T-Mobile

T-MOBILE SITE NUMBER: BA20403A
T-MOBILE SITE NAME: SKOFF TRUCKING/CINGULAR
SITE TYPE: MONOPOLE
TOWER HEIGHT: 78'-0"

BUSINESS UNIT #: 856199
SITE ADDRESS: 1 CASA GRANDE ROAD PETALUMA, CA 94954
COUNTY: SONOMA
JURISDICTION: CITY OF PENTALUMA

ANCHOR

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	HWY 101 - LAKEVILLE
SITE ADDRESS:	1 CASA GRANDE ROAD PETALUMA, CA 94954
COUNTY:	SONOMA
MAP/PARCEL #:	005-050-037
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	38°13'54.0"N (38.231667)
LONGITUDE:	122°36'30.9"W (-122.608583)
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	7'-7"
CURRENT ZONING:	MU1B
JURISDICTION:	CITY OF PENTALUMA
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	PENDING PENDING PENDING
TOWER OWNER:	CCTM1 LLC ONE PARK PLACE, SUITE 300, DUBLIN, CA 94568
CARRIER/APPLICANT:	T-MOBILE 1755 CREEKSIDE OAKS DR. SUITE 190 SACRAMENTO, CA 95833
CROWN CASTLE USA INC. APPLICATION ID:	578187
ELECTRIC PROVIDER:	N/A N/A
TELCO PROVIDER:	N/A N/A

PROJECT TEAM

A&E FIRM:	TELCYTE INFRASTRUCTURE SERVICES 3450 N HIGLEY RD, SUITE 102 MESA, AZ 85215 CWOLFE@TELCYTE.COM
CROWN CASTLE USA INC. DISTRICT CONTACTS:	3530 TORINGDON WAY, SUITE 300 CHARLOTTE, NC 28277 PATRICE TIPTON - PROJECT MANAGER (949) 930-4350 GARY HORACE - CONSTRUCTION MANAGER (661) 330-3745 LAURA MANSFIELD - A&E SPECIALIST LAURA.MANSFIELD@CROWNCASTLE.COM (925) 737-1047
T-MOBILE CONTACT:	MICHELLE STEFFLER MICHELLE.STEFFLER@T-MOBILE.COM

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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.

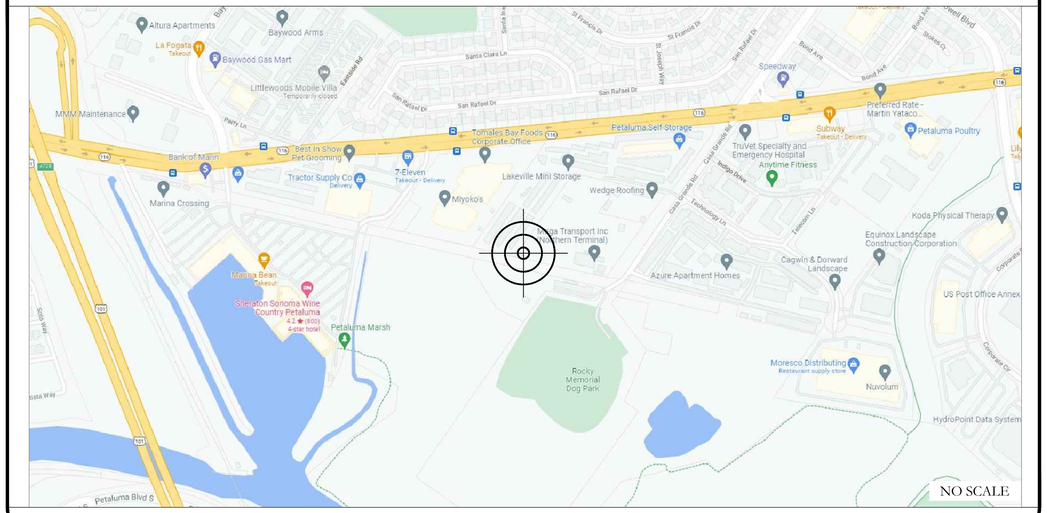
APPROVALS

THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL CONSTRUCTION DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND ANY CHANGES AND MODIFICATIONS THEY MAY IMPOSE.

	PRINT NAME	SIGNATURE	DATE
PROJECT MANAGER			
CONST. PM.			
RF ENGINEER			
SAC REP.			
PLAN CONSULTANT			
PROP. OWNER			
T-MOBILE REP.			

THE PARTIES ABOVE HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL CONSTRUCTION DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND ANY CHANGES AND MODIFICATIONS THEY MAY IMPOSE.

LOCATION MAP



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	2019 CALIFORNIA BUILDING CODE (CBC)/2018 IBC
MECHANICAL	2019 CALIFORNIA MECHANICAL CODE (CMC)/2018 UMC
ELECTRICAL	2019 CALIFORNIA ELECTRICAL CODE (CEC)/2017 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS: T.B.D
T.B.D
MOUNT ANALYSIS: B+T GROUP
10/05/2021

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

CALL CALIFORNIA ONE CALL
(800) 227-2600
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
- REMOVE (3) ANTENNAS
- REMOVE (6) TMAS
- REMOVE (3) RRHS
- REMOVE (12) COAX CABLES
- INSTALL (3) ANTENNAS
- INSTALL (6) RRUS
- INSTALL (2) 6X24 4AWG HCS 30M

GROUND SCOPE OF WORK
- REMOVE (6) RUS01 B2
- REMOVE (6) RUS01 B4
- REMOVE (3) RRUS11 B12
- INSTALL (1) ENCLOSURE 6160 CABINET W/ (1) BB 6648 & (1) PSU 4813
- INSTALL (1) B160 BATTERY CABINET
- INSTALL (1) PSU 4813 IN (E) RBS 6102 CABINET

CONFIG: 67D5A998E OUTDOOR

DESIGN PACKAGE BASED ON THE RFDS
REVISION: 8
DATE: 09/07/2021

DESIGN PACKAGE BASED ON THE APPLICATION
ID: 578187
REVISION: 0

T-Mobile
1755 CREEKSIDE OAKS DR. SUITE 190
SACRAMENTO, CA 95833

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

TELCYTE INFRASTRUCTURE SERVICES
3450 N HIGLEY RD - SUITE 102,
MESA, AZ 85215

T-MOBILE SITE NUMBER:
BA20403A

BU #: 856199

1 CASA GRANDE ROAD
PETALUMA, CA 94954

EXISTING 78'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRAWN	DESCRIPTION	Q.A.
A	10/14/21	AK	PRELIMINARY	CW
0	11/23/21	NP	SUBMITTAL FOR PERMIT	CW

REGISTERED PROFESSIONAL ENGINEER
TIM ALEXANDER
No. E18344
Exp. 3/31/2022
ELECTRICAL
STATE OF CALIFORNIA
SIGNED, 23 NOV 2021

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: 0

SITE WORK GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
2. 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 SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES, SUBCONTRACTOR 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.
3. ALL SITE WORK TO COMPLY WITH QAS-STD-10068 "INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON CROWN CASTLE USA INC. TOWER SITE" AND LATEST VERSION OF TIA 1019 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
4. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS.
5. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
6. 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, OWNER AND/OR LOCAL UTILITIES.
7. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.
8. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
9. 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.
10. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
11. 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 PROJECT SPECIFICATIONS.
12. SUBCONTRACTOR 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.
13. NOTICE TO PROCEED- NO WORK TO COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED AND THE ISSUANCE OF A PURCHASE ORDER.
14. 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 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 THE ANSI/TIA-322 (LATEST EDITION).

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND IN ACCORDANCE WITH ASTM A36 UNLESS OTHERWISE NOTED.
2. BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE (3/4"ø) CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
3. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8"ø ASTM A307 BOLTS UNLESS NOTED OTHERWISE.
4. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS.

CONCRETE AND REINFORCING STEEL NOTES:

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. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. SLAB FOUNDATION DESIGN ASSUMING ALLOWABLE SOIL BEARING PRESSURE OF 2000 PSF.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

   CONCRETE CAST AGAINST EARTH.....3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER.....2 IN.
   #5 AND SMALLER & WWF.....1 1/2 IN.
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
   SLAB AND WALLS.....3/4 IN.
   BEAMS AND COLUMNS.....1 1/2 IN.

5. A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE. IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

MASONRY NOTES:

1. HOLLOW CONCRETE MASONRY UNITS SHALL MEET A.S.T.M. SPECIFICATION C90, GRADE N. TYPE 1. THE SPECIFIED DESIGN COMPRESSIVE STRENGTH OF CONCRETE MASONRY (F'm) SHALL BE 1500 PSI.
2. MORTAR SHALL MEET THE PROPERTY SPECIFICATION OF A.S.T.M. C270 TYP. "S" MORTAR AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI.
3. GROUT SHALL MEET A.S.T.M. SPECIFICATION C475 AND HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2000 PSI.
4. CONCRETE MASONRY SHALL BE LAID IN RUNNING (COMMON) BOND.
5. WALL SHALL RECEIVE TEMPORARY BRACING. TEMPORARY BRACING SHALL NOT BE REMOVED UNTIL GROUT IS FULLY CURED.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

CONTRACTOR-	
SUBCONTRACTOR-	GENERAL CONTRACTOR (CONSTRUCTION)
CARRIER-	T-MOBILE
TOWER OWNER-	CROWN CASTLE USA INC.
OEM-	ORIGINAL EQUIPMENT MANUFACTURER

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR 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 CONTRACTOR AND CROWN CASTLE USA INC.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO SCALE AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR AND CROWN CASTLE USA INC. PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWINGS.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR 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.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

ABBREVIATIONS AND SYMBOLS:

ABBREVIATIONS:

AGL	ABOVE GRADE LEVEL
BTS	BASE TRANSCEIVER STATION
(E)	EXISTING
MIN.	MINIMUM
REF	REFERENCE
RF	RADIO FREQUENCY
T.B.D.	TO BE DETERMINED
T.B.R.	TO BE RESOLVED
TYP	TYPICAL
REQ	REQUIRED
EGR	EQUIPMENT GROUND RING
AWG	AMERICAN WIRE GAUGE
MGB	MASTER GROUND BAR
EG	EQUIPMENT GROUND
BCW	BARE COPPER WIRE
SIAD	SMART INTEGRATED ACCESS DEVICE
GEN	GENERATOR
IGR	INTERIOR GROUND RING (HALO)
RBS	RADIO BASE STATION

SYMBOLS:

-|S/G|-	SOLID GROUND BUS BAR
-|S/N|-	SOLID NEUTRAL BUS BAR
	SUPPLEMENTAL GROUND CONDUCTOR
	2-POLE THERMAL-MAGNETIC CIRCUIT BREAKER
	SINGLE-POLE THERMAL-MAGNETIC CIRCUIT BREAKER
	CHEMICAL GROUND ROD
	TEST WELL
	DISCONNECT SWITCH
M	METER
	EXOTHERMIC WELD (CADWELD) (UNLESS OTHERWISE NOTED)
	MECHANICAL CONNECTION
	GROUNDING WIRE

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. SUBCONTRACTOR 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. HILTI EPOXY ANCHORS ARE REQUIRED BY CROWN CASTLE USA INC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
5. CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
6. EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING AND T1 CONDUCTOR AND 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.
7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH PLASTIC TAPE PER COLOR SCHEDULE. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (I.E. PANEL BOARD AND CIRCUIT ID'S).
8. PANEL BOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
9. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
10. POWER, CONTROL AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#14 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET & DRY) OPERATION LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED UNLESS OTHERWISE SPECIFIED.
11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION WITH OUTER JACKET LISTED OR LABELED FOR THE LOCATION USED 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 AT NO 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 AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E. RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
16. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT) OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) 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 NEC.
21. WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER).
22. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES 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.
23. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL; SHALL MEET OR EXCEED UL 50 AND RATED NEMA 1 (OR BETTER) INDOORS OR NEMA 3R (OR BETTER) OUTDOORS.
24. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
25. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
26. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
27. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
28. INSTALL PLASTIC LABEL ON THE METER CENTER TO SHOW "T-MOBILE".
29. ALL CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

GREENFIELD GROUNDING NOTES:

1. 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.
2. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE SUBCONTRACTOR 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 TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. 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.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 AWG SOLID TINNED COPPER FOR OUTDOOR BTS.
7. 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.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. 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 WIRES WITH 1-#2 AWG TIN-PLATED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS, WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., 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 TINNED SOLID IN 3/4" LIQUID TIGHT CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE LIQUID TIGHT CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).

