



T-MOBILE SITE NUMBER: 9JK0094A
T-MOBILE SITE NAME: COLUMBIA J-FL-012-094
SITE TYPE: GUYED TOWER
TOWER HEIGHT: 250'-0"

BUSINESS UNIT #: 809329
SITE ADDRESS: 1307 SW ENGLISH ST
LAKE CITY, FL 32025
COUNTY: COLUMBIA
JURISDICTION: FL - COLUMBIA COUNTY

T-MOBILE EXCALIBUR ERICSSON SWAP



T-MOBILE SITE NUMBER: 9JK0094A
BU #: 809329
COLUMBIA J-FL-012-094
1307 SW ENGLISH ST
LAKE CITY, FL 32025
EXISTING 250'-0"
GUYED TOWER

SITE INFORMATION	
CROWN CASTLE USA INC. SITE NAME:	COLUMBIA J-FL-012-094
SITE ADDRESS:	1307 SW ENGLISH ST LAKE CITY, FL 32025
COUNTY:	COLUMBIA
MAP/PARCEL #:	EXISTING
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	30° 2' 57.80" (30.049389°) N
LONGITUDE:	-82° 37' 12.40" (-82.620111°) W
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	150.92'
CURRENT ZONING:	N/A
JURISDICTION:	FL - COLUMBIA COUNTY
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	TBD
TOWER OWNER:	CROWN CASTLE USA INC. 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	T-MOBILE 7025 AC SKINNER PARKWAY JACKSONVILLE, FL 32256
ELECTRIC PROVIDER:	COASTAL ELECTRIC CO-OP
TELCO PROVIDER:	AT&T

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G-2	GROUNDING DETAILS
ATTACHED	MOUNT SPECIFICATIONS
ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 11X17. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.	



CALL FLORIDA ONE CALL (800) 432-4770
CALL 3 WORKING DAYS BEFORE YOU DIG!

APPLICABLE CODES/REFERENCE DOCUMENTS	
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:	
CODE TYPE	CODE
BUILDING	2020 FLORIDA BUILDING CODE 7TH EDITION/2018 IBC
MECHANICAL	2020 FLORIDA BUILDING CODE 7TH EDITION/2018 IMC
ELECTRICAL	2020 FLORIDA BUILDING CODE 7TH EDITION/2017 NEC
SITE DESIGN CRITERIA:	
APPLICABLE CODES: TIA-222-H / ASCE 7-16	
WIND SPEED: V = 124 MPH (ULTIMATE 3 SECOND GUST)	
EXPOSURE CATEGORY: C	
RISK CATEGORY: II	
TOPOGRAPHIC CATEGORY: 1	
CREST HEIGHT: N/A	
K _z = 1.0	
SEISMIC RESPONSE: N/A	
REFERENCE DOCUMENTS:	
STRUCTURAL ANALYSIS:	BY OTHERS
DATED:	
MOUNT ANALYSIS:	BY OTHERS
DATED:	
AC ELECTRICAL POWER DESIGN:	BY OTHERS
DATED:	
ORDER ID:	565980
REVISION:	0
RFDS REVISION:	N/A
DATED:	N/A

APPROVALS		
<u>APPROVAL</u>	<u>SIGNATURE</u>	<u>DATE</u>
PROPERTY OWNER OR REP.	_____	Christopher 16:12:46
LAND USE PLANNER	_____	_____
T-MOBILE	_____	_____
OPERATIONS	_____	_____
RF	_____	_____
NETWORK	_____	_____
BACKHAUL	_____	_____
CONSTRUCTION MANAGER	_____	_____
THE PARTIES ABOVE HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL CONSTRUCTION DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND ANY CHANGES AND MODIFICATIONS THEY MAY IMPOSE.		

PROJECT TEAM	
A&E FIRM:	INFINIGY ENGINEERING 1211 SR 436, SUITE 101 CASSELBERRY, FL 32707 OFFICE #: (407) 278-6750
CROWN CASTLE USA INC. DISTRICT CONTACTS:	4511 N HIMES AVE, SUITE 210 TAMPA, FL 33614 SUSAN PALM - A&E SPECIALIST susan.palm@crowncastle.com (205) 909-2049 KEVIN DEPATIE - PROJECT MANAGER Kevin.DePatie@crowncastle.com (813) 342-3888 JOSE DELGADO - SITE DEVELOPMENT MANAGER jose.delgado@T-MOBILE.COM (954) 696-0573
NOTE: PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN NOC AT (800) 788-7011 & CROWN CONSTRUCTION MANAGER.	

PROJECT DESCRIPTION
THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.
TOWER SCOPE OF WORK: - REMOVE (6) RRHs - REMOVE (6) ANTENNAS - REMOVE (2) COVP - INSTALL (6) RRHs - INSTALL (6) ANTENNAS - INSTALL (3) ANTENNA MOUNT - INSTALL (2) 1-5/8" HYBRID CABLES - INSTALL (3) 12' SABRE HD V-BOOM C10857001C ANTENNA MOUNT
GROUND SCOPE OF WORK: - REMOVE (1) JUNCTION BOX - REMOVE (3) EQUIPMENT CABINETS - INSTALL (2) EQUIPMENT CABINETS
EMERGENCY NOTE: NO EQUIPMENT PROPOSED WITHIN THE PROJECT SCOPE SHALL BE USED FOR EMERGENCY RESPONSE

This item has been electronically signed and sealed by Christopher J. Warren, P.E., FL License #59739 using a digital signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER:	REVISION:
T-1	0

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

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

GREENFIELD GROUNDING NOTES:

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

GENERAL NOTES:

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

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

ABBREVIATIONS:

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





T-MOBILE SOUTH LLC
ONE RAVINIA DRIVE, SUITE 1000
ATLANTA, GA 30346



CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317



INFINIGY ENGINEERING, PLLC
1211 SR 436, SUITE 101
CASSELBERRY, FL 32707 OFFICE #:407-278-6750
2039--Z5555--C

T-MOBILE SITE NUMBER:
9JK0094A

BU #: 809329
COLUMBIA J-FL-012-094

1307 SW ENGLISH ST
LAKE CITY, FL 32025

EXISTING 250'-0"
GUYED TOWER

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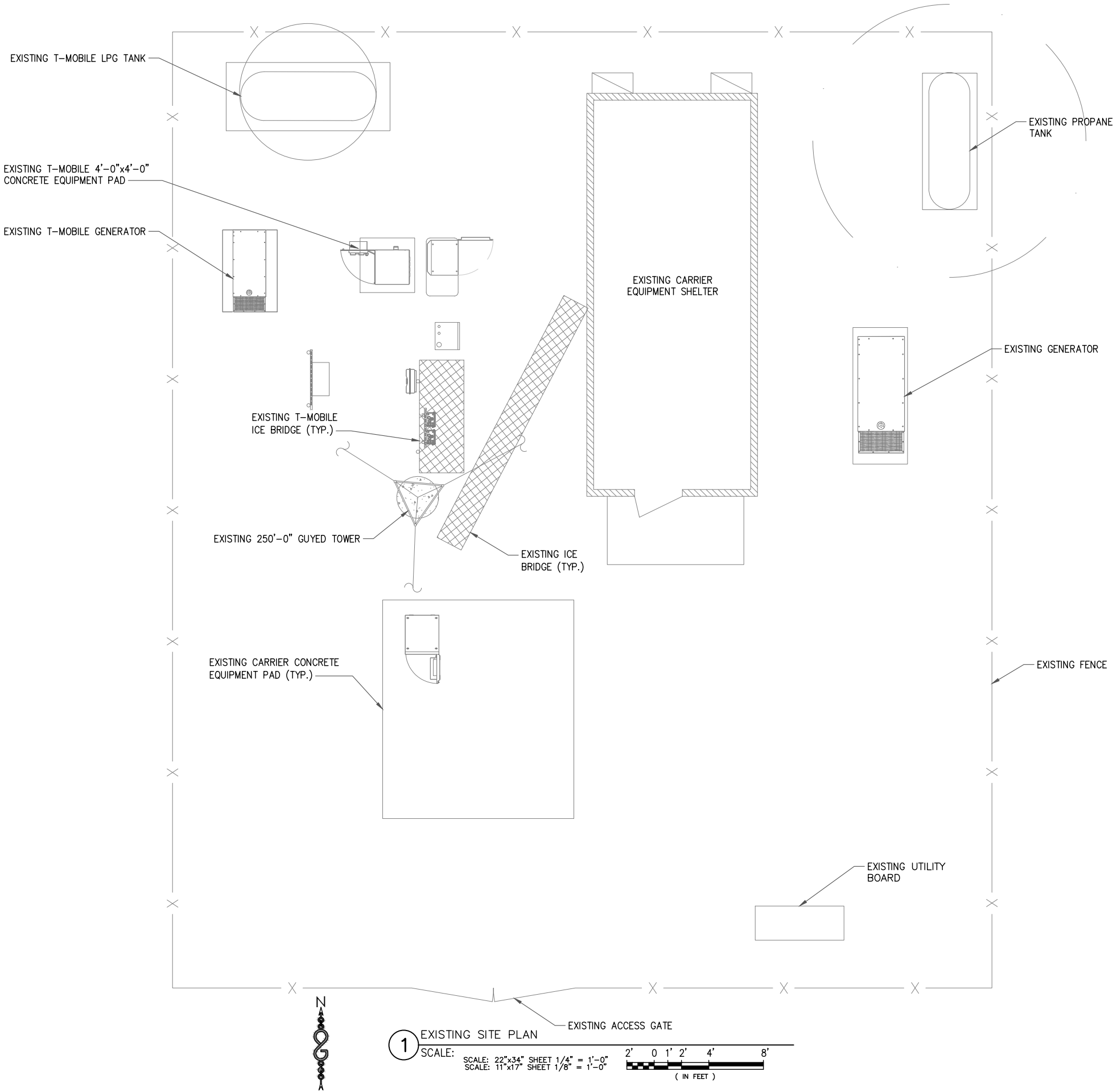
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SHEET NUMBER:
T-2

REVISION:
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SITE PLAN DISCLAIMER:

PROPERTY LINES AND STRUCTURES HAVE BEEN DIGITIZED FROM PREVIOUS PLAN SETS OR FROM ASSESSORS MAPS. CROWN CASTLE USA INC. HAS NOT COMPLETED A SITE SURVEY AND THEREFORE MAKES NO CLAIMS AS TO THE ACCURACY OF INFORMATION DEPICTED ON THIS SHEET



T-Mobile

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CROWN CASTLE

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NOTE:

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

EXISTING T-MOBILE 4'-0"x4'-0"
CONCRETE EQUIPMENT PAD (TYP.)

