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Approved

By:Craig Dossey, Executive Director Date: 02/28/2022



El Paso County Planning & Community Development

BELLEVUE, WA 98006



PITTSBURGH, PA 15239 TEL: (740) 260-9710



421 FAYETTEVILLE ST, SUITE 600 RALEIGH, NC 27601

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I	3	02/11/22	REVISED PER CLIENT	WRS
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ı	0	05/12/21	ISSUED FOR CONSTRUCTION	DLF
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KHCLE- 11797



2xp. 10/31/23

DN06163A SPRINT RETAIN SITE DN14XC247

SBA #: CO46103-A 7353 WEST HIGHWAY 24

MANITOU SPRINGS, CO 80829

TITLE SHEET

T-1

T-MOBILE SITE NUMBER: DN06163A

SPRINT RETAIN SITE DN14XC247 T-MOBILE SITE NAME:

T-MOBILE PROJECT: SPRINT RETAIN **SITE ADDRESS: JURISDICTION:** CO46103-A 7353 WEST HIGHWAY 24 MANITOU SPRINGS, CO 80829 **EL PASO COUNTY**

SITE INFORMATION

SBA SITE NAME USS MANITOU WATER

SITE ADDRESS 7353 WEST HIGHWAY 24 MANITOU SPRINGS, CO 80829

EL PASO COUNTY: AREA OF CONSTRUCTION: EXISTING

PARCEL SIZE 16 AC

LOT AREA COVERAGE: 0.00074841264921875%

ZONING:

LATITUDE: 38.886841° N LONGITUDE: 104.958417° W LAT/LONG TYPE: NAD83 EL PASO COUNTY

JURISDICTION: OCCUPANCY CLASSIFICATION: U

TYPE OF CONSTRUCTION:

FACILITY IS UNMANNED AND NOT FOR A.D.A. COMPLIANCE: HUMAN HABITATION

TOWER OWNER: SBA COMMUNICATIONS

470 DAVIDSON ROAD PITTSBURGH, PA 15239

T-MOBILE CARRIER/APPLICANT

12920 SE 38TH STREET

PARCEL NO .: 83264-00-018

LEGAL DESCRIPTION: A TR OF LAND IN SEC 26-13-68 DESC AS FOLS: BEG AT PT ON S LN OF NE4SE4 SEC 26, A DIST OF 437.0 FT E OF SW4

TH N 88°31' W 50.0 FT, N 00°26' E 314.46 FT, N 22°00' W 81.50 FT. TH N 18°02' E 498.67 FT TO SLY R/W OF HWY 24. TH S 50°04' E 233.20 FT, S 02°00' W 722.18 FT, TH N 88°31' W 230.0 FT TO POB, TOG WITH TR IN NE4SE4 SEC 26-13-68 AS FOLS: BEG AT A PT ON S LN OF SD NE4SE4 387.0 FT E OF SW COR THEREOF, N 00°26' E 314.46 FT, N 22°00' W 81.50 F N 18°02' E 498.67 FT TO SLY R/W LN OF HWY 24, SELY ON SD R/W LN TO INTSEC ELY LN OF SD NE4SE4, S ON E LN TO SE COR OF SD NE4SE4 TH W ON S LN OF SD NE4SE4

PROJECT TEAM

KIMLEY-HORN & ASSOCIATES, INC. A&E FIRM:

882.0 FT TO POB

3875 EMBASSY PKWY, SUITE 280 AKRON, OH 44333

KEVIN.CLEMENTS@KIMLEY-HORN.COM

SBA CONTACT: 470 DAVIDSON ROAD

PITTSBURGH, PA 15239 WILL SPICE - PROJECT MANAGER WSPICE@SBASITÉ.COM

AERIAL MAP





TOWER SCOPE OF WORK

REMOVE (2) ANTENNAS REMOVE (2) POWER CYLINDERS

REMOVE (2) OPTICAL JUNCTION BOXES

REMOVE (2) DIPLEXERS

REMOVE (6) RRHs INSTALL (6) CROSSOVER CHANNEL BRACKETS

INSTALL (6) CROSSOVER PLATES

INSTALL (3) SUPPORT RAIL PIPES

INSTALL (2) SUPPORT RAIL END CONNECTION KITS

INSTALL (4) ANTENNAS

INSTALL (6) RRHs

NO SCALE

AREA MAP

SHEET#	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1.1	OVERALL SITE PLAN
C-1.2	EXISTING EQUIPMENT PLAN
C-1.3	FINAL EQUIPMENT PLAN
C-2	TOWER ELEVATION & ANTENNA PLANS
C-3	ANTENNA SCHEDULE
C-4	PLUMBING DIAGRAM
C-5	EQUIPMENT SPECIFICATIONS
C-6	EQUIPMENT SPECIFICATIONS
C-7	EQUIPMENT SPECIFICATIONS
C-8	MOUNTING DETAIL
C-9	ICE BRIDGE DETAILS
E-1	ELECTRICAL ROUTING
E-2	PANEL SCHEDULE & ONE-LINE DIAGRAM
G-1	GROUNDING DIAGRAM
G-2	GROUNDING DETAILS

DRAWING INDEX

GROUND SCOPE OF WORK

INSTALL NEW 600A SSC CABINET

INSTALL NEW BATTERY CABINET INSTALL NEW ICE BRIDGE

INSTALL NEW PPC

INSTALL NEW DISCONNECT

INSTALL (1) FSMF

INSTALL (2) ASIK INSTALL (2) ASIB

INSTALL (3) ABIA INSTALL (4) ABIL

INSTALL (3) ABIC

INSTALL (2) AMIA INSTALL (1) CSR IXRe V1 INSTALL (2) JUNCTION BOXES

2. INSTALL (2) BREAKOUT PENDANTS 3. INSTALL (2) HYBRID CABLES

DATED: 04/27/2021

RFDS REVISION: 1

CALL COLORADO ONE CALL (800) 922-1987 CALL 3 WORKING DAYS

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 BUILDING 2017 PPRBC (2015 IBC) MECHANICAL ELECTRICAL 2014 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS: TOWER ENGINEERING SOLUTIONS (PROJECT #: 104224)

MOUNT ANALYSIS: TOWER ENGINEERING SOLUTIONS (PROJECT #: 103105)

DATED: 03/11/2021

DATED: 11/09/2020

GENERAL NOTES:

- . OWNER FURNISHED MATERIALS, T-MOBILE "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL:
- A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE
- B. AC/TELCO INTERFACE BOX(PPC)
- C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
- D. TOWERS, MONOPOLE
- E. TOWER LIGHTING
- F. GENERATORS & LIQUID PROPANE TANK
 G. ANTENNA STANDARD BRACKETS, FRAMES, AND PIPES

SHELTER (GROUND BUILD/CO-LOCATE ONLY)

- FOR MOUNTING
- ANTENNAS (INSTALLED BY OTHERS)
- I. TRANSMISSION LINE
- TRANSMISSION LINE JUMPERS
- K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
- WEATHERPROOFING KITS
- L. TRANSMISSION LINE GROUND KITSM. HANGERS
- N. HOISTING GRIPS
- O. BTS EQUIPMENT
- 2. CONTRACTOR TO FURNISH AND INSTALL THE FOLLOWING

THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS.

IT IS THE POSITION OF T-MOBILE TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.

- T-MOBILE FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE T-MOBILE WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATED. PROTECTED AND INSTALLED BY THE
- CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOILINGHENT AFFER PICKING IUP.
- 4. ALL EQUIPMENT FURNISHED AND WORK PERFORMED UNDER THE CONTRACT DOCUMENTS SHALL BE GUARANTEED AGAINST DEFECTS IN MATERIALS OR WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE, UNLESS NOTED OTHERWISE. ANY FAILURE OF EQUIPMENT OR WORK DUE TO DEFECTS IN MATERIALS OR WORKMANSHIP SHALL BE CORRECTED BY THE CONTRACTOR AT NO COST TO THE OWNER.
- 5. ALL WORK, MATERIAL, AND EQUIPMENT SHALL COMPLY WITH ALL REQUIREMENTS OF THE LATEST EDITIONS AND INTERIM AMENDMENTS OF THE NATIONAL ELECTRICAL CODE (NEC). NATIONAL ELECTRICAL SAFETY CODE, OSHA, AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND ORDINANCES. ALL ELECTRICAL EQUIPMENT PROVIDED UNDER THIS CONTRACT SHALL BE NEW (EXCEPT WHERE OTHERWISE NOTED) AND SHALL COMPLY WITH THE REQUIREMENTS OF THE UNDERWRITERS' LABORATORIES (U.L.) AND BEAR THE U.L. LABEL.
- 6. T-MOBILE OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO THE OWNER OR HIS ARCHITECT/ENGINEER.
- THE CONTRACTOR SHALL SUPPORT, BRACE AND SECURE EXISTING STRUCTURE AS REQUIRED. CONTRACTOR IS SOLELY RESPONSIBLE FOR THE PROTECTION OF ANY EXISTING STRUCTURES DURING CONSTRUCTION. FIELD VERIFY ALL EXISTING DIMENSIONS WHICH AFFECT THE NEW CONSTRUCTION.
- 8. THE CONTRACTOR SHALL NOT ALLOW OR CAUSE ANY OF THE WORK TO BE COVERED UP OR ENCLOSED UNTIL IT HAS BEEN INSPECTED BY THE GOVERNING AUTHORITIES, ANY WORK THAT IS ENCLOSED OR COVERED UP BEFORE SUCH INSPECTION AND TEST SHALL BE UNCOVERED AT THE CONTRACTOR'S EXPENSE; AFTER IT HAS BEEN INSPECTED, THE CONTRACTOR SHALL RESTORE THE WORK TO ITS ORIGINAL CONDITION AT HIS OWN EXPENSE.
- 9. ALL EXISTING UTILITIES, FACILITIES, CONDITIONS, AND THEIR DIMENSIONS SHOWN ON PLANS HAVE BEEN PLOTTED FROM AVAILABLE RECORDS. THE ARCHITECT/ENGINEER AND OWNER (T-MOBILE) ASSUME NO RESPONSIBILITY WHATEVER AS TO THE PROFICIENCY OR ACCURACY OF THE INFORMATION SHOWN ON THE PLANS OR THE MANNER OF THEIR REMOVAL OR ADJUSTMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL SAID UTILITIES AND FACILITIES PRIOR TO START OF CONSTRUCTION. CONTRACTOR SHALL ALSO OBTAIN FROM EACH UTILITY COMPANY DETAILED INFORMATION RELATIVE TO WORKING SCHEDULES AND METHODS OF REMOVING OR ADJUSTING AFFECTED UTILITIES.