NEC INSULATOR COLOR CODE

DESCRIPTION	PHASE/CODE LETTER	WIRE COLOR
240/120 1Ø	LEG 1	BLACK
	LEG 2	RED
AC NEUTRAL	N	WHITE
GROUND (EGC)	G	GREEN
VDC POS	+	*RED-POLARITY MARK AT TERMINATION
VDC NEG	-	*BLACK-POLARITY MARK AT TERMINATION
240V OR 208V, 3Ø	PHASE A	BLACK
	PHASE B	RED(ORG. IF HI LEG)
	PHASE C	BLUE
480V, 3Ø	PHASE A	BROWN
	PHASE B	ORANGE
	PHASE C	YELLOW

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

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

TELCYTE INFRASTRUCTURE SERVICES
3450 N HIGLEY RD - SUITE 102,
MESA, AZ 85215

T-MOBILE SITE NUMBER:
BA20403A

BU #: 856199

1 CASA GRANDE ROAD
PETALUMA, CA 94954

EXISTING 78'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRAWN	DESCRIPTION	Q.A.
A	10/14/21	AK	PRELIMINARY	CW
0	11/23/21	NP	SUBMITTAL FOR PERMIT	CW

REGISTERED PROFESSIONAL ENGINEER
TIM ALEXANDER
No. E18344
Exp. 3/31/2022
ELECTRICAL
STATE OF CALIFORNIA
SIGNED, 23 NOV 2021

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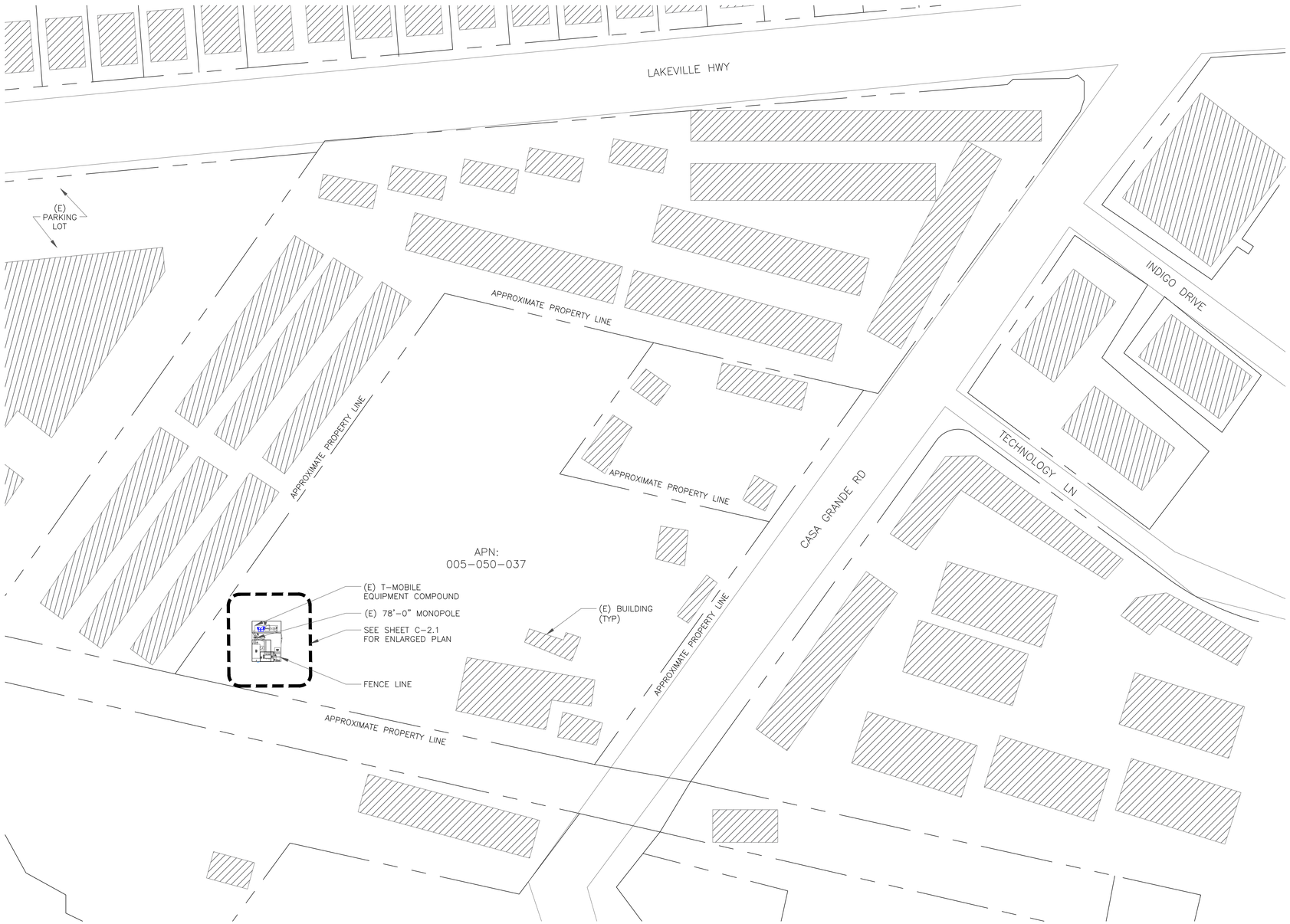
SHEET NUMBER: T-2

REVISION: 0

NOTE:

T–MOBILE OR ITS DESIGNERS SHALL REMOVE THE ANTENNAS AND ALL RELATED COMMUNICATION EQUIPMENT FROM THE SUBJECT PROPERTY WITHIN SIX MONTHS OF DETERMINATION BY THE DEPARTMENT DIRECTOR THAT THE PROPOSED FACILITIES ARE NO LONGER NEEDED, OR UTILIZED IN THE MANNER APPROVED BY THIS CONDITIONAL USE PERMIT.



1 SITE PLAN
SCALE: 60' 30' 0 60' 1" = 60'–0" (FULL SIZE) 1" = 120'–0" (11x17)

N

T-Mobile
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BU #: 856199

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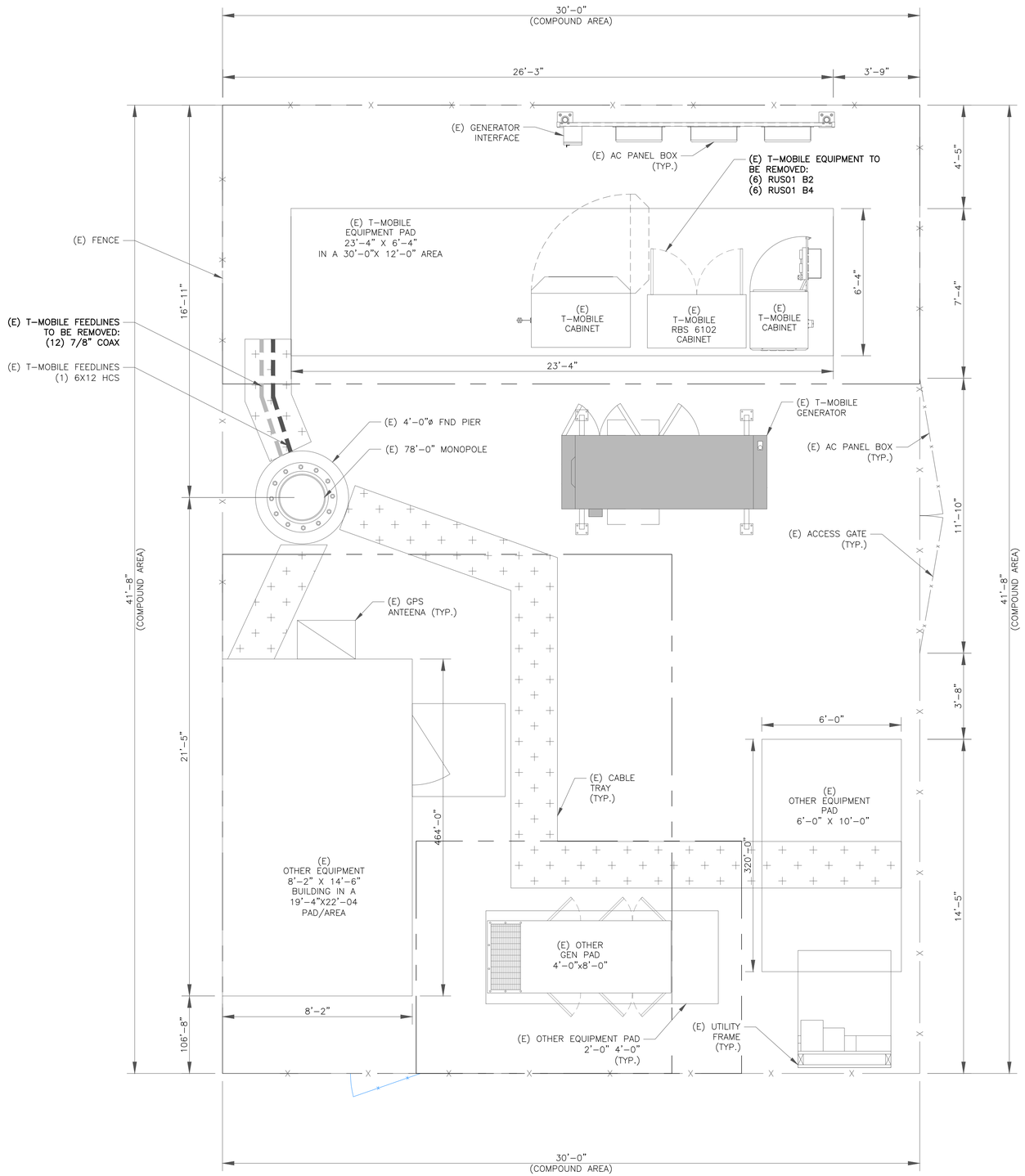
SHEET NUMBER: C-1.0