EXISTING T-MOBILE SSC EQUIPMENT
CABINETs TO BE REMOVED

EXISTING T-MOBILE FOCA EQUIPMENT
CABINETs TO BE REMOVED

EXISTING T-MOBILE VAULT
TO BE REMOVED

EXISTING T-MOBILE
PPC/TELCO TO REMAIN

(2) EXISTING T-MOBILE 1-5/8"
COAX CABLES TO BE REMOVED

(9) EXISTING T-MOBILE 1-5/8"
COAX CABLES TO REMAIN

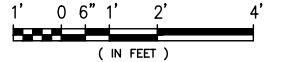
EXISTING T-MOBILE
ICE BRIDGE (TYP.)

EXISTING T-MOBILE
CIENNA BOX

EXISTING T-MOBILE
ATS TO REMAIN

1 EXISTING EQUIPMENT PLAN

SCALE: 22"x34" SHEET 1/2" = 1'-0"
SCALE: 11"x17" SHEET 1/4" = 1'-0"



EXISTING T-MOBILE 4'-0"x4'-0"
CONCRETE EQUIPMENT PAD (TYP.)

NEW T-MOBILE B160 BATTERY CABINET
INSTALLED ON NEW CONCRETE PAD

NEW T-MOBILE 4'-0"x6'-0"
CONCRETE EQUIPMENT PAD

NEW T-MOBILE 6160 ENCLOSURE
INSTALLED ON NEW CONCRETE PAD

EXISTING T-MOBILE
PPC/TELCO TO REMAIN

(2) NEW T-MOBILE RFS
HB158-21U6S24-xxM 1-5/8" HYBRID
CABLES ROUTED ALONG EXISTING ICE BRIDGE

NEW T-MOBILE 36.0"x36.0" HCS
FIBER SPOOL BOX

(9) EXISTING T-MOBILE 1-5/8"
COAX CABLES TO REMAIN

EXISTING T-MOBILE
ICE BRIDGE (TYP.)

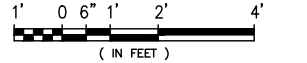
EXISTING T-MOBILE
CIENNA BOX

EXISTING T-MOBILE
ATS TO REMAIN

NEW T-MOBILE LED TECH LIGHTS
ON 60 MIN TIMER (2 TOTAL)

2 FINAL EQUIPMENT PLAN

SCALE: 22"x34" SHEET 1/2" = 1'-0"
SCALE: 11"x17" SHEET 1/4" = 1'-0"



T-Mobile

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ONE RAVINIA DRIVE, SUITE 1000
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**CROWN
CASTLE**

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T-MOBILE SITE NUMBER:
9JK0094A

BU #: 809329
COLUMBIA J-FL-012-094

1307 SW ENGLISH ST
LAKE CITY, FL 32025

EXISTING 250'-0"
GUYED TOWER

ISSUED FOR:

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NEW T-MOBILE EQUIPMENT
(6) ANTENNAS
(6) RRHs
(3) ANTENNA MOUNTs

EXISTING CARRIER
ANTENNAS (TYP.)

OVERALL TOP OF TOWER
ELEV. = 260'-0"
TOP OF TOWER
ELEV. = 250'-0"
T-MOBILE ANTENNAS
ELEV. = 247'-0"

T-MOBILE EQUIPMENT

ANTENNA CL: 247'-0"
MOUNT CL: 246'-0"

THESE PLANS HAVE BEEN DEVELOPED FOR THE MODIFICATION OF AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY OWNED OR LEASED BY T-MOBILE IN ACCORDANCE WITH THE SCOPE OF WORK PROVIDED BY T-MOBILE. INFINIGY HAS INCORPORATED THIS SCOPE OF WORK IN THE PLANS. THESE PLANS ARE NOT FOR CONSTRUCTION UNLESS ACCOMPANIED BY A PASSING STRUCTURAL STABILITY ANALYSIS PREPARED BY A LICENSED STRUCTURAL ENGINEER. STRUCTURAL ANALYSIS MUST INCLUDE BOTH TOWER AND MOUNT.

NOTES:

1. ANY AND ALL TOWER MOUNTED EQUIPMENT MUST NOT TRAP OR INTERFERE W/ EXISTING SAFETY CLIMB
2. ANTENNA TIP MUST BE 1' BELOW BASE OF BEACON

NEW T-MOBILE FEEDLINES:
(2) HYBRID CABLES (1-5/8")

(9) EXISTING T-MOBILE 1-5/8"
COAX CABLES TO REMAIN

EXISTING 250'-0" GUYED TOWER

1 FINAL ELEVATION
SCALE: NOT TO SCALE

EXISTING T-MOBILE ANDREW
TMBXX-6517-A2M ANTENNA TO BE REMOVED
(TYP. 1 PER SECTOR, 3 TOTAL)

ALPHA SECTOR
AZIMUTH 335°

EXISTING T-MOBILE NOKIA FASB
ANTENNA TO BE REMOVED
(TYP. 1 PER SECTOR, 3 TOTAL)

EXISTING T-MOBILE COVP TO BE
REMOVED (TYP. 2 TOTAL)

EXISTING T-MOBILE RRUS TO BE REMOVED
(TYP. 2 PER SECTOR, 6 TOTAL)

EXISTING T-MOBILE ANTENNA
MOUNT TO BE REMOVED (3 TOTAL)

EXISTING 250'-0"
GUYED TOWER

GAMMA SECTOR
AZIMUTH 260°

2 EXISTING ANTENNA PLAN
SCALE: NOT TO SCALE

NEW T-MOBILE COMMSCOPE FFV-65C-R3-V1
ANTENNA (TYP. 1 PER SECTOR, 3 TOTAL)

NEW T-MOBILE ERICSSON RADIO 4480
B71 RRH (TYP. 1 PER SECTOR, 3 TOTAL)

NEW T-MOBILE ERICSSON RADIO 4460
B2/B25 B66 RRH (TYP. 1 PER SECTOR, 3 TOTAL)

NEW T-MOBILE ERICSSON AIR6449 B41
ANTENNA (TYP. 1 PER SECTOR, 3 TOTAL)

ALPHA SECTOR
AZIMUTH 335°

BETA SECTOR
AZIMUTH 75°

EXISTING 250'-0"
GUYED TOWER

NEW T-MOBILE 12' SABRE HD V-BOOM
C10857001C ANTENNA MOUNT (3 TOTAL)

GAMMA SECTOR
AZIMUTH 155°

3 FINAL ANTENNA PLAN
SCALE: NOT TO SCALE

T-Mobile

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T-MOBILE SITE NUMBER:
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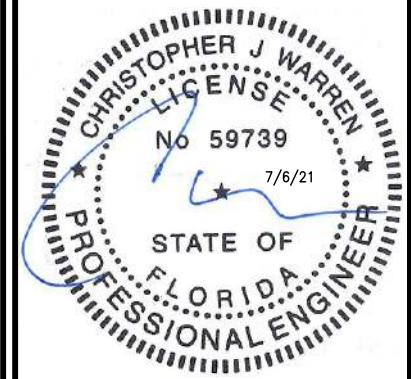
BU #: 809329
COLUMBIA J-FL-012-094

