



at&t

SITE NAME:

I-25 & WIGWAM

FA# / SITE ID:

10099192 / COL06040

PROJECT TYPE:

LTE 5C / 5G NR

PACE:

MRUTH042878 / MRUTH042916

PTN:

3755A0WMM9 / 3755A0WMPR



400 SOUTH COLORADO BOULEVARD, SUITE 820
DENVER, CO 80246
OFFICE: (888)-828-5465

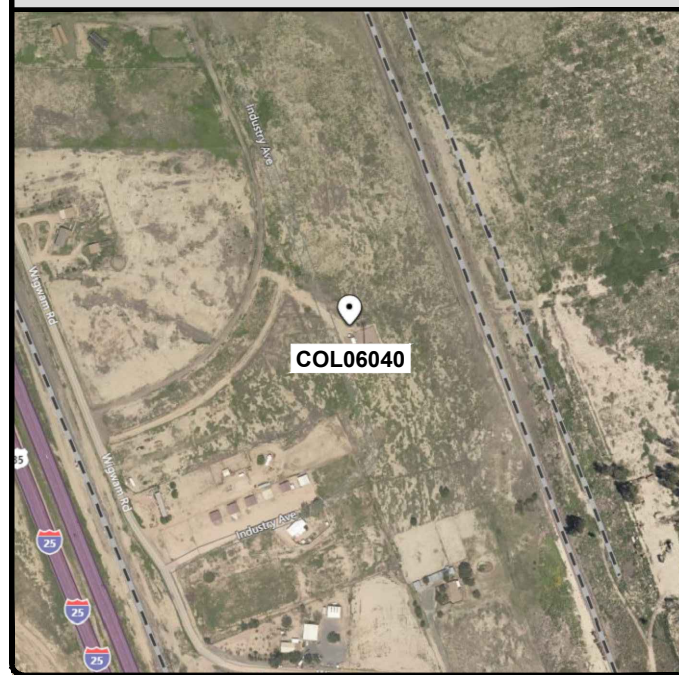


319 CHAPANOKE RD, SUITE 118
RALEIGH, NC 27603
PH: (405)348-5460 FAX: (405)341-4625
CLS PROJECT ID:
64925-10099192-A+E-P1

LOCATION MAP



AERIAL PHOTO



PROJECT INFORMATION

STRUCTURE TYPE: COLLOCATION 147'-0" MONOPOLE
LATITUDE (NAD 83): 38.5378583°
LONGITUDE (NAD 83): -104.6363°
SITE LOCATION: COL06040-I-25 & WIGWAM
20357 E. INDUSTRIAL BLVD
FOUNTAIN, CO 80817
GROUND ELEVATION: 5223' AMSL
MARKET: RMR
JURISDICTION: EL PASO COUNTY
COUNTY: EL PASO
OCCUPANCY TYPE: UNMANNED
A.D.A. COMPLIANCE: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.

DRAWING INDEX

SHEET	SHEET DESCRIPTION	REV
T1	TITLE SHEET	1
GN1	GENERAL NOTES	0
A1	EXISTING SITE PLAN	0
A2	EQUIPMENT PLANS	0
A3	TOWER ELEVATIONS	0
A4	ANTENNA PLANS & SCHEDULE	2
A5-A7	EQUIPMENT SPECIFICATIONS	0
E1	ONE-LINE DIAGRAM	0
E2	PANEL SCHEDULE	0
G1-G2	GROUNDING DETAILS	0

REVISIONS

REV.	DATE	DESCRIPTION	INITIALS
A	03/10/21	PRELIMINARY ISSUE	AND
B	04/05/21	CLIENT COMMENTS	AND
0	08/04/21	FOR CONSTRUCTION	OBA
1	08/12/21	CLIENT COMMENTS	AND
2	08/24/21	CLIENT COMMENTS	AND

PROJECT TEAM

ENGINEER/ARCHITECT: TELAMON CLS
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SUITE 118
RALEIGH, NC 27603
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CUSTOMER: AT&T MOBILITY
161 INVERNESS DR W,
2ND FLOOR
ENGLEWOOD, CO 80112
CONTACT: BETHANY WILSON
PHONE: 970-589-7323
EMAIL: BW925A@ATT.COM
STRUCTURE OWNER: SBA
SITE ACQUISITION: SMARTLINK, LLC
TAMARA SHIVELEY
801-230-4877

SCOPE OF WORK

- TOWER SCOPE:**
- REMOVE (3) KMW AM-X-CD-17-65-00T-RET (1 PER SECTOR)
 - REMOVE (3) KATHREIN 80010765 (1 PER SECTOR)
 - REMOVE (3) POWERWAVE TT19-08BP-111-001 (1 PER SECTOR)
 - INSTALL (6) NEW RR-FA2 (3 KITS) W/ (3) 2-3/8" MOUNT PIPES USING (3) MTC3055PM2 PIPE MOUNT ASSEMBLY, RE: 2-3/A7
 - INSTALL (6) NEW COMMScope NNH4-65C-R6-V3 ANTENNAS (2 PER SECTOR), RE:1/A5
 - INSTALL (3) NEW AIRSCALE DUAL RRH 4T4R B5/29 240W AHCB (1 PER SECTOR), RE:2/A5
 - INSTALL (3) NEW AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB (1 PER SECTOR), RE:3/A5
- GROUND SCOPE:**
- REMOVE GSM CABINET
 - REMOVE EXISTING 9412 CABINET
 - REMOVE EXISTING DC POWER PLANT AND (12) BATTERIES
 - INSTALL NEW VERTIV NETSURE 5100 OUTDOOR DC POWER PLANT W/ (3) STRINGS 190AH BATTERIES, (12) BATTERIES, (10) RECTIFIERS AND (2) CONVERTERS, RE: 2/A6
 - NEW VERTIV OUTDOOR BATTERY CABINET W/ (2) STRINGS OF 190AH BATTERIES (8 BATTERIES), RE: 1/A6
 - INSTALL FLEX 21 CABINET FOR 5G FSM4
 - INSTALL NEW 5G FSM4 WITH (1) ASIK, (1) ABIL AND (1) AMIA IN NEW FLEX21 CABINET, RE: 1/A7
 - INSTALL (1) NEW ABIA IN EXISTING FSM4
 - RELOCATE EXISTING LTE FSM4 FROM 8412 CABINET TO NEW FLEX 21



SITE REFERENCE PHOTO



DRIVING DIRECTIONS

FROM CITY OF COLORADO SPRINGS MUNICIPAL AIRPORT:
DEPART WEST ON MILTON E PROBY PKWY, IN 2.7 MI ROAD NAME CHANGES TO MILTON E. PROBY PKWY, IN 1.1 MI TAKE RAMP LEFT FOR CO-83/S ACADEMY BLVD, IN 2.2 MI TAKE RAMP LEFT FOR I-25 S, IN 16.5 MI AT EXIT 119, TAKE RAMP RIGHT TOWARD RANCHO COLORADO BLVD, IN 0.2 MI TURN LEFT ONTO FRONTAGE RD, IN 0.2 MI TURN RIGHT ONTO WIGWAM RD, IN 1.2 MI TURN LEFT ONTO INDUSTRY AVE, IN 0.2 MI ARRIVE AT INDUSTRY AVE ON THE RIGHT.

CODE COMPLIANCE

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING APPLICABLE CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES.

BUILDING/DWELLING CODE: IBC 2015
STRUCTURAL CODE: IBC 2015
PLUMBING CODE: IPC 2015
MECHANICAL CODE: IMC 2015
ELECTRICAL CODE: NEC 2017
FIRE & LIFE SAFETY CODE: IFC 2015

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT OR ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR THE SAME.

RFDS INFORMATION

RFDS ID: 4139267
RFDS VERSION: 1.00
RFDS DATE: 01/12/2021

I-25 & WIGWAM

FA # / SITE ID:
10099192 / COL06040

20357 E. INDUSTRIAL BLVD
FOUNTAIN, CO 80817

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T1



CALL COLORADO 811
3 WORKING DAYS BEFORE YOU DIG
811 OR 1-800-922-1987

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
 CONTRACTOR – GENERAL CONTRACTOR
 SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
 OWNER – AT&T MOBILITY
 OEM – ORIGINAL EQUIPMENT MANUFACTURER
2. PRIOR TO THE SUBMISSIONS OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, QUANTITIES AND DIMENSIONS BEFORE STARTING ANY WORK. NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES OR INCONSISTENCIES BEFORE PROCEEDING WITH THE WORK.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
7. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.
8. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND TI CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR. ROUTING OF TRENCHING SHALL BE APPROVED BY CONTRACTOR.
9. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
10. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FOR THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
11. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
12. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
13. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS UNLESS OTHERWISE SPECIFIED. ALL CONCRETING WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
14. ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC 13 EDITION SPECIFICATIONS.
15. CONSTRUCTION SHALL COMPLY WITH SPECIFICATION 25741-000-3APS-A00Z-00002, "GENERAL CONSTRUCTION SERVICES".
16. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
17. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK MAY NEED TO BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
18. SINCE THE CELL SITE MAY BE ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUT DOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE REQUIRED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
19. ALL ANTENNA PIPES SHALL BE SCHEDULE 80.
20. LIMITS OF LIABILITY – ITEMS REFERENCED ARE OWNER/CLIENT DICTATED ITEMS, OR SUPPLIED ITEMS WHICH ARE REPRODUCED WITHOUT ALTERATION AS DIRECTED BY OWNER/CLIENT, AND OWNER/CLIENT ASSUMES ANY AND ALL LIABILITY FOR USE OF, CONSEQUENCES OF, OR INTERPRETATION OF SAID ITEM, SPECIFICATION, OR DIRECTIVE; AND AGREES TO INDEMNIFY AND HOLD ENGINEER COMPLETELY HARMLESS.
21. PROFESSIONAL SEAL – DETAILS, SPECIFICATION(S), OR ITEMS REFERENCED, ARE NOT PART OF THE PROFESSIONAL DESIGN PERFORMED BY LICENSEE AND THE PROFESSIONAL SEAL DOES NOT APPLY.

ELECTRICIAL INSTALLATION NOTES

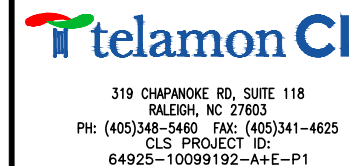
1. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.
2. SUBCONTRACTORS SHALL MODIFY EXISTING CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLE TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL.
3. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.
4. CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
5. EACH END OF EVERY POWER, GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA, AND MATCH EXISTING INSTALLATION REQUIREMENTS.
6. POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC & OSHA, AND MATCH EXISTING INSTALLATION REQUIREMENTS
7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).
8. PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
9. ALL TIE WRAPS WHERE PERMITTED SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES. USE LOW PROFILES TIE WRAPS.
10. POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (12 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (6 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
12. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR 2 AWG SOLID TINNED COPPED CABLE, UNLESS OTHERWISE SPECIFIED.
13. POWER WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (12 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
14. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT ON LESS THAN 75°C (90°C IF AVAILABLE).
15. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.
16. NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
17. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
18. ELECTRICAL METALLIC TUBING (EMT) OR ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
19. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
20. RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
21. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
22. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
23. CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
24. CABINETS, BOXES AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
25. WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 34 (OR BETTER) OUTDOORS.
26. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 34 (OR BETTER) OUTDOORS.
27. METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED, OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
28. NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
29. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
30. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

GROUNDING NOTES

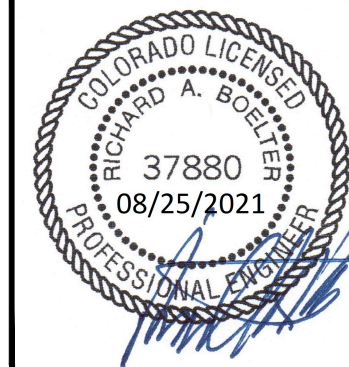
1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ). THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OFF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 91) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS. TESTS SHALL BE PERFORMED IN ACCORDANCE WITH 25471-000-3PS-EG00-0001, DESIGN & TESTING OF FACILITY GROUNDING FOR CELL SITES.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER INDOORS BTS; 2 AWG STRANDED COPPER FOR OUTDOORS BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED WITH STAINLESS STEEL HARDWARE TO THE BRIDGE AND THE TOWER GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL, SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
13. ALL TOWER GROUND SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF ANSI/TIA 222. FOR TOWERS BEING BUILT TO REV G OF THE STANDARD, THE WIRE SIZE OF THE BURIED GROUND RING AND CONNECTIONS BETWEEN THE TOWER AND THE BURIED GROUND RING SHALL BE CHANGED FROM 2 AWG TO 2/0 AWG. IN ADDITION, THE MINIMUM LENGTH OF THE GROUND RODS SHALL BE INCREASED FOR 8 FEET TO 10 FEET.
14. ALL GROUND WIRE TO RRUS SHALL BE #2 GREEN STRANDED.
15. ALL OUTDOOR LUGS SHALL USE BLACK HEAT SHRINK AND INDOOR LUGS SHALL USE CLEAR HEAT SHRINK.
16. ALL OUTDOOR LUGS TO BE LONG BARREL 2 HOLE WITHOUT INSPECTION HOLES AND INDOOR LUGS TO HAVE INSPECTION HOLES.

