



SITE NUMBER: BA02145A
SITE NAME: PL145 ST MARY'S COLLEGE H
1600 POSEN AVE.
ALBANY, CA 94706



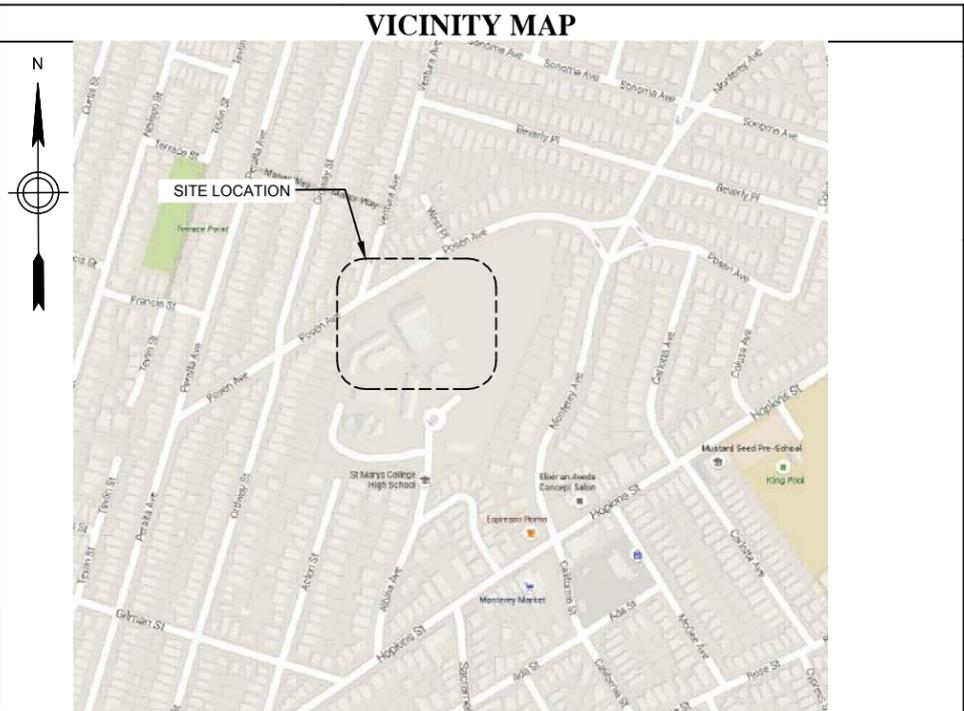
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1600 POSEN AVE.
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PROJECT DESCRIPTION - L700 (RFDS VERSION 3, DATED 11/20/15)	
SCOPE OF WORK:	MODIFICATION OF AN EXISTING TELECOMMUNICATION FACILITY CONSISTING OF THE FOLLOWING: - REMOVE & REPLACE EXISTING (3) EXISTING 4' AIR ANTENNAS FOR (3) NEW 6' AIR ANTENNAS ON EXISTING ANTENNA MOUNTS - INSTALL (3) NEW L700 RRU'S BEHIND NEW PANEL ANTENNAS - UPGRADE EXISTING RBA 6131 CABINET 60A BREAKER FOR NEW 100A BREAKER - RE-USE EXISTING POWER / FIBER CABLES FOR NEW RRU'S/AIR ANTENNAS
SITE ADDRESS:	1600 POSEN AVE. ALBANY, CA 94706
PROPERTY OWNER/LESSOR:	SAINT MARY'S COLLEGE HIGH SCHOOL OF BERKELEY 1294 ALBINA AVE. ALBANY, CA 94706
JURISDICTION:	CITY OF ALBANY
OCCUPANCY:	U, UNMANNED
LATITUDE:	N 37° 53' 01.69" (NAD 83)
LONGITUDE:	W 122° 17' 01.57" (NAD 83)
APN:	065-2428-001
CURRENT USE:	TELECOMMUNICATIONS FACILITY
NEW USE:	NO CHANGE
HANDICAP REQUIREMENTS:	THE FACILITY IS UNMANNED AND NOT FOR CONTINUOUS HUMAN HABITATION. HANDICAP ACCESS IS NOT REQUIRED PER CBC 2013, SECTION 11B-203.4 (LIMITED ACCESS SPACE)

APPLICANT:	T-MOBILE WEST LLC 1855 GATEWAY BLVD SUITE 900 CONCORD, CA 94520
CONTACT:	RICH RICE T-MOBILE WEST LLC RICH.RICE4@t-mobile.com (415) 200-8973
SITE ACQUISITION PHONE:	ROBERTO CARROCCIA CORTEL, INC. roberto.corroccia@cortel-llc.com (415) 936-4904
ZONING PHONE:	JACQUELINE SMART STEINBERG CORTEL, INC. jacqueline.smart@cortel-llc.com (510) 435-9849
ARCHITECT/ENGINEER PHONE:	SEUNG KUN OH CORTEL, INC. seungkun.oh@cortel-llc.com (786) 602-0214

APPROVALS			
	PRINT NAME	SIGNATURE	DATE
LAND OWNER			
T-MOBILE RF			
T-MOBILE ZONING			
T-MOBILE CONSTRUCTION			
T-MOBILE SITE ACQ			
T-MOBILE PROJECT MANAGER			
CORTEL LEASING			
CORTEL ZONING			
CORTEL CONSTRUCTION			



CODE COMPLIANCE
PER CALIFORNIA BUILDING STANDARDS CODE, "TITLE 24 OF THE CALIFORNIA CODE OF REGULATIONS" GOVERNS THE DESIGN AND CONSTRUCTION OF ALL BUILDING OCCUPANCIES AND ASSOCIATED FACILITIES AND EQUIPMENT THROUGHOUT CALIFORNIA. RELEVANT CODE SECTIONS ARE (BUT NOT LIMITED TO):
1. 2013 CALIFORNIA BUILDING CODE 2. 2013 CALIFORNIA ELECTRICAL CODE 3. 2013 CALIFORNIA ENERGY CODE 4. 2013 CALIFORNIA HISTORICAL BUILDING CODE 5. 2013 CALIFORNIA FIRE CODE 6. 2013 CALIFORNIA EXISTING BUILDING CODE 7. CITY/COUNTY ORDINANCES 8. ANSI/TIA-222-G-2005

REV	DATE	DESCRIPTION	BY
1	11/20/15	CD 100% - ISSUED FOR CONSTRUCTION	GF
0	11/04/15	CD 100% - ISSUED FOR CONSTRUCTION	JO
A	10/28/15	CD 90% - ISSUED FOR REVIEW	PS



STATEMENTS
STRUCTURAL: STRUCTURAL ANALYSIS IS NOT WITHIN THE SCOPE OF WORK CONTAINED IN THIS DRAWINGS SET. FOR ANALYSIS OF EXISTING AND/OR NEW COMPONENTS, REFER TO STRUCTURAL ANALYSIS PROVIDED UNDER SEPARATE COVER.
PROPRIETARY INFORMATION: THE INFORMATION CONTAINED WITHIN THIS SET OF DRAWINGS IS PROPRIETARY T-MOBILE. ANY USE OR DISCLOSURE OTHER THAN AS IT RELATES TO T-MOBILE IS STRICTLY PROHIBITED.