REVISION: 0



1 EXISTING EQUIPMENT PLAN

SCALE: 2" 1" 0 2" 3/8"=1'-0" (FULL SIZE) 3/16"=1'-0" (11x17)

N

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BU #: 856199

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0	11/23/21	NP	SUBMITTAL FOR PERMIT	CW

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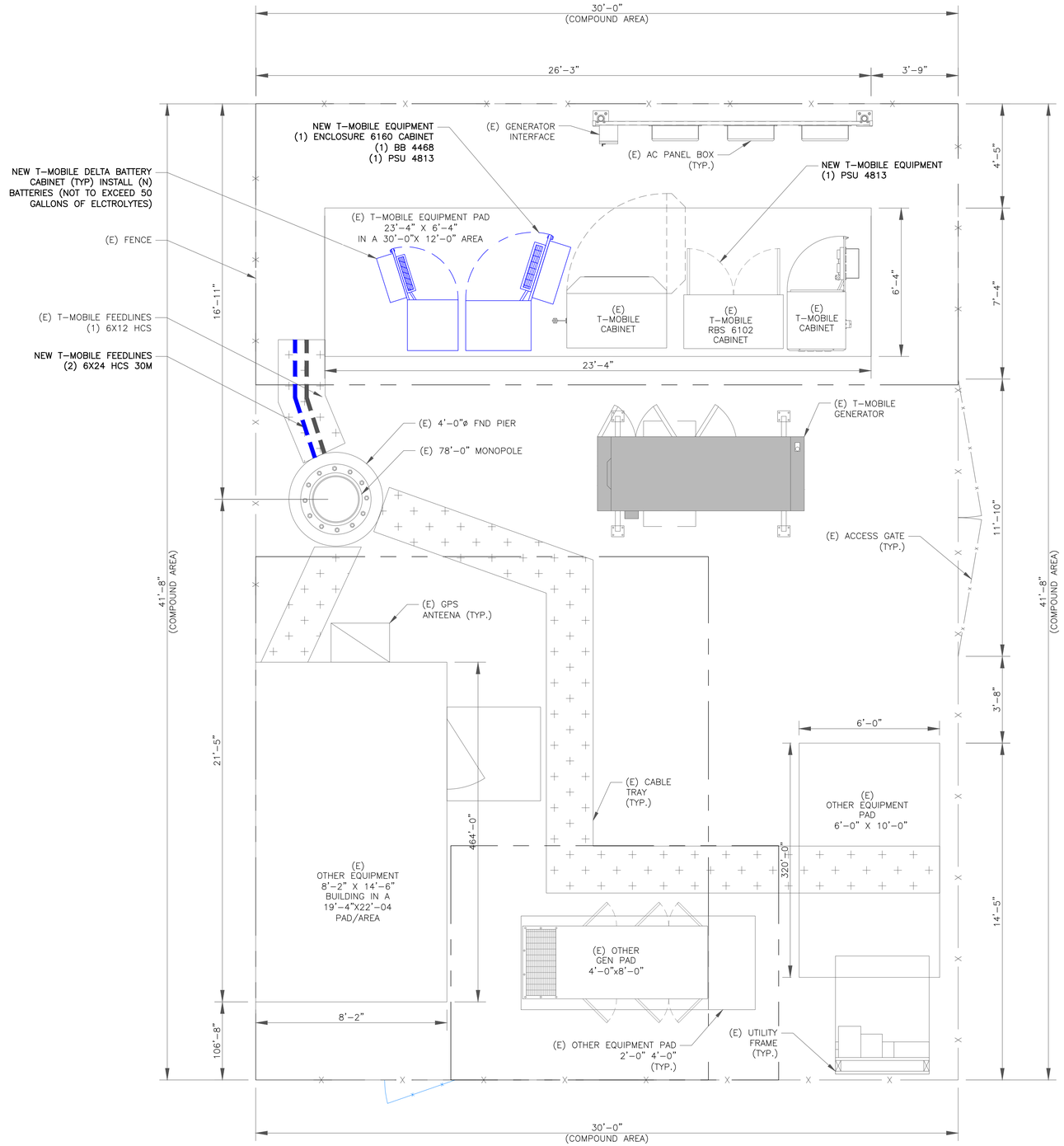
SHEET NUMBER: C-2.1

REVISION: 0



1 FINAL EQUIPMENT PLAN

SCALE: 2' 1' 0 2' 3/8"=1'-0" (FULL SIZE) 3/16"=1'-0" (11x17)

N

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EXISTING 78'-0" MONOPOLE

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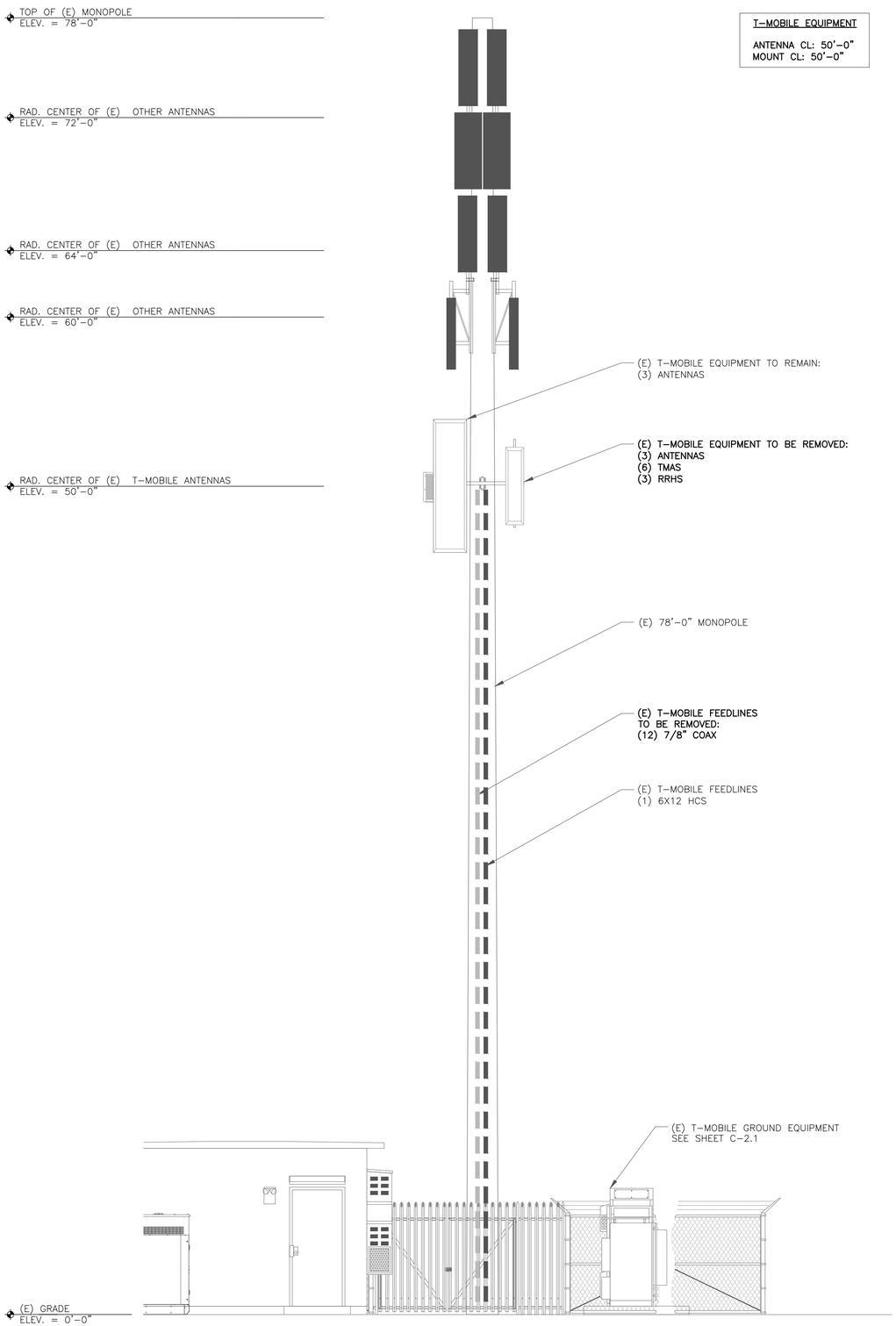
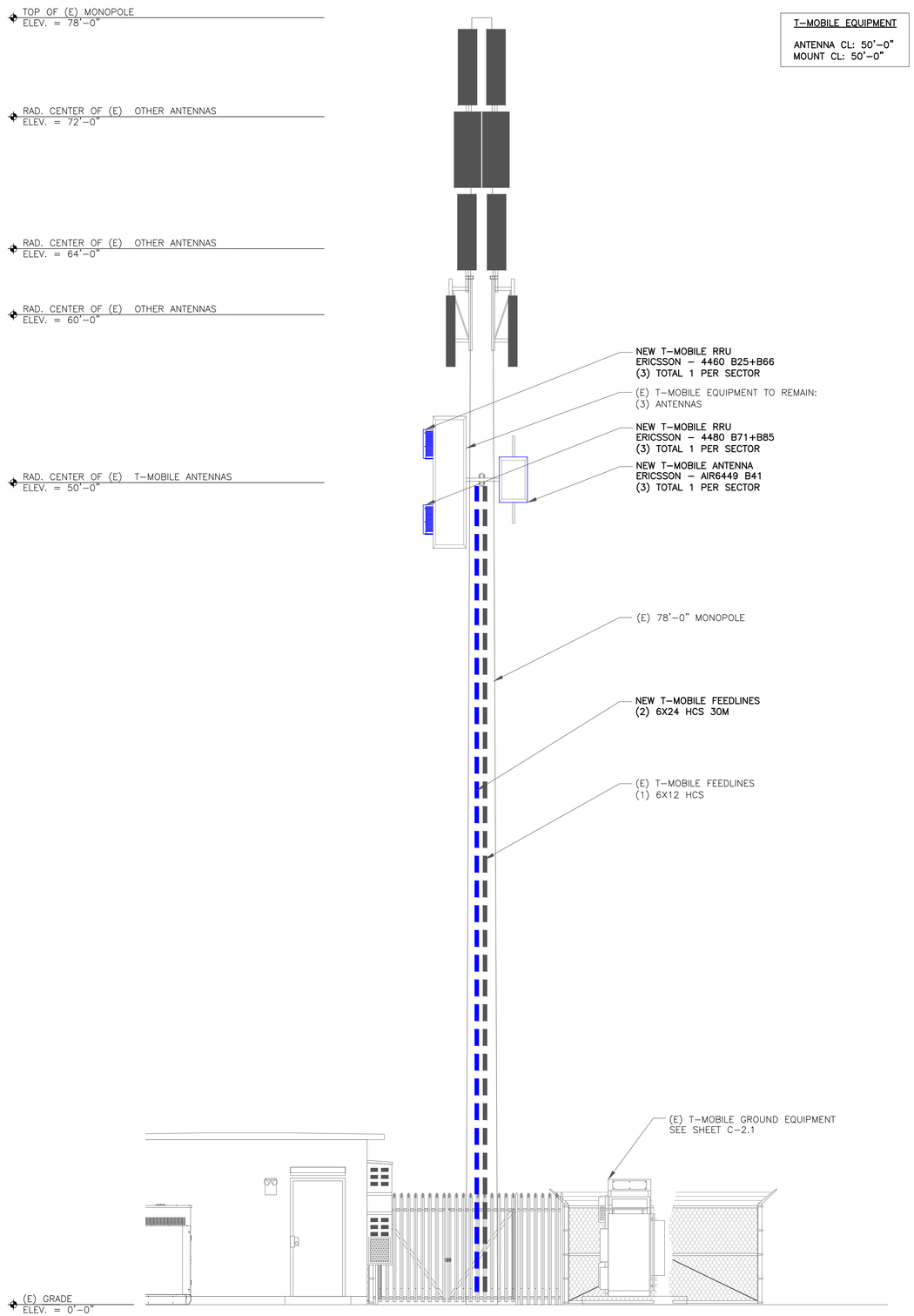
SHEET NUMBER: C-2.2