ABBREVIATIONS

AGL AMSL AWG BLDG DWG FT EMT ELEV EQUIP (E) EXT FND F GALV GPS GND LTE	ABOVE GRADE LEVEL ABOVE MEAN SEA LEVEL AMERICAN WIRE GAUGE BUILDING DRAWING FOOT ELECTRICAL METALLIC TUBING ELEVATION EQUIPMENT EXISTING EXTERIOR FOUNDATION FIBER GALVANIZED GLOBAL POSITIONING SYSTEM GROUND LONG TERM EVOLUTION	MAX MFR MGB MIN N.T.S. (P) PPC RBS IN INT LB(S) OR # SF TYP W/ XFMR	MAXIMUM MANUFACTURER MASTER GROUND BAR MINIMUM NOT TO SCALE PROPOSED POWER PROTECTION CABINET RADIO BASE STATION INCH(ES) INTERIOR POUND(S) SQUARE FOOT TYPICAL WITH TRANSFORMER
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REVISIONS			
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I-25 & WIGWAM

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20357 E. INDUSTRIAL BLVD
FOUNTAIN, CO 80817

SHEET TITLE

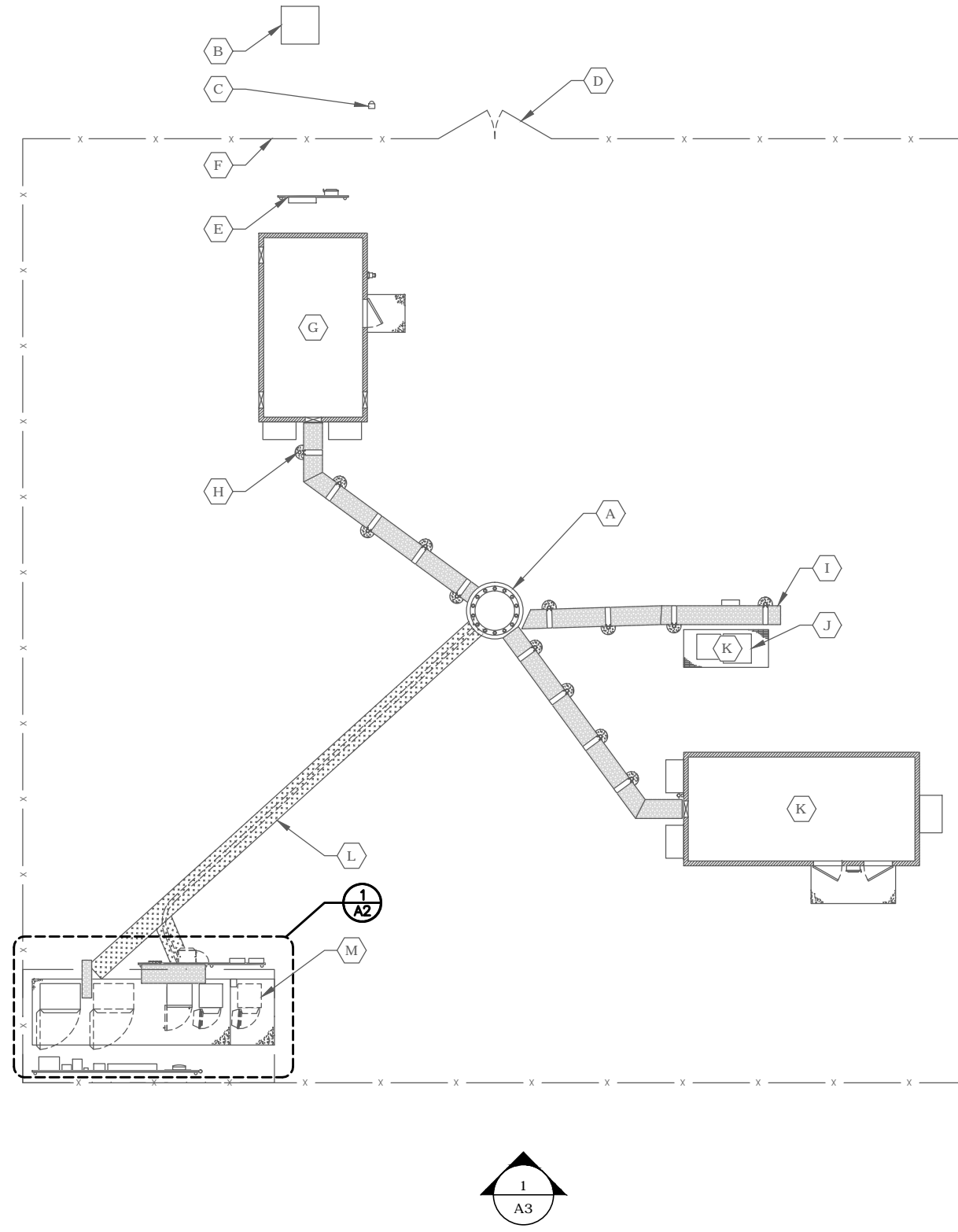
GENERAL NOTES

SHEET NUMBER

GN1

EQUIPMENT KEYNOTES:

- A. 147'-0" MONOPOLE
- B. TRANSFORMER
- C. METER
- D. 12'-0" DOUBLE SWING ACCESS GATE
- E. H-FRAME
- F. CHAIN-LINK FENCE WITH BARBED WIRE
- G. 11'-6" X 20'-0" SHELTER (OTHER CARRIER)
- H. GPS UNIT
- I. ICE BRIDGE
- J. EQUIPMENT ON ELEVATED STEEL PLATFORM (OTHER CARRIER)
- K. VERIZON 25'-0" X 12'-0" SHELTER
- L. CABLE TRAY
- M. AT&T EQUIPMENT ON CONCRETE PAD



400 SOUTH COLORADO BOULEVARD, SUITE 820
DENVER, CO 80246
OFFICE: (888)-828-5465



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I-25 & WIGWAM

FA # / SITE ID:
10099192 / COL06040

20357 E. INDUSTRIAL BLVD
FOUNTAIN, CO 80817

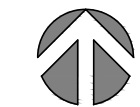
SHEET TITLE
EXISTING SITE
PLAN

SHEET NUMBER

A1

1 EXISTING SITE PLAN

SCALE: 1/4"=1'-0" (FULL SIZE)
1/8"=1'-0" (11x17)



TRUE NORTH

RE: GN20/GN1

T:\SMARTLINK\64925 - SMARTLINK AT&T RMR\10099192 - I-25 AND WIGWAM\00 - A&E (PHASE 1)\64925-10099192-A+E-P1 REV2.DWG - CLS PROJECT ID: 64925-10099192-A+E-P1

EXISTING EQUIPMENT KEYNOTES:

- A. 25'-8" X 7'-0" CONCRETE PAD
- B. ICE BRIDGE
- C. CABLE TREY
- D. DIPLEXER ON H-FRAME
- E. GSM CABINET
- F. UMTS CABINET
- G. MICROWAVE CABINET
- H. AC PANEL
- I. UTILITY BOX
- J. CENA BOX
- K. MAIN DISCONNECT
- L. AT&T H-FRAME
- M. GPS UNIT
- N. LEASE AREA
- O. OUTDOOR DC SURGE SUPPRESSORS ON EXISTING H-FRAME

SOW KEYNOTES

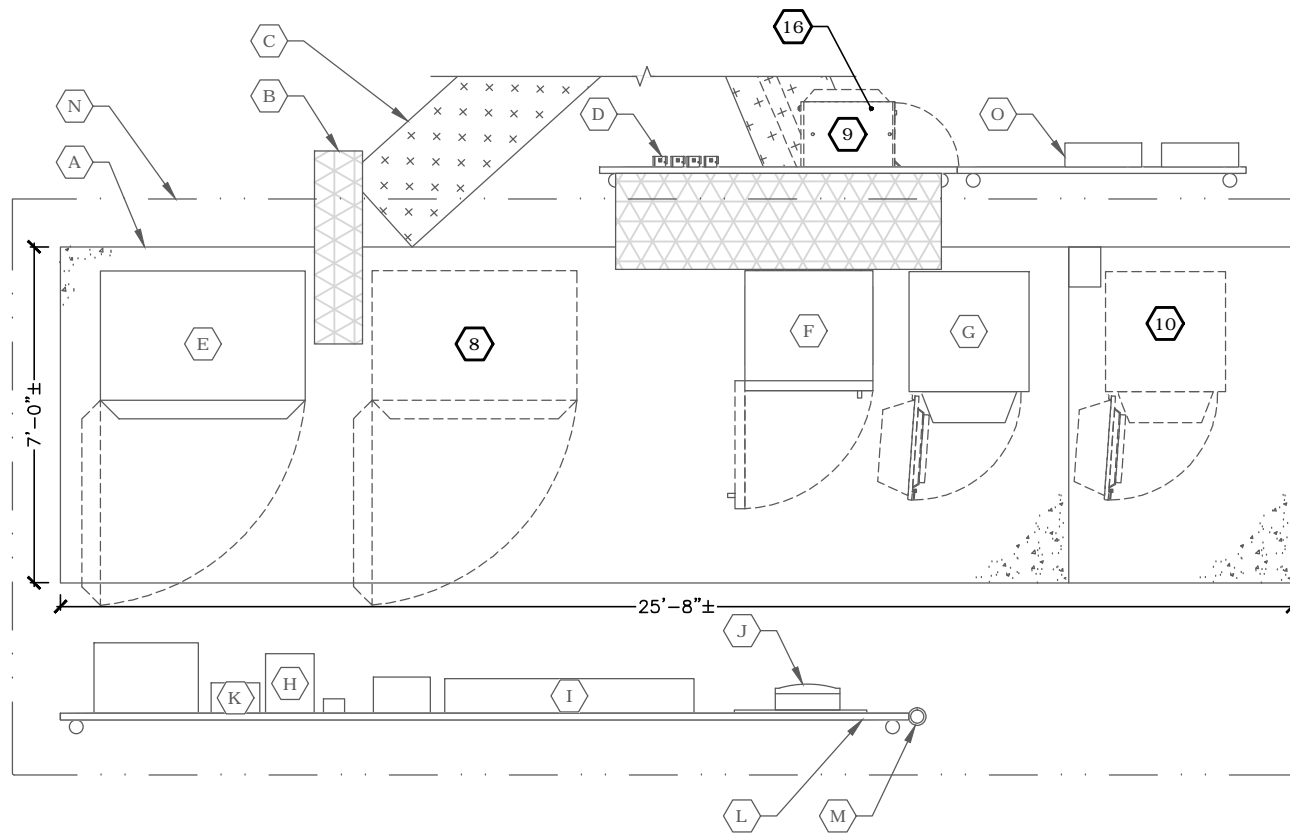
TOWER SCOPE:

1. REMOVE (3) KMW AM-X-CD-17-65-00T-RET (1 PER SECTOR)
2. REMOVE (3) KATHREIN 80010765 (1 PER SECTOR)
3. REMOVE (3) POWERWAVE TT19-08BP-111-001 (1 PER SECTOR)
4. INSTALL (6) NEW RR-FA2 (3 KITS) W/ (3) 2-3/8" MOUNT PIPES USING (3) MTC3055PM2 PIPE MOUNT ASSEMBLY, RE: 2-3/A7
5. INSTALL (6) NEW COMMSCOPE NNH4-65C-R6-V3 ANTENNAS (2 PER SECTOR), RE:1/A5
6. INSTALL (3) NEW AIRSCALE DUAL RRH 4T4R B5/29 240W AHBCB (1 PER SECTOR), RE:2/A5
7. INSTALL (3) NEW AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB (1 PER SECTOR), RE:3/A5

GROUND SCOPE:

8. REMOVE GSM CABINET
9. REMOVE EXISTING 9412 CABINET

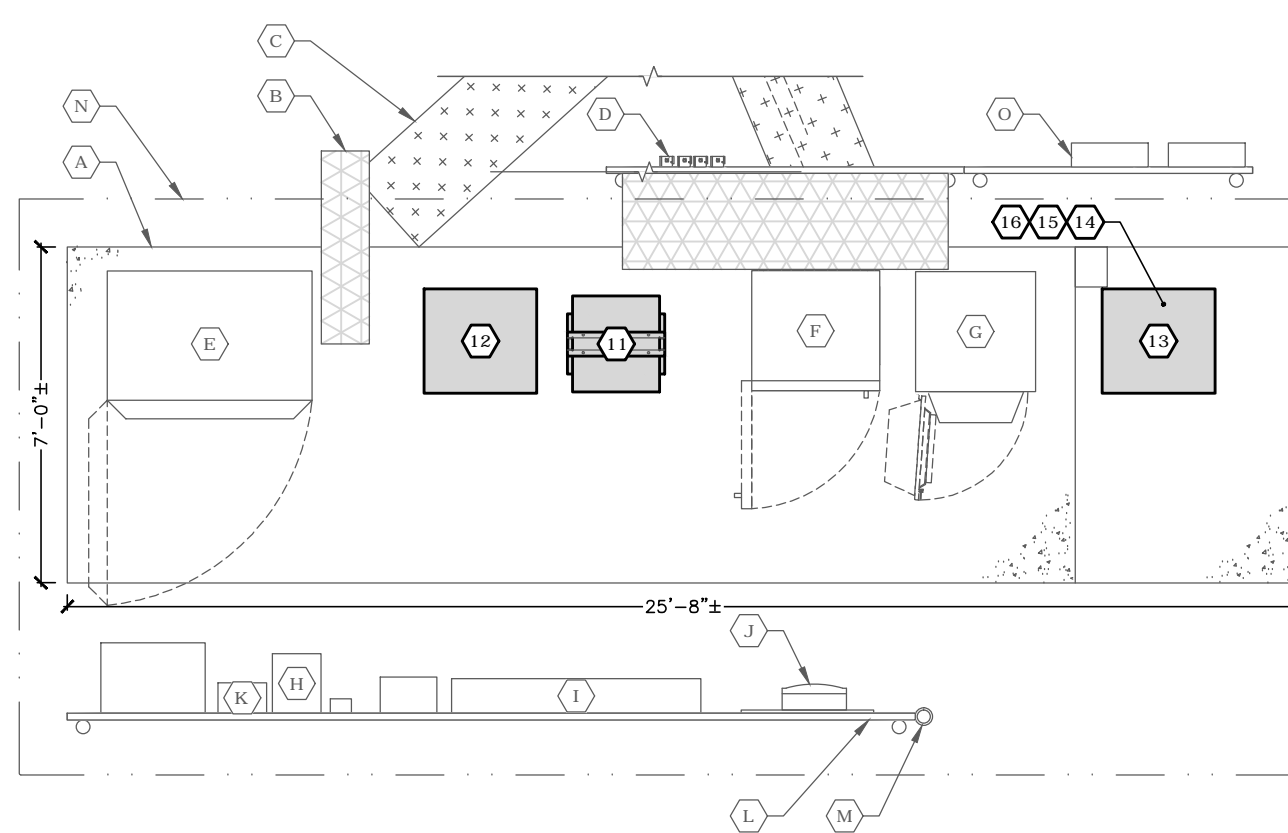
10. REMOVE EXISTING DC POWER PLANT AND (12) BATTERIES
11. INSTALL NEW VERTIV NETSURE 5100 OUTDOOR DC POWER PLANT W/ (3) STRINGS 190AH BATTERIES, (12) BATTERIES, (10) RECTIFIERS AND (2) CONVERTERS, RE: 2/A6
12. NEW VERTIV OUTDOOR BATTERY CABINET W/ (2) STRINGS OF 190AH BATTERIES (8 BATTERIES), RE: 1/A6
13. INSTALL FLEX 21 CABINET FOR 5G FSM4
14. INSTALL NEW 5G FSM4 WITH (1) ASIK, (1) ABIL AND (1) AMIA IN NEW FLEX21 CABINET, RE: 1/A7
15. INSTALL (1) NEW ABIA IN EXISTING FSM4
16. RELOCATE EXISTING LTE FSM4 FROM 8412 CABINET TO NEW FLEX 21