SHEET TITLE
TITLE SHEET
SHEET NUMBER
T01

GENERAL NOTES

1. FOR THE PURPOSE OF THIS CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION) AND ANY LOWER TIER SUBCONTRACTORS.
ENGINEER - CORTEL
OWNER - T-MOBILE
2. CONTRACTOR SHALL VISIT THE CELL SITE PRIOR TO THE SUBMISSION OF BIDS TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY, CONFLICT, OR OMISSION FOUND SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION, PRIOR TO BID SUBMISSION & PRIOR TO COMMENCEMENT OF ANY WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTION OF ANY ERRORS, OMISSIONS, OR DISCREPANCIES DISCOVERED AFTER THE COMMENCEMENT OF CONSTRUCTION WHICH HAVE NOT BEEN BROUGHT TO THE ATTENTION OF THE ENGINEER. ANY COSTS INCURRED TO REMEDY THE SITUATION SHALL BE AT THE EXPENSE OF THE CONTRACTOR. THE ENGINEER SHALL APPROVE ALL METHODS USED TO CORRECT THE SITUATION.
- 3.
4. 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.
5. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
6. THE CONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUITS AND OTHER CABLES. CONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY.
7. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGES SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
8. 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.
9. AT ANY TIME DURING THE DURATION OF CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SECURITY OF THE SITE. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
10. AS MAY BE REQUIRED BY THE GOVERNING AGENCY OR PROPERTY OWNER, THE CONTRACTOR SHALL PROVIDE TEMPORARY POWER, WATER, OR TOILET FACILITIES.
11. THE EXISTING CELL SITE IS ASSUMED TO BE IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH THE OWNER. ALSO, WORK MAY NEED TO BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
12. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REGULATIONS DURING THE ENTIRE CONSTRUCTION PERIOD. SINCE THE CELL SITE MAY BE ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE REQUIRED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
13. THE CONTRACTOR SHALL NOT USE OR INSTALL ANY MATERIAL CONTAINING ASBESTOS OR LEAD PAINT CONTENT. THE USE OF SUCH MATERIAL IS STRICTLY PROHIBITED.
14. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES, WHETHER OR NOT SHOWN ON PLANS, AND TO AVOID OR PROTECT THEM FROM ANY DAMAGE. ANY COSTS INCURRED TO REPAIR UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE AT THE SOLE COST OF THE CONTRACTOR. TELEPHONE 811 FOR USA DIG ALERT.
15. THE GOVERNING AGENCY MAY REQUIRE A COPY OF THE APPROVED PLANS TO BE KEPT ON SITE AT ALL TIMES. THE CONTRACTOR SHALL MAKE SUCH A SET AVAILABLE FOR INSPECTION AT ALL TIMES. ANY DEVIATIONS FROM THE APPROVED SET SHALL BE DOCUMENTED AND PROVIDED TO THE ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL BEAR THE SOLE COST TO CORRECT ANY INSTALLATION WHICH DEVIATES FROM APPROVED PLANS AND IS NOT ACCEPTED BY THE ENGINEER.
16. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL MEANS & METHODS, TECHNIQUES, SEQUENCING, AND PROCEDURES REQUIRED TO PERFORM THE WORK. ANY ANALYSIS OF THE STRUCTURE UNDER TEMPORARY CONSTRUCTION LOADING CONDITIONS IS OUTSIDE OF THE SCOPE OF THESE DRAWINGS. THE CONTRACTOR SHOULD EVENLY DISTRIBUTE ANY MATERIAL TO BE STORED ON SITE DURING CONSTRUCTION SO THAT THE LOAD DOES NOT EXCEED THE STRUCTURES DESIGNED LIVE LOAD; OR PROVIDE TEMPORARY SHORING OR BRACING IN THESE AREAS.
17. DRAWINGS ARE NOT TO BE SCALED. DIMENSIONS SHOWN TAKE PRECEDENCE OVER SCALE.
18. ALL NEW COMPONENTS ADD TO THE EXTERIOR OF THE STRUCTURE, WHICH ARE VISIBLE FROM PUBLIC VIEW, SHALL BE PAINTED TO MATCH THE EXISTING CONDITIONS.
19. ALL DETAILS AND NOTES INDICATED IN THESE PLANS ARE THE MINIMUM REQUIREMENTS.
20. IT MAY BE NECESSARY TO TEMPORARILY RELOCATE, REMOVE, REPLACE, OR WORK AROUND VARIOUS ARCHITECTURAL FEATURES, PIPES, FIXTURES, CABLING, OR OTHER NON-STRUCTURAL ITEMS IN ORDER TO COMPLETE THE NEW WORK. CONTRACTOR SHALL RESTORE THESE ITEMS TO THEIR ORIGINAL CONDITION AT THEIR EXPENSE UNLESS OTHERWISE NOTED IN THESE PLANS.