GENERAL NOTES (CONT'D):

- 10. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES BOTH HORIZONTALLY AND VERTICALLY PRIOR TO START OF CONSTRUCTION. ANY DISCREPANCIES OR DOUBTS AS TO THE INTERPRETATION OF PLANS SHOULD BE IMMEDIATELY REPORTED TO THE PROJECT MANAGER FOR RESOLUTION AND INSTRUCTION, AND NO FURTHER WORK SHALL BE PERFORMED UNTIL DISCREPANCY IS CHECKED AND CORRECTED BY THE ARCHITECT/ENGINEER. FAILURE TO SECURE SUCH INSTRUCTION MEANS CONTRACTOR WILL HAVE WORKED AT HIS OWN RISK AND EXPENSE
- 11. CONTRACTORS SHALL CLEAN ENTIRE SITE AFTER CONSTRUCTION SUCH THAT NO PAPERS, TRASH, DEBRIS, WEEDS, BRUSH, OR ANY OTHER DEPOSITS REMAIN. ALL MATERIALS COLLECTED DURING CLEANING OPERATIONS SHALL BE PROPERLY DISPOSED OF OFE-SITE BY THE CONTRACTOR
- 12. ALL SITE WORK SHALL BE CAREFULLY COORDINATED BY THE CONTRACTOR WITH LOCAL GAS, ELECTRIC, TELEPHONE, AND ANY OTHER UTILITY COMPANIES HAVING JURISDICTION OVER THIS LOCATION
- 13. DURING CONSTRUCTION, THE CONTRACTOR SHALL AT ALL TIMES MAINTAIN THE UTILITIES OF THE BUILDING/SITE WITHOUT INTERRUPTION. SHOULD IT BE NECESSARY TO INTERRUPT ANY SERVICE OR UTILITY, THE CONTRACTOR SHALL SECURE PERMISSION IN WRITING FROM THE BUILDING/PROPERTY OWNER FOR SUCH INTERRUPTION, AT LEAST 72 HOURS IN ADVANCE. ANY INTERRUPTION SHALL BE MADE WITH A MINIMUM AMOUNT OF INCONVENIENCE TO THE BUILDING/PROPERTY OWNER AND ANY SUCH SHUTDOWN TIME SHALL BE COORDINATED WITH THE BUILDING/PROPERTY OWNER.
- CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION.
- 15. CONTRACTOR SHALL SUBMIT AT THE END OF THE PROJECT A COMPLETE SET OF AS BUILT DRAWINGS TO TAMOBILE'S PROJECT ENGINEER
- 16. GC WILL NOT START THE CONSTRUCTION UNTIL AFTER THEY RECEIVE THE PRE CON PACKAGE AND HAVE A PRE CON WALK WITH THE PROJECT MANAGER.

DIVISION 2 - SITE WORK:

- 1. THE CONTRACTOR SHALL CALL UTILITIES 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 THE PROJECT MANAGER. EXTREME CAUTION SHOULD
 BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR
 NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE
 WORKING CREW. THIS WILL INCLUDE BUT NOT LIMITED TO:
 - A. FALL PROTECTION
 - B. CONFINED SPACE
 - C. ELECTRICAL SAFETY
 - D. TRENCHING AND EXCAVATION
- REMOVE FROM SITE/OWNER'S PROPERTY ALL WASTE MATERIALS, UNUSED EXCAVATED MATERIAL INCLUDING MATERIAL CLASSIFIED UNSATISFACTORY CONTAMINATED OR DANGEROUS TRASH AND DEBRIS, AND DISPOSE OF IN A LEGAL MANNER
- 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 ENGINEERING.
- THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE BUILDING OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED, AND COVERED WITH MULCH
- CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, AS REQUIRED DURING CONSTRUCTION.

CONTRACTOR IS RESPONSIBLE FOR LAYOUT AND CONSTRUCTION STAKING.
CONTRACTOR SHALL ESTABLISH GRADE AND LINE STAKES PRIOR TO CONSTRUCTION

KIMLEY-HORN DOES NOT GUARANTEE OR WARRANT THAT THE AFOREMENTIONED EASEMENTS ARE SUFFICIENT FOR CONSTRUCTION TRAFFIC. GC SHALL CONSULT WITH A T-MOBILE REPRESENTATIVE AND LANDLORD WITH EXACT LOGISTICS TO FACILITATE CONTRACTIBILITY OF THE SITE AND DELIVERY OF CRITICAL MATERIALS SUCH AS THE TOWER, STEEL, CONCRETE AND CRANES TO THE PROPOSED LEASE AREA. GC SHALL RESTORE SITE TO ORIGINAL CONDITIONS AND REPLACE ANY AND ALL DISTURBED TREES OR LANDSCAPING.

 ${\it KIMLEY-HORN \ IS\ NOT\ RESPONSIBLE\ FOR\ THE\ MAINTENANCE\ AND/OR\ OPERATIONAL\ FEASIBILITY. }$

SCOPE OF WORK FOR THESE PLANS DOES NOT INVOLVE VALUE ENGINEERING AS WELL AS MAINTAINABILITY OPERATIONS OF THE SITE, ACCESS OR UTILITIES.

DIVISION 3 - CONCRETE:

- MINIMUM ALLOWABLE CONCRETE COMPRESSIVE STRENGTH SHALL BE
 4000 PSI AT 28 DAYS WHEN TESTED IN ACCORDANCE WITH THE
 AMERICAN SOCIETY FOR TESTING AND MATERIALS METHODS STANDARDS ASTM
 C172, ASTM C31 AND ASTM C39 UNLESS OTHERWISE NOTED.
- CONCRETE FOR ALL FOUNDATIONS: 540 LBS PER CUBIC YARD OF
 CONCRETE MINIMUM CEMENT CONTENT FOR 1-INCH MAXIMUM SIZE
 AGGREGATE, SLUMP RANGE 3 INCHES TO 5 INCHES, TOTAL AIR CONTENT 4
 PERCENT TO 7 PERCENT BY VOLUME. AIR ENTRAINING ADMIXTURE REQUIRED TO
 CONTROL TOTAL AIR CONTENT, WATER REDUCING ADMIXTURE PERMITTED TO
 OBTAIN SLUMP OVER 3-INCHES.
- ALL CONCRETE CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE (ACI 318) BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE AND (ACI 301) STANDARD SPECIFICATION FOR STRUCTURAL CONCRETE.
- REBARS SHALL BE ASTM A-615 DEFORMED TYPE WITH MINIMUM YIELD STRENGTH OF 60,000 PSI (40,000 PSI GRADE MAY BE USED FOR TIES & STIRRUPS).

WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185.

- DETAILING SHALL BE IN ACCORDANCE WITH MANUAL OF STANDARD PRACTICE OF DETAILING REINFORCED CONCRETE STRUCTURES (ACI STD-315 LATEST EDITION).
- 6. CHAMFER ALL EXPOSED EDGES OF CONCRETE 3/4".UNLESS OTHERWISE NOTED.
- REINFORCING STEEL SHALL BE ACCURATELY PLACED AND ADEQUATELY SECURED IN POSITION. LOCATION OF REINFORCEMENT SHALL BE INDICATED ON THE DRAWINGS. THE FOLLOWING MINIMUM COVER (INCHES) FOR REINFORCEMENT SHALL BE PROVIDED. EXCEPT AS NOTED ON DRAWINGS.

MINIMUM COVER (INCHES)
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH ... 3"
EXPOSED TO EARTH OR WEATHER:
#6 THROUGH #18 ... 2"

#5 BAR AND SMALLER ... 1-1/2"

8. TESTS

CONCRETE MATERIALS AND OPERATIONS SHALL BE TESTED AND INSPECTED BY THE ENGINEER AS THE WORK PROGRESSES. FAILURE TO DETECT ANY DEFECTIVE WORK OR MATERIAL SHALL NOT IN ANY WAY PREVENT LATER REJECTION WHEN SUCH DEFECT IS DISCOVERED NOR SHALL IT OBLIGATE THE ENGINEER FOR FINAL ACCEPTANCE.

- A. FIVE CONCRETE TEST CYLINDERS SHALL BE TAKEN OF THE TOWER PIER FOUNDATION TWO SHALL BE TESTED @ THREE DAYS, TWO @ TWENTY-EIGHT DAYS. THE FIFTH CYLINDER SHALL BE KEPT SEPARATELY, IF REQUIRED TO BE USED IN THE FUTURE.
- B. ONE ADDITIONAL TEST CYLINDER SHALL BE TAKEN DURING COLD WEATHER AND CURED ON SITE UNDER SAME CONDITIONS AS CONCRETE IT REPRESENTS.
- C. ONE SLUMP TEST SHALL BE TAKEN FOR EACH SET OF TEST CYLINDERS TAKEN.

9. PLACING CONCRETE

- A THE ENGINEER SHALL BE NOTIFIED NOT LESS THAT 24 HOURS IN ADVANCE OF CONCRETE PLACEMENT, UNLESS INSPECTION IS WAIVED IN EACH CASE, PLACING OF CONCRETE SHALL NOT BE PLACED UNTIL ALL FORMWORK, EMBEDDED PARTS, STEEL REINFORCEMENT, FOUNDATION SURFACES AND JOINTS INVOLVED IN THE PLACING HAVE BEEN APPROVED, AND UNTIL FACILITIES ACCEPTABLE TO THE T-MOBILE REPRESENTATIVE HAVE BEEN PROVIDED AND MADE READY FOR ACCOMPLISHMENT OF THE WORK AS SPECIFIED. CONCRETE MAY NOT BE ORDERED FOR PLACEMENT UNTIL ALL ITEMS HAVE BEEN APPROVED AND T-MOBILE HAS PERFORMED A FINAL INSPECTION AND GIVEN APPROVAL TO START PLACEMENT IN WRITING.
- B. PLACEMENT OF CONCRETE SHALL BE IN ACCORDANCE WITH ACI 301.

10. PROTECTION

- A. IMMEDIATELY AFTER PLACEMENT, THE CONTRACTOR SHALL PROTECT THE CONCRETE FROM PREMATURE DRYING, EXCESSIVELY HOT OR COLD TEMPERATURES, AND MECHANICAL INJURY. FINISHED WORK SHALL BE PROTECTED.
- B. CONCRETE SHALL BE MAINTAINED WITH MINIMAL MOISTURE LOSS AT RELATIVELY CONSTANT TEMPERATURE FOR A PERIOD NECESSARY FOR HYDRATION OF CEMENT AND HARDENING OF CONCRETE.
- C. ALL CONCRETE SHALL BE WATER CURED BY CONTINUOUS (NOT PERIODIC) FINE MIST SPRAYING OR SPRINKLING ALL EXPOSED SURFACES. WATER SHALL BE CLEAN AND FREE FROM ACID, ALKALL, SALTS, OIL SEDIMENT, AND ORGANIC MATTER. SUCCESSFUL CURING SHALL BE OBTAINED BY USE OF AN AMPLE WATER SUPPLY UNDER PRESSURE IN PIPES, WITH ALL NECESSARY APPLIANCES OF SPRINKLERS, AND SPRAYING DEVICES.

ELECTRICAL NOTES:

1. ELECTRICAL DESIGN SHALL BE PERFORMED BY ELECTRICAL CONTRACTOR. STRUCTURAL DESIGN SHALL BE PERFORMED BY GENERAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL ENSURE THAT ALL WORK COMPLIES WITH ALL APPLICABLE LOCAL AND STATE CODES AND NATIONAL ELECTRICAL CODE.

2. ALL SUGGESTED ELECTRICAL ELEMENTS (SUCH AS BREAKER SIZES, WIRE SIZES, CONDUITS SIZES ARE FOR ZONING PURPOSES ONLY. IT IS THE RESPONSIBILITY TO OF THE ELECTRICAL CONTRACTOR TO CONFIRM COMPLIANCE WITH LOCAL ELECTRICAL CODES AND PASS ALL APPLICABLE AND NECESSARY INSPECTIONS. IN SOME EVENTS, IT MAY BE NECESSARY TO PERFORM AN ELECTRICAL LOAD STUDY TO VERIFY THE CAPACITY OF THE EXISTING SERVICE. THIS IS NOT THE RESPONSIBILITY OF KIMLEY-HORN. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.

