



Crown Castle
3530 Toringdon Way Suite 300
Charlotte NC 28277

Tel (704) 405-6600

April 16, 2015

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

RE: T-Mobile-Exempt Modification - Crown Site BU: 826053
T-Mobile Site ID: CT11215A
Located at: 88 Main Street, Monroe, CT 06468

Dear Ms. Bachman:

This letter and exhibits are submitted on behalf of T-Mobile. T-Mobile is making modifications to certain existing sites in its Connecticut system in order to implement their 700MHz technology. Please accept this letter and exhibits as notification, pursuant to § 16-50j-73 of the Regulations of Connecticut State Agencies (“R.C.S.A.”), of construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In compliance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Mr. Stephen J. Vavrek, First Selectman for the Town of Monroe and Stepney Volunteer Fire Department, Property Owner.

T-Mobile plans to modify the existing wireless communications facility owned by Crown Castle and located at **88 Main Street, Monroe, CT 06468**. Attached are a compound plan and elevation depicting the planned changes (Exhibit-1), and documentation of the structural sufficiency of the structure to accommodate the revised antenna configuration (Exhibit-2). Also included is a power density table report reflecting the modification to T-Mobile’s operations at the site (Exhibit-3).

The changes to the facility do not constitute a modification as defined in Connecticut General Statutes (“C.G.S.”) § 16-50i(d) because the general physical characteristics of the facility will not be significantly changed. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in the R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing tower. T-Mobile’s replacement antennas will be located at the same elevation on the existing tower.
2. There will be no proposed modifications to the ground and no extension of boundaries.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more.

4. The operation of the replacement antennas will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) adopted safety standard. A cumulative General Power Density table report for T-Mobile's modified facility is included as Exhibit-3.
5. A Structural Modification Report confirming that the tower and foundation can support T-Mobile's proposed modifications is included as Exhibit-2.

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

Sincerely,

Jerry Feathers
Real Estate Specialist

Enclosure

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: Mr. Stephen J. Vavrek, First Selectman
Monroe Town Hall
7 Fan Hill Road
Monroe, CT 06468

cc: Stepney Volunteer Fire Department
P.O. Box 266
Monroe, CT 06468

T-Mobile®

T-MOBILE NORTHEAST LLC

T-MOBILE SITE #: CT11215A
CROWN CASTLE BU #: 826053
SITE NAME: MONROE 1 / RT. 25
88 MAIN STREET
MONROE, CT 06468
FAIRFIELD COUNTY



Dewberry Engineers Inc.
 600 PARSIPPANY ROAD
 SUITE 301
 PARSIPPANY, NJ 07054
 PHONE: 973.739.9400
 FAX: 973.739.9710



T-MOBILE NORTHEAST LLC

4 SYLVAN WAY
 PARSIPPANY, NJ 07054
 PHONE: (973) 397-4800
 FAX: (973) 292-8893

MONROE 1 / RT. 25

CT11215A

88 MAIN STREET
 MONROE, CT 06468
 FAIRFIELD COUNTY

THIS DOCUMENT WAS DEVELOPED TO REFLECT A SPECIFIC SITE AND ITS SITE CONDITIONS AND IS NOT TO BE USED FOR ANOTHER SITE OR WHEN OTHER CONDITIONS PERTAIN. REUSE OF THIS DOCUMENT IS AT THE SOLE RISK OF THE USER.



THIS SEAL IS VALID FOR THE STATE OF CONNECTICUT ONLY. IT IS THE SOLE RESPONSIBILITY OF THE ENGINEER TO MAINTAIN THE SEAL AND TO RENEW IT AS REQUIRED. REPRODUCTION OR USE OF THIS SEAL FOR ANY OTHER PURPOSE IS STRICTLY FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF T-MOBILE.

SCALE
 AS SHOWN

REV.	DATE	BY	DESCRIPTION
0	04/15/15	BSH	ISSUED AS FINAL
B	04/10/15	ALH	ISSUED FOR REVIEW
A	11/05/14	ALH	ISSUED FOR REVIEW

REVISIONS

DRAWN BY: ALH
 CHECKED BY: BSH
 APPROVED BY: CHN
 DATE: 11/05/14

TITLE

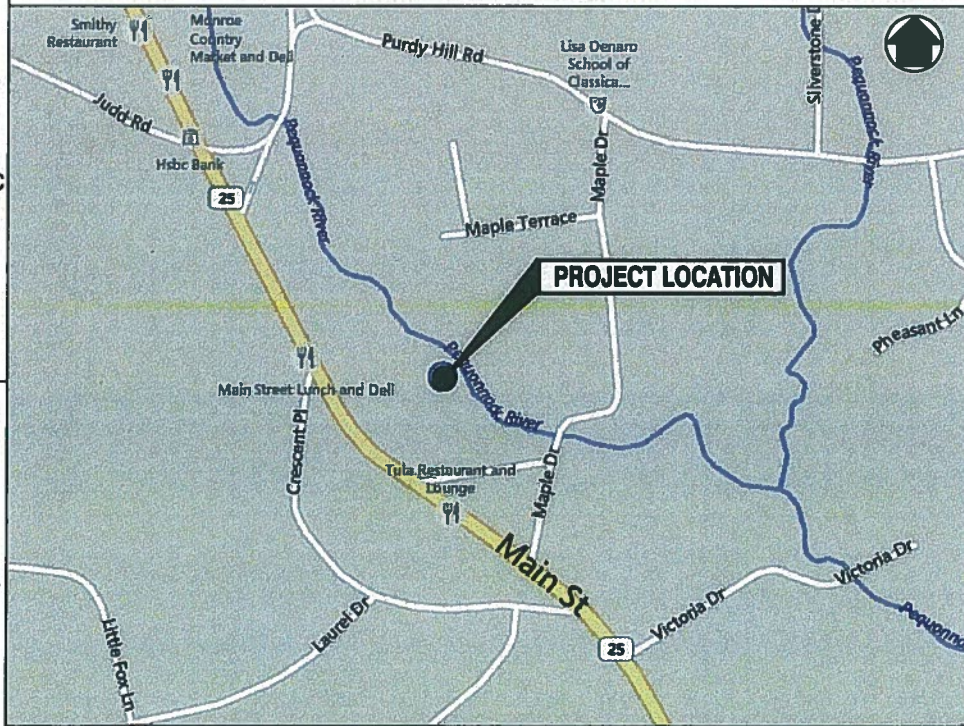
TITLE SHEET

PROJECT NO. 50068258/50068279

T - 1

SHEET NO.

SITE INFORMATION



KEY MAP

N.T.S.

DIRECTIONS: (FROM PARSIPPANY):

TAKE US-202 N TO I-287 N. MERGE ONTO I-87 S / I-287 E / NEW YORK TRWY S TOWARD I-87 S / TAPPAN ZEE BRG / NEW YORK CITY. KEEP LEFT TO TAKE I-287 E / CROSS WESTCHESTER EXPY E VIA EXIT 8 TOWARD WHITE PLAINS / RYE. TAKE EXIT 9S-N TOWARD HUTCHINSON PKWY / MERRITT PKWY / WHITESTONE BRG, MERGE ONTO WESTCHESTER AVE / NY-119 / COUNTY HWY-62 VIA EXIT 9N ON THE LEFT TOWARD HUTCHINSON PKWY N / MERRITT PKWY. TAKE THE HUTCHINSON PKWY N EXIT 9N TOWARD MERRITT PKWY. MERGE ONTO HUTCHINSON RIVER PKWY N. KEEP RIGHT TO TAKE HUTCHINSON RIVER PKWY N TOWARD MERRITT PKWY / RYE BROOK. HUTCHINSON RIVER PKWY N BECOMES CT-15 N / MERRITT PKWY N. TAKE THE MAIN ST / CT-111 EXIT 48. KEEP LEFT TO TAKE THE CT-15S RAMP TOWARD TRUMBULL / POLICE DEPT / LONG HILL / MONROE. TURN SLIGHT LEFT ONTO MAIN ST. TURN LEFT ONTO MAIN ST / CT-25. DESTINATION IS ON THE RIGHT.

PROJECT INFORMATION

T-MOBILE SITE #: CT11215A
 CROWN CASTLE BU #: 826053
 SITE ADDRESS: 88 MAIN STREET
 MONROE, CT 06468
 FAIRFIELD COUNTY

LATITUDE: N 41° 18' 6.06"
 LONGITUDE: W 73° 15' 2.92"

TOWER OWNER: CROWN CASTLE
 12 GILL STREET, SUITE 5800
 WOBURN, MA 01801

CONTACT: WARREN KELLEHER
 (781) 970-0055

APPLICANT: T-MOBILE NORTHEAST, LLC
 4 SYLVAN WAY
 PARSIPPANY, NJ 07054
 PHONE #: (973) 397-4800
 FAX #: (973) 292-8893

ENGINEER: DEWBERRY ENGINEERS INC.
 600 PARSIPPANY ROAD, SUITE 301
 PARSIPPANY, NJ 07054

CONTACT: BRYAN HUFF
 (973) 576-0147

SCOPE OF WORK: REMOVE AND REPLACE (8) EXISTING ANTENNAS WITH (9) NEW ANTENNAS, REMOVE AND REPLACE (6) EXISTING TMA'S WITH (3) NEW TMA'S, ADD (3) NEW RRU'S, ADD (1) NEW HYBRID LINE, REMOVE AND REPLACE (2) EXISTING T-ARMS WITH (2) NEW T-ARMS

CONFIGURATION

702Cu

SHEET INDEX

SHEET NO.	SHEET DESCRIPTION
T-1	TITLE SHEET
G-1	GENERAL NOTES
C-1	COMPOUND PLAN & EQUIPMENT PLANS
C-2	ANTENNA LAYOUTS & ELEVATIONS
C-3	CONSTRUCTION DETAILS
E-1	GROUNDING NOTES & DETAILS

APPROVALS

T-MOBILE	DATE
OWNER/ LANDLORD	DATE
RF ENGINEER	DATE
ZONING	DATE
CONSTRUCTION	DATE

GENERAL NOTES:

- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
PROJECT MANAGEMENT - CROWN CASTLE
CONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)
OWNER - T-MOBILE
OEM - ORIGINAL EQUIPMENT MANUFACTURER
- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF PROJECT MANAGEMENT.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
- ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- DRAWINGS PROVIDED HERE ARE NOT TO SCALE UNLESS OTHERWISE NOTED AND ARE INTENDED TO SHOW OUTLINE ONLY.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY PROJECT MANAGEMENT.
- CONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. CONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. CONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH PROJECT MANAGEMENT.
- THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
- CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
- THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
- CONTRACTOR SHALL NOTIFY DEWBERRY 48 HOURS IN ADVANCE OF POURING CONCRETE, OR BACKFILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS & POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEER REVIEW.
- CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. CONTRACTOR SHALL NOTIFY PROJECT MANAGEMENT OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
- THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY CONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
- SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

SITE WORK GENERAL NOTES:

- THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO:
A) FALL PROTECTION
B) CONFINED SPACE
C) ELECTRICAL SAFETY
D) TRENCHING & EXCAVATION.
- ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
- IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES, TOP SOIL AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
- 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.
- CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION.
- THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE T-MOBILE SPECIFICATION FOR SITE SIGNAGE.
- THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE TRANSMISSION EQUIPMENT AND TOWER AREAS.
- 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.
- THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION, SEE SOIL COMPACTION NOTES.
- THE AREAS OF THE OWNER'S 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.
- EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL JURISDICTION'S GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

ELECTRICAL INSTALLATION NOTES:

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
- CONTRACTOR SHALL MODIFY EXISTING CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO THE NEW BTS EQUIPMENT. CONTRACTOR SHALL SUBMIT MODIFICATIONS TO PROJECT MANAGEMENT FOR APPROVAL.
- CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
- WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.
- ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.
- CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
- 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 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA, AND MATCH EXISTING INSTALLATION REQUIREMENTS.
- ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).
- PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
- ALL THE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
- POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, 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.
- POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL.) PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC & OSHA AND MATCH EXISTING INSTALLATION REQUIREMENTS.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (SIZE 8 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.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.
- POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (SIZE 14 AWG OR LARGER), 600V, 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.
- ALL POWER AND POWER GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEC, AND NEC.
- NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
- 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.
- ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
- RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEC, AND NEC.
- CABINETS, BOXES, AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
- WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
- 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.
- 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.
- 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.
- THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM PROJECT MANAGEMENT BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
- THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

CONCRETE AND REINFORCING STEEL NOTES:

- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 338, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (4000 PSI) MAY BE USED. ALL CONCRETING WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
- REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE (UNO). SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
- 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:
#8 AND LARGER2 IN.
#5 AND SMALLER & WWF.....1 1/2 IN.
CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
SLAB AND WALL3/4 IN.
BEAMS AND COLUMNS.....1 1/2 IN.
- A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
- INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR SHALL BE PER MANUFACTURER'S WRITTEN 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. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.
- CONCRETE CYLINDER TEST IS NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC 1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER:
(A) RESULTS OF CONCRETE CYLINDER TESTS PERFORMED AT THE SUPPLIER'S PLANT,
(B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.
FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.
- AS AN ALTERNATIVE TO ITEM 7, TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.
- EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

STRUCTURAL STEEL NOTES:

- ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS UNLESS NOTED OTHERWISE. STRUCTURAL STEEL SHALL BE ASTM-A-36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE PERFORMED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".
- ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". PAINTED SURFACES SHALL BE TOUCHED UP.
- BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE (3/4") CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
- NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.
- INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN 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. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL.
- ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

CONSTRUCTION NOTES:

- FIELD VERIFICATION:
CONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, T-MOBILE ANTENNA PLATFORM LOCATION AND ANTENNAS TO BE REPLACED.
- COORDINATION OF WORK:
CONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH PROJECT MANAGEMENT.
- CABLE LADDER RACK:
CONTRACTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY, AND CONDUIT AS REQUIRED TO SUPPORT CABLES TO THE NEW BTS LOCATION.
- GROUNDING OF ALL EQUIPMENT AND ANTENNAS IS NOT CONSIDERED PART OF THE SCOPE OF THIS PROJECT AND IS THE RESPONSIBILITY OF THE OWNER AND CONTRACTOR AT THE TIME OF CONSTRUCTION. ALL EQUIPMENT AND ANTENNAS TO BE INSTALLED AND GROUNDED IN ACCORDANCE WITH GOVERNING BUILDING CODE, MANUFACTURER RECOMMENDATIONS AND OWNER SPECIFICATIONS.



