Verizon

VERIZON SITE NUMBER: 290438

VERIZON SITE NAME:

SITE TYPE:

TOWER HEIGHT:

CS_GOODMAN_AND_SONS MONOPINE

69'-0"

TITLE SHEET

SITE PLAN

GENERAL NOTES

ANTENNA PLANS

TOWER ELEVATIONS

EQUIPMENT DETAILS

PLUMBING DIAGRAM

GROUNDING DETAILS

GROUNDING DETAILS

FINAL EQUIPMENT SCHEDULE

BUSINESS UNIT #: 823520

SITE ADDRESS:

COUNTY:

JURISDICTION:

17997 SIERRA WAY MONUMENT, CO 80132

EL PASO

COUNTY OF EL PASO

VERIZON PROJECT - 16585177

SITE INFORMATION CROWN CASTLE USA INC. CS_GOODMAN_AND_SONS SITE NAME: SITE ADDRESS 17997 SIERRA WAY MONUMENT, CO 80132 EL PASO COUNTY: 6118009003 MAP/PARCEL #: AREA OF CONSTRUCTION: **EXISTING** Ensure site address LATITUDE: 39° 49' 40.52" -105° 07' 02.92" LONGITUDE: NAD83 LAT/LONG TYPE: $7490~\mathrm{FT}~\pm$ **GROUND ELEVATION: CURRENT ZONING:** RR-2.5 CITY OF ARVADA JURISDICTION: OCCUPANCY CLASSIFICATION: U TYPE OF CONSTRUCTION: FACILITY IS UNMANNED AND NOT FOR-A.D.A. COMPLIANCE: **HUMAN HABITATION** PROPERTY OWNER: 2700 YOUNGFIELD STE 280 LAKEWOOD, CO 80215 Per SDP checklist TOWER OWNER: CROWN CASTLE

17995 SIERRA

CARRIER/APPLICANT:

ELECTRIC PROVIDER:

TELCO PROVIDER:

VERIZON WIRELESS

BELLEVUE, WA 98008

MONUMENT, CO 80132-8424

3245 158TH AVENUE MS 231 ←

MOUNTAIN VIEW ELECTRIC

WINGS CONTAINED HEREIN ARE FORMATTED FOR 🛚 🎇 II FULL SIZE. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE provide tower owne AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING mail address Per SDP checklist,

address

K OR BE RESPONSIBLE FOR SAME. rovide a contact

PPROVALS associated phone number and email

DRAWING INDEX

<u>DATE</u>

LOCATION MAP PEBBLE CREEK CT

DRIVING DIRECTIONS: FROM DENVER INTERNATIONAL AIRPORT. HEAD NORTH ON PEÑA BLVD. SLIGHT LEFT ONTO TERMINAL W (SIGNS FOR AIRPORT TERMINAL W). USE THE 2ND FROM THE LEFT LANE TO TURN SLIGHTLY LEFT ONTO PARKING – TERMINAL W. SLIGHT RIGHT. KEEP LEFT. KEEP LEFT TO CONTINUE ON NEW CASTLE ST. CONTINUE ONTO 8599- NEW CASTLE STREET -8101. 8599- NEW CASTLE STREET -8101 TURNS SLIGHTLY RIGHT AND BECOMES PEÑA BLVD (SIGNS FOR I-70/AIRPORT EXIT/AIRPORT RETURN TO TERMINAL). TAKE EXIT 6A TOWARD I-70 S. KEEP LEFT AT THE Y JUNCTION AND MERGE WITH E-470 S. TAKE EXIT 1A FOR INTERSTATE 25 S TOWARD COLO SPGS. MERGE WITH I-25 S. TAKE EXIT 161 FOR CO-105 TOWARD MONUMENT/PALMER LAKE. TURN RIGHT ONTO CO-105 E.

PROJECT TEAM

(800) 388-9881

(866) 642-0444

CENTURYLINK

A&E FIRM: TOWER ENGINEERING PROFESSIONALS 4710 E ELWOOD ST, STE 9 PHOENIX, AZ 85040 OFFICE: (480) 285-0036 CROWN CASTLE 2055 S. STEARMAN DRIVE USA INC. DISTRIC CHANDLER, AZ 85286 CONTACTS: ---- - PROJECT MANAGER

---- - CONSTRUCTION MANAGER

SABRINA LANCASTER SABRINA. LANCASTER@CROWN CASTLE.COM

CONTRACTOR PMI REQUIREMENTS

https://pmi.vxwsmart.com PMI ACCESSED AT SMART TOOL VENDOR PROJECT NUMBER VzW LOCATION CODE (PSLC) 280313

*** PMI AND REQUIREMENTS ALSO EMBEDDED IN MOUNT ANALYSIS REPORT

MOUNT MODIFICATION REQUIRED

VzW APPROVED SMART KIT VENDORS

REFER TO MOUNT MODIFICATION DRAWINGS PAGE FOR VzW SMART KIT APPROVED VENDORS

APPLICABLE CODES/REFERENCE **DOCUMENTS**

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

CODE TYPE CODE BUILDING 2018 IBC **MECHANICAL** 2018 IMC 2020 NEC ELECTRICAL

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS: PENDING DATED: PENDING MOUNT ANALYSIS: MASER CONSULTING DATED: 12/14/2021 RFDS REVISION: 1

DATED: 06/24/2021

ORDER ID: 597820 **REVISION:**

CALL COLORADO ONE CALL (800) 922-1987 CALL 3 WORKING DAYS BEFORE YOU DIG!

PROJECT DESCRIPTION

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

TOWER SCOPE OF WORK:

- INSTALL (6) ANTENNAS
- INSTALL (6) RRHs
- INSTALL (2) OVP BOX • INSTALL (2) HYBRID
- INSTALL (3) DUAL ANTENNA BRACKETS

PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN NOC AT (800) 788-7011 & CROWN CONSTRUCTION







VERIZON SITE NUMBER: 290438

BU #: **823520** CS_GOODMAN_AND_SONS

> 17997 SIERRA WAY MONUMENT, CO 80132

EXISTING 69'-0" MONOPINE

	ISSUED FOR:					
REV	DATE	DRWN	DESCRIPTION	DES./QA		
0	01/19/22	ORG	CONSTRUCTION	HMM		

NO SCALE



Andrew R. Berglund, P.E. Professional Engineer License: #58252

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

SHEET NUMBER:

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

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

GENERAL NOTES:

A DAILY BASIS.

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

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE. 2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED
- TO BE 1000 psf. 3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF
- CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.
- ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
- #4 BARS AND SMALLER.... #5 BARS AND LARGER.... ..60 ksi THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE
- ON DRAWINGS: CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH... CONCRETE EXPOSED TO EARTH OR WEATHER:
- #6 BARS AND LARGER... #5 BARS AND SMALLER1-1/2" CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
- SLAB AND WALLS.... BEAMS AND COLUMNS ..
- 7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

GREENFIELD GROUNDING NOTES:

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

ELECTRICAL INSTALLATION NOTES:

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE
- FEDERAL, STATE, AND LOCAL CODES/ORDINANCES. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED
- AND TRIP HAZARDS ARE ELIMINATED. 3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
- 4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC. 4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
- ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERYIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT
- ADOPTED CODE PRE THE GOVERNING JURISDICTION. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
- ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).
- PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS 8. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES
- ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
- 10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHËRWISE SPECIFIÉD.
- 11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS
- OTHERWISE SPECIFIED. 12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH
- TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED. 13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP—STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).
- 14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE
- 15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR
- EXPOSED INDOOR LOCATIONS 16. ELECTRICAL METALLIC TUBING (EMT) OR METAL—CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- 17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE
- GRADE PVC CONDUIT 18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- 19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
- 20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND
- 21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
- 22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
- 23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED
- MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE 24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3R (OR
- METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
- 26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.