3. CONTRACTOR SHALL FIELD LOCATE ALL BELOW GRADE GROUND LINES AND UTILITY LINES PRIOR TO CONTRACTOR IS RESPONSIBLE FOR RELOCATION OF ALL UTILITIES AND GROUND LINES THAT MAY BECOME DISTURBED OR CONFLICTING IN THE COURSE OF CONSTRUCTION.

DIVISION 5 - STRUCTURAL STEEL:

- DETAIL, FABRICATE AND ERECT STRUCTURAL STEEL IN ACCORDANCE WITH THE LATEST AISC MANUAL OF STEEL CONSTRUCTION (ASD), AWS D1.1, AND THE BASIC BUILDING CODE. STRUCTURAL STEEL SHALL BE AS FOLLOWS:
- A. ASTM A36, GRADE 36; ROLLED STEEL, RODS, PLATES, U-BOLTS AND ANCHOR BOLTS.
- B ASTM A325 BOLTS BEARING TYPE
- C. ALL STEEL SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123.
- 2. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING AND/OR BRACING WHERE REQUIRED DURING CONSTRUCTION UNTIL ALL CONNECTIONS ARE COMPLETE.
- ANY FIELD CHANGES OR SUBSTITUTIONS SHALL HAVE PRIOR APPROVAL FROM THE ENGINEER. AND T- MOBILE PROJECT MANAGER IN WRITING
- 4. TIGHTEN HIGH STRENGTH BOLTS TO A SNUG TIGHT CONDITION WHERE ALL PLIES IN A JOINT ARE IN FIRM CONTACT BY EITHER
- A. A FEW IMPACTS OF A IMPACT WRENCH
- B. THE FULL EFFORT OF A PERSON USING A SPUD WRENCH.

5. WELDING

- A. ALL WELDING SHALL BE DONE BY CERTIFIED WELDERS. CERTIFICATION DOCUMENTS SHALL BE MADE AVAILABLE FOR ENGINEER'S AND/OR OWNER'S REVIEW IF REQUIESTED.
- B. WELDING ELECTRODES FOR MANUAL SHIELDED METAL ARC WELDING SHALL
 CONFORM TO ASTM A-233, E70 SERIES. BARS ELECTRODES AND GRANULAR FLUX
 USED IN THE SUBMERGED ARC PROCESS SHALL CONFORM TO AISC SPECIFICATIONS.
- C. FIELD WELDING SHALL BE DONE AS PER AWSD1.1 REQUIREMENTS VISUAL INSPECTION IS ACCEPTABLE.

6. PROTECTION

A. UPON COMPLETION OF ERECTION INSPECT ALL GALVANIZED STEEL
AND PAINT ANY FIELD CUTS, WELDS, OR GALVANIZED BREAKS WITH
ZINC BASED PAINT. COLOR TO MATCH THE GALVANIZING PROCESS.

<u>DIVISION 13 - SPECIAL CONSTRUCTION</u> ANTENNA INSTALLATION

1. WORK INCLUDED:

- A. ANTENNAS AND COAXIAL CABLES ARE FURNISHED BY T-MOBILE UNDER A
 SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION
 CONTRACTOR IN TERMS OF COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL AND
- B. INSTALL ANTENNAS AS INDICATED ON DRAWINGS AND T-MOBILE SPECIFICATIONS.
- C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS.
- D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE AND PROVIDE PRINTOUT OF THAT TEST.

PROPERTY. E. CONTRACTOR SHALL PROVIDE FOUR (4) SETS OF SWEEP TESTS USING ANRITZU- $\,$

PACKARD 8713B RF SCALAR NETWORK ANALYZER. SUBMIT FREQUENCY DOMAIN REFLECTOMETER(FDR) TESTS RESULTS TO THE PROJECT MANAGER. SWEEP TESTS SHALL BE AS PER ATTACHED RFS "MINIMUM FIELD TESTING RECOMMENDED FOR ANTENNA AND HELIAX COAXIAL CABLE SYSTEMS" DATED 10/5/93. TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.

- F. INSTALL COAXIAL CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT
 PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTORS
 BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS.
 TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT
 LOCATION UNLESS OTHERWISE STATED.
- $\ensuremath{\mathsf{G}}.$ ANTENNA AND COAXIAL CABLE GROUNDING:
 - ALL EXTERIOR #6 GREEN GROUND WIRE "DAISY CHAIN" CONNECTIONS
 ARE TO BE WEATHER SEALED WITH RFS CONNECTOR/SPLICE
 WEATHERPROOFING KIT #221213 OR EQUAL.
 - 2. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS).





PLANS PREPARED BY:



421 FAYETTEVILLE ST, SUITE 600 RALEIGH, NC 27601

BY

3 02/11/22 REVISED PER CLIENT WR
2 01/18/22 REVISED PER CLIENT DP
1 08/26/21 REVISED PER CLIENT DP
0 05/12/21 ISSUED FOR CONSTRUCTION DLI
A 05/07/21 ISSUED FOR REVIEW AM

DRAWN BY: CHECKED BY:

AMG DLF

ENGINEER SEAL: PARADO LICENSE ADD OCTOBER SEAL: PARADO LICENSE ADD OCTOBER SEAL: PARADO CONTROL AD

Exp. 10/31/23

HA PROJECT NUMBER:

DN06163A
SPRINT RETAIN SITE
DN14XC247
SBA #: CO46103-A
7353 WEST HIGHWAY 24
MANITOU SPRINGS, CO 80829

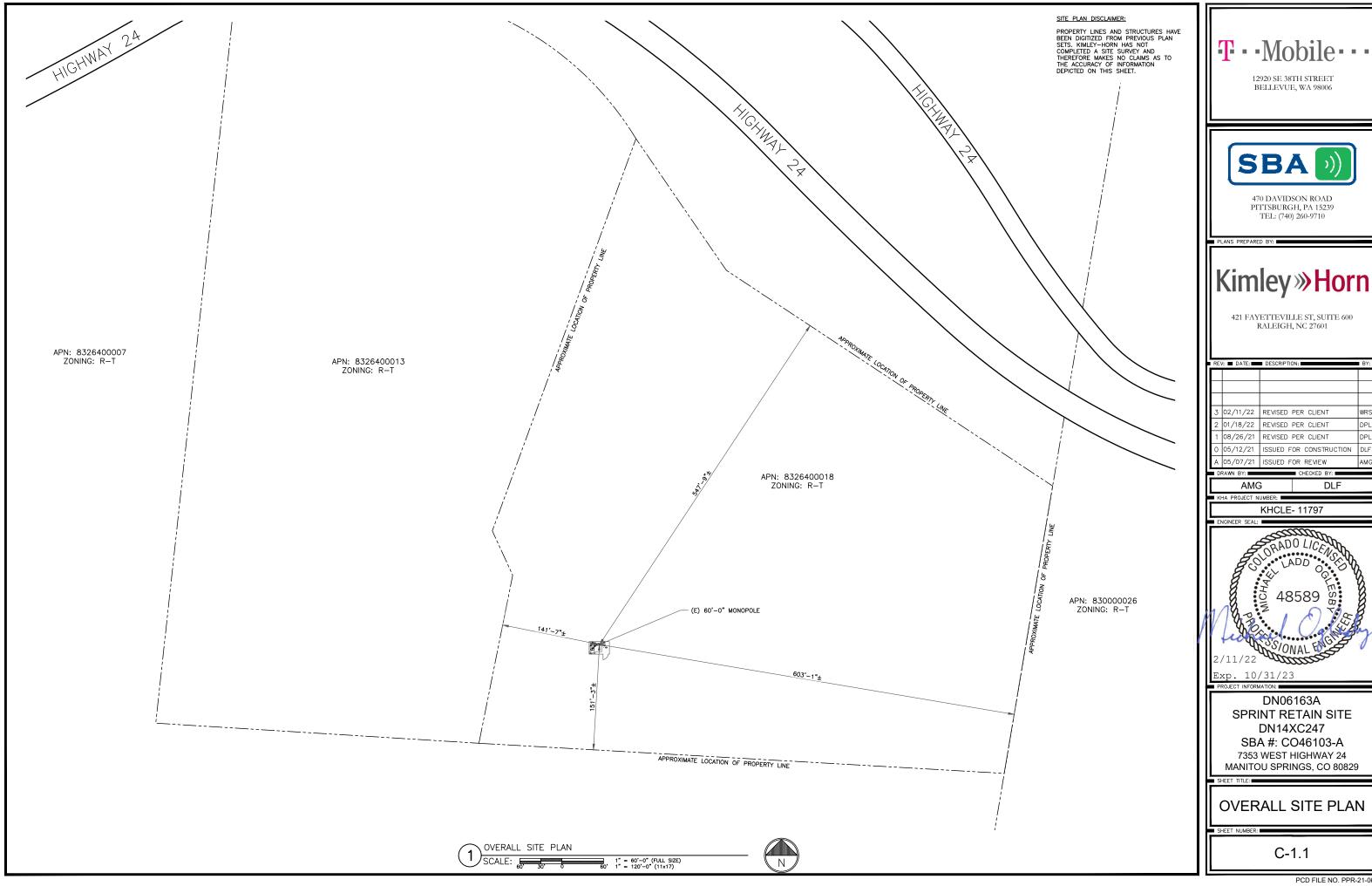
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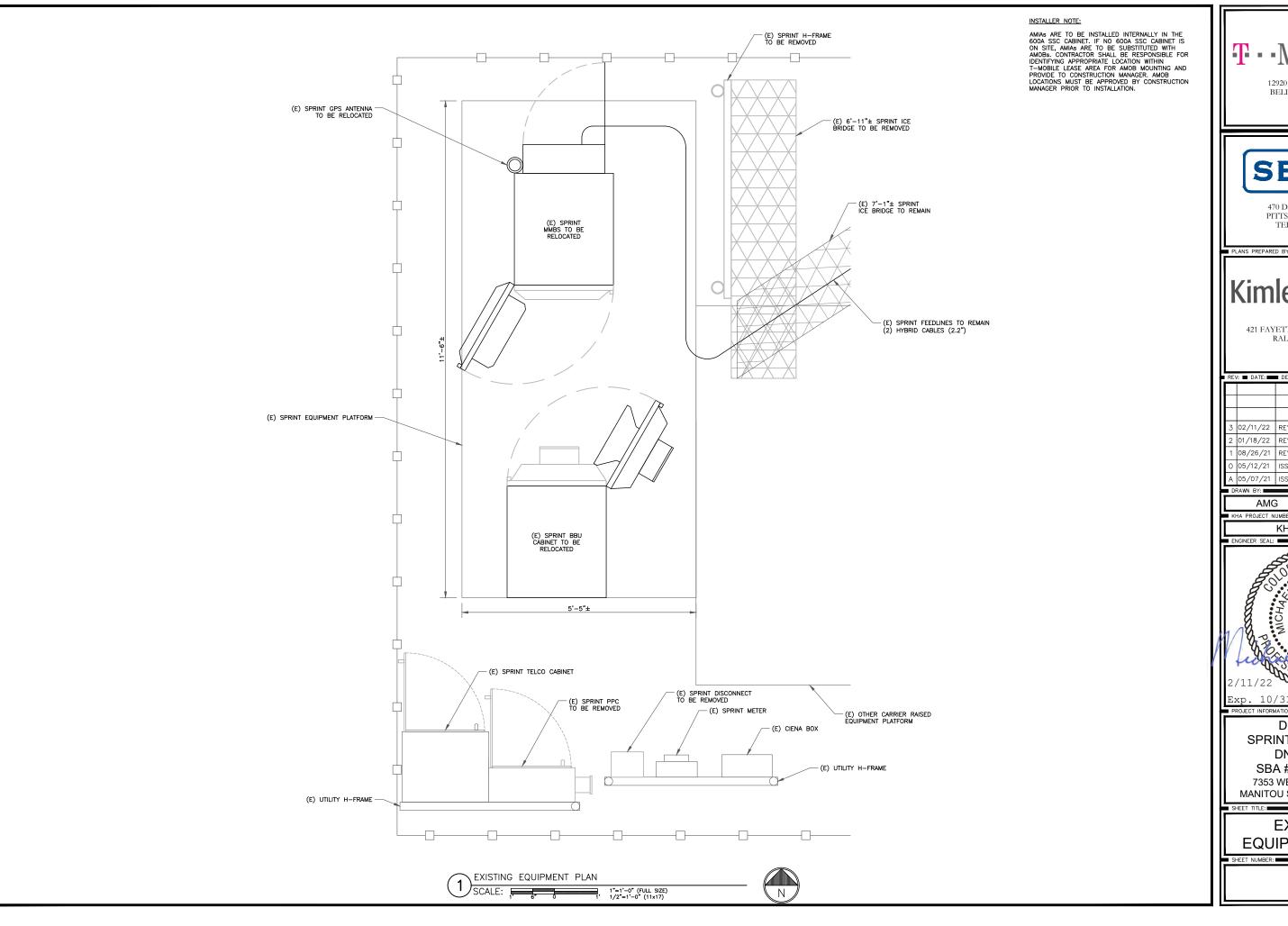
GENERAL NOTES

