---Mobile---

T-MOBILE SITE NUMBER: DN06268A T-MOBILE SITE NAME: CO46078-A

T-MOBILE PROJECT: **SPRINT RETAIN**

SBA SITE ID: SITE ADDRESS: JURISDICTION: CO46078-A 18620 OIL WELL ROAD RAMAH, CO 80832

EL PASO COUNTY

SITE INFORMATION

SBA SITE NAME SIMLA

SITE ADDRESS 18620 OIL WELL ROAD RAMAH, CO 80832

EL PASO COUNTY: AREA OF CONSTRUCTION: EXISTING 39.107014° N LATITUDE: LONGITUDE 104.108347° W LAT/LONG TYPE: NAD83

JURISDICTION: EL PASO COUNTY

OCCUPANCY CLASSIFICATION: U TYPE OF CONSTRUCTION:

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

TOWER OWNER: SBA COMMUNICATIONS 470 DAVIDSON ROAD

PITTSBURGH, PA 15239

CARRIER/APPLICANT:

12920 SE 38TH STREET

Please include the following information:

- Property tax schedule number
- Legal description
- -Lot size
- Lot area coverage calculation
- -Current zoning of the property

PROJECT TEAM

A&E FIRM:

KIMLEY-HORN & ASSOCIATES, INC. 3875 EMBASSY PKWY, SUITE 280

AKRON, OH 44333

 $\overset{\cdot}{\text{KEVIN.CLEMENTS@KIMLEY-HORN.COM}}$

470 DAVIDSON ROAD SBA CONTACT: PITTSBURGH, PA 15239

> WILL SPICE - PROJECT MANAGER WSPICE@SBASITÉ.COM





AREA MAP

| | DRAWING INDEX |
|--------|-----------------------------------|
| 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 |
| E-1 | ELECTRICAL ROUTING |
| E-2 | PANEL SCHEDULE & ONE-LINE DIAGRAM |
| G-1 | GROUNDING DIAGRAM |
| G-2 | GROUNDING DETAILS |
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GROUND SCOPE OF WORK

NO SCALE

- REMOVE ALL EXISTING SPRINT CABINETS
- INSTALL NEW DELTA 600A ELITE POWER RACK INSTALL NEW 19" EQUIPMENT RACK
- INSTALL (1) FSMF
- INSTALL (1) ASIK
- INSTALL (1) ASIB INSTALL (3) ABIA
- INSTALL (1) ABIL
- INSTALL (1) CSR IXRe V2
- INSTALL (2) JUNCTION BOXES

TOWER SCOPE OF WORK

- REMOVE (6) ANTENNAS
- REMOVE (9) RRHS
- REMOVE (3) POWER JUNCTION CYLINDERS
- REMOVE (3) OPTICAL JUNCTION CYLINDERS
- INSTALL NEW HEAVY COLLAR MOUNT ASSEMBLY INSTALL NEW SUPPORT RAIL PIPE KIT INSTALL (6) ANTENNAS
- INSTALL (6) RRHS
- INSTALL (2) HYBRID CABLES
- INSTALL (2) BREAKOUT PENDANTS

APPLICABLE CODES/REFERENCE DOCS

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:

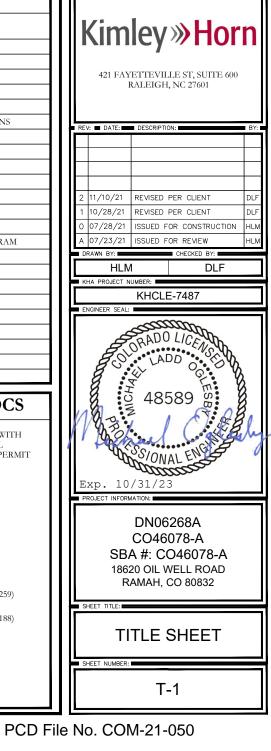
BUILDING 2017 PPRBC (2015 IMC)

MECHANICAL ELECTRICAL 2014 NEC

RFDS REVISION: 1 DATED: 03/11/2021

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

REFERENCE DOCUMENTS: STRUCTURAL ANALYSIS: TOWER ENGINEERING SOLUTIONS (PROJECT #: 110259) DATED: 06/30/2021 MOUNT ANALYSIS: TOWER ENGINEERING SOLUTIONS (PROJECT #: 109188) DATED: 06/07/2021



SBA

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

GENERAL NOTES:

- OWNER FURNISHED MATERIALS, T-MOBILE "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL:
- 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
- GENERATORS & LIQUID PROPANE TANK
- . ANTENNA STANDARD BRACKETS, FRAMES, AND PIPES FOR MOUNTING

SHELTER (GROUND BUILD/CO-LOCATE ONLY)

- ANTENNAS (INSTALLED BY OTHERS)
- I. TRANSMISSION LINE
- J. TRANSMISSION LINE JUMPERS
- K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
- L. TRANSMISSION LINE GROUND KITS
- I. IRANSMISSION LIF
 M. HANGERS
- N. HOISTING GRIPSO. 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 FOLLIMENT AFTER PICKING JULY
- 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.
- 7. 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 T-MORILE'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 BOT BE PERFORMED ONLY IN THE PRESENCE OF THE ENGINEER. 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, ALKALI, 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 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.
- 3. ANY FIELD CHANGES OR SUBSTITUTIONS SHALL HAVE PRIOR APPROVAL FROM THE ENGINEER AND T-MORILE 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 PEOLIESTED.
- B. WELDING ELECTRODES FOR MANUAL SHIELDED METAL ARC WELDING SHALL
 CONFORM TO ASTM A-233, E70 SERIES. BARE 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.

DIVISION 13 - SPECIAL CONSTRUCTION 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

V: DATE: DESCRIPTION:

2 11/10/21 REVISED PER CLIENT DLI
1 10/28/21 REVISED PER CLIENT DLI
0 07/28/21 ISSUED FOR CONSTRUCTION HLI
A 07/23/21 ISSUED FOR REVIEW HLI
DRAWN BY:

HLM DEPONICT NUMBER:

ENGINEER SEAL:

ORADO LICENCE

ADD

OF

48589

KHCLE-7487

Exp. 10/31/23

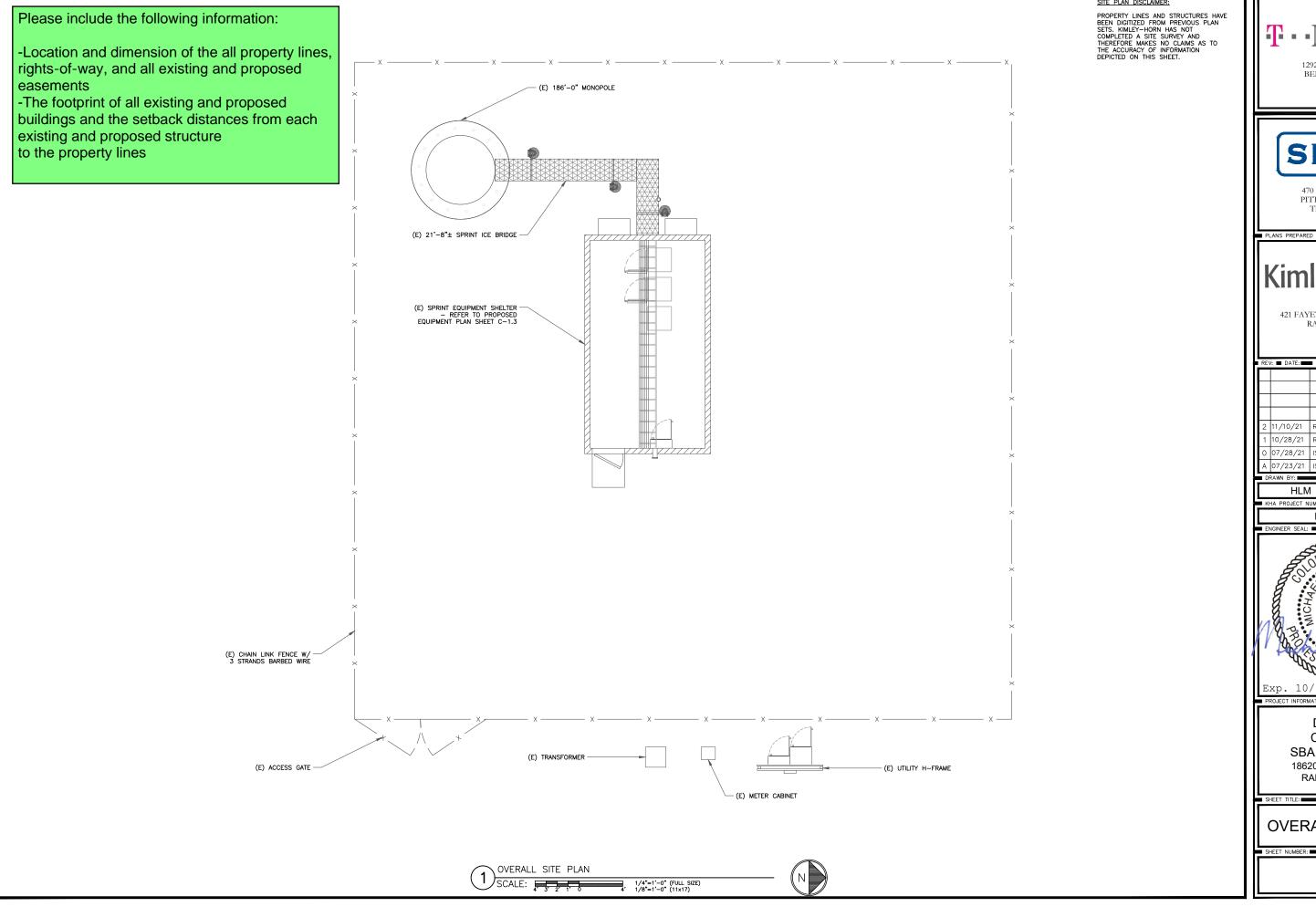
DN06268A CO46078-A SBA #: CO46078-A 18620 OIL WELL ROAD RAMAH, CO 80832

SHEET TITLE:

GENERAL NOTES

HEET NUMBER:

T-2



SITE PLAN DISCLAIMER:



12920 SE 38TH STREET BELLEVUE, WA 98006



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



421 FAYETTEVILLE ST, SUITE 600 RALEIGH, NC 27601

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| ı | 2 | 11/10/21 | REVISED PER CLIENT | DLF |
| ı | 1 | 10/28/21 | REVISED PER CLIENT | DLF |
| ı | 0 | 07/28/21 | ISSUED FOR CONSTRUCTION | HLM |
| ı | Α | 07/23/21 | ISSUED FOR REVIEW | HLM |

DLF HLM

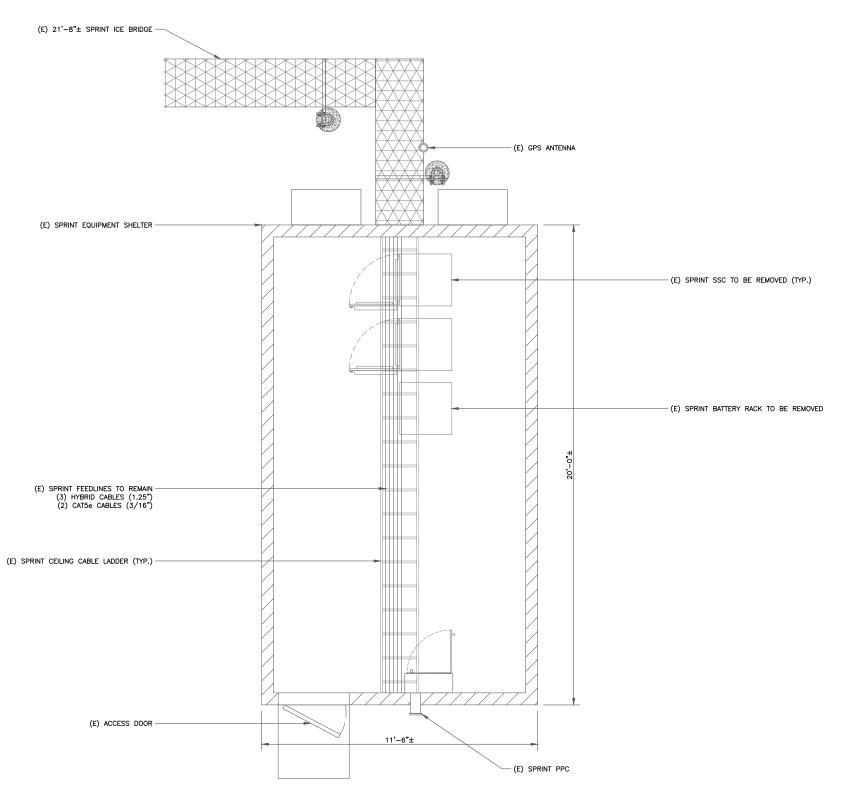
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Exp. 10/31/23

DN06268A CO46078-A SBA #: CO46078-A 18620 OIL WELL ROAD RAMAH, CO 80832

OVERALL SITE PLAN

C-1.1



INSTALLER NOTE:

- 1. AMIAS ARE TO BE INSTALLED INTERNALLY IN THE 600A SSC CABINET. IF NO 600A SSC CABINET IS ON SITE, AMIAS ARE TO BE SUBSTITUTED WITH AMOBS. CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING APPROPRIATE LOCATION WITHIN T—MOBILE LEASE AREA FOR AMOB MOUNTING AND PROVIDE TO CONSTRUCTION MANAGER. AMOB LOCATIONS MUST BE APPROVED BY CONSTRUCTION MANAGER PRIOR TO INSTALLATION.
- ALL IN SHELTER EQUIPMENT LOCATIONS WERE ASSUMED. IN THE EVENT OF FIT/SPACING ISSUES CONTRACTOR SHALL CONTACT OWNER AND ENGINEER.



12920 SE 38TH STREET BELLEVUE, WA 98006



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

PLANS PREPARED BY:



421 FAYETTEVILLE ST, SUITE 600 RALEIGH, NC 27601

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ENGINEER SEAL:

ORADO LICENS

ADD

OSCIONAL ENGINEER

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Exp. 10/31/23

DN06268A CO46078-A SBA #: CO46078-A

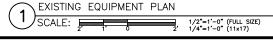
18620 OIL WELL ROAD RAMAH, CO 80832

SHEET TITLE

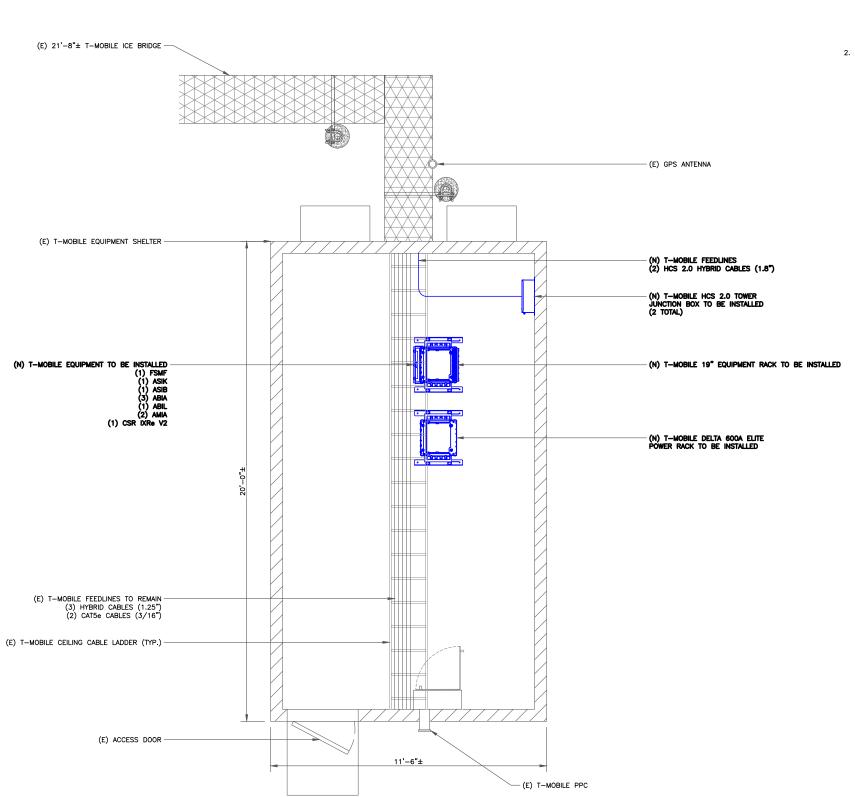
EXISTING EQUIPMENT PLAN

SHEET NUMBER:

C-1.2







INSTALLER NOTE:

- 1. AMIAS ARE TO BE INSTALLED INTERNALLY IN THE 600A SSC CABINET. IF NO 600A SSC CABINET IS ON SITE, AMIAS ARE TO BE SUBSTITUTED WITH AMOBS. CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING APPROPRIATE LOCATION WITHIN T—MOBILE LEASE AREA FOR AMOB MOUNTING AND PROVIDE TO CONSTRUCTION MANAGER. AMOB LOCATIONS MUST BE APPROVED BY CONSTRUCTION MANAGER PRIOR TO INSTALLATION.
- 2. ALL IN SHELTER EQUIPMENT LOCATIONS WERE ASSUMED. IN THE EVENT OF FIT/SPACING ISSUES CONTRACTOR SHALL CONTACT OWNER AND ENGINEER.



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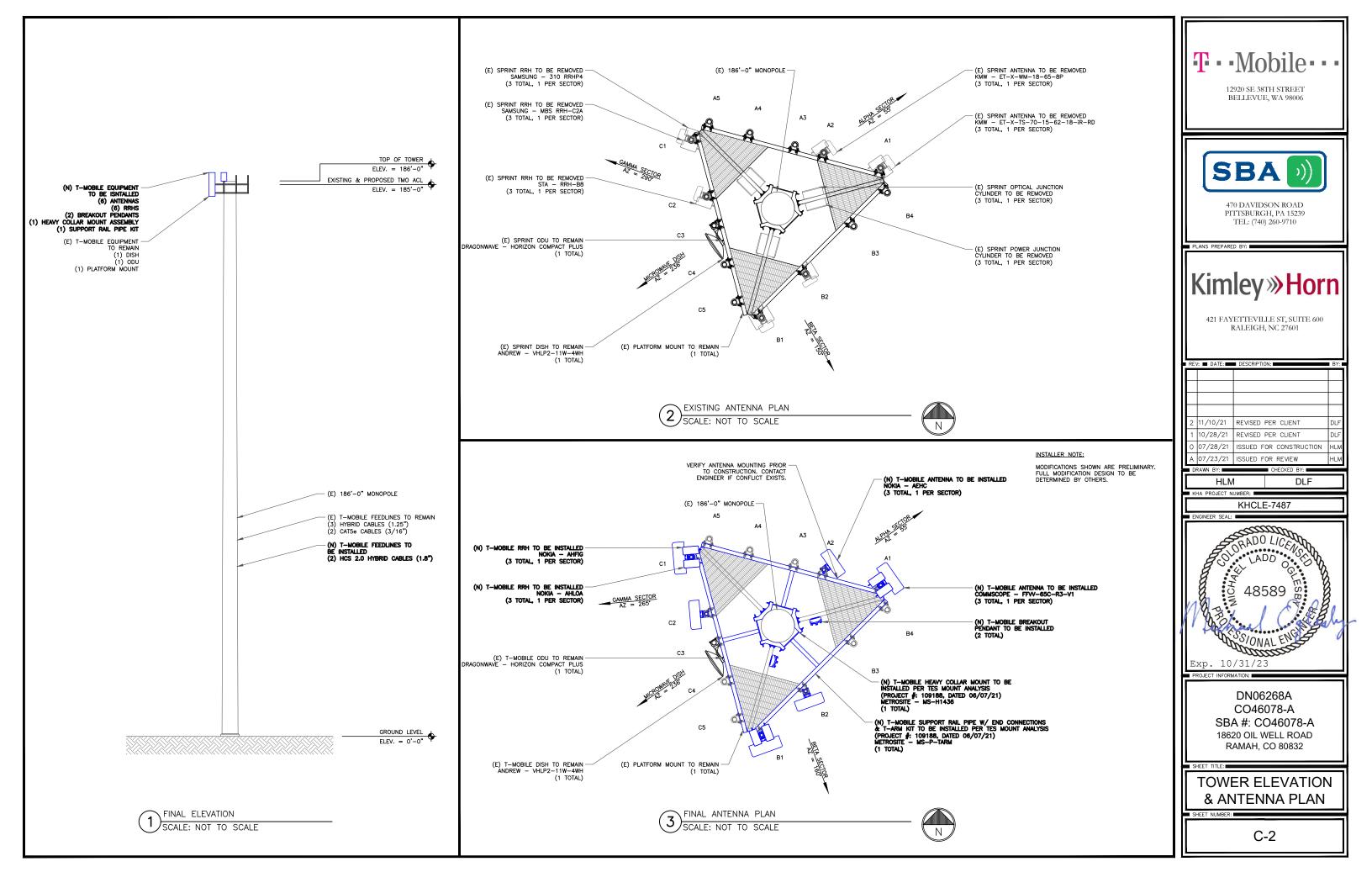
18620 OIL WELL ROAD RAMAH, CO 80832

FINAL EQUIPMENT PLAN

C-1.3

FINAL EQUIPMENT PLAN 1/2"=1'-0" (FULL SIZE) 2' 1/4"=1'-0" (11x17)