TYPICAL SYMBOLS

<p> SOLID GROUND BUS BAR</p> <p> SOLID NEUTRAL BUS BAR</p> <p> SUPPLEMENTAL GROUND CONDUCTOR</p> <p> 2-POLE THERMAL-MAGNETIC CIRCUIT BREAKER</p> <p> SINGLE-POLE THERMAL-MAGNETIC CIRCUIT BREAKER</p> <p> XIT GROUND ROD (CHEMICAL)</p> <p> GROUND ROD</p> <p> DISCONNECT SWITCH</p> <p> UTILITY METER</p> <p> EXOTHERMIC CONNECTION (CADWELD) TO GROUND RING AND COMPRESSION TO GROUND HALO</p> <p> COMPRESSION, CLAMP, OR DOUBLE HOLE LUG TYPE GROUND CONNECTION</p>	<p> GROUND ROD WITH ACCESS (TEST WELL)</p> <p> GROUNDING WIRE, DASHED REPRESENTS UNDERGROUND</p> <p> TELEPHONE LINE, DASHED REPRESENTS UNDERGROUND</p> <p> COAXIAL CABLE, DASHED REPRESENTS UNDERGROUND</p> <p> ANTENNA COAX</p> <p> OVERHEAD ELECTRICAL CABLES</p>
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ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	(P)	NEW
(E)	EXISTING	EMT	ELECTRICAL METALLIC TUBING
MIN	MINIMUM	GND	GROUND
N.T.S.	NOT TO SCALE	GPS	GLOBAL POSITIONING SYSTEM
REF	REFERENCE	GFCI	GROUND FAULT CIRCUIT INTERRUPTER
RF	RADIO FREQUENCY	BTCW	BARE TINNED COPPER WIRE
T.B.D.	TO BE DETERMINED		
TYP	TYPICAL		
EGR	EQUIPMENT GROUND RING		
AWG	AMERICAN WIRE GAUGE		
MGB	MASTER GROUND BUS		
EG	EQUIPMENT GROUND		
BCW	BARE COPPER WIRE		
GEN	GENERATOR		
IGR	INTERIOR GROUND RING (HALO)		

TYPICAL SYMBOLS & ABBREVIATIONS

1. ALL GROUNDING WORK SHALL COMPLY WITH THE LATEST EDITION OF THE CALIFORNIA ELECTRICAL CODE, AS WELL AS WITH ALL LOCAL, STATE, AND NATIONAL CODES, LAWS, AND ORDINANCES APPLICABLE TO GROUNDING WORK.
2. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION SO AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
4. ALL DETAILS ARE SHOWN IN GENERAL TERMS. ACTUAL GROUNDING INSTALLATION SHALL BE ACCORDING TO SPECIFIC SITE CONDITIONS.
5. GROUNDING CONDUCTORS SHALL BE #2 AWG SOLID BARE TINNED COPPER WIRE, UNLESS NOTED OTHERWISE.
6. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
7. INSTALL GROUND CONDUCTORS AND GROUND ROD A MINIMUM OF 1'-0" FROM CONCRETE SLAB, FOOTING, OR FENCE.
8. ALL GROUNDING INSTALLATIONS AND CONNECTIONS SHALL BE MADE BY AN ELECTRICAL CONTRACTOR.
9. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
10. 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 AND UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
11. 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 METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
12. CHEMICAL GROUND SHALL BE XIT, CHEM-ROC, OR APPROVED EQUAL, WHEN REQUIRED.
13. CONNECTIONS TO THE GROUND BARS SHALL NOT BE DOUBLED UP OR STACKED. BACK-TO-BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BAR ARE PERMITTED.
14. NOTIFY PROJECT MANAGER IF THERE ARE DIFFICULTIES INSTALLING GROUNDING SYSTEM DUE TO SOIL CONDITIONS.
15. ANY EQUIPMENT, BOX, SKID TO BE GROUNDED AND DOES NOT HAVE A DESIGNATED GROUND CONNECTION SHALL BE DRILLED AS NECESSARY TO CONNECT A GROUND WIRE. REMOVE PAINT IN AREA UNDER LUG. APPLY ANTI-OXIDANT COMPOUND AND CONNECT WITH TWO-HOLE, COMPRESSION LUG.

GENERAL GROUNDING NOTES



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COLLEGE H**

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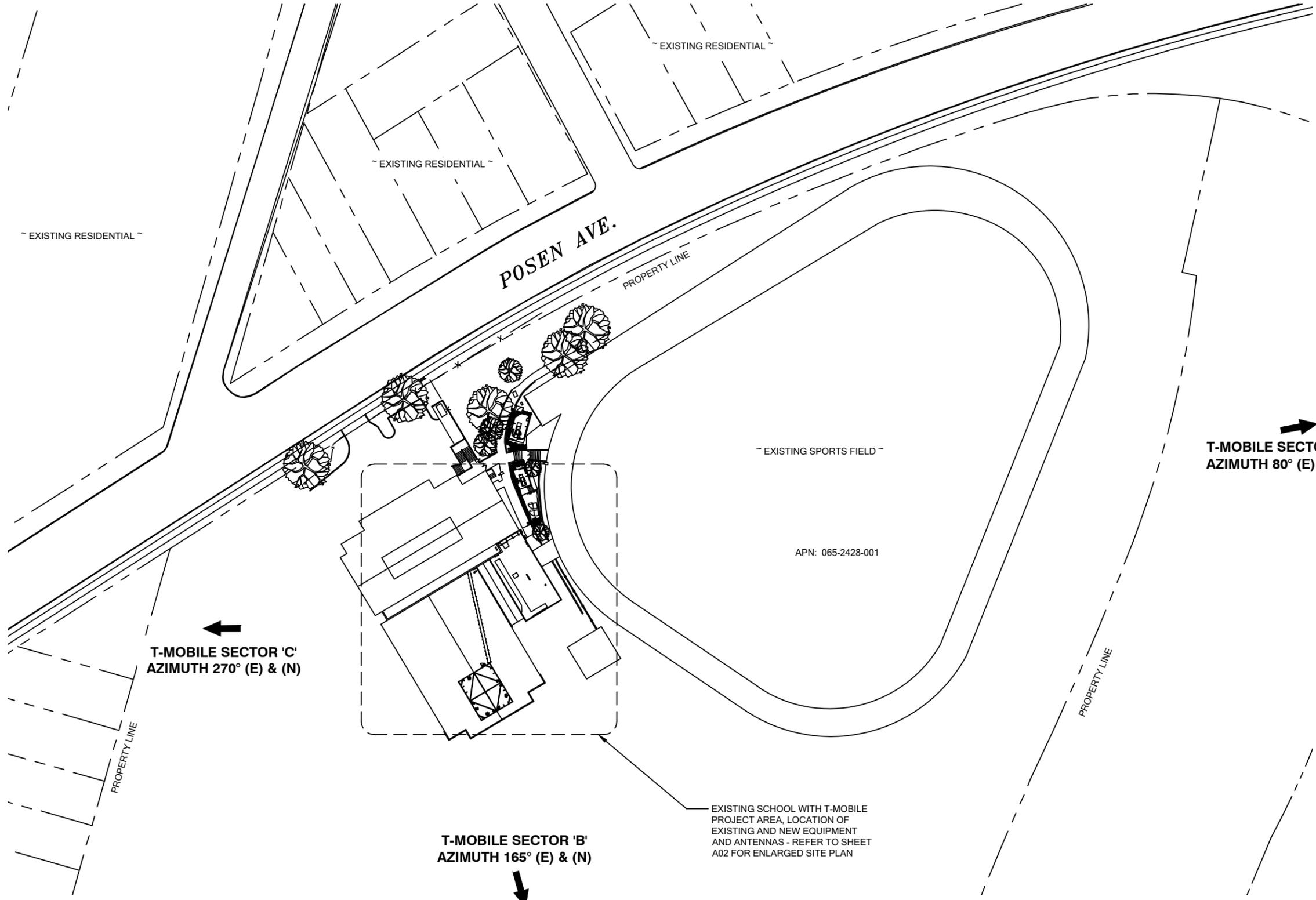