SHEET NUMBER:

T-2

PCD FILE NO. PPR-21-064





12920 SE 38TH STREET BELLEVUE, WA 98006



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PLANS PREPARED BY:

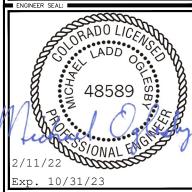


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RE'	V: ■ DATE:	DESCRIPTION:	■ BY:
3	02/11/22	REVISED PER CLIENT	WRS
2	01/18/22	REVISED PER CLIENT	DPL
1	08/26/21	REVISED PER CLIENT	DPL
0	05/12/21	ISSUED FOR CONSTRUCTION	DLF
Α	05/07/21	ISSUED FOR REVIEW	AMG

CHECKED BY: AMG DLF

KHCLE- 11797

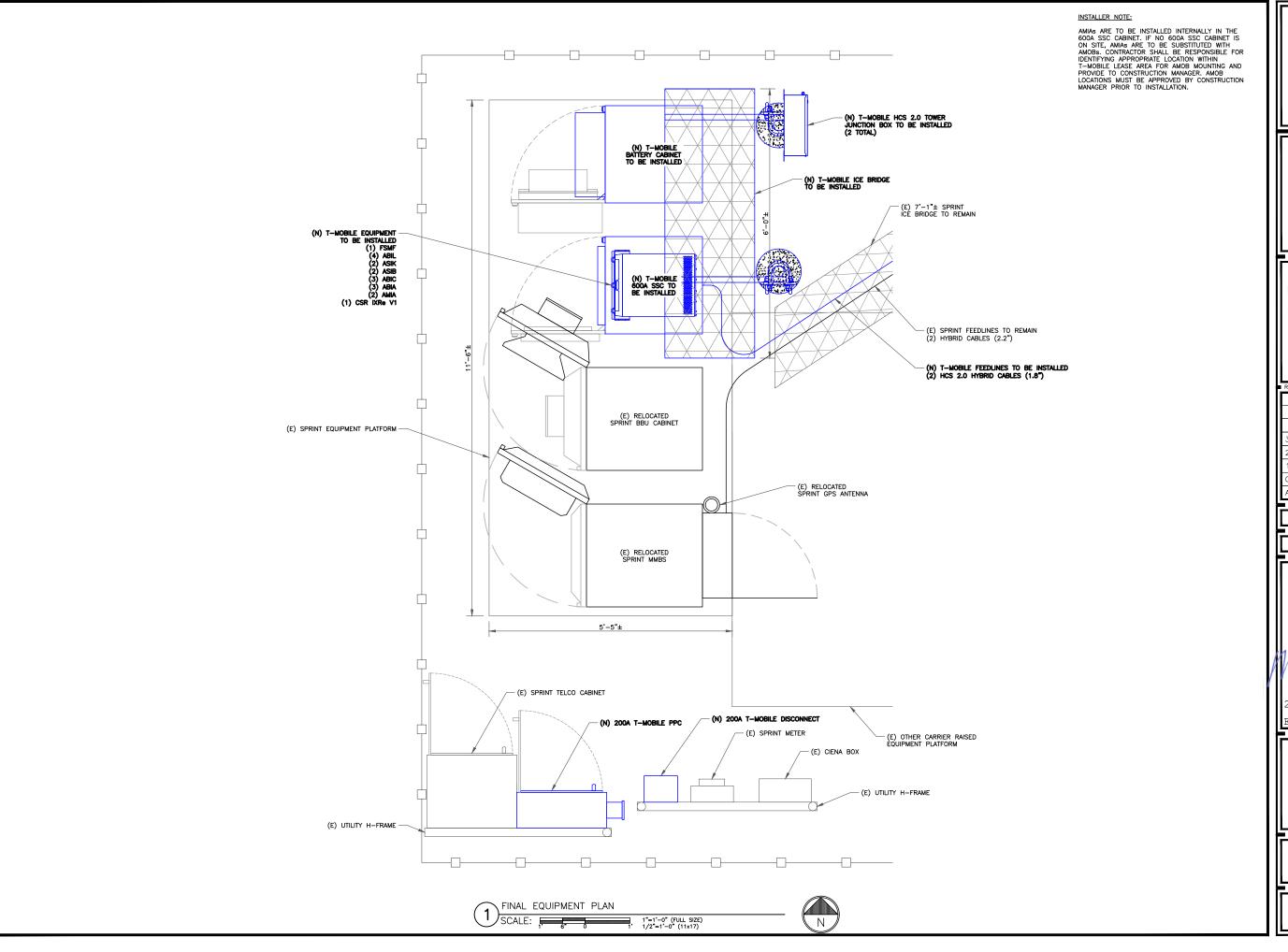


DN06163A SPRINT RETAIN SITE DN14XC247 SBA #: CO46103-A

7353 WEST HIGHWAY 24 MANITOU SPRINGS, CO 80829

EXISTING EQUIPMENT PLAN

C-1.2





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I	0	05/12/21	ISSUED FOR CONSTRUCTION	DLF
ı	Α	05/07/21	ISSUED FOR REVIEW	AMG

DRAWN BY: CHECKED BY:

AMG
DLF

KHA PROJECT NIMBER:

KHCLE- 11797

Exp. 10/31/23

DN06163A SPRINT RETAIN SITE DN14XC247 SBA #: CO46103-A

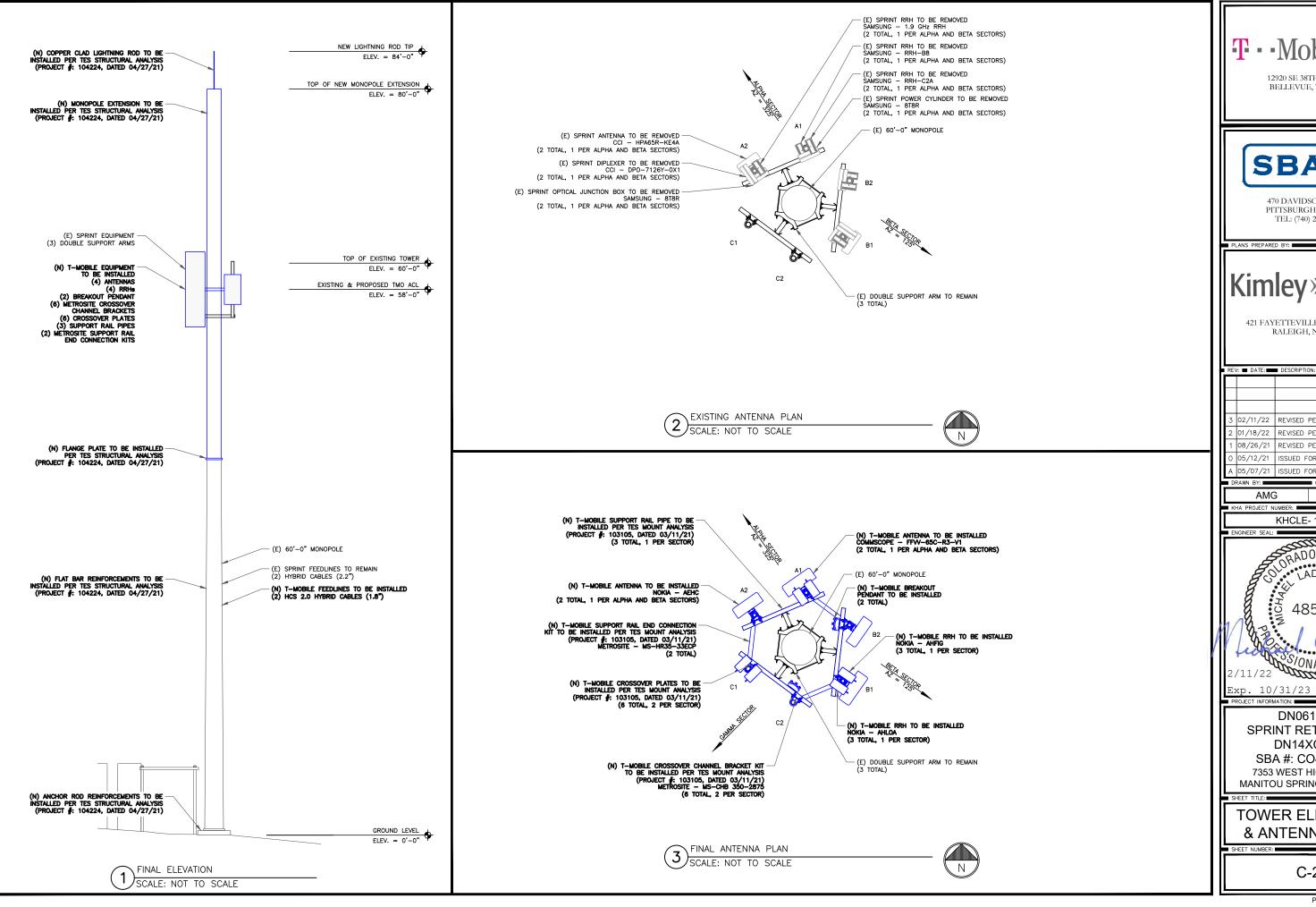
7353 WEST HIGHWAY 24 MANITOU SPRINGS, CO 80829