REVISION: 0



1 EXISTING EAST ELEVATION

SCALE: 4' 3' 2' 1' 0 4' 1/4"=1'-0" (FULL SIZE) 1/8"=1'-0" (11x17)



2 NEW EAST ELEVATION

SCALE: 4' 3' 2' 1' 0 4' 1/4"=1'-0" (FULL SIZE) 1/8"=1'-0" (11x17)

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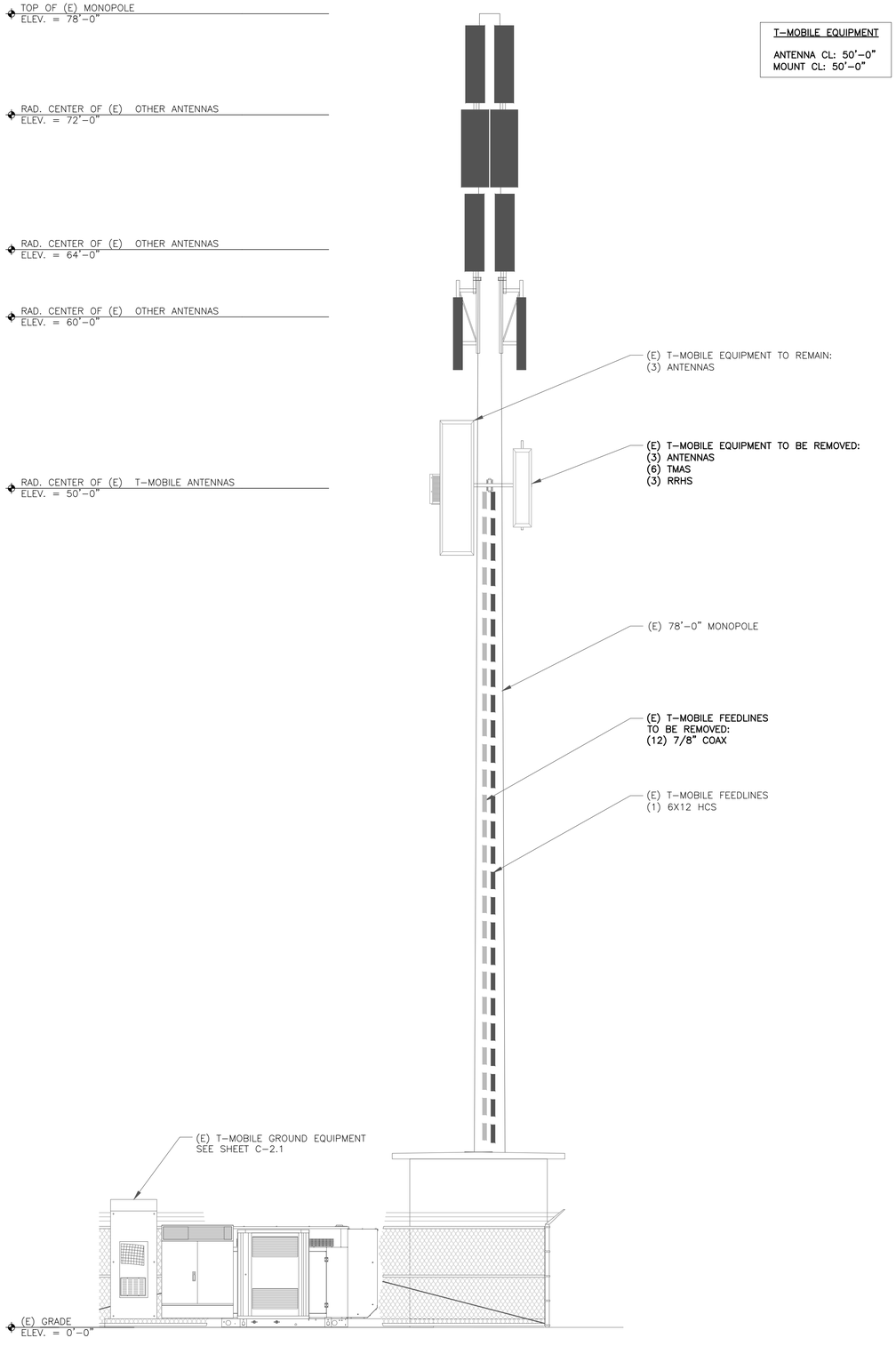
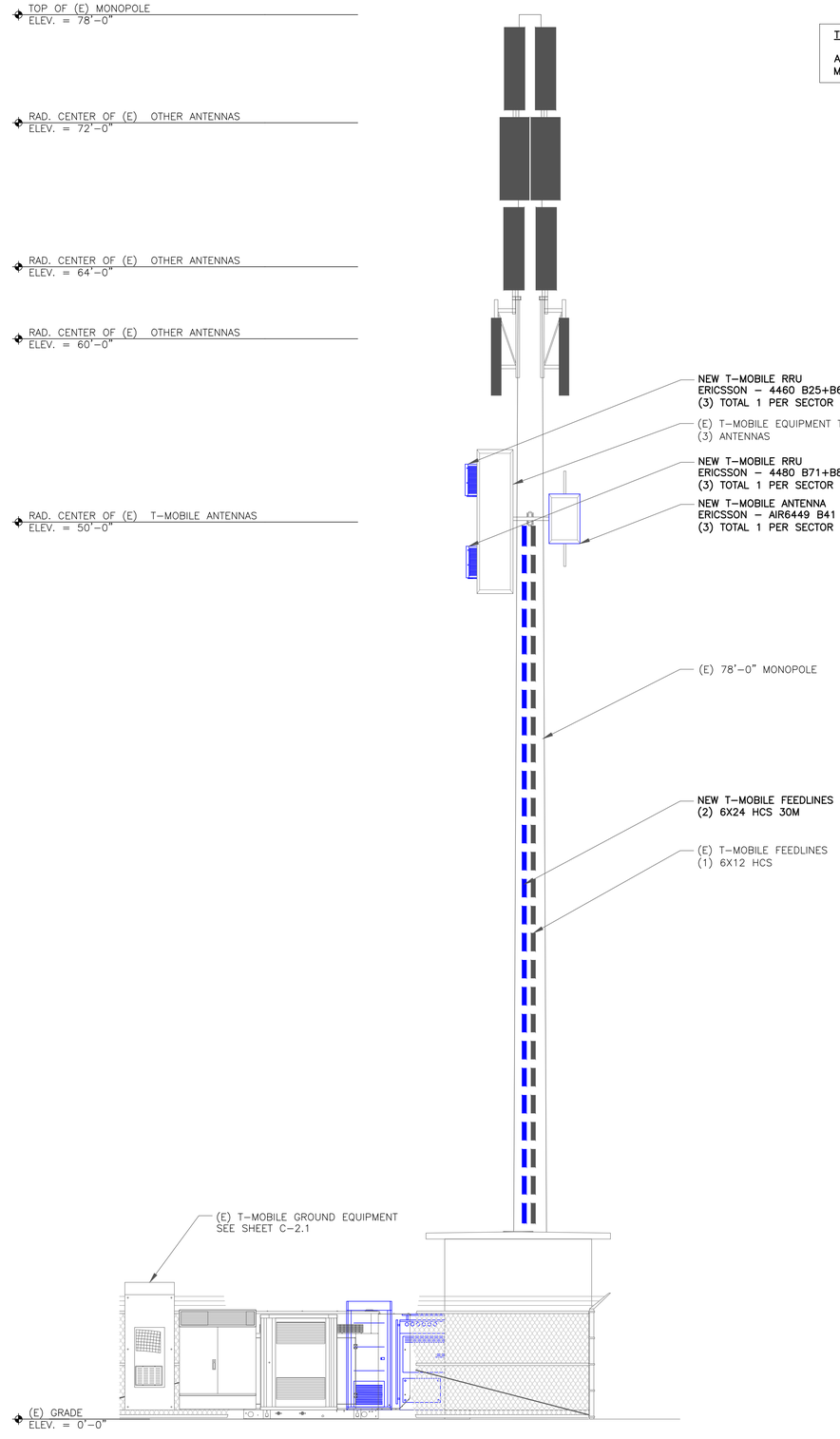
SHEET NUMBER: C-3

REVISION: 0



1 EXISTING NORTH ELEVATION

SCALE: 4' 3' 2' 1' 0 4' 1/4"=1'-0" (FULL SIZE) 1/8"=1'-0" (11x17)



2 NEW NORTH ELEVATION

SCALE: 4' 3' 2' 1' 0 4' 1/4"=1'-0" (FULL SIZE) 1/8"=1'-0" (11x17)

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PETALUMA, CA 94954

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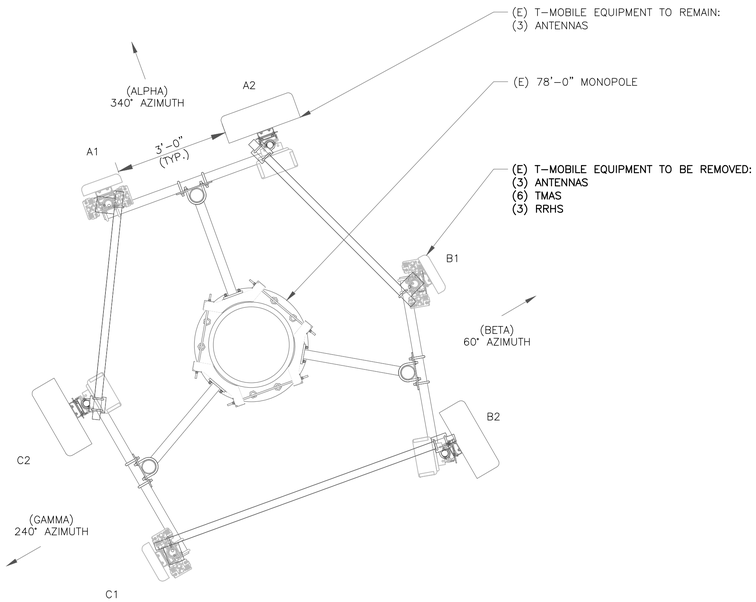
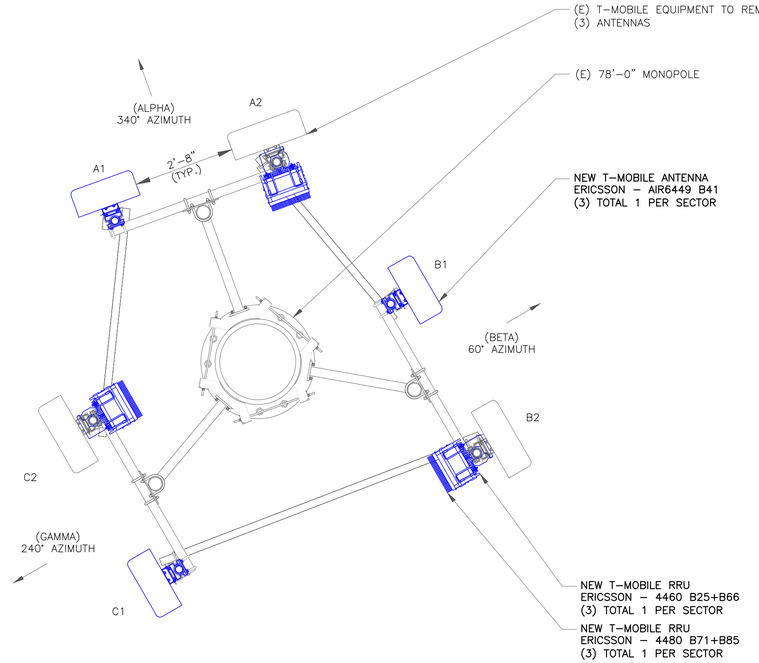
SHEET NUMBER: C-4