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A	11/05/14	ALH	ISSUED FOR REVIEW

REVIEWS

DRAWN BY ALH

CHECKED BY BSH

APPROVED BY CHN

DATE 11/05/14

TITLE

GENERAL NOTES

PROJECT NO. 50068258/50068279

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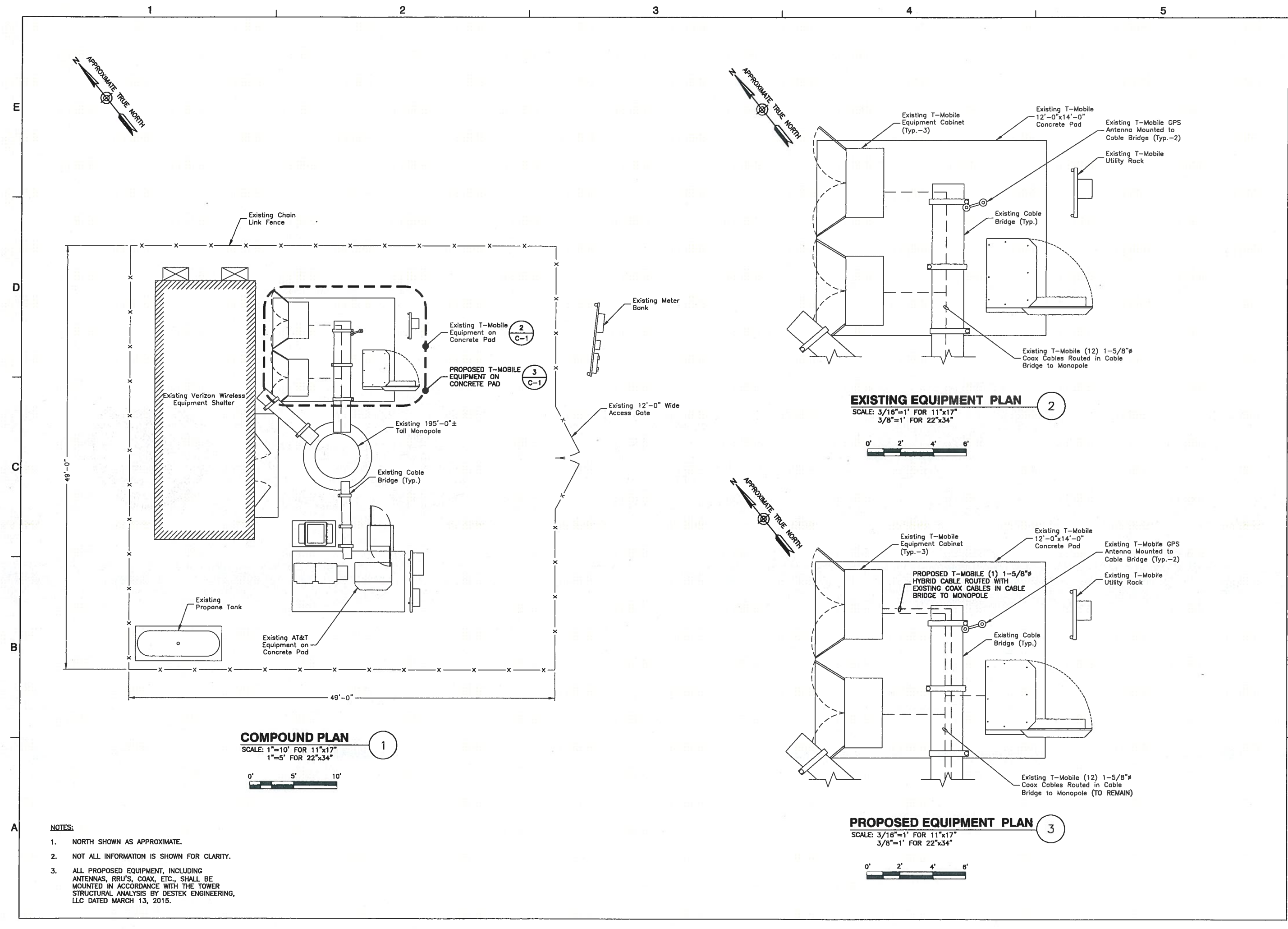
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A	11/05/14	ALH	ISSUED FOR REVIEW

REVISIONS

DRAWN BY: ALH
 CHECKED BY: BSH
 APPROVED BY: GHN
 DATE: 11/05/14

COMPOUND PLAN & EQUIPMENT PLANS

PROJECT NO. 50066258/50066279



COMPOUND PLAN 1
 SCALE: 1"=10' FOR 11"x17"
 1"=5' FOR 22"x34"

EXISTING EQUIPMENT PLAN 2
 SCALE: 3/16"=1' FOR 11"x17"
 3/8"=1' FOR 22"x34"

PROPOSED EQUIPMENT PLAN 3
 SCALE: 3/16"=1' FOR 11"x17"
 3/8"=1' FOR 22"x34"

- NOTES:**
1. NORTH SHOWN AS APPROXIMATE.
 2. NOT ALL INFORMATION IS SHOWN FOR CLARITY.
 3. ALL PROPOSED EQUIPMENT, INCLUDING ANTENNAS, RRU'S, COAX, ETC., SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS BY DESTEK ENGINEERING, LLC DATED MARCH 13, 2015.

1

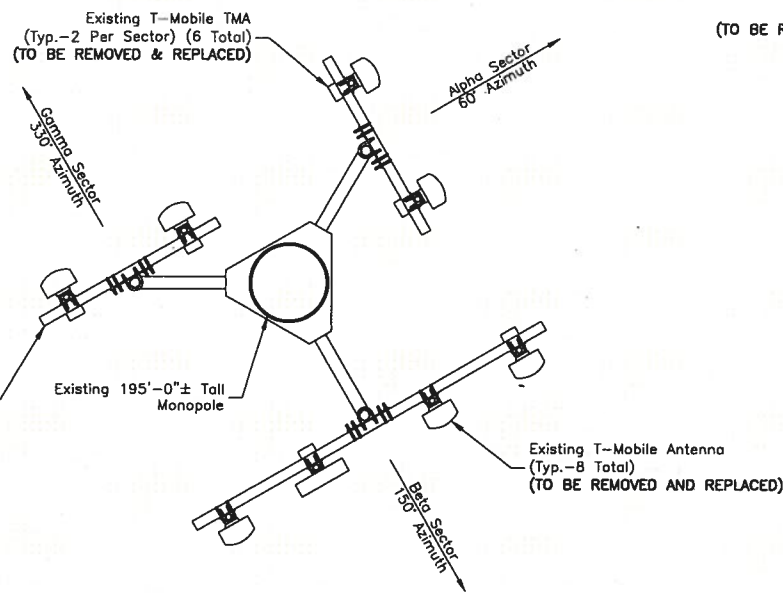
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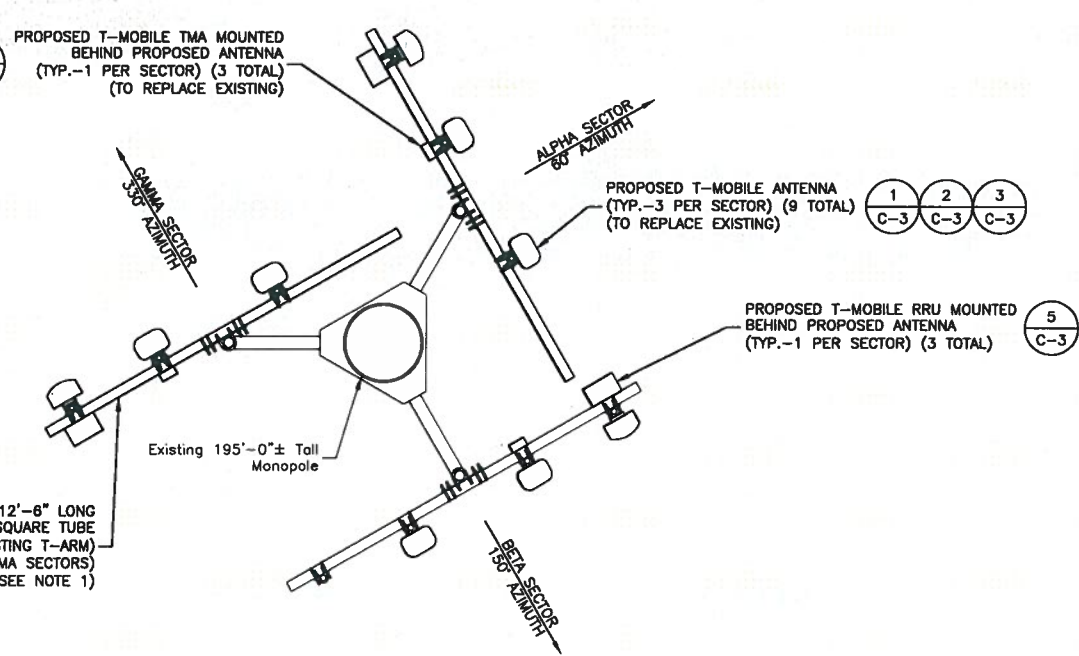
4

5

E
D
C
B
A



EXISTING ANTENNA LAYOUT
SCALE: N.T.S. 1



PROPOSED ANTENNA LAYOUT
SCALE: N.T.S. 2

NOTE:
1. REUSE EXISTING MOUNTING HARDWARE FOR PROPOSED T-ARM.

Top of Existing T-Mobile Antennas
Elev. = 197'-0"± A.G.L.
Top of Existing Monopole
Elev. = 195'-0"± A.G.L.

PROPOSED T-MOBILE ANTENNA
(TYP.-3 PER SECTOR) (9 TOTAL)
(TO REPLACE EXISTING)

TOP OF PROPOSED T-MOBILE ANTENNAS
ELEV. = 197'-0"± A.G.L.
Top of Existing Monopole
Elev. = 195'-0"± A.G.L.

PROPOSED T-MOBILE RRU MOUNTED
BEHIND PROPOSED ANTENNA
(TYP.-1 PER SECTOR) (3 TOTAL)

Existing Antenna
(By Others) (Typ.)

Existing Antenna
(By Others) (Typ.)

Existing T-Mobile (12) 1-5/8"φ
Coax Cables Routed Inside
Monopole to Antennas

Existing T-Mobile (12) 1-5/8"φ
Coax Cables Routed Inside
Monopole to Antennas
(TO REMAIN)

Existing 195'-0"± Tall
Monopole

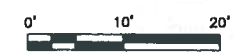
Existing 195'-0"± Tall
Monopole

PROPOSED T-MOBILE (1) 1-5/8"φ
HYBRID CABLE ROUTED WITH
EXISTING COAX CABLES INSIDE
MONOPOLE TO ANTENNAS

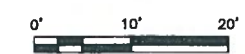
NOTES:

- 1. ALL PROPOSED EQUIPMENT, INCLUDING ANTENNAS, RRU'S, COAX, ETC., SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS BY DESTEK ENGINEERING, LLC DATED MARCH 13, 2015.
- 2. TOP OF PROPOSED ANTENNAS ARE NOT TO EXCEED TOP OF EXISTING ANTENNAS.

