




SITE NUMBER: DN06324A
SITE NAME: DN63XC121
SITE TYPE: MONOPOLE
TOWER HEIGHT: 60'-0"

BUSINESS UNIT #: 877103
SITE ADDRESS: 231 MAIN ST
COLORADO SPRINGS, CO 80911
COUNTY: EL PASO


T-MOBILE PROJECT: SPRINT RETAIN

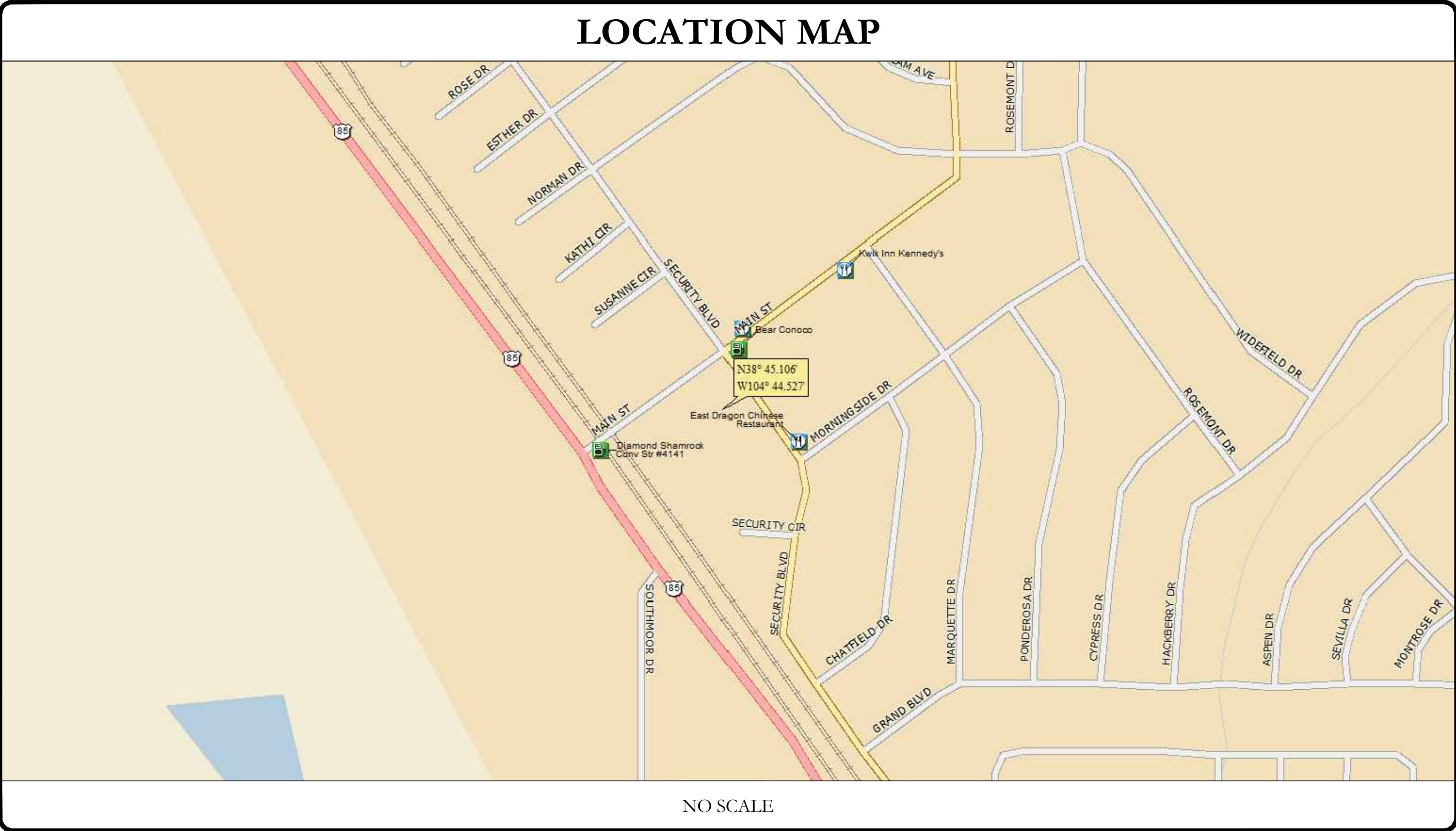
SITE INFORMATION	
CROWN CASTLE USA INC. SITE NAME:	KEEBLER/ COLORADO SPGS/ CSP209
SITE ADDRESS:	231 MAIN ST COLORADO SPRINGS, CO 80911
COUNTY:	EL PASO
MAP/PARCEL #:	6514103028
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	38° 45' 06.34"
LONGITUDE:	-104° 44' 31.64"
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	5,762 FT
CURRENT ZONING:	CC CAD.0
JURISDICTION:	EL PASO COUNTY
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	GLOBAL SIGNAL ACQUISITIONS II LLC 170 FOX HILL LN COLORADO SPRINGS, CO 80919
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	T-MOBILE 2323 DELGANY STREET DENVER, CO 80216
ELECTRIC PROVIDER:	COLORADO SPRINGS UTILITIES (800) 238-5434
TELCO PROVIDER:	UNKNOWN

DRAWING INDEX	
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C-1.2	SITE PLAN
C-1.3	EXISTING & NEW EQUIPMENT PLANS
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C-3	ANTENNA PLANS
C-4	FINAL EQUIPMENT SCHEDULE
C-5.1	EQUIPMENT SPECS
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C-5.3	EQUIPMENT SPECS
E-1	ELECTRICAL DETAILS
E-2	ELECTRICAL DETAILS
G-1	GROUNDING DETAILS
ATTACHED	RF CABLING DIAGRAM
ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR FULL SIZE. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.	



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







PROJECT TEAM	
A&E FIRM:	TOWER ENGINEERING PROFESSIONALS 4710 E ELWOOD ST, STE 9 PHOENIX, AZ 85040 OFFICE: (480) 285-0036
CROWN CASTLE USA INC. DISTRICT CONTACTS:	200 SPECTRUM CENTER DRIVE, SUITE 1700 & 1800 IRVINE, CA 92618 BRYCE NORTHCUTT - PROJECT MANAGER BRYCE.NORTHCUTT@CROWNCastle.COM KEITH HAHN - A&E SPECIALIST KEITH.HAHN@CROWNCastle.COM

PROJECT DESCRIPTION
THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.
TOWER SCOPE OF WORK: <ul style="list-style-type: none">• REMOVE ALL UNUSED SPRINT EQUIPMENT• INSTALL (6) ANTENNAS<ul style="list-style-type: none">• (3) ANDREW / HBXX-6517DS-A2M• (3) NOKIA/AEHC• INSTALL (2) 6x12 HYBRID CABLES• INSTALL (3) RADIOS<ul style="list-style-type: none">• (3) NOKIA AHFIG• ADD (1) PLATFORM MOUNT (MC-PM12M-AP4 W/ MT-195-12HD, PVS-050B-U MOUNT)
• GROUND SCOPE OF WORK: <ul style="list-style-type: none">• ADD (2) ASIBs• ADD (2) ASIK• ADD (1) FSMF• ADD (2) ABIAs• ADD (5) ABILs• ADD (3) ABICs• ADD (2) AMLAs• ADD (1) GENERIC 600A SSC• ADD (1) GENERIC BATTERY CABINET FOR 600A SSC• ADD E5-LINK (INTER CABINET CONNECTION)• ADD (2) HCS 2.0 JUNCTION BOXES• ADD (1) UTILITY METER• ADD (1) DISCONNECT SWITCH• REMOVE ALL UNUSED EQUIPMENT

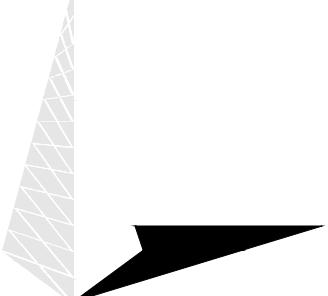
APPLICABLE CODES/REFERENCE DOCUMENTS	
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:	
CODE TYPE	CODE
BUILDING	2018 IBC
MECHANICAL	2018 IMC
ELECTRICAL	2017 NEC
REFERENCE DOCUMENTS:	
STRUCTURAL ANALYSIS:	PENDING
DATED:	PENDING
MOUNT ANALYSIS:	PENDING
DATED:	PENDING
RFDS REVISION:	01
DATED:	02/17/2021
ORDER ID:	545808
REVISION:	0
NOTE: PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN NOC AT (800) 788-7011 & CROWN CONSTRUCTION MANAGER.	



2323 DELGANY STREET
DENVER, CO 80216



200 SPECTRUM CENTER DRIVE,
SUITE 1700 & 1800
IRVINE, CA 92618



TOWER ENGINEERING PROFESSIONALS
4710 E ELWOOD ST, STE 9
PHOENIX, AZ 85040
OFFICE: (480) 285-0036
www.tecpgroup.net


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DN06324A

BU #: 877103
KEEBLER/ COLORADO
SPGS/ CSP209

231 MAIN ST
COLORADO SPRINGS,
CO 80911

EXISTING 60'-0" MONOPOLE

ISSUED FOR:				
REV	DATE	DRWN	DESCRIPTION	DES./QA
0	05/10/21	GBP	CONSTRUCTION	HMM
1	05/25/21	GBP	CONSTRUCTION	HMM



05/25/21

Andrew R. Berglund, P.E.
Professional Engineer License: #58272

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:
T-1

REVISION:
1

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.
2. "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.
3. 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.
4. 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 FOR APPROVAL BY CROWN CASTLE USA INC. PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. 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 SURFACE APPLICATION.
17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
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:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR: GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
CARRIER: T-MOBILE
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.
3. 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.
4. 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.
5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON 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.
6. 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.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND CROWN CASTLE PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION AND IS TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF CROWN CASTLE USA INC.
13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. 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 PLACEMENT.
4. 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.
5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
#4 BARS AND SMALLER.....40 ksi
#5 BARS AND LARGER.....60 ksi
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.....3"
CONCRETE EXPOSED TO EARTH OR WEATHER:
#6 BARS AND LARGER.....2"
#5 BARS AND SMALLER.....1-1/2"
CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
SLAB AND WALLS.....3/4"
BEAMS AND COLUMNS.....1-1/2"
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.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. 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.
 - 4.2. 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. VERIFY 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.
5. 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.
6. 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).
7. 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.
9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TO CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEC AND NEC.
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 SLEW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEC AND THE NEC.
21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECIMATE 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 BETTER) FOR EXTERIOR LOCATIONS.
25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR CROWN CASTLE USA INC. BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "T-MOBILE".
30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

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

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

ABBREVIATIONS:

ANT	ANTENNA
(E)	EXISTING
FIF	FACILITY INTERFACE FRAME
GEN	GENERATOR
GPS	GLOBAL POSITIONING SYSTEM
GSM	GLOBAL SYSTEM FOR MOBILE
LTE	LONG TERM EVOLUTION
MGB	MASTER GROUND BAR
MW	MICROWAVE
(N)	NEW
NEC	NATIONAL ELECTRIC CODE
(P)	PROPOSED
PP	POWER PLANT
QTY	QUANTITY
RECT	RECTIFIER
RBS	RADIO BASE STATION
RET	REMOTE ELECTRIC TILT
RFDS	RADIO FREQUENCY DATA SHEET
RRH	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

APWA UNIFORM COLOR CODE:

WHITE	PROPOSED EXCAVATION
PINK	TEMPORARY SURVEY MARKINGS
RED	ELECTRIC POWER LINES, CABLES, CONDUIT, AND LIGHTING CABLES
YELLOW	GAS, OIL, STEAM, PETROLEUM, OR GASEOUS MATERIALS
ORANGE	COMMUNICATION, ALARM OR SIGNAL LINES, CABLES, OR CONDUIT AND TRAFFIC LOOPS
BLUE	POTABLE WATER
PURPLE	RECLAIMED WATER, IRRIGATION, AND SLURRY LINES
GREEN	SEWERS AND DRAIN LINES

T

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CC

CROWN
CASTLE

200 SPECTRUM CENTER DRIVE,
SUITE 1700 & 1800
IRVINE, CA 92618

TOWER ENGINEERING PROFESSIONALS

4710 E ELWOOD ST, STE 9
PHOENIX, AZ 85040
OFFICE: (480) 285-0036
www.tecpgroup.net

T-MOBILE SITE NUMBER:
DN06324A

BU #: 877103
KEEBLER/ COLORADO
SPGS/ CSP209

231 MAIN ST
COLORADO SPRINGS,
CO 80911

EXISTING 60'-0" MONOPOLE

ISSUED FOR:				
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0	05/10/21	GBP	CONSTRUCTION	HMM
1	05/25/21	GBP	CONSTRUCTION	HMM

PROFESIONAL ENGINEER

05/25/21

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SITE PLAN DISCLAIMER:
PROPERTY LINES AND STRUCTURES HAVE BEEN DIGITIZED FROM PREVIOUS PLAN SETS. TOWER ENGINEERING PROFESSIONALS HAS NOT COMPLETED A SITE SURVEY AND THEREFORE MAKES NO CLAIMS AS TO THE ACCURACY OF INFORMATION DEPICTED ON THIS SHEET.



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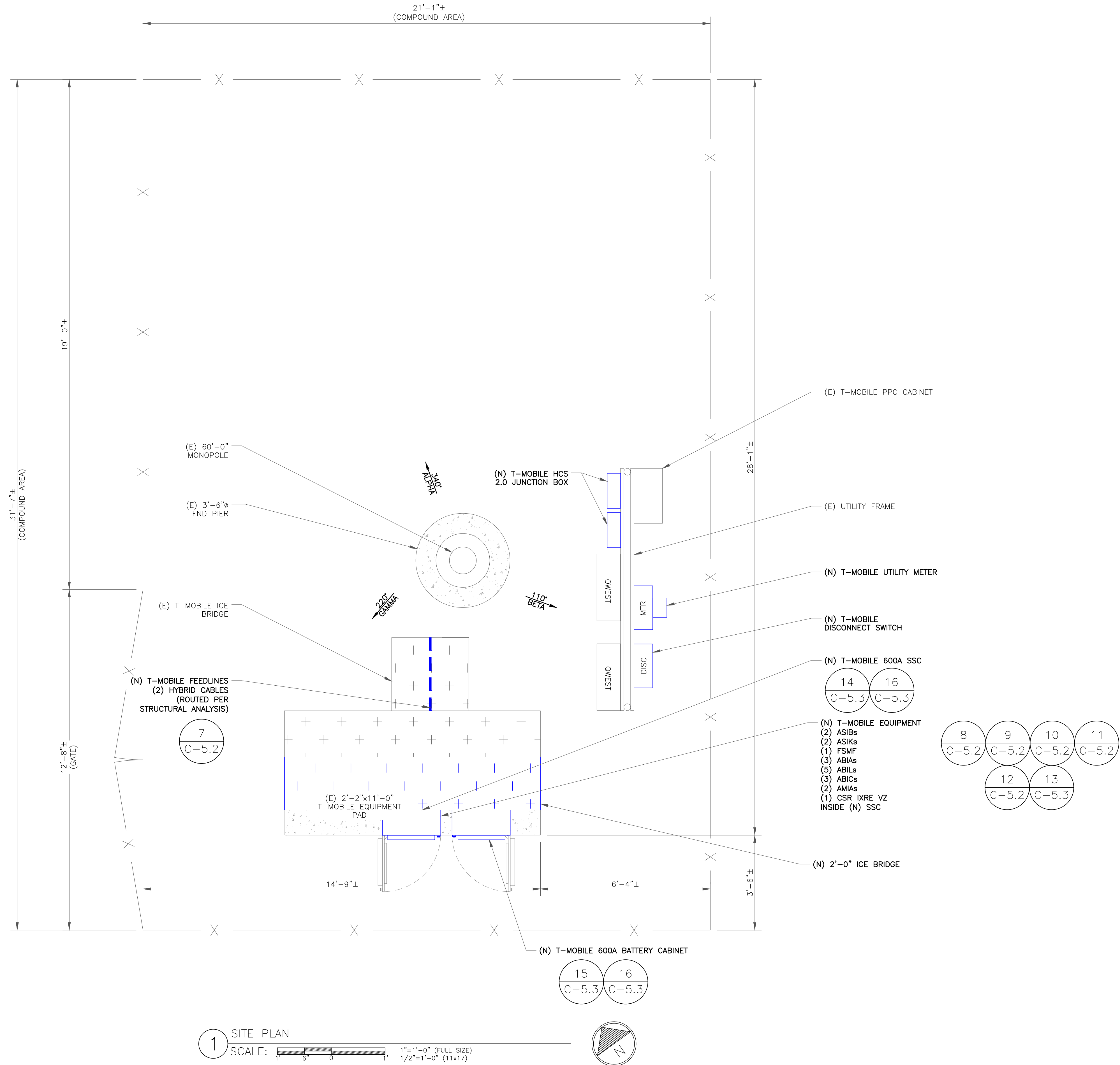
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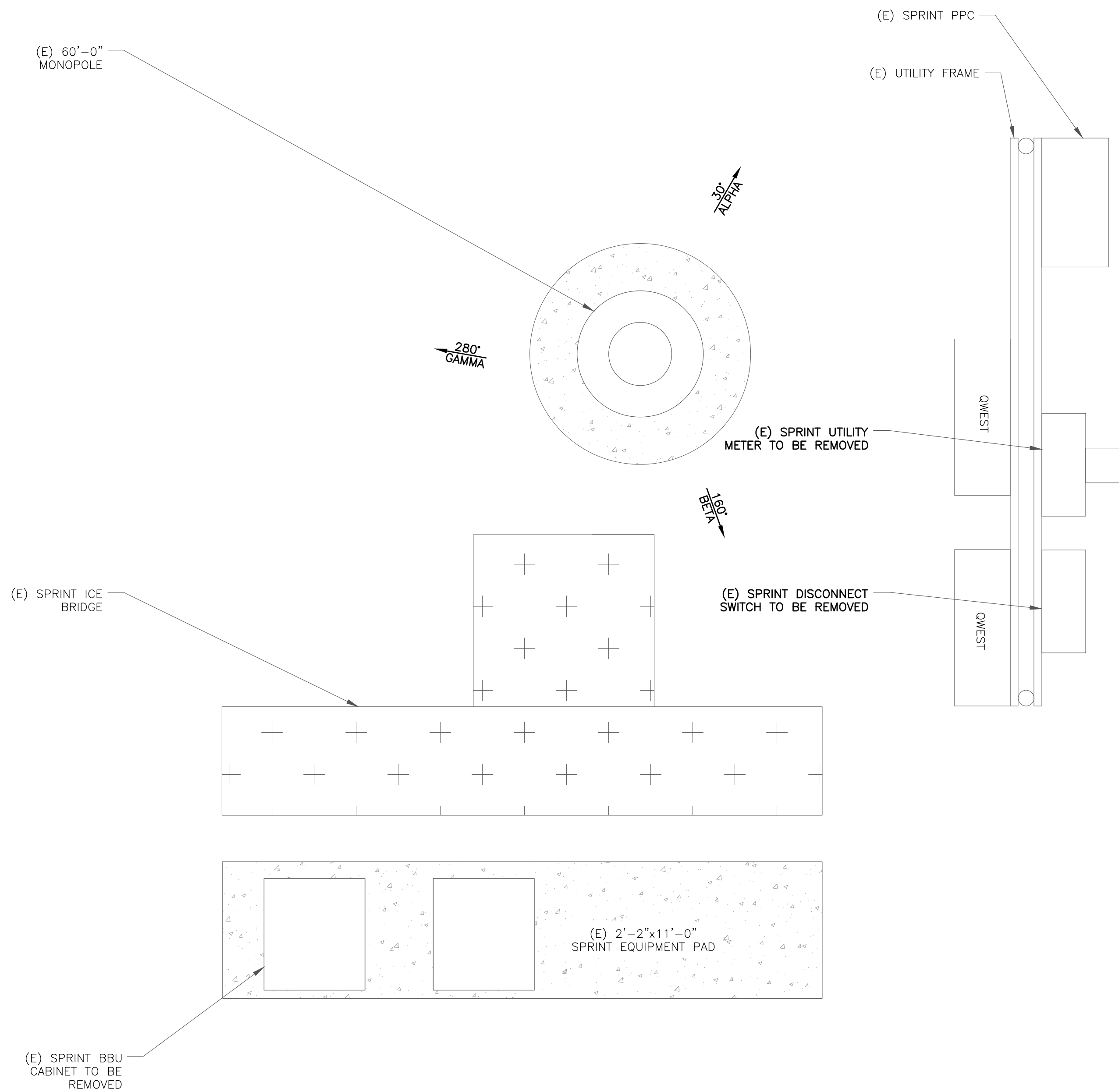

