# I Mobile

APPROVAL

T-MOBILE

**OPERATIONS** 

NETWORK

**BACKHAUL** 

PROPERTY OWNER OR REP.

CONSTRUCTION MANAGER

LAND USE PLANNER

T-MOBILE SITE NUMBER: 9JK0371A

T-MOBILE SITE NAME:

**MICROWAVE** T-MOBILE PROJECT:

**BUSINESS UNIT #:** 825403

> 8381 NE MOLINO RD **SITE ADDRESS:**

> > LAKE CITY, FL 32055

DATE

**COLUMBIA COUNTY: MONOPOLE** SITE TYPE:

**APPROVALS** 

SIGNATURE

149'-0" **TOWER HEIGHT:** 

## The Mobile of the second secon

#### T-MOBILE SITE NUMBER: 9JK0371A

BU #: **825403** LITTLE GUM SWAMP

8381 NE MOLINO RD LAKE CITY, FL 32055

EXISTING 149'-0" MONOPOLE

ĺ	ISSUED FOR:						
REV	DATE	DRWN	DESCRIPTION	DES./QA			
0	3/14/24	LAW	FINAL	GMA			

Map data ©20

## Graham andres STATE OF

3/18/2024 | 8:29:20 AM CDT

CROWN CASTLE USA INC. PROFESSIONAL ENGINEER LICENSE: #75317 COA #28970

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:** 

#### SITE INFORMATION

CROWN CASTLE USA INC.

SITE NAME:

BU NUMBER:

TOWER OWNER:

2000 CORPORATE DRIVE CANONSBURG, PA 15317

LITTLE GUM SWAMP

CROWN CASTLE

CARRIER/APPLICANT: T-MOBILE

19807 NORTH CREEK PKWY N

BOTHELL, WA 98011

SITE ADDRESS: 8381 NE MOLINO RD

LAKE CITY, FL 32055 COUNTY: **COLUMBIA** 

LATITUDE: LONGITUDE:

30° 15′ 39.98″ / 30.2611° -82° 28' 25.07" / -82.4736° LAT/LONG TYPE: GROUND ELEVATION: 154'+/- AMSL

AREA OF CONSTRUCTION: **CURRENT ZONING:** 

MAP/PARCEL #:

OCCUPANCY CLASSIFICATION: U TYPE OF CONSTRUCTION:

A.D.A. COMPLIANCE:

FACILITY IS UNMANNED AND

NOT FOR HUMAN HABITATION

**EXISTING** 

01-3S-18-10257-000

PROPERTY OWNER: USDA FOREST SERVICE

2900 NW STEWART PKWY NATIONAL COMMUNICATIONS USE BILLING TEAM ROSEBURG, OR 97471

JURISDICTION:

COLUMBIA COUNTY 135 NE HERNANDO AVE. SUITE-21

LAKE CITY, FL 32055

ELECTRIC PROVIDER: FLORIDA POWER & LIGHT

TELCO PROVIDER: AT&T

#### ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND ANY CHANGES AND MODIFICATIONS THEY MAY IMPOSE.

AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE

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

• REMOVE (1) RFS - UXA4-59 AC MICROWAVE DISH

• REMOVE (3) ANDREW - LDF7-50A COAX CABLE

• INSTALL (1) COMMSCOPE - VHLP3-11W/A MICROWAVE DISH

• INSTALL (1) ERICSSON - NTM 201 3929/2 56.9MM

### PROJECT DESCRIPTION

CONSTRUCTION DESCRIBED HEREIN. ALL CONSTRUCTION DOCUMENTS

THE PARTIES ABOVE HEREBY APPROVE AND ACCEPT THESE DOCUMENTS

TOWER SCOPE OF WORK:

• INSTALL (2) CERAGON - FIBEAIR IP-20A\_RFU-D ODU

• INSTALL (1) COMMSCOPE - LDF4-50A

REFERENCE DOCUMENTS: STRUCTURAL ANALYSIS: TOWER ENGINEERING PROFESSIONALS DATED: 2/27/24

NOT CONFORMING TO THESE CODES:

CODE TYPE

**MECHANICAL** 

ELECTRICAL

BUILDING

MOUNT ANALYSIS: TRYLON DATED: 2/27/24

MICROWAVE PATH: A DATED: 11/08/23

ORDER ID: 661290 REVISION: 0

INSTALLER NOTE:

TWIST AND SWAY LIMITATIONS OF TIA 222 G ANNEX D FOR THIS DISH DO NOT MEET THE ALLOWABLE 3 DB DEGRADATION. THEY DO MEET THE 10 DB DEGRADATION LIMIT.