APWA UNIFORM COLOR CODE:

PROPOSED EXCAVATION

GASEOUS MATERIALS

POTABLE WATER

SLURRY LINES

EMPORARY SURVEY MARKINGS

LECTRIC POWER LINES, CABLES,

GAS, OIL, STEAM, PETROLEUM, OR

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

ECLAIMED WATER, IRRIGATION, AND

SEWERS AND DRAIN LINES

CONDUIT, AND LIGHTING CABLES

- 27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR CROWN CASTLE USA INC BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
- 28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY. 29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "VERIZON".
- 30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

CONDUCTOR COLOR CODE					
SYSTEM	CONDUCTOR	COLOR			
	A PHASE	BLACK			
 120/240V, 1Ø	B PHASE	RED			
120/2400, 10	NEUTRAL	WHITE			
	GROUND	GREEN			
	A PHASE	BLACK			
	B PHASE	RED			
120/208V, 3Ø	C PHASE	BLUE			
	NEUTRAL	WHITE			
	GROUND	GREEN			
	A PHASE	BROWN			
	B PHASE	ORANGE OR PURPLE			
277/480V, 3Ø	C PHASE	YELLOW			
	NEUTRAL	GREY			
	GROUND	GREEN			
DC VOLTAGE	POS (+)	RED**			
DO VOLTAGE	NEG (-)	BLACK**			

SEE NEC 210.5(C)(1) AND (2)

** POLARITY MARKED AT TERMINATION

ABBREVIATIONS:

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



BELLEVUE, WA 98008





VERIZON SITE NUMBER:

290438

PHOENIX, AZ 85040

OFFICE: (480) 285-0036

www.tepgroup.net

BU #: **823520** CS_GOODMAN_AND_SONS

> 17997 SIERRA WAY MONUMENT, CO 80132

EXISTING 69'-0" MONOPINE

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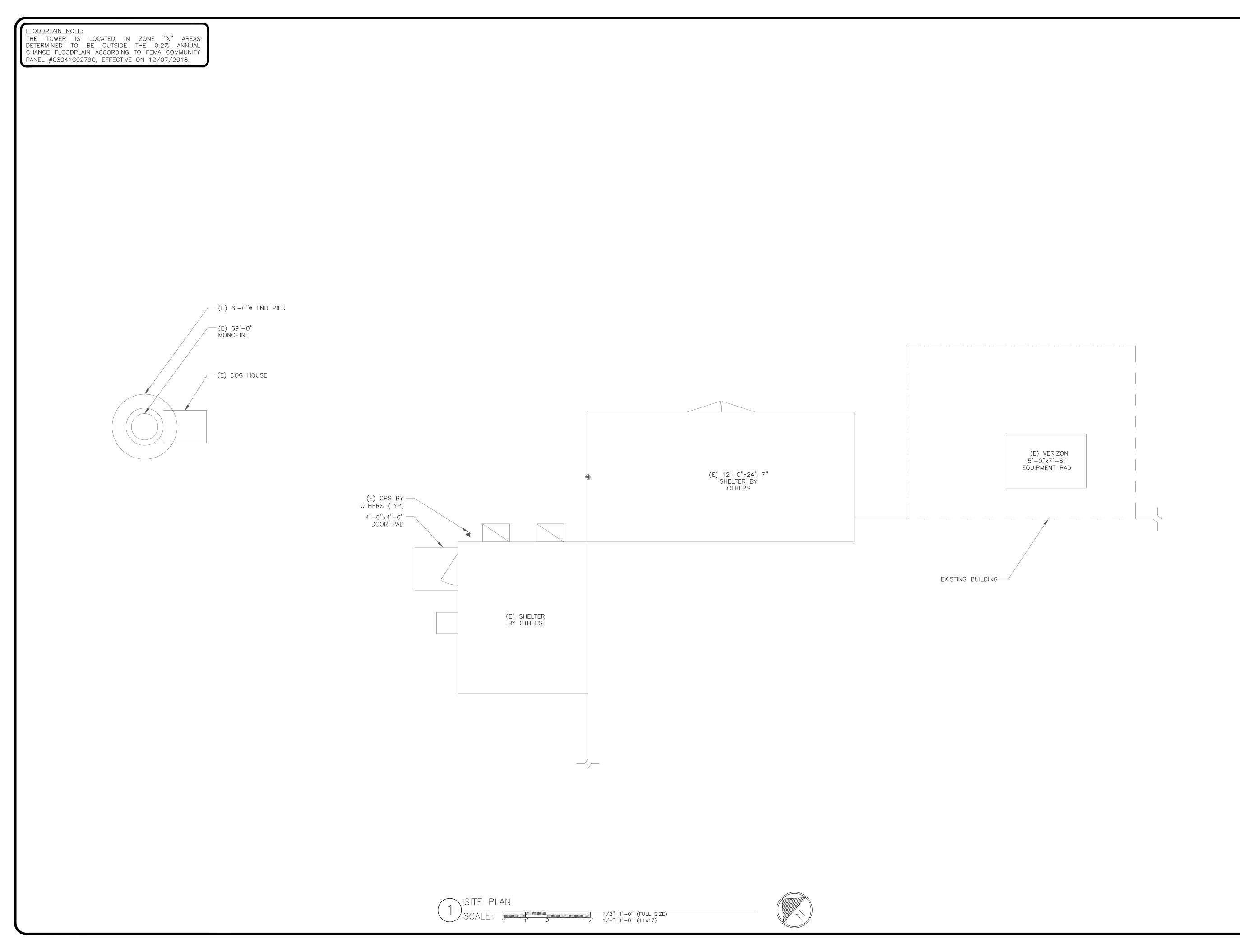