REVISION: 0



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

N



INSTALLER NOTE:

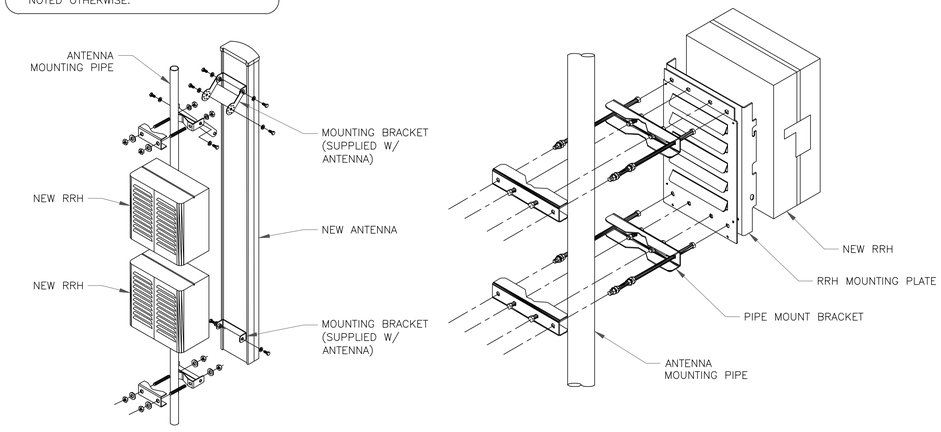
REPLACE EXISTING PIPE MOUNTS WITH NEW 2-1/2" STD (2-7/8" O.D.) GALV. SCH 40 PIPE AS REQ'D.

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

N

INSTALLER NOTES:

1. COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRHs RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING.
2. DO NOT OPEN RRH PACKAGES IN THE RAIN.
3. ALL PIPES, BRACKETS, AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE.



3 ANTENNA & RRU MOUNTING
SCALE: NOT TO SCALE

ANTENNA SCHEDULE (VERIFY WITH CURRENT RFDS)

SECTOR	TECHNOLOGY		ANTENNA	RAD CENTER	HCS/COAX		RRU	ANTENNA AZIMUTH		ANTENNA SIZE	
	EXISTING	PROPOSED			EXISTING	FINAL		EXISTING	PROPOSED	EXISTING	PROPOSED
A1	U1900/L2100/G1900	**L2500/N2500**	**ERICSSOIN ERICSSON - AIR6449 B41**	50'-0"	(12) 7/8" COAX (1) 6X12 HCS	(1) 6X12 HCS (2) 6X24 HCS 4AWG 30M	**(1) 4480 B71+B85**	340°	340°	55.9"X13"X3.15"	**33.1"X20.6"X8.6"**
A2	L700/L600/N600	L700/L600/N600	RFS APXVAARR24_43-U-NA20	50'-0"			**(1) 4460 B25+B66**	340°	340°	95.9"X24.0"X8.7"	95.9"X24.0"X8.7"
B1	U1900/L2100/G1900	**L2500/N2500**	**ERICSSOIN ERICSSON - AIR6449 B41**	50'-0"			**(1) 4480 B71+B85**	60°	60°	55.9"X13"X3.15"	**33.1"X20.6"X8.6"**
B2	L700/L600/N600	L700/L600/N600	RFS APXVAARR24_43-U-NA20	50'-0"			**(1) 4460 B25+B66**	60°	60°	95.9"X24.0"X8.7"	95.9"X24.0"X8.7"
C1	U1900/L2100/G1900	**L2500/N2500**	**ERICSSOIN ERICSSON - AIR6449 B41**	50'-0"			**(1) 4480 B71+B85**	240°	240°	55.9"X13"X3.15"	**33.1"X20.6"X8.6"**
C2	L700/L600/N600	L700/L600/N600	RFS APXVAARR24_43-U-NA20	50'-0"			**(1) 4460 B25+B66**	240°	240°	95.9"X24.0"X8.7"	95.9"X24.0"X8.7"

4 ANTENNA SCHEDULE
SCALE: NOT TO SCALE

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BU #: 856199

1 CASA GRANDE ROAD
PETALUMA, CA 94954

EXISTING 78'-0" MONOPOLE

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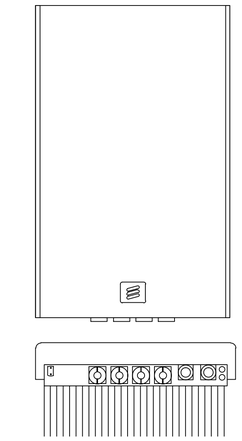
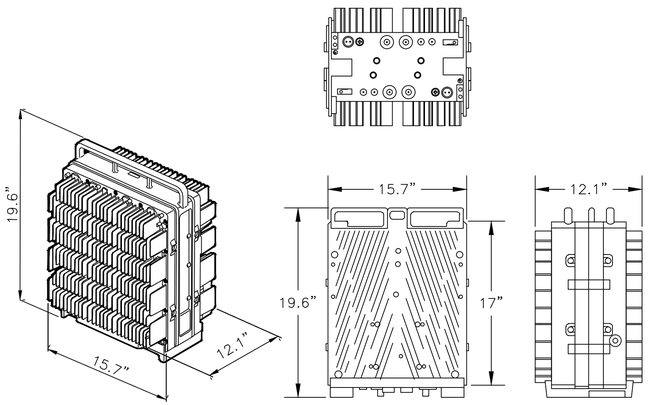
SHEET NUMBER: C-5

REVISION: 0



ERICSSON – AIR 6449 B41
ANTENNA
WEIGHT: 114.63 LBS
SIZE (HXWXD): 33.11X20.51X8.54 IN.

1 ERICSSON – AIR 6449 B41
SCALE: NOT TO SCALE



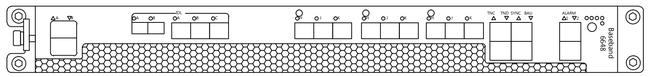
ERICSSON 4460 B25+B66
19.6" X 15.7" X 12.1"
WEIGHT: 109LBS

2 ERICSSON – RADIO 4460
SCALE: NOT TO SCALE

ERICSSON BASEBAND UNIT 6648
DC POWER SUPPLY

NOMINAL VOLTAGE:	–48VDC
TEMPERATURE:	0 TO + 55 DEG C
DIMENSION:	19" W X 13.8"D
WEIGHT:	14.3 lbs

15 CPRI PORTS
MAXIMUM OF 24 CELLS (18 WITH NB–IOT)
2 OPTICAL (1/10Gbps)/2 ELECTRICAL (1Gbps) PORTS

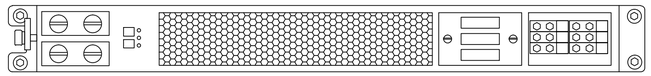


PSU 4813
VOLTAGE BOOSTER

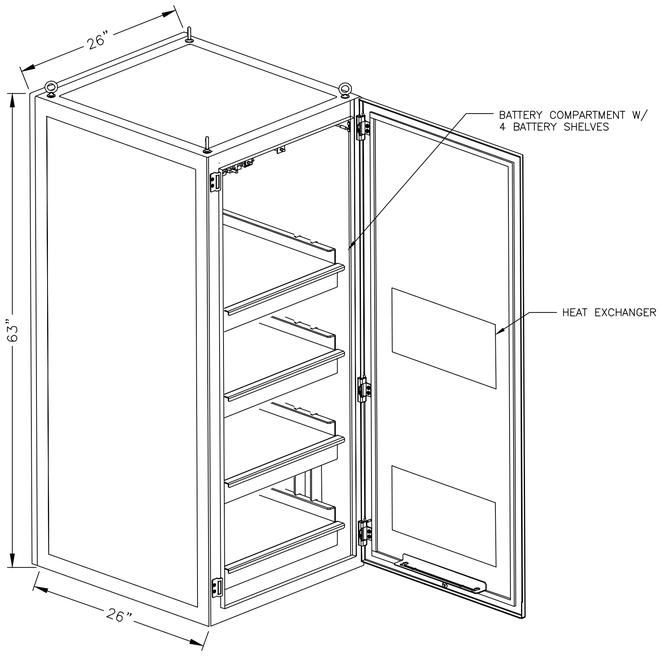
DC POWER SUPPLY

NOMINAL VOLTAGE:	–38VDC
TEMPERATURE:	–40°C TO + 60° C
DIMENSION:	19" W X 13"D

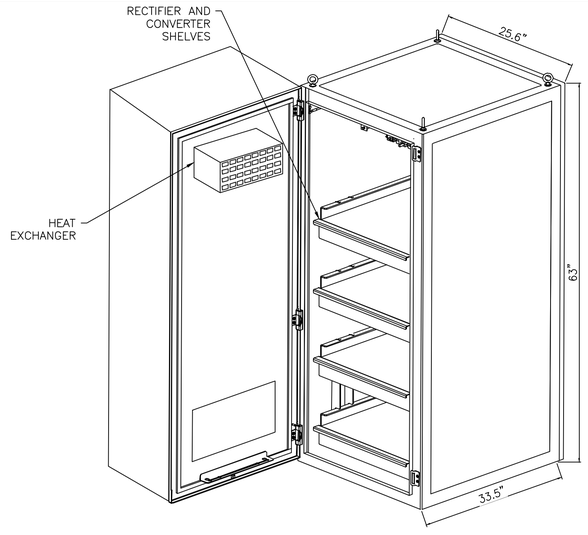
TOTAL OUTPUT POWER 6000 WATTS (2000 W/PORT)