1 EXISTING EQUIPMENT PLAN

SCALE: 1-1/2"=1'-0" (FULL SIZE)
3/4"=1'-0" (11x17)

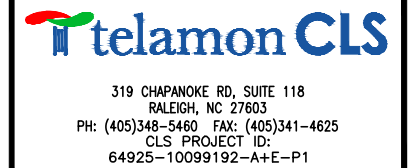
RE: GN20/GN1



2 PROPOSED EQUIPMENT PLAN

SCALE: 1-1/2"=1'-0" (FULL SIZE)
3/4"=1'-0" (11x17)

RE: GN20/GN1



REVISIONS			
REV.	DATE	DESCRIPTION	INITIALS
A	03/10/21	PRELIMINARY ISSUE	AND
B	04/05/21	CLIENT COMMENTS	AND
0	08/04/21	FOR CONSTRUCTION	OBA
2	08/24/21	CLIENT COMMENTS	AND



I-25 & WIGWAM
FA # / SITE ID:
10099192 / COL06040
20357 E. INDUSTRIAL BLVD
FOUNTAIN, CO 80817

SHEET TITLE
EQUIPMENT
PLANS

SHEET NUMBER
A2

T:\SMARTLINK\64925 - SMARTLINK AT&T RMR\10099192 - I-25 AND WIGWAM CO - A&E (PHASE 1)\64925-10099192-A+E-P1 REV2.DWG - CLS PROJECT ID: 64925-10099192-A+E-P1

LOADING NOTES:

OTHER CARRIERS EQUIPMENT MAY BE OMITTED FOR CLARITY

TOWER NOTES:

147'-0" MONOPOLE IS SHOWN FOR ILLUSTRATION ONLY AND FOR LOCATION OF APPURTENANCE(S).

REFER TO 147'-0" MONOPOLE SURVEY FOR ALL EXISTING 147'-0" MONOPOLE COMPONENTS TO INCLUDE ANTENNAS, LIGHTS, LIGHTNING ROD & 147'-0" MONOPOLE HEIGHT.

CONTRACTOR(S) TO COMPLY WITH ALL FCC AND FAA REGULATIONS ON THIS PROJECT. COAX ROUTING MUST BE PER STRUCTURAL ANALYSIS.

PRIOR TO CONSTRUCTION:
CONTRACTOR SHALL VERIFY THAT A 147'-0" MONOPOLE AND MOUNT STRUCTURAL ANALYSIS, DEPICTING THE LOADING SHOWN, HAS BEEN PERFORMED AND SHOWS A "PASS" OR AN "ACCEPTABLE" RATING. UNDER NO CIRCUMSTANCE WHAT SO EVER SHALL THE PROPOSED EQUIPMENT BE INSTALLED WITHOUT SAID STRUCTURAL ANALYSIS. IF SAID STRUCTURAL ANALYSIS REQUIRES THAT THE 147'-0" MONOPOLE AND/OR MOUNT BE MODIFIED, SUCH MODIFICATIONS SHALL BE COMPLETED PRIOR TO INSTALLATION OF THE PROPOSED EQUIPMENT.

MOUNT ANALYSIS DONE BY TELAMON CLS, PROJECT #64925-10099192-01-MA, DATED FEBRUARY 2, 2021.

STRUCTURAL ANALYSIS DONE BY TOWER ENGINEERING SOLUTIONS, TES PROJECT #111429, DATED JULY 23, 2021.

EXISTING EQUIPMENT KEYNOTES:

- A. 147'-0" MONOPOLE
- B. KATHREIN 800-10992K (1 PER SECTOR, 3 TOTAL)
- C. AIRSCALE DUAL RRH 4T4R B5 160W AHCA (1 PER SECTOR, 3 TOTAL)
- D. ALU B25 RRH4X30-4R (1 PER SECTOR, 3 TOTAL)
- E. (6) 1-5/8" COAX, (4) 2" INNERDUCT, (6) DC POWER TRUNKS, (3) FIBER TRUNK
- F. RAYCAP DC6-48-60-18-8F SQUID (1 PER SECTOR, 3 TOTAL)
- G. DISH (OTHER CARRIER)
- H. ANTENNAS (OTHER CARRIER)
- I. ANTENNAS (VERIZON)
- J. ICE BRIDGE
- K. VERIZON EQUIPMENT SHELTER
- L. CHAIN-LINK FENCE
- M. EQUIPMENT SHELTER (OTHER CARRIER)
- N. GPS UNIT
- O. AT&T EQUIPMENT ON CONCRETE PAD
- P. AT&T GPS UNIT
- Q. AT&T EQUIPMENT ON H-FRAME
- R. ALU RRH2X40-07L-AT (1 PER SECTOR, 3 TOTAL)

SOW KEYNOTES

TOWER SCOPE:

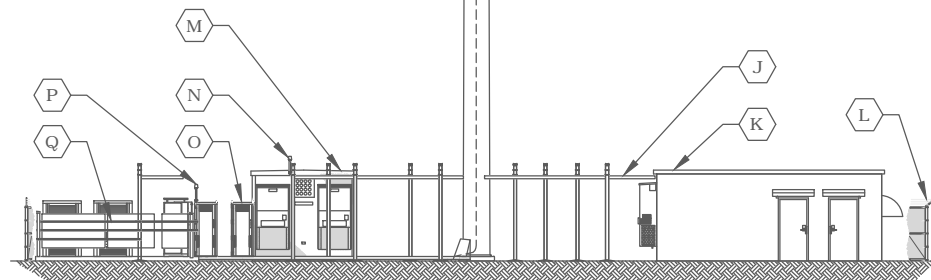
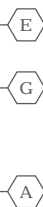
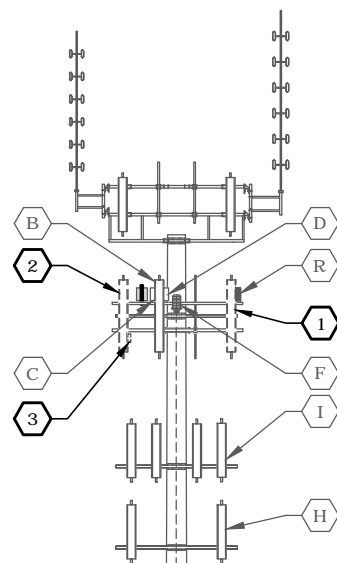
1. REMOVE (3) KMW AM-X-CD-17-65-00T-RET (1 PER SECTOR)
2. REMOVE (3) KATHREIN 80010765 (1 PER SECTOR)
3. REMOVE (3) POWERWAVE TT19-08BP-111-001 (1 PER SECTOR)
4. INSTALL (6) NEW RR-FA2 (3 KITS) W/ (3) 2-3/8" MOUNT PIPES USING (3) MTC3055PM2 PIPE MOUNT ASSEMBLY, RE: 2-3/A7
5. INSTALL (6) NEW COMMSCOPE NNH4-65C-R6-V3 ANTENNAS (2 PER SECTOR), RE:1/A5
6. INSTALL (3) NEW AIRSCALE DUAL RRH 4T4R B5/29 240W AHBCB (1 PER SECTOR), RE:2/A5
7. INSTALL (3) NEW AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB (1 PER SECTOR), RE:3/A5

GROUND SCOPE:

8. REMOVE GSM CABINET
9. REMOVE EXISTING 9412 CABINET
10. REMOVE EXISTING DC POWER PLANT AND (12) BATTERIES
11. INSTALL NEW VERTIV NETSURE 5100 OUTDOOR DC POWER PLANT W/ (3) STRINGS 190AH BATTERIES, (12) BATTERIES, (10) RECTIFIERS AND (2) CONVERTERS, RE: 2/A6
12. NEW VERTIV OUTDOOR BATTERY CABINET W/ (2) STRINGS OF 190AH BATTERIES (8 BATTERIES), RE: 1/A6
13. INSTALL FLEX 21 CABINET FOR 5G FSM4
14. INSTALL NEW 5G FSM4 WITH (1) ASIK, (1) ABIL AND (1) AMIA IN NEW FLEX21 CABINET, RE: 1/A7
15. INSTALL (1) NEW ABIA IN EXISTING FSM4
16. RELOCATE EXISTING LTE FSM4 FROM 8412 CABINET TO NEW FLEX 21

MONOPOLE HEIGHT
ELEV.= 147'-0 AGL

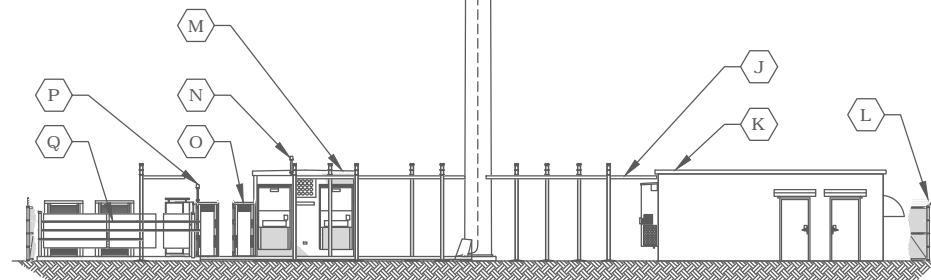
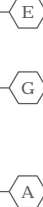
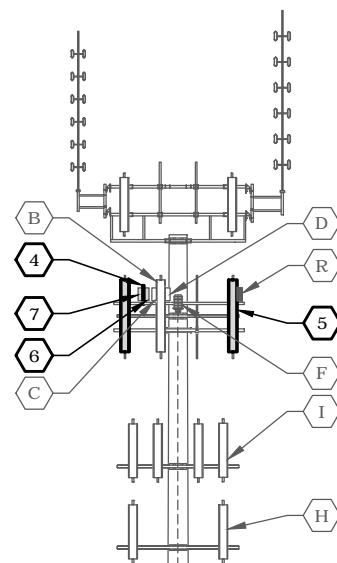
EXISTING AT&T ANTENNA
ELEV.= 138'-0 AGL



1 EXISTING ELEVATION

SCALE: 3/32"=1'-0" (FULL SIZE)
3/64"=1'-0" (11x17)

RE: GN20/GN1



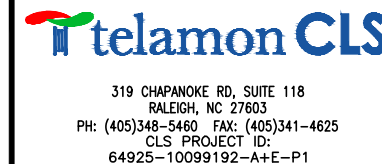
2 PROPOSED ELEVATION

SCALE: 3/32"=1'-0" (FULL SIZE)
3/64"=1'-0" (11x17)

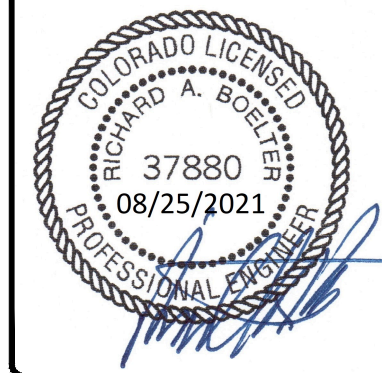
RE: GN20/GN1

MONOPOLE HEIGHT
ELEV.= 147'-0 AGL

PROPOSED AT&T ANTENNA
ELEV.= 138'-0 AGL



REVISIONS			
REV.	DATE	DESCRIPTION	INITIALS
A	03/10/21	PRELIMINARY ISSUE	AND
B	04/05/21	CLIENT COMMENTS	AND
0	08/04/21	FOR CONSTRUCTION	OBA
2	08/24/21	CLIENT COMMENTS	AND