1307 SW ENGLISH ST
LAKE CITY, FL 32025

EXISTING 250'-0"
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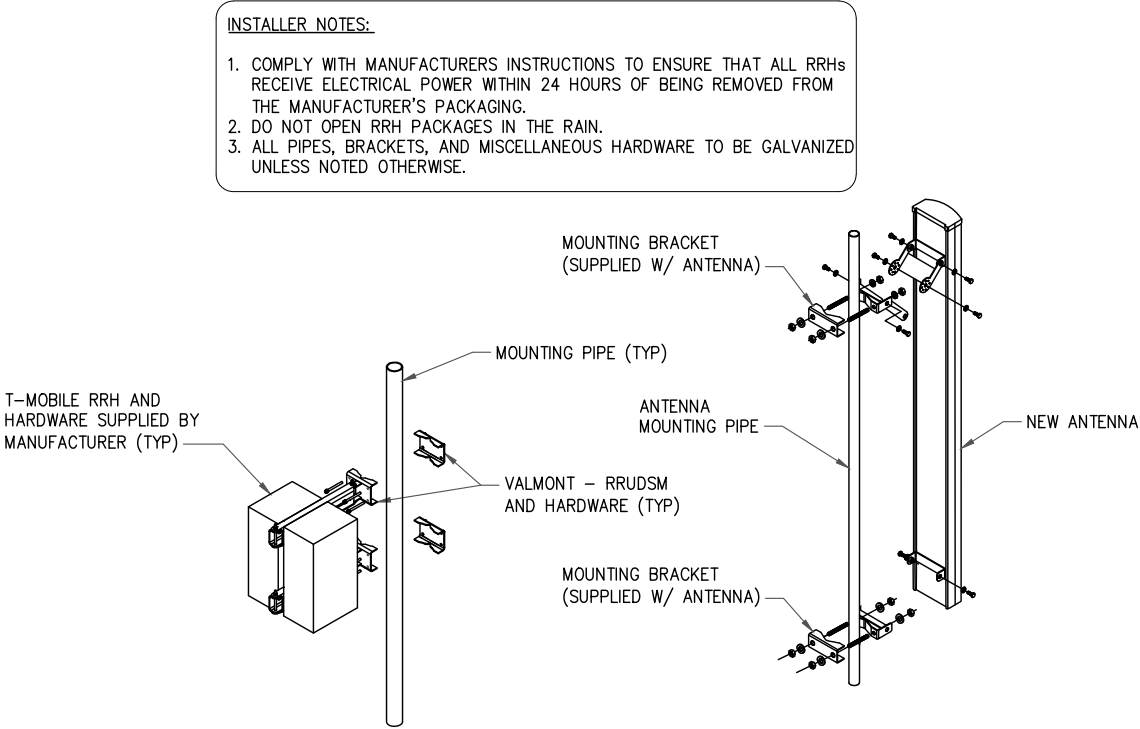
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TOWER TOP EQUIPMENT SCHEDULE						
ANTENNA SECTOR	ANTENNA MARK	ANTENNA MODEL #	ANTENNA AZIMUTH	RRU MODEL	COVP	ANTENNA CABLE DESCRIPTION
ALPHA	A1	ERICSSON AIR6449 B41 (P)	335°	--		(3) 1-5/8" DIA. COAX CABLE (E)
ALPHA	A2	COMMSCOPE FFVW-65C-R3-V1 (P)	335°	(1) ERICSSON - 4460 B2/B25 B66 (1) ERICSSON - 4480 B71		(1) 1-5/8" DIA. x 297' HYBRID CABLE (P)
BETA	B1	ERICSSON AIR6449 B41 (P)	75°	--		(3) 1-5/8" DIA. COAX CABLE (E)
BETA	B2	COMMSCOPE FFVW-65C-R3-V1 (P)	75°	(1) ERICSSON - 4460 B2/B25 B66 (1) ERICSSON - 4480 B71		(1) 1-5/8" DIA. x 297' HYBRID CABLE (P)
GAMMA	C1	ERICSSON AIR6449 B41 (P)	155°	--		(3) 1-1/4" DIA. COAX CABLE (E)
GAMMA	C2	COMMSCOPE FFVW-65C-R3-V1 (P)	155°	(1) ERICSSON - 4460 B2/B25 B66 (1) ERICSSON - 4480 B71		--

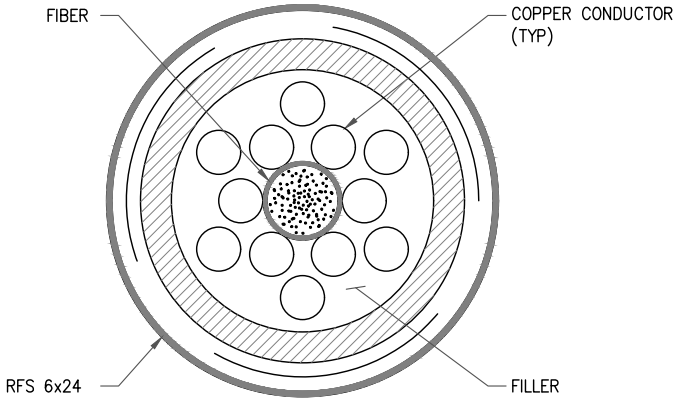
TOWER TOP EQUIPMENT SCHEDULE				
EXISTING QUANTITY	REMOVE QUANTITY	EQUIPMENT TYPE	ADD QUANTITY	TOTAL QUANTITY
6	6	PANEL ANTENNA	6	6
11	2	COAX CABLE	0	9
3	3	NOKIA FXFB	0	0
3	3	NOKIA FRIJ	0	0
0	0	RRUS-4480 B71	3	3
0	0	RRUS-4460 B2/B25 B66	3	3
0	0	FIBER CABLE	0	0
0	0	HYBRID CABLE	2	2

1 FINAL ANTENNA AND CABLE SCHEDULE
SCALE: NOT TO SCALE



2 ANTENNA WITH RRHs MOUNTING DETAIL
SCALE: NOT TO SCALE

PARAMETER	VALUE
NOMINAL DIAMETER (INCHES)	1.99
CROSS-SECTION AREA (SQUARE INCHES)	3.13
JACKET COLOR	BLACK
WEIGHT/LINEAR FOOT (POUNDS)	2.5