SHEET TITLE

**GENERAL NOTES,
ABBREVIATIONS,
AND SYMBOLS**

SHEET NUMBER

T02



EXISTING RESIDENTIAL

EXISTING RESIDENTIAL

EXISTING RESIDENTIAL

POSEN AVE.
PROPERTY LINE

EXISTING SPORTS FIELD

APN: 065-2428-001

PROPERTY LINE

PROPERTY LINE

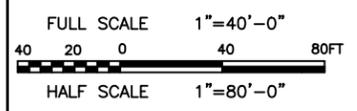
T-MOBILE SECTOR 'C'
AZIMUTH 270° (E) & (N)

T-MOBILE SECTOR 'A'
AZIMUTH 80° (E) & (N)

T-MOBILE SECTOR 'B'
AZIMUTH 165° (E) & (N)

EXISTING SCHOOL WITH T-MOBILE
PROJECT AREA, LOCATION OF
EXISTING AND NEW EQUIPMENT
AND ANTENNAS - REFER TO SHEET
A02 FOR ENLARGED SITE PLAN

SITE PLAN



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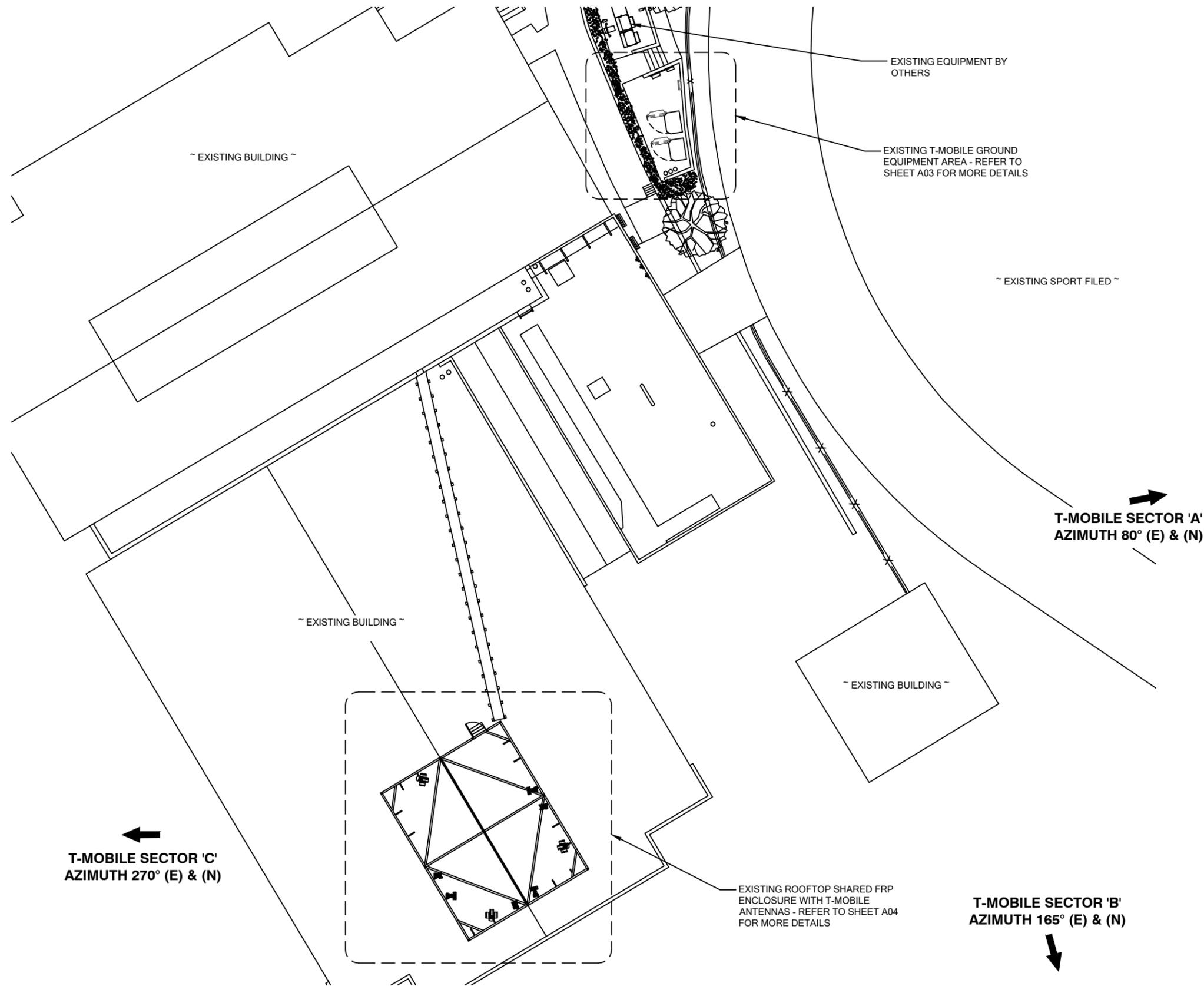


SHEET TITLE

SITE PLAN

SHEET NUMBER

A01



ENLARGED SITE PLAN

FULL SCALE 3/32"=1'-0"
 12 0 12 24 FT
 HALF SCALE 3/64"=1'-0"