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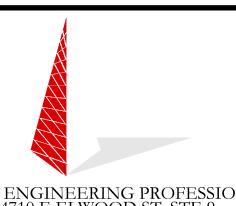
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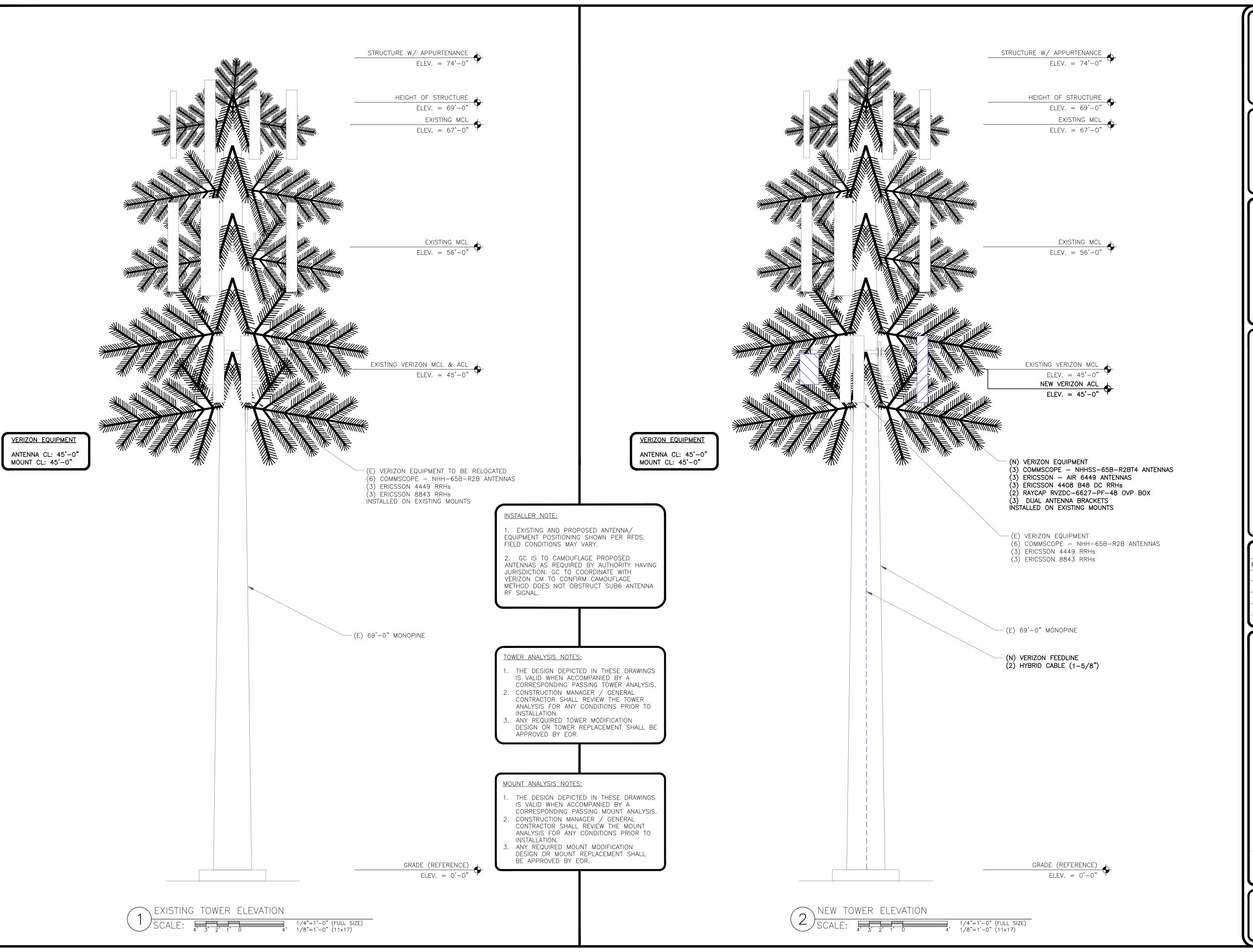
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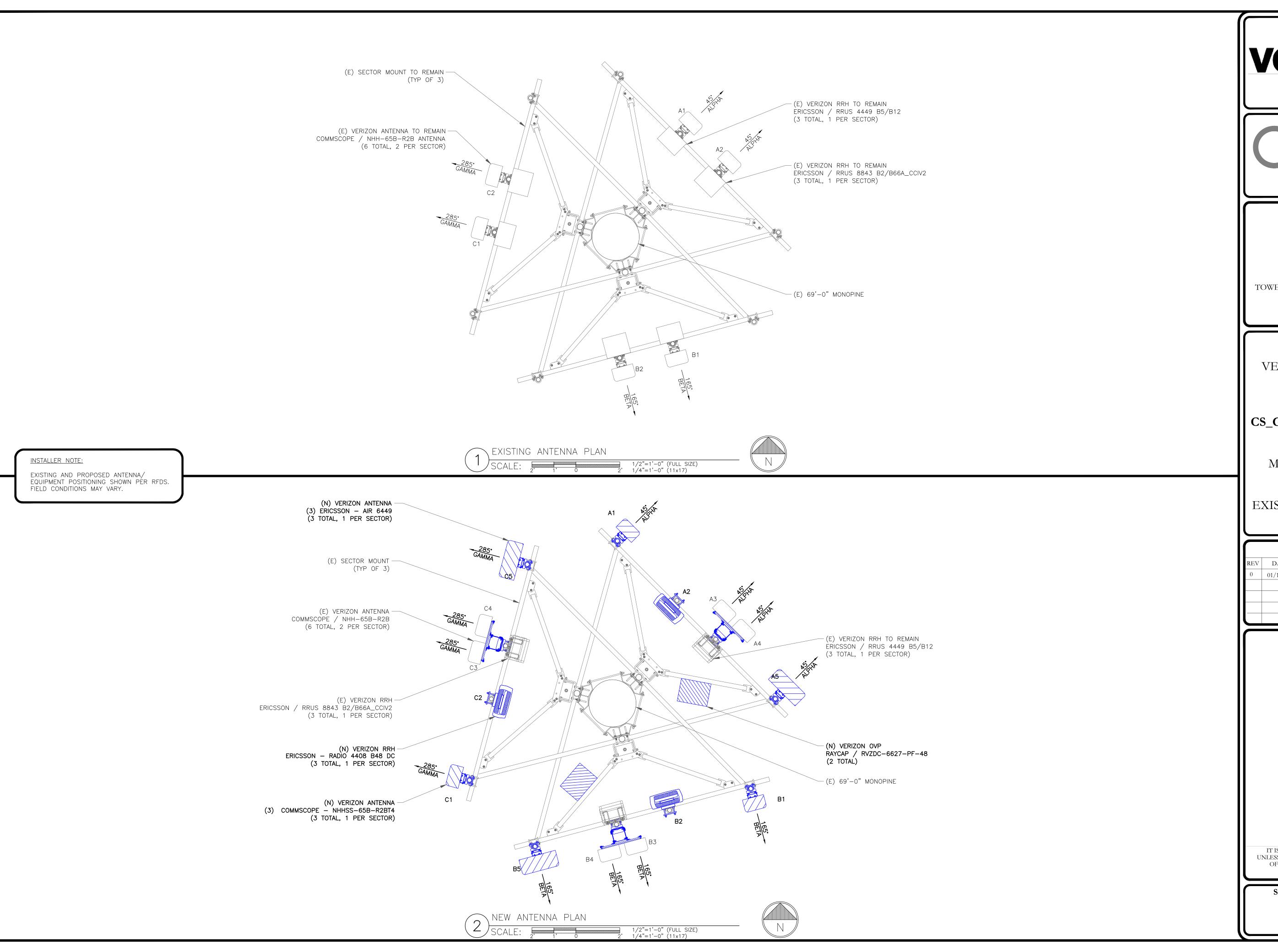
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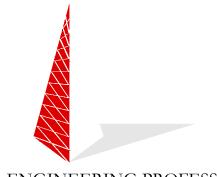
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C-2









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SHEET NUMBER:

C-3

	ANTENNA/RRH SCHEDULE									
SECTOR	STATUS	ANTENNA MANUFACTURER	ANTENNA MODEL	ANTENNA CENTERLINE	AZIMUTH	MECHANICAL DOWNTILTS	ELECTRICAL DOWNTILTS	TOWER EQUIPMENT MANUFACTURER	TOWER EQUIPMENT QTY/MODEL	
A1	NEW	COMMSCOPE	NHHSS-65B-R2BT4	45'-0"	45°	0.	0.	_	_	
A2	-	_	_	45'-0"	45°	0°	0•	ERICSSON	(1) 4408 B48 DC RADIO	
А3	EXISTING	COMMSCOPE	NHH-65B-R2B	45'-0"	45°	0°	0°	ERICSSON	(1) RADIO 4449	
A4	EXISTING	COMMSCOPE	NHH-65B-R2B	45'-0"	45°	0°	0°	RAYCAP ERICSSON	(1) RVZDC-6627-PF-48 (1) RRUS 8843	
A5	NEW	ERICSSON	AIR 6449	45'-0"	45°	0°	0.	-	-	
B1	NEW	COMMSCOPE	NHHSS-65B-R2B	45'-0"	165°	0°	0,	ERICSSON	(1) 4408 B48 DC RADIO	
B2	-	-	-	45'-0"	165°	0°	0,	ERICSSON	(1) 4408 B48 DC RADIO	
В3	EXISTING	COMMSCOPE	NHH-65B-R2B	45'-0"	165°	0°	0°	ERICSSON	(1) RADIO 4449	
B4	EXISTING	COMMSCOPE	NHH-65B-R2B	45'-0"	165°	0°	0°	RAYCAP ERICSSON	(1) RVZDC-6627-PF-48 (1) RRUS 8843	
B5	NEW	ERICSSON	AIR 6449	45'-0"	165°	0°	0,	-	-	
C1	NEW	COMMSCOPE	NHHSS-65B-R2B	45'-0"	285°	0°	0•	-	-	
C2	-	-	-	45'-0"	285°	0*	0,	ERICSSON	(1) 4408 B48 DC RADIO	
С3	EXISTING	COMMSCOPE	NHH-65B-R2B	45'-0"	285°	0°	0°	ERICSSON	(1) RADIO 4449	
C4	EXISTING	COMMSCOPE	NHH-65B-R2B	45'-0"	285°	0°	0°	ERICSSON	(1) RRUS 8843	
C5	NEW	ERICSSON	AIR 6449	45'-0"	285°	0.	0,	_	_	

C	CABLE SCHEDULE						
STATUS	STATUS CABLE TYPE SIZE LENGTH QTY						
NEW	HYBRID	1-5/8"	95'-0"±	2			
TOTAL CABLE QTY:				1			