3 HYBRID CABLE DETAIL
SCALE: NOT TO SCALE



T-MOBILE SITE NUMBER:
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BU #: **809329**
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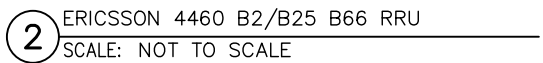
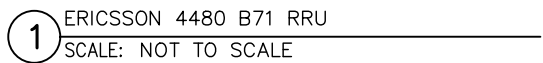
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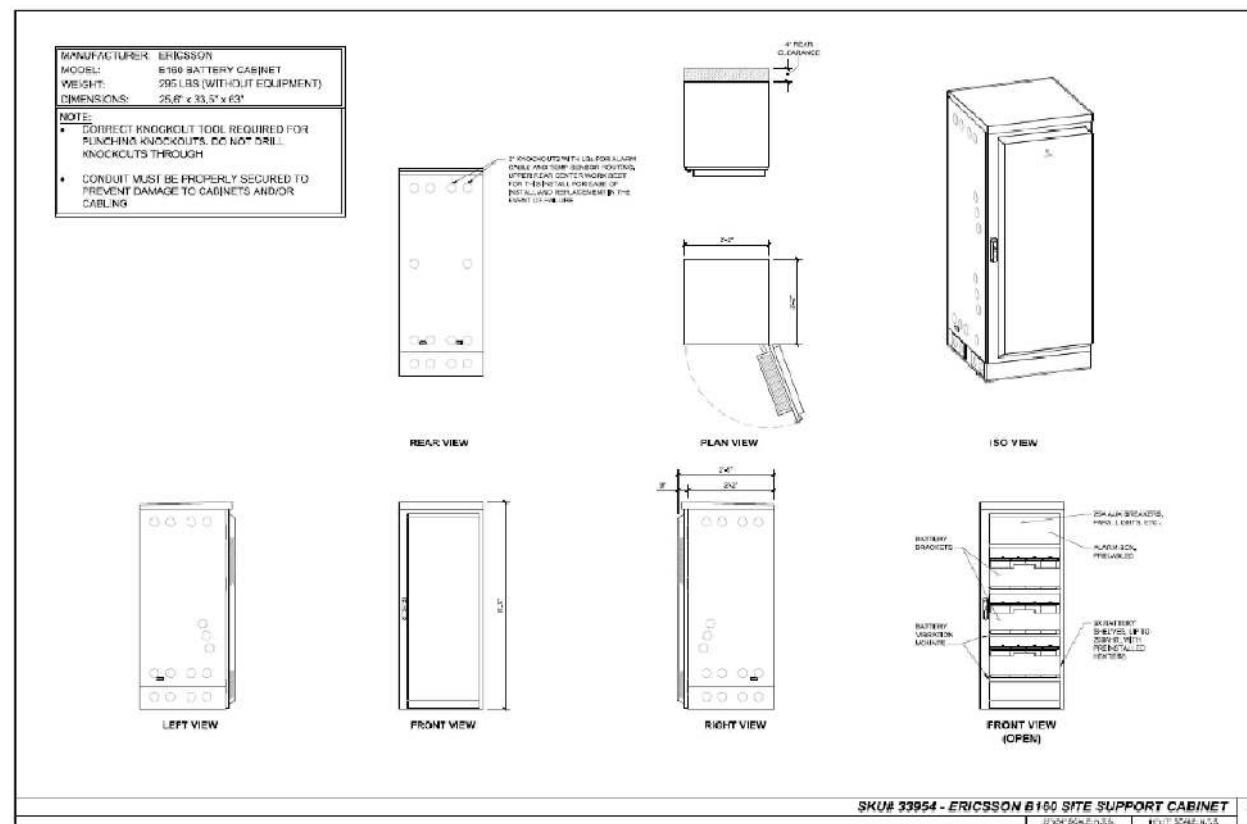
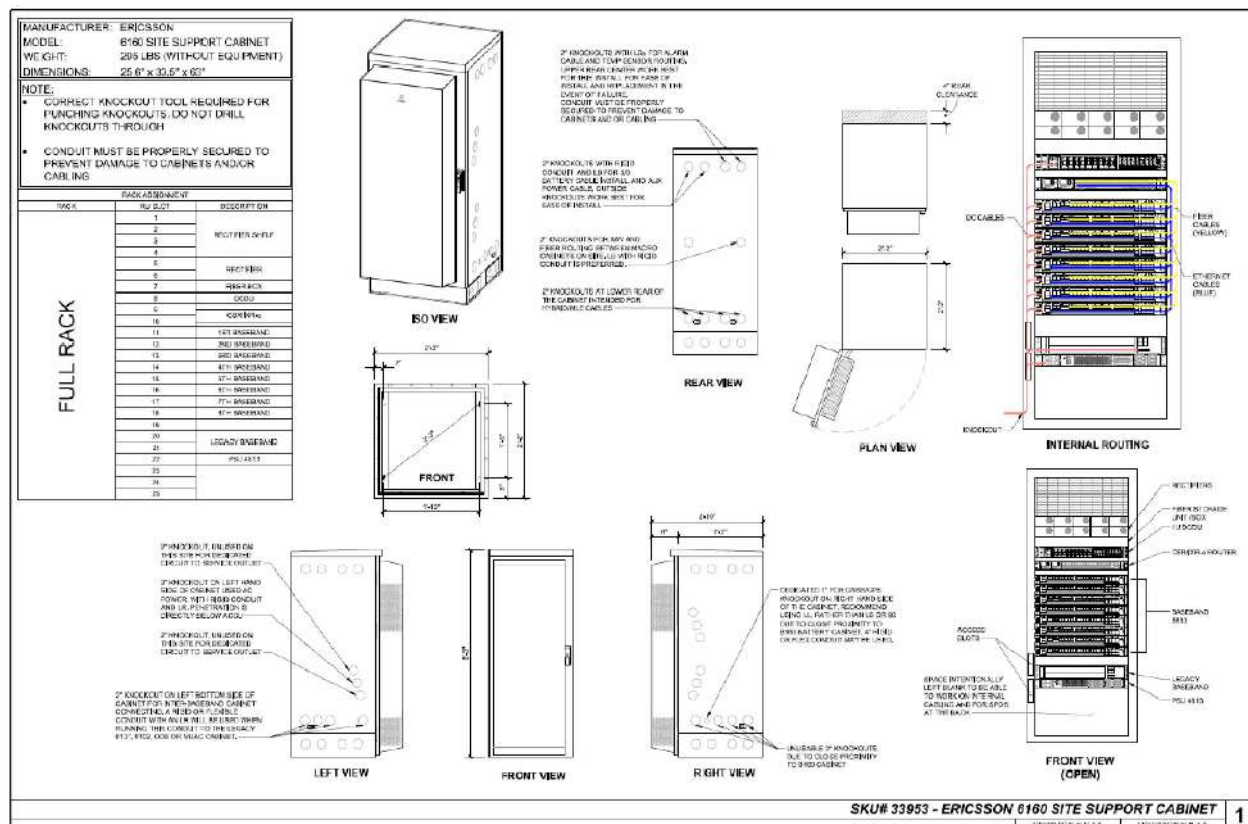
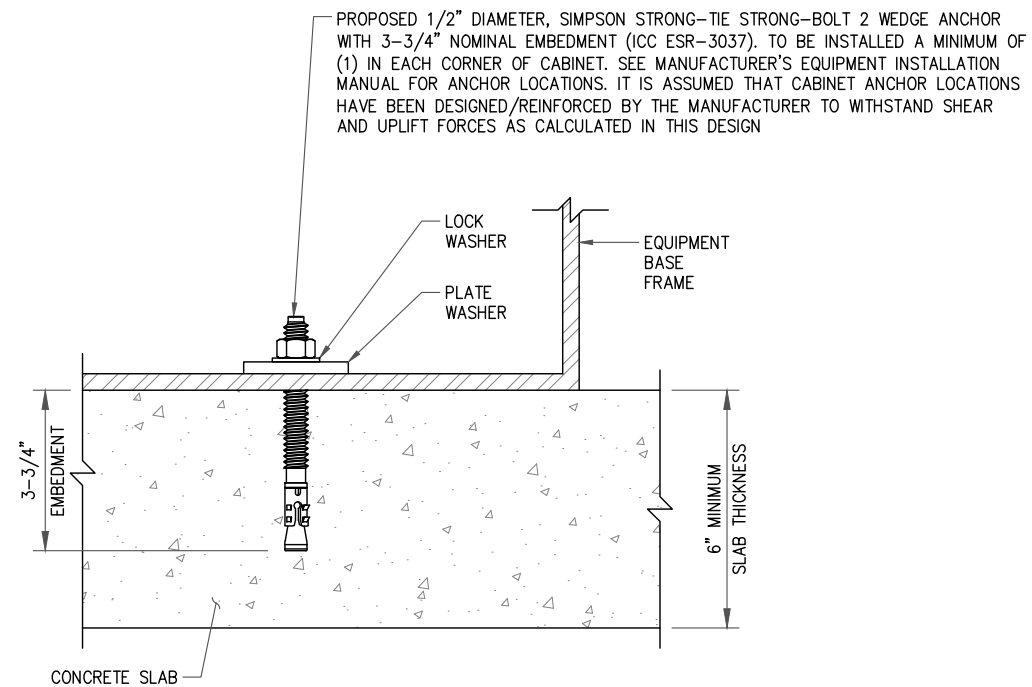
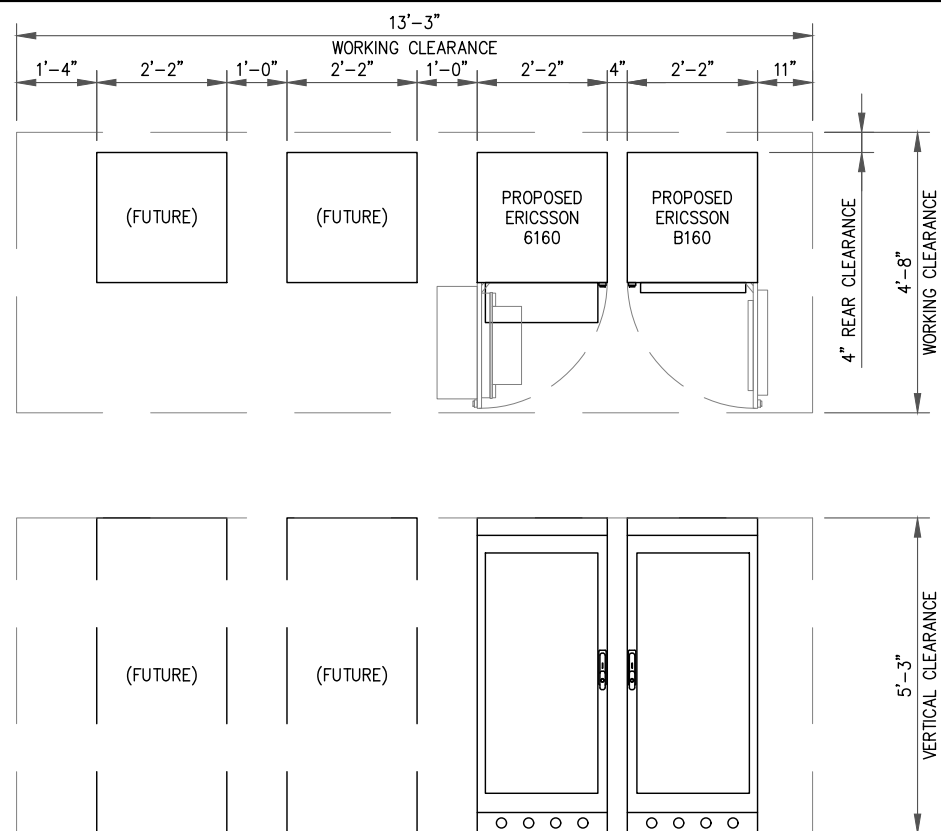
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3 COMMSCOPE FFVV-65C-R3-V1 ANTENNA
SCALE: NOT TO SCALE

4 ERICSSON AIR6449 B41 ANTENNA
SCALE: NOT TO SCALE

SHEET NUMBER: C-4	REVISION: 0
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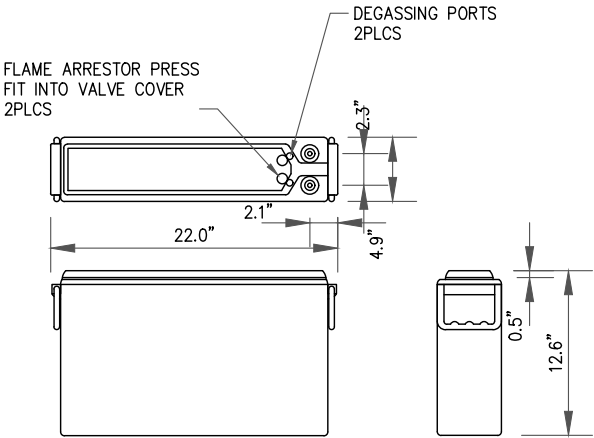


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A	06/07/21	RCD	PRELIMINARY	PHR
0	07/05/21	RCD	FINAL CD8	PHR

Battery Type			NSB13 Red	NSB90 Red	NSB125 Red	NSB40FT Red	NSB60FT Red	NSB92FT Red	NSB100FT Red	NSB110FT Red	NSB145FT Red	NSB155FT Red	NSB170FT Red	NSB180FT Red	NSB190FT Red	NSB210FT Red
Electrolyte	Weight	/kg	0.8	8.2	8.0	2.6	3.9	5.7	6.1	7.1	8.1	9.8	10.5	10.5	10.5	12.1
		/lbs	1.7	13.6	17.6	5.8	8.6	12.5	13.5	15.6	17.9	21.1	23.2	23.2	23.2	26.5
	Volume	/litres	0.6	4.6	6.0	2.0	2.9	4.3	4.6	5.3	6.1	7.1	7.8	7.8	7.8	9.0
		/gallons	0.1	1.2	1.6	0.5	0.8	1.1	1.2	1.4	1.5	1.9	2.08	2.08	2.08	2.4
Acid	Weight	/kg	0.4	3.4	4.4	1.4	2.1	3.1	3.4	4.0	4.5	5.4	4.8	4.8	4.8	6.8
		/lbs	0.9	7.5	9.6	3.2	4.7	6.9	7.5	8.7	10.0	11.8	10.5	10.5	10.5	14.9
	Volume	/litres	0.2	1.8	2.4	0.8	1.2	1.7	1.8	2.2	2.5	2.9	2.6	2.6	2.6	3.7
		/gallons	0.1	0.5	0.6	0.2	0.3	0.5	0.5	0.6	0.7	0.8	0.7	0.7	0.7	1.0
Lead	Weight	/kg	1.7	11.4	14.7	4.4	6.3	9.1	9.6	12.2	14.0	15.7	15.4	17.3	17.9	19.8
		/lbs	3.7	25.0	32.3	9.7	13.9	20.0	21.2	26.8	30.7	34.5	33.9	38.1	39.4	43.6
Lead Oxide	Weight	/kg	1.6	12.4	16.0	5.3	7.8	11.6	12.7	15.2	17.4	20.8	20.3	24.2	23.3	25.7
		/lbs	3.5	27.2	35.2	11.7	17.1	25.5	27.9	33.4	38.3	45.9	44.8	53.3	51.2	56.6
Cells	# of Cells		6	6	6	6	6	6	6	6	6	6	6	6	6	6
Total Weight	Weight	/kg	4.9	34.4	44.5	14.2	20.6	30.2	32.5	39.2	45.0	52.9	55.0	60.8	59.7	66.0
		/lbs	10.8	75.8	97.9	31.3	45.2	66.3	71.6	86.3	99.0	116.4	121.2	133.7	131.6	145.5

PROPOSED BATTERY
IN B160 CABINET

BATTERY INFORMATION	
- NUMBER OF BATTERIES = 12 - VOL ELECTROLYTE = 2.08 GAL PER BATTERY - TOTAL VOLUME ELECTROLYTE = 24.96 GAL - CLASSIFICATION = VRLA VALVE REGULATED LEAD ACID BATTERY, SULFURIC ACID, HEALTH RATING 3, FIRE RATING 0, REACTIVE RATING 2 - MODEL #NSB 190FT RED NORTHSTAR FRONT TERMINAL BATTERY	
* PER NCFC SEC 608.1, THE T-MOBILE BATTERY ELECTROLYTE CAPACITY (24.96 GAL) TO BE INSTALLED IS LESS THAN THE REQUIRED 50 GAL TO ADHERE TO BATTERY REQUIREMENTS OF TABLE 608.1.	