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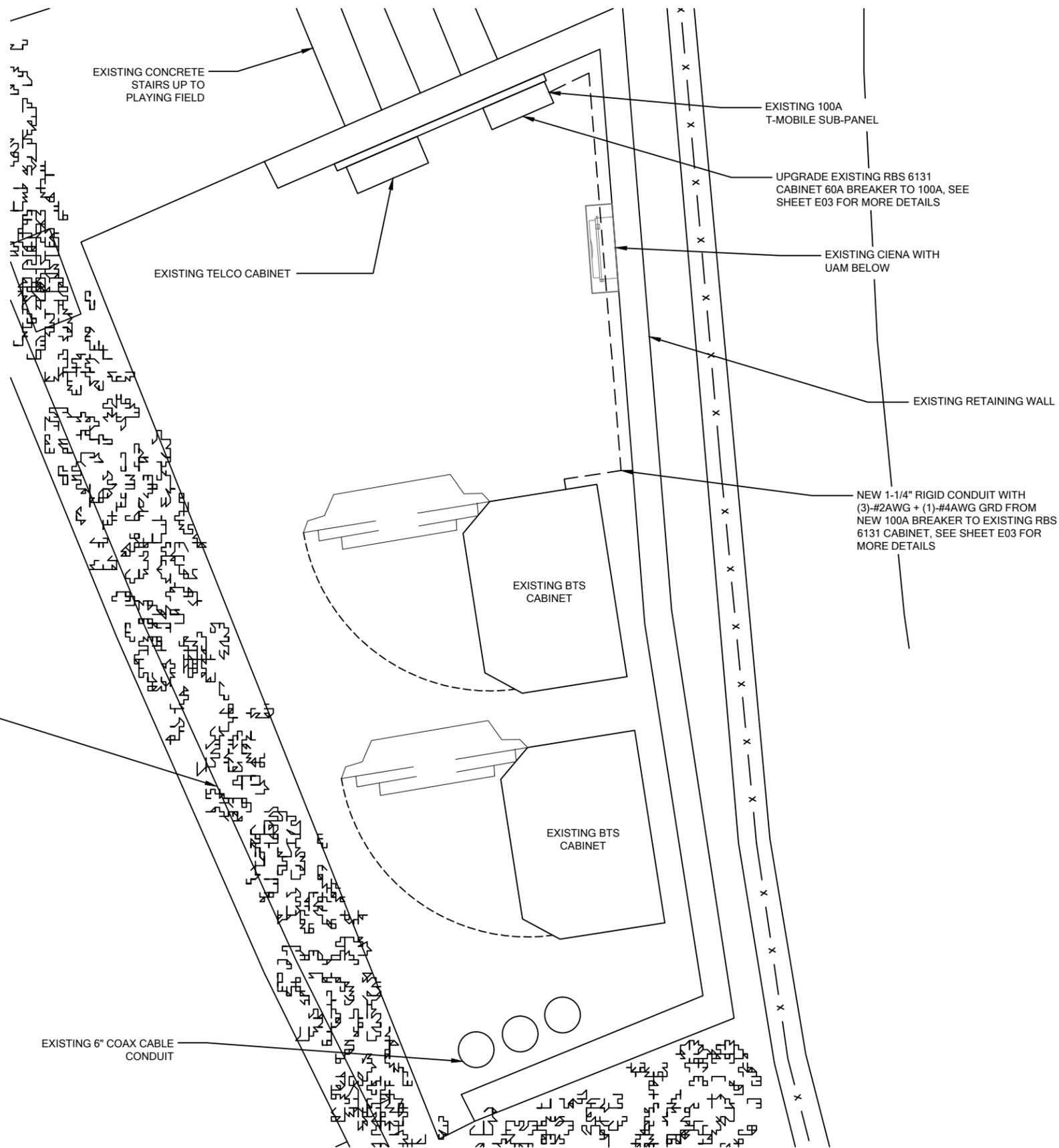


SHEET TITLE

**ENLARGED
SITE PLAN**

SHEET NUMBER

A02



EXISTING EQUIPMENT AREA

FULL SCALE 3/4" = 1'-0"
 1 0 1 2 3 FT
 HALF SCALE 3/8" = 1'-0"

NOTE:
 1. ONLY ELECTRICAL WORK TO BE PERFORMED IN EQUIPMENT AREA



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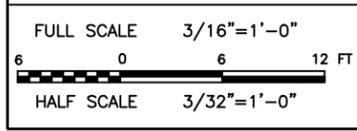
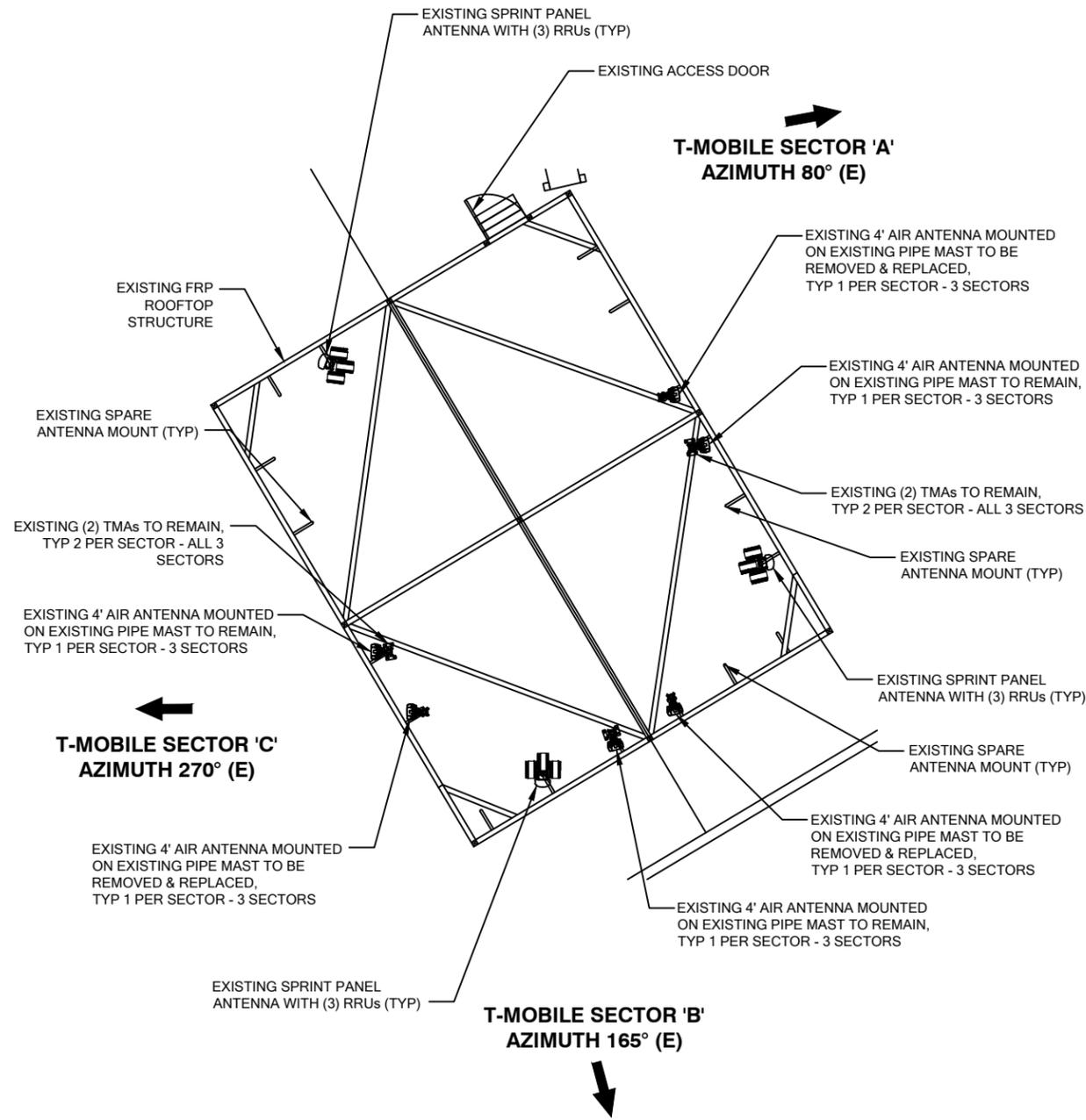