EXISTING ELEVATION
SCALE: 1"=20' FOR 11"x17"
1"=10' FOR 22"x34" 3



PROPOSED ELEVATION
SCALE: 1"=20' FOR 11"x17"
1"=10' FOR 22"x34" 4



Existing Chain Link Fence

Existing Chain Link Fence

Existing Grade
Elev. = 0'-0" A.G.L.

Existing Grade
Elev. = 0'-0" A.G.L.

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B	04/10/15	ALH	ISSUED FOR REVIEW
A	11/05/14	ALH	ISSUED FOR REVIEW

DRAWN BY: ALH
CHECKED BY: BSH
APPROVED BY: GHN
DATE: 11/05/14

ANTENNA LAYOUTS & ELEVATIONS

PROJECT NO. 50066258/50066279

C - 2

SHEET NO.

1

2

3

4

5

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SCALE

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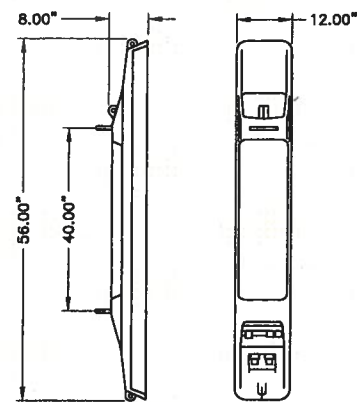
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DRAWN BY: ALH, CHECKED BY: BSH, APPROVED BY: GHN, DATE: 11/05/14

TITLE

CONSTRUCTION DETAILS

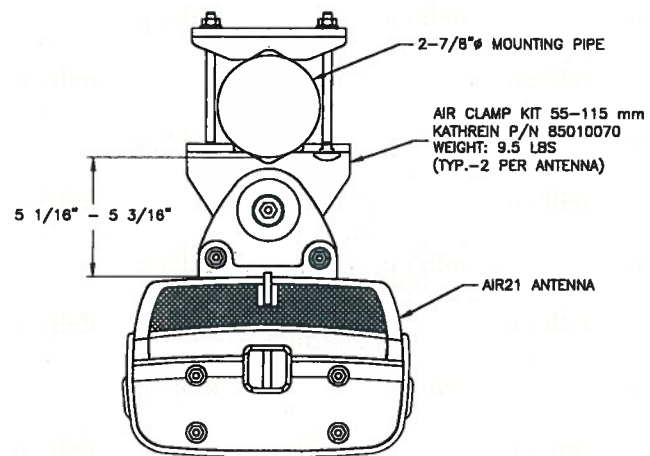
PROJECT NO. 50066258/50066279



WEIGHT: 83 LBS.

AIR21 ANTENNA DETAIL SCALE: N.T.S.

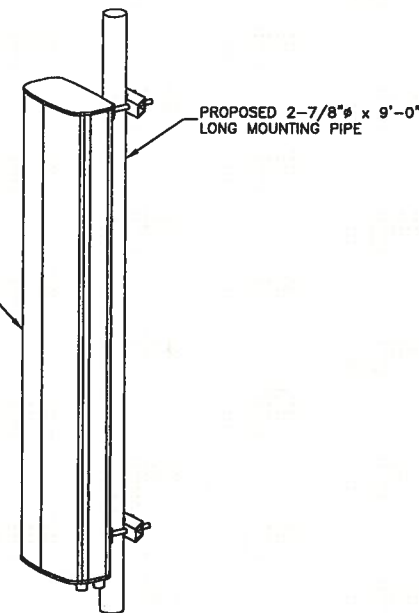
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AIR21 MOUNT/CLAMP SCALE: N.T.S.

2

PROPOSED ANTENNA (COMMSCOPE P/N LNX-6515DS-VTM) (96.4\"/>

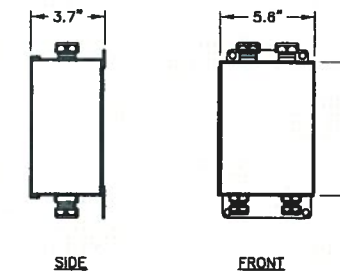


NOTE:

- 1. PLEASE SEE RFDS FOR SPECIFIC ANTENNA MODEL.

ISOMETRIC ANTENNA DETAIL SCALE: N.T.S.

3



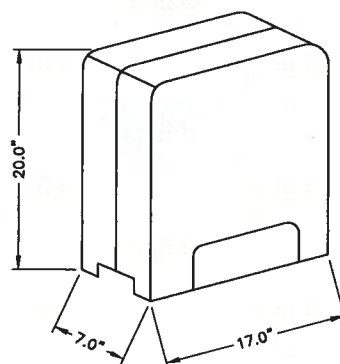
ERICSSON KRY 112 71

NOTES:

- 1. MOUNT EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS.
2. GROUND EQUIPMENT AND MOUNTS PER MANUFACTURER'S RECOMMENDATIONS AND T-MOBILE STANDARDS.
3. CONFIRM REQUIRED EQUIPMENT WITH THE LATEST RFDS.

DUAL-PORT TMA DETAIL SCALE: N.T.S.

4



ERICSSON_RRUS-11_B12

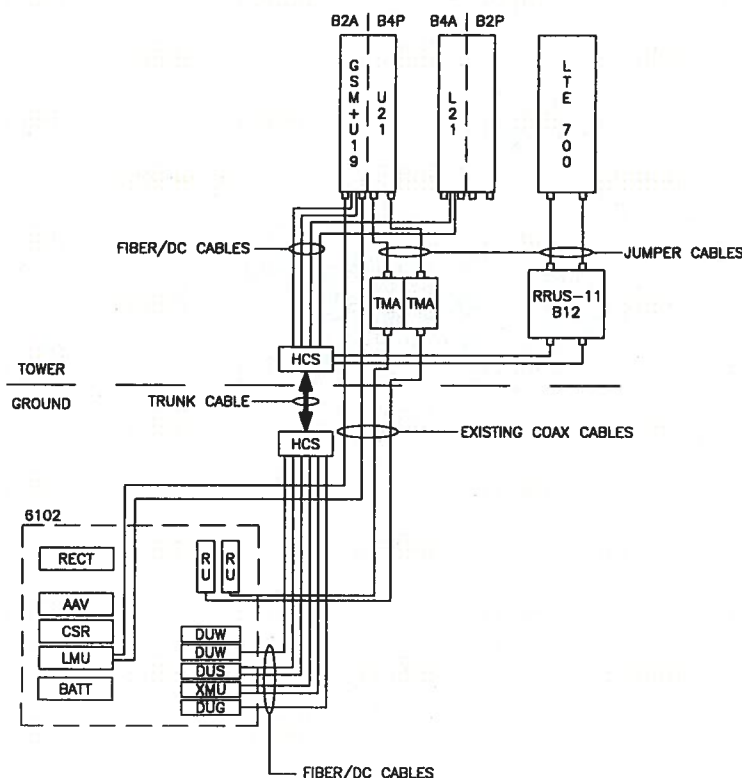
SPECIFICATIONS: HEIGHT: 20.0\"/>

RRU NOTES:

- 1. MOUNT EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS.
2. GROUND EQUIPMENT AND MOUNTS PER MANUFACTURER'S RECOMMENDATIONS AND T-MOBILE STANDARDS.
3. CONFIRM REQUIRED EQUIPMENT WITH THE LATEST RFDS.

RRUS-11 - REMOTE RADIO UNIT SCALE: N.T.S.

5



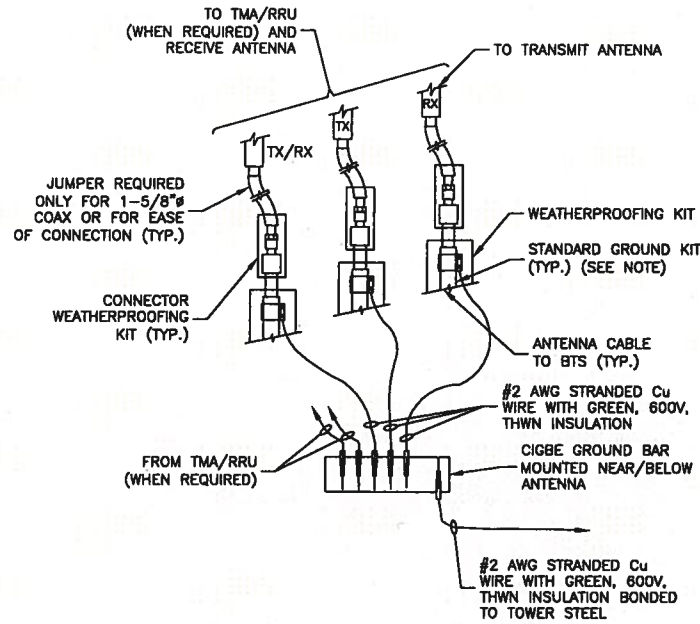
SITE CONFIGURATION 702Cu SCALE: N.T.S.

6

DESIGN CONFIGURATION table with columns: ANTENNAS (EXISTING, PROPOSED), COAX (EXISTING, PROPOSED), COAX LENGTH, PROPOSED HCS. Lists configurations for ALPHA, BETA, and GAMMA sites.

GROUNDING NOTES:

- THE CONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTNING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE CONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE ENGINEER FOR RESOLUTION.
- 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. ALL AVAILABLE GROUNDING ELECTRODES SHALL BE CONNECTED TOGETHER IN ACCORDANCE WITH THE NEC.
- THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS. USE OF OTHER METHODS MUST BE PRE-APPROVED BY THE ENGINEER IN WRITING.
- THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS ON TOWER SITES AND 10 OHMS OR LESS ON ROOFTOP SITES. WHEN ADDING ELECTRODES, CONTRACTOR SHALL MAINTAIN A MINIMUM DISTANCE BETWEEN THE ADDED ELECTRODE AND ANY OTHER EXISTING ELECTRODE EQUAL TO THE BURIED LENGTH OF THE ROD. IDEALLY, CONTRACTOR SHALL STRIVE TO KEEP THE SEPARATION DISTANCE EQUAL TO TWICE THE BURIED LENGTH OF THE RODS.
- THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
- 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 AND UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
- 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 TRANSMISSION EQUIPMENT.
- CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK-TO-BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
- ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
- USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED. IN ALL CASES, BENDS SHALL BE MADE WITH A MINIMUM BEND RADIUS OF 8 INCHES.
- EACH INTERIOR TRANSMISSION CABINET FRAME/PLINTH SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH 6 AWG STRANDED, GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRE UNLESS NOTED OTHERWISE IN THE DETAILS. EACH OUTDOOR CABINET FRAME/PLINTH SHALL BE DIRECTLY CONNECTED TO THE BURIED GROUND RING WITH 2 AWG SOLID TIN-PLATED COPPER WIRE UNLESS NOTED OTHERWISE IN THE DETAILS.
- ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING, SHALL BE 2 AWG SOLID TIN-PLATED COPPER UNLESS OTHERWISE INDICATED.
- EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE. CONNECTIONS TO ABOVE GRADE UNITS SHALL BE MADE WITH EXOTHERMIC WELDS WHERE PRACTICAL OR WITH 2 HOLE MECHANICAL TYPE BRASS CONNECTORS WITH STAINLESS STEEL HARDWARE, INCLUDING SET SCREWS. HIGH PRESSURE CRIMP CONNECTORS MAY ONLY BE USED WITH WRITTEN PERMISSION FROM T-MOBILE MARKET REPRESENTATIVE.
- EXOTHERMIC WELDS SHALL BE PERMITTED ON TOWERS ONLY WITH THE EXPRESS APPROVAL OF THE TOWER MANUFACTURER OR THE CONTRACTORS STRUCTURAL ENGINEER.
- ALL WIRE TO WIRE GROUND CONNECTIONS TO THE INTERIOR GROUND RING SHALL BE FORMED USING HIGH PRESS CRIMPS OR SPLIT BOLT CONNECTORS WHERE INDICATED IN THE DETAILS.
- ON ROOFTOP SITES WHERE EXOTHERMIC WELDS ARE A FIRE HAZARD COPPER COMPRESSION CAP CONNECTORS MAY BE USED FOR WIRE TO WIRE CONNECTIONS. 2 HOLE MECHANICAL TYPE BRASS CONNECTORS WITH STAINLESS STEEL HARDWARE, INCLUDING SET SCREWS SHALL BE USED FOR CONNECTION TO ALL ROOFTOP TRANSMISSION EQUIPMENT AND STRUCTURAL STEEL.
- COAX BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR USING TWO-HOLE MECHANICAL TYPE BRASS CONNECTORS AND STAINLESS STEEL HARDWARE.
- APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
- ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
- MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
- BOND ALL METALLIC OBJECTS WITHIN 6 FT. OF THE BURIED GROUND RING WITH 2 AWG SOLID TIN-PLATED COPPER GROUND CONDUCTOR. DURING EXCAVATION FOR NEW GROUND CONDUCTORS, IF EXISTING GROUND CONDUCTORS ARE ENCOUNTERED, BOND EXISTING GROUND CONDUCTORS TO NEW CONDUCTORS.
- 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., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT WITH LISTED BONDING FITTINGS.