SHEET TITLE

FINAL EQUIPMENT PLAN

SHEET NUMBER

C-1.3



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SONAL EMPS Exp. 10/31/23

> DN06163A **SPRINT RETAIN SITE**

DN14XC247 SBA #: CO46103-A 7353 WEST HIGHWAY 24 MANITOU SPRINGS, CO 80829

TOWER ELEVATION & ANTENNA PLAN

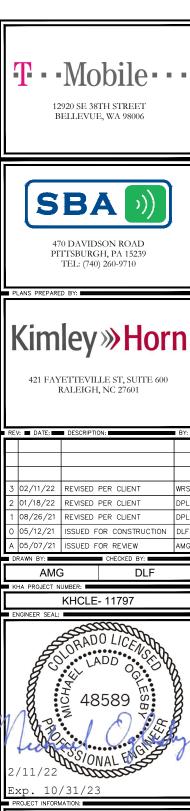
C-2

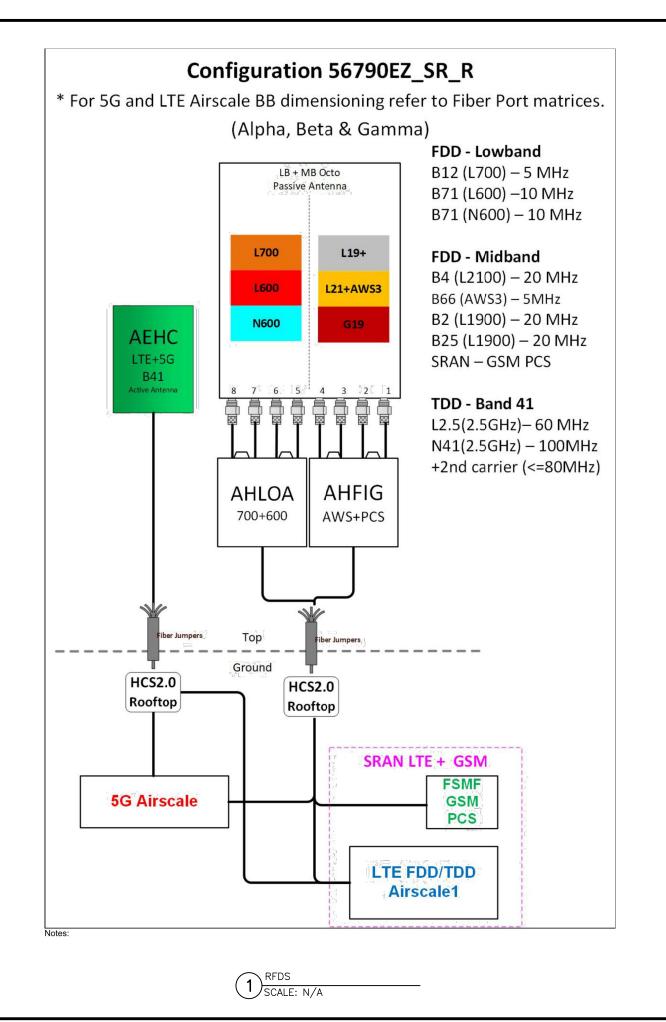
NEW AND EXISTING ANTENNA AND CABLE SCHEDULE COAX HCS **JUMPER** RAD CABLE DIPLEXER/ **SECTOR** POS. **AZIMUTH TECHNOLOGY** ANTENNA STATUS RRU TYPE COVP CABLE **FACTORY** M. TILT CENTER TMA STATUS LENGTH LENGTH LENGTH L2500, Α2 58'-0" 0° NEW 325° NOKIA - AEHC <15'-0'N2500 L600, N600, (1) NEW ALPHA L700, COMMSCOPE -AHLOA, 325° 0° NEW <15'-0' Α1 58'-0" L1900, FFVV-65C-R3-V1 (1) NEW G1900, ÁHFIG (2) L2100 **EXISTING** L2500, 125° 0° <15'-0' B2 58'-0" NOKIA - AEHC NEW 2.2" N2500 (2) **HYBRID** L600, N600, ŇEŴ CABLES, (1) NEW BETA EXISTING | EXISTING L700, **BREAKOUT** (2) COMMSCOPE -AHLOA, В1 125° 58'-0" 0° L1900, NEW <15'-0'**PENDANTS** NEW FFVV-65C-R3-V1 (1) NEW G1900, 1.8" AHFIG L2100 **HYBRID CABLES** C2 (1) NEW **GAMMA** AHLOA, C1 58'-0" <15'-0" (1) NEW

AHFIG

(*) SHARED WITH ALL SECTORS

IMPORTANT NOTE: PLEASE REFER TO LATEST RFDS SHEET FOR NSN CONFIGURATION. GC TO CAP ALL UNUSED PORTS







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DN06163A SPRINT RETAIN SITE DN14XC247 SBA #: CO46103-A

7353 WEST HIGHWAY 24 MANITOU SPRINGS, CO 80829

PLUMBING DIAGRAM

C-4

FFVV-65C-R3-V1



8-port sector antenna, 4x 617-894 and 4x 1695–2690 MHz, 65° HPBW, 3x RET

General Specifications

| Section | Sect

Grounding TypeRF connector inner conductor and body grounded to reflector and mounting bracket

Performance Note Outdoor usage
Ladome Material Fiberglass, UV resistant
Ladiator Material Low loss circuit board
Aluminum
Leffector Material Aluminum
Lef Connector Interface 4.3-10 Female
Leff Connector Location Bottom
Leff Connector Quantity, high band 4
Leff Connector Quantity, low band 4

Remote Electrical Tilt (RET) Information, General

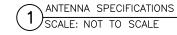
RET Interface 8-pin DIN Female | 8-pin DIN Male

RET Interface, quantity 1 female | 1 male

Dimensions

 Width
 640 mm | 25.197 in

 Length
 2437 mm | 95.945 in



AEHC AirScale MAA 64T64R 192AE n41 240W

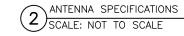
Preliminary Technical datasheet

Specification	3GPP/FCC compliant, TDD
Frequency range	2496 - 2690 MHz
Max, supported modulation	256 QAM
Number of TX/RX paths	64T / 64R
MIMO streams	16
Instantaneous bandwidth IBW	194 MHz
Occupied bandwidth OBW	194 MHz
Total average EIRP	79.3 dBm
Max. output power per TRX	3.75 W / TRX (240 W total)
Antenna configuration	12 rows, 8 columns, 2 (±45° X-polarized)
Max. Antenna gain	25.5dBi
Horizontal beamwidth	15* (boresight)
Vertical beamwidth	6* (boresight)
Horizontal coverage angle	±45* (3 dB), ±60* (5 dB)
Vertical steering angle	±6"
Dimensions	TBD:900 mm (H) x 580 mm (W) x 210 mm (D)
Volume /Windward area	TBD:<110 L /-0.6m2
Weight	<45kg (without mounting brackets)
Supply voltage / Connector type	DC -40.5 V57 V / 2 pole connector
Power consumption	900 W typical (75% DL duty cycle, 30% RF load) 1300 W max (75% DL duty cycle, 100% RF load)



Optical ports	4 x SFP28, 10/25GE eCPRI (with R2CT)
Other interfaces / Connector type	Control AISG RF monitor port / SMA Female External Alarms / MDR26 status LED
Operational temperature range	-40 °C +55 °C
Cooling	Natural convection cooling
Ingress protection class	IP65
Installation options	Pole / Wall, ± 5" vertical adjustment
Surge protection	Class II 20 kA

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ENGINEER SEAL:

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PROJECT INFORMATI

DN06163A
SPRINT RETAIN SITE
DN14XC247
SBA #: CO46103-A
7353 WEST HIGHWAY 24
MANITOU SPRINGS, CO 80829

SHEET TITLE:

EQUIPMENT SPECIFICATIONS

SHEET NUMBER:

C-5

AirScale Dual RRH 4T4R B12/71 240W AHLOA



Product Code: 474331A	
Supported Frequency bands	3GPP Band 12/71
Frequencies	Band 71: UL 663 MHz - 698 MHz, DL 728 - 746 MHz Band 71: UL 663 MHz - 698 MHz, DL 617 MHz - 652 MHz
Number of TX/RX paths/pipes	4 pipes; 2T2R, 2T4R, 4T4R for both bands
Instantaneous Bandwidth IBW	17 MHz for B12 and 35MHz for B71 1 MHz below B12 NB IoT future use
Occupied Bandwidth OBW	UL 53MHz contiguous DL 812 17MHz + 1 MHz NB IoT future use, B71 35MHz
Output Power	60W per TX shared between bands
Supply Voltage / Range	DC-48 V / -36 V to -60 V
Typical Power Consumption	640W [ETSI Busy Hour Load at 4TX@60W
	450W [ETSI Busy Hour Load at 4TX@20W
Antenna Ports	4 parts, 4.3-10+
Optical Ports	2 x CPRI 9.6 Gbps
ALD Control Interfaces	AISG3.0 and RET (DC on ANT1 & ANT3)
Other Interfaces	External Alarm MDR-26 (4 inputs, 1 Output) DC Circular Power Connector
Physical	560 mm x 308 mm x 189 mm Approximately 38kg with no covers or brackets
Operating Temperature Range	-40°C to 55°C (with no solar load)
Surge Protection	Class II 5A
Installation Options	Pole, Wall, Book Mount

NOKIA - AHLOA
SCALE: NOT TO SCALE

HYBRID CABLE & BREAKOUT
SCALE: NOT TO SCALE

AirScale System Module Installation Guidelines - AMIA

AMIA is primary for indoor sites (environmentally controlled) or site support cabinets

- For a 19" rack installation 3U of space is needed (adapters/support required for 23" rack)
- For Medium/Large HP/ Large Delta SSC Fan/filter kit required (SKU# 32168) to support medium config
- For Medium Purcell SSC Nothing required to support minimal config (single LTE layer)
- For Medium Purcell SSC Door upgrade kit required (SKU# 33401) to support full config

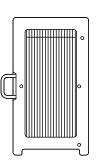
AMIA Mounting Options		
Item Description	3U space*	4U Space
19 to 23 inch adaptor bracket, 3U w/slot	x	
19 to 23 inch adaptor bracket, 4U w/slot		x
ASSY, SHELF		х



*Bottom support is available

F. Mohiles

AMIA SPECIFICATIONS
SCALE: NOT TO SCALE





NOKIA — AHFIG WEIGHT (FULLY EQUIPPED): 79.4 LBS SIZE (HxWxD): 27.6x13.4x5.6 IN.

NOKIA - AHFIG SCALE: NOT TO SCALE





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AMG	DLF
KHA PROJECT NUMBER:	

KHCLE- 11797

NEER SEAL:

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PROJECT INFORMATIO

DN06163A SPRINT RETAIN SITE DN14XC247 SBA #: CO46103-A 7353 WEST HIGHWAY 24

MANITOU SPRINGS, CO 80829

EQUIPMENT SPECIFICATIONS

SHEET NUMBER:

C-6

PCD FILE NO. PPR-21-064

Cell Site Solutions Ordering Guide for T-Mobile Issue 1.1



Cell Site Solutions Ordering Guide for T-Mobile Issue 1.1



Outdoor Power & Battery Enclosures for AAV Equipment

The following products are described in this section. Please refer to Shelf power section for rectifiers, controllers and circuit breakers.