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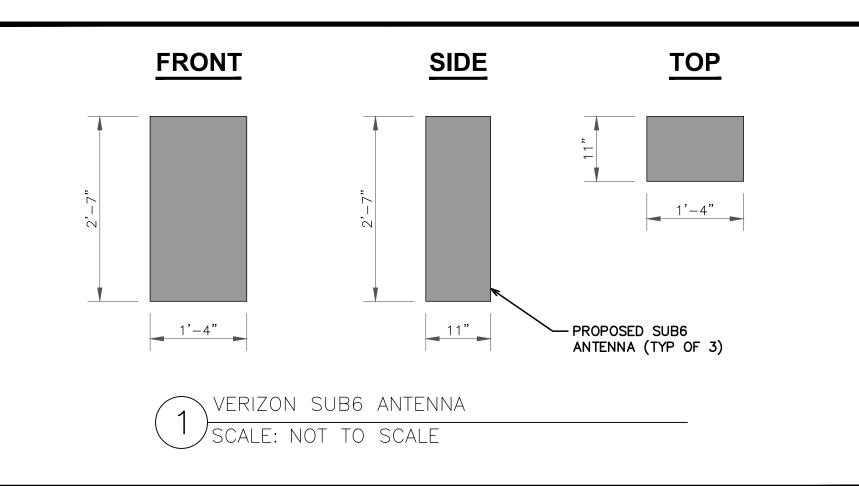
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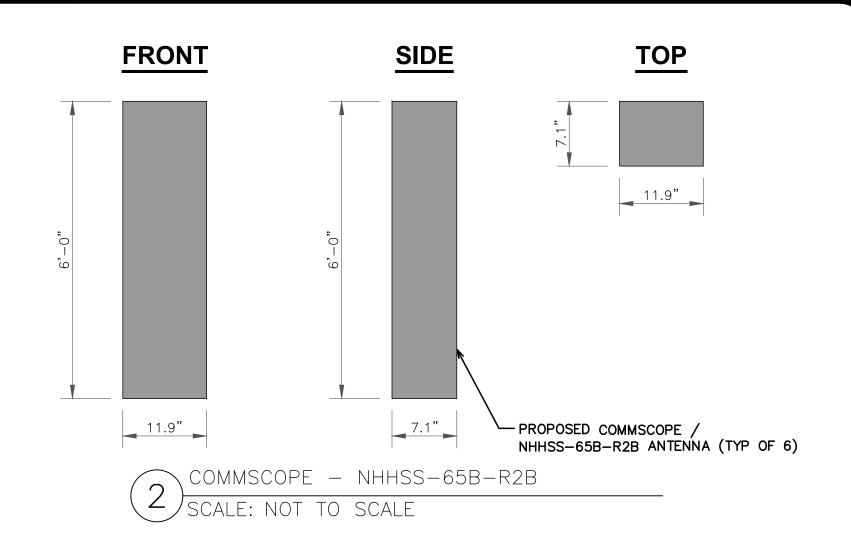
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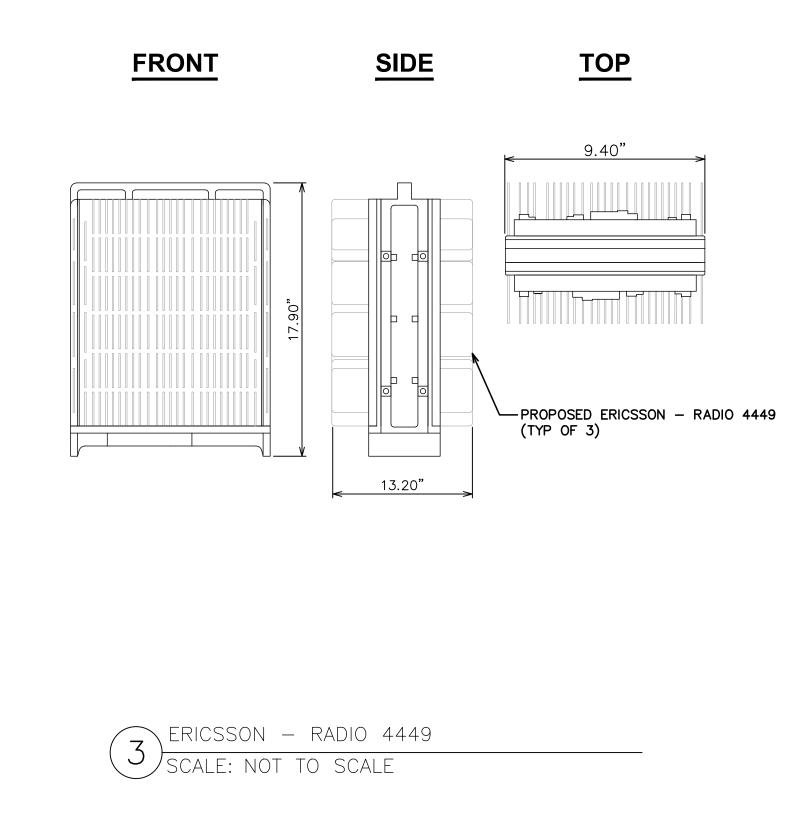
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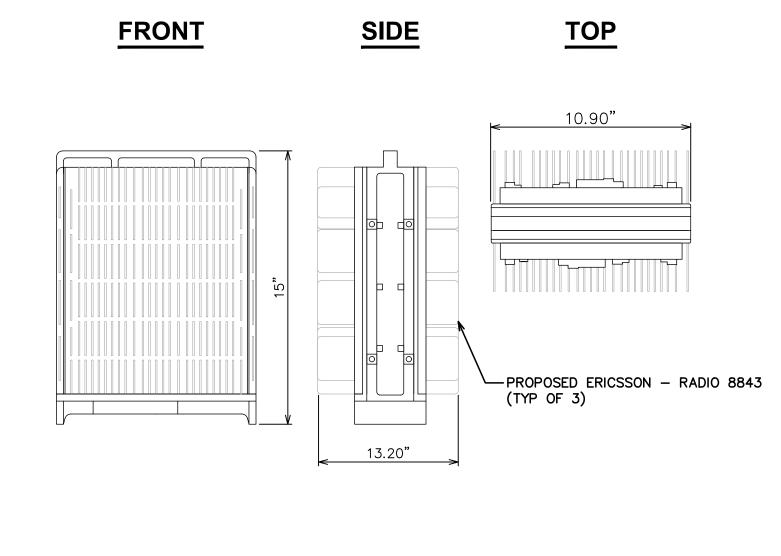
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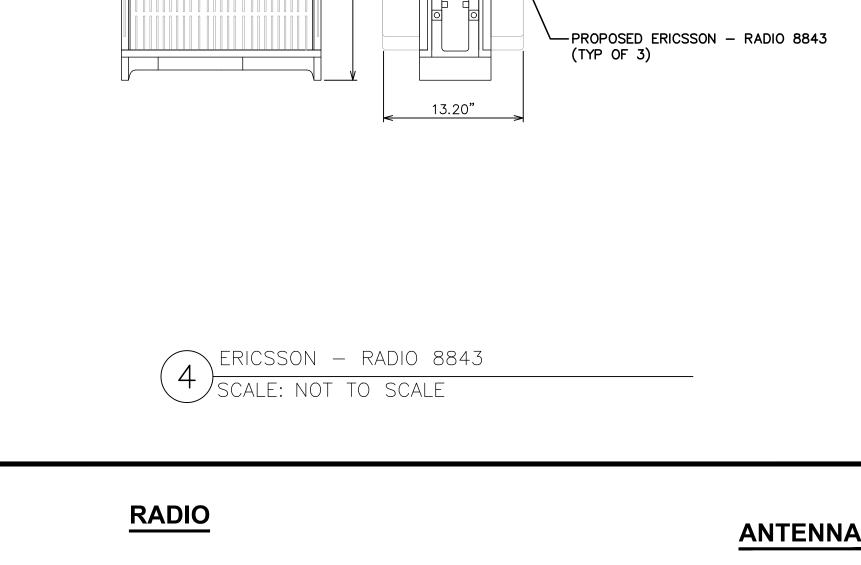