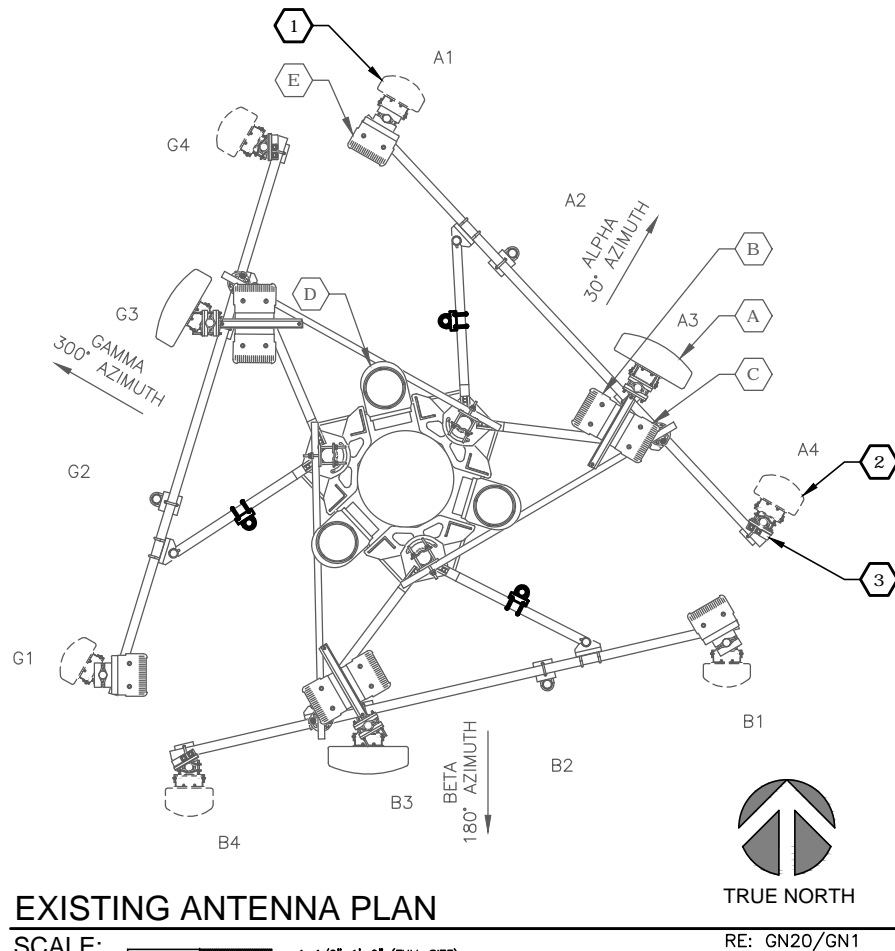


I-25 & WIGWAM
FA # / SITE ID:
10099192 / COL06040
20357 E. INDUSTRIAL BLVD
FOUNTAIN, CO 80817

SHEET TITLE
TOWER ELEVATIONS

SHEET NUMBER
A3

T:\SMARTLINK\64925 - SMARTLINK AT&T RMR\10099192 - A&E (PHASE 1)\64925-10099192-A+E-P1 REV2.DWG - CLS PROJECT ID: 64925-10099192-A+E-P1



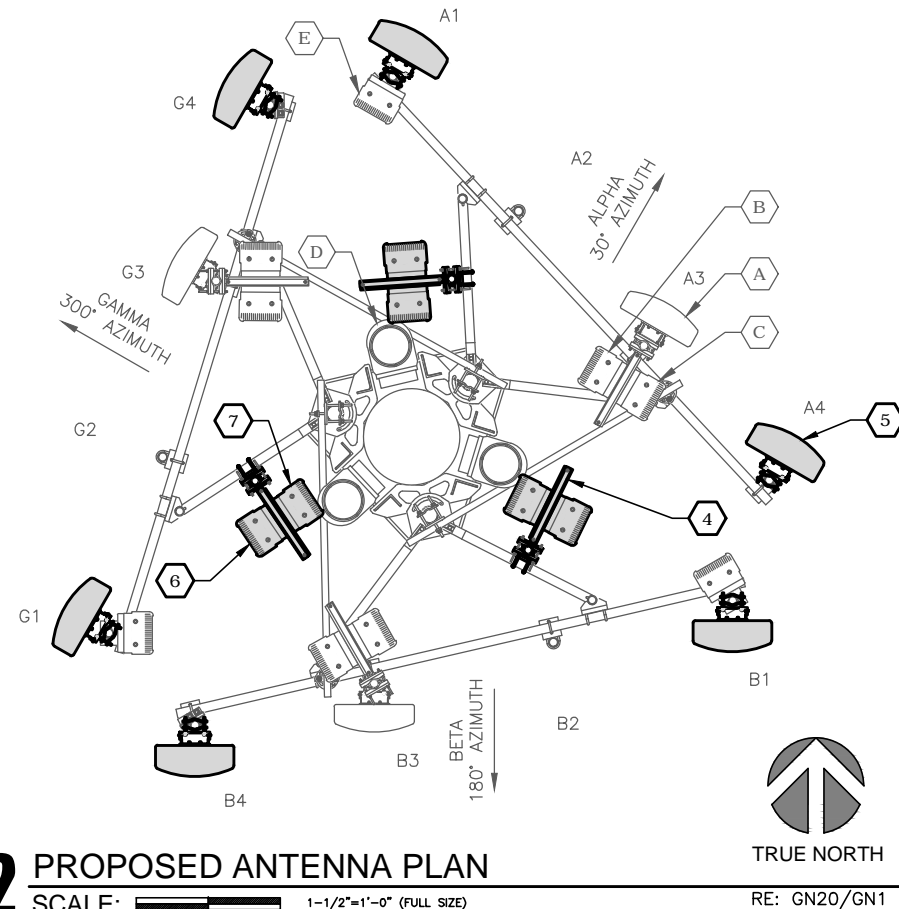
1 EXISTING ANTENNA PLAN

SCALE: 1-1/2"=1'-0" (FULL SIZE)
3/4"=1'-0" (11x17)

- # EXISTING EQUIPMENT KEYNOTES:
- A. KATHREIN 800-10992K (1 PER SECTOR, 3 TOTAL)
 - B. AIRSCALE DUAL RRH 4T4R B5 160W AHCA (1 PER SECTOR, 3 TOTAL)
 - C. ALU B25 RRH4X30-4R (1 PER SECTOR, 3 TOTAL)
 - D. RAYCAP DC6-48-60-18-8F SQUID (1 PER SECTOR, 3 TOTAL)
 - E. ALU RRH2X40-07L-AT (1 PER SECTOR, 3 TOTAL)

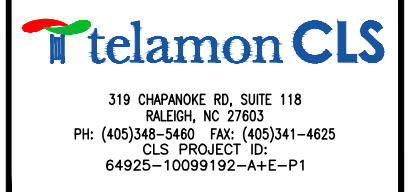
- # SOW KEYNOTES
- TOWER SCOPE:**
1. REMOVE (3) KMW AM-X-CD-17-65-00T-RET (1 PER SECTOR)
 2. REMOVE (3) KATHREIN 80010765 (1 PER SECTOR)
 3. REMOVE (3) POWERWAVE TT19-08BP-111-001 (1 PER SECTOR)
 4. INSTALL (6) NEW RR-FA2 (3 KITS) W/ (3) 2-3/8" MOUNT PIPES USING (3) MTC3055PM2 PIPE MOUNT ASSEMBLY, RE: 2-3/A7
 5. INSTALL (6) NEW COMMSCOPE NNH4-65C-R6-V3 ANTENNAS (2 PER SECTOR), RE:1/A5
 6. INSTALL (3) NEW AIRSCALE DUAL RRH 4T4R B5/29 240W AHBCB (1 PER SECTOR), RE:2/A5
 7. INSTALL (3) NEW AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB (1 PER SECTOR), RE:3/A5

- GROUND SCOPE:**
8. REMOVE GSM CABINET
 9. REMOVE EXISTING 9412 CABINET
 10. REMOVE EXISTING DC POWER PLANT AND (12) BATTERIES
 11. INSTALL NEW VERTIV NETSURE 5100 OUTDOOR DC POWER PLANT W/ (3) STRINGS 190AH BATTERIES, (12) BATTERIES, (10) RECTIFIERS AND (2) CONVERTERS, RE: 2/A6
 12. NEW VERTIV OUTDOOR BATTERY CABINET W/ (2) STRINGS OF 190AH BATTERIES (8 BATTERIES), RE: 1/A6
 13. INSTALL FLEX 21 CABINET FOR 5G FSM4
 14. INSTALL NEW 5G FSM4 WITH (1) ASIK, (1) ABIL AND (1) AMIA IN NEW FLEX21 CABINET, RE: 1/A7
 15. INSTALL (1) NEW ABIA IN EXISTING FSM4
 16. RELOCATE EXISTING LTE FSM4 FROM 8412 CABINET TO NEW FLEX 21



2 PROPOSED ANTENNA PLAN

SCALE: 1-1/2"=1'-0" (FULL SIZE)
3/4"=1'-0" (11x17)



REVISIONS			
REV.	DATE	DESCRIPTION	INITIALS
A	03/10/21	PRELIMINARY ISSUE	AND
B	04/05/21	CLIENT COMMENTS	AND
0	08/04/21	FOR CONSTRUCTION	OBA
1	08/12/21	CLIENT COMMENTS	AND
2	08/24/21	CLIENT COMMENTS	AND

ANTENNA EQUIPMENT & CABLE SCHEDULE
(BOLD DENOTES PROPOSED OR RECONFIGURED EQUIPMENT)
(E) = EXISTING (R) = RELOCATED (P) = PROPOSED

ANTENNA MARK	SECTOR	RAD CENTER	AZIMUTH	ANTENNAS	TMAS	SURGE PROTECTION	RRUS	COAX/CABLE	TECHNOLOGY	CABLE LENGTH
A1	ALPHA	138'-0"	30°	(P) COMMSCOPE NNH4-65C-R6-V3	--	(E) (1) RAYCAP DC6-48-60-18-8F SQUID	(P) (1) AIRSCALE DUAL RRH 4T4R B5/29 240W AHBCB	(E) (6) 1-5/8" COAX (E) (4) 2" INNERDUCT (E) (6) #8AWG DC POWER TRUNKS (E) (3) FIBER TRUNK	LTE 700_3 5GNR 850	±180-0"
A2	ALPHA	--	--	--	--	--	(E) (1) AIRSCALE DUAL RRH 4T4R B5 160W AHCA (F) (E) (1) ALU B25 RRH4X30-4R		LTE 700_2 LTE 1900	
A3	ALPHA	138'-0"	30°	(E) KATHREIN 800-10992K	--	--	(E) (1) RRH2x40-07L-AT (P) (1) AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB		UMTS 850 LTE 1900 LTE AWS LTE 700_1	
A4	ALPHA	138'-0"	30°	(P) COMMSCOPE NNH4-65C-R6-V3	(E) (1) TT19-08BP-111-001	--	(P) (1) AIRSCALE DUAL RRH 4T4R B5/29 240W AHBCB		LTE 700_3 5GNR 850	
B1	BETA	138'-0"	180°	(P) COMMSCOPE NNH4-65C-R6-V3	--	--	(P) (1) AIRSCALE DUAL RRH 4T4R B5/29 240W AHBCB	(E) (6) 1-5/8" COAX (E) (4) 2" INNERDUCT (E) (6) #8AWG DC POWER TRUNKS (E) (3) FIBER TRUNK	LTE 700_3 5GNR 850	±180-0"
B2	BETA	--	--	--	--	--	--		--	
B3	BETA	138'-0"	180°	(E) KATHREIN 800-10992K	--	(E) (1) RAYCAP DC6-48-60-18-8F SQUID	(E) (1) AIRSCALE DUAL RRH 4T4R B5 160W AHCA (F) (E) (1) ALU B25 RRH4X30-4R		LTE 700_2 LTE 1900	
B4	BETA	138'-0"	180°	(P) COMMSCOPE NNH4-65C-R6-V3	(E) (1) TT19-08BP-111-001	--	(E) (1) RRH2x40-07L-AT (P) (1) AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB		UMTS 850 LTE 1900 LTE AWS LTE 700_1	
G1	GAMMA	138'-0"	300°	(P) COMMSCOPE NNH4-65C-R6-V3	--	--	(P) (1) AIRSCALE DUAL RRH 4T4R B5/29 240W AHBCB	(E) (6) 1-5/8" COAX (E) (4) 2" INNERDUCT (E) (6) #8AWG DC POWER TRUNKS (E) (3) FIBER TRUNK	LTE 700_3 5GNR 850	±180-0"
G2	GAMMA	--	--	--	--	--	--		--	
G3	GAMMA	138'-0"	300°	(E) KATHREIN 800-10992K	--	(E) (1) RAYCAP DC6-48-60-18-8F SQUID	(E) (1) AIRSCALE DUAL RRH 4T4R B5 160W AHCA (F) (E) (1) ALU B25 RRH4X30-4R		LTE 700_2 LTE 1900	
G4	GAMMA	138'-0"	300°	(P) COMMSCOPE NNH4-65C-R6-V3	(E) (1) TT19-08BP-111-001	--	(E) (1) RRH2x40-07L-AT (P) (1) AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB		UMTS 850 LTE 1900 LTE AWS LTE 700_1	

3 FINAL EQUIPMENT SCHEDULE

SCALE: N.T.S.