3 BB 6648 & PSU 4813 DETAIL
SCALE: NOT TO SCALE



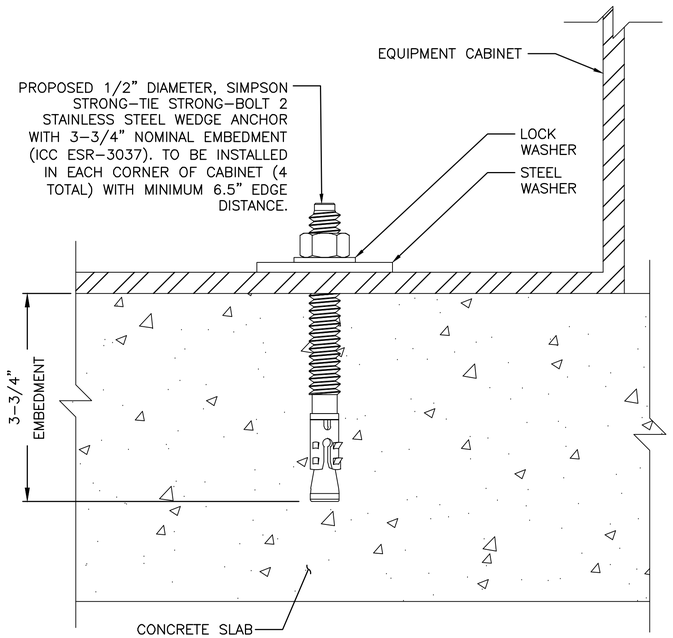
4 B160 BATTERY CABINET
SCALE: NOT TO SCALE



MECHANICAL SPECIFICATIONS:

WEIGHT:	145 KG (EXCLUDING ACTIVE EQUIPMENT) 320 LBS (EXCLUDING ACTIVE EQUIPMENT)
DIMENSIONS: (H X W X D)	1600 X 650 X 850.9 MM (INCL. BASE FRAME) 63 X 25.6 X 33.5 IN. (INCL. BASE FRAME)
BASE FRAME HEIGHT:	150 MM 6 IN.
MOUNTING POSITION:	GROUND
ENCLOSURE MATERIAL:	ALUMINUM COLOR POWER PAINT NCS 2002–B
DOOR:	FRONT ACCESS
RACK TYPE:	19" (IEC 60297–3–100)
LOCKING TYPE:	PAD LOCK OR CYLINDER

5 ENCLOSURE 6160 CABINET DETAIL
SCALE: NOT TO SCALE



6 CABINET ANCHOR BOLT DETAIL
SCALE: NOT TO SCALE

T-Mobile
1755 CREEKSIDE OAKS DR. SUITE 190
SACRAMENTO, CA 95833

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

TELCYTE
INFRASTRUCTURE SERVICES
3450 N HIGLEY RD - SUITE 102,
MESA, AZ 85215

T-MOBILE SITE NUMBER:
BA20403A

BU #: 856199

1 CASA GRANDE ROAD
PETALUMA, CA 94954

EXISTING 78'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRAWN	DESCRIPTION	Q.A.
A	10/14/21	AK	PRELIMINARY	CW
0	11/23/21	NP	SUBMITTAL FOR PERMIT	CW

REGISTERED PROFESSIONAL ENGINEER
TIM ALEXANDER
No. E18344
Exp. 3/31/2022
ELECTRICAL
STATE OF CALIFORNIA
SIGNED, 23 NOV 2021

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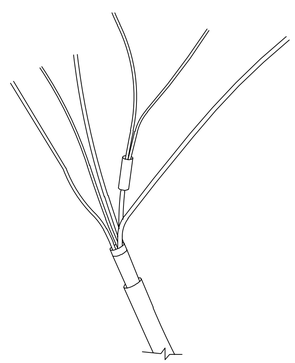
SHEET NUMBER: C-6

REVISION: 0

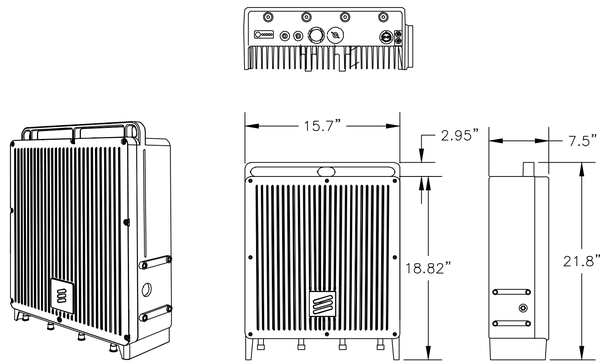
1 NOT USED
SCALE: NOT TO SCALE

HYBRIFLEX 6X24 HCS

STRUCTURE	
CABLE TYPE	HYBRIFLEX®
SIZE	1-5/8"
MECHANICAL SPECIFICATIONS	
OUTER DIAMETER NOMINAL [MM (IN)]	50.7 (1.996)
CABLE WEIGHT [KG/M (LB/FT)]	3.42 (2.3)
MINIMUM BENDING RADIUS, SINGLE BEND [MM (IN)]	254 (10)
MINIMUM BENDING RADIUS, MULTI BENDS [MM (IN)]	508 (20)
RECOMMENDED / MAXIMUM CLAMP SPACING [M (FT)]	1 / 1.2 (3.25 / 4)



4 HCS CABLE DETAIL
SCALE: NOT TO SCALE



ERRICSSON 4480 B71+B85
21.8" X 15.7" X 7.5"
WEIGHT: 77LBS

2 ERICSSON – RADIO 4480 B71+B85
SCALE: NOT TO SCALE

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REVISION: 0

BA20403A / HWY 101 & LAKEVILLE, EXISTING AC PANEL, EXISTING BREAKER SCHEDULE

	LOAD DESCRIPTION	VOLT-AMPS	LOADS CONTINUOUS	LOADS NONCONTINUOUS	BREAKER	LOAD PER PHASE "A"	LOAD PER PHASE "B"	BREAKER	LOADS NONCONTINUOUS	LOADS CONTINUOUS	VOLT-AMPS	LOAD DESCRIPTION	
1	SURGE SUPPRESSION	1	C		30	801		60	NC		800	BATTERY CABINET	2
3		1	C				801		NC		800		4
5	GFCI RECEPTACLE	180		NC	15	360		20		C	180	TELCO PLUG	6
7	TELCO RECEPTACLE	180	C		20		360	20		C	180	TELCO PLUG	8
9	LIGHT	300	C		20	300		20				SPARE (OFF)	10
11	RBS 6102	8000	C		100		8000	50				UMTS (OFF)	12
13		8000	C			8000							14
15	BLANK						0					BLANK	16
17	BLANK					0						BLANK	18
19	BLANK						0					BLANK	20
21	BLANK					0						BLANK	22
23	BLANK						0					BLANK	24
25	BLANK					0						BLANK	26
27	BLANK						0					BLANK	28
29	BLANK					0						BLANK	30
	CONNECTED PHASE TOTALS, VA:					9461	9161						

CONNECTED LOAD PER PHASE, AMPS:	79	76
CONNECTED LOAD PER PHASE, KVA:	9.461	9.161
TOTAL CONNECTED LOAD, KVA:	18.622	
NONCONTINUOUS LOAD PER PHASE, KVA:	0.980	0.800
TOTAL NONCONTINUOUS LOAD, KVA:	1.780	
CONTINUOUS LOAD PER PHASE, KVA:	10.601	10.451
TOTAL CONTINUOUS LOAD, KVA:	21.053	
DEMAND LOAD (CONT + NONCONT) PER PHASE, KVA:	11.581	11.251
TOTAL DEMAND LOAD (CONTINUOUS + NONCONTINUOUS), KVA:	22.833	
TOTAL DEMAND LOAD (CONT + NONCONT), AMPS:	97	94
PANEL CAPACITY, KVA:	48.000	
SPARE PANEL CAPACITY, KVA:	25.168	

AC PANEL DATA	
SYSTEM VOLTAGE:	240
MAIN BREAKER:	200
BUSS RATING:	200
MAIN LUG ONLY:	N/A
KAIC RATING:	65/10 KAIC SERIES-RATED
NOTES:	

1 EXISTING AC PANEL, EXISTING BREAKER SCHEDULE
SCALE: NOT TO SCALE

BA20403A / HWY 101 & LAKEVILLE, EXISTING AC PANEL, PROPOSED BREAKER SCHEDULE

	LOAD DESCRIPTION	VOLT-AMPS	LOADS CONTINUOUS	LOADS NONCONTINUOUS	BREAKER	LOAD PER PHASE "A"	LOAD PER PHASE "B"	BREAKER	LOADS NONCONTINUOUS	LOADS CONTINUOUS	VOLT-AMPS	LOAD DESCRIPTION	
1	SURGE SUPPRESSION	1	C		30	801		60	NC		800	BATTERY CABINET	2
3		1	C				801		NC		800		4
5	GFCI RECEPTACLE	180		NC	15	360		20		C	180	TELCO PLUG	6
7	TELCO RECEPTACLE	180	C		20		360	20		C	180	TELCO PLUG	8
9	LIGHT	300	C		20	300		20				SPARE (OFF)	10
11	RBS 6102	8000	C		100		8000	50				UMTS (OFF)	12
13		8000	C			8000							14
15	**6160 CABINET***	8200	C		**100***		8200					BLANK	16
17		8200	C			8200						BLANK	18
19	BLANK						0					BLANK	20
21	BLANK					0						BLANK	22
23	BLANK						0					BLANK	24
25	BLANK					0						BLANK	26
27	BLANK						0					BLANK	28
29	BLANK					0						BLANK	30
	CONNECTED PHASE TOTALS, VA:					17661	17361						

CONNECTED LOAD PER PHASE, AMPS:	147	145
CONNECTED LOAD PER PHASE, KVA:	17.661	17.361
TOTAL CONNECTED LOAD, KVA:	35.022	
NONCONTINUOUS LOAD PER PHASE, KVA:	0.980	0.800
TOTAL NONCONTINUOUS LOAD, KVA:	1.780	
CONTINUOUS LOAD PER PHASE, KVA:	20.851	20.701
TOTAL CONTINUOUS LOAD, KVA:	41.553	
DEMAND LOAD (CONT + NONCONT) PER PHASE, KVA:	21.831	21.501
TOTAL DEMAND LOAD (CONTINUOUS + NONCONTINUOUS), KVA:	43.333	
TOTAL DEMAND LOAD (CONT + NONCONT), AMPS:	182	179
PANEL CAPACITY, KVA:	48.000	
SPARE PANEL CAPACITY, KVA:	4.668	

AC PANEL DATA	
SYSTEM VOLTAGE:	240
MAIN BREAKER:	200
BUSS RATING:	200
MAIN LUG ONLY:	N/A
KAIC RATING:	65/10 KAIC SERIES-RATED
NOTES:	

1) CHANGES AND NEW CIRCUITS ARE INDICATED IN BOLD FONT WITH AN ASTERISK (*).
2) INSTALL (1) NEW 100A/2P BREAKER FOR NEW 6160 CABINET.
3) UPDATE PANEL DIRECTORY.