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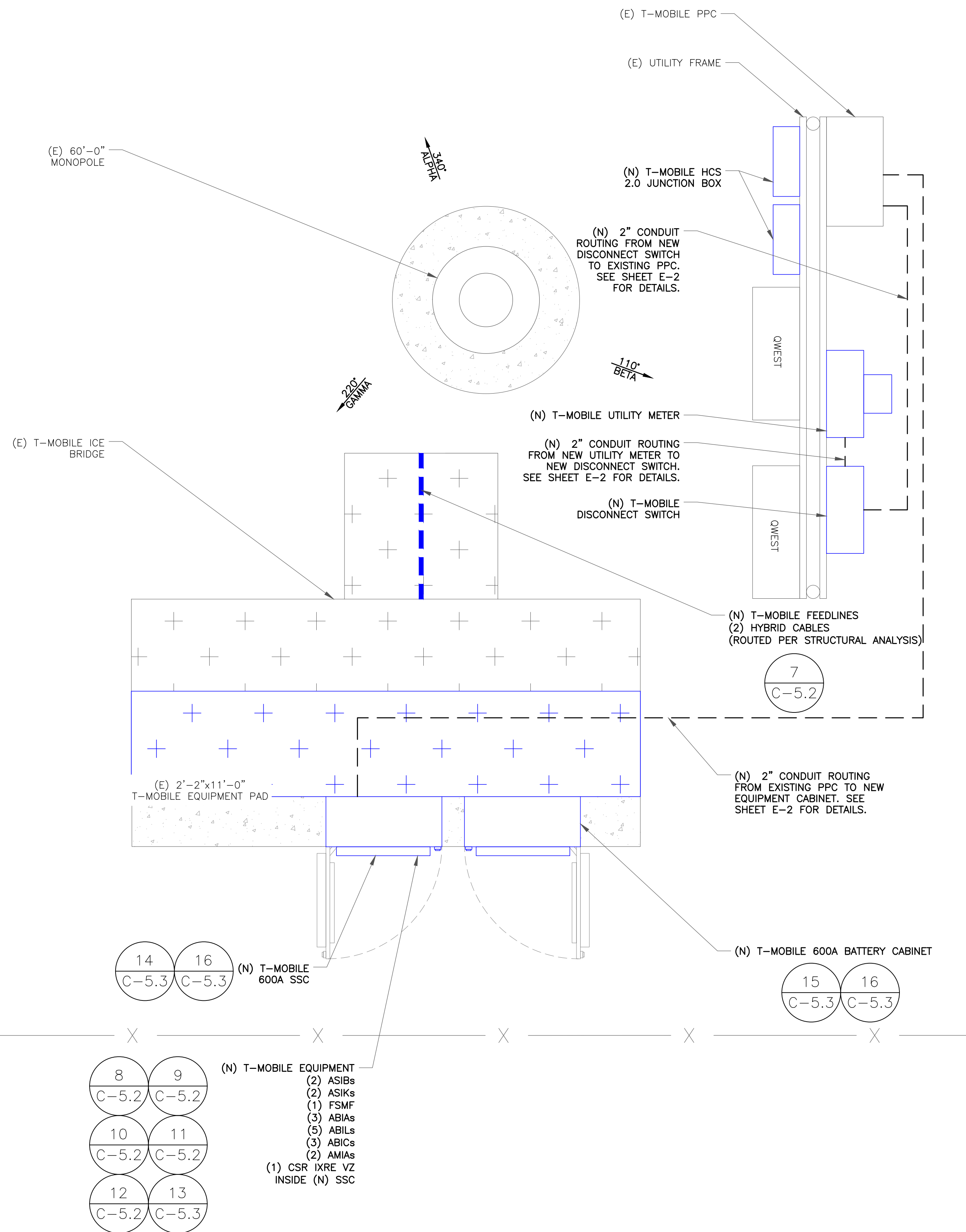
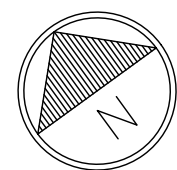
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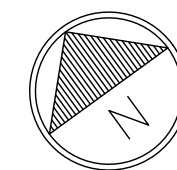
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1 EXISTING EQUIPMENT PLAN
SCALE: 1" = 6'-0" (FULL SIZE)
3/4" = 1'-0" (11x17)



2 NEW EQUIPMENT PLAN
SCALE: 1" = 6'-0" (FULL SIZE)
3/4" = 1'-0" (11x17)



NOTE:

THE POWER DESIGN FOR ANY AC ELECTRICAL POWER CHANGES IS TO BE PERFORMED BY OTHERS AND IS SHOWN HERE FOR REFERENCE PURPOSES ONLY. T-MOBILE IS SOLELY RESPONSIBLE FOR THE ELECTRICAL POWER DESIGN.

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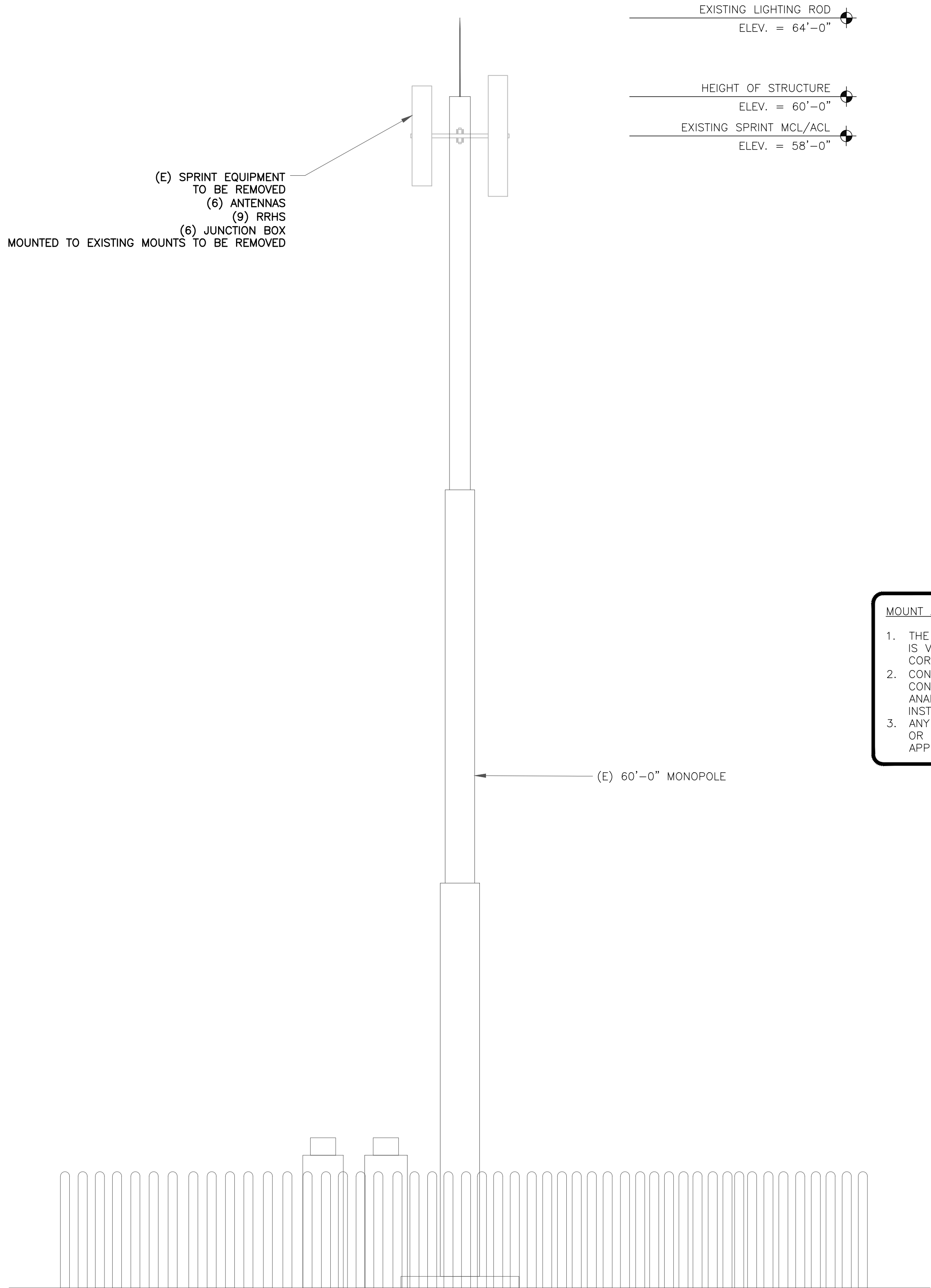
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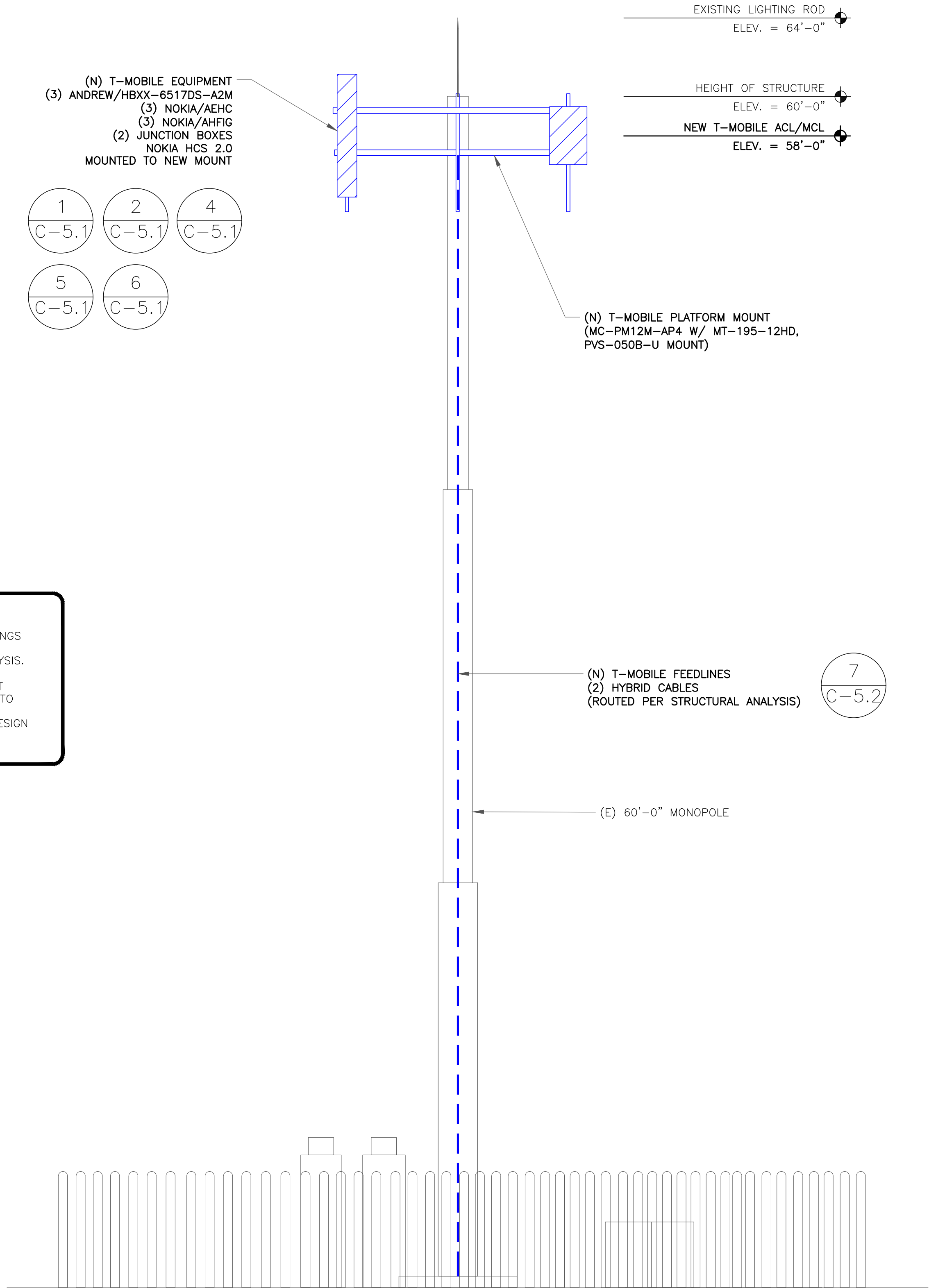
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1 EXISTING NORTH ELEVATION
SCALE: 1/4"=1'-0" (FULL SIZE)
1/8"=1'-0" (11x17)



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

MOUNT ANALYSIS NOTES:

1. THE DESIGN DEPICTED IN THESE DRAWINGS IS VALID WHEN ACCOMPANIED BY A CORRESPONDING PASSING MOUNT ANALYSIS.
2. CONSTRUCTION MANAGER / GENERAL CONTRACTOR SHALL REVIEW THE MOUNT ANALYSIS FOR ANY CONDITIONS PRIOR TO INSTALLATION.
3. ANY REQUIRED MOUNT MODIFICATION DESIGN OR MOUNT REPLACEMENT SHALL BE APPROVED BY EOR.