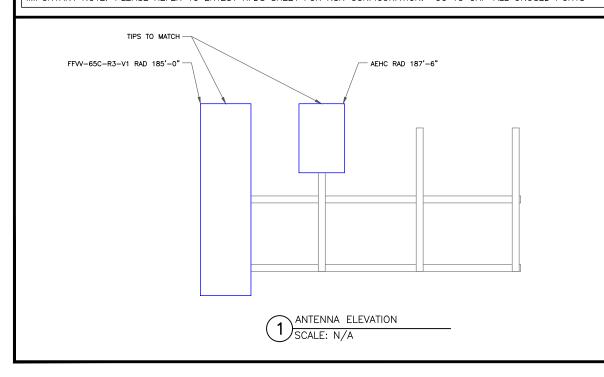




| | | | | | NEV | V AND EXISTING ANTENNA | AND C | ABLE SCH | HEDULE | | | | | |
|--------|------|---------|---------------|---------|--|-------------------------------|--------|--------------------------------------|------------------|----------------------|-----------------------------|-------------------------|--------------------------|------------------|
| SECTOR | POS. | AZIMUTH | RAD CENTER | M. TILT | TECHNOLOGY | ANTENNA | STATUS | RRU TYPE | DIPLEXER/ TMA | COVP | CABLE STATUS | COAX CABLE LENGTH | HCS FACTORY LENGTH | JUMPER LENGTH |
| | A5 | _ | _ | _ | _ | _ | _ | _ | _ | | | | | _ |
| | A4 | _ | _ | _ | _ | _ | _ | _ | _ | | | | | _ |
| | А3 | _ | _ | _ | _ | _ | _ | _ | _ | | | | | _ |
| ALPHA | A2 | 55° | 187'-6" | 0° | L2500 N2500 | NOKIA — AEHC | NEW | _ | _ | | | | | <15'-0" |
| | A1 | 55° | 185'-0" | 0° | L700 L600 N600 L2100 G1900 L1900 | COMMSCOPE — FFVV—65C—R3—V1 | NEW | (1) NEW AHLOA (1) NEW AHFIG | _ | | (3) EXISTING | | | <15'-0" |
| | B4 | _ | _ | _ | _ | _ | _ | _ | _ | | 1.25" HYBRID | | | _ |
| | В3 | _ | _ | _ | _ | _ | _ | _ | _ | | CABLES, | | | _ |
| BETA | B2 | 160° | 187'-6" | 0° | L2500 N2500 | NOKIA – AEHC | NEW | _ | _ | (2) NEW | (2) EXISTING | | | <15'-0" |
| DETA | В1 | 160° | 185'-0" | O° | L700 L600 N600 L2100 G1900 L1900 | COMMSCOPE — FFVV—65C—R3—V1 | NEW | (1) NEW AHLOA (1) NEW AHFIG | _ | BREAKOUT PENDANTS | 3/16" CAT5e CABLES, (2) NEW | EXISTING | EXISTING | <15'-0" |
| | C5 | _ | _ | _ | _ | - | _ | _ | _ | | 1.8" | | | _ |
| | C4 | _ | _ | _ | _ | - | _ | _ | _ | | HYBRID CABLES | | | _ |
| | С3 | 236° | 185'-0" | _ | _ | ANDREW - VHLP2-11W-4WH | EXIST | (1) EXIST ODU | _ | | 0,1222 | | | <15'-0" |
| GAMMA | C2 | 265° | 187'-6" | 0° | L2500 N2500 | NOKIA – AEHC | NEW | _ | _ | | | | | <15'-0" |
| | C1 | 265° | 185'-0" | O° | L700 L600 N600 L2100 G1900 L1900 | COMMSCOPE — FFVV—65C—R3—V1 | NEW | (1) NEW AHLOA (1) NEW AHFIG | _ | | | | | <15'-0" |

(*) SHARED WITH ALL SECTORS

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



NOT USED
SCALE: N/A





PLANS PREPARED BY:



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DLF HLM KHCLE-7487

Exp. 10/31/23

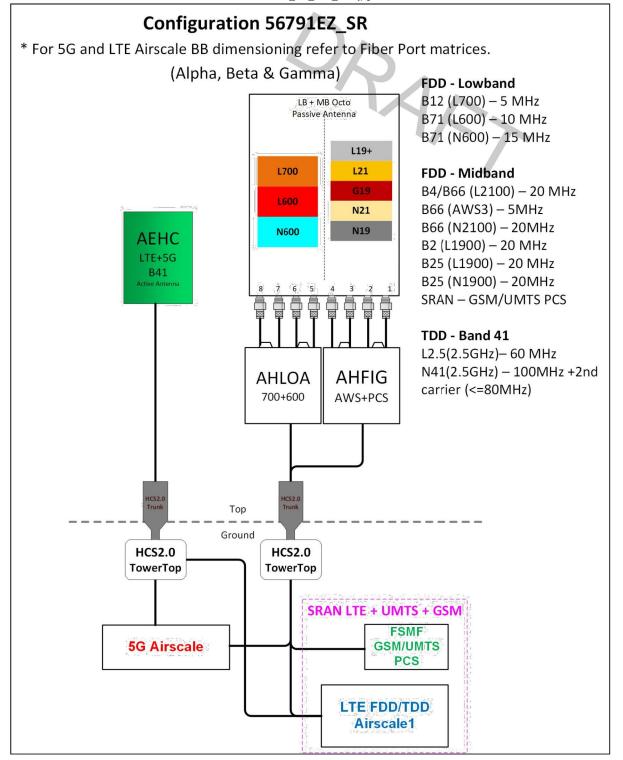
DN06268A CO46078-A

SBA #: CO46078-A 18620 OIL WELL ROAD RAMAH, CO 80832

ANTENNA **SCHEDULE**

Section 3 - Proposed Template Images

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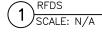
PROJECT INFORMATIO

DN06268A CO46078-A SBA #: CO46078-A 18620 OIL WELL ROAD RAMAH, CO 80832

SHEET TITLE:

PLUMBING DIAGRAM

SHEET NUMBE



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



General Specifications

Antenna Type Sector
Band Multiband

Grounding Type RF connector inner conductor and body grounded to reflector and mounting bracket.

 Performance Note
 Outdoor usage

 Radome Material
 Fibergias st, UV resistant.

 Rediator Material
 Low loss circutoser

 Reflector Material
 Aluminum

 RF Connector Interface
 4.3-10 Female

 RF Connector Quantity, high band
 4

 RF Connector Quantity, low band
 4

 RF Connector Quantity, low band
 4

 RF Connector Quantity, total
 8

Remote Electrical Tilt (RET) Information

 RET Interface
 Spin DIN Female | Spin DIN Male

 RET Interface, quantity
 1 female | 1 male

 Input Voltage
 10-30 Vdc

 Internal RET
 High band (2) | Low band (1)

 Power Consumption, idle state, maximum
 1 W

er Consumption, normal conditions, maximum 10 W

ol 3GPP/A/SG 2.0 (Single RET)

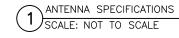
Dimension

 Width
 640 mm | 25 197 in

 Depth
 225 mm | 9.5.92 in

 Length
 2437 mm | 9.5.945 in

 Net Weight, without mounting kit
 55.5 kg | 124.561 lb



AEHC AirScale MAA 64T64R 192AE n41 240W

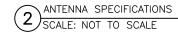
Preliminary Technical datasheet

| 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 |
| perational temperature range | -40 °C +55 °C |
| Cooling | Natural convection cooling |
| ngress protection class | IP65 |
| nstallation options | Pole / Wall, ± 5* vertical adjustment |
| Surge protection | Class II 20 kA |

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PLANS PREPARED BY:



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HLM DLF
PROJECT NUMBER:

KHCLE-7487

FOR REFERENCE PURPOSES ONLY

PROJECT INFORMATION

DN06268A CO46078-A SBA #: CO46078-A 18620 OIL WELL ROAD RAMAH, CO 80832

SHEET TITLE:

EQUIPMENT SPECIFICATIONS

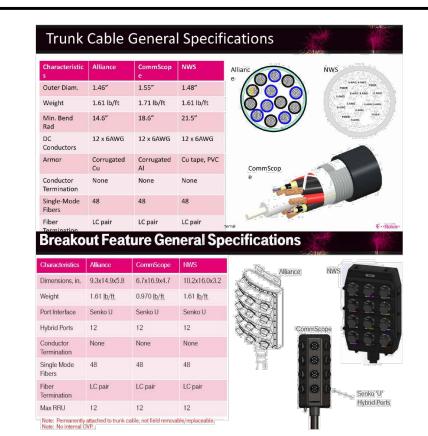
SHEET NUMBER:

AirScale Dual RRH 4T4R B12/71 240W AHLOA



| Product Code: 474331A | |
|-----------------------------|---|
| Supported Frequency bands | 3GPP Band 12/71 |
| Frequencies | Band 12 adjusted: UL 698 - 716 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, 871 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 ports, 4.3-10+ |
| Optical Ports | 2 x CPRI 9.8 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 | -AQ*C to 55*C (with no solar load) |
| Surge Protection | Class II 5A |
| Installation Options | Pole, Wall, Book Mount |
| | |

NOKIA – AHLOA (1) 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

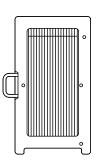
- For a 19" rack installation 3U of space is needed (adapters/support required for 23" rack)
- For Medium/Large HP/ Large Delta SSC Fan/filter kit required (SKU# 32168) to support
- For Medium Purcell SSC Nothing required to support minimal config (single LTE layer)
- For Medium Purcell SSC Door upgrade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

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



*Bottom support is available

AMIA SPECIFICATIONS
SCALE: NOT TO SCALE





NOKIA – AHFIG WEIGHT (FULLY EQUIPPED): 79.4 LBS

NOKIA - AHFIG SCALE: NOT TO SCALE





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DN06268A CO46078-A SBA #: CO46078-A 18620 OIL WELL ROAD RAMAH, CO 80832

EQUIPMENT SPECIFICATIONS



Elite Power -48V 600A

Indoor Rack Mounted Power system

Product Features

- 48V/600A Rack (23") Mounted Power System
- Slimline High Power / Efficiency DPR2900 Rectifiers (2900W / up to 96.3%), 12x max
- 7' High 2-post relay rack zone 2 rated, zone 4 rated with top bracing
- 4 battery (190Ahr) trays
- Prewired battery cabling with 200A battery circuit breaker for each tray
- Battery Landings
 - o $6 \times \frac{1}{4}$ " holes $-\frac{5}{8}$ " center to center
 - \circ 6 x $\frac{3}{8}$ " holes 1" center to center
- Front Access Load Distribution
 - o (26) Load Breaker Positions (Bullet) / Up to 100A per position
 - o GMT Fuse Adapter block (10-position) optional
- Battery LVD included

www.deltaww.com





Specifications

| 1. Input | | |
|----------------------------------|------------------------------|--|
| AC Voltage | Single phase; 2W+PI | E (L1, L2/N, FG) 110 - 240VAC |
| AC Current | Single phase, 32A ea | ach (6x) / 190A total (max) |
| AC frequency | 50 - 60HZ | |
| 2. Output | | |
| Output Voltage | 42 - 58VDC; 54VDC | (default) |
| Output Current | 600A @ -54V | |
| Power Limitation | 32.4kW @ -54V | |
| Voltage Regulation | ±1% over line, load, a | and temperature |
| Current Sharing | ±5% of the full capac | ity of the rectifier |
| 3. General | | |
| Rectifier | DPR 2900C-48, up to | 96.3% efficiency, 12x |
| Controller | Orion Touch | |
| Battery | 4 Trays, 190AHr | |
| Dimensions (W x H x D) | 24.7" x 84" x 22.6" | |
| Weight | 250 Lbs | |
| 4. Standards | | |
| Safety | IEC / EN 60950, UL1 | 801, UL1950 |
| EMC | NEBS (GR-1089) | |
| Operating Temperature | -40°C to +75 °C (-40° | °F to +167 °F) |
| Humidity (relative) | 95%, non-condensing | g (Max.) |
| Environment | NEBS Level 3 (earth | quake zone 4) |
| 5. Equipment | | |
| Load Cable Entry | Front access | |
| Circuit Breakers and Landings | 26x -48V, 100A max. | per position, 1/4"-20, 5%" center to center |
| Fuse Module (optional) | 10 position GMT 15A | max/position 110A max. total |
| Battery landings | (6) 1/4" holes - 5/6" cen | ter to center, (4) % " holes - 1" center to center |
| Low Voltage Disconnect | Battery LVD included | |
| 6. Ordering information | | |
| System | ESAA600AHCU03 | Elite Power Rack, 7', -48V 600A, (4) Battery Trays including (10) Rectifiers |
| Rectifier | ESR-48/56C F-A | 48V / 56A 2900W, 96.4%, CAN communication |
| GMT Module (optional) | 3799260600-S | 10 pos. plug-in module (takes 2 positions) |
| Load Breaker | 0830xxxxxxx | Breaker, Bullet, Mid-Trip, 5A - 250A |
| Load Breaker Adapter | 3799235700-S 3799236400-S | 2 Pole Lug Adapter Kit (125A -200A) 3 Pole Lug Adapter Kit (250A) |

Delta Group Website:

Delta Electronics (USA) Inc. 2925 E. Plano Parkway

DEUSTPS.Sales@deltaww.com

DEUSTPS.Orders@deltaww.com

DEUSTPS.Support@deltaww.com

Installation Services:

DEUSTPS.Services@deltaww.com

RMA.US@deltaww.com

*All specifications are subject to change without prior notice.

www.deltaww.com

Product Website:

United States of America & Canada:

Plano, TX (Texas) 75074

Sales and Orders:

Field Support:

1-877-DELTA-08 option 3 (877-335-8208 option 3)

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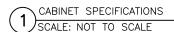
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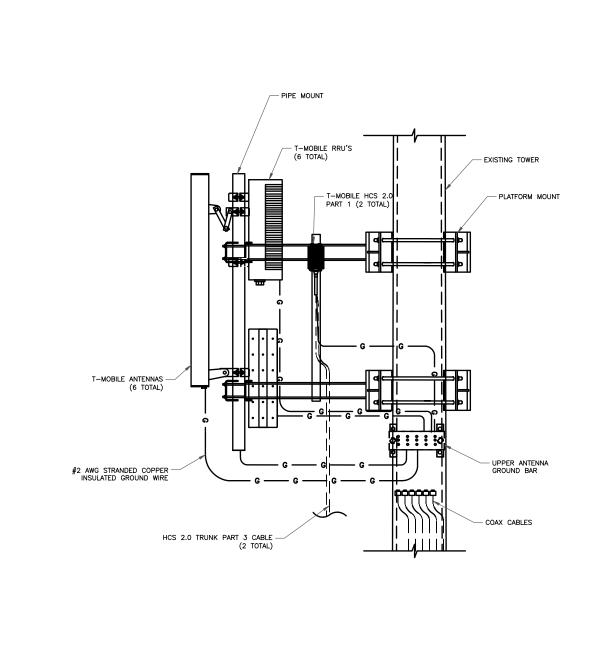
KHCLE-7487

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DN06268A CO46078-A SBA #: CO46078-A 18620 OIL WELL ROAD RAMAH, CO 80832

EQUIPMENT SPECIFICATIONS









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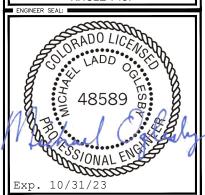