Products: Small SSC, LP Small SSC, Medium SSC, Large SSC, HP Large SSC, Battery Enclosure Advantage 1kW, Advantage 2kW & Advantage 6U







Basic Overview Pad Mount Power Cabinets										
Parameter LP Small SSC Small SSC Medium SSC Large SSC HP Large SSC										
Max Output (@-54V)	150	200	200	200	400					
Height	37"	37"	54"	72"	72"					
Width	26"	26"	30"	30"	30"					
Depth	27"	27"	35"	35"	35"					
Weight (w/ Rectifiers)	196	198	320	419	470					
Open Rack Space	7RU	6RU	10RU	10RU	12RU					
Max Eqmt Depth	15"	15"	20"	20"	20"					
No. Battery Strings	1 x 100Ah	1 x 100Ah	1 x 100Ah 1 x 185Ah	3 x 185Ah	2 x 185Ah					
Load Circuit Positions	17	17	17	17	52					

HP Large Site Support Cabinet





HP Large SSC

- Corrosion Resistant Aluminum Construction
- Direct Air Cooling with optional Gore filter upgrade
- Compact design for power, battery, and equipment
- 72"H x 30"W x 36"D
- 400A/48V Power System
- Supports 2 Battery strings of 185 Ahr each
- 12RU/19" or 23" rack for Equipment

T-Mobile SAP Number	Delta Part Number	Product Description
33112	ESOA400-CCU01	HP Large SS Cabinet w/ (3) 2900W rectifiers
33113	3799442800-S	Optional Mounting Plinth, 6"
30068	ESR-48/40C F-A	DPR2000 Rectifier Module, -48V, 2000W, 96% efficiency
31910	ESR-48/56C F-A	DPR2900 Rectifier Module, -48V, 2900W, 96% efficiency
See Page 27	See Page 27	Load Circuit Breakers, DIN rail type
14502	0999142300	-48V String (4 batteries) of PYL12V185FT with intercell connectors
32186	3799252800-S	Gore filter upgrade kit w/ fan
	CU-19C A13	CSU502 Controller (FRU)

HP Large SS SAP number includes: enclosure with thermal management (fans & heaters), AC load center with surge protection, 23" 10.5RU power system with CSU502 controller, power system equipped with (1) 200A 4-pole breaker for battery string, (1) 150A 3pole breaker for load, (3) 10A 1-pole breakers for load, (2) thermal probes for battery strings. In addition, HP Large SS ships with (3) 50A rectifiers.

BELLEVUE, WA 98006



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AMG DLF

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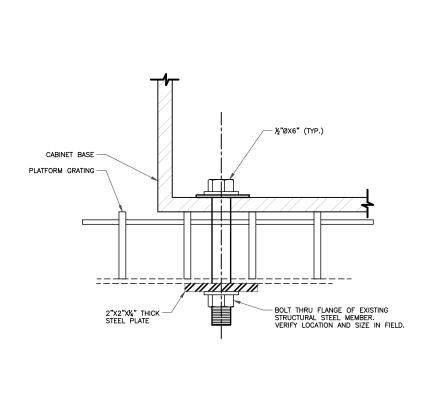
MANITOU SPRINGS, CO 80829

EQUIPMENT SPECIFICATIONS

8 | Page

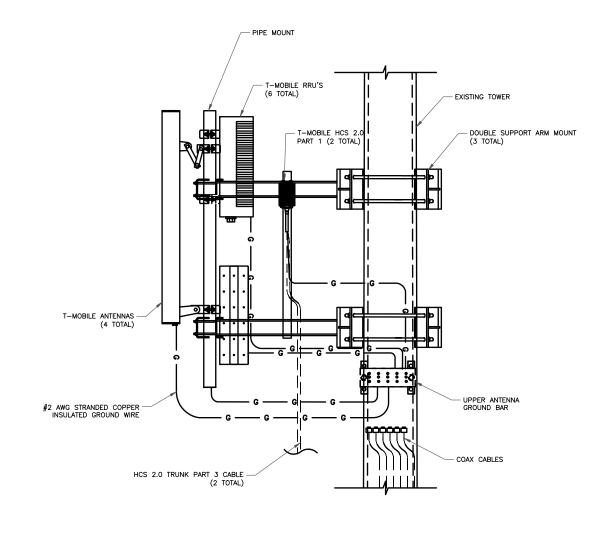
C-7

3 | Page



CABINET BOLT DOWN DETAIL

(1) SCALE: NOT TO SCALE







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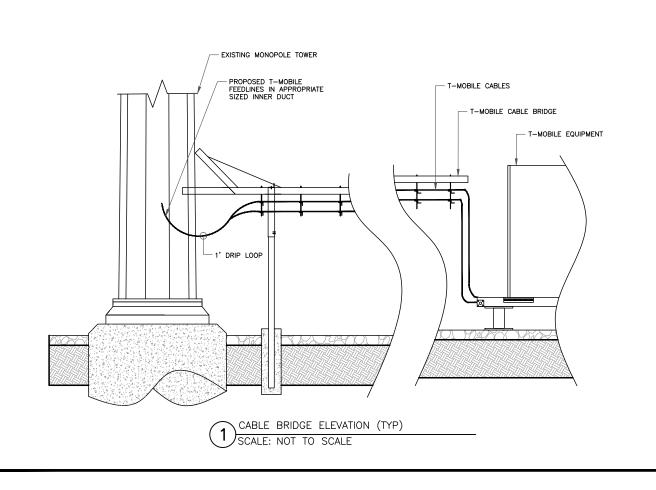
DN06163A SPRINT RETAIN SITE DN14XC247 SBA #: CO46103-A 7353 WEST HIGHWAY 24

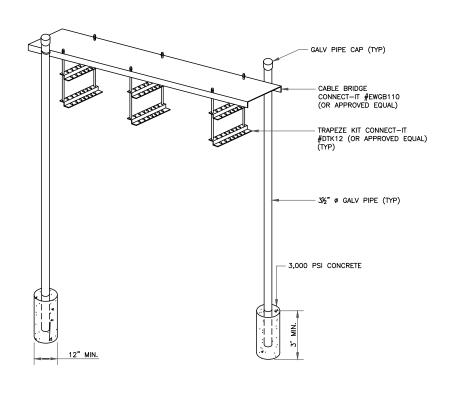
MANITOU SPRINGS, CO 80829

MOUNTING DETAIL

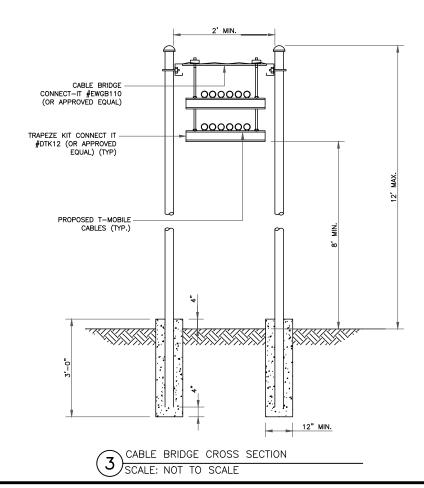
C-8

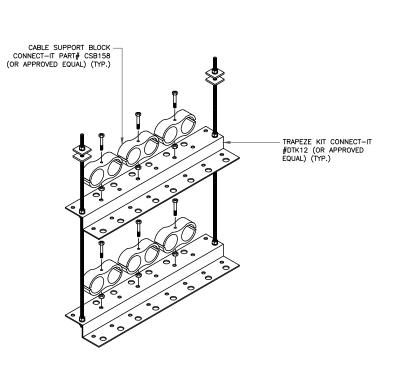
ANTENNA/RRU MOUNT DIAGRAM
SCALE: NOT TO SCALE





CABLE BRIDGE ANONOMETRIC (TYP)
SCALE: NOT TO SCALE





TRAPEZE KIT ISOMETRIC

SCALE: NOT TO SCALE

12920 SE 38TH STREET BELLEVUE, WA 98006 SBA 470 DAVIDSON ROAD PITTSBURGH, PA 15239 TEL: (740) 260-9710 PLANS PREPARED BY: Kimley»Horn 421 FAYETTEVILLE ST, SUITE 600 RALEIGH, NC 27601 EV: DATE: DESCRIPTION: 02/11/22 REVISED PER CLIENT 01/18/22 REVISED PER CLIENT 08/26/21 REVISED PER CLIENT 05/12/21 ISSUED FOR CONSTRUCTION ISSUED FOR REVIEW DRAWN BY: AMG KHA PROJECT NUMBER: KHCLE- 11797 Exp. 10/31/23 DN06163A