T · · · Mobile ·

T-MOBILE SOUTH LLC

ONE RAVINIA DRIVE, SUITE 1000

ATLANTA, GA 30346

CROWN CASTLE

2000 CORPORATE DRIVE

CANONSBURG, PA 15317

INFINIGY

ENGINEERING, PLLC

1211 SR 436, SUITE 101

CASSELBERRY, FL 32707 OFFICE #407-278-6750

2039-Z5555-C

T-MOBILE SITE NUMBER:
9JK0094A

BU #: 809329
COLUMBIA J-FL-012-094

1307 SW ENGLISH ST
LAKE CITY, FL 32025

EXISTING 250'-0"
GUYED TOWER

ISSUED FOR:				
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	06/07/21	RCD	PRELIMINARY	PHR
0	07/05/21	RCD	FINAL CDs	PHR

CHRISTOPHER J WARREN

LICENSE

No 59739

7/6/21

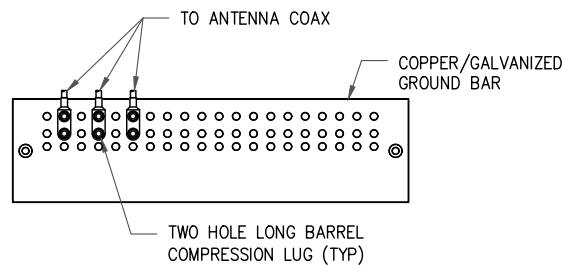
STATE OF FLORIDA

PROFESSIONAL ENGINEER

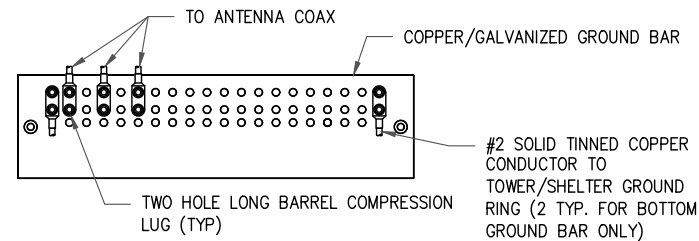
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

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C-6

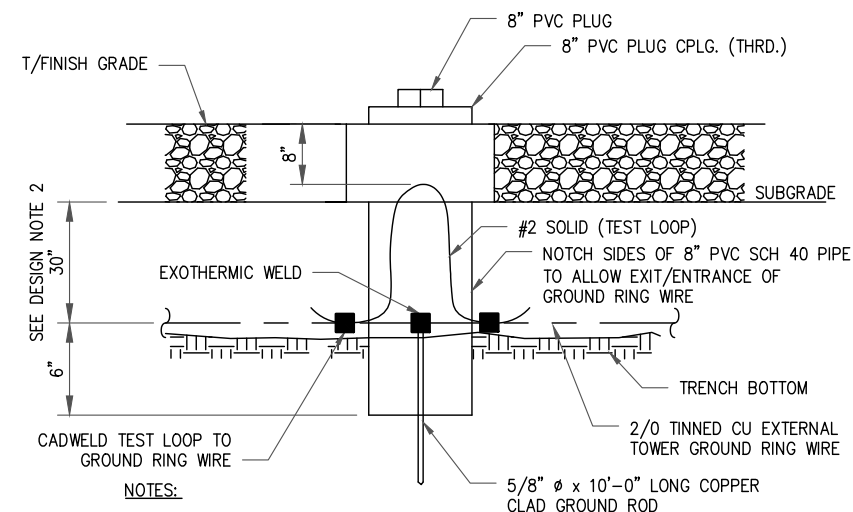
REVISION:
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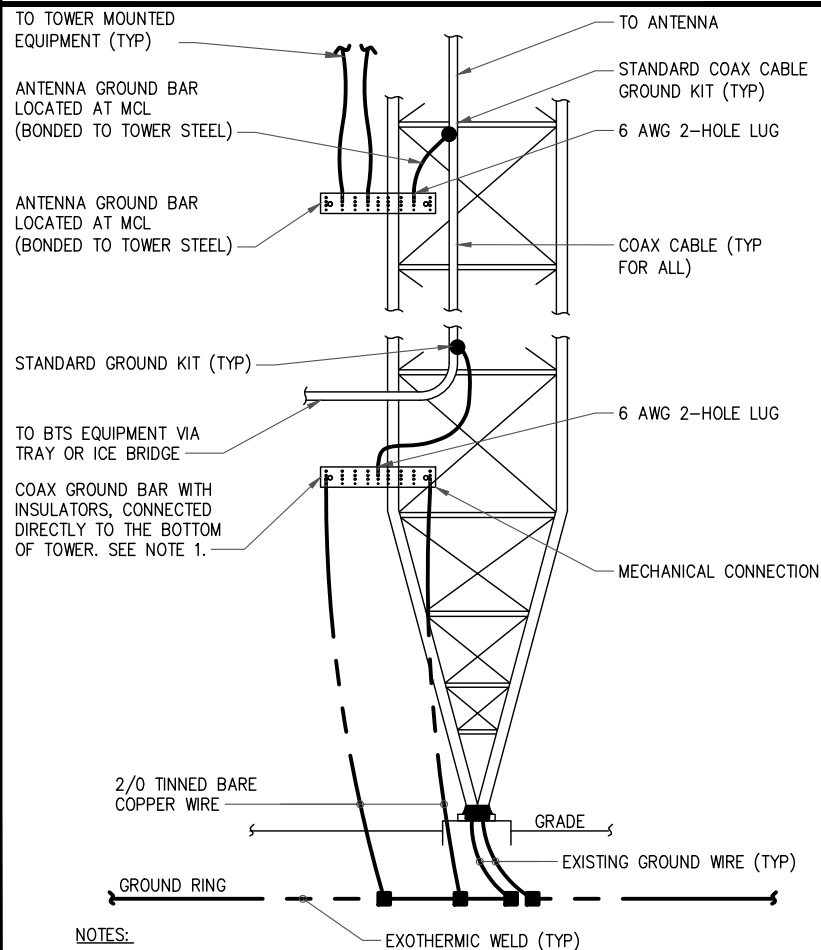
1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



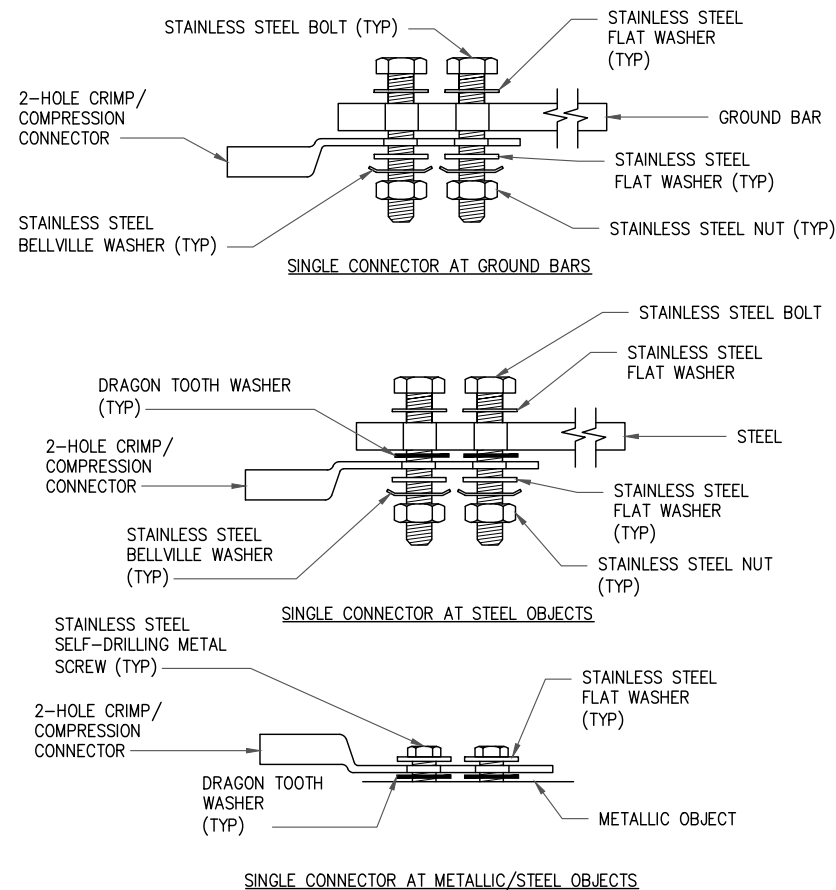
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