2 EXISTING AC PANEL, PROPOSED BREAKER SCHEDULE
SCALE: NOT TO SCALE

NOTES:

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

FAULT CALCULATIONS

FAULT AVAILABLE AT THE SERVICE:	22,000 AMPS RMS SYMM
SERVICE VOLTAGE:	120/240V, 1ϕ
METER	
Fault Available L-L:	22,000A
PPC	
DISTANCE	15 Feet
CONDUIT TYPE	Conductive
CONDUCTOR	#3/0
Fault Available L-L:	20,534A

2019 CFC CHAPTER 1206.2, TABLE 1206.2 COMPLIANCE TABLE (EXISTING + NEW)

EXISTING BATTERY INFORMATION (12V MONOBLOCKS)

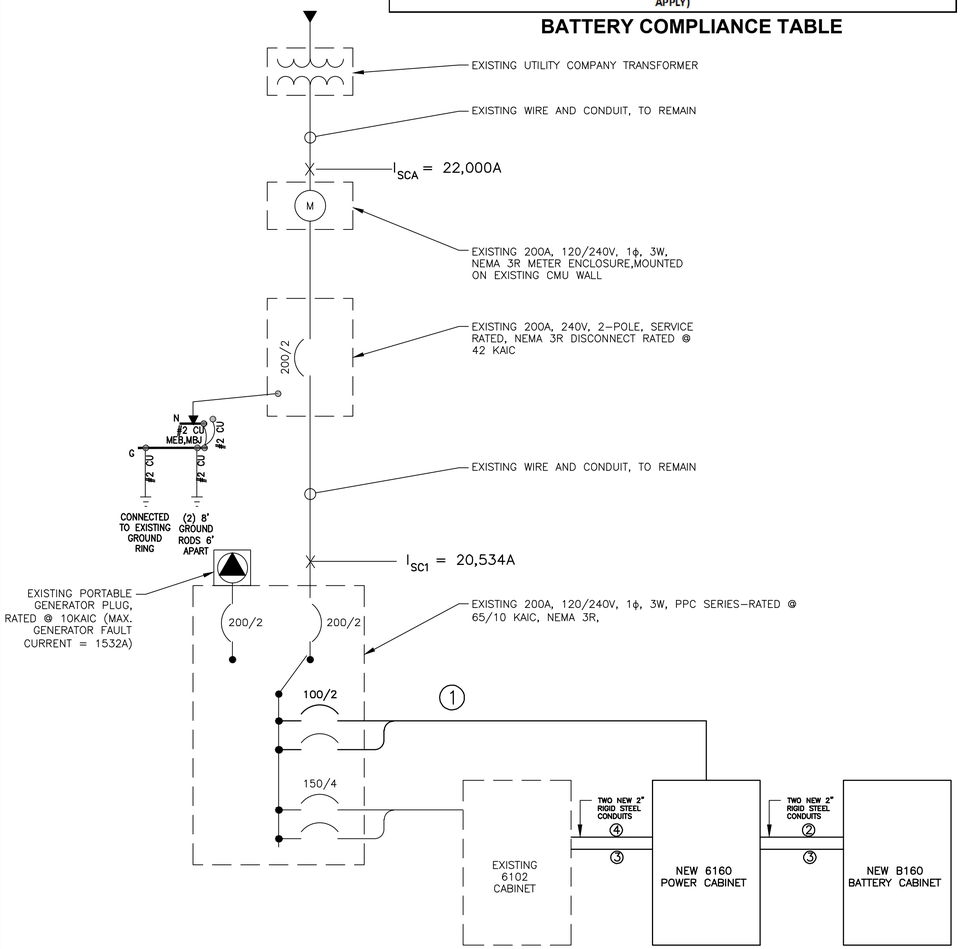
BATTERY MODEL	TOTAL # OF BATTERIES INSTALLED	AMP-HRS PER BATTERY	kWH PER BATTERY	TOTAL BATTERY KWH (EXISTING)
(NONE)	0	0	0.00	0.00

NEW BATTERY INFORMATION (12V MONOBLOCKS)

BATTERY MODEL	TOTAL # OF BATTERIES INSTALLED	AMP-HRS PER BATTERY	kWH PER BATTERY	TOTAL BATTERY KWH (NEW)
GS PYL12V185FT, IN NEW B160 BATTERY CABINET	16	185	2.22	35.52
		TOTAL KWH CAPACITY (EXISTING + NEW) :		35.52

TOTAL KWH CAPACITY (EXISTING + NEW) = 35.52 KWH (SINCE < 70 KWH, 2019 CFC CHAPTER 1206.2 DOES NOT APPLY)

BATTERY COMPLIANCE TABLE



1	PROPOSED CABLE & CONDUIT SCHEDULE
	PROPOSED (3) #3, (1) #6 GND, 1" CONDUIT

2	PROPOSED CABLE & CONDUIT SCHEDULE, 6160 TO B160
	DC POWER, BATTERY BACKUP, (2) #4/0, UPPER 2" STEEL CONDUIT

3	PROPOSED CABLE & CONDUIT SCHEDULE, 6160 TO 6102
	ALARM, B160 DOOR OPEN, #14 PAIR, LOWER 2" STEEL CONDUIT
	ALARM, B160 CLIMATE FAILURE, #14 PAIR, LOWER 2" STEEL CONDUIT
	DC POWER, B160 MAIN CIRCUIT BOARD, #14 PAIR, LOWER 2" STEEL CONDUIT
	DC POWER, B160 500W COOLING FAN, #14 PAIR, LOWER 2" STEEL CONDUIT
	BATTERY TEMPERATURE PROBE, #14 PAIR, LOWER 2" STEEL CONDUIT

4	PROPOSED CABLE & CONDUIT SCHEDULE, 6160 TO 6102
	UPPER 2" STEEL CONDUIT, EMPTY, FUTURE USED

3 ONE LINE DIAGRAM
SCALE: NOT TO SCALE

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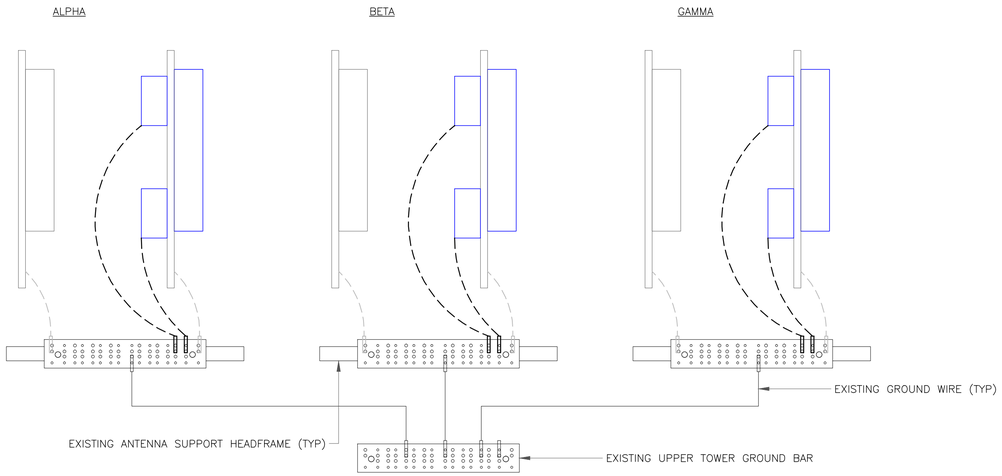
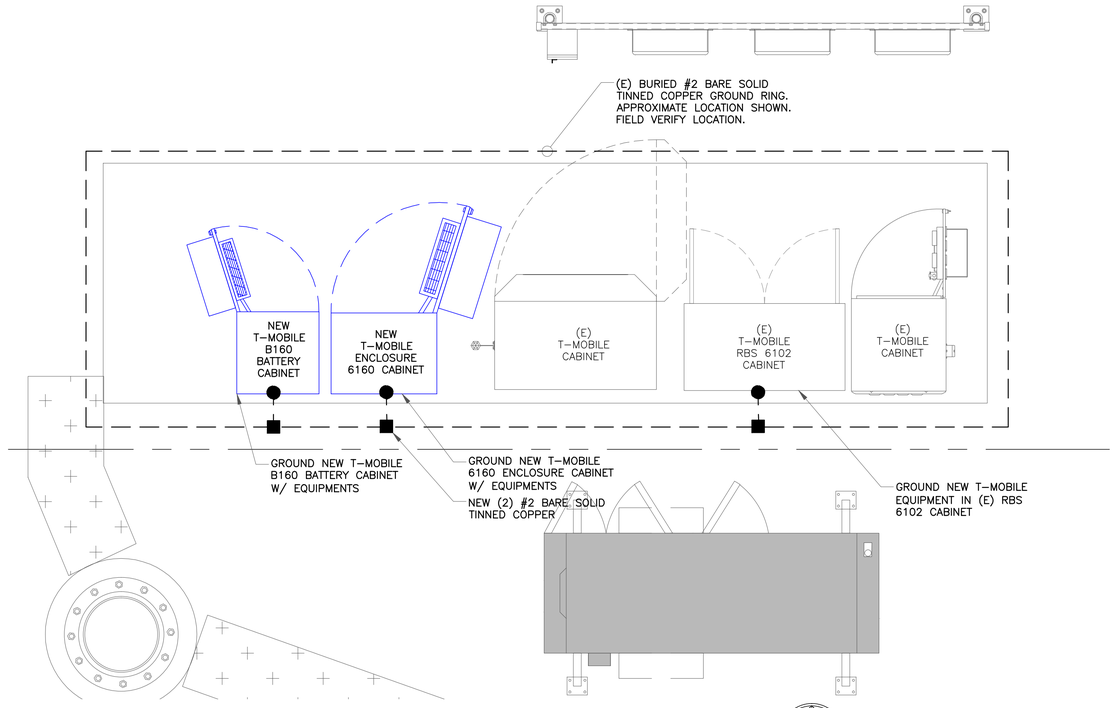
SHEET NUMBER: E-1

REVISION: 0



1 ANTENNA GROUND DIAGRAM
SCALE: NOT TO SCALE



2 EQUIPMENT GROUNDING (NO WORK)
SCALE: 2' 1' 0 2' 1/2"=1'-0" (FULL SIZE) 1/4"=1'-0" (11x17)

GROUNDING LEGEND

- INSPECTION WELL VERIFY LOCATION W/ CONSTR. MGR.
- 5/8"x10'-0" COPPER CLAD GROUND ROD, 10' O.C. (TYP)
- #6 AWG STRANDED & INSULATED
- #2 AWG SOLID COPPER TINNED
- GROUND BUS BAR
- EXOTHERMIC WELD (CADWELD) (UNLESS OTHERWISE NOTED)
- MECHANICAL CONNECTION

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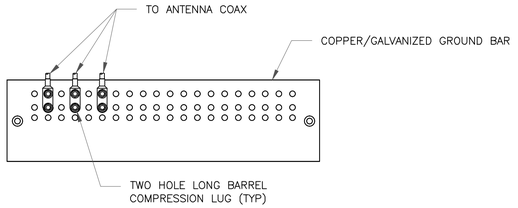
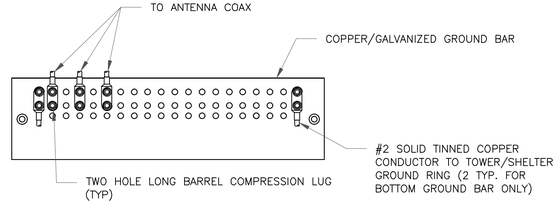


NOTES:

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.