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EXISTING 60'-0" MONOPOLE

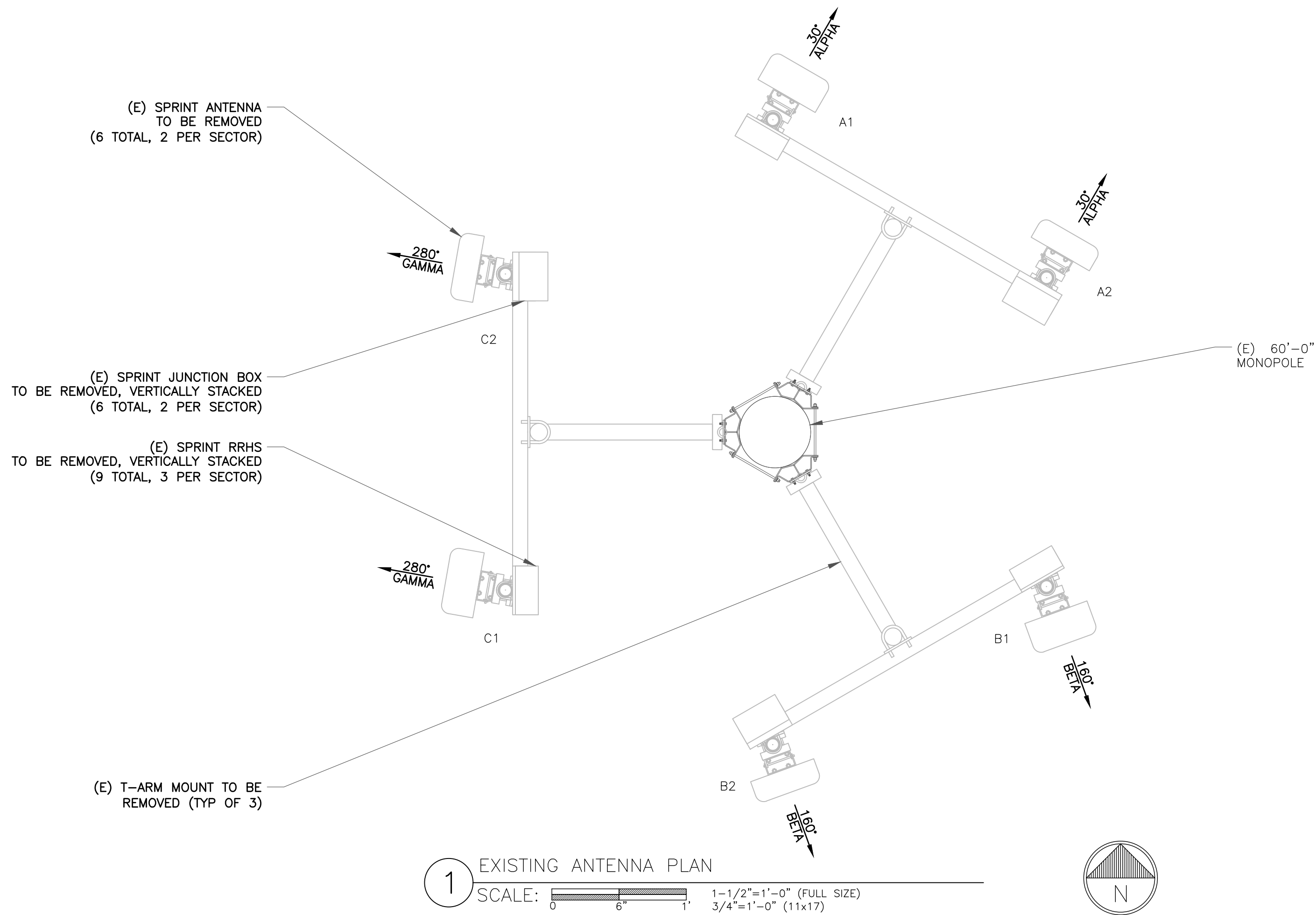
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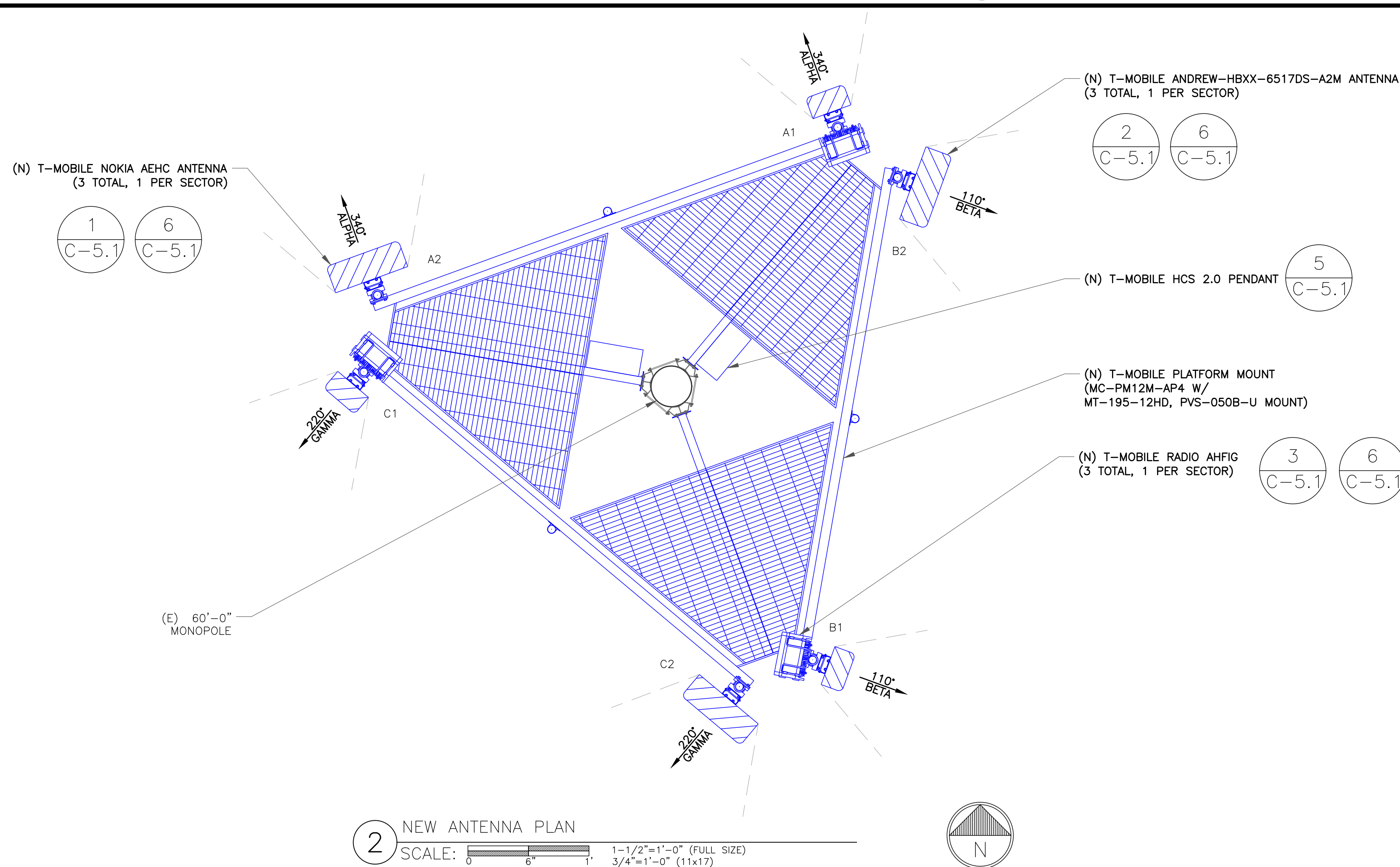
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SHEET NUMBER: C-2	REVISION: 1
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NOTES:

1. ROTATE T-ARMS TO ACCOMMODATE AZIMUTHS



"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.

NOTES:

1. REFERENCE C-4 FOR FINAL EQUIPMENT SCHEDULE.
2. REFERENCE C-5.1, C-5.2 & C-5.3 FOR NEW EQUIPMENT SPECIFICATIONS.
3. CONTRACTOR TO VERIFY ALL ANTENNA TIP HEIGHTS DO NOT EXCEED BEACON BASE HEIGHT.

MOUNT ANALYSIS NOTES:

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FINAL EQUIPMENT SCHEDULE (VERIFY WITH CURRENT RFDS)																								
ALPHA																								
POSITION	ANTENNA				RADIO			DIPLEXER			TMA		SURGE PROTECTION		CABLES				JUMPERS					
	TECH.	STATUS/MANUFACTURER		MODEL	AZIMUTH	RAD CENTER	QTY.	STATUS/MODEL		LOCATION	QTY.	STATUS	LOCATION	QTY.	STATUS	QTY.	STATUS/MODEL		QTY.	STATUS/TYPE	SIZE	LENGTH	TYPE	QTY.
A1	L2100 L1900 G1900 N1900 N2100	(N) ANDREW HBXX-6517DS-A2M			340°	58'-0"	1	(N) AHFIG		TOWER	-	-	-	-	-	-	-		-	-	-	-	-	-
A2	L2500 N2500	(N) NOKIA AEHC			340°	58'-0"	-	-		-	-	-	-	-	-	1	(N) HCS 2.0 PART 1		1	(N) HCS 2.0 PART 3	1-½"	108'-0"	-	-
BETA																								
B1	L2100 L1900 G1900 N1900 N2100	(N) ANDREW HBXX-6517DS-A2M			110°	58'-0"	1	(N) AHFIG		TOWER	-	-	-	-	-	-	-		-	-	-	-	-	-
B2	L2500 N2500	(N) NOKIA AEHC			110°	58'-0"	-	-		-	-	-	-	-	-	1	(N) HCS 2.0 PART 1		1	(N) HCS 2.0 PART 3	1-½"	108'-0"	-	-
GAMMA																								
C1	L2100 L1900 G1900 N1900 N2100	(N) ANDREW HBXX-6517DS-A2M			220°	58'-0"	1	(N) AHFIG		TOWER	-	-	-	-	-	-	-		-	-	-	-	-	-
C2	L2500 N2500	(N) NOKIA AEHC			220°	58'-0"	-	-		-	-	-	-	-	-	-	-		-	-	-	-	-	-

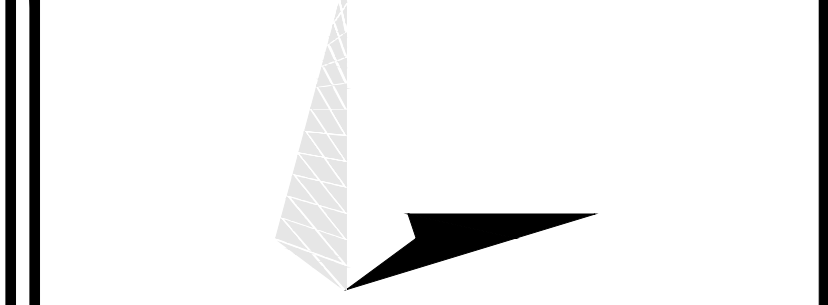
NOTE:
(E) - EXISTING
(N) - NEW



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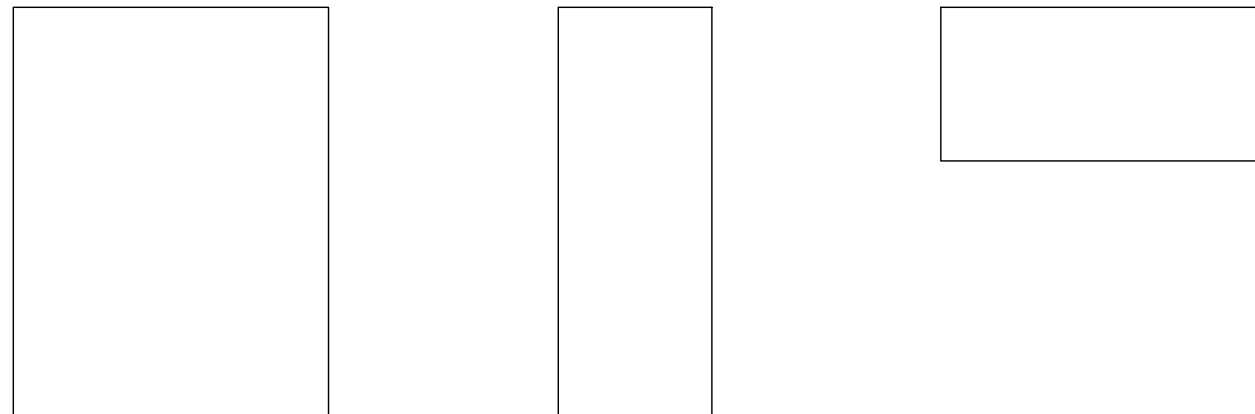
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FINAL EQUIPMENT SCHEDULE
SCALE: NOT TO SCALE

FRONT

SIDE

TOP



NOKIA AEHC

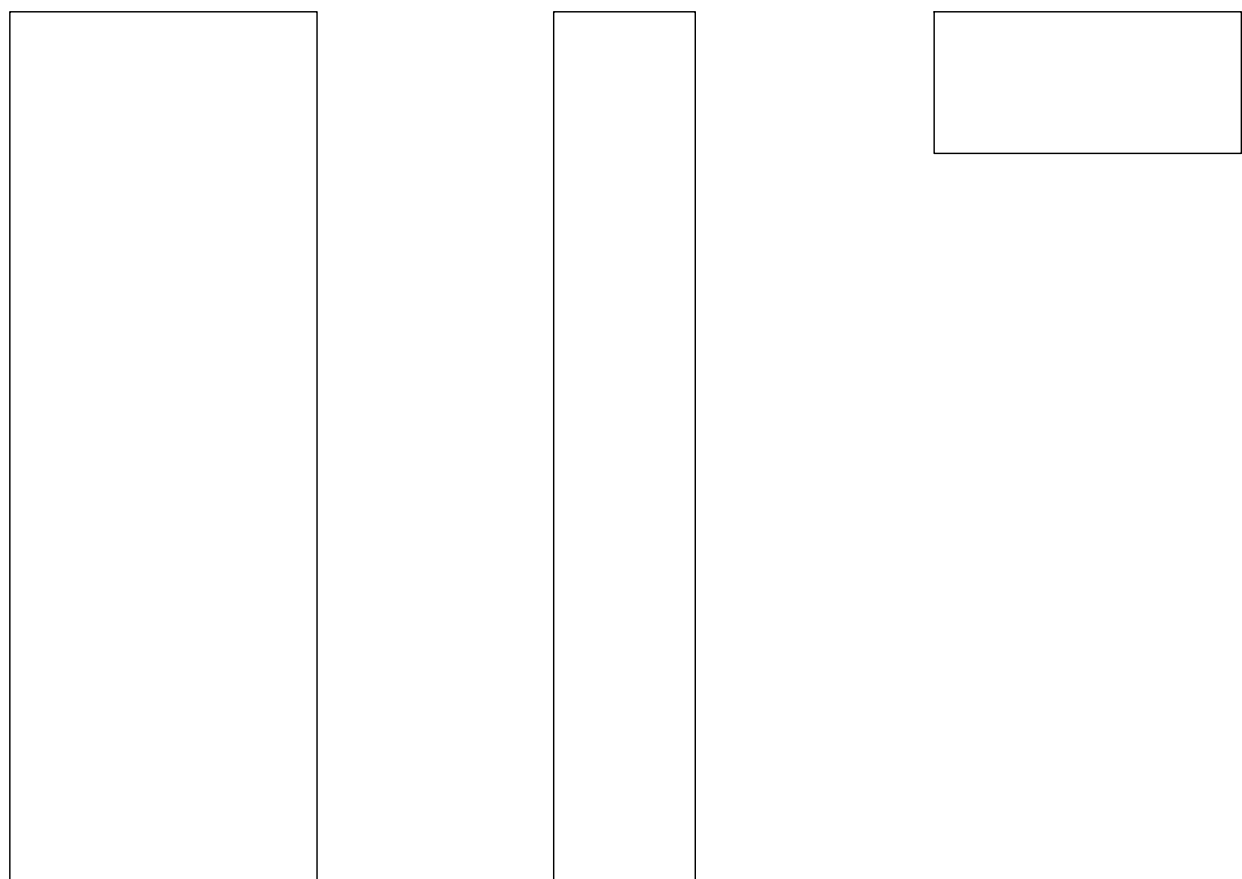
ANTENNA MAKE: NOKIA
ANTENNA MODEL: AEHC
DIMENSIONS, HxWxD: 35.43"x22.83"x8.26"
WEIGHT: 99.20 LBS