RE: GN20/GN1



I-25 & WIGWAM
FA # / SITE ID:
10099192 / COL06040
20357 E. INDUSTRIAL BLVD
FOUNTAIN, CO 80817

SHEET TITLE
ANTENNA PLANS & SCHEDULE

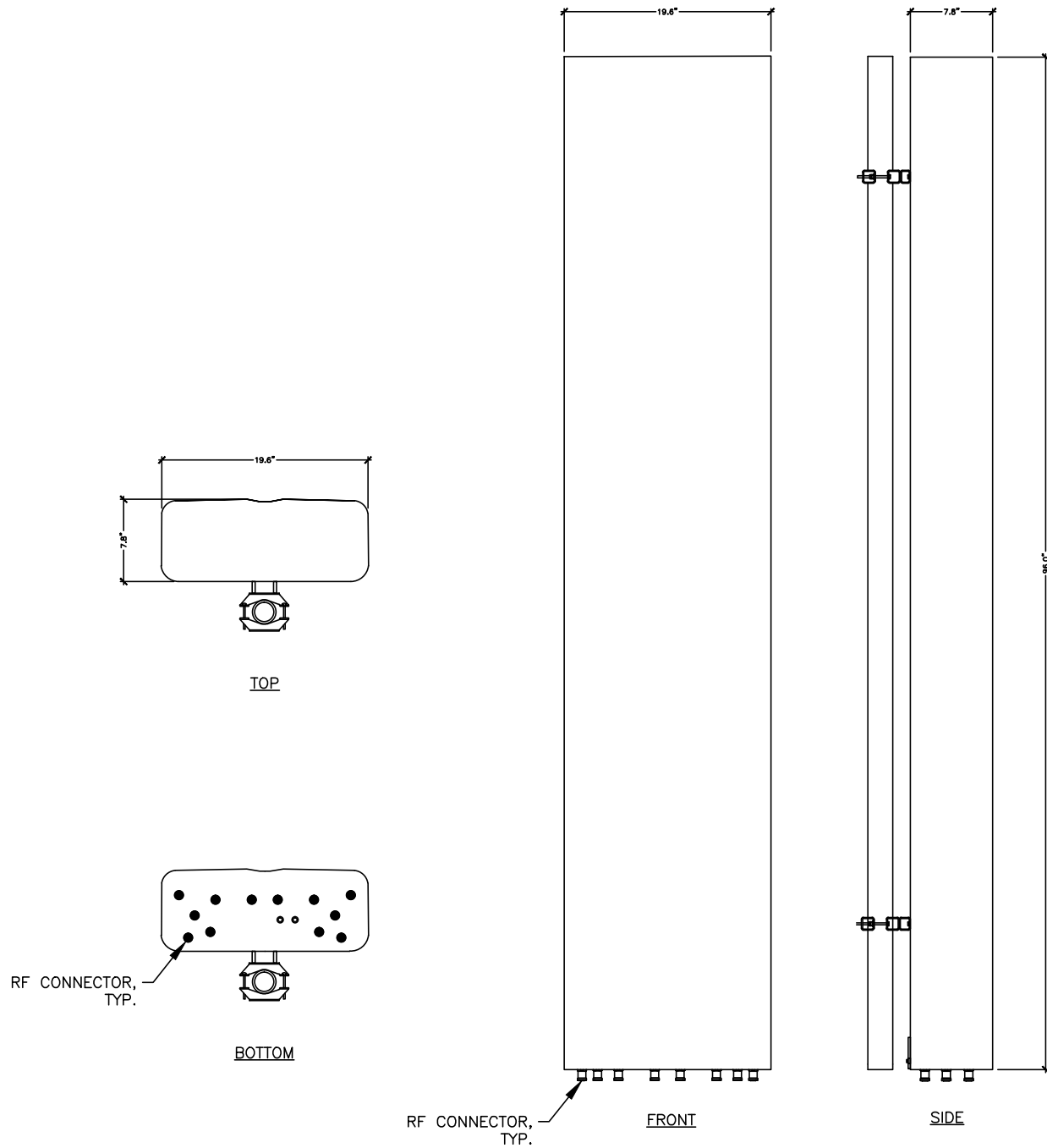
SHEET NUMBER
A4

TX:SMARTLINK 64925 - SMARTLINK AT&T RMR 10099192 - I-25 AND WIGWAM 00 - A&E (PHASE 1) 64925-10099192-A+E-P1 REV2.DWG - CLS PROJECT ID: 64925-10099192-A+E-P1

NOTE:
ANTENNA INFORMATION
PULLED FROM PRELIMINARY
PRODUCT DATA SHEET

NNH4-65C-R6-V3

MANUFACTURER: COMMSCOPE
 MODEL: NNH4-65C-R6-V3
 DIMENSIONS: 96.0" X 19.6" X 7.8"
 (HxWxD)
 WEIGHT: 102.1 LBS
 FREQUENCY: REFER TO RF DATA SHEET



1 ANTENNA SPECIFICATIONS

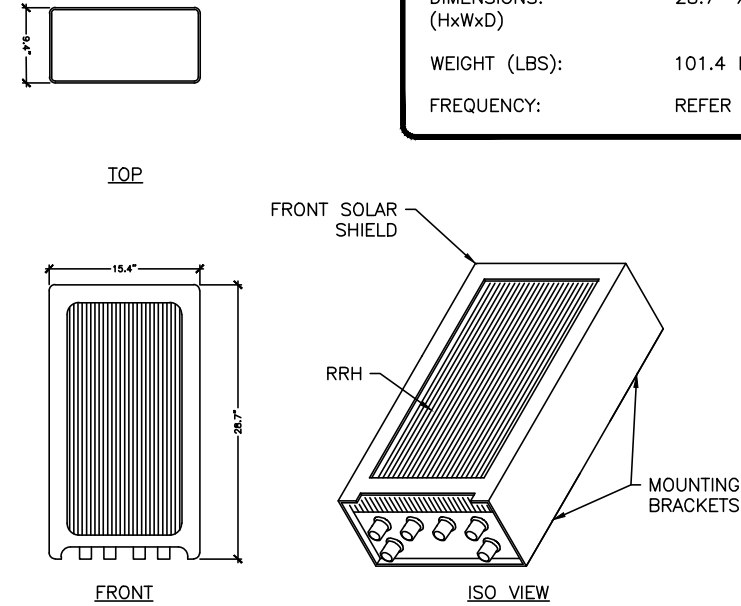
SCALE: N.T.S.

RE: GN20/GN1

NOTE:
RRUS CAN ONLY BE PAINTED
ON SOLAR SHIELD.

AIRSCALE DUAL RRH

MANUFACTURER: NOKIA
 MODEL: AIRSCALE DUAL RRH 4T4R
 B5/29 240W AHBCB
 DIMENSIONS: 28.7" X 15.4" X 9.4"
 (HxWxD)
 WEIGHT (LBS): 101.4 LBS
 FREQUENCY: REFER TO RF DATA SHEET



2 RADIO SPECIFICATIONS

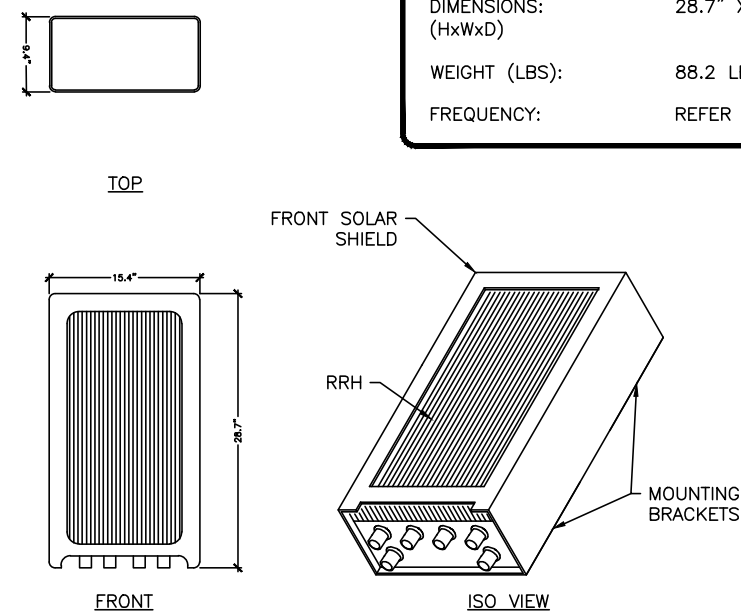
SCALE: N.T.S.

RE: GN20/GN1

NOTE:
RRUS CAN ONLY BE PAINTED
ON SOLAR SHIELD.

AIRSCALE DUAL RRH

MANUFACTURER: NOKIA
 MODEL: AIRSCALE DUAL RRH 4T4R
 B25/B66 320W AHFIB
 DIMENSIONS: 28.7" X 15.4" X 9.4"
 (HxWxD)
 WEIGHT (LBS): 88.2 LBS
 FREQUENCY: REFER TO RF DATA SHEET



3 RADIO SPECIFICATIONS

SCALE: N.T.S.

RE: GN20/GN1



400 SOUTH COLORADO BOULEVARD, SUITE 820
 DENVER, CO 80246
 OFFICE: (888)-828-5465



319 CHAPANOKE RD, SUITE 118
 RALEIGH, NC 27603
 PH: (405)348-5460 FAX: (405)341-4625
 CLS PROJECT ID:
 64925-10099192-A+E-P1

REVISIONS

REV.	DATE	DESCRIPTION	INITIALS
A	03/10/21	PRELIMINARY ISSUE	AND
B	04/05/21	CLIENT COMMENTS	AND
0	08/04/21	FOR CONSTRUCTION	OBA
2	08/24/21	CLIENT COMMENTS	AND



I-25 & WIGWAM

FA # / SITE ID:
 10099192 / COL06040

20357 E. INDUSTRIAL BLVD
 FOUNTAIN, CO 80817

SHEET TITLE
**EQUIPMENT
 SPECIFICATIONS**

SHEET NUMBER

A5

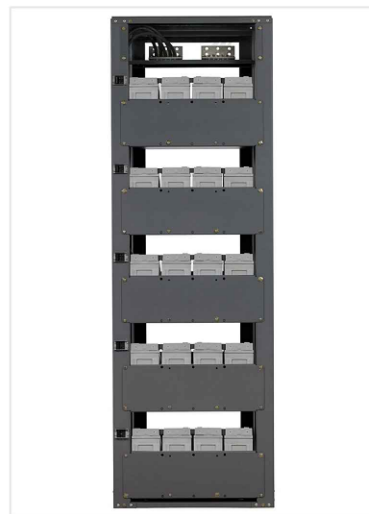
NetSure™ VRLA Battery Rack

Description

The NetSure VRLA Battery Rack provides back-up capacity up to 2100 amp-hours per bay for +24 V applications and 1050 amp-hours per bay for -48 V applications.

Designed for use in wireline and wireless communication systems installed in small offices, huts, CEVs and CUEs, this battery rack is compatible with NetSure DC power systems and most DC power equipment.

- Battery connection cables are supplied with factory installed lugs
- Circuit breakers provide individual battery string disconnect with alarm
- Compatible with any DC power system for versatility
- Circuit breaker alarm, form-C relay
- Complies with industry standards: UL Listed and Seismic Zone 4 compliant



-48 V NetSure VRLA battery rack

Technical Specifications

Rated Output Capacity

Output	+24 Volts DC or -48 Volts DC
Capacity	1200 amps per bay

Physical Characteristics

Rack dimensions (H x W x D)	-48V: 84" x 27.5" x 22.7" +24V: 84" x 25.8" x 22.5"
Rack weight (without batteries)	-48V: 484 lb., +24V: 600lb.

Environmental

Operating Temperature	-40 °C to +40 °C (-40 °F to +104 °F)
Storage Range	-40 °C to +85 °C (-40 °F to +185 °F)
Safety Compliance	UL Listed and Seismic Zone 4 compliant

Ordering Information

AT&T Number	Vertiv Number	Description	System
NEQ.20326	588820400200	-48 V NetSure VRLA battery rack 84" H x 27.5" W x 22.7" D (5) battery trays at 8 RU (14 inch) spacing, (1) string per tray, up to 210 Ahr each, 200 A CB per string	NetSure 5100
			NetSure 7100
NEQ.15311	588810200ZZ001	+24 V NetSure VRLA battery rack 84" H x 25.8" W x 22.5" D (5) battery trays at 8 RU (14 inch) spacing, (2) strings per tray, up to 210 Ahr each, 200 A CB per string	NetSure 5100
			NetSure 7100

Accessories & Spare Parts

NEQ.19478*	562859	Kit e/w (1) SMTEMP and (5) temperature probes, 3.3 meters (556155)
NEQ.13596	237812800	Isolation pad kit

* This kit is required when ordering a battery rack for a NetSure 7100, NetSure 721 or NetSure 710 DC power system.

Vertiv™ XTE 601P Enclosure, NetSure 512 Power System

Description

This outdoor power solution includes a NetSure™ 512 DC Power System and an environmentally controlled Vertiv XTE 601P enclosure that offers separate individually-cooled chambers for power equipment and batteries. Temperature is monitored with an Environmental Control Unit (ECU) that adjusts thermal settings to maintain ideal conditions within each chamber, while simultaneously decreasing system power consumption and noise. All DC power-feed cables to customer equipment are surge protected at the distribution bus. The battery chamber houses 3 shelves of front-post VRLA batteries and SAFT batteries up to 180 Ah in size.