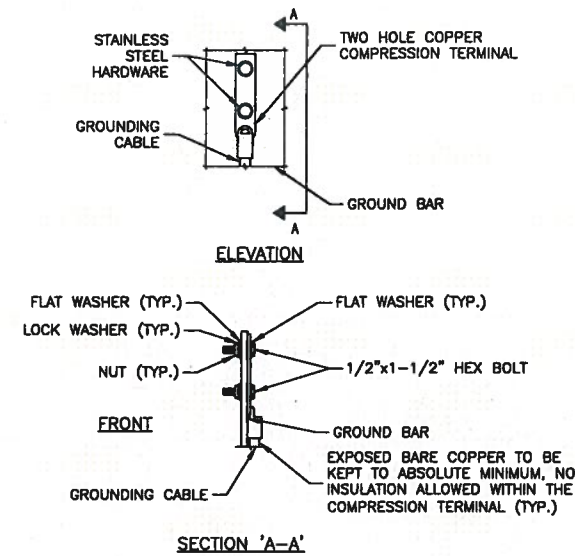
NOTE:

- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE.

CONNECTION OF GROUND WIRES TO GROUNDING BAR (CIGBE)

SCALE: N.T.S.

1



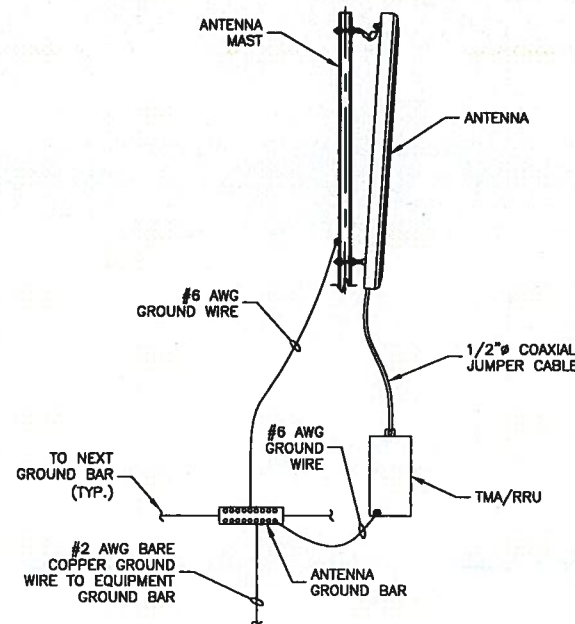
NOTES:

- DOUBLING UP OR STACKING OF CONNECTIONS IS NOT PERMITTED.
- OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

TYPICAL GROUND BAR MECHANICAL CONNECTION DETAIL

SCALE: N.T.S.

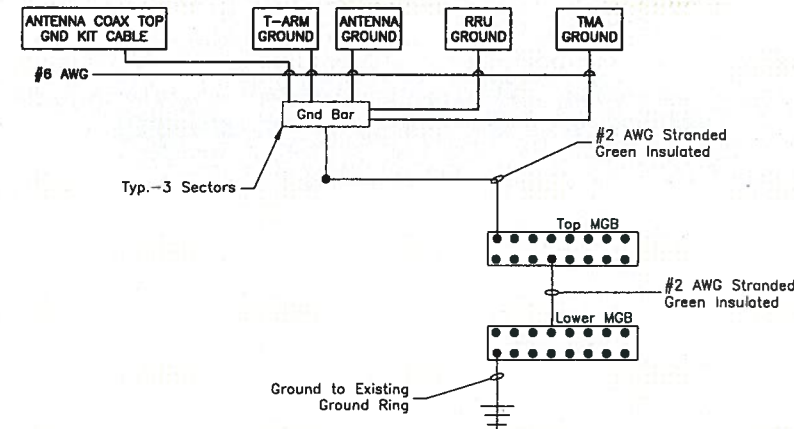
2



TYPICAL ANTENNA GROUNDING DETAIL

SCALE: N.T.S.

3



NOTES:

- BOND ANTENNA GROUNDING KIT CABLE TO TOP CIGBE
- BOND ANTENNA GROUNDING KIT CABLE TO BOTTOM CIGBE.
- SCHEMATIC GROUNDING DIAGRAM IS TYPICAL FOR EACH SECTOR.
- VERIFY EXISTING GROUND SYSTEM IS INSTALLED PER T-MOBILE STANDARDS.

SCHEMATIC GROUNDING DIAGRAM

SCALE: N.T.S.

4



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T-MOBILE NORTHEAST LLC

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DRAWN BY ALH
 CHECKED BY BSH
 APPROVED BY GHN
 DATE 11/05/14

TITLE

GROUNDING NOTES & DETAILS

PROJECT NO. 50066258/50066279

Date: **March 13, 2015**

Veronica Harris
Crown Castle
1200 McArthur Blvd
Mahwah, NJ 07430



Destek Engineering, LLC
1281 Kennestone Circle, Suite 100
Marietta, GA 30066
(770) 693 0835

Subject: Structural Analysis Report

Carrier Designation: **T-Mobile Co-Locate**
Carrier Site Number: CT11215A
Carrier Site Name: Monroe-1/Rt 25

Crown Castle Designation: **Crown Castle BU Number:** 826053
Crown Castle Site Name: Monroe-1/Rt 25
Crown Castle JDE Job Number: 325626
Crown Castle Work Order Number: 1020862
Crown Castle Application Number: 285335 Rev. 1

Engineering Firm Designation: **Destek Engineering, LLC Project Number:** 1502126

Site Data: **88 Main Street, Monroe, Fairfield County, CT**
Latitude 41° 18' 6.06", Longitude -73° 15' 2.92"
195 Foot - Monopole Tower

Dear Veronica Harris,

Destek Engineering, LLC 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 764254, in accordance with application 285335, revision 1.

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.

The analysis has been performed in accordance with the TIA/EIA-222-F standard and 2005 CT State Building Code with 2009 amendment based upon a wind speed of 70 mph fastest mile.

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

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

Structural analysis prepared by: Chiyu Zhang, EIT

Respectfully submitted by:

Ahmet Colakoglu, PE
President



TABLE OF CONTENTS

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Table 2 - Existing and Reserved Antenna and Cable Information

Table 3 - Design Antenna and Cable Information

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Table 4 - Documents Provided

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3.2) Assumptions

4) ANALYSIS RESULTS

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Table 6 – Tower Components vs. Capacity

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tnxTower Output

6) APPENDIX B

Base Level Drawing

7) APPENDIX C

Additional Calculations

1) INTRODUCTION

This tower is a 195 ft Monopole tower designed by FWT INC. in May of 2001. The tower was originally designed for a wind speed of 85 mph per TIA/EIA-222-F.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 85 mph with no ice, 37.6 mph with 0.75 inch ice thickness and 50 mph under service loads.

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
195.0	195.0	3	commscope	LNx-6515DS-VTM 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
195.0	195.0	2	andrew	TMBXX-6516-R2M w/ Mount Pipe	-	-	3
		3	ems wireless	RV90-17-02DPL2 w/ Mount Pipe			
		3	ericsson	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	13	1-5/8	1
		3	ericsson	ERICSSON AIR 21 B4A B2P w/ Mount Pipe			
		3	ericsson	KRY 112 71			
		3	rfs celwave	APX16DWV-16DWV-S-E-ACU w/ Mount Pipe	-	-	3
		1	tower mounts	Sector Mount [SM 901-3]			1
175.0	175.0	6	ericsson	RRUS-11	2	7/8	1
		3	powerwave technologies	7770.00 w/ Mount Pipe			
		6	powerwave technologies	LGP21401			
		3	powerwave technologies	P65-16-XLH-RR w/ Mount Pipe			
		1	raycap	DC6-48-60-18-8F			
		1	tower mounts	Platform Mount [LP 303-1]			
165.0	165.0	3	alcatel lucent	RRH2x40-AWS	1	1-5/8	2
		3	antel	BXA-171085-12BF w/ Mount Pipe	18	1-5/8	1

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
		3	antel	BXA-70063/6CF w/ Mount Pipe			
		6	antel	LPA-80080/6CF w/ Mount Pipe			
		3	kathrein	742 213 w/ Mount Pipe			
		1	rfs celwave	DB-B1-6C-8AB-0Z	-	-	2
		1	tower mounts	Platform Mount [LP 403-1]	-	-	1

- Notes:
 1) Existing Equipment
 2) Reserved Equipment
 3) Equipment To Be Removed

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)
195	195	12	ems wireless	EMS RR90-17-00DP PCS	-	-
185	185	12	ems wireless	EMS RR90-17-00DP PCS	-	-
175	175	12	ems wireless	EMS RR90-17-00DP PCS	-	-
165	165	12	ems wireless	EMS RR90-17-00DP PCS	-	-
155	155	12	ems wireless	EMS RR90-17-00DP PCS	-	-
140	135	2	-	10' WHIP	-	-
120	115	2	-	10' WHIP	-	-

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Jaworski Geotech, Inc. (Proj No. 01129G, 2/15/2001)	3488965	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Summit Manufacturing, Inc. (Job No. 29201-0505, 5/10/2001)	3950063	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Summit Manufacturing, Inc. (Job No. 29201-0505, 5/4/2001)	3488966	CCISITES

3.1) Analysis Method

tnxTower (version 6.1.4.1), 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.
- 4) The analysis was performed for the main tower members and their connections. It does not include an evaluation of the antenna mounts and their connections.

This analysis may be affected if any assumptions are not valid or have been made in error. Destek Engineering, LLC 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	195 - 157.5	Pole	TP33.351x26x0.25	1	-8.23	1331.10	34.0	Pass
L2	157.5 - 116.75	Pole	TP40.839x32.0179x0.3125	2	-14.98	2036.66	69.0	Pass
L3	116.75 - 77	Pole	TP48.006x39.1849x0.375	3	-24.35	2874.51	78.6	Pass
L4	77 - 38	Pole	TP54.901x46.0798x0.375	4	-35.25	3289.03	92.4	Pass
L5	38 - 0	Pole	TP61.6x52.7788x0.4375	5	-51.51	4415.35	88.1	Pass
							Summary	
						Pole (L4)	92.4	Pass
						Rating =	92.4	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	84.8	Pass
1	Base Plate	0	77.9	Pass
1	Base Foundation	0	84.0	Pass

Structure Rating (max from all components) =	92.4%
---	--------------

Notes:

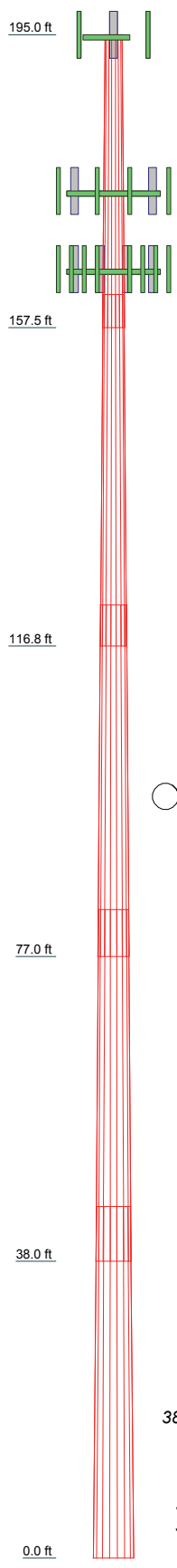
- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