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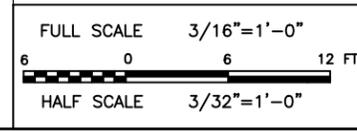
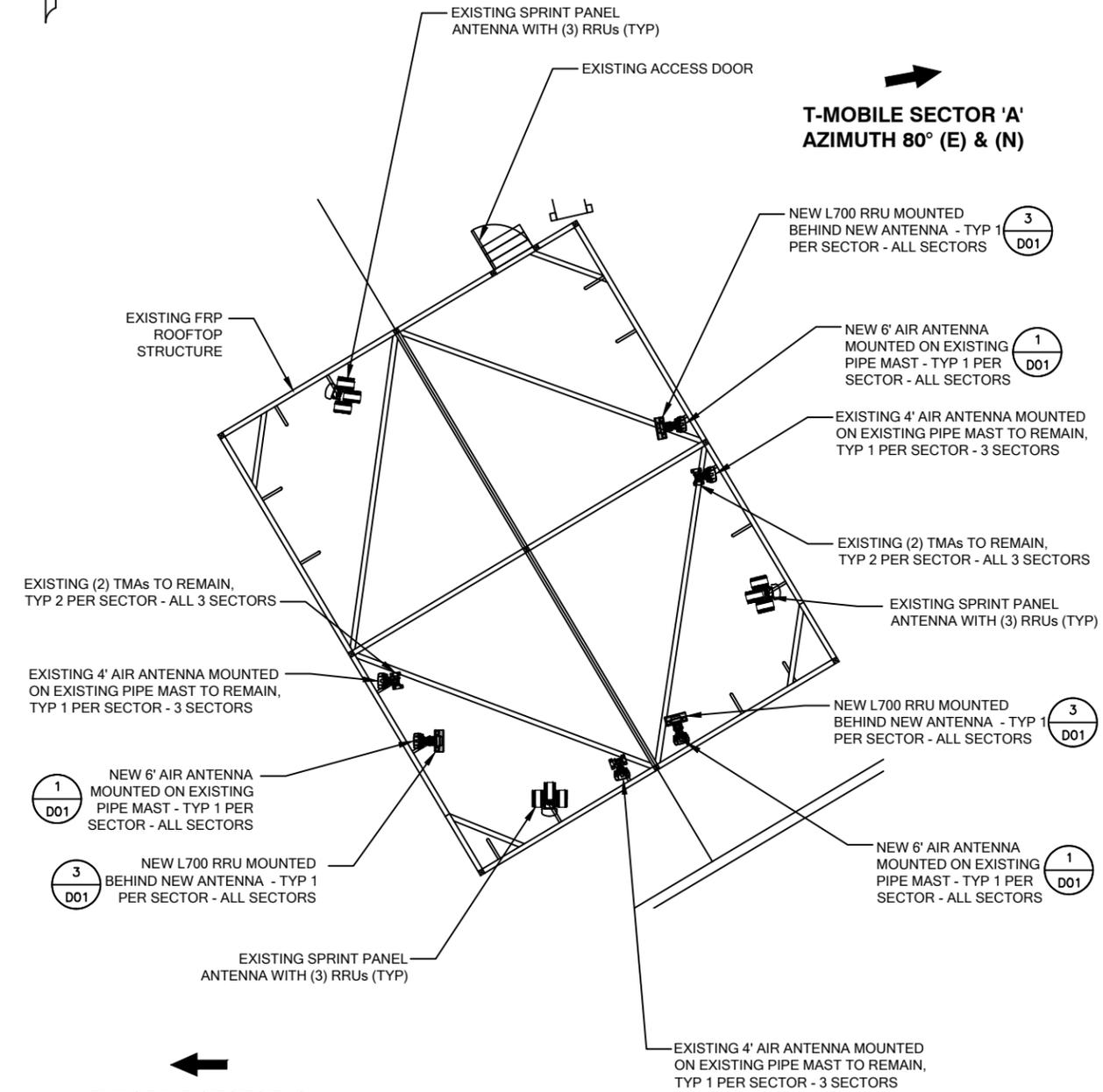
EQUIPMENT AREA