NetSure 512 DC Power System

- eSure™ rectifiers provide high energy efficiency
- Great output power at high temperatures
- Advanced remote monitoring with NCU controller

Vertiv™ XTE Enclosure

- Separate temperature-controlled zones for power and batteries
- Door-mounted cooling system & rear cable-entry compartment

Technical Specifications

DC Power System Features

Nominal System Voltage	-48 VDC or +24 VDC
Control	NCU controller

Rated Output Capacity – Maximum Configuration

System	525 amps at -48 VDC plus redundancy 400 amps at +24 VDC plus redundancy
--------	--

Distribution Panel	Top: Wired for (16) +24 V and (13) -48 V bullet positions Bottom: (30) -48 V bullet positions
--------------------	--

Environmental

Operating Temperature	-40 °F to 115 °F (-40 °C to 46 °C) continuous operation
Humidity	0 to 95%, non-condensing

Thermal Solutions

Power Chamber	2500 watt door-mounted heat exchanger, 2 RU available space for surge protection
Battery Chamber	Fan cooled, fresh air ventilation; holds up to (3) battery strings

Equipment

Ground Bar	10 positions
Terminal Block	12-position Phoenix alarm block, 32-position Phoenix alarm bunching block

Safety

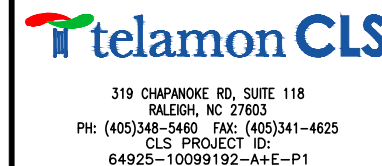
DC Power System	UL 1801 Listed (US & Canada), NEBS Level 3
Enclosure	GR-487, UL 60950, and Seismic Zone 4 compliant



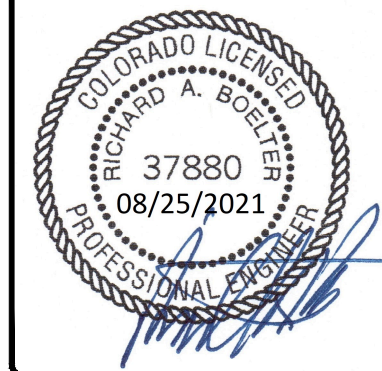
Ordering Process

Follow the steps below for each DC power system required.

1. Order -48VDC 2000 watt rectifiers, quantity as required, NEQ.15930 (1R482000E3).
2. Order -48VDC to +24VDC 1500 watt converters, quantity as required, NEQ.15929 (1C48241500).
3. Order load circuit breakers and GMT fuse module NEQ.15981 (549017) as required per Bullet Nose Type Circuit Breakers on [page 22](#) and GMT Fuse Modules on [page 23](#).



REVISIONS			
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2	08/24/21	CLIENT COMMENTS	AND



I-25 & WIGWAM
FA # / SITE ID:
10099192 / COL06040
20357 E. INDUSTRIAL BLVD
FOUNTAIN, CO 80817

SHEET TITLE
EQUIPMENT
SPECIFICATIONS

SHEET NUMBER
A6

T:\SMARTLINK\64925 - SMARTLINK AT&T RMR\10099192 - A&E (PHASE 1)\64925-10099192-A+E-P1 REV2.DWG - CLS PROJECT ID: 64925-10099192-A+E-P1

PURCELL FLX21-2520 CABINET

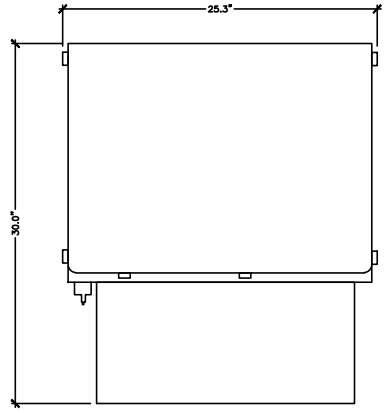
MANUFACTURER: PURCELL

MODEL: FLX21-2520

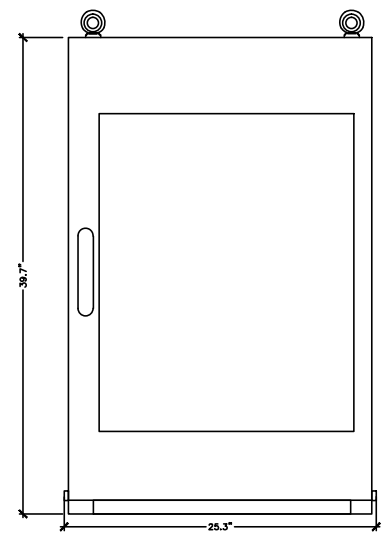
DIMENSIONS: 39.7" X 25.3" X 30"

H X W X D (IN)

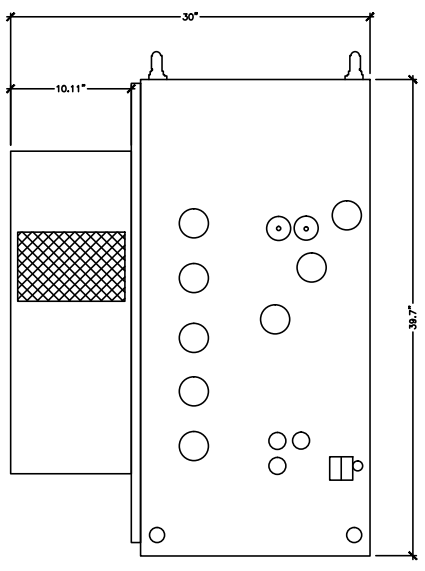
WEIGHT (LBS): 140.0 LBS



TOP VIEW



FRONT VIEW

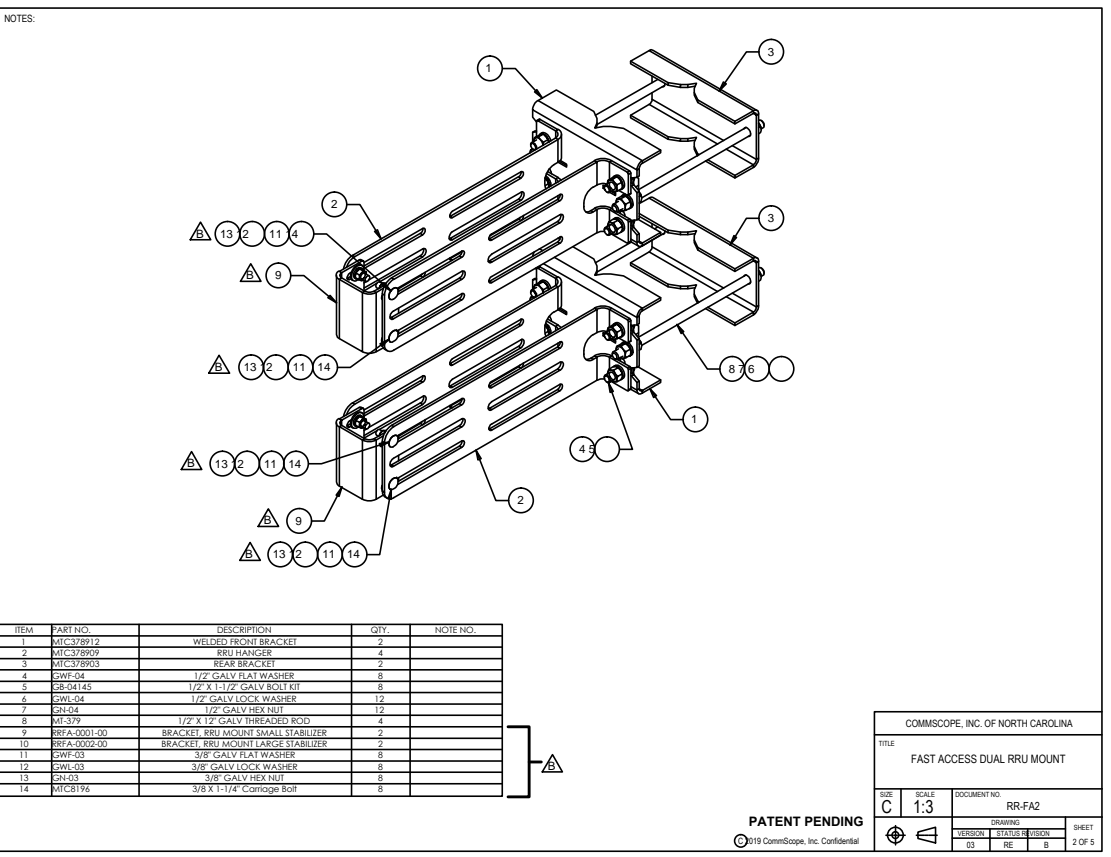


SIDE VIEW

1 FLEX21 CABINET

SCALE: N.T.S.

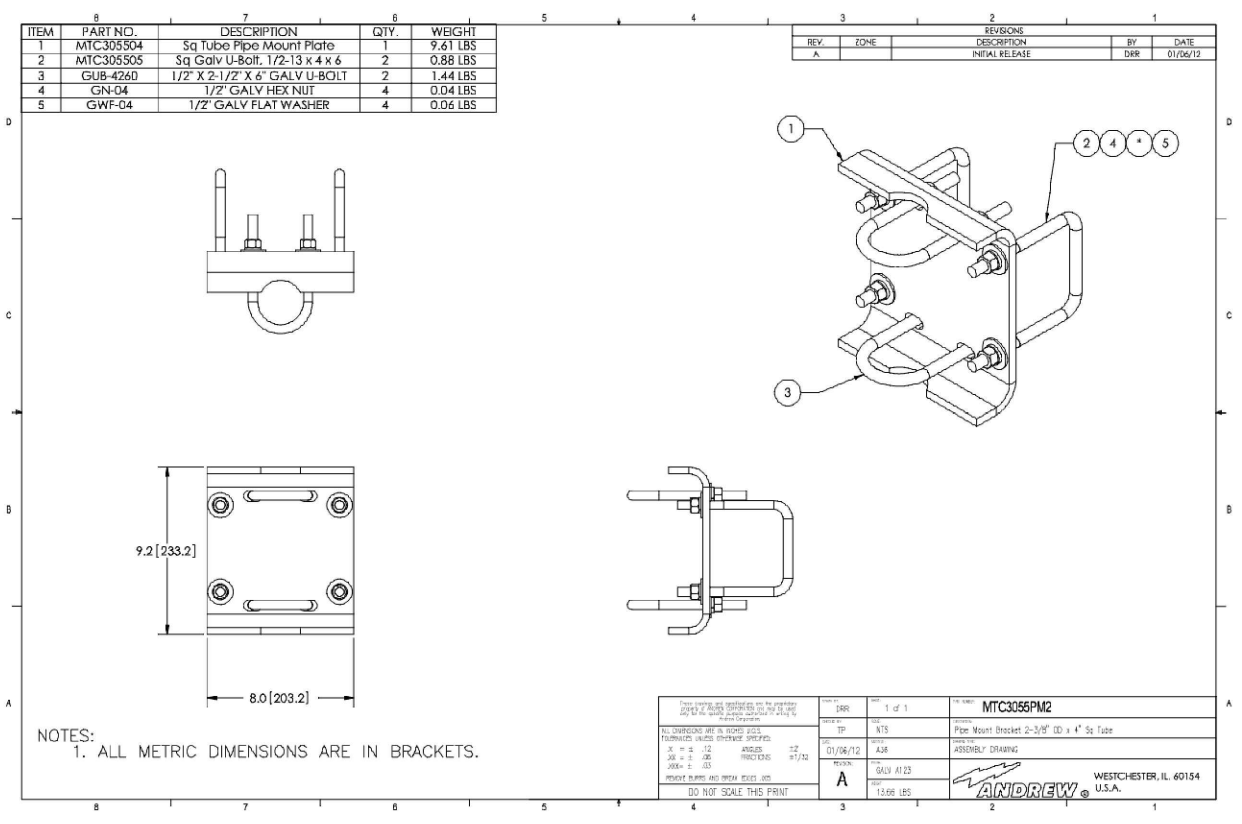
RE: GN20/GN1



2 COMMSCOPE RR-FA2

SCALE:

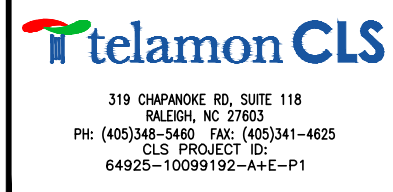
RE: GN20/GN1



3 COMMSCOPE MTC3055PM2

SCALE:

RE: GN20/GN1



REVISIONS				
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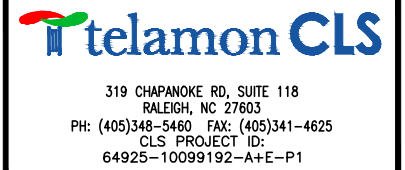
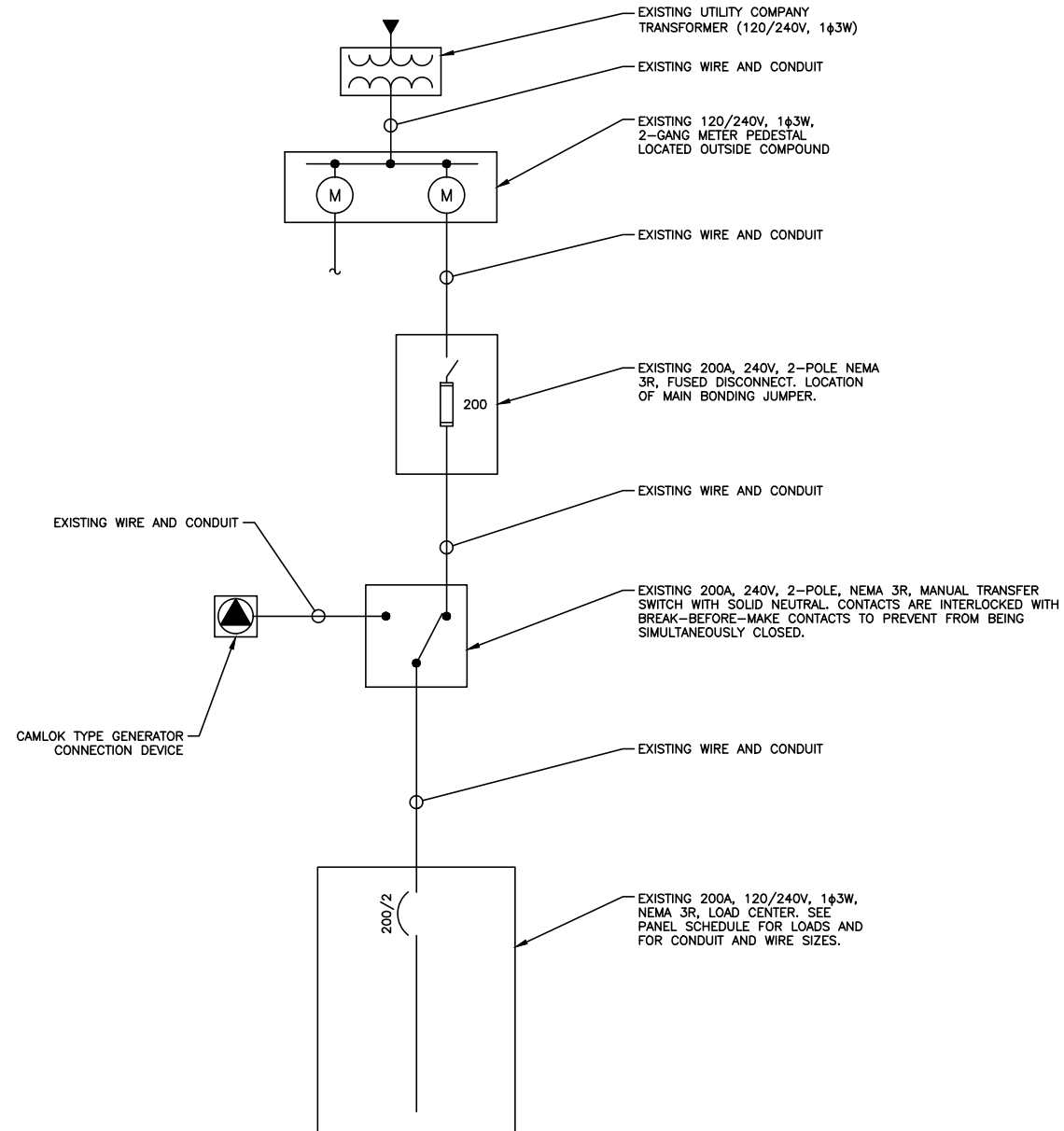
I-25 & WIGWAM
FA # / SITE ID:
10099192 / COL06040
20357 E. INDUSTRIAL BLVD
FOUNTAIN, CO 80817

