power(W):	180
ERP (W):	6,287.19	ERP (W):	6,287.19	ERP (W):	6,287.19
Antenna A2 MPE%	1.12	Antenna B2 MPE%	1.12	Antenna C2 MPE%	1.12
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	148	Height (AGL):	148	Height (AGL):	148
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):	865.21	ERP (W):	865.21	ERP (W):	865.21
Antenna A3 MPE%	0.33	Antenna B3 MPE%	0.33	Antenna C3 MPE%	0.33

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Per Sector Max)	**2.28 %**
AT&T	2.06 %
MetroPCS	0.29 %
Verizon Wireless	1.65 %
Sprint	0.59 %
Nextel	0.26 %
Site Total MPE %:	**7.13 %**

T-Mobile Sector A Total:	2.28 %
T-Mobile Sector B Total:	2.28 %
T-Mobile Sector C Total:	2.28 %
Site Total:	7.13 %

T-Mobile _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	2,334.27	148	8.32	AWS - 2100 MHz	1000	0.83%
T-Mobile AWS - 2100 MHz UMTS	2	809.32	148	2.89	AWS - 2100 MHz	1000	0.29%
T-Mobile PCS - 1950 MHz UMTS	2	1,167.14	148	4.16	PCS - 1950 MHz	1000	0.42%
T-Mobile PCS - 1950 MHz GSM	2	1,167.14	148	4.16	PCS - 1950 MHz	1000	0.42%
T-Mobile 700 MHz LTE	1	865.21	148	1.54	700 MHz	467	0.33%
						Total*:	**2.28%**

*NOTE: Totals may vary by 0.01% due to summing of remainders

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general public 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 public exposure to RF Emissions are shown here:

T-Mobile Sector	Power Density Value (%)
Sector A:	2.28 %
Sector B:	2.28 %
Sector C:	2.28 %
T-Mobile Per Sector Maximum:	2.28 %
Site Total:	7.13 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **7.13%** of the allowable FCC established general public 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.