1 NOKIA – AEHC
SCALE: NOT TO SCALE

FRONT

SIDE

TOP



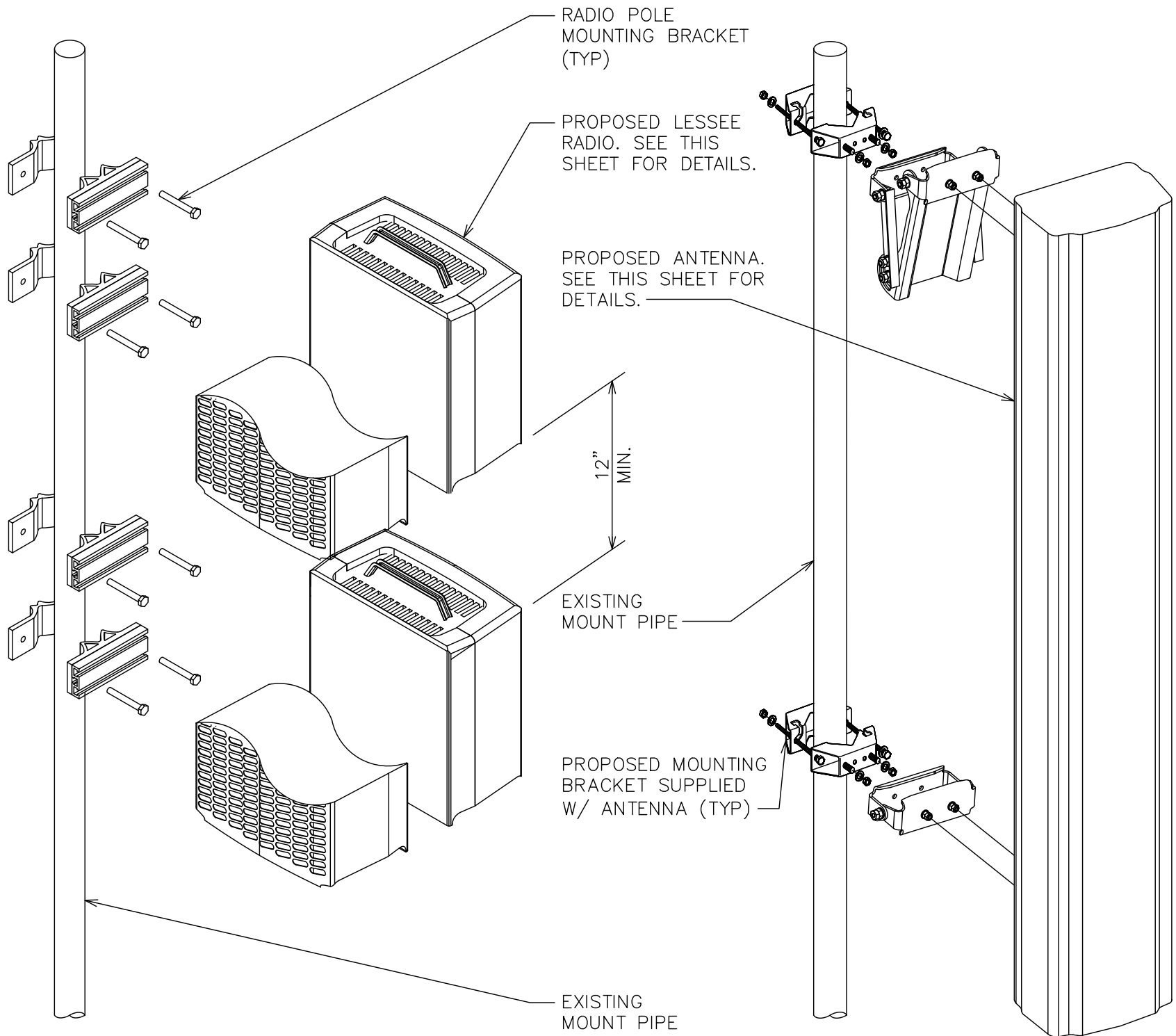
ANDREW - HBXX-6517DS-A2M

ANTENNA MAKE: ANDREW
ANTENNA MODEL: HBXX-6517DS-A2M
DIMENSIONS, HxWxD: 75.0"x12.0"x6.5"
WEIGHT: 49.30 LBS

2 ANDREW – HBXX-6517DS-A2M
SCALE: NOT TO SCALE

RADIO

ANTENNA

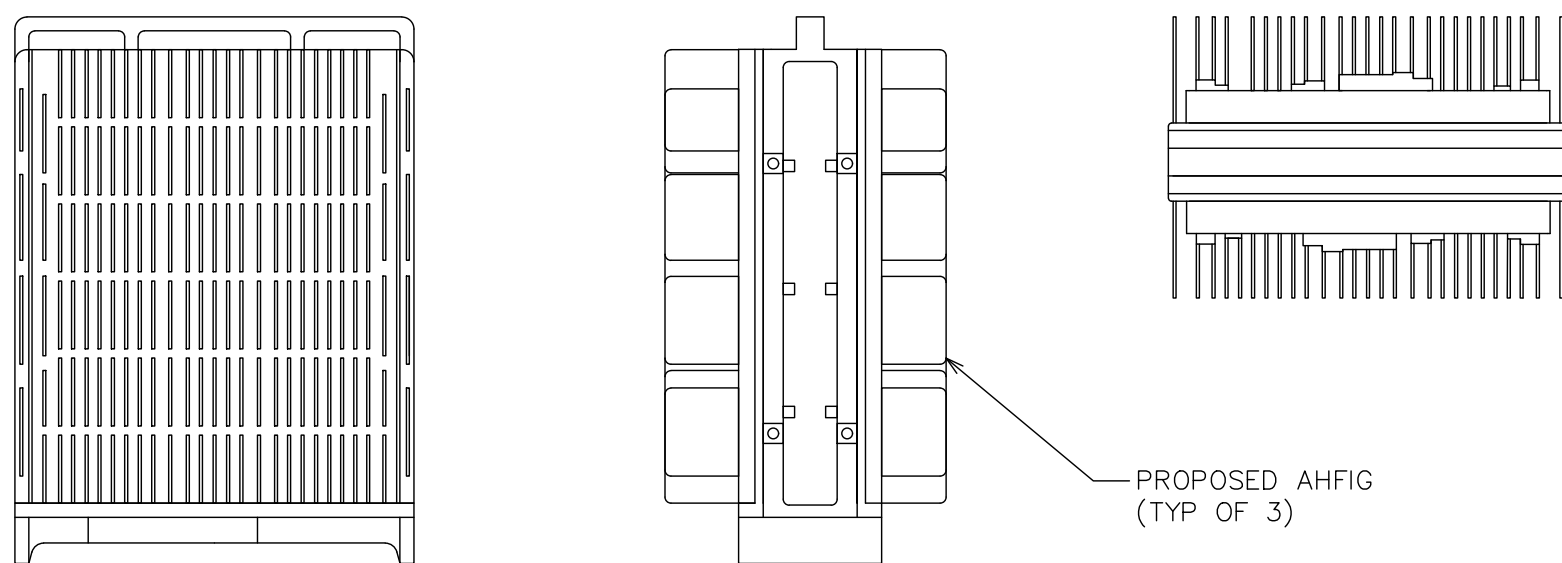


6 RADIO & ANTENNA MOUNTING
SCALE: NOT TO SCALE

FRONT

SIDE

TOP



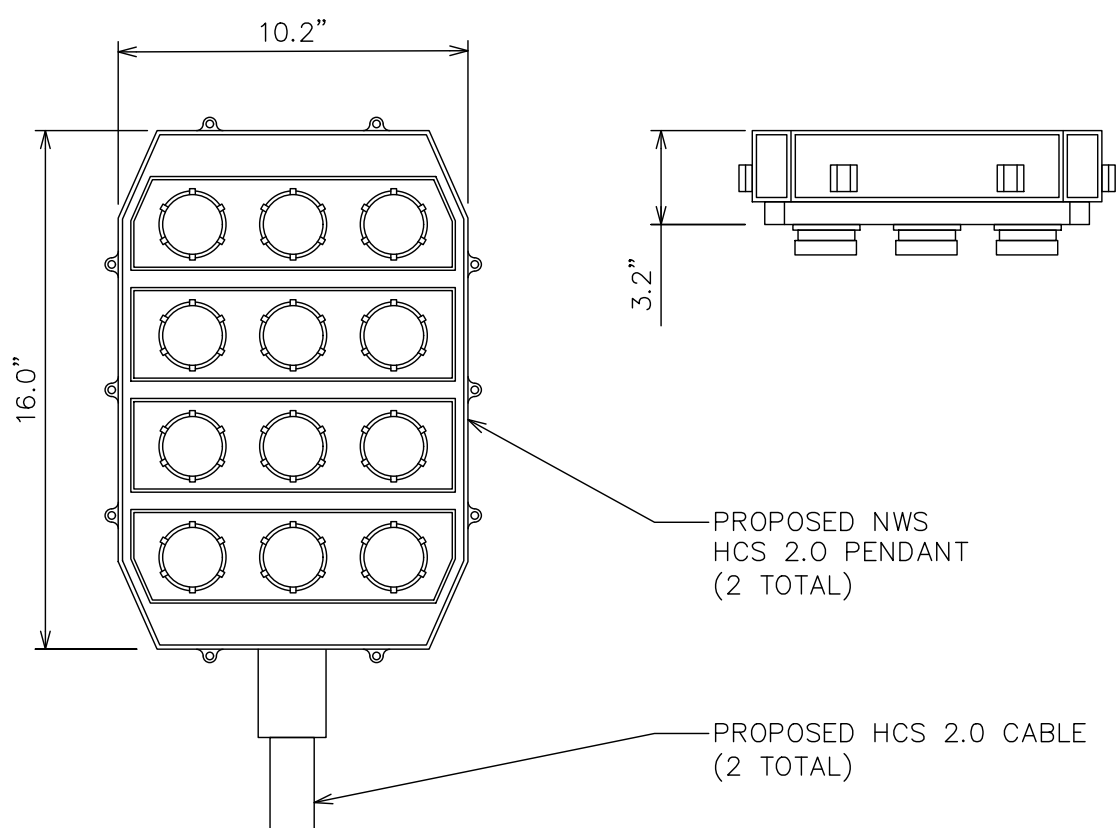
NOKIA AHFIG

NOKIA: RADIO AHFIG
DIMENSIONS, HxWxD: 28.74"x12.87"x5.59"
WEIGHT: 70.55 LBS

4 NOKIA: AHFIG
SCALE: NOT TO SCALE

FRONT

TOP



NOKIA HCS 2.0 JUNCTION BOX

COVP MAKE: NOKIA
COVP MODEL: HCS 2.0 PART 1
DIMENSIONS, HxWxD: 16.0"x10.2"x3.2"
WEIGHT: 1.61 lbs/ft

5 NOKIA – HCS 2.0 PART 1
SCALE: NOT TO SCALE

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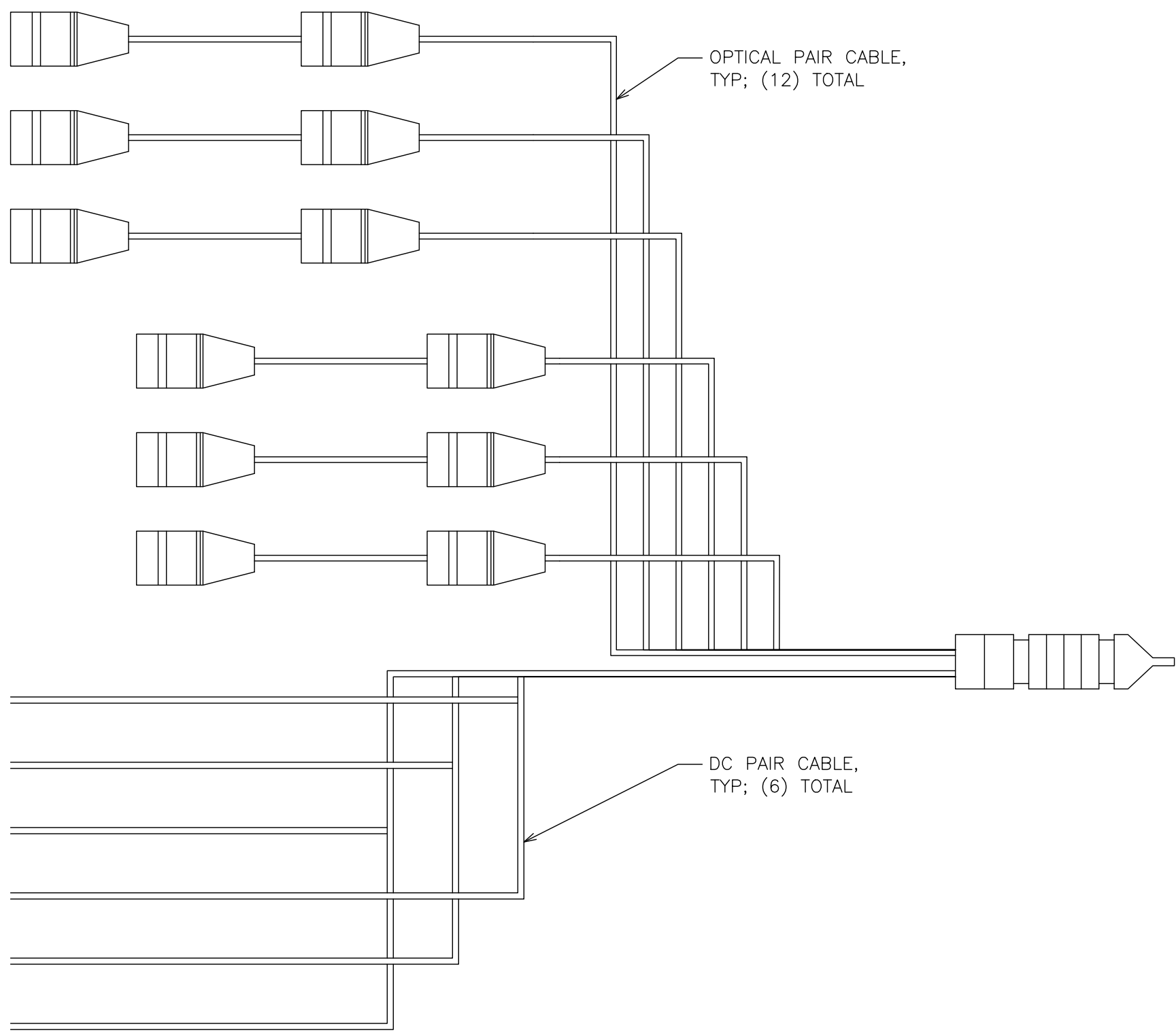
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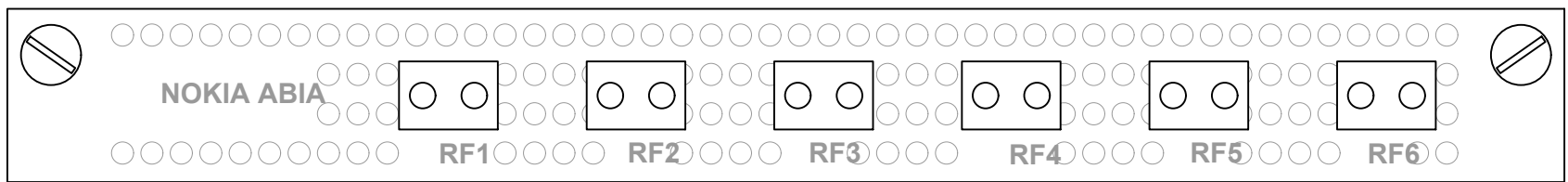
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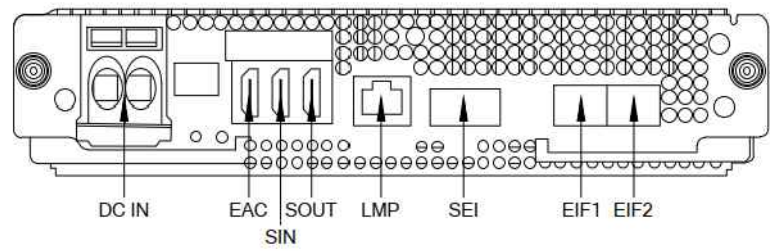


ERICSSON - HCS 6X12
WEIGHT: 1.7 LBS/FT
DIAMETER: 1.38" (±.1")
COAX EQUIVALENT: 1 3/8"

7 HCS DETAIL
SCALE: NOT TO SCALE

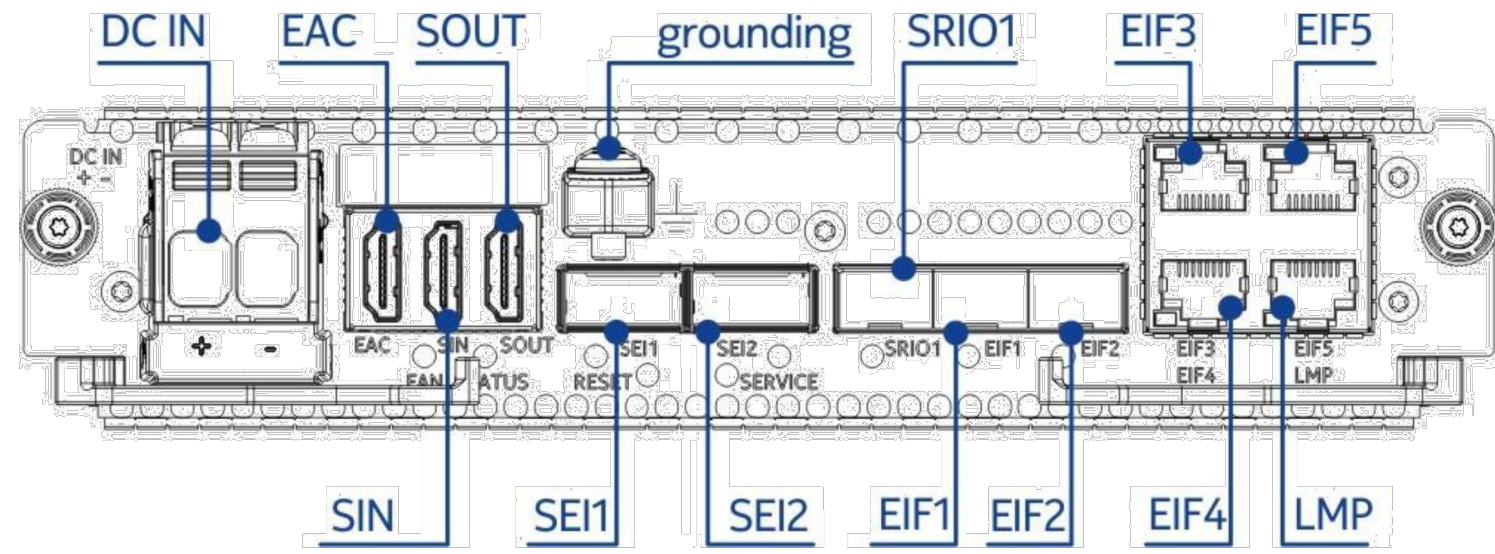


8 ABIA DETAIL
SCALE: NOT TO SCALE



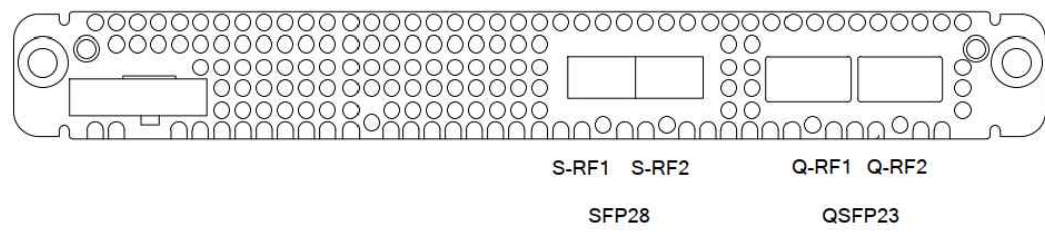
SIGNAL	#OF INTERFACES	CONNECTOR	DESCRIPTION
DC IN	1	DC TERMINAL	48V DC INPUT
EAC	1	HDMI	EXTERNAL ALARM & CONTROL, 6 ALARMS, 6 ALARMS/SECTORS
SIN	1	HDMI	SYNCHRONIZATION INPUT, GNSS INTERFACE
SOUT	1	HDMI	SYNCHRONIZATION OUTPUT
LMP	1	RJ45	LOCAL MANAGEMENT PORT, 1G ETHERNET
EIF	2	SFP28	BACKHAUL/HIGHER LAYER FRONTHAUL INTERFACE UP TO 25GE PER PORT, SUPPORT FOR SYNC IEEE1588
SEI	1	QSFP+	SYSTEM EXTENSION INTERFACE, 4 X 10GE
RESET	1		PLUG IN RESET
SERVICE	1		SERVICE BUTTON, RECOVERY RESET
LEDS	7		VISUAL INDICATION OF STATUS

9 ABIL DETAIL
SCALE: NOT TO SCALE



Property	ASIB
Nokia product code	473764A
Ingress protection class	IP 20
Weight (without packaging)	2.9 kg (6.4 lb)
Introduced by feature	LTE3178: AirScale Common ASIB and SR002002: AirScale Common ASIB PIU SBTS support