SHEET TITLE
EQUIPMENT SPECIFICATION

SHEET NUMBER
A7

NOTES:

1. 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. SEE PANEL SCHEDULE FOR THE WIRE AND CONDUIT SIZES FOR THE NEW LOADS IN THE PANEL.
4. ALL GROUNDING AND BONDING PER THE NEC.



REVISIONS

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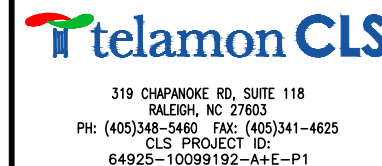
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ONE-LINE DIAGRAM

SHEET NUMBER

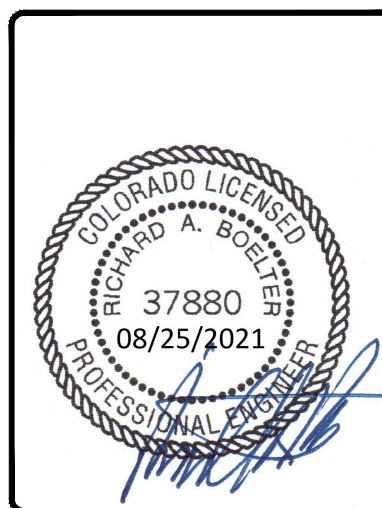
E1

1 ONE-LINE DIAGRAM
SCALE: N.T.S.

RE: GN20/GN1



REVISIONS			
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I-25 & WIGWAM
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 10099192 / COL06040
 20357 E. INDUSTRIAL BLVD
 FOUNTAIN, CO 80817

SHEET TITLE
PANEL SCHEDULE

SHEET NUMBER
E2

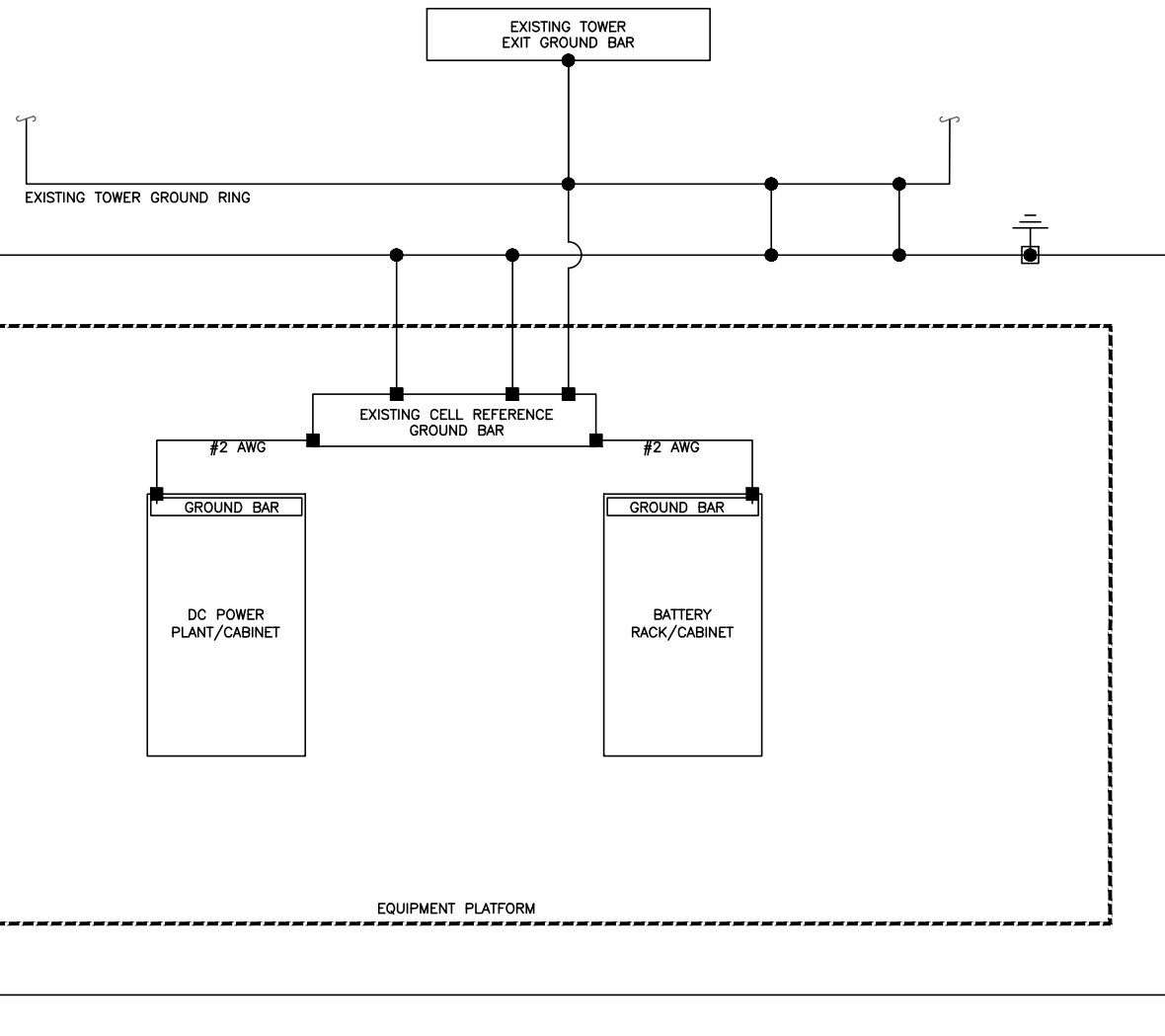
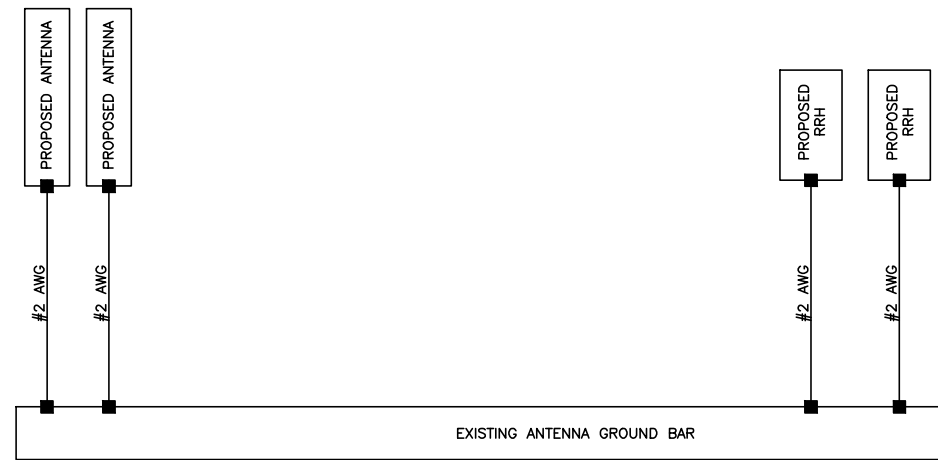
AT&T PANEL SCHEDULE

MAIN: 200 AMP MAIN BREAKER					VOLTAGE/PHASE: 120/240V, 1-PHASE, 3-WIRE					SHORT CIRCUIT CURRENT RATING: 10,000 AMPS									
MOUNTING: SURFACE					ENCLOSURE: NEMA 3R					SURGE PROTECTION DEVICE: YES									
BUS: 200 AMPS					MANUFACTURER: GENERAL ELECTRIC					MODEL NUMBER: ----									
DESCRIPTION	CONDUCTORS & CONDUIT				LOAD (VA)	C or NC	C/B	CIR No.	LOAD (VA)		CIR No.	C/B	C or NC	LOAD (VA)	CONDUCTORS & CONDUIT				DESCRIPTION
	HOT	NEUTRAL	GROUND	CONDUIT					A-PHASE	B-PHASE					HOT	NEUTRAL	GROUND	CONDUIT	
1900 CABINET					2400	C	50	1	2900		2	20	C	500					GFCI RECEPTACLE & LIGHTS
					2400	C		3		2580		4	20	NC	180				
850 CABINET					2400	C	50	5	6240		6	80	C	3840					UMTS CABINET
					2400	C		7		6240		8	80	C	3840				
SURGE PROTECTION DEVICE					0	NC	60	9	850		10	20	C	850					CIENA
					0	NC		11		850		12	20	C	850				
SPARE					0	NC		13	990		14	30	C	990	10	--	10	1/2"	RECTIFIERS #5 & #6 **
SPARE					0	NC		15		990	16		C	990	10				
RECTIFIERS #1 & #2 **	10	--	10	1/2"	990	C	30	17	1980		18	30	C	990	10	--	10	1/2"	RECTIFIERS #7 & #8 **
	10				990	C		19		1980		20		C	990	10			
RECTIFIERS #3 & #4 **	10	--	10	1/2"	990	C	30	21	1980		22	30	C	990	10	--	10	1/2"	RECTIFIERS #9 & #10 **
	10				990	C		23		1980		24		C	990	10			
ARGUS GFCI RECEPTACLE					180	NC	30	25	180		26								
BLANK								27		0									BLANK
								29		0									
								31		0									
								33		0									
								35		0									
								37		0									
								39		0									
BASE LOAD (VA) =									15120	14620									
25% OF CONTINUOUS LOAD (VA) =									3735	3610	C = CONTINUOUS LOAD; NC = NON-CONTINUOUS LOAD								
TOTAL LOAD (VA) =									18855	18230									
TOTAL LOAD (A) =									158	152									

- ** NEW LOAD. USE EXISTING 30A, 2-POLE BREAKER FOR NEW RECTIFIER. CONTRACTOR MAY USE EXISTING WIRE AND CONDUIT IF IT MEETS OR EXCEEDS WHAT IS SPECIFIED IN PANEL SCHEDULE.
1. CONDUIT SIZES SHOWN ARE MINIMUM SIZES. CONTRACTOR TO FOLLOW SECTION 310-15 OF THE NEC AND ADJUST CONDUCTOR AMPACITIES IF CONTRACTOR CHOOSES TO COMBINE CIRCUITS IN A CONDUIT.
 2. ALL LOADS EXISTING UNLESS NOTED OTHERWISE.
 3. RECTIFIER LOADS SHOWN ARE FOR THE VERTIV eSURE 2000W RECTIFIER (MODEL No. R48-2000e3). RECTIFIER DEMAND IS BASED ON ALL RECTIFIERS RUNNING CONTINUOUS AT 50% OF FULL LOAD.
 4. AT&T HAS NOT PROVIDED THE RECTIFIER LOADS FOR LOAD CALCULATIONS. AT&T TO REVIEW AND VERIFY CORRECT ASSUMPTIONS FOR RECTIFIER LOADS.

T:\SMARTLINK\64925 - SMARTLINK AT&T RMR\10099192 - I-25 AND WIGWAM\00 - A&E (PHASE 1)\64925-10099192-A+E-P1 REV2.DWG - CLS PROJECT ID: 64925-10099192-A+E-P1

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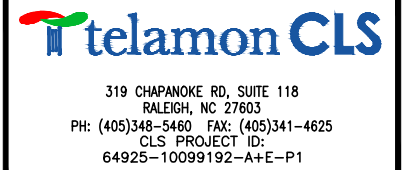
- EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION
- ⊥ GROUND ROD
- ⊥ T TEST GROUND ROD WITH INSPECTION SLEEVE

LEGEND

1. GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
2. CONTRACTOR SHALL GROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. GROUNDING SHALL BE IN COMPLIANCE WITH NEC SECTION 250 AND AT&T GROUNDING AND BONDING REQUIREMENTS (ATT-TP-76416) AND MANUFACTURER'S SPECIFICATIONS.
3. ALL GROUND CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.