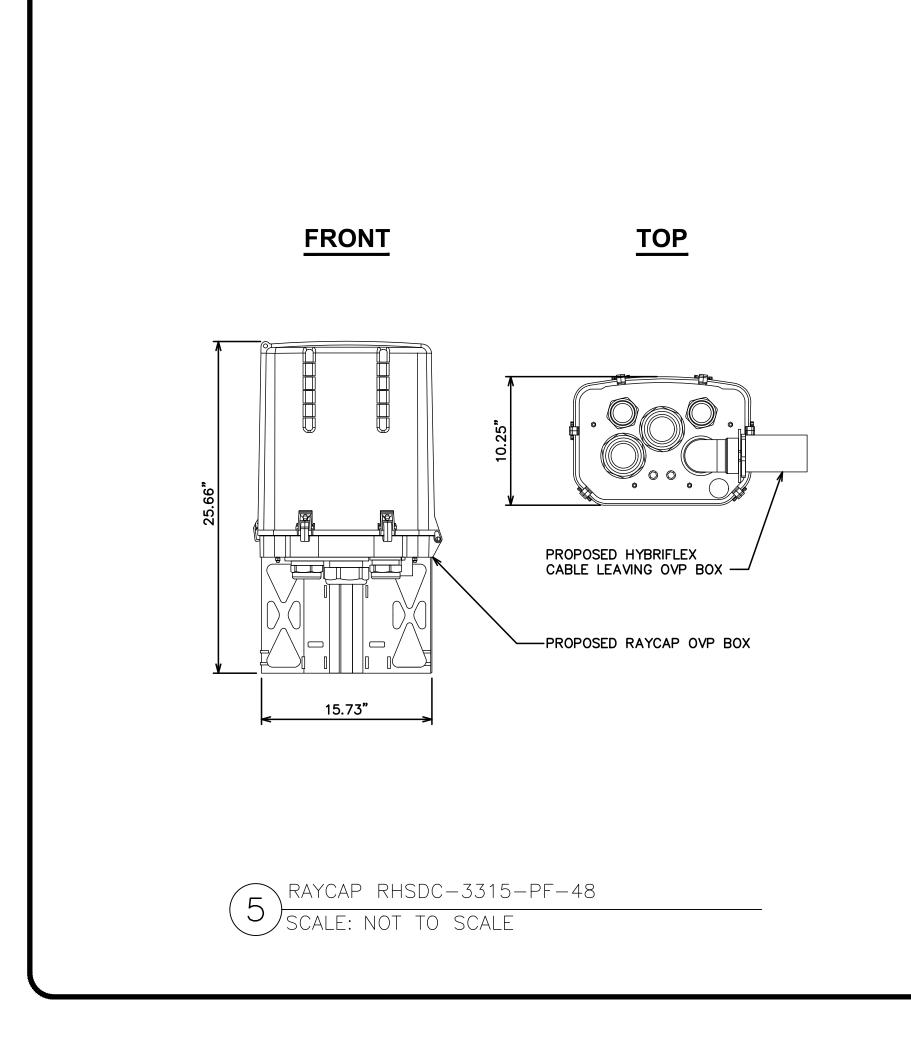


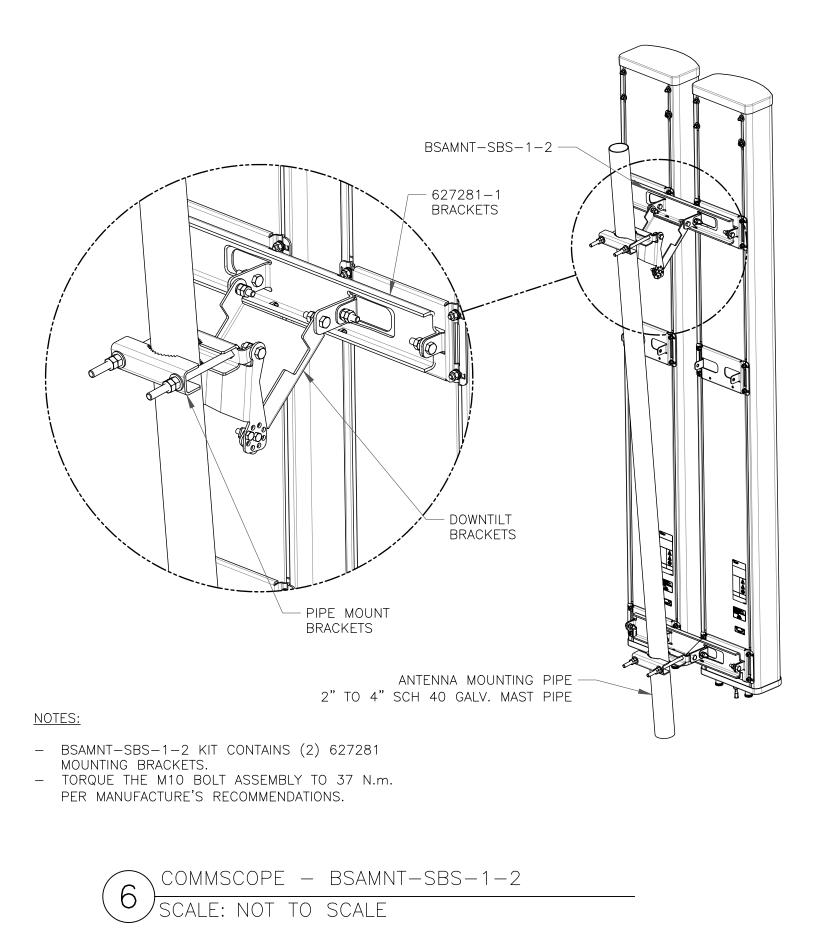


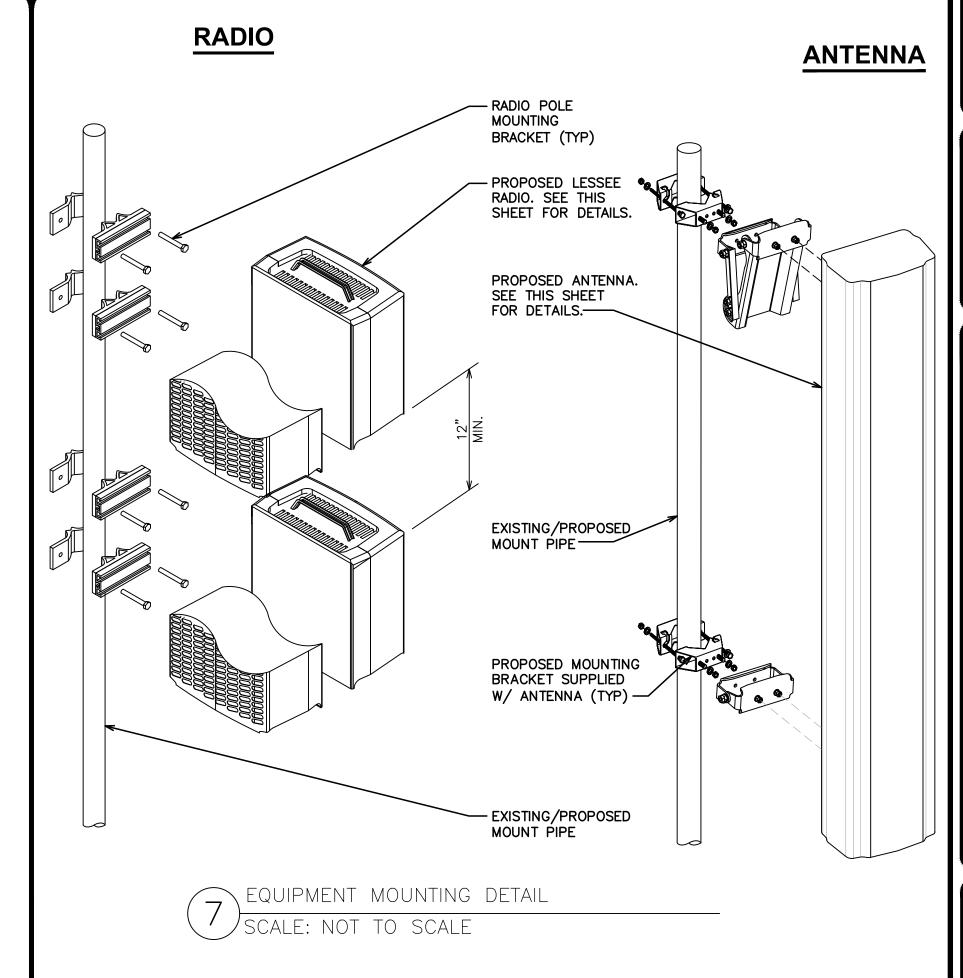


















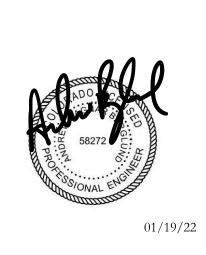
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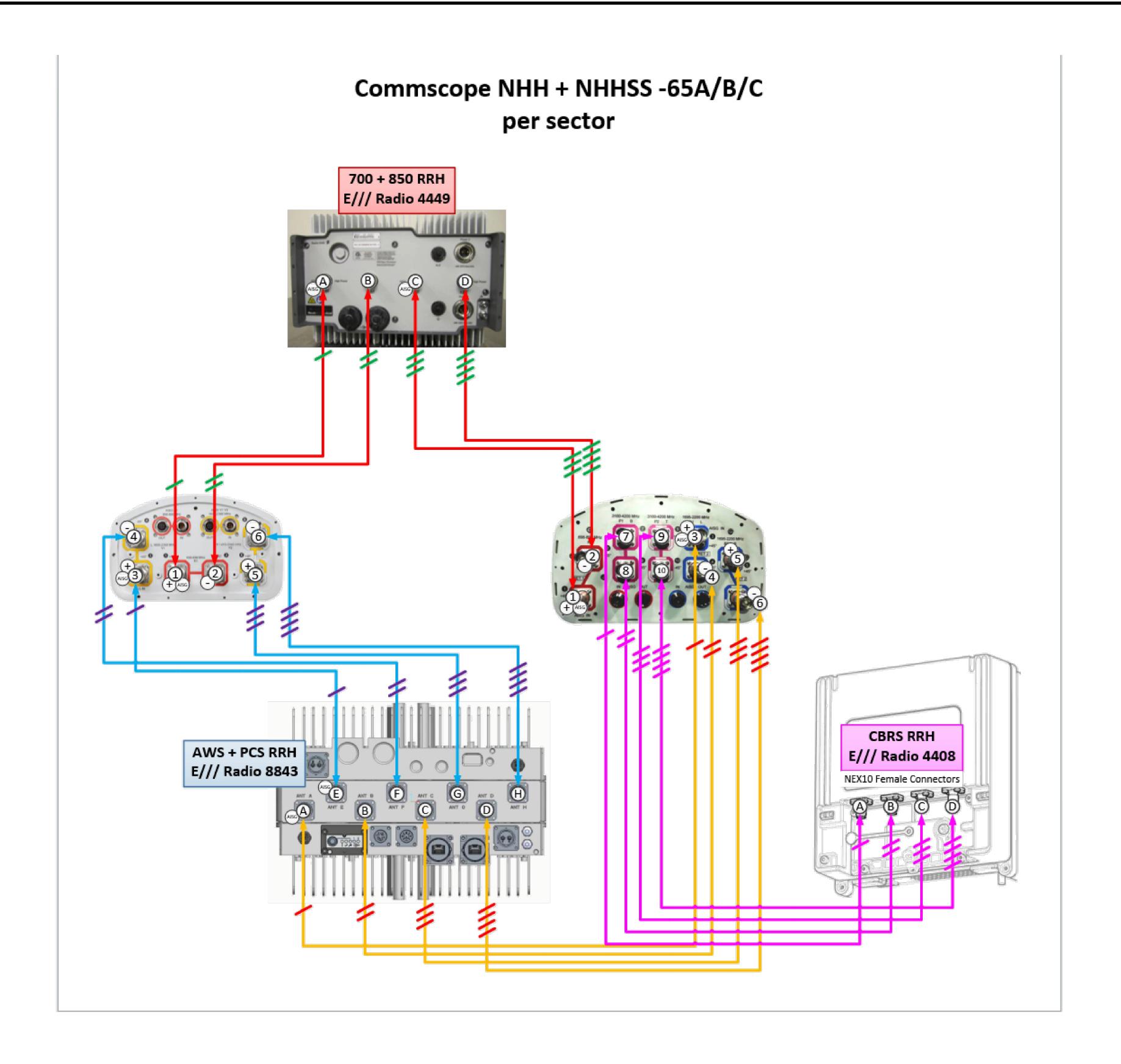
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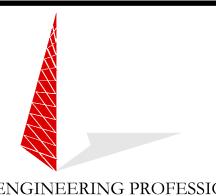


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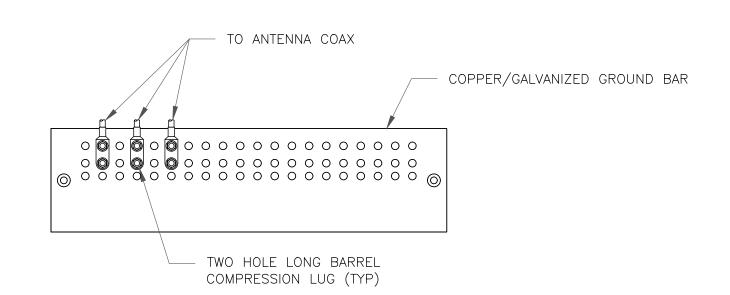