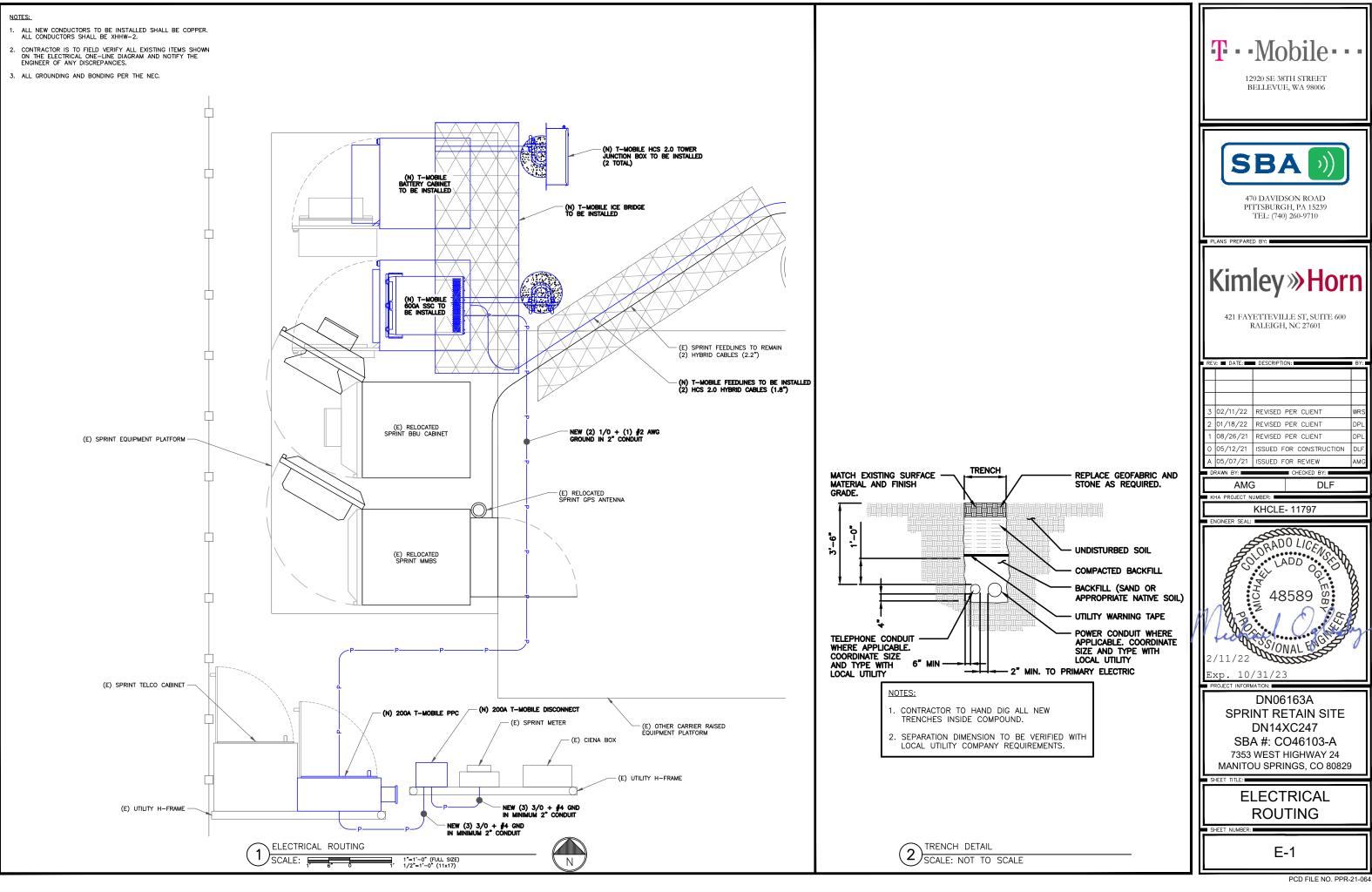
SPRINT RETAIN SITE DN14XC247 SBA #: CO46103-A 7353 WEST HIGHWAY 24

MANITOU SPRINGS, CO 80829

ICE BRIDGE **DETAILS**

C-9

DLF



VOLTAGE	120/240V	AIC RATING	10,000 AMPS
MAIN BREAKER	200 AMP	BUSS RATING	200 AMPS
MOUNT	SURFACE	NEUTRAL BAR	YES
ENCLOSURE TYPE	NEMA 3R	GROUND BAR	YES
PANEL STATUS	NEW	N TO GROUND BOND	YES
PHASE, WIRES	SINGLE, 3	INTERNALTVSS	TBD

PHAS	E, WIRES	SINGLE, 3			IN TERNAL I	V55		IRD							
		BREAKER	BREAKER	BREAKER		10.0	PHASE A		USAGE		BREAKER	BREAKER	BREAKER		
CKT	LOAD DESCRIPTION	AMPS	POLES	STATUS	LOAD VA	FACTOR	VA	VA	FACTOR	LOAD VA	STATUS	POLES	AMPS	LOAD DESCRIPTION	CKT
1	UNKNOWN	60	2	OFF	0	1.25	0		1.25	0	ON	2	60	ACSURGE PROTECTOR	2
3		60	2	ÖFF	0	1.25		0	1.25	0	ON	2	60		4
5	EXISTING MMBS	100	2	ON	6,000	1.25	9300		1.25	1,440	ON	2	15	EXISTING BBU	6
7		100	2	ON	6,000	1.25		9300	1.25	1,440	ON	2	15		8
9	GENERATOR CHARGER	20	1	OFF	0	1.25	180		1.00	180	ON	1	20	TELCO GFI	10
11	FAN	10	1	ÓN	360	1.25		12450	1.25	9,600	ON	2	150*	NEW SSC CABINET	12
13	SPACE	-	1	N/A	0	1.25	12000		1.25	9,600	ON	2	150*		14
15	SPACE	:-	1	N/A	0	1.25		0	1.25	0	N/A	1	1-1	SPACE	16
17	SPACE	-	1	N/A	0	1.25	0		1.25	0	N/A	1	-	SPACE	18
19	SPACE	-	1	N/A	0	1.25		0	1.25	0	N/A	1	-	SPACE	20
21	SPACE	-	1	N/A	0	1.25	0		1.25	0	N/A	1	-	SPACE	22
23	SPACE	-	1	N/A	0	1.25		0	1.25	0	N/A	1	1-1	SPACE	24

21480 21750 OVERALL LOAD SUMMARY TOTAL SERVICE LOAD KVA 43.23 180.13

= Loading provided by T-Mobile.

=Assumed Maximum Loading Per Breaker Size

* = New 150A Breaker

ELECTRICAL PANEL SCHEDULE

- 1. CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS OT THE CONTRACTORS FUNCTIONS, THE SCOPE OF WORK OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.
 2. LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO ROUGH-IN.
 3. THE CONDUIT RUNS AS SHOWN ON THE PLANS ARE APPROXIMATE. EXACT LOCATION AND ROUTING SHALL BE PER EXISTING FIELD CONDITIONS.
 4. PROVIDE PULL BOXES AND JUNCTION BOXES WHERE SHOWN OR REQUIRED BY NEC.
 5. ALL CONDUITS SHALL BE MET WITH BENDS MADE IN ACCORDANCE WITH NEC TABLE 346-10. NO RIGHT ANGLE DEVICE OTHER THAN STANDARD CONDUIT ELBOWS WITH 12" MINIMUM INSIDE SWEEPS FOR ALL CONDUITS 2" OR LARGER.

- 6. ALL CONDUIT TERMINATION'S SHALL BE PROVIDED WITH PLASTIC THROAT INSULATING GROUNDING

- BUSHINGS.

 7. ALL WIRE SHALL BE TYPE THHN/THWN, SOLID ANNEALED COPPER UP TO SIZE #10 (#8 AND LARGER SHALL BE CONCENTRIC STRANDED) 75 DEGREE C (164 DEGREES F), 98% CONDUCTIVITY, MINUMUM #12.

 8. ALL WIRES SHALL BE TAGGED AT ALL PULL BOXES, J—BOXES, EQUIPMENT BOXES AND CABINETS WITH APPROVED PLASTIC TAGS, ACTION CRAFT, BRADY, OR APPROVED EQUAL.

 9. ALL NEW MATERIAL SHALL HAVE A U.L. LABEL.

 10. CONDUIT ROUGH—IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION TO CONFLICTS. VERIFY WITH MECHANICAL CONTRACTOR AND COMPLY AS REQUIRED.

 11. ALL PANEL DIRECTORIES SHALL BE TYPEWRITTEN NOT HAND WRITTEN.

 12. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS PER THE SPECIFICATIONS AND NEC. THE EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS PER THE SPECIFICATIONS AND NEC. AND ALL DISCONNECT SWITCHES, STARTERS, AND EQUIPMENT CABINETS.

 13. THE CONTRACTOR SHALL PEPARE AS—BUILT DRAWINGS, DOCUMENT ANY AND ALL WIRING AND EQUIPMENT CONDITIONS AND CHANGES WHILE COMPLETING THIS CONTRACT. SUBMIT AT SUBSTANTAL COMPLETION.

 14. ALL DISCONNECT SWITCHES AND OTHER CONTROLLING, DEVICES SHALL BE PROVIDED WITH ENGRAVED LAMICOID NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS INSTALLED ON, AND PANEL FIELD LOCATIONS FED FROM (NO EXCEPTIONS).

 15. ALL ELECTRICAL DEVICES AND INSTALLATIONS OF THE DEVICES SHALL COMPLY WITH (ADA) AMERICANS
- FIELD LOCATIONS FED FROM (NO EXCEPTIONS).

 15. ALL ELECTRICAL DEVICES AND INSTALLATIONS OF THE DEVICES SHALL COMPLY WITH (ADA) AMERICANS WITH DISABILITIES ACT AS ADOPTED BY THE APPLICABLE STATE.

 16. PROVIDE CORE DRILLING AS NECESSARY FOR PENETRATIONS OR RISERS THROUGH BUILDING. DO NOT PENETRATE STRUCTURAL MEMBERS WITHOUT CONSTRUCTIONS MANAGERS APPROVAL. SLEEVES AND/OR PENETRATIONS IN FIRE RATED CONSTRUCTION SHALL BE PACKED WITH FIRE RATED MATERIAL WHICH SHALL MAINTAIN THE FIRE RATING OF THE WALL OR STRUCTURE. FILL FOR FLOOR PENETRATIONS SHALL PREVENT PASSAGE OF WATER, SMOKE, FIRE AND FUMES. ALL MATERIAL SHALL BE UL APPROVED FOR THIS PURPOSE. THIS PURPOSE.

 17. ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT (NEW AND EXISTING) SHALL BE FIELD VERIFIED WITH
- THE OWNER'S REPRESENTATIVE AND EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN OF CONDUIT AND WIRE. ALL EQUIPMENT SHALL BE PROPERLY CNNECTED ACCORDING TO THE NAMEPLATE DATA FURNISHED ON THE EQUIPMENT (THE DESIGN OF THESE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AT THE TIME OF DESIGN AND SOME EQUIPMENT CHARACTERISTICS MAY VARY FROM DESIGN AS SHOWN ON THESE

- TIME OF DESIGN AND SOME EQUIPMENT CHARACTERISTICS MAY VARY FROM DESIGN AS SHOWN ON THESE DRAWINGS. LOCATION OF ALL OUTLET, BOXES, ETC., AND THE TYPE OF CONNECTION (PLUG OR DIRECT) SHALL BE CONFIRMED WITH THE OWNER'S REPRESENTATIVE PRIOR TO ROUGH—IN.

 18. FOR FLEXIBLE LIQUID TIGHT CONDUIT PROVIDE GLAND TYPE COMPRESSION FITTINGS. SET SCREW OR QUICK—CONNECT FITTINGS SHALL NOT BE ACCEPTABLE.

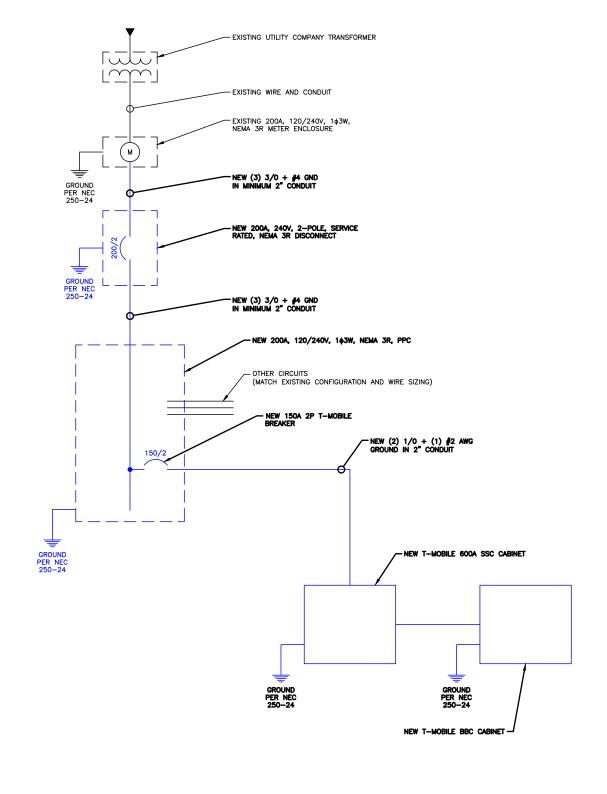
 19. FLEXIBLE CONDUITS SHALL BE USED FOR CONNECTION OF EQUIPMENT SUBJECT TO VIBRATION, NOISE TRANSMISSION OR MOVEMENT AND ALL MOTORS, RECESSED AND SEMI—RECESSED LIGHT FIXTURES. MAXIMUM LENGTH OF FLEXIBLE CONDUIT SHALL NOT EXCEED 6—FEET, SUBJECT TO NEC LIMITATIONS. FLEXIBLE CONDUITS SHALL NOT BE USED WHERE SUBJECT TO MECHANICAL DAMAGE.