SHEET NUMBER

A03



EXISTING ANTENNA PLAN



NEW ANTENNA PLAN



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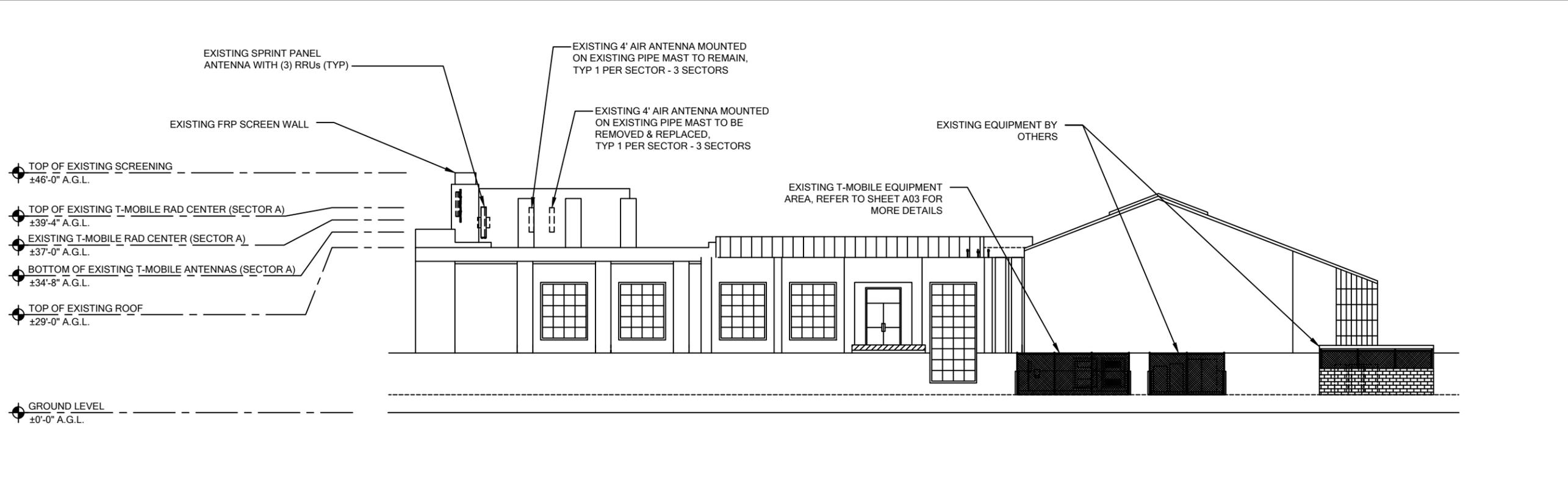


SHEET TITLE

EXISTING AND NEW
ANTENNA PLAN

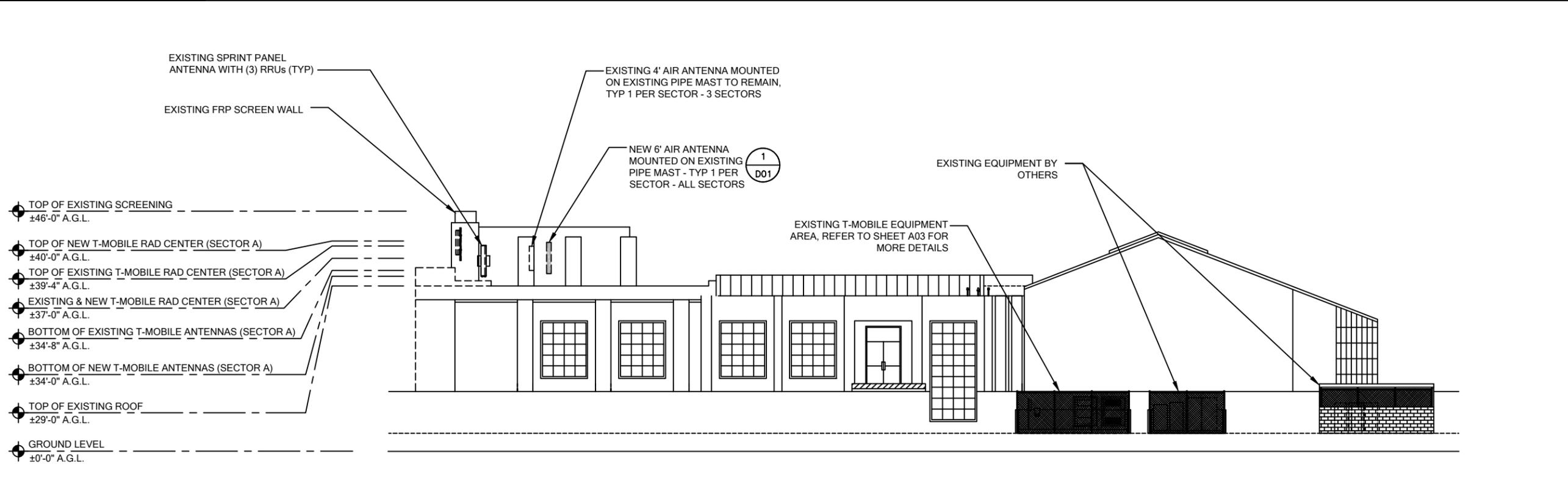
SHEET NUMBER

A04



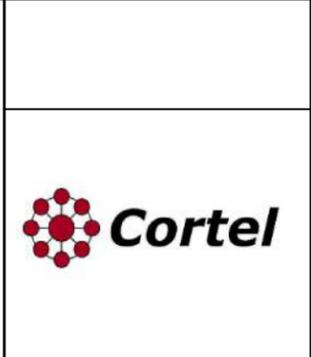
FULL SCALE 3/32"=1'-0"
 12 0 12 24 FT
 HALF SCALE 3/64"=1'-0"

EXISTING NORTHEAST ELEVATION



FULL SCALE 3/32"=1'-0"
 12 0 12 24 FT
 HALF SCALE 3/64"=1'-0"