**LOCATION MAP** 

△ Osceola Shelter

NO SCALE

**APPLICABLE CODES &** 

REFERENCE DOCUMENTS

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN

CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES.

ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING

NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK

CODE

2023 IBC

2023 IMC

2020 NEC

Florida Trail Turkey (1)
Run Trailhead

Warmouth Pond - 🥝

Osceola National Forest

### PROJECT TEAM

A&E FIRM:

CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317

CROWN CASTLE USA INC.

CONTACTS:

8020 KATY FREEWAY HOUSTON, TX 77024

KEVIN DEPATIE - PROJECT MANAGER KEVIN.DEPATIE@CROWNCASTLE.COM

NITSA CRENSHAW - AES

CROWN NOC AT (800) 788-7011 & CROWN CONSTRUCTION MANAGER.

NITSA.CRENSHAW@CROWNCASTLE.COM

PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE

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



ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 22X34. 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.

**DRAWING INDEX** 

SHEET DESCRIPTION

MICROWAVE MOUNTING DETAILS AND SPECIFICATIONS

Plans

Reviewed

for Code

Compliance :

SHEET#

T-1

T-2

C-1

C-3

TITLE SHEET

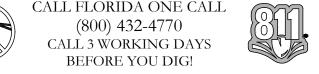
SITE PLAN

GENERAL NOTES

ANTENNA PLANS

TOWER ELEVATIONS

MICROWAVE DATA CUT SHEETS



MAINTENANCE AND CONTRACTOR NOTICE TICKET.

- 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.
- "LOOK UP" CROWN CASTLE USA INC. SAFETY CLIMB REQUIREMENT: THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR CROWN CASTLE USA INC. POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB
- 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.
- 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).
- 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.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION. 10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
- 11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
- 12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY
- 13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF 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.
- 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
- 20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE
- RETURNED TO THE OWNER'S DESIGNATED LOCATION. 21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
- 22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

#### GENERAL NOTES:

- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY: CONTRACTOR: GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION T-MOBILE
- TOWER OWNER: CROWN CASTLE USA INC. 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.
- 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.
- 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.
- SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSI<mark>ONS AND MEASUREMENTS ON</mark> 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.
- 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
- 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.
- 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.
- 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:

- 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.
- UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf. 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
- 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.
- 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 THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE
- CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH... CONCRETE EXPOSED TO EARTH OR WEATHER:
- #6 BARS AND LARGER.. #5 BARS AND SMALLER. ..1-1/2" CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
- SLAB AND WALLS.... BEAMS AND COLUMNS.
- 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.

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.
- THE CONTRACTOR SHALL PERFORM IEEE FALL—OF—POTENTAL 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. 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
- 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
- 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.
- 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. 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.
- ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED. 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).

#### **ELECTRICAL INSTALLATION NOTES:**

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE
- FEDERAL, STATE, AND LOCAL CODES/ORDINANCES. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED
- AND TRIP HAZARDS ARE ELIMINATED. WIRING. RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
- 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.
- ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERYIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
- 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. 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
- PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
- ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
- 10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
- 11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
- 12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TO 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
- 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. UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC ON STRAIGHTS AND SCHEDULE 80 PVC UNDER ALL TRAFFIC EASEMENTS AND ALL ELBOWS/90s. ABOVE GRADE CONDUIT TO BE SCH 80 PVC OR IMC/RMC CONDUIT. EMT IS ALLOWED AT STUB UP LOCATIONS AND INDOORS ONLY.
- 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
- 21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
- 22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL). 23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN
- 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

A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT

- 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.