10 ASIB DETAIL
SCALE: NOT TO SCALE

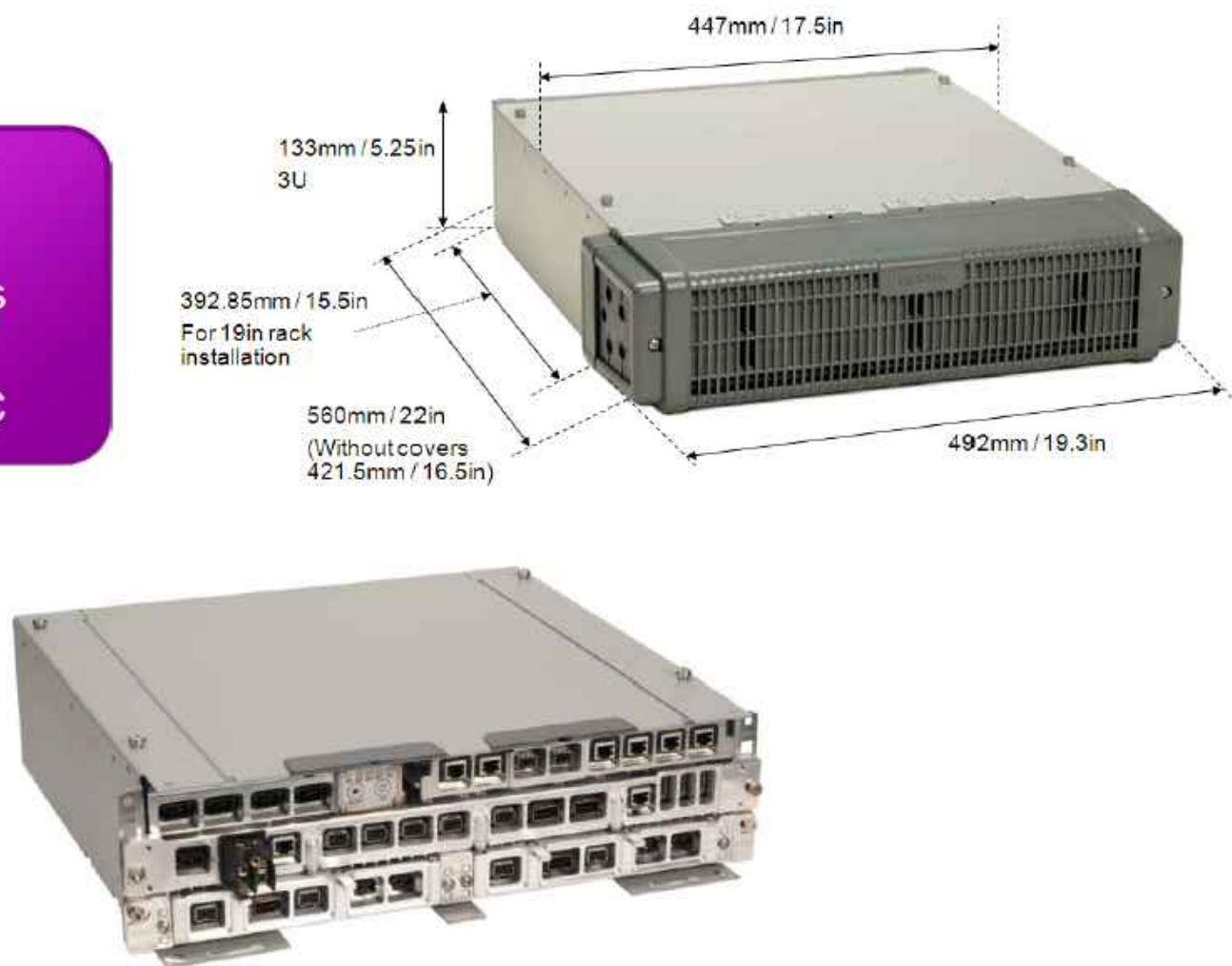


SIGNAL	#OF INTERFACES	CONNECTOR	DESCRIPTION
Q-RFN	2	QSFP28	4 X 25/10 GBPS PER EACH CONNECTOR, SUPPORTS 10GE AND 25 GE ETHERNET PROTOCOLS
S-RFN	2	SFP28	1 X 25/10 GBPS PER EACH CONNECTOR, SUPPORTS 10GE AND 25 GE ETHERNET PROTOCOLS
LEDS	5		VISUAL INDICATION OF STATUS

11 ASIK DETAIL
SCALE: NOT TO SCALE

Flexi Multiradio BTS System Module FSMF

- < 15 liters
- < 15 kg
- 3 height units
- IP65
- 35 to +55 °C



12 FSMF DETAIL
SCALE: NOT TO SCALE

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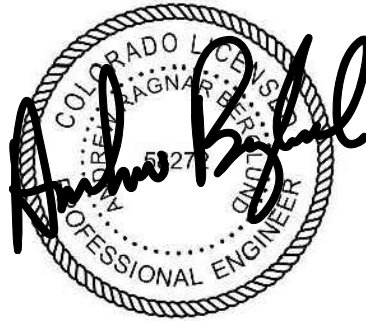
BU #: **877103**
KEEBLER/ COLORADO
SPGS/ CSP209

231 MAIN ST
COLORADO SPRINGS,
CO 80911

EXISTING 60'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	05/10/21	GBP	CONSTRUCTION	HMM
1	05/25/21	GBP	CONSTRUCTION	HMM



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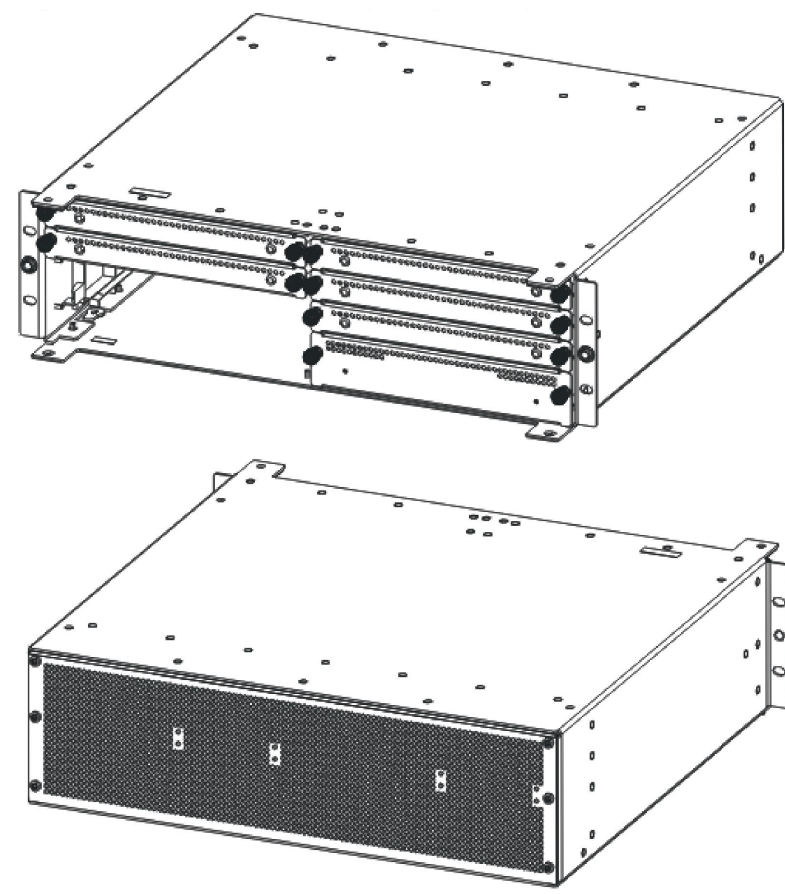
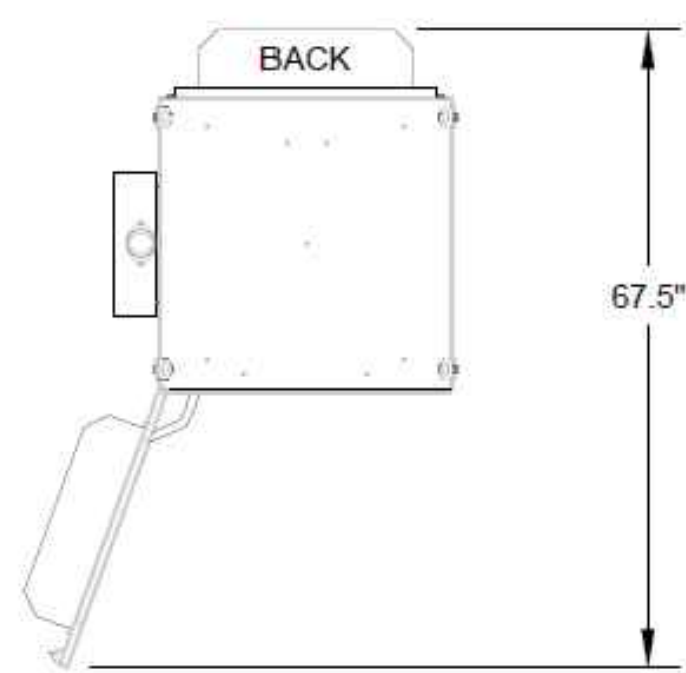


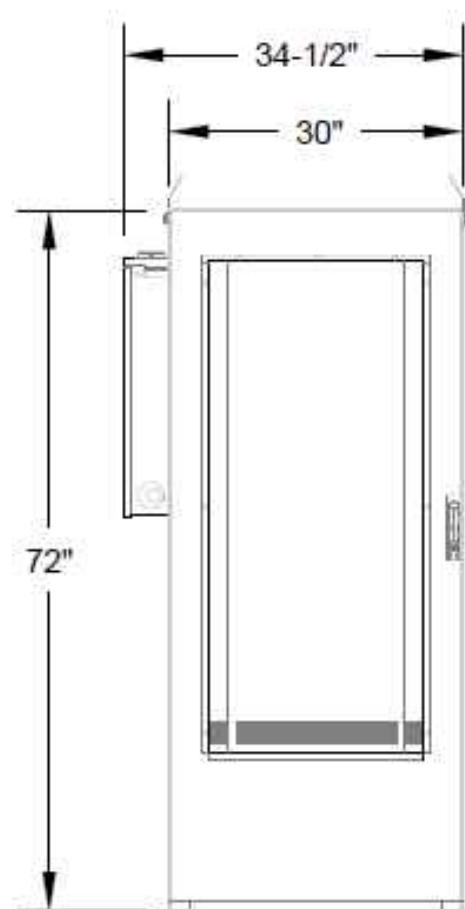
Table: AMIA dimensions and weight

Property	Value	Dimensions orientation
Height	128.5 mm (5.1 in.)	
Depth	400 mm (15.7 in.)	
Width	447 mm (17.6 in.)	

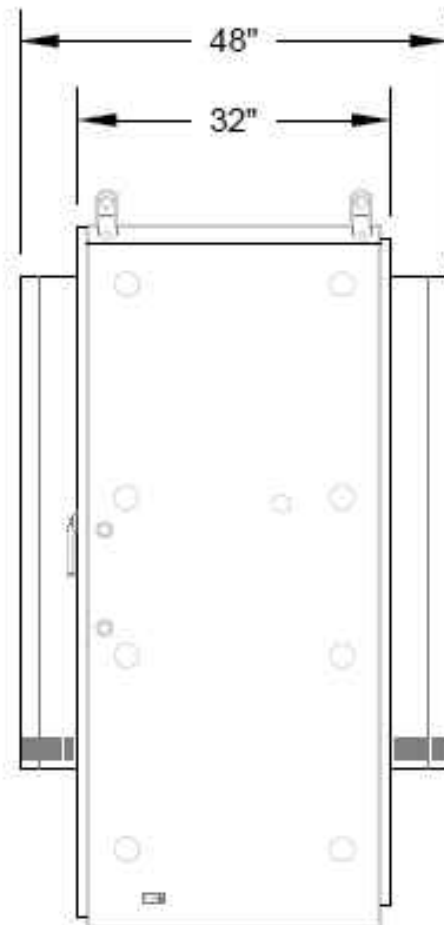
13 AMIA DETAIL
SCALE: NOT TO SCALE



PLAN VIEW



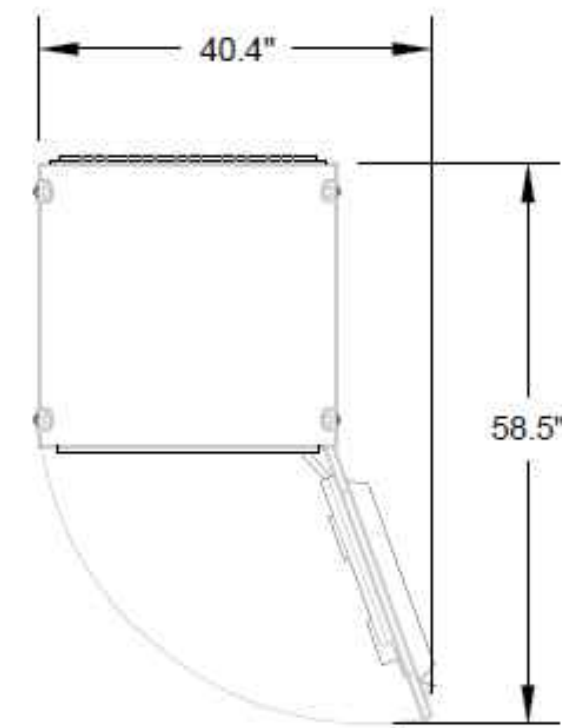
FRONT



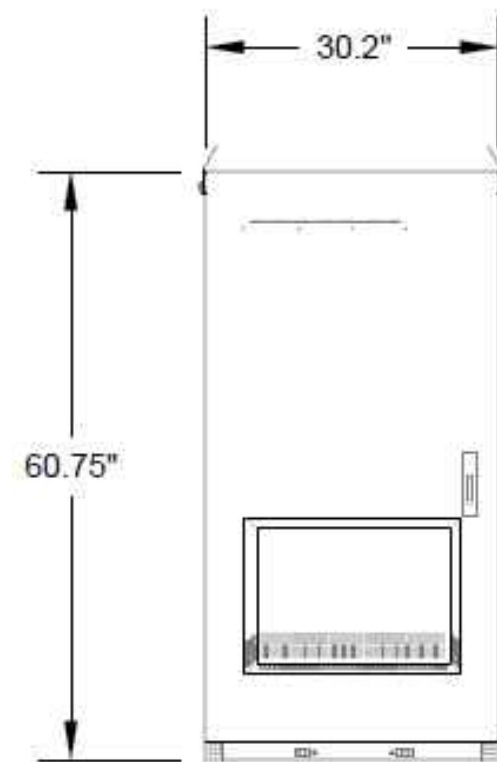
SIDE

14 600A SSC
SCALE: NOT TO SCALE

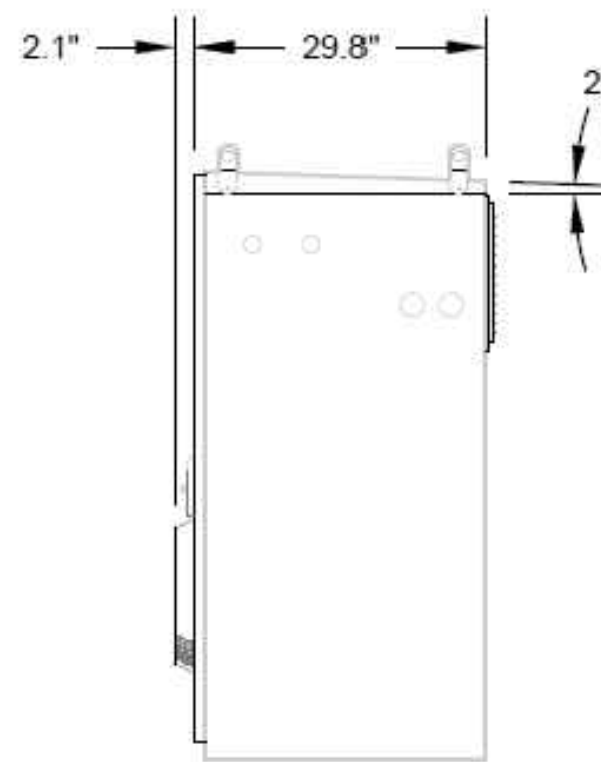
PROPERTY	VALUE	PROPERTY
HEIGHT	72 in (876 mm)	BASIC CABINET: ENCLOSURE, DC POWER PLANT W/OUT LIFTING BRACKETS
WIDTH	30 in 762 mm	BASIC CABINET: ENCLOSURE, DC POWER PLANT
WIDTH W/AC LOAD CENTER	34-1/2 in 835 mm	BASIC CABINET: ENCLOSURE, DC POWER PLANT W/AC SIDE MOUNTED LOAD CENTER
DEPTH	32 in 813 mm	BASIC CABINET: ENCLOSURE, DC POWER PLANT
DEPTH WITH SHROUDS	48 in 1219 mm	BASIC CABINET: ENCLOSURE, W/ FRONT AND REAR DAC SHROUDS
EST. WEIGHT	850 lbs	BASIC CABINET WEIGHT WITH TOTAL OF 7 SUBRACKS INCLUDED



PLAN VIEW



FRONT



SIDE

15 BATTERY CABINET
SCALE: NOT TO SCALE

PROPERTY	VALUE
HEIGHT	60.75 in 1543.00 mm
WIDTH	30.2 in 768.17 mm
DEPTH W/ DAC	31.9 in 810.37 mm
DEPTH	29.8 in 757.54 mm
DOOR OPENING WIDTH	26.5 in 673.12 mm
DOOR OPENING HEIGHT	55.6 in 1411.93 mm
EST. WEIGHTS	540 lbs (EMPTY) 2700 lbs (4 BATTERY STRINGS)

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BU #: 877103
**KEEBLER/ COLORADO
SPGS/ CSP209**

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CO 80911

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05/25/21

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Professional Engineer License: #58272