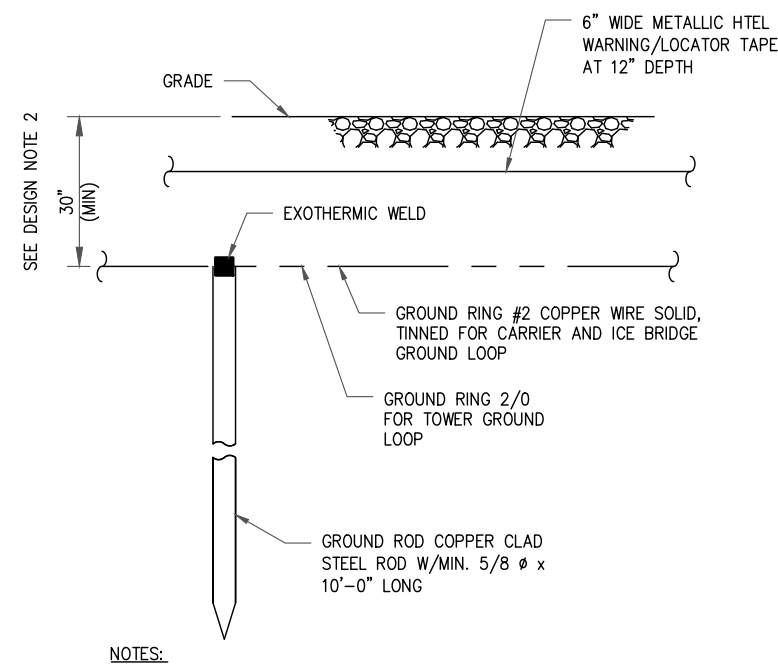
3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE



4 TYPICAL ANTENNA CABLE GROUNDING
SCALE: NOT TO SCALE



5 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



6 GROUND ROD DETAIL
SCALE: NOT TO SCALE

T-Mobile
T-MOBILE SOUTH LLC
ONE RAVINIA DRIVE, SUITE 1000
ATLANTA, GA 30346

CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

INFINIGY ENGINEERING, PLLC
1211 SR 436, SUITE 101
CASSELBERRY, FL 32707 OFFICE #407-278-6750
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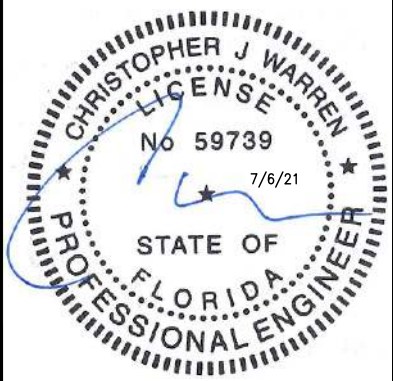
T-MOBILE SITE NUMBER:
9JK0094A

BU #: 809329
COLUMBIA J-FL-012-094

1307 SW ENGLISH ST
LAKE CITY, FL 32025

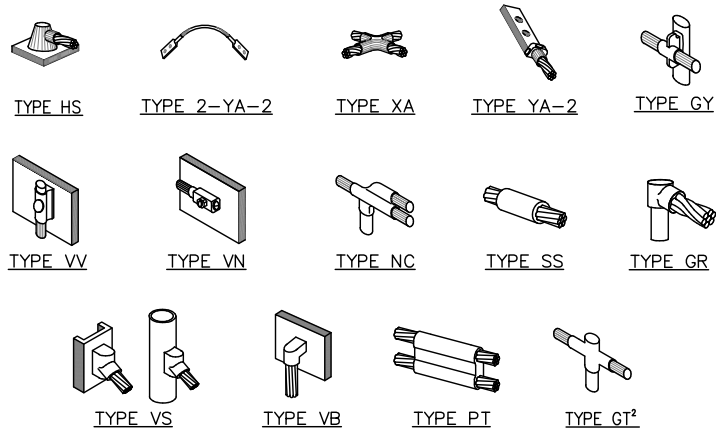
EXISTING 250'-0"
GUYED TOWER

ISSUED FOR:				
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	06/07/21	RCD	PRELIMINARY	PHR
0	07/05/21	RCD	FINAL CDs	PHR



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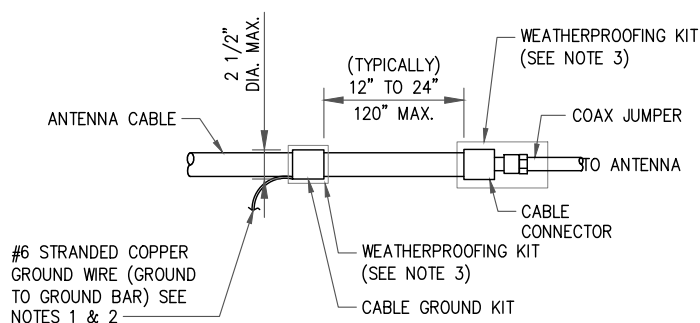
SHEET NUMBER: **G-1** REVISION: **0**



NOTE:

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

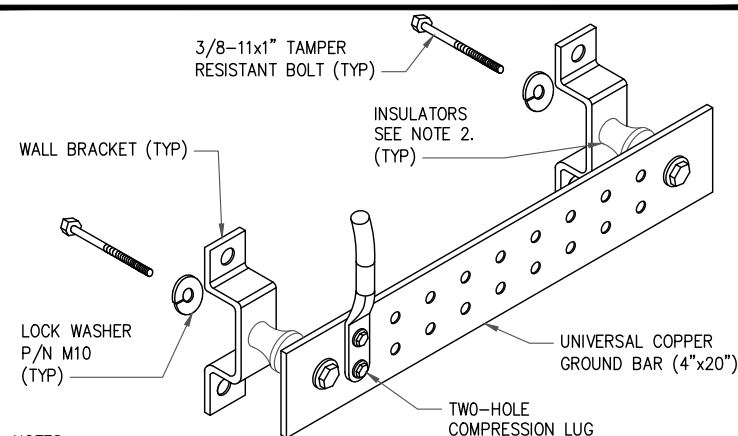
1 CADWELD GROUNDING CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

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

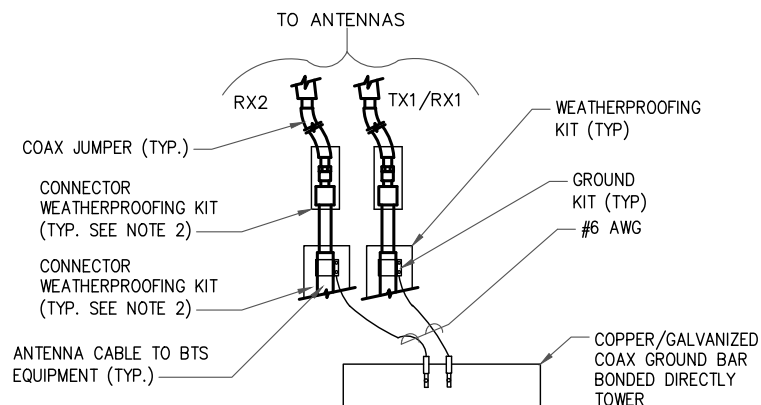
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



NOTES:

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

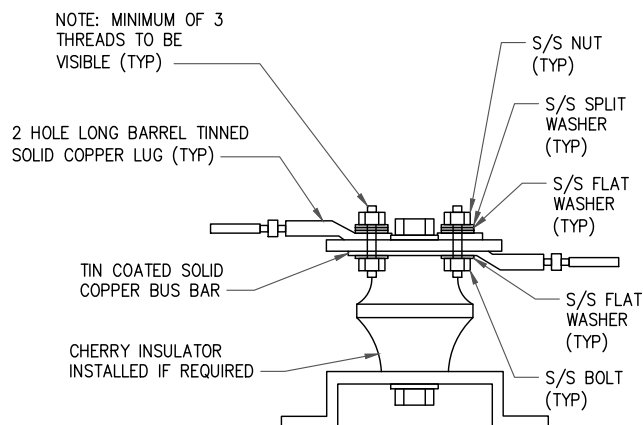
6 GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

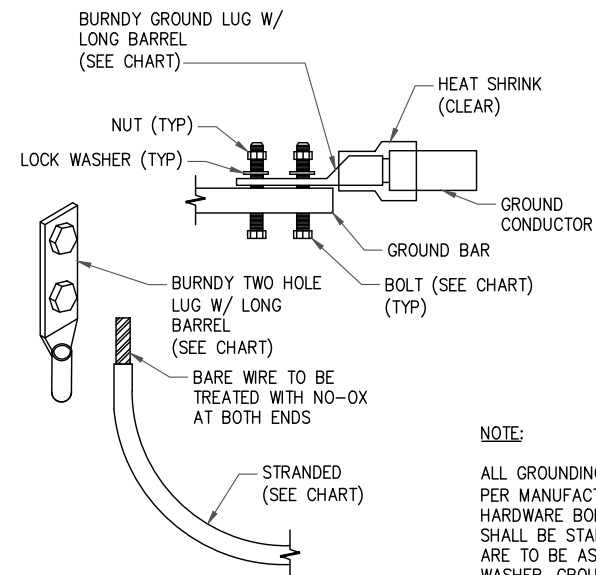
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.