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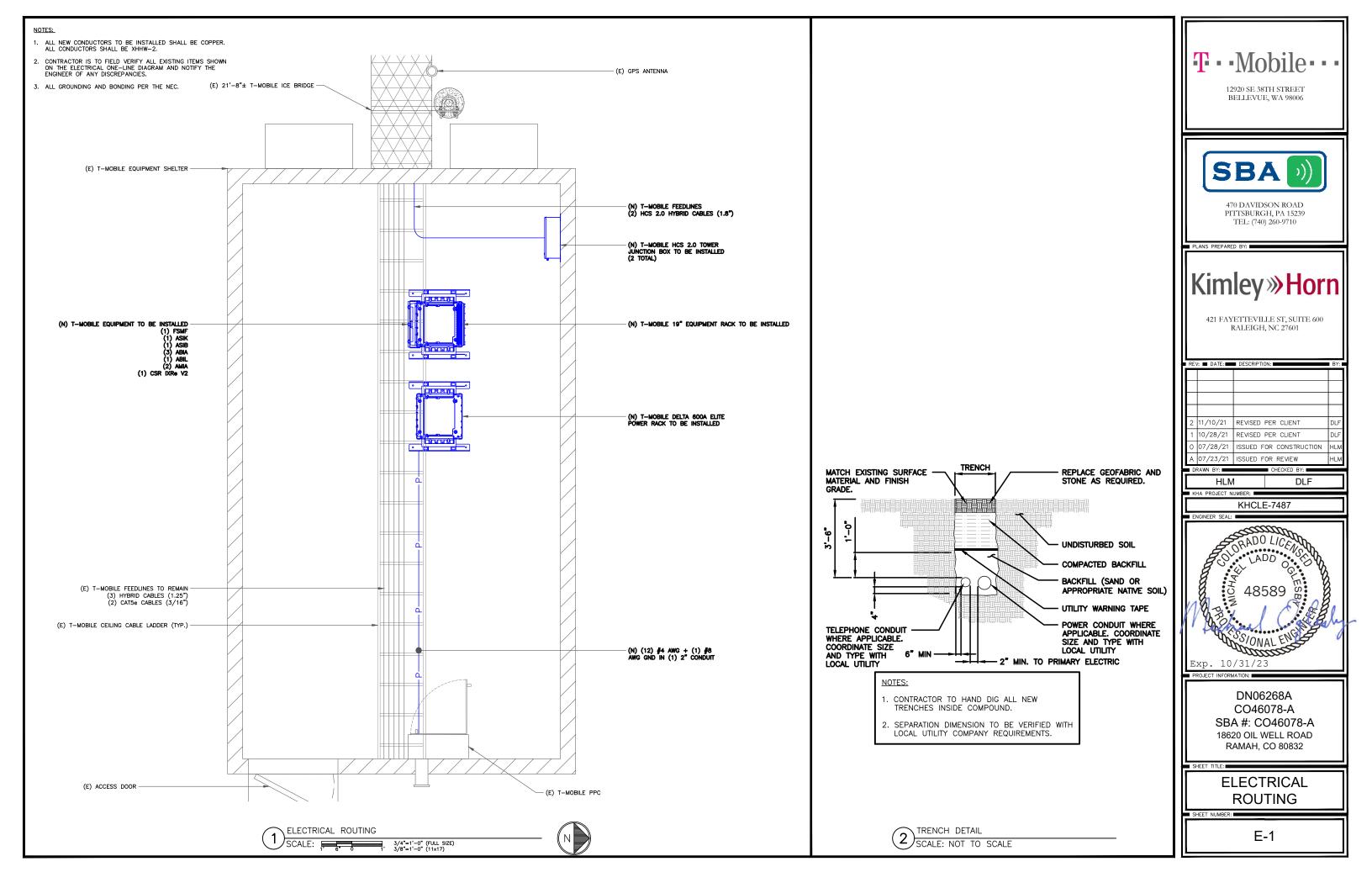
MOUNTING DETAIL

SHEET NUMB

C-8

NOT USED
SCALE: NOT TO SCALE

ANTENNA/RRU MOUNT DIAGRAM SCALE: NOT TO SCALE



| VOLTA | AGE | 120/240V | | | AIC RATIN | G | | 10,000 AM | IPS | | | | | |
|-------|------------------|-----------|---------|---------|-----------|----------|---------|-----------|--------|---------|---------|---------|---------|---|
| MAIN | BREAKER | 200 AMP | | | BUSS RATI | NG | | 200 AMPS | | | | | | |
| MOUN | NT | SURFACE | | | NEUTRAL | BAR | | YES | | | | | | |
| ENCLO | OSURE TYPE | NEMA 3R | | | GROUND | BAR | | YES | | | | | | |
| PANEL | LSTATUS | EXISTING | | | N TO GRO | UND BONI | 0 | YES | | | | | | |
| PHASE | E, WIRES | SINGLE, 3 | | | INTERNAL | TVSS | | TBD | | | | | | |
| | | BREAKER | BREAKER | BREAKER | SERVICE | USAGE | PHASE A | PHASE B | USAGE | SERVICE | BREAKER | BREAKER | BREAKER | Ī |
| CKT | LOAD DESCRIPTION | ANADS | DOLES | STATLIS | LOADVA | EACTOR | V/A | V/A | EACTOR | LOADVA | STATUS | DOLES | ANADS | ı |

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|------------------|---|--------------|--------------|--------------|---|--------------|---|--------------|---|--------------|--|--|---|--|
| | BREAKER | BREAKER | BREAKER | SERVICE | USAGE | PHASE A | PHASE B | USAGE | SERVICE | BREAKER | BREAKER | BREAKER | | |
| LOAD DESCRIPTION | AMPS | POLES | STATUS | LOAD VA | FACTOR | VA | VA | FACTOR | LOAD VA | STATUS | POLES | AMPS | LOAD DESCRIPTION | CKT |
| NEW POWER RACK | 40* | 2 | ON | 2, 160 | 1.25 | 5400 | | 1.25 | 2,160 | ON | 2 | 40* | NEW POWER RACK | 2 |
| | 40* | 2 | ON | 2, 160 | 1.25 | | 5400 | 1.25 | 2,160 | ON | 2 | 40* | | 4 |
| NEW POWER RACK | 40* | 2 | ON | 2, 160 | 1.25 | 5400 | | 1.25 | 2,160 | ON | 2 | 40* | NEW POWER RACK | 6 |
| | 40* | 2 | ON | 2, 160 | 1.25 | | 5400 | 1.25 | 2,160 | ON | 2 | 40* | | 8 |
| NEW POWER RACK | 40* | 2 | ON | 2,160 | 1.25 | 5400 | | 1.25 | 2,160 | ON | 2 | 40* | NEW POWER RACK | 10 |
| | 40* | 2 | ON | 2, 160 | 1.25 | | 5400 | 1.25 | 2,160 | ON | 2 | 40* | | 12 |
| SPACE** | - | 1 | N/A | 0 | 1.25 | 0 | | 1.25 | 0 | N/A | 1 | _ | SPACE** | 14 |
| SPACE** | - | 1 | N/A | 0 | 1.25 | | 0 | 1.25 | 0 | N/A | 1 | - | SPACE** | 16 |
| UNKNOWN | 30 | 2 | OFF | 0 | 1.25 | 0 | | 1.25 | 0 | OFF | 2 | 30 | UNKNOWN | 18 |
| | 30 | 2 | OFF | 0 | 1.25 | | 0 | 1.25 | 0 | OFF | 2 | 30 | | 20 |
| HVAC#1 | 50 | 2 | ON | 4,800 | 1.25 | 6000 | | 1.25 | 0 | ON | 2 | 50 | HVAC#2 | 22 |
| | 50 | 2 | ON | 4,800 | 1.25 | | 6000 | 1.25 | 0 | ON | 2 | 50 | | 24 |
| SPACE** | _ | 1 | N/A | 0 | 1.25 | 0 | | 1.25 | 0 | OFF | 2 | 35 | UNKNOWN | 26 |
| SPACE** | _ | 1 | N/A | 0 | 1.25 | | 0 | 1.25 | 0 | OFF | 2 | 35 | | 28 |
| CONV. OUTLET | 20 | 1 | ON | 180 | 1.25 | 525 | | 1.25 | 240 | ON | 1 | 20 | LIGHTS | 30 |
| CONV. OUTLET | 20 | 1 | ON | 180 | 1.25 | | 475 | 1.25 | 200 | ON | 1 | 20 | SMOKE DETECTOR | 32 |
| CONV. OUTLET | 20 | 1 | ON | 180 | 1.25 | 450 | | 1.25 | 180 | ON | 1 | 20 | UNKNOWN | 34 |
| CONV. OUTLET | 20 | 1 | ON | 180 | 1.25 | | 225 | 1.25 | 0 | N/A | 1 | - | SPACE | 36 |
| SURGE SUPPRESSOR | 60 | 2 | ON | 0 | 1.25 | 225 | | 1.25 | 180 | ON | 1 | 20 | CONV. OUTLET | 38 |
| | 60 | 2 | ON | 0 | 1.25 | | 180 | 1.00 | 180 | ON | 1 | 20 | GFI | 40 |
| | LOAD DESCRIPTION NEW POWER RACK NEW POWER RACK NEW POWER RACK SPACE** SPACE** UNKNOWN HVAC #1 SPACE** CONV. OUTLET CONV. OUTLET CONV. OUTLET CONV. OUTLET | BREAKER AMPS | BREAKER AMPS | BREAKER AMPS | BREAKER AMPS BREAKER STATUS COAD VA | BREAKER AMPS | BREAKER AMPS BREAKER STATUS LOAD VA FACTOR VA | BREAKER AMPS | BREAKER AMPS BREAKER AMPS SERVICE USAGE PHASE A PHASE B USAGE LOAD VA FACTOR VA VA VA VA FACTOR VA VA VA FACTOR VA VA VA VA FACTOR VA VA VA VA VA FACTOR VA VA VA VA FACTOR VA VA VA VA VA FACTOR VA VA VA VA VA VA VA V | BREAKER AMPS | BREAKER AMPS BREAKER AMPS BREAKER AMPS SERVICE USAGE LOAD VA FACTOR VA VA VA FACTOR LOAD VA STATUS LOAD VA FACTOR VA VA FACTOR LOAD VA STATUS LOAD VA FACTOR VA VA FACTOR LOAD VA STATUS LOAD VA TATUS LOAD VA LOAD VA TATUS LOAD VA TATUS LOAD VA TATUS LOAD VA LOAD VA TATUS LOAD VA TATUS LOAD VA TATUS LOAD VA LOAD VA TATUS LOAD VA TATUS LOAD VA TATUS LOAD VA L | BREAKER BREAKER BREAKER STATUS LOAD VA FACTOR VA VA FACTOR LOAD VA FACTOR LOAD VA FACTOR LOAD VA FACTOR LOAD VA STATUS LOAD VA FACTOR LOAD VA STATUS LOAD VA FACTOR LOAD VA STATUS POLES | NEW POWER RACK 40* 2 ON 2,160 1.25 5400 1.25 2,160 ON 2 40* | Dad Description Data Breaker Amps Poles Status Load Data Factor Va Va Va Va Va Va Va V |