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C-6

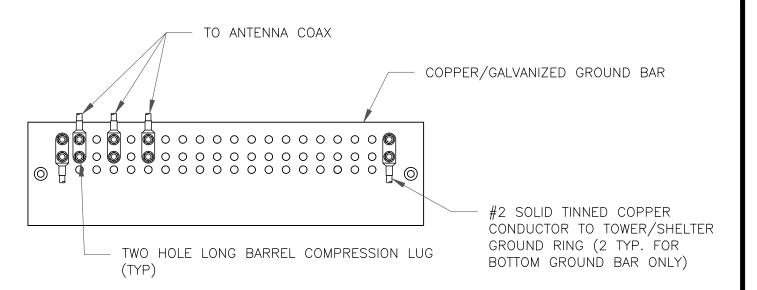


NOTES:

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



SCALE: NOT TO SCALE

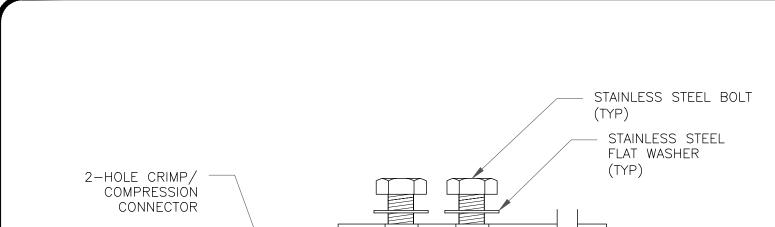


IOTES:

STAINLESS STEEL

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





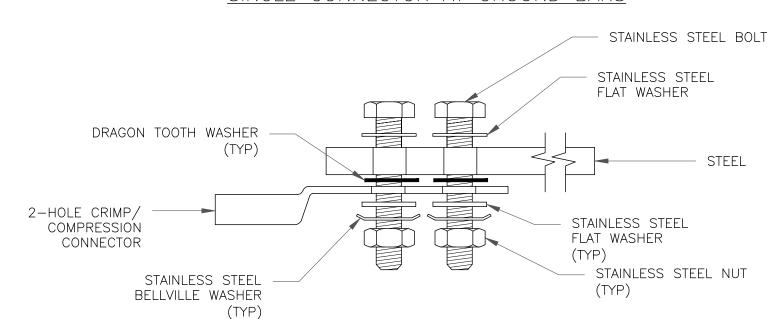
BELLVILLE WASHER
(TYP)