4 GROUND CABLE CONNECTION
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE

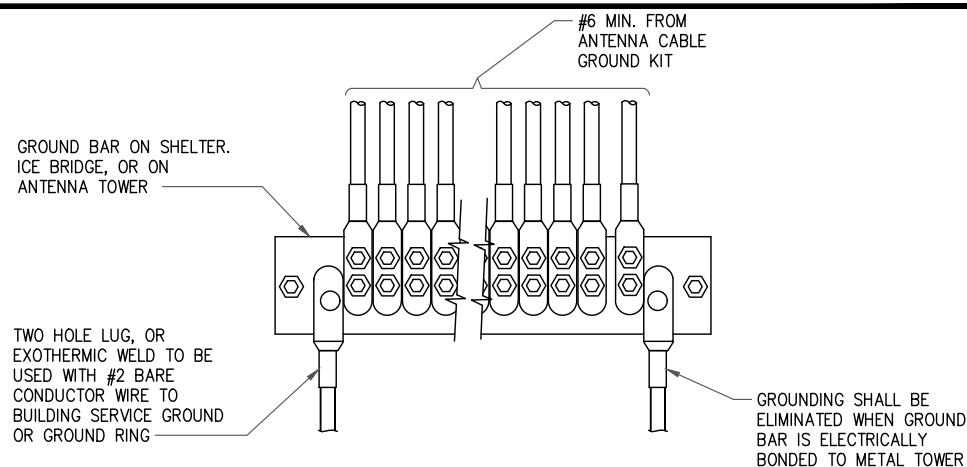
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 SOLID TINNED	YA3C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 STRANDED	YA2C-2TC38	3/8" - 16 NC SS 2 BOLT
#2/0 STRANDED	YA26-2TC38	3/8" - 16 NC SS 2 BOLT
#4/0 STRANDED	YA28-2N	1/2" - 16 NC SS 2 BOLT



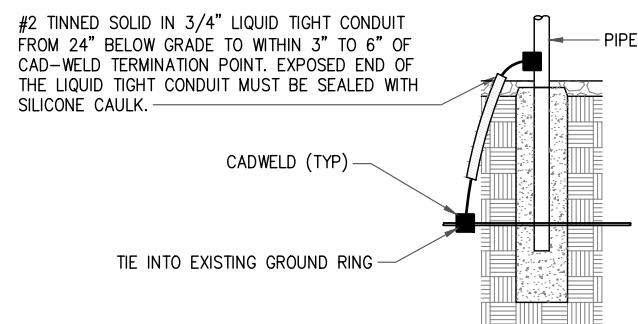
NOTE:

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

2 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



5 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



8 TRANSITIONING GROUND DETAIL
SCALE: NOT TO SCALE



T-MOBILE SITE NUMBER:
9JK0094A

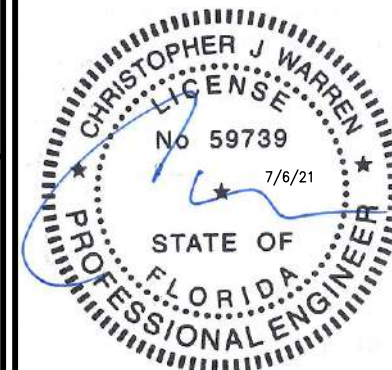
BU #: 809329
COLUMBIA J-FL-012-094

1307 SW ENGLISH ST
LAKE CITY, FL 32025

EXISTING 250'-0"
GUYED TOWER

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	06/07/21	RCD	PRELIMINARY	PHR
0	07/05/21	RCD	FINAL CDs	PHR



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

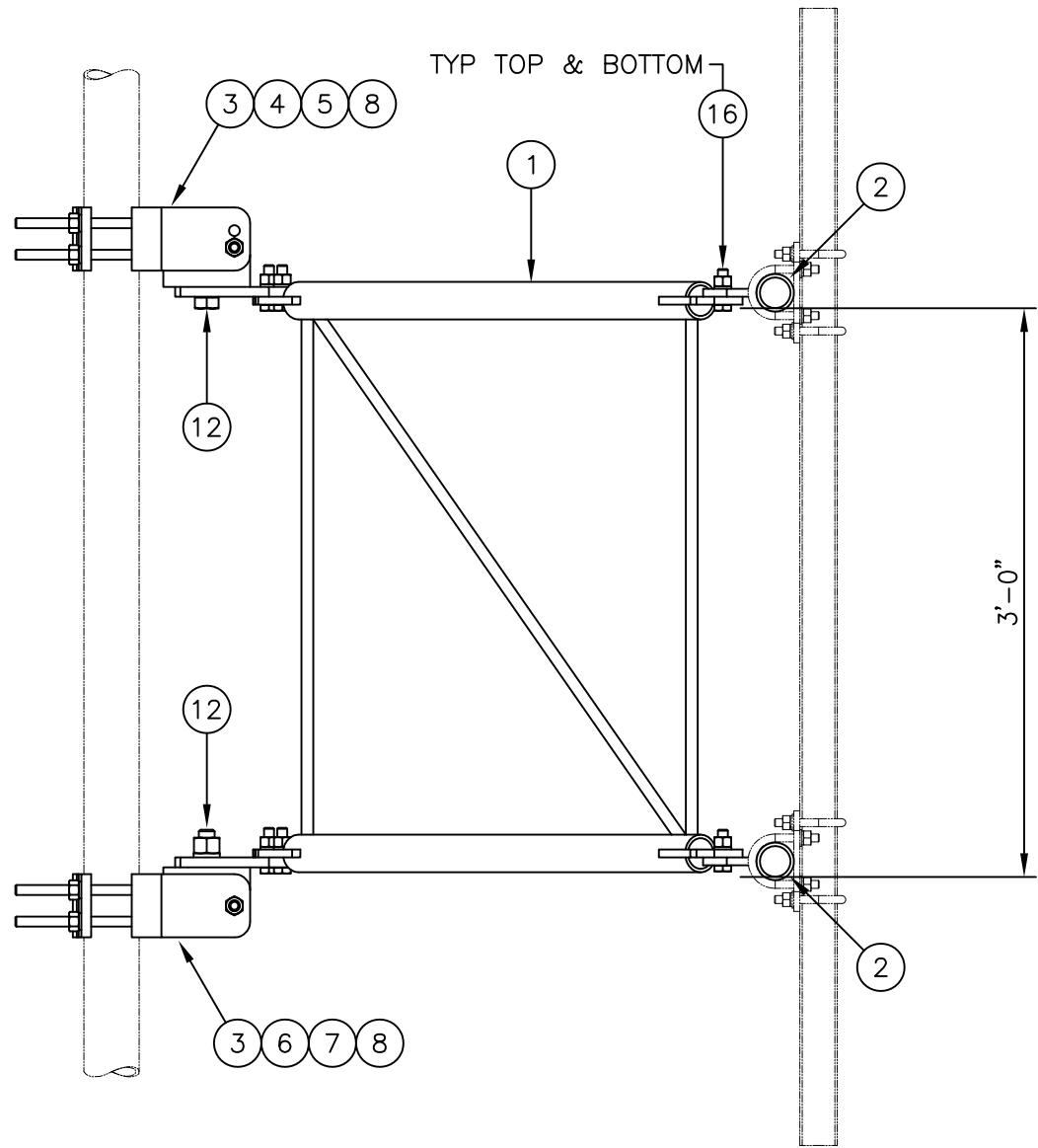
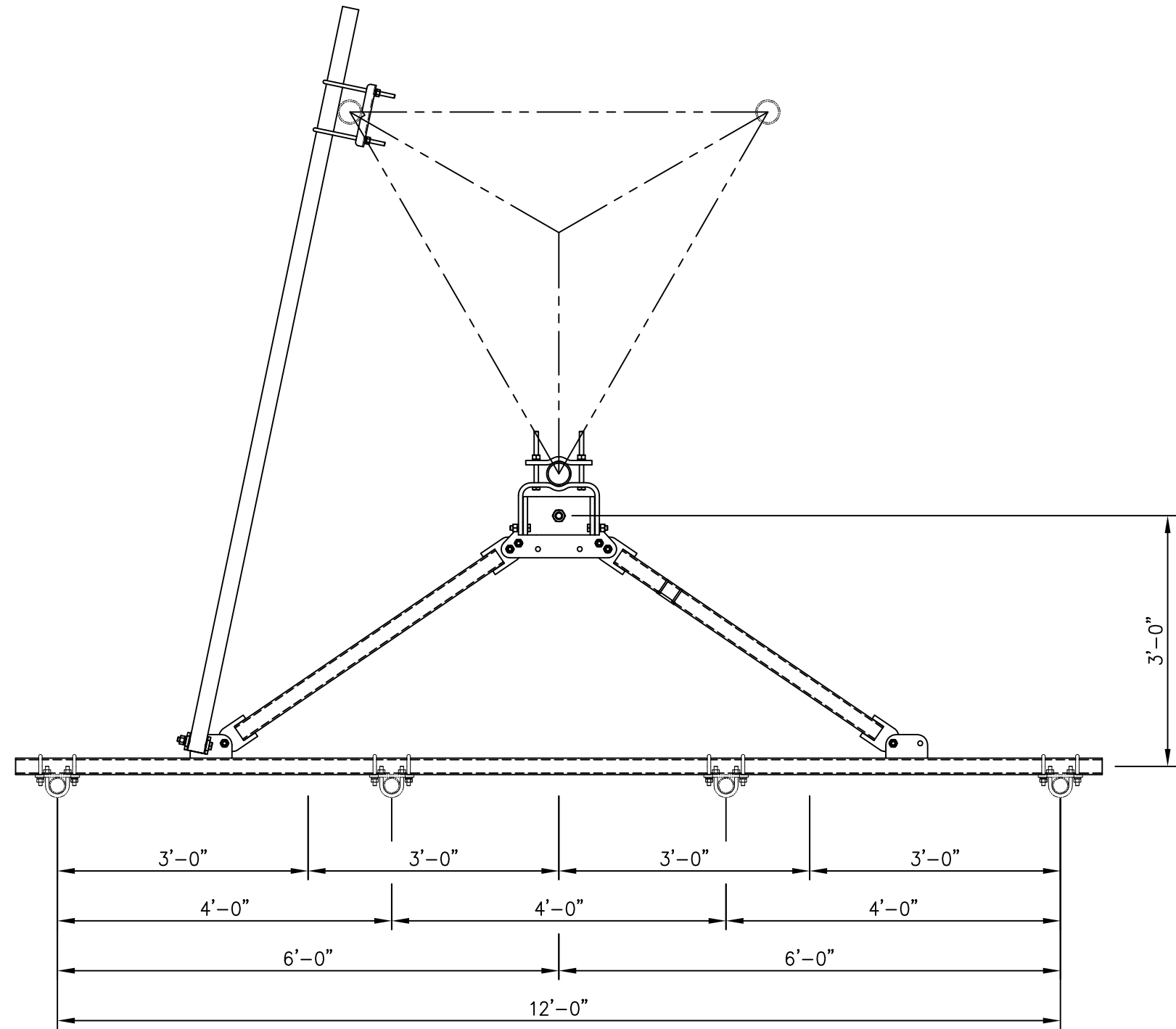
SHEET NUMBER:

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REVISION:

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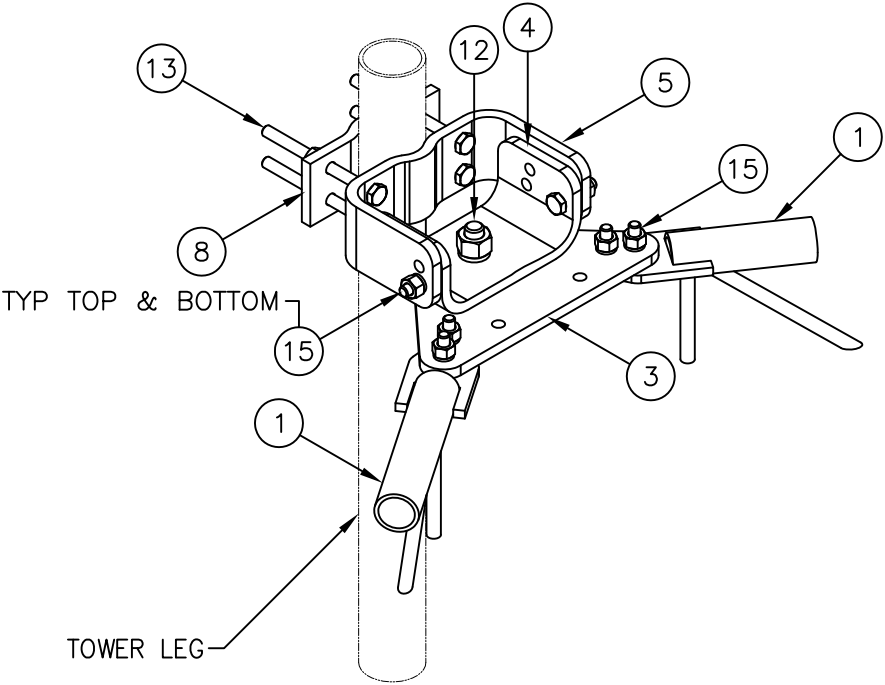
TOTAL WEIGHT	462
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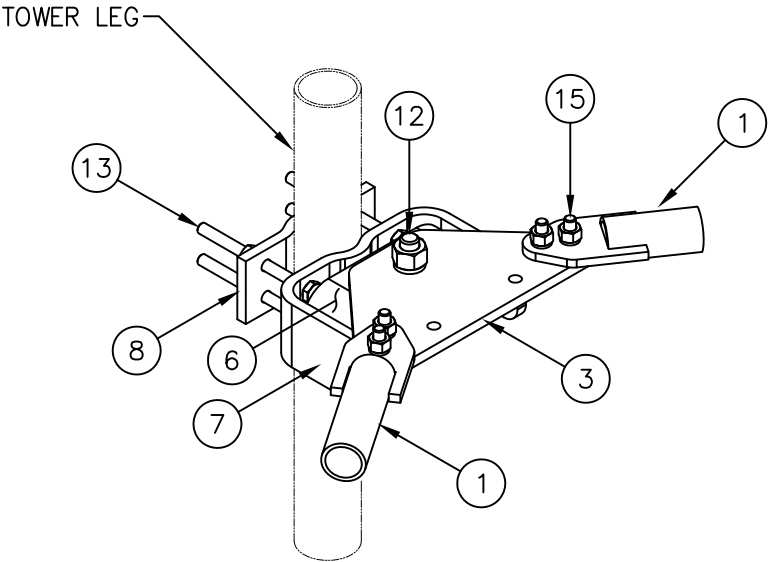
SIDE VIEW

MOUNTING OPTIONS
SHOWING MOUNTING PIPE PLACEMENTS

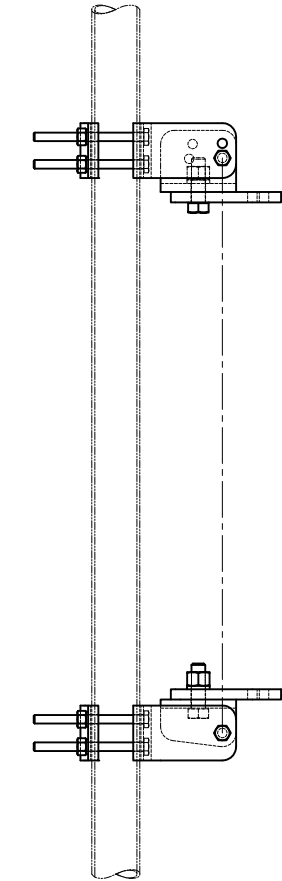
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES					MATERIAL:										12' HD V-BOOM ASSEMBLY W/TIEBACK (3' STANDOFF) W/NO ANTENNA MOUNTING PIPES									
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"					TOLERANCES DO NOT APPLY TO RAW MATERIAL																			
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1	01/21/16	KLE	EK	REVISED NOTES & ADDED TIEBACK ANGLE RANGE DETAIL																				
REV	DATE	DRW	CHK	DESCRIPTION																				



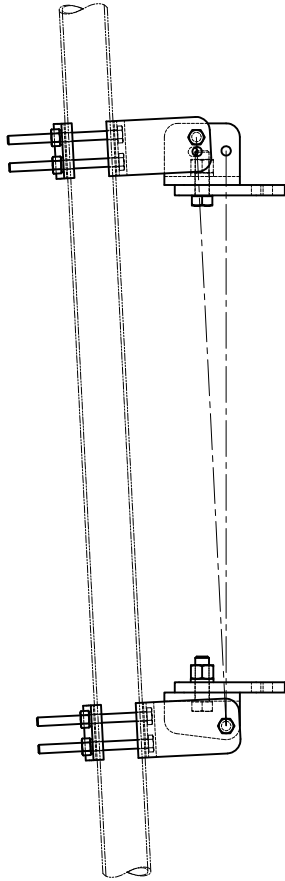
UPPER LEG MOUNTING DETAIL



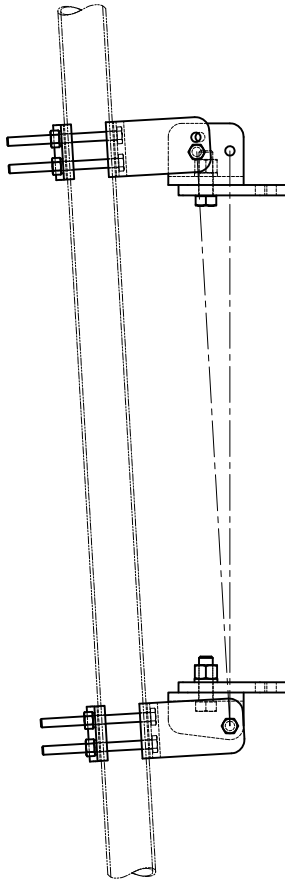
LOWER LEG MOUNTING DETAIL



STRAIGHT
TOWER SECTION

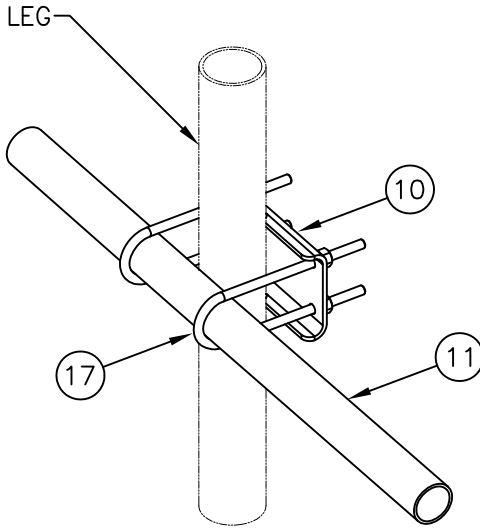


TAPERED
1'-9 IN 20' SLOPE

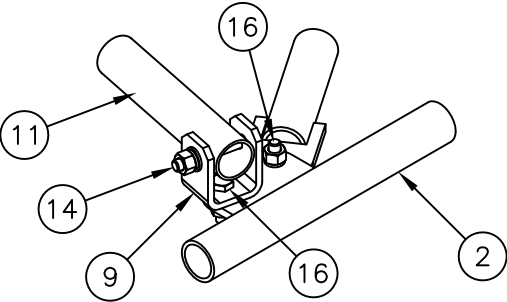


TAPERED
2' IN 20' SLOPE

-----PIVOTING OPTIONS-----



TIE BACK DETAIL
AT TOWER LEG



TIE BACK DETAIL
AT ANTENNA MOUNTING FRAME

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS $\pm 1/16"$
ANGLES $\pm 1/2$ DEG.
DECIMALS $\pm .010"$

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

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12' HD V-BOOM ASSEMBLY W/TIEBACK
(3' STANDOFF)
W/NO ANTENNA MOUNTING PIPES

REV	DATE	DRW	CHK	DESCRIPTION
1	01/21/16	KLE	EK	REVISED NOTES & ADDED TIEBACK ANGLE RANGE DETAIL

		SIZE B	DRAWING NO. C10857001C		REV 1
DATE	12/22/15				
DRAWN BY	WRF		SCALE None	PAGE 3 OF 3	
CHECKED BY	EK				