4.1) Recommendations

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

APPENDIX A
TNXTOWER OUTPUT

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



DESIGNED APPURTENANCE LOADING

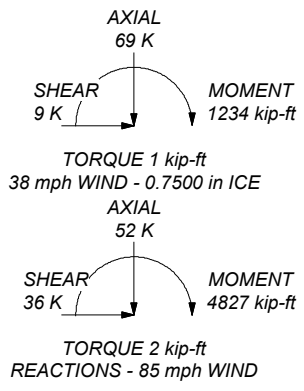
TYPE	ELEVATION	TYPE	ELEVATION
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	195	7770.00 w/ Mount Pipe	175
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	195	P65-16-XLH-RR w/ Mount Pipe	175
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	195	(2) LGP21401	175
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	195	(2) RRRUS-11	175
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	195	7770.00 w/ Mount Pipe	175
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	195	P65-16-XLH-RR w/ Mount Pipe	175
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	195	(2) LGP21401	175
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	195	(2) RRRUS-11	175
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	195	Platform Mount [LP 303-1]	175
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	195	BXA-171085-12BF w/ Mount Pipe	165
KRY 112 71	195	BXA-70063/6CF w/ Mount Pipe	165
KRY 112 71	195	(2) LPA-80080/6CF w/ Mount Pipe	165
KRY 112 71	195	742 213 w/ Mount Pipe	165
LNX-6515DS-VTM w/ Mount Pipe	195	RRH2x40-AWS	165
LNX-6515DS-VTM w/ Mount Pipe	195	BXA-171085-12BF w/ Mount Pipe	165
LNX-6515DS-VTM w/ Mount Pipe	195	BXA-70063/6CF w/ Mount Pipe	165
RRUS 11 B12	195	(2) LPA-80080/6CF w/ Mount Pipe	165
RRUS 11 B12	195	742 213 w/ Mount Pipe	165
RRUS 11 B12	195	RRH2x40-AWS	165
Sector Mount [SM 901-3]	195	BXA-171085-12BF w/ Mount Pipe	165
7770.00 w/ Mount Pipe	175	BXA-70063/6CF w/ Mount Pipe	165
P65-16-XLH-RR w/ Mount Pipe	175	(2) LPA-80080/6CF w/ Mount Pipe	165
(2) LGP21401	175	742 213 w/ Mount Pipe	165
DC6-48-60-18-8F	175	RRH2x40-AWS	165
(2) RRRUS-11	175	DB-B1-6C-8AB-0Z	165
		Platform Mount [LP 403-1]	165

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 92.4%



Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX:	Job: BU# 826053 Monroe-1/Rt 25			
	Project: 1502126	Client: Crown Castle	Drawn by: Ahmet Colakoglu	App'd:
	Code: TIA/EIA-222-F	Date: 03/13/15	Scale: NTS	Dwg No. E-1
	Path: Y:\2015\02 - Crown\1502126 - 826053 Monroe-1 Rt 25 (WO1020862)\TNXTower\826053.dwg			

Tower Input Data

There is a pole section.

This tower is designed using the TIA/EIA-222-F standard.

The following design criteria apply:

- 1) Tower is located in Fairfield County, Connecticut.
- 2) Basic wind speed of 85 mph.
- 3) Nominal ice thickness of 0.7500 in.
- 4) Ice thickness is considered to increase with height.
- 5) Ice density of 56 pcf.
- 6) A wind speed of 38 mph is used in combination with ice.
- 7) Temperature drop of 50 °F.
- 8) Deflections calculated using a wind speed of 50 mph.
- 9) A non-linear (P-delta) analysis was used.
- 10) Pressures are calculated at each section.
- 11) Stress ratio used in pole design is 1.333.
- 12) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification ✓ Use Code Stress Ratios ✓ Use Code Safety Factors - Guys ✓ Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) Add IBC .6D+W Combination	Distribute Leg Loads As Uniform Assume Legs Pinned ✓ Assume Rigid Index Plate ✓ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension ✓ Bypass Mast Stability Checks ✓ Use Azimuth Dish Coefficients ✓ Project Wind Area of Appurt. Autocalc Torque Arm Areas SR Members Have Cut Ends Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Use TIA-222-G Tension Splice Capacity Exemption	Treat Feedline Bundles As Cylinder Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation ✓ Consider Feedline Torque Include Angle Block Shear Check <div style="background-color: #e0e0e0; text-align: center; padding: 2px;">Poles</div> ✓ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets
--	--	--

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	195.00-157.50	37.50	4.25	18	26.0000	33.3510	0.2500	1.0000	A607-65 (65 ksi)
L2	157.50-116.75	45.00	5.25	18	32.0179	40.8390	0.3125	1.2500	A607-65 (65 ksi)
L3	116.75-77.00	45.00	6.00	18	39.1849	48.0060	0.3750	1.5000	A607-65 (65 ksi)
L4	77.00-38.00	45.00	7.00	18	46.0798	54.9010	0.3750	1.5000	A607-65 (65 ksi)
L5	38.00-0.00	45.00		18	52.7788	61.6000	0.4375	1.7500	A607-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L1	26.4011	20.4326	1711.6544	9.1412	13.2080	129.5922	3425.5610	10.2183	4.1360	16.544
	33.8655	26.2656	3635.8648	11.7509	16.9423	214.6027	7276.5137	13.1353	5.4298	21.719
L2	33.3578	31.4478	3993.8666	11.2554	16.2651	245.5484	7992.9885	15.7269	5.0851	16.272
	41.4690	40.1972	8340.8765	14.3869	20.7462	402.0433	16692.728	20.1024	6.6377	21.241
L3	40.8344	46.1934	8790.2699	13.7775	19.9059	441.5909	17592.106	23.1011	6.2365	16.631
	48.7466	56.6928	16249.677	16.9090	24.3870	666.3241	32520.736	28.3518	7.7891	20.771
L4	47.9850	54.4002	14356.959	16.2252	23.4086	613.3208	28732.810	27.2053	7.4501	19.867
	55.7479	64.8996	24377.353	19.3567	27.8897	874.0627	48786.783	32.4560	9.0026	24.007
L5	54.9864	72.6825	25156.862	18.5812	26.8116	938.2813	50346.826	36.3481	8.5191	19.472
	62.5503	84.9318	40140.069	21.7127	31.2928	1282.7254	80332.955	42.4740	10.0716	23.021

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

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement	Total Number		C _{AA}	Weight
				ft			ft ² /ft	k/ft
5/8 rod/step	C	No	CaAa (Out Of Face)	195.00 - 0.00	1	No Ice	0.02	0.00
						1/2" Ice	0.12	0.00
						1" Ice	0.22	0.00
						2" Ice	0.42	0.01
						4" Ice	0.82	0.02
Safety Line 3/8	C	No	CaAa (Out Of Face)	195.00 - 0.00	1	No Ice	0.04	0.00
						1/2" Ice	0.14	0.00
						1" Ice	0.24	0.00
						2" Ice	0.44	0.00
						4" Ice	0.84	0.00
* LDF7-50A(1-5/8")	B	No	Inside Pole	195.00 - 0.00	12	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	B	No	CaAa (Out Of Face)	195.00 - 0.00	1	No Ice	0.16	0.00
						1/2" Ice	0.26	0.00
						1" Ice	0.36	0.00
						2" Ice	0.56	0.01
						4" Ice	0.96	0.03
* LDF5-50A(7/8")	C	No	Inside Pole	175.00 - 0.00	2	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
LDF7-50A(1-5/8")	C	No	Inside Pole	175.00 - 0.00	12	No Ice	0.00	0.00

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C _{AA} ft ² /ft	Weight klf
9776(3/4")	C	No	Inside Pole	175.00 - 0.00	1	1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
						No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
2" Rigid Conduit	C	No	Inside Pole	175.00 - 0.00	1	2" Ice	0.00	0.00
						4" Ice	0.00	0.00
						No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
* LDF7-50A(1-5/8")	A	No	Inside Pole	165.00 - 0.00	18	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
						No Ice	0.20	0.00
						1/2" Ice	0.30	0.00
HB158-1-08U8-S8J18(1-5/8)	A	No	CaAa (Out Of Face)	165.00 - 0.00	1	No Ice	0.20	0.00
						1/2" Ice	0.30	0.00
						1" Ice	0.40	0.00
						2" Ice	0.60	0.01
						4" Ice	1.00	0.03

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	195.00-157.50	A	0.000	0.000	0.000	1.485	0.12
		B	0.000	0.000	0.000	6.094	0.41
		C	0.000	0.000	0.000	2.156	0.26
L2	157.50-116.75	A	0.000	0.000	0.000	8.069	0.65
		B	0.000	0.000	0.000	6.622	0.44
		C	0.000	0.000	0.000	2.343	0.57
L3	116.75-77.00	A	0.000	0.000	0.000	7.871	0.64
		B	0.000	0.000	0.000	6.460	0.43
		C	0.000	0.000	0.000	2.286	0.56
L4	77.00-38.00	A	0.000	0.000	0.000	7.722	0.63
		B	0.000	0.000	0.000	6.338	0.43
		C	0.000	0.000	0.000	2.243	0.55
L5	38.00-0.00	A	0.000	0.000	0.000	7.524	0.61
		B	0.000	0.000	0.000	6.175	0.41
		C	0.000	0.000	0.000	2.185	0.54

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} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	195.00-157.50	A	0.917	0.000	0.000	0.000	2.860	0.15
		B		0.000	0.000	0.000	12.968	0.52
		C		0.000	0.000	0.000	15.905	0.34
L2	157.50-116.75	A	0.889	0.000	0.000	0.000	15.539	0.79
		B		0.000	0.000	0.000	14.092	0.56
		C		0.000	0.000	0.000	17.284	0.67
L3	116.75-77.00	A	0.853	0.000	0.000	0.000	14.941	0.76
		B		0.000	0.000	0.000	13.530	0.54
		C		0.000	0.000	0.000	16.427	0.65
L4	77.00-38.00	A	0.802	0.000	0.000	0.000	14.377	0.74
		B		0.000	0.000	0.000	12.992	0.53

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L5	38.00-0.00	C	0.750	0.000	0.000	0.000	15.552	0.63
		A		0.000	0.000	0.000	13.617	0.72
		B		0.000	0.000	0.000	12.268	0.51
		C		0.000	0.000	0.000	14.370	0.61

Feed Line Center of Pressure

Section	Elevation ft	CP _x in	CP _z in	CP _x Ice in	CP _z Ice in
L1	195.00-157.50	0.1234	0.0902	-0.0725	0.3218
L2	157.50-116.75	0.1201	-0.1162	-0.0714	0.0039
L3	116.75-77.00	0.1225	-0.1185	-0.0703	0.0010
L4	77.00-38.00	0.1242	-0.1202	-0.0660	-0.0031
L5	38.00-0.00	0.1255	-0.1215	-0.0576	-0.0094

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K	
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	60.0000	195.00	No Ice	6.83	5.64	0.11
						1/2" Ice	7.35	6.48	0.17
						1" Ice	7.86	7.26	0.23
						2" Ice	8.93	8.86	0.38
						4" Ice	11.18	12.29	0.81
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	60.0000	195.00	No Ice	6.81	5.63	0.11
						1/2" Ice	7.33	6.47	0.17
						1" Ice	7.85	7.24	0.23
						2" Ice	8.91	8.85	0.38
						4" Ice	11.16	12.27	0.81
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	30.0000	195.00	No Ice	6.83	5.64	0.11
						1/2" Ice	7.35	6.48	0.17
						1" Ice	7.86	7.26	0.23
						2" Ice	8.93	8.86	0.38
						4" Ice	11.18	12.29	0.81
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	30.0000	195.00	No Ice	6.81	5.63	0.11
						1/2" Ice	7.33	6.47	0.17
						1" Ice	7.85	7.24	0.23
						2" Ice	8.91	8.85	0.38
						4" Ice	11.16	12.27	0.81
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	90.0000	195.00	No Ice	6.83	5.64	0.11
						1/2" Ice	7.35	6.48	0.17
						1" Ice	7.86	7.26	0.23
						2" Ice	8.93	8.86	0.38
						4" Ice	11.18	12.29	0.81
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	90.0000	195.00	No Ice	6.81	5.63	0.11
						1/2" Ice	7.33	6.47	0.17
						1" Ice	7.85	7.24	0.23
						2" Ice	8.91	8.85	0.38
						4" Ice	11.16	12.27	0.81