SINGLE CONNECTOR AT GROUND BARS

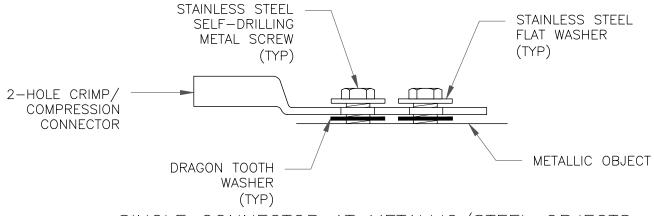
GROUND

STAINLESS STEEL

FLAT WASHER

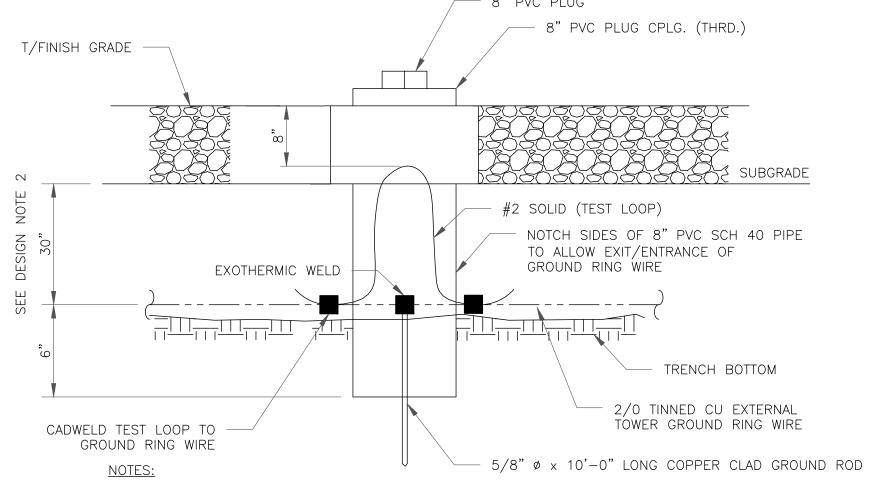


SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

5 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS SCALE: NOT TO SCALE



- 1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE
- 2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D)
- (3) INSPECTION WELL DETAIL SCALE: NOT TO SCALE

GRADE

GRADE

GRADE

GROUND RING #2 COPPER WIRE SOLID, TINNED FOR CARRIER AND ICE BRIDGE GROUND LOOP

GROUND RING 2/0 FOR TOWER GROUND LOOP

- 1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE
- 2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D)

GROUND ROD COPPER

CLAD STEEL ROD W/MIN.

 $5/8 \phi \times 10'-0" LONG$



NOTES:







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EXISTING 69'-0" MONOPINE

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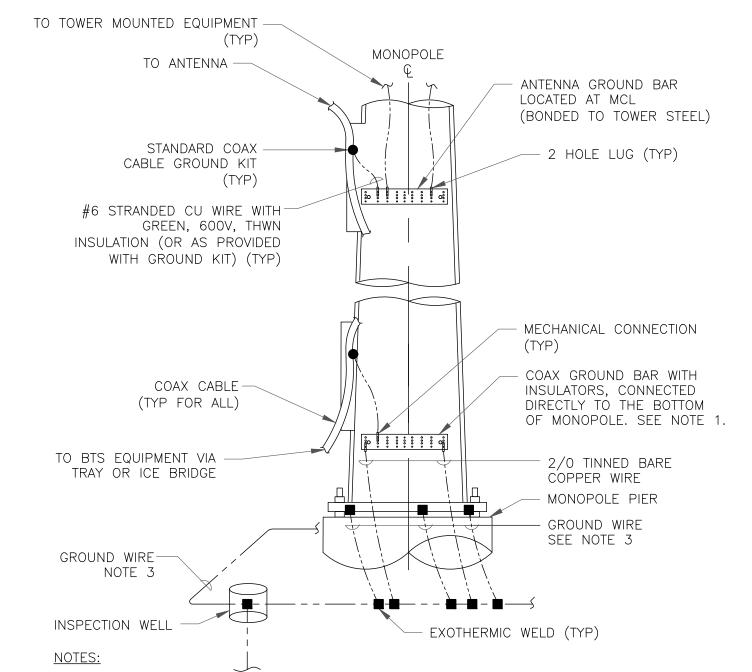


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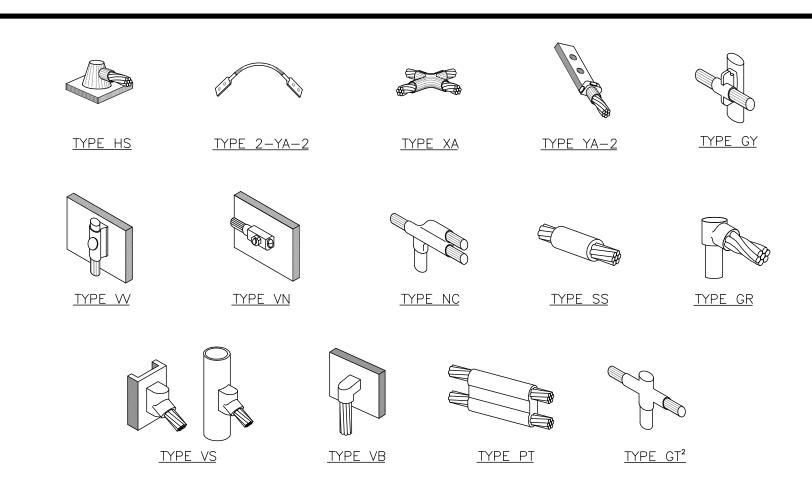
SHEET NUMBER:

G-1



- 1. NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATIONS AND CONNECTION ORIENTATION. COAXIAL CABLES EXCEEDING 200 FEET ON THE TOWER SHALL HAVE GROUND KITS AT THE MIDPOINT. PROVIDE AS REQUIRED.
- 2. ONLY MECHANICAL CONNECTIONS ARE ALLOWED TO BE MADE TO CROWN CASTLE USA INC. TOWERS. ALL MECHANICAL CONNECTIONS SHALL BE TREATED WITH AN ANTI-OXIDANT COATING.
- 3. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF THE RECOGNIZED EDITION OF ANSI/TIA 222 AND NFPA 780.



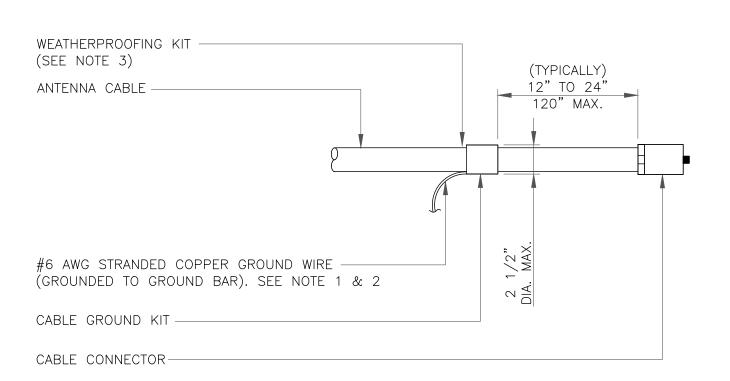


NOTE:

- 1. ERICO EXOTHERMIC "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH CONSTRUCTION MANAGER FOR SPECIFIC
- MOLDS TO BE USED FOR THIS PROJECT.

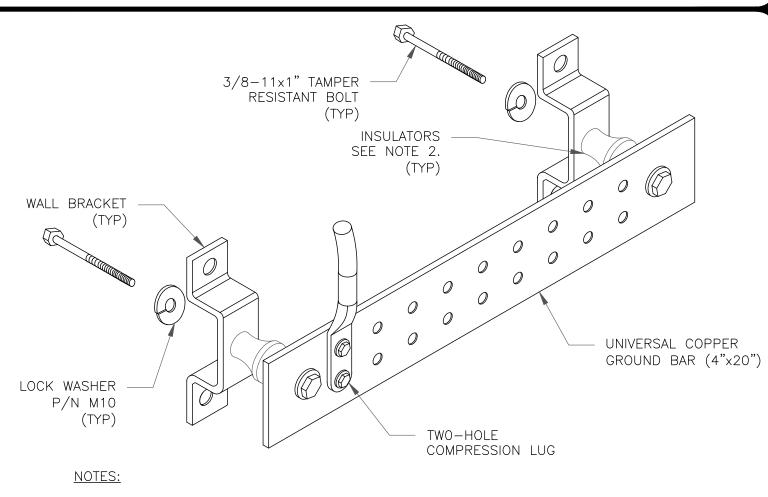
 2. MOLD TYPE ONLY TO BE USED BELOW GRADE WHEN CONNECTING GROUND RING TO GROUND ROD.