APWA UNIFORM COLOR CODE:

YELLOW GASEOUS MATERIALS

OTABLE WATER

SLURRY LINES

SEWERS AND DRAIN LINES

PROPOSED EXCAVATION

TEMPORARY SURVEY MARKINGS

LECTRIC POWER LINES, CABLES,

CONDUIT, AND LIGHTING CABLES

GAS, OIL, STEAM, PETROLEUM, OR

COMMUNICATION, ALARM OR SIGNAL LINES, CABLES, OR CONDUIT AND TRAFFIC LOOPS

ECLAIMED WATER, IRRIGATION, AND

WHITE

- 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				
	A PHASE	BLACK				
120/240V, 1Ø	B PHASE	RED				
120/2400, 10	NEUTRAL	WHITE				
	GROUND	GREEN				
	A PHASE	BLACK				
	B PHASE	RED				
120/208V, 3Ø	C PHASE	BLUE				
	NEUTRAL	WHITE				
	GROUND	GREEN				
	A PHASE	BROWN				
	B PHASE	ORANGE OR PURPLE				
277/480V, 3Ø	C PHASE	YELLOW				

	GROUND	GREEN			
	A PHASE	BLACK			
	B PHASE	RED			
120/208V, 3Ø	C PHASE	BLUE			
	NEUTRAL	WHITE			
	GROUND	GREEN			
	A PHASE	BROWN			
	B PHASE	ORANGE OR PURPL			
277/480V, 3Ø	C PHASE	YELLOW			
	NEUTRAL	GREY			
	GROUND	GREEN			
DC VOLTAGE	POS (+)	RED**			
DC VOLIAGE	NEG (-)	BLACK**			

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

#### ABBREVIATIONS:

- ANTENNA EXISTING
- FACILITY INTERFACE FRAME
- GEN GENERATOR GPS GLOBAL POSITIONING SYSTEM
- GLOBAL SYSTEM FOR MOBILE GSM LONG TERM EVOLUTION MGB
- MASTER GROUND BAR MWMICROWAVE
- NATIONAL ELECTRIC CODE PROPOSED POWER PLANT
- QTY QUANTITY RECT RECTIFIER RBS RADIO BASE STATION
- RET REMOTE ELECTRIC TILT RADIO FREQUENCY DATA SHEET RRH REMOTE RADIO HEAD
- RRU REMOTE RADIO UNIT SIAD SMART INTEGRATED DEVICE TMA TOWER MOUNTED AMPLIFIER
- TYP UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM UMTS W.P. WORK POINT



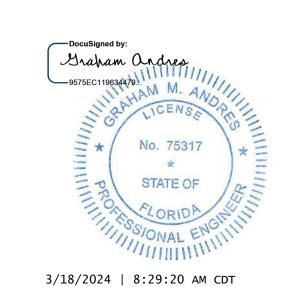
#### T-MOBILE SITE NUMBER: 9JK0371A

BU #: **825403** LITTLE GUM SWAMP

8381 NE MOLINO RD LAKE CITY, FL 32055

> EXISTING 149'-0" MONOPOLE

<b>).</b>					
=			ISSUI	ED FOR:	
	REV	DATE	DRWN	DESCRIPTION	DES./
	0	3/14/24	LAW	FINAL	GM



CROWN CASTLE USA INC. PROFESSIONAL ENGINEER LICENSE: #75317 COA #28970

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-MOBILE SITE NUMBER: 9JK0371A

BU #: **825403 LITTLE GUM SWAMP** 

8381 NE MOLINO RD LAKE CITY, FL 32055

EXISTING 149'-0"
MONOPOLE

	ISSUED FOR:					
REV	DATE	DRWN	DESCRIPTION	DES./QA		
0	3/14/24	LAW	FINAL	GMA		



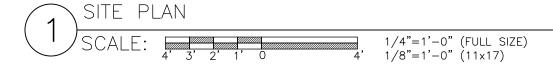
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CROWN CASTLE USA INC. PROFESSIONAL ENGINEER LICENSE: #75317 COA #28970