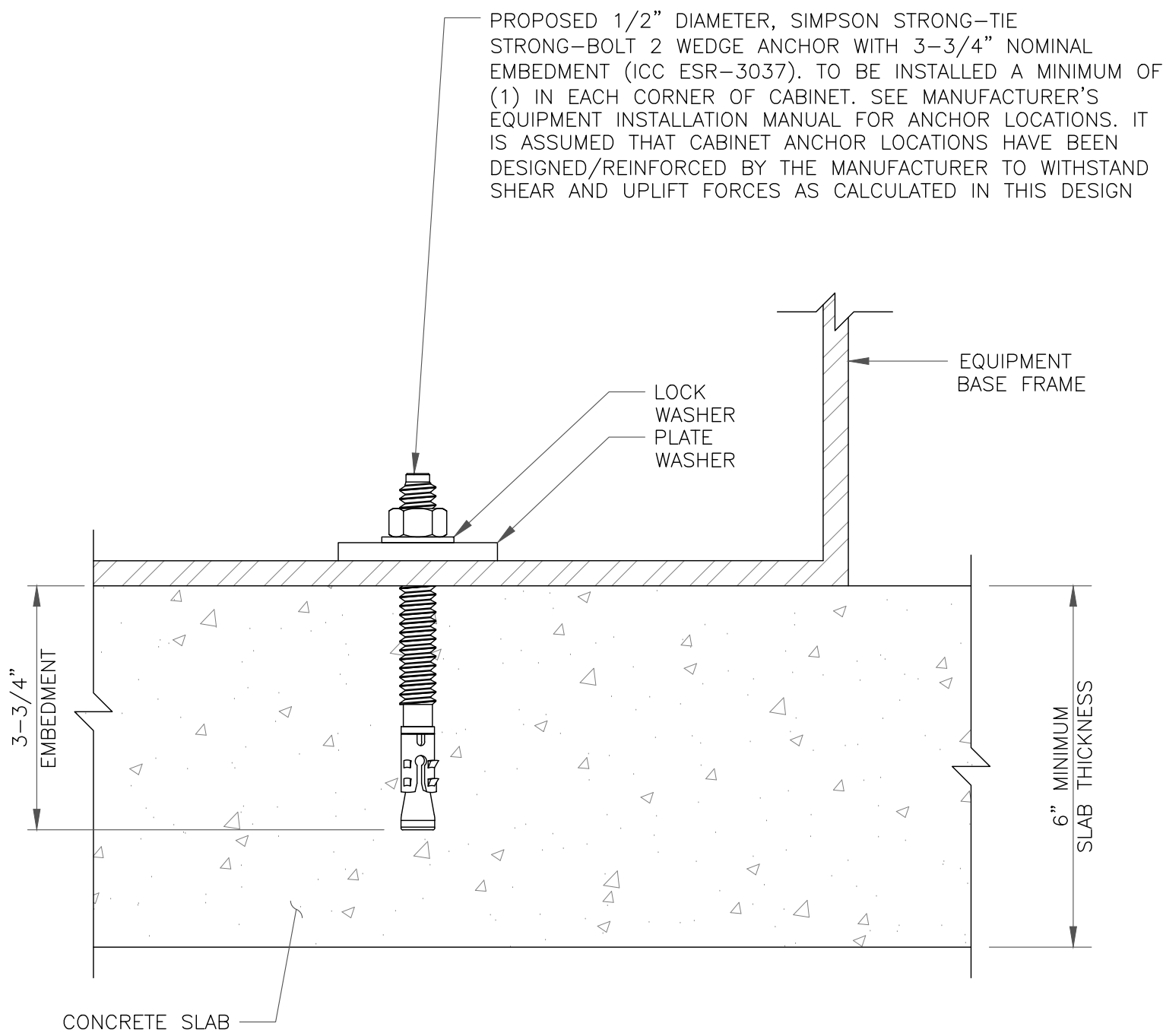
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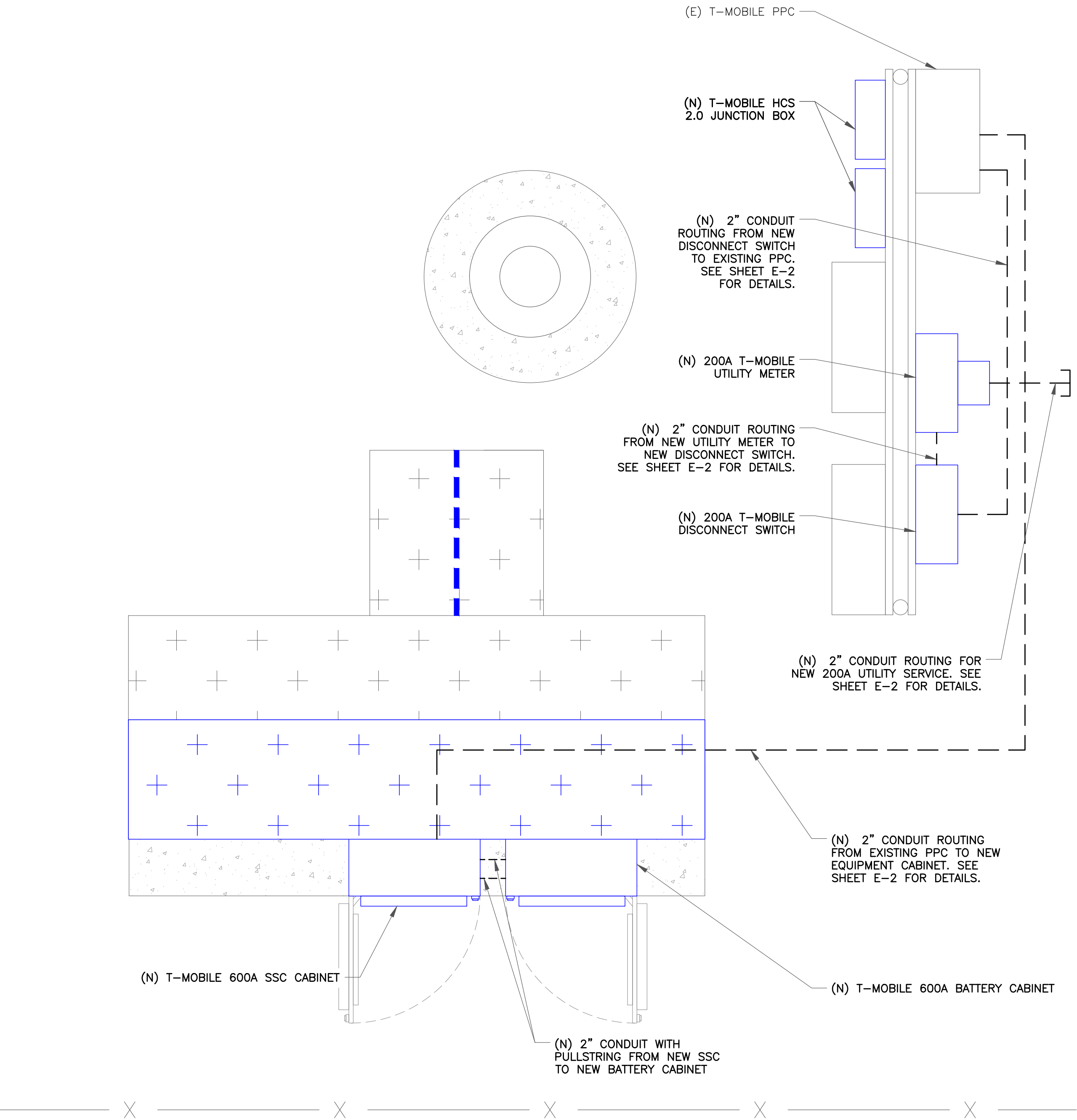
16 CABINET ANCHOR DETAIL
SCALE: NOT TO SCALE

17 NOT USED
SCALE: NOT TO SCALE

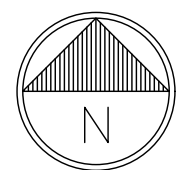
18 NOT USED
SCALE: NOT TO SCALE

ELECTRICAL DETAILS NOTES:

- EXISTING EQUIPMENT LAYOUT WAS MADE USING INFORMATION PROVIDED BY CROWN CASTLE. CONTRACTOR TO VERIFY ALL EXISTING INFORMATION IS AS INDICATED ON SITE PLAN. CONTRACTOR IS TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES. IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES.
- CONTRACTOR TO ENSURE THAT ALL T-MOBILE EQUIPMENT IS INSTALLED INSIDE T-MOBILE'S LEASE AREA, INCLUDING BUT NOT LIMITED TO, EQUIPMENT CABINETS, UTILITY CABINETS, H-FRAMES, ETC.
- CONTRACTOR TO VERIFY THAT ALL T-MOBILE EQUIPMENT IS INSTALLED TO MEET THE WORKING CLEARANCE REQUIREMENTS OF NEC 110.26

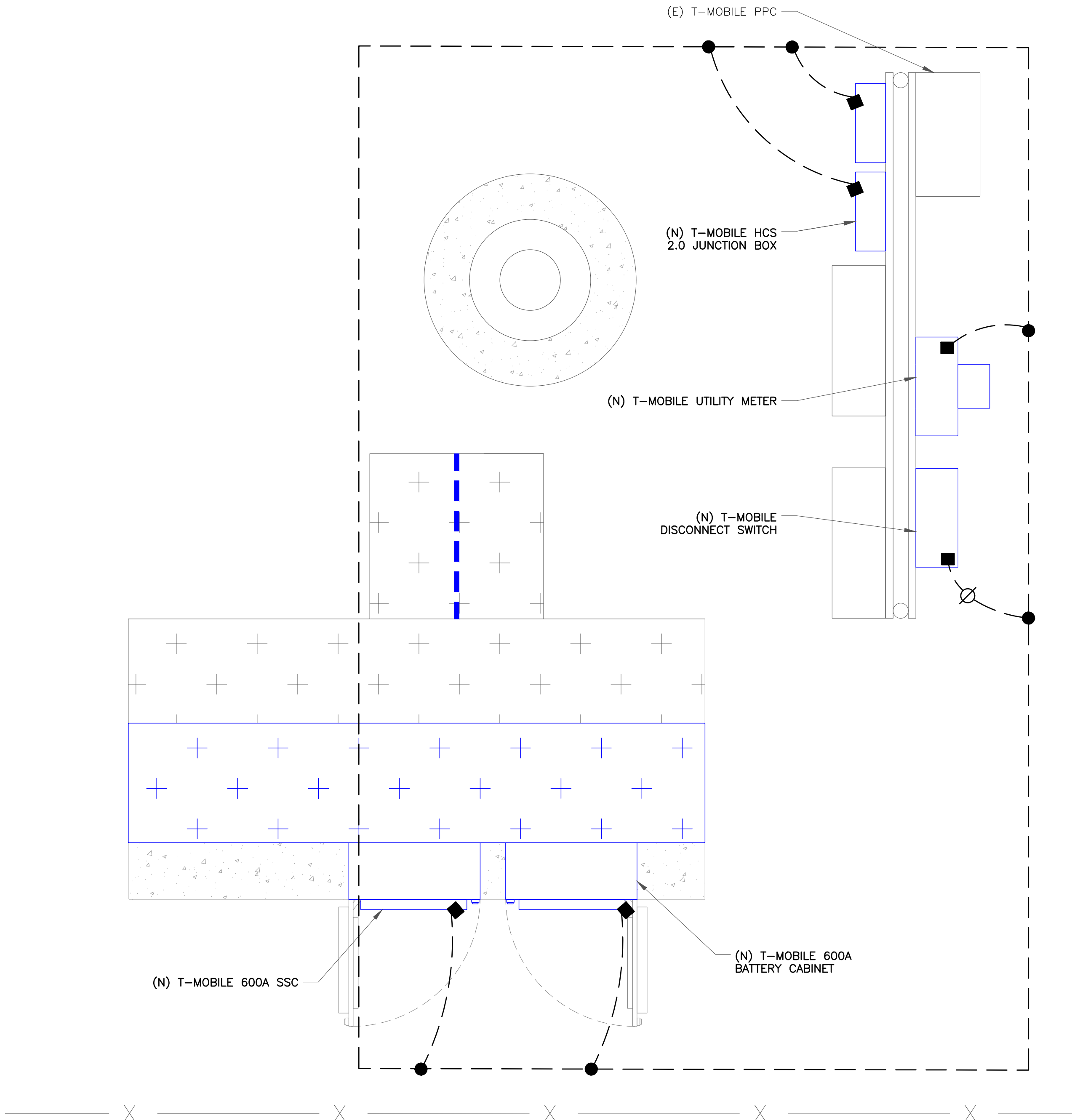


1 ELECTRICAL ROUTING PLAN
SCALE: 1"=1'-0" (FULL SIZE)
1/2"=1'-0" (11x17)

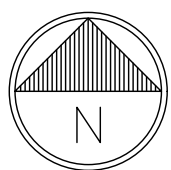


ELECTRICAL DETAILS NOTES:

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- CONTRACTOR TO ENSURE THAT ALL T-MOBILE EQUIPMENT IS INSTALLED INSIDE T-MOBILE'S LEASE AREA, INCLUDING BUT NOT LIMITED TO, EQUIPMENT CABINETS, UTILITY CABINETS, H-FRAMES, ETC.
- CONTRACTOR TO VERIFY THAT ALL T-MOBILE EQUIPMENT IS INSTALLED TO MEET THE WORKING CLEARANCE REQUIREMENTS OF NEC 110.26
- CONTRACTOR TO VERIFY CONDITION AND LOCATION OF ALL EXISTING GROUNDING EQUIPMENT PRIOR TO CONSTRUCTION. TEP DID NOT CONFIRM EXISTING SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO, GROUND RINGS, GROUND RODS, AND GROUND BARS.



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



LEGEND	
	MECHANICAL CONNECTION
	EXOTHERMIC CONNECTION
	ANTENNA GROUND BAR
	MASTER GROUND BAR

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05/25/21

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Professional Engineer License: #51287

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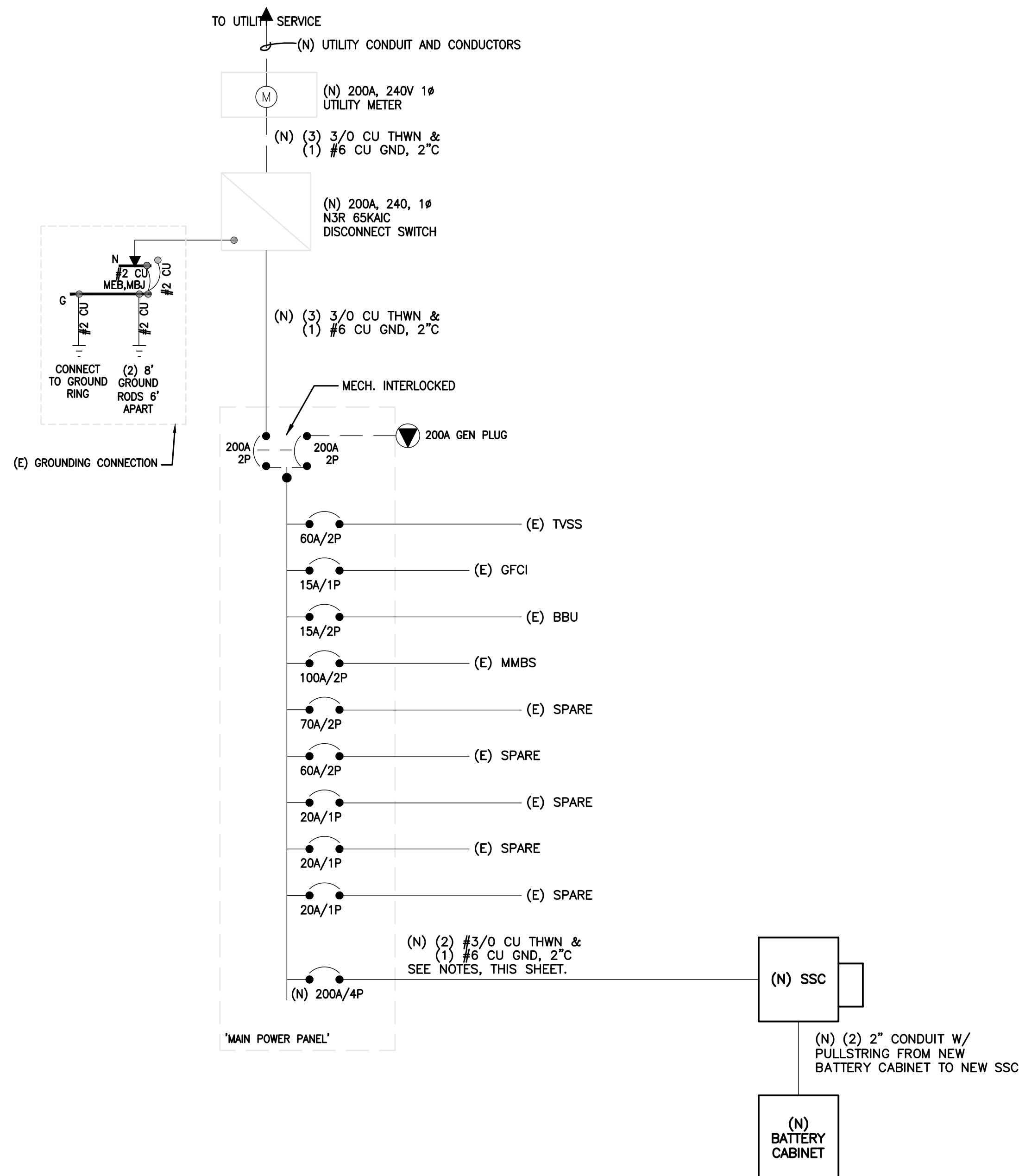
1

NEW			ELECTRICAL PANEL SCHEDULE										VOLTAGE: 240 / 120 V 1ø,3W		
PANEL: PPC			65/10KAIC SERIES RATED										MAINS: 200 A MCB		
LOCATION: PPC CABINET													BUS: 200 A CU		
MOUNTING: SURFACE			NEMA RATING:3R												
LOAD DESCRIPTION	EMT COND	CU GRND	PHASE NEUT	CKT BRKR	CIR NO.	LOAD AMPS		CIR NO.	CKT BRKR	PHASE NEUT	CU GRND	EMT COND	LOAD DESCRIPTION		
MISC	1"	10	6	60	1	0.0		70	4	8	1"	MISC			
(E) TVSS			3		0.0	2						(E) SPARE / OFF			
MISC Cont.			2		0.0	4	2					MISC Cont.			
RECEPTACLES	3/4"	12	12	15	5	1.5		60	6	8	1"	MISC			
(E) GFCI				1		0.0		6				(E) SPARE / OFF			
MISC	3/4"	12	12	15	7		0.0		6			MISC			
(E) BBU / OFF							0.0	8	2			MISC Cont.			
MISC Cont.			12		9	0.0		20	10	10	3/4"	MISC			
				2		0.0		10	1			(E) SPARE / OFF			
MISC	1-1/4"	8	3	100	11		0.0	20	10	10	3/4"	MISC			
(E) MMBS / OFF							0.0	12	1			(E) SPARE / OFF			
MISC Cont.			3		13	0.0		20	10	10	3/4"	MISC			
				2		0.0		14	1			(E) SPARE / OFF			
MISC	2"	6	3/0	200	15		32.9					BUSSED SPACE			
(N) T-MOBILE 600A SSC			3/0		17	32.9		16				BUSSED SPACE			
MISC Cont.						0.0		18				BUSSED SPACE			
MISC			3/0		19		32.9					BUSSED SPACE			
Cont.							0.0	20				BUSSED SPACE			
MISC			3/0		21	32.9						BUSSED SPACE			
Cont.				4		0.0		22				BUSSED SPACE			
BUSSED SPACE					23		0.0					BUSSED SPACE			
							0.0	24							
AMPS PER PHASE (CODE LOAD)						67.3		65.8							
1 PHASE DEMAND (VA)										CONTRACTOR TO INSTALL. OVERHEAD HANDLE TIE ON ALL SHARED NEUTRAL CIRCUITS.					
LIGHTING						0				SYMBOL LIST					
25% OF LIGHTING						0									
RECEPTACLES						180									
MISCELLANEOUS						15792									
25% OF MISCELLANEOUS						3948									
TOTAL VA						19920									
19.92 KVA ● 240 V 1ø															
83.00 A ● 240 V 1ø															

DC -48V FEEDER CABLING CHART

CALCULATIONS ARE BASE ON WORST CASE FULL LOAD AMPS AT 104A -48VDC, NOT EXCEEDING 3% VOLTAGE DROP. IF FIELD CONDITIONS ARE DIFFERENT THAN INDICATED, CONTACT ENGINEER FOR REVISED CALCULATIONS.