CADWELD GROUNDING CONNECTIONS SCALE: NOT TO SCALE



NOTES:

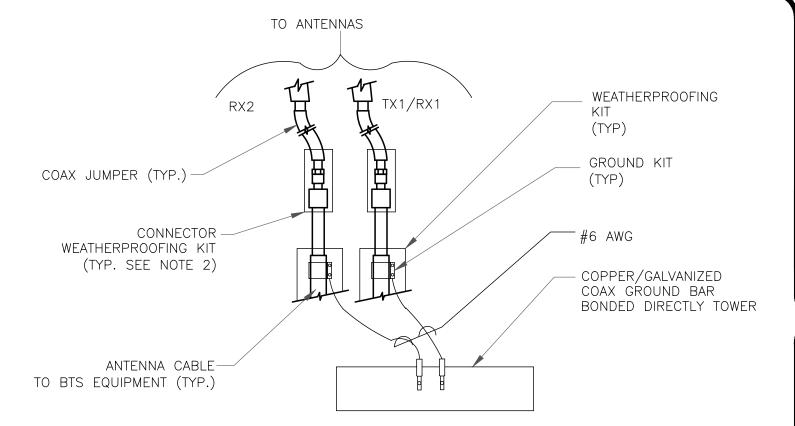
- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
- 2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
- 3. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT
 - CABLE GROUND KIT CONNECTION SCALE: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



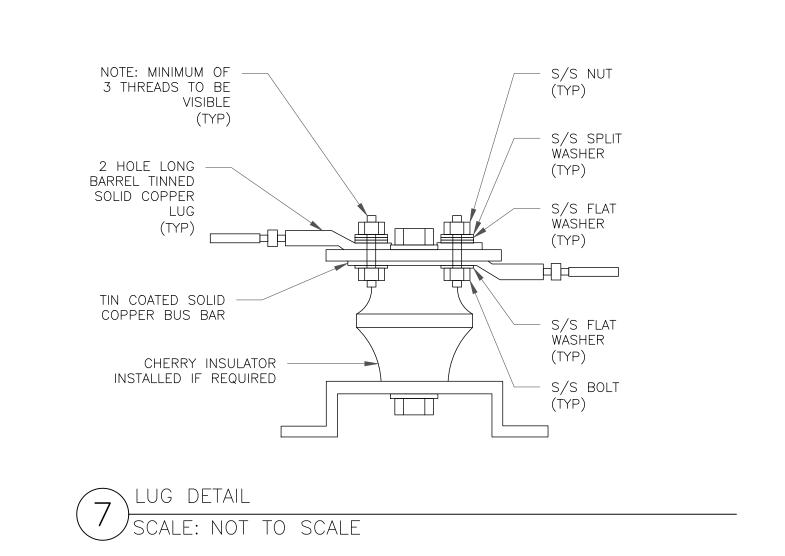
1. DOWN LEAD (HOME RUN) CONDUCTORS ARE <u>NOT</u> TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS—STD—10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD—WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.

2. OMIT INSULATOR WHEN MOUNTING TO TOWER STEEL OR PLATFORM STEEL USE INSULATORS WHEN ATTACHING TO BUILDING OR SHELTERS.

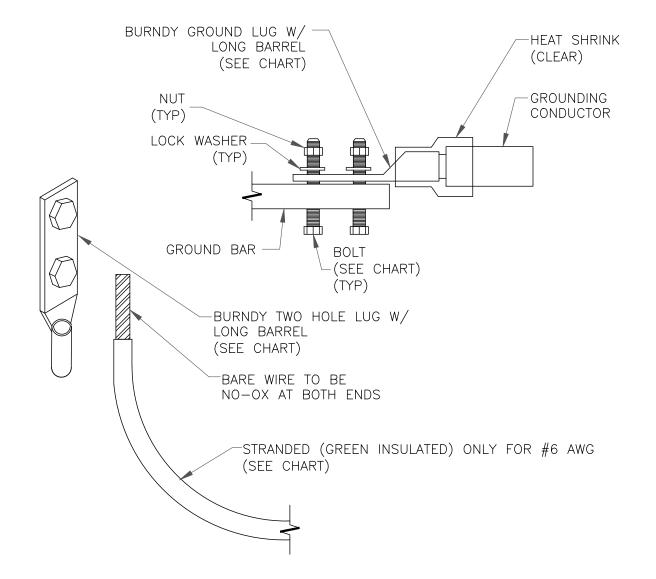
GROUND BAR DETAIL
SCALE: NOT TO SCALE



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

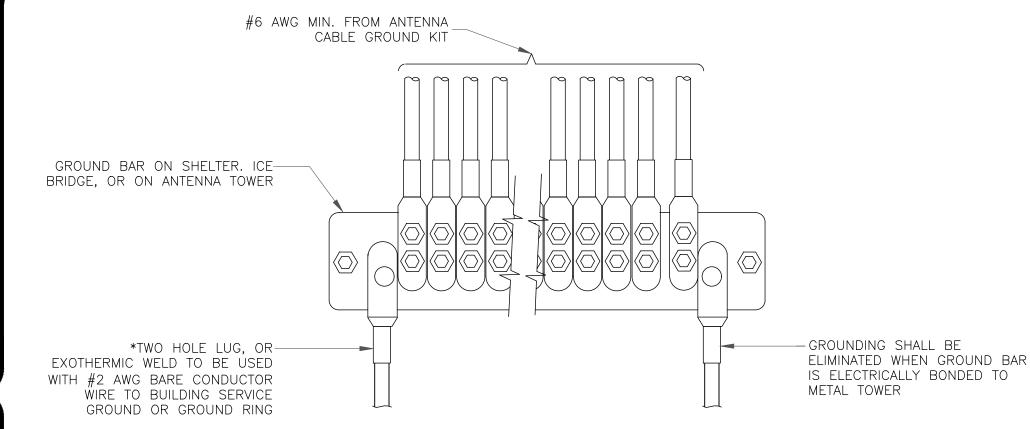


WIRE SIZE BURNDY LUG BOLT SIZE 3/8" - 16 NC S 2 BOLT #6 AWG GREEN INSULATED YA6C-2TC38 3/8" - 16 NC S 2 BOLT #2 AWG SOLID TINNED YA3C-2TC38 #2 AWG STRANDED YA2C-2TC38 3/8" - 16 NC S 2 BOLT 3/8" - 16 NC S 2 BOLT #2/0 AWG STRANDED YA26-2TC38 1/2" - 16 NC S 2 BOLT #4/0 AWG STRANDED YA28-2N

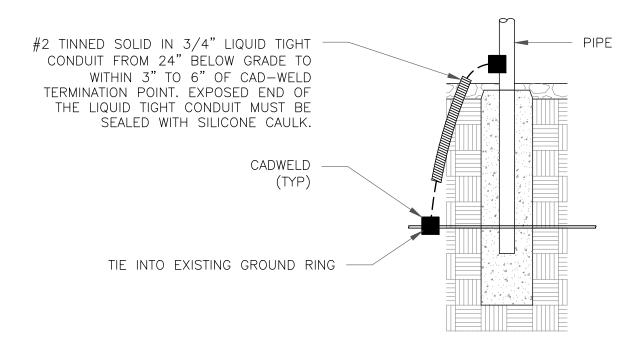


NOTES:

- 1. ALL GROUNDING LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL HARDWARE BOLTS, NUTS, LOCK WASHERS SHALL BE STAINLESS STEEL. ALL HARDWARE ARE TO BE AS FOLLOWS: BOLT, FLAT WASHER, GROUND BAR, GROUND LUG, FLAT WASHER AND NUT.
- 2 MECHANICAL LUG CONNECTION SCALE: NOT TO SCALE



GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



8 TRANSITIONING GROUND DETAIL SCALE: NOT TO SCALE







VERIZON SITE NUMBER: 290438

BU #: 823520 CS_GOODMAN_AND_SONS

> 17997 SIERRA WAY MONUMENT, CO 80132

EXISTING 69'-0" MONOPINE

	ISSUED FOR:				
REV	DATE	DRWN	DESCRIPTION	DES./QA	
0	01/19/22	ORG	CONSTRUCTION	HMM	



01/10

Andrew R. Berglund, P.E. Professional Engineer License: #58252

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

SHEET NUMBER:

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