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} _{Front}	C _{AA} _{Side}	Weight
			Horz Lateral	Vert					
			ft	ft	°	ft	ft ²	ft ²	K
KRY 112 71	A	From Leg	4.00	0.0000	195.00	No Ice	0.68	0.45	0.01
			0.00			1/2"	0.80	0.56	0.02
			0.00			Ice	0.93	0.68	0.03
						1" Ice	1.22	0.94	0.04
						2" Ice	1.90	1.57	0.11
KRY 112 71	B	From Leg	4.00	0.0000	195.00	No Ice	0.68	0.45	0.01
			0.00			1/2"	0.80	0.56	0.02
			0.00			Ice	0.93	0.68	0.03
						1" Ice	1.22	0.94	0.04
						2" Ice	1.90	1.57	0.11
KRY 112 71	C	From Leg	4.00	0.0000	195.00	No Ice	0.68	0.45	0.01
			0.00			1/2"	0.80	0.56	0.02
			0.00			Ice	0.93	0.68	0.03
						1" Ice	1.22	0.94	0.04
						2" Ice	1.90	1.57	0.11
* LNX-6515DS-VTM w/ Mount Pipe	A	From Leg	4.00	0.0000	195.00	No Ice	11.68	9.84	0.08
			0.00			1/2"	12.40	11.37	0.17
			0.00			Ice	13.14	12.91	0.27
						1" Ice	14.60	15.27	0.51
						2" Ice	17.87	20.14	1.15
LNX-6515DS-VTM w/ Mount Pipe	B	From Leg	4.00	0.0000	195.00	No Ice	11.68	9.84	0.08
			0.00			1/2"	12.40	11.37	0.17
			0.00			Ice	13.14	12.91	0.27
						1" Ice	14.60	15.27	0.51
						2" Ice	17.87	20.14	1.15
LNX-6515DS-VTM w/ Mount Pipe	C	From Leg	4.00	0.0000	195.00	No Ice	11.68	9.84	0.08
			0.00			1/2"	12.40	11.37	0.17
			0.00			Ice	13.14	12.91	0.27
						1" Ice	14.60	15.27	0.51
						2" Ice	17.87	20.14	1.15
RRUS 11 B12	A	From Leg	4.00	0.0000	195.00	No Ice	3.31	1.36	0.05
			0.00			1/2"	3.55	1.54	0.07
			0.00			Ice	3.80	1.73	0.10
						1" Ice	4.33	2.13	0.15
						2" Ice	5.50	3.04	0.31
RRUS 11 B12	B	From Leg	4.00	0.0000	195.00	No Ice	3.31	1.36	0.05
			0.00			1/2"	3.55	1.54	0.07
			0.00			Ice	3.80	1.73	0.10
						1" Ice	4.33	2.13	0.15
						2" Ice	5.50	3.04	0.31
RRUS 11 B12	C	From Leg	4.00	0.0000	195.00	No Ice	3.31	1.36	0.05
			0.00			1/2"	3.55	1.54	0.07
			0.00			Ice	3.80	1.73	0.10
						1" Ice	4.33	2.13	0.15
						2" Ice	5.50	3.04	0.31
Sector Mount [SM 901-3]	C	From Leg	0.00	-20.0000	195.00	No Ice	12.90	12.90	1.26
			0.00			1/2"	12.90	12.90	1.43
			0.00			Ice	12.90	12.90	1.61
						1" Ice	12.90	12.90	1.96
						2" Ice	12.90	12.90	2.65
*** 7770.00 w/ Mount Pipe	A	From Leg	4.00	60.0000	175.00	No Ice	6.12	4.25	0.06
			0.00			1/2"	6.63	5.01	0.10
			0.00			Ice	7.13	5.71	0.16

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} _{Front}	C _{AA} _{Side}	Weight	
			Horz	Lateral						Vert
			ft	ft	°	ft	ft ²	ft ²	K	
P65-16-XLH-RR w/ Mount Pipe	A	From Leg	4.00	0.00	60.0000	175.00	1" Ice	8.16	7.16	0.29
							2" Ice	10.36	10.41	0.66
							4" Ice			
							No Ice	8.64	6.36	0.08
							1/2" Ice	9.29	7.54	0.14
							1" Ice	9.91	8.43	0.22
							2" Ice	11.18	10.24	0.39
(2) LGP21401	A	From Leg	4.00	0.00	60.0000	175.00	2" Ice	13.83	14.10	0.89
							4" Ice			
							No Ice	1.29	0.23	0.01
							1/2" Ice	1.45	0.31	0.02
							Ice	1.61	0.40	0.03
							1" Ice	1.97	0.61	0.05
							2" Ice	2.79	1.12	0.14
DC6-48-60-18-8F	A	From Leg	4.00	0.00	60.0000	175.00	4" Ice			
							No Ice	2.57	2.57	0.02
							1/2" Ice	2.80	2.80	0.04
							Ice	3.04	3.04	0.07
							1" Ice	3.54	3.54	0.13
							2" Ice	4.66	4.66	0.30
							4" Ice			
(2) RRUS-11	A	From Leg	4.00	0.00	60.0000	175.00	No Ice	3.25	1.37	0.05
							1/2" Ice	3.49	1.55	0.07
							Ice	3.74	1.74	0.09
							1" Ice	4.27	2.14	0.15
							2" Ice	5.43	3.04	0.31
							4" Ice			
							No Ice	6.12	4.25	0.06
7770.00 w/ Mount Pipe	B	From Leg	4.00	0.00	60.0000	175.00	1/2" Ice	6.63	5.01	0.10
							Ice	7.13	5.71	0.16
							1" Ice	8.16	7.16	0.29
							2" Ice	10.36	10.41	0.66
							4" Ice			
							No Ice	8.64	6.36	0.08
							1/2" Ice	9.29	7.54	0.14
P65-16-XLH-RR w/ Mount Pipe	B	From Leg	4.00	0.00	60.0000	175.00	Ice	9.91	8.43	0.22
							1" Ice	11.18	10.24	0.39
							2" Ice	13.83	14.10	0.89
							4" Ice			
							No Ice	1.29	0.23	0.01
							1/2" Ice	1.45	0.31	0.02
							Ice	1.61	0.40	0.03
(2) LGP21401	B	From Leg	4.00	0.00	60.0000	175.00	1" Ice	1.97	0.61	0.05
							2" Ice	2.79	1.12	0.14
							4" Ice			
							No Ice	3.25	1.37	0.05
							1/2" Ice	3.49	1.55	0.07
							Ice	3.74	1.74	0.09
							1" Ice	4.27	2.14	0.15
(2) RRUS-11	B	From Leg	4.00	0.00	60.0000	175.00	2" Ice	5.43	3.04	0.31
							4" Ice			
							No Ice	6.12	4.25	0.06
							1/2" Ice	6.63	5.01	0.10
							Ice	7.13	5.71	0.16
							1" Ice	8.16	7.16	0.29
							2" Ice	10.36	10.41	0.66
7770.00 w/ Mount Pipe	C	From Leg	4.00	0.00	60.0000	175.00	4" Ice			
							No Ice	6.12	4.25	0.06
							1/2" Ice	6.63	5.01	0.10
							Ice	7.13	5.71	0.16
							1" Ice	8.16	7.16	0.29
							2" Ice	10.36	10.41	0.66
							4" Ice			
P65-16-XLH-RR w/ Mount Pipe	C	From Leg	4.00	0.00	60.0000	175.00	No Ice	8.64	6.36	0.08
							1/2" Ice	9.29	7.54	0.14
							Ice	9.91	8.43	0.22
							1" Ice	11.18	10.24	0.39
							2" Ice	13.83	14.10	0.89
							4" Ice			
							No Ice	1.29	0.23	0.01
(2) LGP21401	C	From Leg	4.00	0.00	60.0000	175.00	1/2" Ice	1.45	0.31	0.02
							Ice			
							No Ice			

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
			0.00			1/2" Ice 1.61	0.40	0.03
						1" Ice 1.97	0.61	0.05
						2" Ice 2.79	1.12	0.14
						4" Ice No Ice		
(2) RRUS-11	C	From Leg	4.00	60.0000	175.00	No Ice 3.25	1.37	0.05
			0.00			1/2" Ice 3.49	1.55	0.07
			0.00			Ice 3.74	1.74	0.09
						1" Ice 4.27	2.14	0.15
						2" Ice 5.43	3.04	0.31
						4" Ice No Ice		
Platform Mount [LP 303-1]	C	From Leg	0.00	60.0000	175.00	No Ice 14.66	14.66	1.25
			0.00			1/2" Ice 18.87	18.87	1.48
			0.00			Ice 23.08	23.08	1.71
						1" Ice 31.50	31.50	2.18
						2" Ice 48.34	48.34	3.10
						4" Ice No Ice		

BXA-171085-12BF w/ Mount Pipe	A	From Leg	4.00	60.0000	165.00	No Ice 4.97	5.23	0.04
			0.00			1/2" Ice 5.52	6.39	0.09
			0.00			Ice 6.04	7.26	0.14
						1" Ice 7.09	9.05	0.27
						2" Ice 9.36	12.82	0.67
						4" Ice No Ice		
BXA-70063/6CF w/ Mount Pipe	A	From Leg	4.00	60.0000	165.00	No Ice 7.98	5.41	0.04
			0.00			1/2" Ice 8.62	6.56	0.10
			0.00			Ice 9.23	7.42	0.17
						1" Ice 10.47	9.20	0.33
						2" Ice 13.08	12.95	0.79
						4" Ice No Ice		
(2) LPA-80080/6CF w/ Mount Pipe	A	From Leg	4.00	60.0000	165.00	No Ice 4.56	10.73	0.05
			0.00			1/2" Ice 5.11	11.99	0.11
			0.00			Ice 5.61	12.97	0.19
						1" Ice 6.65	14.98	0.36
						2" Ice 8.83	19.22	0.86
						4" Ice No Ice		
742 213 w/ Mount Pipe	A	From Leg	4.00	60.0000	165.00	No Ice 5.37	4.62	0.05
			0.00			1/2" Ice 5.95	6.00	0.09
			0.00			Ice 6.50	6.98	0.15
						1" Ice 7.61	8.85	0.28
						2" Ice 9.93	12.79	0.68
						4" Ice No Ice		
RRH2x40-AWS	A	From Leg	4.00	0.0000	165.00	No Ice 2.52	1.59	0.04
			0.00			1/2" Ice 2.75	1.80	0.06
			0.00			Ice 2.99	2.01	0.08
						1" Ice 3.50	2.46	0.13
						2" Ice 4.61	3.48	0.28
						4" Ice No Ice		
BXA-171085-12BF w/ Mount Pipe	B	From Leg	4.00	60.0000	165.00	No Ice 4.97	5.23	0.04
			0.00			1/2" Ice 5.52	6.39	0.09
			0.00			Ice 6.04	7.26	0.14
						1" Ice 7.09	9.05	0.27
						2" Ice 9.36	12.82	0.67
						4" Ice No Ice		
BXA-70063/6CF w/ Mount Pipe	B	From Leg	4.00	60.0000	165.00	No Ice 7.98	5.41	0.04
			0.00			1/2" Ice 8.62	6.56	0.10
			0.00			Ice 9.23	7.42	0.17
						1" Ice 10.47	9.20	0.33
						2" Ice 13.08	12.95	0.79
						4" Ice No Ice		
(2) LPA-80080/6CF w/ Mount Pipe	B	From Leg	4.00	60.0000	165.00	No Ice 4.56	10.73	0.05
			0.00			1/2" Ice 5.11	11.99	0.11
			0.00			Ice 5.61	12.97	0.19
						1" Ice 6.65	14.98	0.36
						2" Ice 8.83	19.22	0.86

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	195 - 157.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-16.88	3.86	-2.01
			Max. Mx	11	-8.23	294.02	0.06
			Max. My	8	-8.23	0.98	-294.59
			Max. Vy	11	-18.66	294.02	0.06
			Max. Vx	8	18.64	0.98	-294.59
			Max. Torque	2			2.52
			Max Tension	1	0.00	0.00	0.00
L2	157.5 - 116.75	Pole	Max. Compression	14	-25.70	3.95	-2.04
			Max. Mx	11	-14.98	1128.87	-0.61
			Max. My	8	-14.98	1.78	-1128.66
			Max. Vy	11	-23.39	1128.87	-0.61
			Max. Vx	8	23.37	1.78	-1128.66
			Max. Torque	2			2.51
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-37.13	3.94	-1.98
L3	116.75 - 77	Pole	Max. Mx	11	-24.35	2134.23	-1.27
			Max. My	8	-24.35	2.51	-2133.23
			Max. Vy	11	-28.09	2134.23	-1.27
			Max. Vx	8	28.07	2.51	-2133.23
			Max. Torque	2			2.46
			Max Tension	1	0.00	0.00	0.00
L4	77 - 38	Pole	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L5	38 - 0	Pole	Max. Compression	14	-49.97	3.86	-1.89
			Max. Mx	11	-35.25	3282.80	-1.90
			Max. My	8	-35.25	3.17	-3281.04
			Max. Vy	11	-32.19	3282.80	-1.90
			Max. Vx	8	32.17	3.17	-3281.04
			Max. Torque	2			2.41
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-68.54	3.75	-1.77
			Max. Mx	11	-51.51	4826.30	-2.61
			Max. My	8	-51.51	3.89	-4823.66
			Max. Vy	11	-36.30	4826.30	-2.61
			Max. Vx	8	36.28	3.89	-4823.66
			Max. Torque	2			2.36