 20. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.

 21. RIGID GALVANIZED STEEL (RGS) CONDUIT SHALL BE USED FOR EXTERIOR LOCATIONS ABOVE GROUND AND IN UNFINISHED INTERIOR LOCATIONS. RIGID CONDUIT SHALL BE STEEL, COATED WITH ZINC EXTERIOR AND INSIDE OF COATED WITH LOT DEPORT OF COATIONS. RIGID CONDUIT SHALL BE LISTED WITH THE UNDERWRITERS' LABORATORIES. EXTERIOR UNDERGROUND CONDUIT AND CONDUIT IN CONCRETE SHALL BE POLYVINYL CHLORIDE (PVC) SCHEDULE 40. JOINTS SHALL BE BELLED, AND FLUSH SOLVENT WELDED IN POLYVINYL CHLORIDE (PVC) SCHEDULE 40. JOINTS SHALL BE BELLED, AND FLUSH SOLVENT WELDED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. UNDERGROUND ELBOW SWEEPS, AND TRANSITIONS TO ABOVE GROUND SHALL BE SCHEDULE 80 PVC OR SCHEDULE 40 GALVANIZED.



- ALL NEW CONDUCTORS TO BE INSTALLED SHALL BE COPPER. ALL CONDUCTORS SHALL BE THHW, THWN, THWN-2, XHHW, OR XHHW-2 UNLESS NOTED OTHERWISE.
- 2. CONTRACTOR IS TO FIELD VERIFY ALL EXISTING ITEMS SHOWN ON THE ELECTRICAL ONE-LINE DIAGRAM AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- 3. ALL GROUNDING AND BONDING PER THE NEC.



ONE-LINE DIAGRAM SCALE: NOT TO SCALE





TEL: (740) 260-9710

PLANS PREPARED BY:



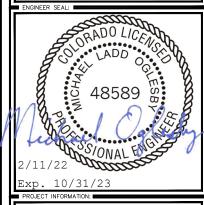
421 FAYETTEVILLE ST, SUITE 600 RALEIGH, NC 27601

L	RE	V: ■ DATE:	DESCRIPTION:	■ BY:
	3	02/11/22	REVISED PER CLIENT	WRS
	2	01/18/22	REVISED PER CLIENT	DPL
ı	1	08/26/21	REVISED PER CLIENT	DPL
ı	0	05/12/21	ISSUED FOR CONSTRUCTION	DLF
ı	Α	05/07/21	ISSUED FOR REVIEW	АМС
ı	D	RAWN BY:	CHECKED BY:	

KHCLE- 11797

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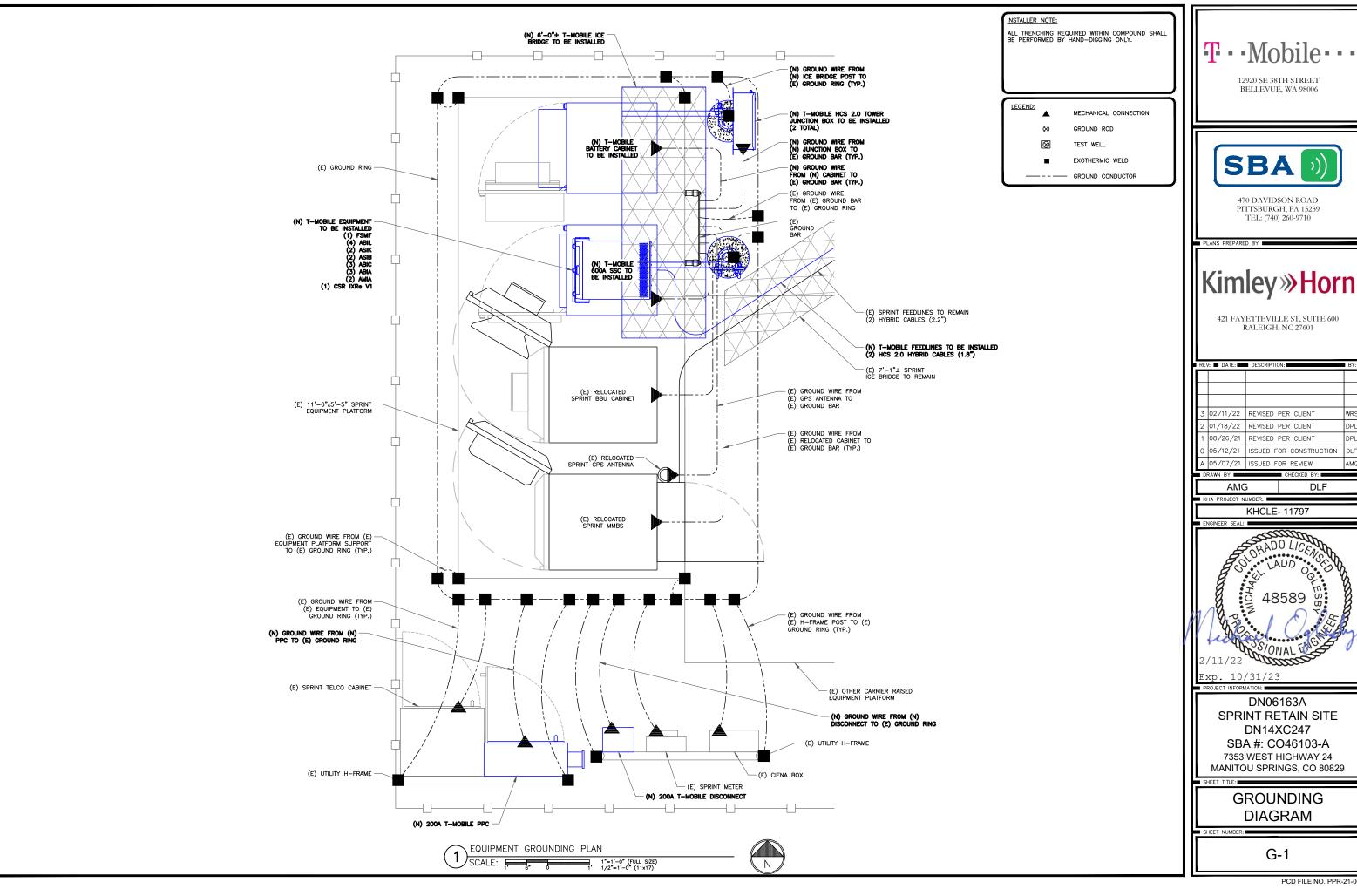
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DN06163A SPRINT RETAIN SITE DN14XC247 SBA #: CO46103-A 7353 WEST HIGHWAY 24 MANITOU SPRINGS, CO 80829

PANEL SCHEDULE & ONE-LINE DIAGRAM

E-2

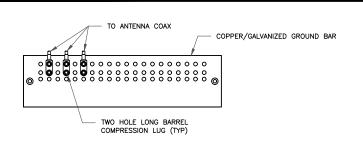


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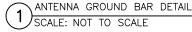
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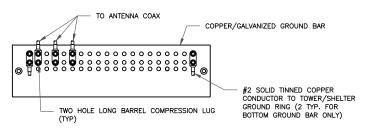
MANITOU SPRINGS, CO 80829

GROUNDING DIAGRAM



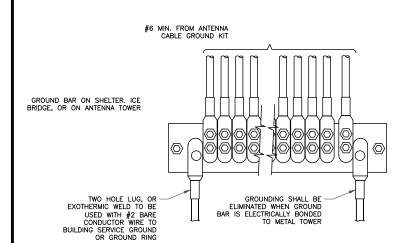
- DOUBLING UP "OR STACKING" OF CONNECTIONS IS NOT PERMITTED.
 EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
 GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL.



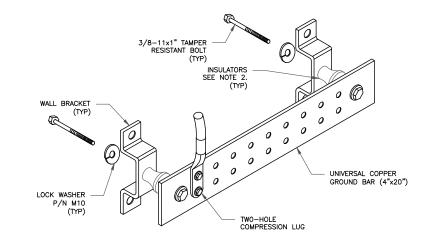


- EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
 GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL (TOWER ONLY).
 GROUND BAR SHALL BE ISOLATED FROM BUILDING OR SHELTER.

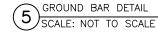
TOWER/SHELTER GROUND BAR DETAIL TOWER/SHELTER GROUS SCALE: NOT TO SCALE

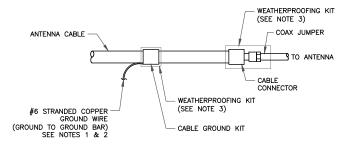


GROUNDWIRE INSTALLATION (4) SCALE: NOT TO SCALE

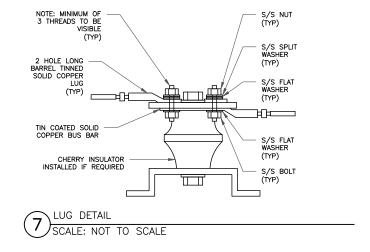


- 1. DOWN LEAD (HOME RUN) CONDUCTORS ARE <u>NOT</u> TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.
- 2. OMIT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

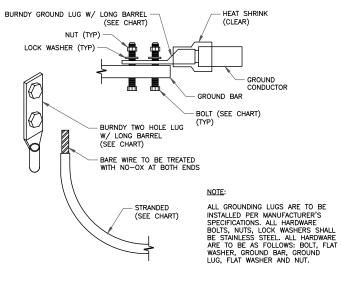


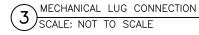


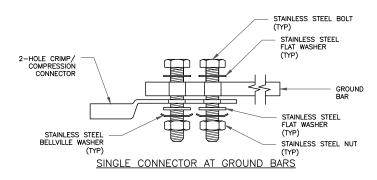
- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
 GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
 WEATHER PROOFING SHALL BE TWO—PART TAPE KIT, COLD SHRINK SHALL NOT BE
- CABLE GROUND KIT CONNECTION (6) SCALE: NOT TO SCALE

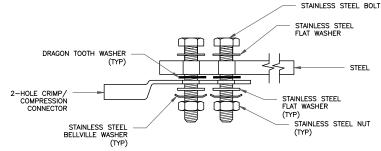




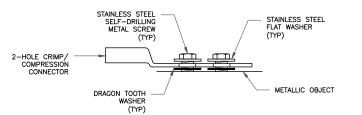








SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

HARDWARE DETAIL FOR EXTERIOR CONNECTIONS 8 SCALE: NOT TO SCALE





PLANS PREPARED BY:



421 FAYETTEVILLE ST, SUITE 600 RALEIGH, NC 27601

RF'	V· ■ DATE·	DESCRIPTION:	■ BY:
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3	02/11/22	REVISED PER CLIENT	WR:
2	01/18/22	REVISED PER CLIENT	DPI
1	08/26/21	REVISED PER CLIENT	DPI
0	05/12/21	ISSUED FOR CONSTRUCTION	DLF
Α	05/07/21	ISSUED FOR REVIEW	АМ

DLF **AMG**

KHCLE- 11797 ORADO LICEN ONAL FINE Exp. 10/31/23

> DN06163A **SPRINT RETAIN SITE** DN14XC247 SBA #: CO46103-A 7353 WEST HIGHWAY 24

MANITOU SPRINGS, CO 80829

GROUNDING DETAILS

G-2