23400 23080

OVERALL LOAD SUMMARY TOTAL SERVICE LOAD KVA 46.48 193.67 AMPS

= Loading provided by T-Mobile.

= Assumed maximum loading per breaker size.

= New 40A Breaker

= Remove existing breaker and cover space with insert



- 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
- THE CONDUIT RUNS AS SHOWN ON THE PLANS ARE APPROXIMATE. EXACT LOCATION AND ROUTING SHALL BE PER EXISTING FIELD
- CONDITIONS.

 PROVIDE PULL BOXES AND JUNCTION BOXES WHERE SHOWN OR REQUIRED BY NEC.

 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.

- 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 TAGED 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

 CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULL BOXES, AND ALL DISCONNECT SWITCHES, STARTERS, AND EQUIPMENT

 CABINETS.
- CABINETS.

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

- 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 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 CONSTRUCTION SHANAGERS 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 ILL APPROVED FOR THIS PURPOSE.

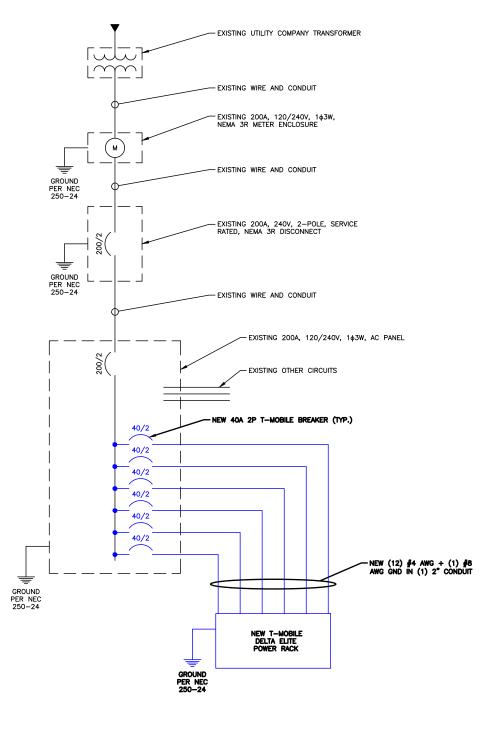
 17. ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT (NEW AND EXISTING) SHALL BE FIELD VERIFIED WITH THE OWNER'S REPRESENTATIVE AND EQUIPMENT SUPPLIER PRIOR TO ROUGH—IN OF CONDUIT AND WIRE. ALL EQUIPMENT SHALL BE PROPERLY CNNECTED ACCORDING TO THE NAMEPLATE DATA FURNISHED ON THE EQUIPMENT (THE DESIGN OF THESE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AT THE TIME OF DESIGN AND SOME EQUIPMENT CHARACTERISTICS MAY VARY FROM DESIGN AS SHOWN ON THESE 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.
- 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
- 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 INTERIOR BY THE HOT DIP GALVANIZED PROCESS. CONDUIT SHALL BE PRODUCED TO ANIS SPECIFICATIONS (80.1, FEDERAL SPECIFICATION WP-C-581 AND 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 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.
- 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





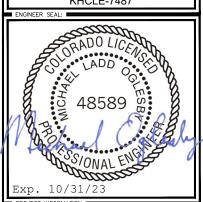
PLANS PREPARED BY:



421 FAYETTEVILLE ST, SUITE 600 RALEIGH, NC 27601

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KHA PROJECT NUMBER: KHCLE-7487