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	24	68.54	9.00	-0.01
	Max. H _x	11	51.54	36.27	-0.02
	Max. H _z	2	51.54	-0.02	36.25
	Max. M _x	2	4820.82	-0.02	36.25
	Max. M _z	5	4820.88	-36.27	0.02
	Max. Torsion	2	2.31	-0.02	36.25
	Min. Vert	1	51.54	0.00	0.00
	Min. H _x	5	51.54	-36.27	0.02
	Min. H _z	8	51.54	0.02	-36.25
	Min. M _x	8	-4823.66	0.02	-36.25
	Min. M _z	11	-4826.30	36.27	-0.02
	Min. Torsion	8	-2.31	0.02	-36.25

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturing Moment, M _x kip-ft	Overturing Moment, M _z kip-ft	Torque kip-ft
Dead Only	51.54	0.00	0.00	1.38	2.64	-0.00
Dead+Wind 0 deg - No Ice	51.54	0.02	-36.25	-4820.82	1.53	-2.31
Dead+Wind 30 deg - No Ice	51.54	18.15	-31.40	-4175.35	-2410.12	-1.99
Dead+Wind 60 deg - No Ice	51.54	31.42	-18.14	-2410.72	-4175.25	-1.13
Dead+Wind 90 deg - No Ice	51.54	36.27	-0.02	0.25	-4820.88	0.03
Dead+Wind 120 deg - No Ice	51.54	31.40	18.11	2411.52	-4174.06	1.18
Dead+Wind 150 deg - No Ice	51.54	18.12	31.39	4177.01	-2408.06	2.01
Dead+Wind 180 deg - No Ice	51.54	-0.02	36.25	4823.66	3.89	2.31
Dead+Wind 210 deg - No Ice	51.54	-18.15	31.40	4178.20	2415.54	1.98
Dead+Wind 240 deg - No Ice	51.54	-31.42	18.14	2413.58	4180.67	1.13
Dead+Wind 270 deg - No Ice	51.54	-36.27	0.02	2.61	4826.30	-0.03
Dead+Wind 300 deg - No Ice	51.54	-31.40	-18.11	-2408.67	4179.49	-1.18
Dead+Wind 330 deg - No Ice	51.54	-18.12	-31.39	-4174.17	2413.49	-2.01
Dead+Ice+Temp	68.54	-0.00	0.00	1.77	3.75	-0.00
Dead+Wind 0 deg+Ice+Temp	68.54	0.01	-8.99	-1226.01	2.56	-0.59
Dead+Wind 30 deg+Ice+Temp	68.54	4.51	-7.79	-1062.18	-611.96	-0.45
Dead+Wind 60 deg+Ice+Temp	68.54	7.80	-4.50	-613.25	-1061.46	-0.18
Dead+Wind 90 deg+Ice+Temp	68.54	9.00	-0.01	0.50	-1225.49	0.13
Dead+Wind 120 deg+Ice+Temp	68.54	7.79	4.49	614.60	-1060.11	0.41

Load Combination	Vertical	Shear _x	Shear _z	Overturning Moment, M _x	Overturning Moment, M _z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead+Wind 150 deg+Ice+Temp	68.54	4.49	7.78	1064.52	-609.63	0.58
Dead+Wind 180 deg+Ice+Temp	68.54	-0.01	8.99	1229.69	5.25	0.59
Dead+Wind 210 deg+Ice+Temp	68.54	-4.51	7.79	1065.86	619.77	0.45
Dead+Wind 240 deg+Ice+Temp	68.54	-7.80	4.50	616.93	1069.27	0.18
Dead+Wind 270 deg+Ice+Temp	68.54	-9.00	0.01	3.19	1233.31	-0.13
Dead+Wind 300 deg+Ice+Temp	68.54	-7.79	-4.49	-610.92	1067.93	-0.41
Dead+Wind 330 deg+Ice+Temp	68.54	-4.49	-7.78	-1060.83	617.44	-0.58
Dead+Wind 0 deg - Service	51.54	0.01	-12.54	-1669.68	2.34	-0.81
Dead+Wind 30 deg - Service	51.54	6.28	-10.87	-1446.00	-833.41	-0.70
Dead+Wind 60 deg - Service	51.54	10.87	-6.28	-834.48	-1445.10	-0.40
Dead+Wind 90 deg - Service	51.54	12.55	-0.01	1.03	-1668.84	0.01
Dead+Wind 120 deg - Service	51.54	10.87	6.27	836.64	-1444.69	0.41
Dead+Wind 150 deg - Service	51.54	6.27	10.86	1448.47	-832.70	0.71
Dead+Wind 180 deg - Service	51.54	-0.01	12.54	1672.55	3.15	0.81
Dead+Wind 210 deg - Service	51.54	-6.28	10.87	1448.87	838.89	0.70
Dead+Wind 240 deg - Service	51.54	-10.87	6.28	837.35	1450.59	0.40
Dead+Wind 270 deg - Service	51.54	-12.55	0.01	1.85	1674.33	-0.01
Dead+Wind 300 deg - Service	51.54	-10.87	-6.27	-833.77	1450.18	-0.41
Dead+Wind 330 deg - Service	51.54	-6.27	-10.86	-1445.59	838.19	-0.71

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-51.54	0.00	0.00	51.54	0.00	0.000%
2	0.02	-51.54	-36.25	-0.02	51.54	36.25	0.000%
3	18.15	-51.54	-31.40	-18.15	51.54	31.40	0.000%
4	31.42	-51.54	-18.14	-31.42	51.54	18.14	0.000%
5	36.27	-51.54	-0.02	-36.27	51.54	0.02	0.000%
6	31.40	-51.54	18.11	-31.40	51.54	-18.11	0.000%
7	18.12	-51.54	31.39	-18.12	51.54	-31.39	0.000%
8	-0.02	-51.54	36.25	0.02	51.54	-36.25	0.000%
9	-18.15	-51.54	31.40	18.15	51.54	-31.40	0.000%
10	-31.42	-51.54	18.14	31.42	51.54	-18.14	0.000%
11	-36.27	-51.54	0.02	36.27	51.54	-0.02	0.000%
12	-31.40	-51.54	-18.11	31.40	51.54	18.11	0.000%
13	-18.12	-51.54	-31.39	18.12	51.54	31.39	0.000%
14	0.00	-68.54	0.00	0.00	68.54	-0.00	0.000%
15	0.01	-68.54	-8.99	-0.01	68.54	8.99	0.000%
16	4.51	-68.54	-7.79	-4.51	68.54	7.79	0.000%
17	7.80	-68.54	-4.50	-7.80	68.54	4.50	0.000%
18	9.00	-68.54	-0.01	-9.00	68.54	0.01	0.000%
19	7.79	-68.54	4.49	-7.79	68.54	-4.49	0.000%
20	4.49	-68.54	7.78	-4.49	68.54	-7.78	0.000%
21	-0.01	-68.54	8.99	0.01	68.54	-8.99	0.000%
22	-4.51	-68.54	7.79	4.51	68.54	-7.79	0.000%
23	-7.80	-68.54	4.50	7.80	68.54	-4.50	0.000%
24	-9.00	-68.54	0.01	9.00	68.54	-0.01	0.000%
25	-7.79	-68.54	-4.49	7.79	68.54	4.49	0.000%
26	-4.49	-68.54	-7.78	4.49	68.54	7.78	0.000%

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
27	0.01	-51.54	-12.54	-0.01	51.54	12.54	0.000%
28	6.28	-51.54	-10.87	-6.28	51.54	10.87	0.000%
29	10.87	-51.54	-6.28	-10.87	51.54	6.28	0.000%
30	12.55	-51.54	-0.01	-12.55	51.54	0.01	0.000%
31	10.87	-51.54	6.27	-10.87	51.54	-6.27	0.000%
32	6.27	-51.54	10.86	-6.27	51.54	-10.86	0.000%
33	-0.01	-51.54	12.54	0.01	51.54	-12.54	0.000%
34	-6.28	-51.54	10.87	6.28	51.54	-10.87	0.000%
35	-10.87	-51.54	6.28	10.87	51.54	-6.28	0.000%
36	-12.55	-51.54	0.01	12.55	51.54	-0.01	0.000%
37	-10.87	-51.54	-6.27	10.87	51.54	6.27	0.000%
38	-6.27	-51.54	-10.86	6.27	51.54	10.86	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00000001	0.00009565
3	Yes	6	0.00000001	0.00007196
4	Yes	6	0.00000001	0.00007498
5	Yes	4	0.00000001	0.00042663
6	Yes	6	0.00000001	0.00007532
7	Yes	6	0.00000001	0.00007202
8	Yes	5	0.00000001	0.00009583
9	Yes	6	0.00000001	0.00007638
10	Yes	6	0.00000001	0.00007319
11	Yes	4	0.00000001	0.00042844
12	Yes	6	0.00000001	0.00007289
13	Yes	6	0.00000001	0.00007636
14	Yes	4	0.00000001	0.00003198
15	Yes	5	0.00000001	0.00032174
16	Yes	5	0.00000001	0.00041788
17	Yes	5	0.00000001	0.00042150
18	Yes	5	0.00000001	0.00032004
19	Yes	5	0.00000001	0.00042543
20	Yes	5	0.00000001	0.00041942
21	Yes	5	0.00000001	0.00032419
22	Yes	5	0.00000001	0.00043400
23	Yes	5	0.00000001	0.00043003
24	Yes	5	0.00000001	0.00032477
25	Yes	5	0.00000001	0.00042379
26	Yes	5	0.00000001	0.00043007
27	Yes	4	0.00000001	0.00039570
28	Yes	5	0.00000001	0.00012173
29	Yes	5	0.00000001	0.00013225
30	Yes	4	0.00000001	0.00014702
31	Yes	5	0.00000001	0.00013437
32	Yes	5	0.00000001	0.00012267
33	Yes	4	0.00000001	0.00039761
34	Yes	5	0.00000001	0.00013954
35	Yes	5	0.00000001	0.00012801
36	Yes	4	0.00000001	0.00014830
37	Yes	5	0.00000001	0.00012619
38	Yes	5	0.00000001	0.00013883

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	195 - 157.5	48.611	35	2.1154	0.0066
L2	161.75 - 116.75	34.217	35	1.9756	0.0040
L3	122 - 77	19.403	35	1.5244	0.0019
L4	83 - 38	8.843	35	1.0261	0.0010
L5	45 - 0	2.564	35	0.5159	0.0004

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
195.00	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	35	48.611	2.1154	0.0066	46782
175.00	7770.00 w/ Mount Pipe	35	39.832	2.0528	0.0050	11694
165.00	BXA-171085-12BF w/ Mount Pipe	35	35.571	1.9987	0.0042	7800

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	195 - 157.5	139.543	11	6.0600	0.0193
L2	161.75 - 116.75	98.328	11	5.6710	0.0116
L3	122 - 77	55.815	11	4.3835	0.0056
L4	83 - 38	25.459	10	2.9535	0.0028
L5	45 - 0	7.388	10	1.4862	0.0011

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
195.00	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	11	139.543	6.0600	0.0193	16877
175.00	7770.00 w/ Mount Pipe	11	114.412	5.8881	0.0145	4216
165.00	BXA-171085-12BF w/ Mount Pipe	11	102.208	5.7362	0.0123	2810

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
L1	195 - 157.5 (1)	TP33.351x26x0.25	37.50	0.00	0.0	39.000	25.6046	-8.23	998.58	0.008
L2	157.5 - 116.75 (2)	TP40.839x32.0179x0.3125	45.00	0.00	0.0	39.000	39.1765	-14.98	1527.88	0.010
L3	116.75 - 77 (3)	TP48.006x39.1849x0.375	45.00	0.00	0.0	39.000	55.2929	-24.35	2156.42	0.011

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
L4	77 - 38 (4)	TP54.901x46.0798x0.375	45.00	0.00	0.0	39.000	63.2663	-35.25	2467.39	0.014
L5	38 - 0 (5)	TP61.6x52.7788x0.4375	45.00	0.00	0.0	39.000	84.9318	-51.51	3312.34	0.016