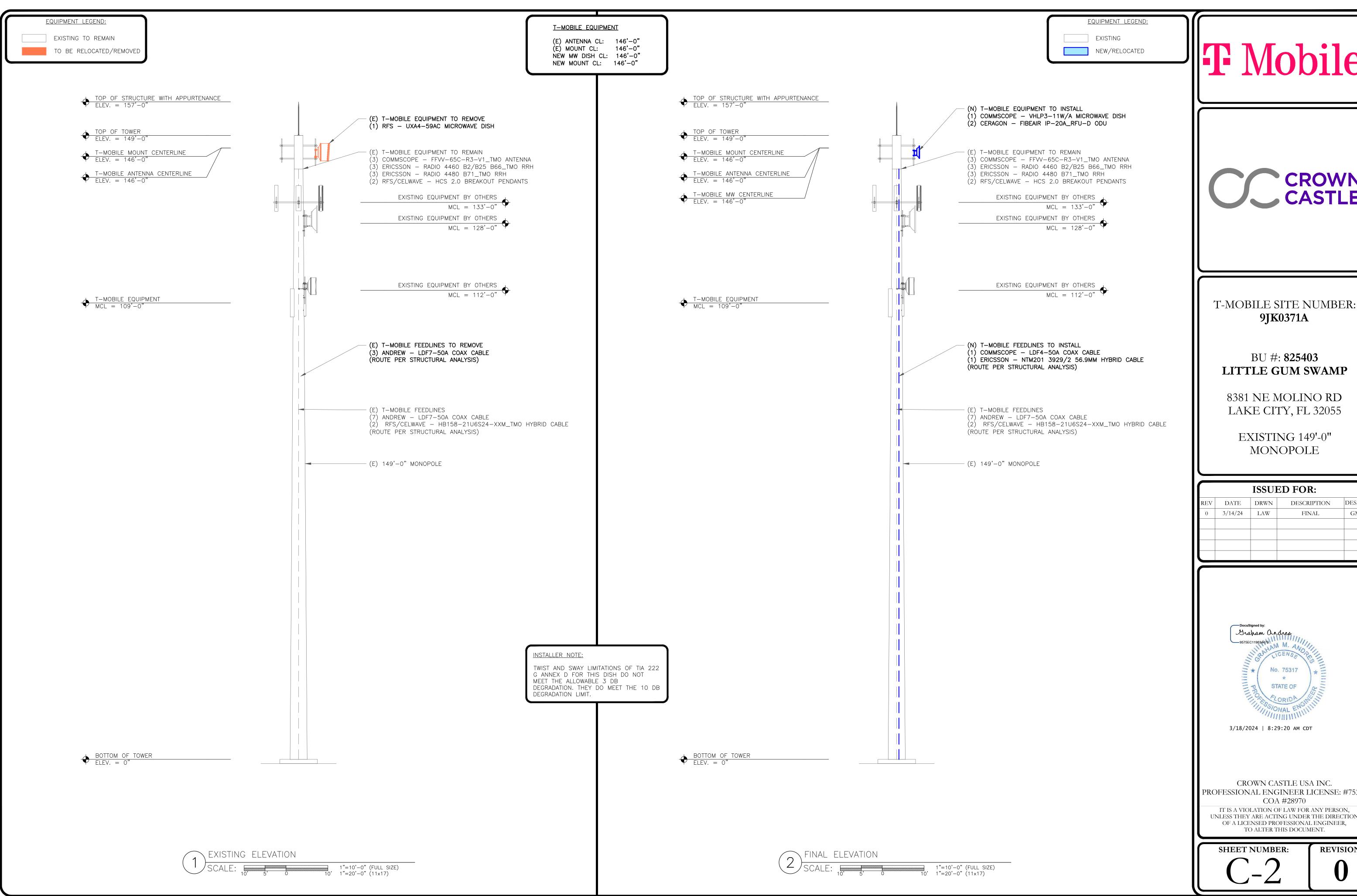
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SHEET NUMBER:

umber: Revision:







LAKE CITY, FL 32055

	ISSUED FOR:					
REV	DATE	DRWN	DESCRIPTION	DES./QA		
0	3/14/24	LAW	FINAL	GMA		

PROFESSIONAL ENGINEER LICENSE: #75317

UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER,

**REVISION:** 

**F** Mobile



T-MOBILE SITE NUMBER: 9JK0371A

BU #: **825403** LITTLE GUM SWAMP

8381 NE MOLINO RD LAKE CITY, FL 32055

> EXISTING 149'-0" MONOPOLE

	ISSUED FOR:					
REV	DATE	DRWN	DESCRIPTION	DES./QA		
0	3/14/24	LAW	FINAL	GMA		



3/18/2024 | 8:29:20 AM CDT

CROWN CASTLE USA INC. PROFESSIONAL ENGINEER LICENSE: #75317 COA #28970

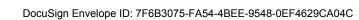
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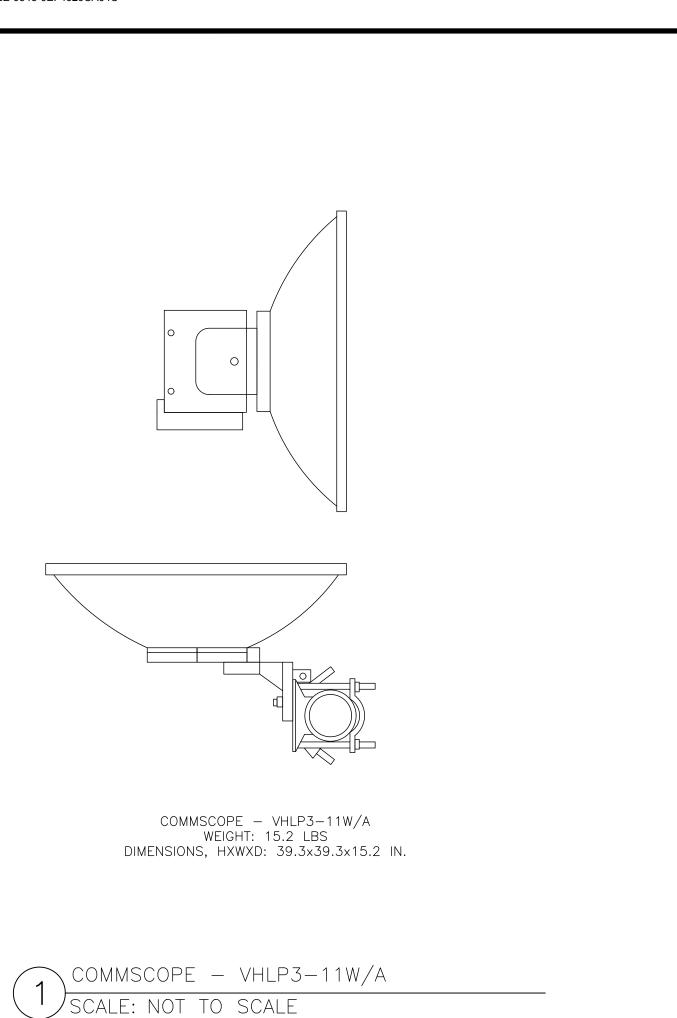
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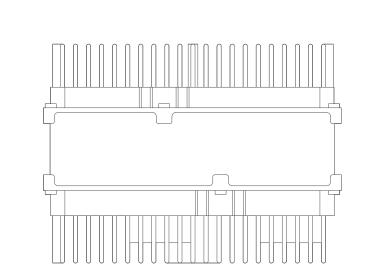
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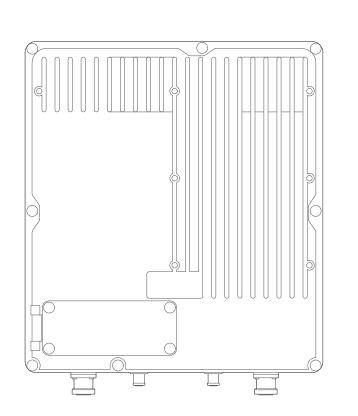
SCALE: 1/2"=1'-0" (FULL SIZE) 2' 1/4"=1'-0" (11x17)

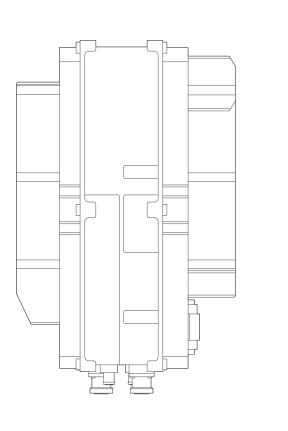












RADIO SPECIFICATIONS					
MANUFACTURER MODEL HEIGHT WIDTH DEPTH WEIGHT					
CERAGON         FIBEAIR IP-20A-RFU-D         9.05"         9.17"         3.85"         14.33 LBS					

2 CERAGON - FIBEAIR IP-20A\_RFU-D SCALE: NOT TO SCALE

NOT USED

SCALE: NOT TO SCALE

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CROWN

T-MOBILE SITE NUMBER: 9JK0371A

BU #: **825403** LITTLE GUM SWAMP

8381 NE MOLINO RD LAKE CITY, FL 32055

> EXISTING 149'-0" MONOPOLE

	ISSUED FOR:					
REV	DATE	DRWN	DESCRIPTION	DES./QA		
0	3/14/24	LAW	FINAL	GMA		



3/18/2024 | 8:29:20 AM CDT

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**SHEET NUMBER:** 

**REVISION:** 

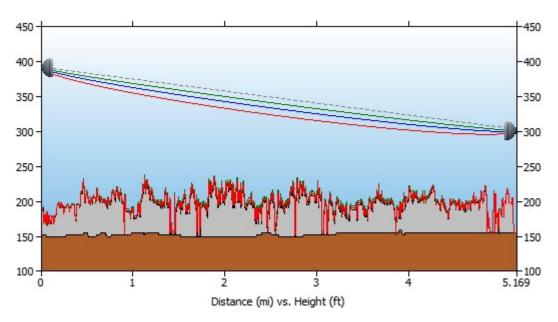
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SCALE: NOT TO SCALE