NOTES

- (A) **EXTERIOR GROUND RING:** #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING. (ATT-TP-76416 2.2.3.5 / 7.5.1)
- (B) **TOWER GROUND RING:** THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA TOWER'S LEGS, AND/OR GUY ANCHORS. WHERE SEPARATE SYSTEMS HAVE BEEN PROVIDED FOR THE TOWER AND THE BUILDING, AT LEAST TWO BONDS SHALL BE MADE BETWEEN THE TOWER RING GROUND SYSTEM AND THE BUILDING RING GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS. (ATT-TP-76416 / 7.5.1)
- (C) **GROUND ROD:** UL LISTED COPPER CLAD STEEL MINIMUM 5/8" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR. (ATT-TP-76416)
- (D) **CELL REFERENCE GROUND BAR:** POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS. (ATT-TP-76416 / 7.6.7)
- (E) **TOWER EXIT GROUND BAR:** #2 AWG SOLID TINNED COPPER BOND TO THE TOWER GROUND RING. (ATT-TP-76416 / 7.4.2.6)
- (F) **FRAME BONDING:** THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK. BOND THE FRAME GROUND TO THE "I" SECTION OF THE CELL REFERENCE GROUND BAR OR SUPPLEMENTARY CONDUCTOR. (ATT-TP-76416 6.5.3 AND 7.8)
- (G) **FENCE AND GATE GROUNDING:** METAL FENCES WITHIN 7 FEET OF THE EXTERIOR GROUND RING OR OBJECTS BONDED TO THE EXTERIOR GROUND RING SHALL BE BONDED TO THE GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS. (ATT-TP-76416 / 7.12.2.2)
- (H) **EXTERIOR UNIT BONDS:** METALLIC OBJECTS SHALL BE BONDED TO THE EXTERIOR GROUND RING. (ATT-TP-76416 / 7.12.6)
- (J) **ICE BRIDGE SUPPORTS:** EACH ICE BRIDGE LEG SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXOTHERMIC WELDS AT BOTH THE ICE BRIDGE LEG AND BURIED GROUND RING. (ATT-TP-76416 / 7.4.2.6)
- (K) **OUTDOOR GROUNDING CONDUCTORS:** GROUNDING CONDUCTORS INSTALLED OUTDOORS AND RUN ENTIRELY ABOVE GRADE SHALL BE TINNED STRANDED COPPER AND BE SUNLIGHT RESISTANT.



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I-25 & WIGWAM
FA # / SITE ID:
10099192 / COL06040
20357 E. INDUSTRIAL BLVD
FOUNTAIN, CO 80817

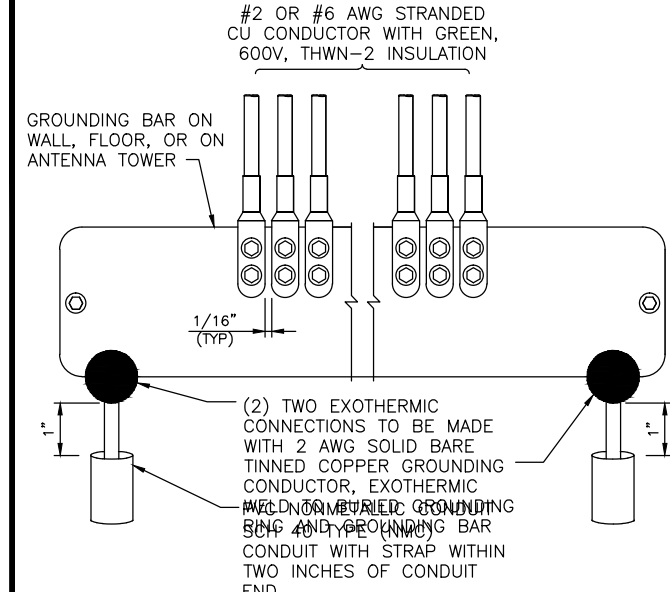
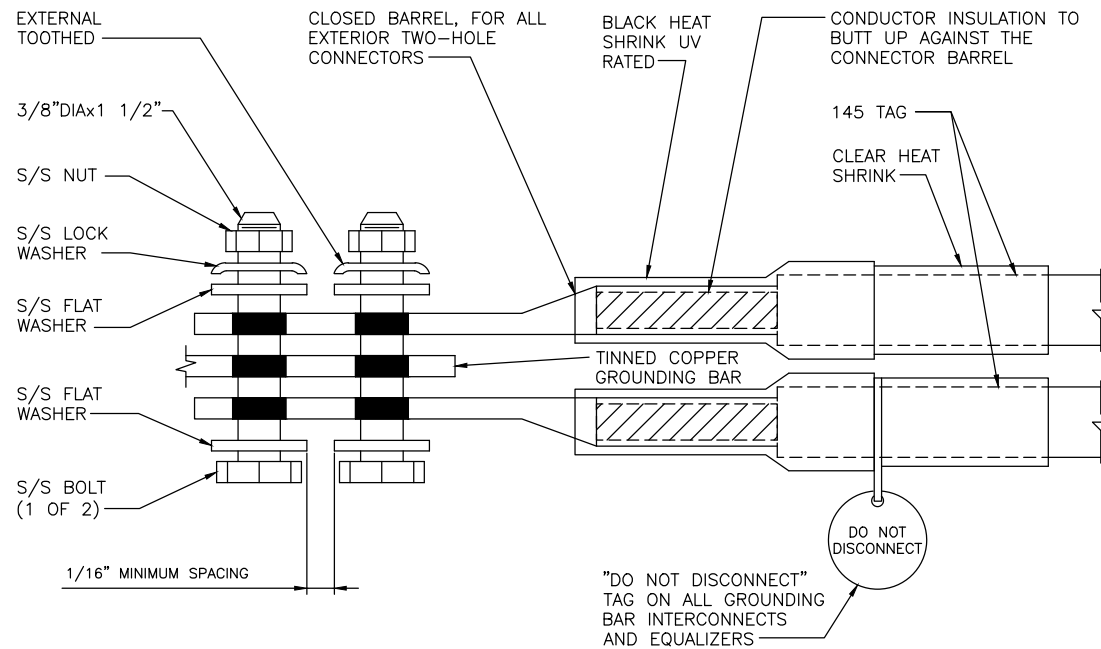
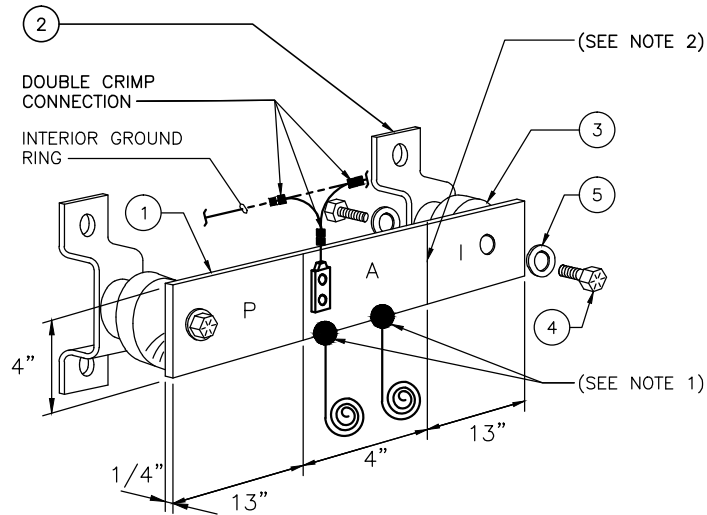
SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G1

1 SITE GROUNDING DETAIL AND NOTES
SCALE: N.T.S.

RE: GN20/GN1

NEWTON INSTRUMENT COMPANY, INC. BUTNER, N.C.			
NO	REQUIRED	PART NUMBER	DESCRIPTION
1	1	1/4"x4"x30"	SOLID GROUND BAR
2	2	A-6056	WALL MOUNTING BRACKET
3	2	3061-4	INSULATORS
4	4	3012-1	5/8"-11x1" H.H.C.S.
5	4	3015-8	5/8" LOCKWASHER



2 EXTERIOR TWO HOLE LUG DETAIL
SCALE: N.T.S. RE: GN20/GN1

3 GROUND CONDUCTOR DETAIL
SCALE: N.T.S. RE: GN20/GN1

EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION

SECTION "P" - SURGE PROTECTORS

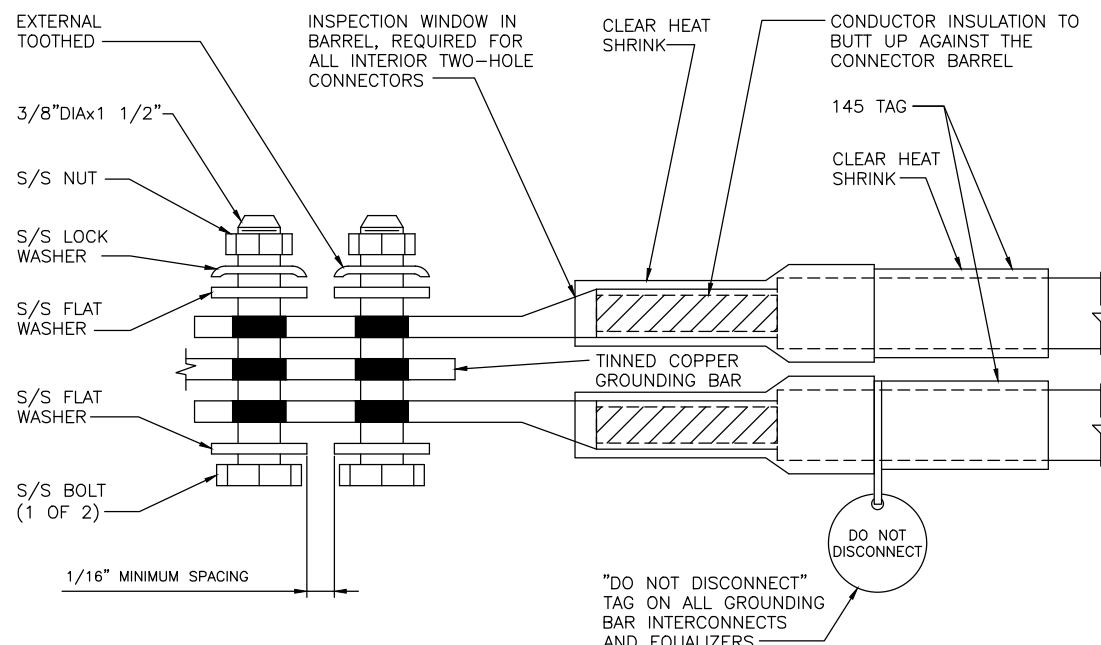
- (EC) CELL REFERENCE GROUND BAR (IF COLLOCATED)
- (EC) GENERATOR FRAMEWORK (IF AVAILABLE) (#2 AWG)
- (EC) TELCO GROUND BAR (#2 AWG)
- (EC) COMMERCIAL POWER COMMON NEUTRAL/GROUNDING BOND (3/0)
- (EC) FIBER GROUND BAR (#2 AWG)
- (EC) POWER ROOM REFERENCE GROUND BAR (#2 AWG)
- (AT&T) RECTIFIER FRAMES

SECTION "I" - ISOLATED GROUNDING ZONE

- (AT&T) ALL ISOLATED GROUNDING REFERENCE
- (AT&T) GROUND WINDOW BAR

SECTION "A" - SURGE ABSORBERS

- (EC) INTERIOR GROUND RING (#2 AWG)
- (EC) EXTERNAL EARTH GROUNDING FIELD (BURIED GROUND RING) ((2) #2 AWG)
- (EC) METALLIC COLD WATER PIPE (IF AVAILABLE) (1/0 AWG)
- (EC) BUILDING STEEL (IF AVAILABLE) (1/0 AWG)

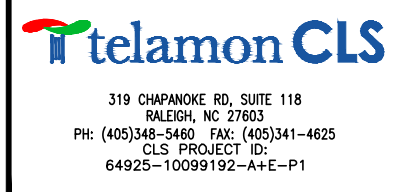


4 INTERIOR TWO HOLE LUG DETAIL
SCALE: N.T.S. RE: GN20/GN1

- EXOTHERMIC WELD (2) TWO, #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUND BAR. ROUTE CONDUCTORS TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
- ALL GROUND BARS SHALL BE STAMPED IN TO THE METAL "IF STOLEN DO NOT RECYCLE." THE CONTRACTOR SHALL USE PERMANENT MARKER TO DRAW THE LINES BETWEEN EACH SECTION AND LABEL EACH SECTION ("P", "A", "I") WITH 1" HIGH LETTERS.
- ALL HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
- FOR GROUND BOND TO STEEL ONLY: INSERT A CADMIUM FLAT WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
- DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUND CONDUCTOR DOWN TO GROUNDING BUS.
- NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUND BAR AND BOLTED ON THE BACK SIDE. INSTALL BLACK HEAT-SHRINKING TUBE, 600 VOLT INSULATION, ON ALL GROUNDING TERMINATIONS. THE INTENT IS TO WEATHERPROOF THE COMPRESSION CONNECTION.
- ALL GROUNDING PARTS AND EQUIPMENT TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUND BAR AS REQUIRED, PROVIDING 50% SPARE CONNECTION POINTS.
- ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).

5 GROUNDING NOTES
SCALE: N.T.S. RE: GN20/GN1

1 GROUND BAR DETAIL
SCALE: N.T.S. RE: GN20/GN1



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I-25 & WIGWAM
FA # / SITE ID:
10099192 / COL06040
20357 E. INDUSTRIAL BLVD
FOUNTAIN, CO 80817

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G2

TX: SMARTLINK 64925 - SMARTLINK AT&T RMR 10099192 - I-25 AND WIGWAM - COL06040 - COL06040 - I-25 AND WIGWAM - A&E (PHASE 1) 64925-10099192-A+E-P1 REV2.DWG - CLS PROJECT ID: 64925-10099192-A+E-P1