DISTANCE FROM FUEL CELL TO EQUIP. CABINET.	-48V, DC SINGLE CABLE	-48V, DC PARALLEL CABLE	CONDUIT SIZE
1'-70'	1-#1/0 CU. AWG		1-1/4"
71'-90'	1-#2/0 CU. AWG		1-1/2"
91'-110'	1-#3/0 CU. AWG		1-1/2"
111'-140'	1-#4/0 CU. AWG		2"
141'-175'		2-#2/0 CU. AWG	2"



NOTE:
#6 COPPER WIRE AND GREATER SHALL BE
(COPPER) THWN WIRE OR (COPPER) XHHW.

NOTE:
PRIOR TO RUNNING CONDUIT ROUTE - CONTRACTOR
SHALL CONTACT THE T-MOBILE PROJECT MANAGER
AND VERIFY THE EQUIPMENT CABINET LAYOUT
CONFIGURATION AND ROUTE CONDUITS ACCORDINGLY.

NOTE:
PRE-CONSTRUCTION MEETING AND
ELECTRICAL EASEMENT REQUIRED.

NOTE:
CONTRACTOR SHALL TAG EACH
CIRCUIT CONDUCTOR AT EACH
J-BOX, OUTLET, SWITCH, ETC.
WITH THE CIRCUITS IDENTIFICATION.

NOTE:
CONTRACTOR SHALL TAG EACH
CIRCUIT CONDUCTOR AT EACH
J-BOX, OUTLET, SWITCH, ETC.
WITH THE CIRCUITS IDENTIFICATION.


NOTE:
PROPOSED CONDUCTORS FROM
PPC TO SSC CABINET EXCLUDE
NEUTRAL CONDUCTOR AT THE
DIRECTION OF T-MOBILE.

NOTE:
ALL EQUIPMENT SHOWN IN THE ONE-LINE DIAGRAM
AND PANEL SCHEDULE IN THESE DRAWINGS IS
EXISTING UNLESS NOTED OTHERWISE. ONLY NEW
CONDUIT AND CONDUCTORS ARE SHOWN ON
ONE-LINE DIAGRAM FOR CLARITY.

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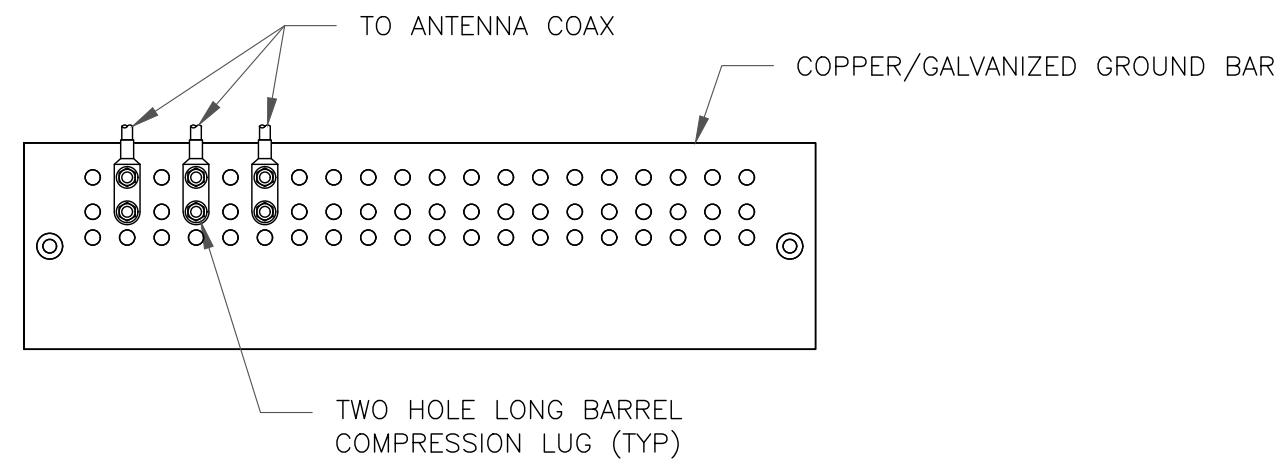
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EXISTING 60'-0" MONOPOLE

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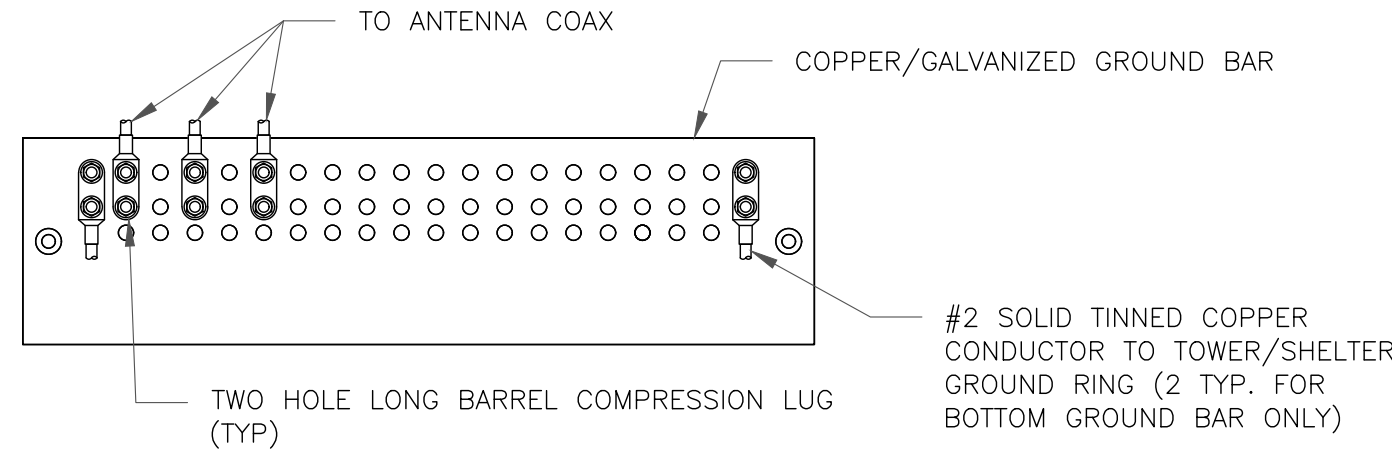
REVISION:



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 TOWER STEEL.

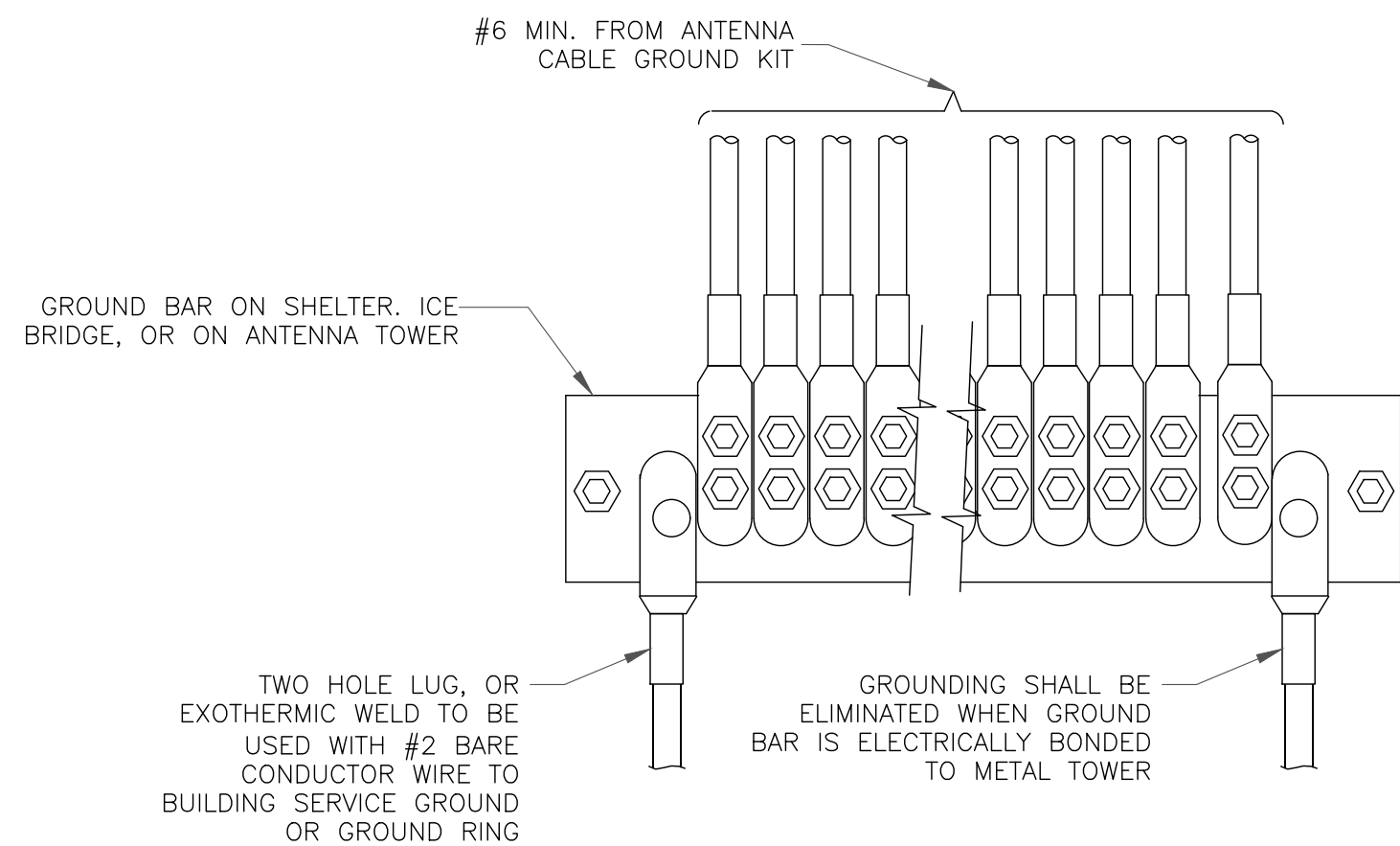
1 ANTENNA GROUND BAR DETAIL
SCALE: NOT TO SCALE



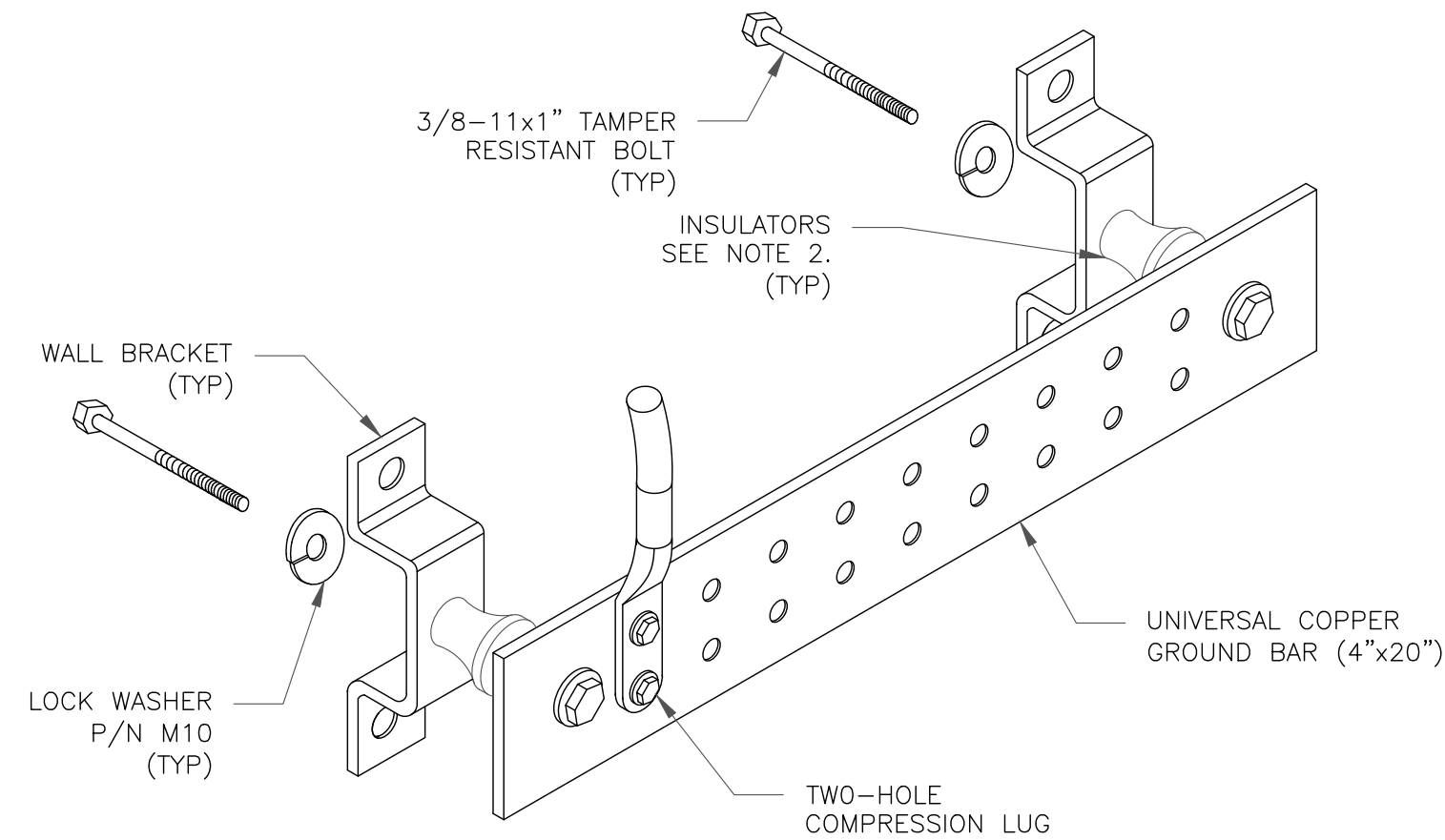
NOTES:

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.

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



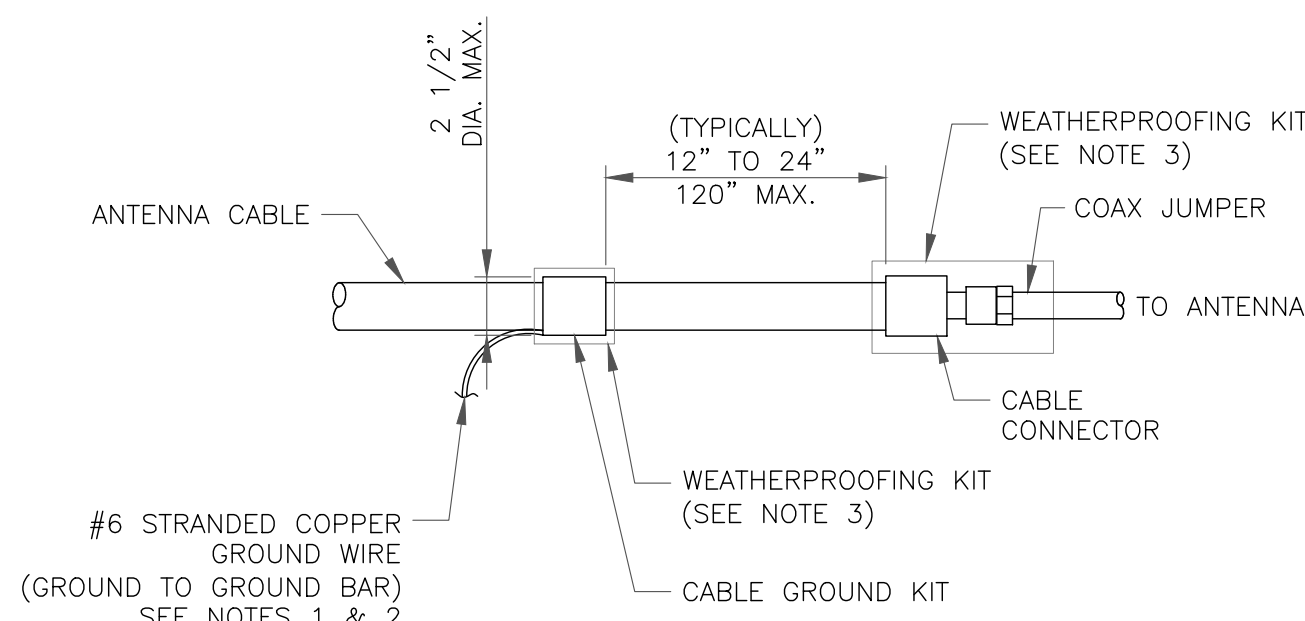
4 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



NOTES:

1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT 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.