6 NOT USED
SCALE: NOT TO SCALE

#### iQ.link — Link Budget Report

Date Printed: 08-NOV-2023Link ID: 3011320Region: SouthCreate Date: 08-NOV-2023Link Name: 9JK2338S\_9JK0371ACreated By: CVance5



Path length (5.17 mi)

9JK2338S				
Latitude:	30-13-47.2 N			
Longitude:	82-33- 7.7 W			
Azimuth:	65.30 Deg			
Elevation:	150.92 ft			

Frequency (GHz) = 11.00 GHz					
K1:	1.33				
%F1:	0.60				
K2:	0.67				
%F2:	0.30				

9JK0371A				
Latitude:	30-15-40.0 N			
Longitude:	82-28-25.0 W			
Azimuth:	245.34 Deg			
Elevation:	154.20 ft			

Antenna CL: 240.00 ft AGL

K3:	1.33
%F3:	1.00

Antenna CL: 147.00 ft AGL

Transmission details									
SITE ID:	9JK2338S	9JK0371A							
CLUSTER_ID:	[CLUSTER_ID_A]	9JK0154D							
CALL_SIGN:	[CALL_SIGN_A]	WQXL968							
ASR #:		1231547							
AAV_CONTRACT_ID:	ATT224	TMW01							
AAV_CONTRACT_STATUS:	Selected	Selected							
Ethernet Installed:	Ethernet	Ethernet							
Latitude:	30-13-47.2 N	30-15-40.0 N							
Longitude:	82-33- 7.7 W	82-28-25.0 W							
Azimuth (deg):	65.30 Deg	245.34 Deg							
Vertical angle (deg):	0.22 Down	0.16 Up							
Elevation:	150.92 ft	154.20 ft							
Antenna model:	VHLP3-11WA	VHLP3-11WA							
Antenna manufacturer:	ANDREW CORPORATION	ANDREW CORPORATION							
Antenna Id:	220	220							
Antenna gain (dBi):	38.50 dBi	38.50 dBi							
Antenna diameter:	2.95 ft	2.95 ft							
Antenna CL:	240.00 ft AGL	147.00 ft AGL							
Diversity Antenna model:									
Diversity Antenna manufacturer:									
Diversity Antenna Id:									
Diversity Antenna gain (dBi):									
Diversity Antenna diameter:									
Diversity Antenna CL:									
Branch Loss Tx/Rx (dB):	0.50/0.50	0.50/0.50							
Attenuator Common/Tx/Rx (dB):									
Waveguide #1 Model, Len, Loss(dB):									
Waveguide #2 Model, Len, Loss(dB):									
Waveguide #3 Model, Len, Loss(dB):									

Total Waveguide Loss (dB):							
Other Losses (dB):	0.00	0.00					
Frequency (GHz):	11.00	GHz					
Path length:	5.17	<sup>7</sup> mi					
Free space loss (dB):	131.6	68 dB					
Atmospheric absorption loss (dB):	0.12	2 dB					
Obstruction Loss (dB):	0.00 dB	(oLOS)					
Field margin (dB):	1.00	) dB					
Net path loss (dB):	56.30 dB	56.30 dB					
Configuration:	2+0/DP/DM/OMT	2+0/DP/DM/OMT					
Radio model:	IP20D-D11-80X-A_4501	IP20D-D11-80X-A_4501					
Radio manufacturer:	Ceragon Networks	Ceragon Networks					
Radio Id:	748	748					
Frequency Plan: Frequency (MHz):	Low: N/A	High: N/A					
Polarization:	N/A	N/A					
Emission designator:	80M0D7W	80M0D7W					
Climatic factor:	1.0	00					
Terrain roughness factor:	4.00						
Average annual temperature:	: 68.26 degF						
Design Path Polarity:	y: Vertical						
Rain region:	Jacksonville, Florida						
0.01% Rain Rate:	72.9 r	nm/hr					