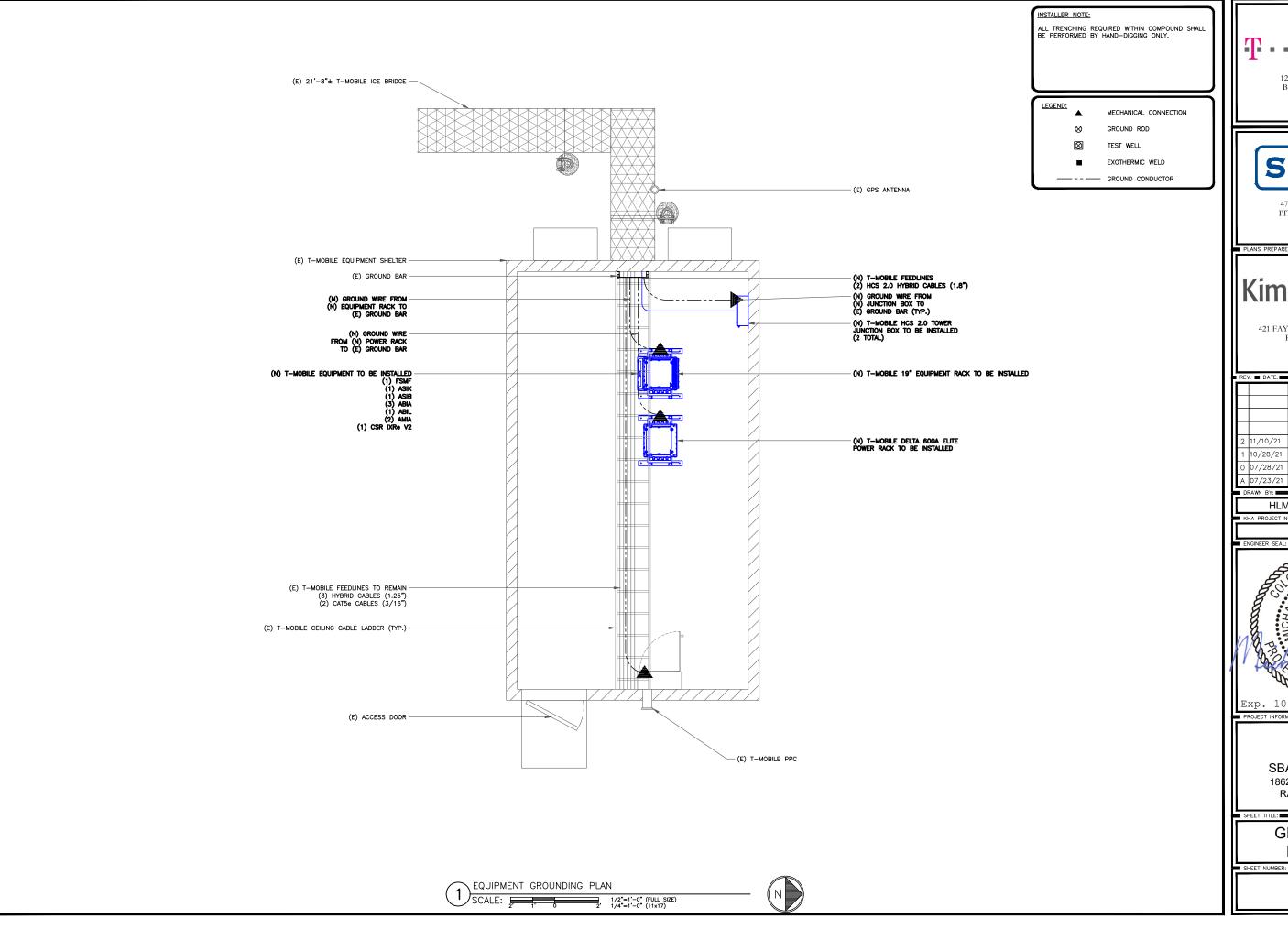


DN06268A CO46078-A SBA #: CO46078-A 18620 OIL WELL ROAD RAMAH, CO 80832

PANEL SCHEDULE & ONE-LINE DIAGRAM

E-2





12920 SE 38TH STREET BELLEVUE, WA 98006



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

PLANS PREPARED BY:



421 FAYETTEVILLE ST, SUITE 600 RALEIGH, NC 27601

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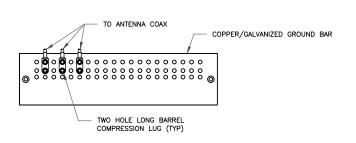
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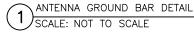
DN06268A CO46078-A SBA #: CO46078-A 18620 OIL WELL ROAD RAMAH, CO 80832

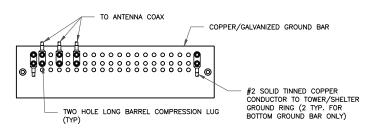
GROUNDING DIAGRAM

G-1



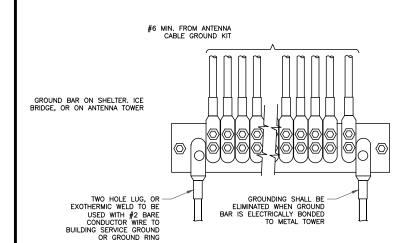
- DOUBLING UP "OR STACKING" OF CONNECTIONS IS NOT PERMITTED.
 EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
 GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL.



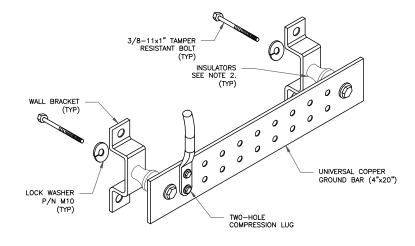


- EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
 GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL (TOWER ONLY).
 GROUND BAR SHALL BE ISOLATED FROM BUILDING OR SHELTER.

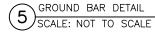
TOWER/SHELTER GROUND BAR DETAIL TOWER/SHELTER GROUS SCALE: NOT TO SCALE

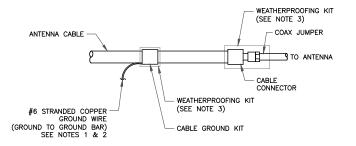


GROUNDWIRE INSTALLATION (4) SCALE: NOT TO SCALE



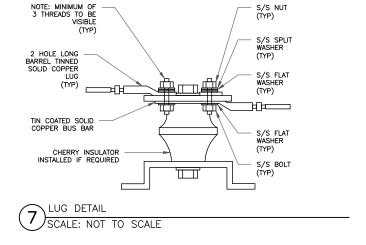
- 1. DOWN LEAD (HOME RUN) CONDUCTORS ARE <u>NOT</u> TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.
- 2. OMIT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



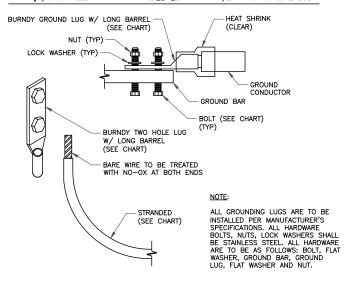


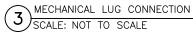
- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
 GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
 WEATHER PROOFING SHALL BE TWO—PART TAPE KIT, COLD SHRINK SHALL NOT BE

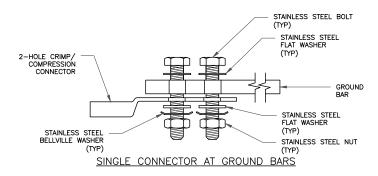
CABLE GROUND KIT CONNECTION (6) SCALE: NOT TO SCALE

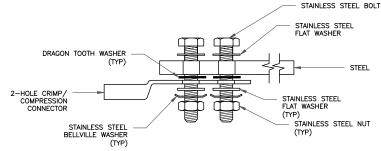


| WIRE SIZE | BURNDY LUG | BOLT SIZE |
|--------------------|------------|------------------------|
| #6 GREEN INSULATED | YA6C-2TC38 | 3/8" - 16 NC SS 2 BOLT |
| #2 SOLID TINNED | YA3C-2TC38 | 3/8" - 16 NC SS 2 BOLT |
| #2 STRANDED | YA2C-2TC38 | 3/8" - 16 NC SS 2 BOLT |
| #2/0 STRANDED | YA26-2TC38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

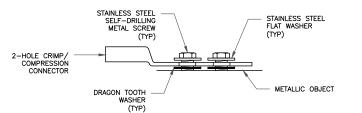








SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

HARDWARE DETAIL FOR EXTERIOR CONNECTIONS 8 SCALE: NOT TO SCALE





PLANS PREPARED BY:

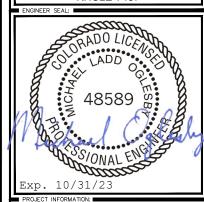


421 FAYETTEVILLE ST, SUITE 600 RALEIGH, NC 27601

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GROUNDING DETAILS

G-2