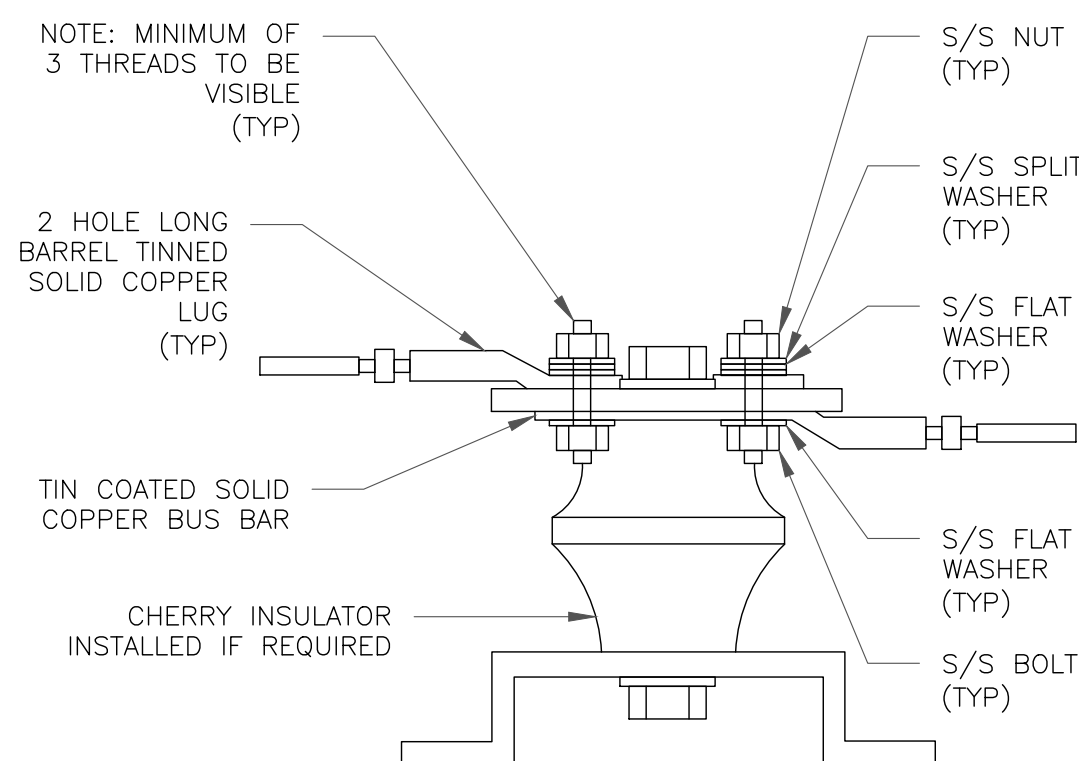
5 GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

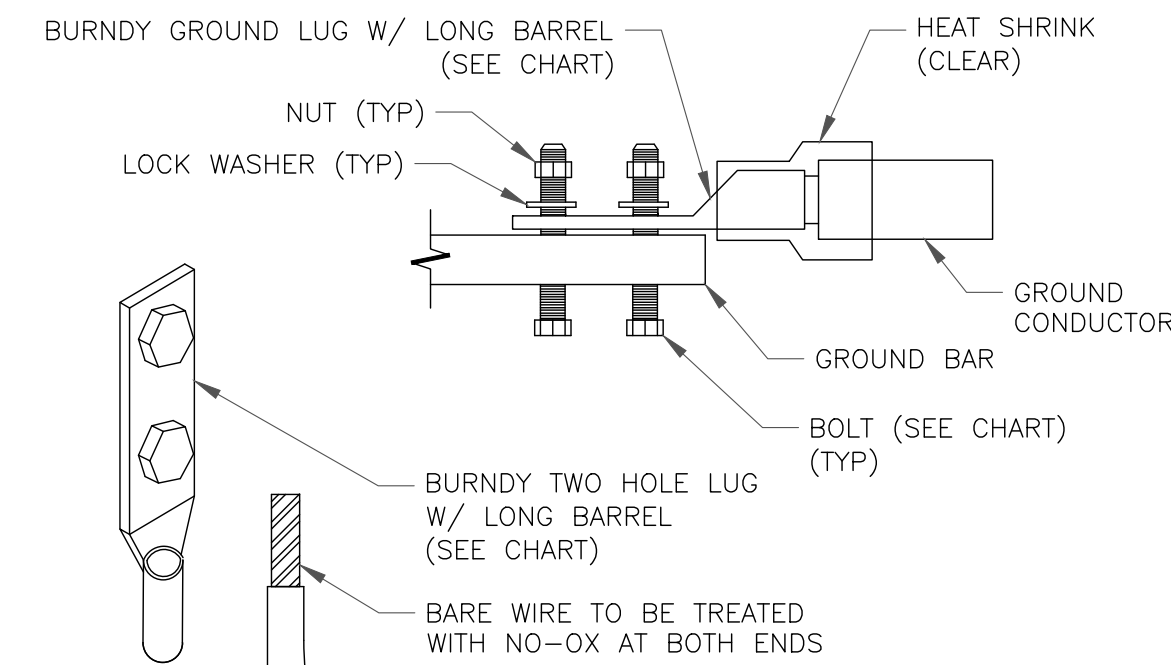
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
3. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.

6 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE

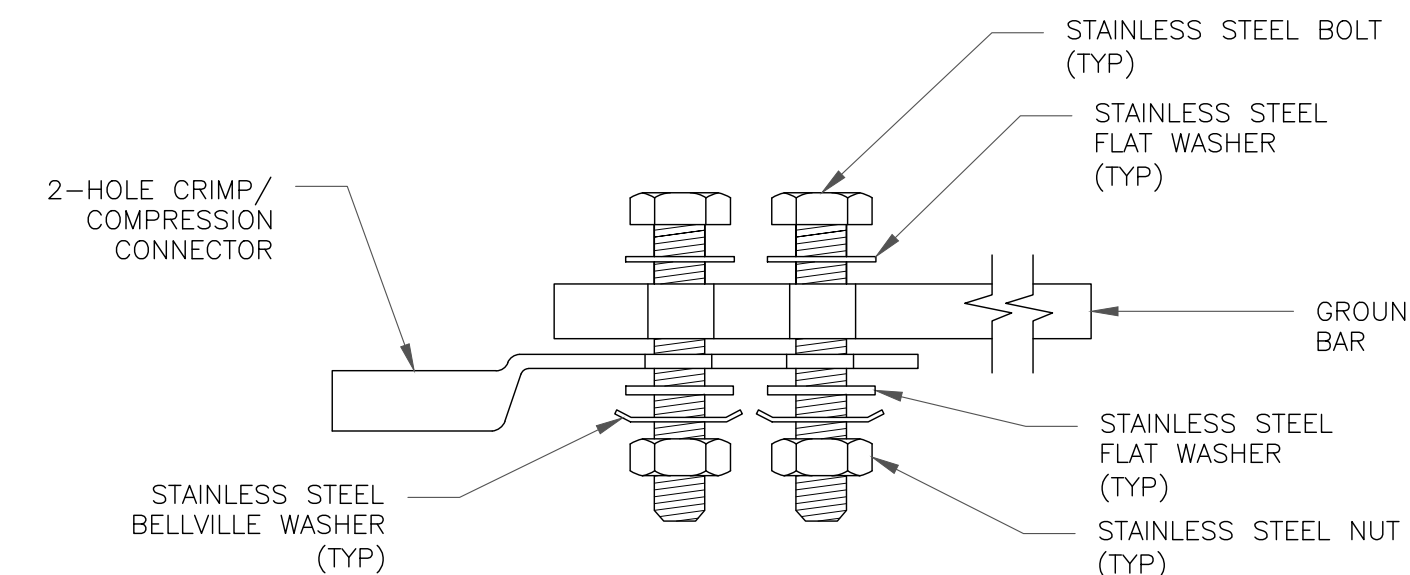
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 SOLID TINNED	YA3C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 STRANDED	YA2C-2TC38	3/8" - 16 NC SS 2 BOLT
#2/0 STRANDED	YA26-2TC38	3/8" - 16 NC SS 2 BOLT
#4/0 STRANDED	YA28-2N	1/2" - 16 NC SS 2 BOLT



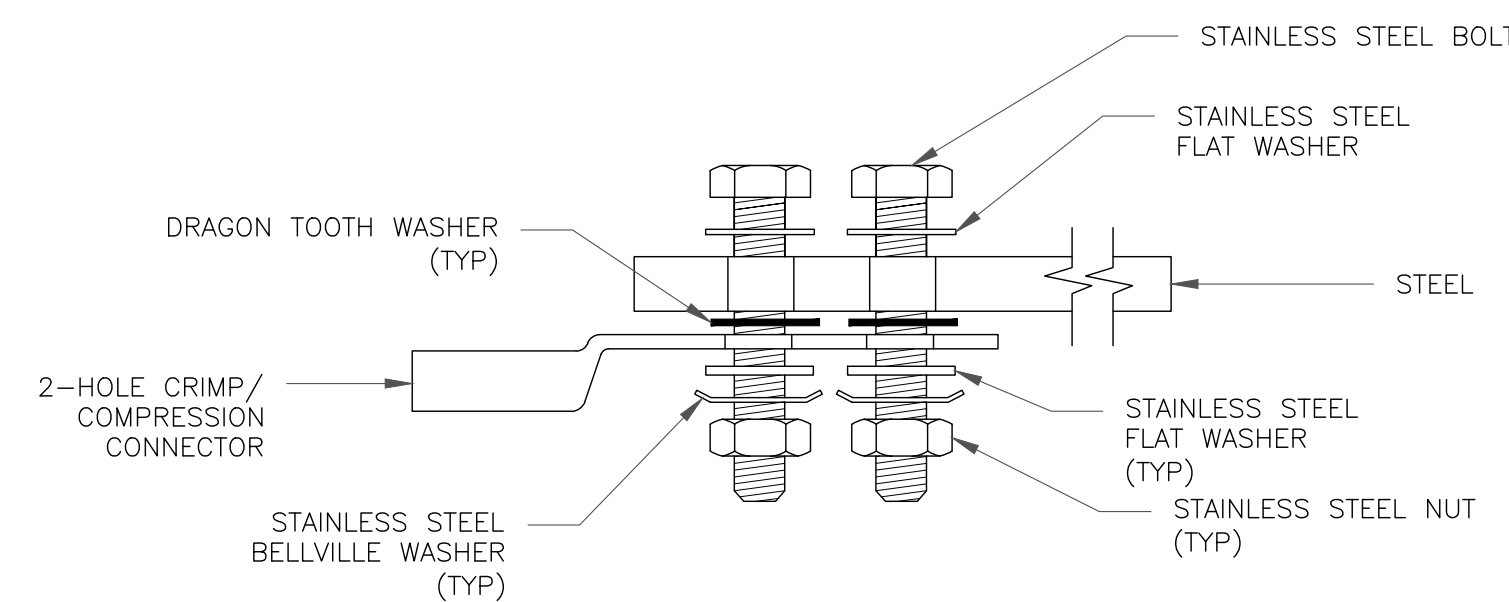
NOTE:

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.

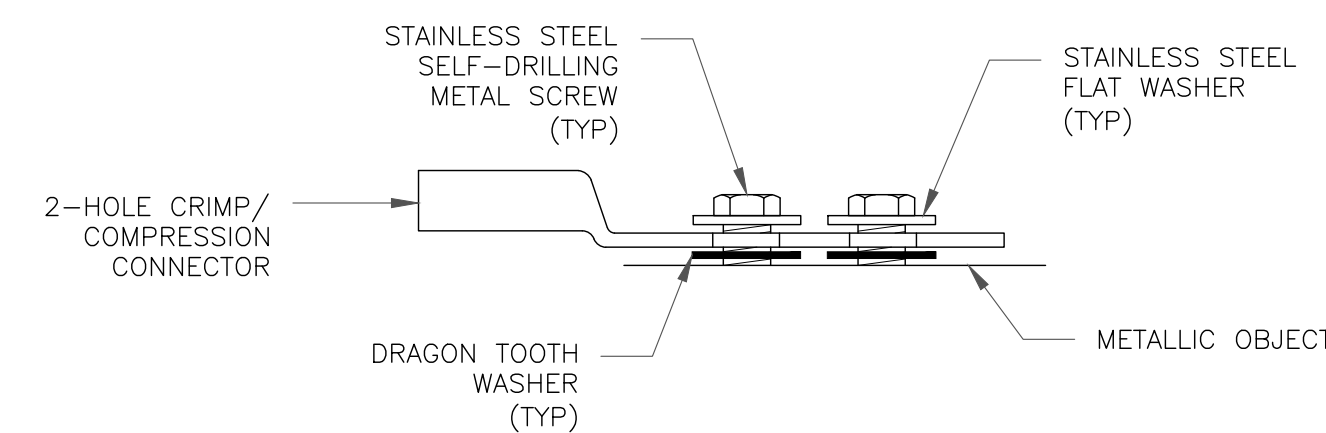
3 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS



SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

8 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE

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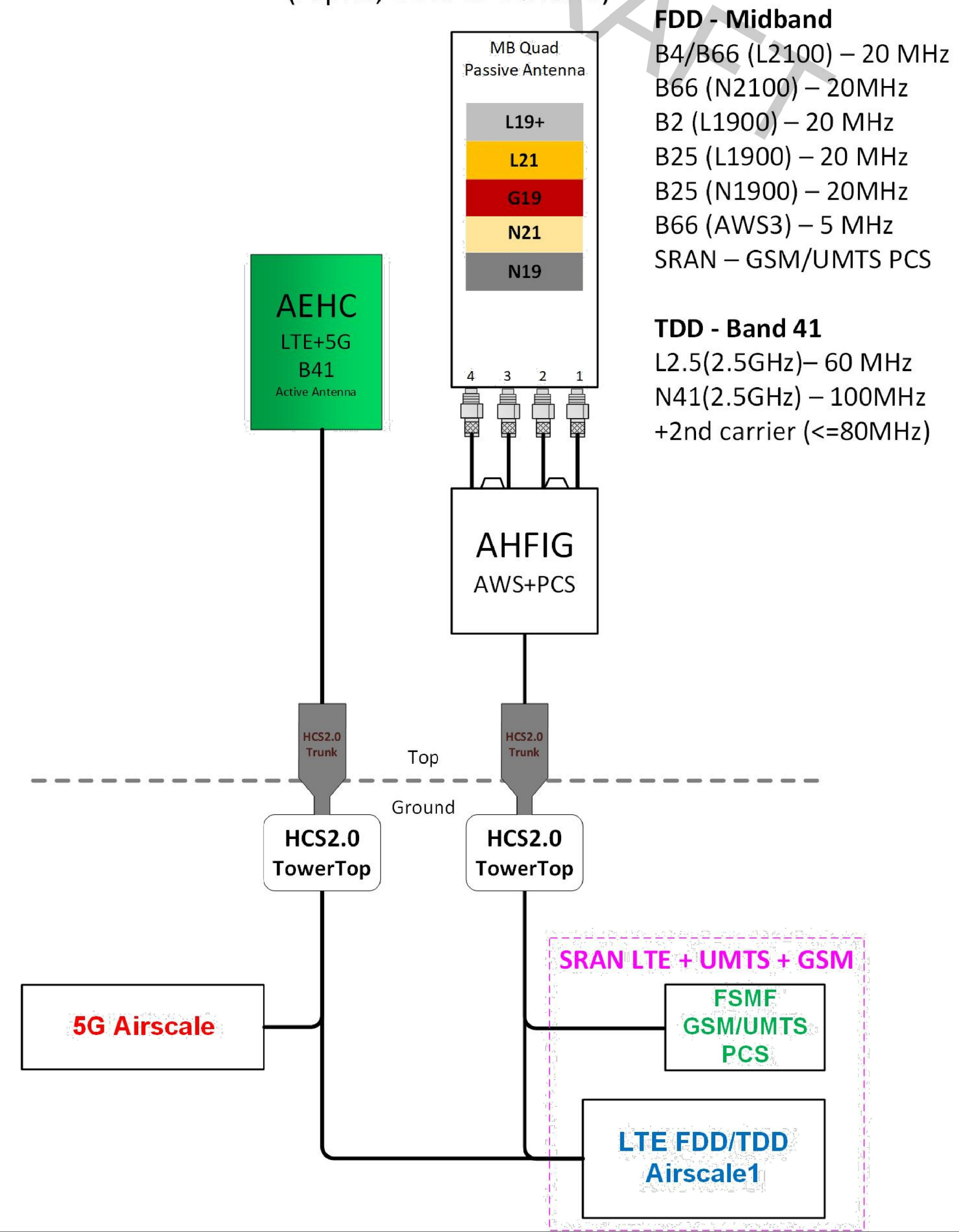
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Section 3 - Proposed Template Images

50091EZ_NO_UMTS_NO_AWS3.jpg

Configuration 50091EZ_SR

* For 5G and LTE Airscale BB dimensioning refer to Fiber Port matrices.
(Alpha, Beta & Gamma)



Notes:

FOR REFERENCE ONLY