Modulation / Throughput	Tx Power A/B (dBm)		EIRP A/B (dBm)		Receive Signal A/B (dBm)		Composite Fade Margin A/B (dB)		Radio Threshold/ ACM Drop Level A/B (dBm)	
BPSK 67.00 Mbps	28.00	28.00	66.00	66.00	-27.80	-27.80	56.70	56.70	-85.50	-85.50
4QAM 136.00 Mbps	28.00	28.00	66.00	66.00	-27.80	-27.80	50.70	50.70	-79.50	-79.50
8QAM 195.00 Mbps	28.00	28.00	66.00	66.00	-27.80	-27.80	47.20	47.20	-76.00	-76.00
16QAM 279.00 Mbps	28.00	28.00	66.00	66.00	-27.80	-27.80	44.20	44.20	-73.00	-73.00
32QAM 368.00 Mbps	28.00	28.00	66.00	66.00	-27.80	-27.80	40.70	40.70	-69.50	-69.50

64QAM 451.00 Mbps	27.00	27.00	65.00	65.00	-28.80	-28.80	36.70	36.70	-66.50	-66.50
128QAM 533.00 Mbps	26.00	26.00	64.00	64.00	-29.80	-29.80	32.70	32.70	-63.50	-63.50
256QAM 614.00 Mbps	26.00	26.00	64.00	64.00	-29.80	-29.80	30.20	30.20	-61.00	-61.00
512QAM 675.00 Mbps	26.00	26.00	64.00	64.00	-29.80	-29.80	27.70	27.70	-58.50	-58.50
1KLQAM 735.00 Mbps	25.00	25.00	63.00	63.00	-30.80	-30.80	23.20	23.20	-55.00	-55.00
1KHQAM 780.00 Mbps	25.00	25.00	63.00	63.00	-30.80	-30.80	22.70	22.70	-54.50	-54.50
2KQAM 826.00 Mbps	24.00	24.00	62.00	62.00	-31.80	-31.80	19.20	19.20	-52.00	-52.00

Modulation/Throughput	Worst Month Multipath Worst Month Rain		Annual N	Annual Multipath		Annual Rain		Total Annual		Total Active in Mode		
	(100-%)	(s)	(100-%)	(s)	(100-%)	(s)	(100-%)	(s)	(100-%)	(s)	(100-%)	(s)
BPSK 67.00 Mbps	99.999994	0.17	99.998600	36.79	99.999998	0.70	99.999843	49.43	99.999841	50.13	0.000105	33.17
4QAM 136.00 Mbps	99.999974	0.68	99.997860	56.24	99.999991	2.78	99.999745	80.52	99.999736	83.30	0.000103	32.33
8QAM 195.00 Mbps	99.999942	1.52	99.997206	73.42	99.999980	6.23	99.999653	109.40	99.999633	115.63	0.000130	41.02
16QAM 279.00 Mbps	99.999885	3.03	99.996448	93.36	99.999961	12.43	99.999543	144.22	99.999503	156.65	0.000232	73.01
32QAM 368.00 Mbps	99.999742	6.79	99.995242	125.05	99.999912	27.82	99.999360	201.83	99.999272	229.65	0.000453	142.79
64QAM 451.00 Mbps	99.999351	17.06	99.993234	177.81	99.999778	69.89	99.999041	302.56	99.998819	372.44	0.000840	264.91
128QAM 533.00 Mbps	99.998369	42.86	99.990227	256.84	99.999443	175.55	99.998536	461.81	99.997979	637.35	0.000895	282.34
256QAM 614.00 Mbps	99.997100	76.22	99.987595	326.00	99.999010	312.17	99.998074	607.53	99.997084	919.70	0.001398	440.74
512QAM 675.00 Mbps	99.994842	135.54	99.984150	416.54	99.998240	555.13	99.997446	805.31	99.995686	1360.44	0.004996	1575.49
1KLQAM 735.00 Mbps	99.985464	382.01	99.974819	661.75	99.995039	1564.55	99.995651	1371.37	99.990690	2935.93	0.000868	273.70
1KHQAM 780.00 Mbps	99.983690	428.62	99.973502	696.36	99.994433	1755.46	99.995389	1454.17	99.989822	3209.63	0.009474	2987.77
2KQAM 826.00 Mbps	99.963487	959.56	99.961009	1024.67	99.987538	3929.98	99.992810	2267.41	99.980348	6197.40	99.980348	31529802.60

Multipath fading method - VIGANTS Rain fading method - Crane City/Jacksonville, Florida