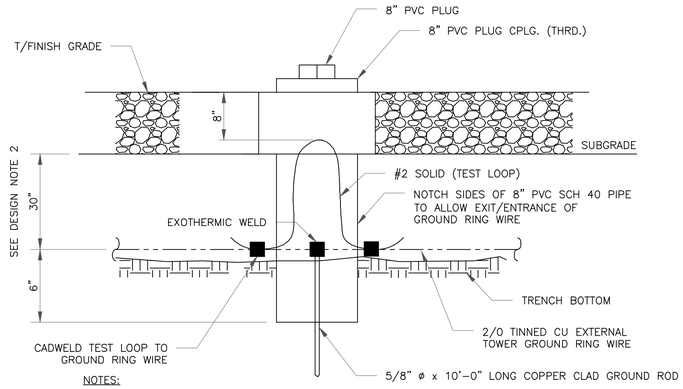
1 ANTENNA GROUND BAR DETAIL
SCALE: NOT TO SCALE



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.

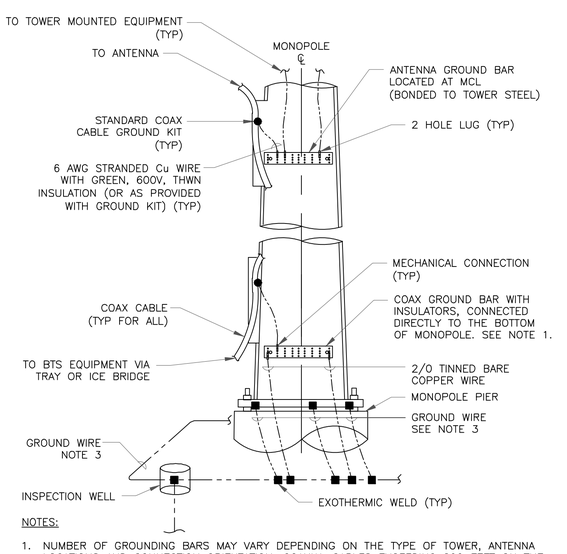
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL
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)

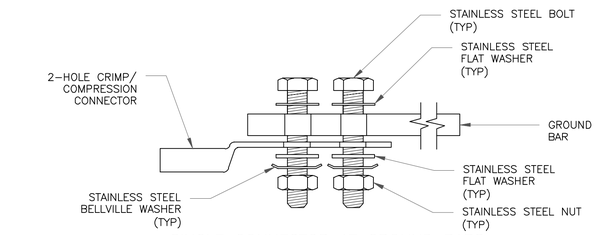
3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE



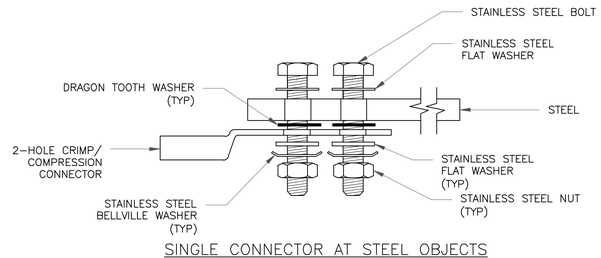
NOTES:

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.

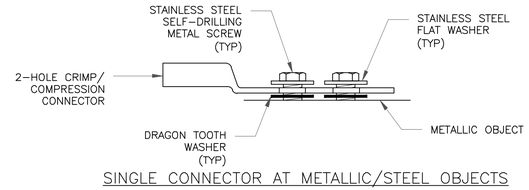
4 TYPICAL ANTENNA CABLE GROUNDING
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS

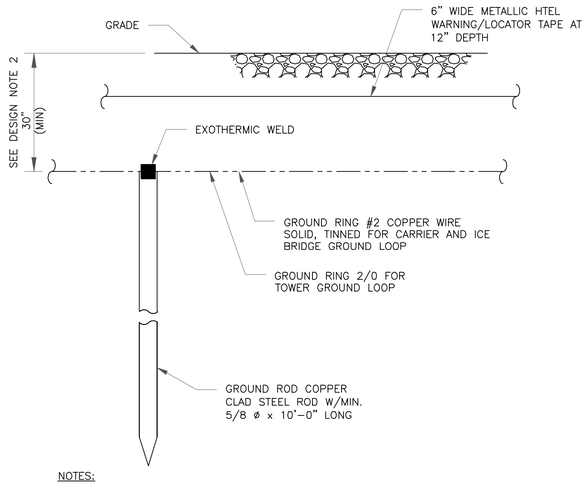


SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

5 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL
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)

6 GROUND ROD DETAIL
SCALE: NOT TO SCALE

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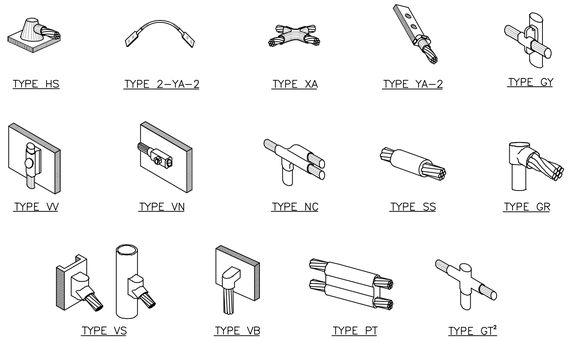
SHEET NUMBER: G-2

REVISION: 0

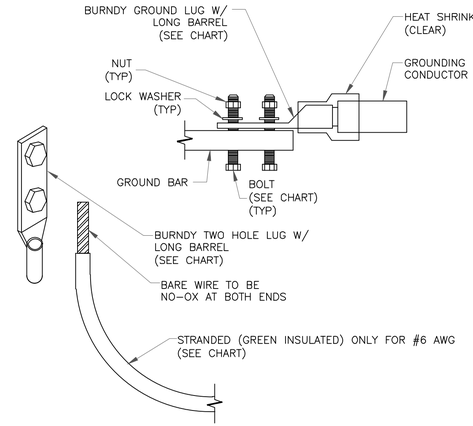


NOTE:

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.

1 CADWELD GROUNDING CONNECTIONS
SCALE: NOT TO SCALE

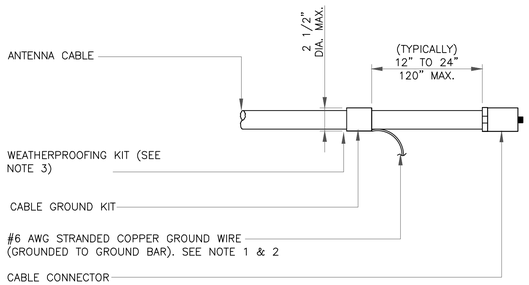
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT



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.

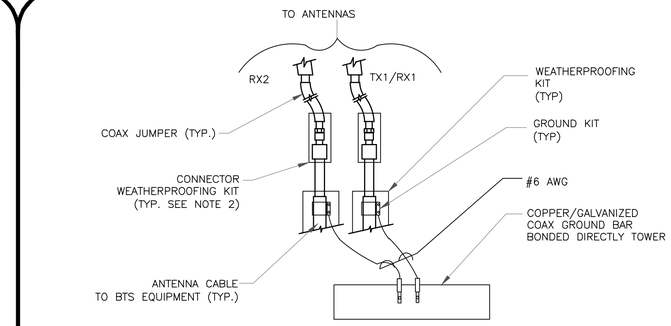
2 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



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.

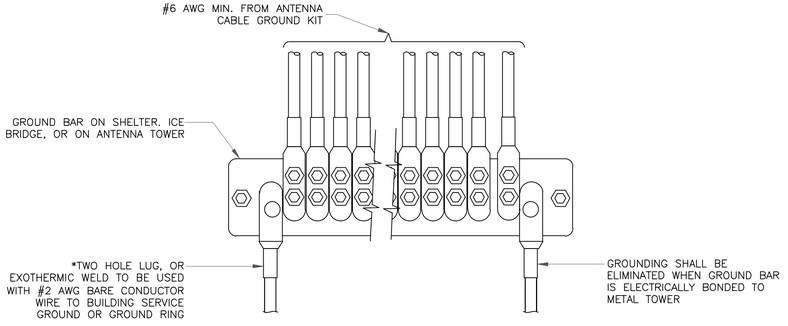
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



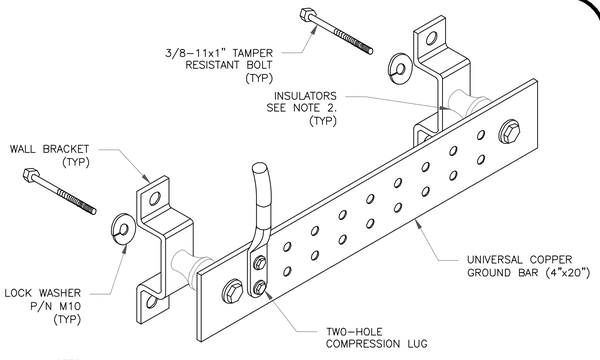
NOTES:

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.

4 GROUND CABLE CONNECTION
SCALE: NOT TO SCALE



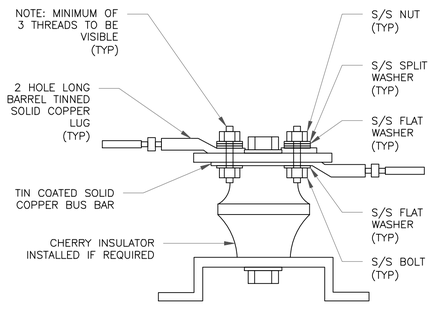
5 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



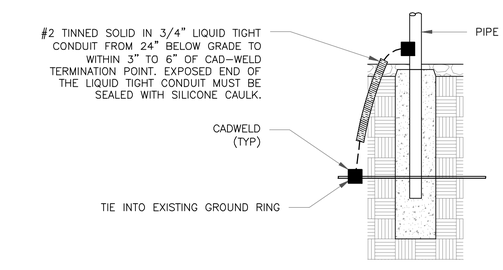
NOTES:

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.

6 GROUND BAR DETAIL
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE



8 TRANSITIONING GROUND DETAIL
SCALE: NOT TO SCALE

T-Mobile
1755 CREEKSIDE OAKS DR. SUITE 190
SACRAMENTO, CA 95833

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

TELCYTE INFRASTRUCTURE SERVICES
3450 N HIGLEY RD - SUITE 102,
MESA, AZ 85215

T-MOBILE SITE NUMBER:
BA20403A

BU #: 856199

1 CASA GRANDE ROAD
PETALUMA, CA 94954

EXISTING 78'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRAWN	DESCRIPTION	Q.A.
A	10/14/21	AK	PRELIMINARY	CW
0	11/23/21	NP	SUBMITTAL FOR PERMIT	CW

REGISTERED PROFESSIONAL ENGINEER
TIM ALEXANDER
No. E18344
Exp. 3/31/2022
ELECTRICAL
STATE OF CALIFORNIA
SIGNED, 23 NOV 2021

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: G-3

REVISION: 0