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M _x kip-ft	Actual f _{bx} ksi	Allow. F _{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M _y kip-ft	Actual f _{by} ksi	Allow. F _{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	195 - 157.5 (1)	TP33.351x26x0.25	294.70	17.344	39.000	0.445	0.00	0.000	39.000	0.000
L2	157.5 - 116.75 (2)	TP40.839x32.0179x0.312 5	1128.8 8	35.480	39.000	0.910	0.00	0.000	39.000	0.000
L3	116.75 - 77 (3)	TP48.006x39.1849x0.375	2134.4 8	40.420	39.000	1.036	0.00	0.000	39.000	0.000
L4	77 - 38 (4)	TP54.901x46.0798x0.375	3283.4 3	47.444	39.000	1.217	0.00	0.000	39.000	0.000
L5	38 - 0 (5)	TP61.6x52.7788x0.4375	4827.3 5	45.160	39.000	1.158	0.00	0.000	39.000	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V K	Actual f _v ksi	Allow. F _v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f _{vt} ksi	Allow. F _{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L1	195 - 157.5 (1)	TP33.351x26x0.25	18.64	0.728	26.000	0.056	1.44	0.041	26.000	0.002
L2	157.5 - 116.75 (2)	TP40.839x32.0179x0.312 5	23.39	0.597	26.000	0.046	0.17	0.003	26.000	0.000
L3	116.75 - 77 (3)	TP48.006x39.1849x0.375	28.10	0.508	26.000	0.039	1.10	0.010	26.000	0.000
L4	77 - 38 (4)	TP54.901x46.0798x0.375	32.20	0.509	26.000	0.039	1.11	0.008	26.000	0.000
L5	38 - 0 (5)	TP61.6x52.7788x0.4375	36.31	0.428	26.000	0.033	1.13	0.005	26.000	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	195 - 157.5 (1)	0.008	0.445	0.000	0.056	0.002	0.454	1.333	H1-3+VT ✓
L2	157.5 - 116.75 (2)	0.010	0.910	0.000	0.046	0.000	0.920	1.333	H1-3+VT ✓
L3	116.75 - 77 (3)	0.011	1.036	0.000	0.039	0.000	1.048	1.333	H1-3+VT ✓
L4	77 - 38 (4)	0.014	1.217	0.000	0.039	0.000	1.231	1.333	H1-3+VT ✓
L5	38 - 0 (5)	0.016	1.158	0.000	0.033	0.000	1.174	1.333	H1-3+VT ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P _{allow} K	% Capacity	Pass Fail	
L1	195 - 157.5	Pole	TP33.351x26x0.25	1	-8.23	1331.10	34.0	Pass	
L2	157.5 - 116.75	Pole	TP40.839x32.0179x0.3125	2	-14.98	2036.66	69.0	Pass	
L3	116.75 - 77	Pole	TP48.006x39.1849x0.375	3	-24.35	2874.51	78.6	Pass	
L4	77 - 38	Pole	TP54.901x46.0798x0.375	4	-35.25	3289.03	92.4	Pass	
L5	38 - 0	Pole	TP61.6x52.7788x0.4375	5	-51.51	4415.35	88.1	Pass	
							Summary		
							Pole (L4)	92.4	Pass
							RATING =	92.4	Pass

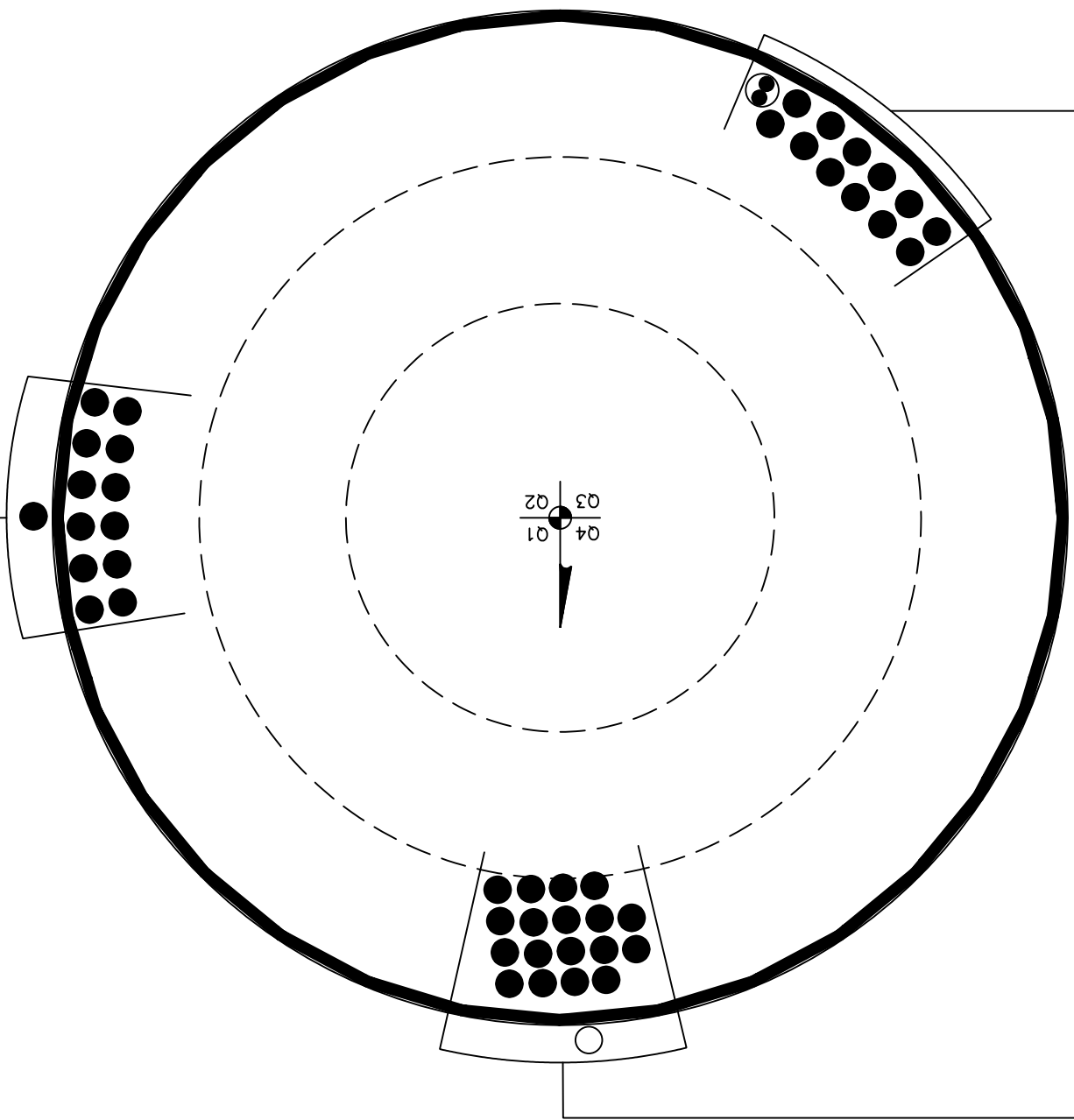
APPENDIX B
BASE LEVEL DRAWING



(INSTALLED-IN 2" CONDUIT)
(2) 7/8" TO 175 FT LEVEL
(INSTALLED)
(1) 3/4" TO 175 FT LEVEL
(12) 1-5/8" TO 175 FT LEVEL

(RESERVED)
(1) 1-5/8" TO 165 FT LEVEL
(INSTALLED)
(18) 1-5/8" TO 165 FT LEVEL

(INSTALLED)
(13) 1-5/8" TO 195 FT LEVEL



APPENDIX C
ADDITIONAL CALCULATIONS

Square, Stiffened / Unstiffened Base Plate, Any Rod Material - Rev. F / G

- Assumptions:** 1) Rod groups at corners. Total # rods divisible by 4. Maximum total # of rods = 48 (12 per Corner).
 2) Rod Spacing = Straight Center-to-Center distance between any (2) adjacent rods (same corner)
 3) Clear space between bottom of leveling nut and top of concrete **not** exceeding $(1) \times (\text{Rod Diameter})$

Site Data

BU#: 826053
 Site Name: Monroe-1/Rt 25
 App #: 285335 Rev. 1

Anchor Rod Data

Qty:	20	
Diam:	2.25	in
Rod Material:	A615-J	
Yield, Fy:	75	ksi
Strength, Fu:	100	ksi
Bolt Circle:	69	in
Anchor Spacing:	6	in

Plate Data

W=Side:	68	in
Thick:	3	in
Grade:	55	ksi
Clip Distance:	13	in

Stiffener Data (Welding at both sides)

Configuration:	Unstiffened	
Weld Type:		**
Groove Depth:		in **
Groove Angle:		degrees
Fillet H. Weld:		<-- Disregard
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

Pole Data

Diam:	61.6	in
Thick:	0.4375	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round

Stress Increase Factor

ASD ASIF:	1.333	
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** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Base Reactions

TIA Revision:	F	
Unfactored Moment, M:	4827	ft-kips
Unfactored Axial, P:	52	kips
Unfactored Shear, V:	36	kips

Anchor Rod Results

TIA F --> Maximum Rod Tension: 165.3 Kips
 Allowable Tension: 195.0 Kips
 Anchor Rod Stress Ratio: 84.8% **Pass**

Base Plate Results

Base Plate Stress: 42.8 ksi
 Allowable PL Bending Stress: 55.0 ksi
 Base Plate Stress Ratio: 77.9% **Pass**

Flexural Check

PL Ref. Data

Yield Line (in):	34.57
Max PL Length:	34.57

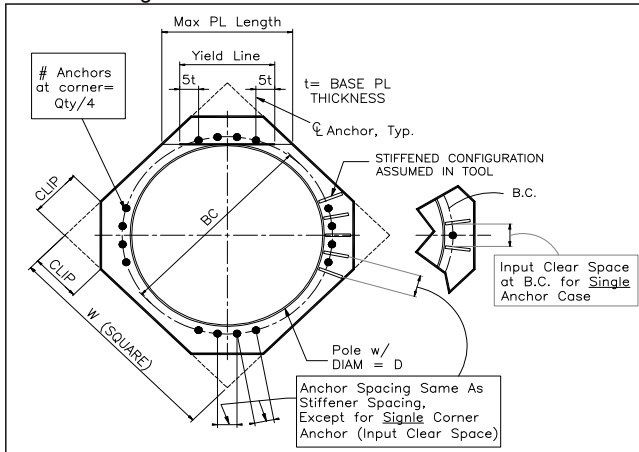
N/A - Unstiffened

Stiffener Results

Horizontal Weld: N/A
 Vertical Weld: N/A
 Plate Flex+Shear, $f_b/F_b + (f_v/F_v)^2$: N/A
 Plate Tension+Shear, $f_t/F_t + (f_v/F_v)^2$: N/A
 Plate Comp. (AISC Bracket): N/A

Pole Results

Pole Punching Shear Check: N/A



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

T-Mobile Existing Facility

Site ID: CT11215A

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

March 27, 2015

EBI Project Number: 6215001905

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	26.09 %

March 27, 2015

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

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

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

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

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

General population/uncontrolled exposure limits apply to situations in which the general 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 ($\mu\text{W}/\text{cm}^2$). The general population exposure limit for the 700 MHz Band is $467 \mu\text{W}/\text{cm}^2$, and the general population exposure limit for the PCS and AWS bands is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **88 Main Street, Monroe, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

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

- 1) 2 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel
- 2) 2 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.
- 3) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 4) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.
- 5) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

- 6) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 7) The antennas used in this modeling are the **Ericsson AIR21 B4A/B2P** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Commscope LNX-6515DS-VTM** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Ericsson AIR21 B4A/B2P** has a maximum gain of **15.9 dBd** at its main lobe. The **Commscope LNX-6515DS-VTM** has a maximum gain of **14.6 dBd** at its main lobe. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 8) The antenna mounting height centerline of the proposed antennas is **195 feet** above ground level (AGL).
- 9) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	195	Height (AGL):	195	Height (AGL):	195
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	2	Channel Count	2	# PCS Channels:	2
Total TX Power:	120	Total TX Power:	120	# AWS Channels:	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A1 MPE%	0.47	Antenna B1 MPE%	0.47	Antenna C1 MPE%	0.47
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):	195	Height (AGL):	195	Height (AGL):	195
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	4	Channel Count	4	Channel Count	4
Total TX Power:	120	Total TX Power:	120	Total TX Power:	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A2 MPE%	0.47	Antenna B2 MPE%	0.47	Antenna C2 MPE%	0.47
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):	195	Height (AGL):	195	Height (AGL):	195
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power:	30	Total TX Power:	30	Total TX Power:	30
ERP (W):	865.21	ERP (W):	865.21	ERP (W):	865.21
Antenna A3 MPE%	0.19	Antenna B3 MPE%	0.19	Antenna C3 MPE%	0.19

Site Composite MPE%	
Carrier	MPE%
T-Mobile	3.38
AT&T	5.07 %
Verizon	17.64 %
Site Total MPE %:	26.09 %

T-Mobile Sector 1 Total:	1.13 %
T-Mobile Sector 2 Total:	1.13 %
T-Mobile Sector 3 Total:	1.13 %
Site Total:	26.09 %

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 1:	1.13 %
Sector 2:	1.13 %
Sector 3 :	1.13 %
T-Mobile Total:	3.38 %
Site Total:	26.09 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **26.09%** 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.



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