NEW NORTHEAST ELEVATION



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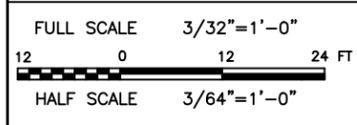
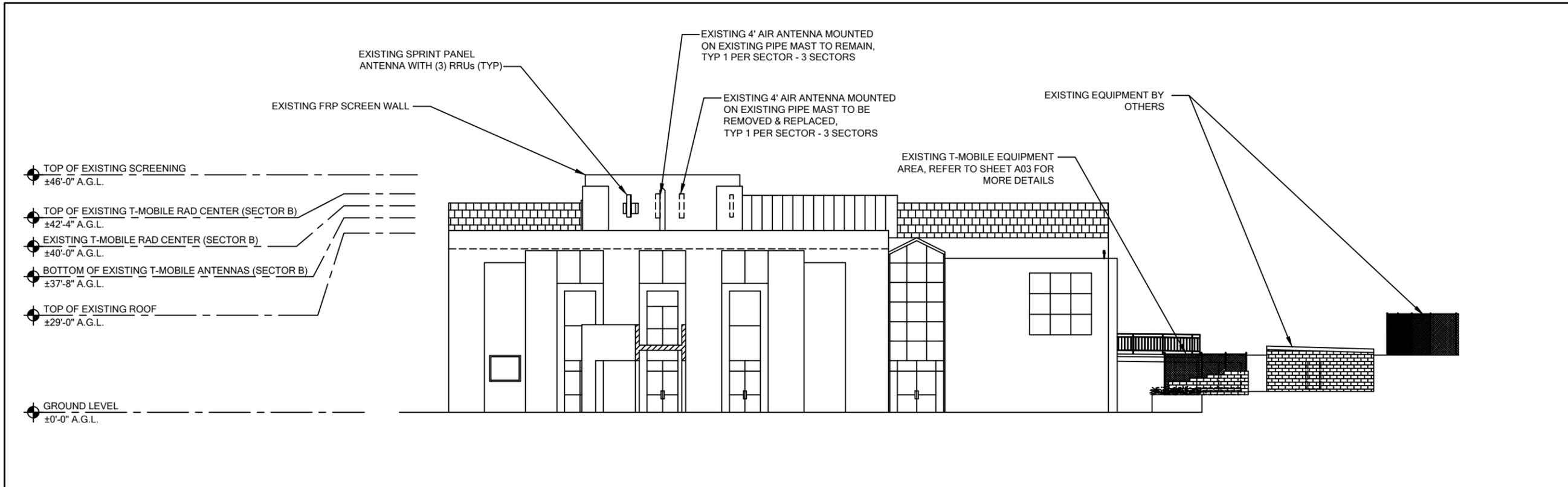


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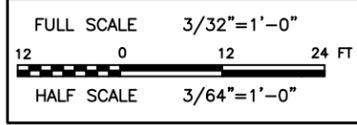
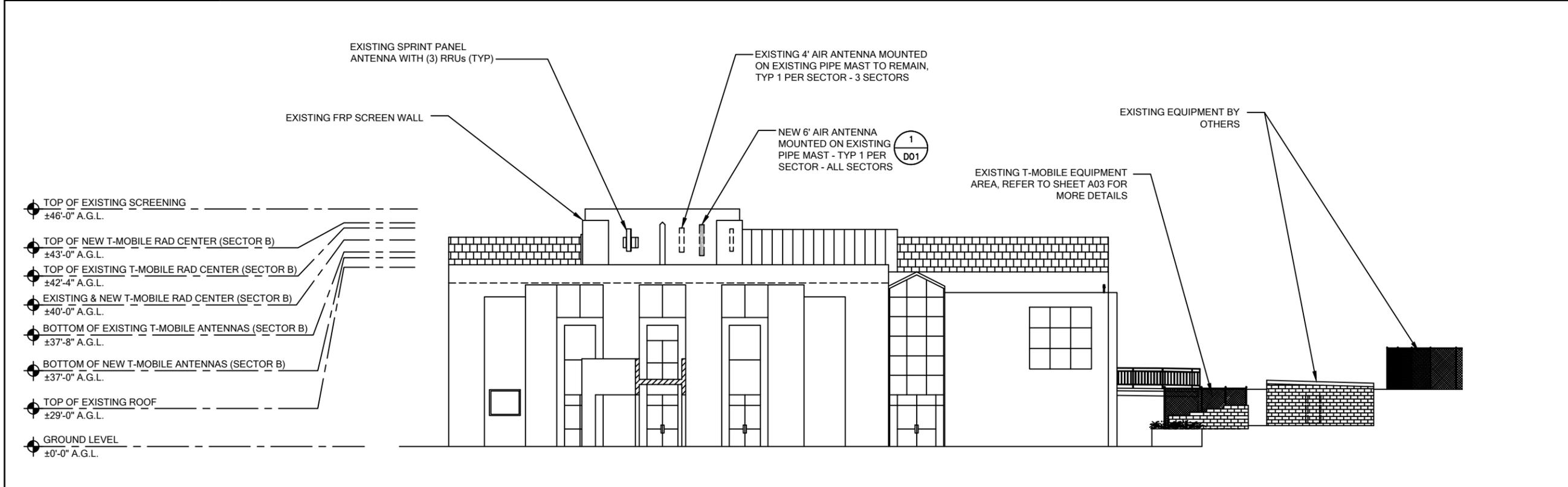
**EXISTING AND NEW
 NORTHEAST
 ELEVATION**

SHEET NUMBER

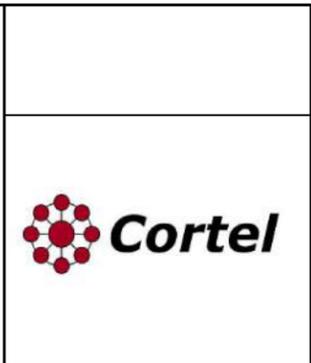
A05



EXISTING SOUTHEAST ELEVATION



NEW SOUTHEAST ELEVATION



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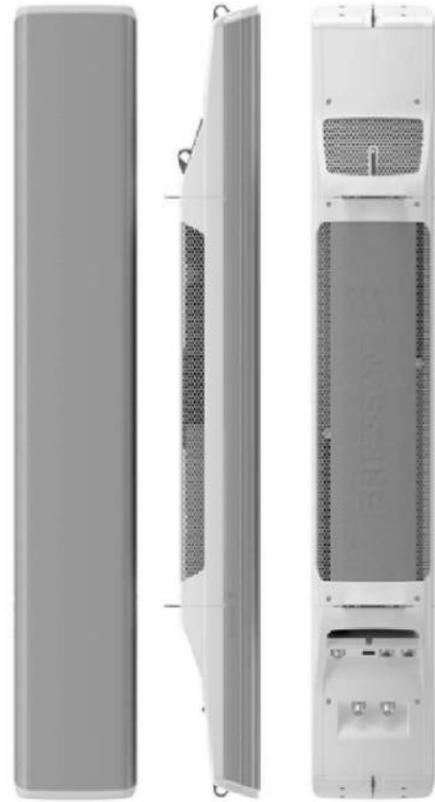


SHEET TITLE

**EXISTING AND NEW
SOUTHEAST
ELEVATION**

SHEET NUMBER

A06



<u>Preliminary</u> ⁰	6' AIR (B4A/ B5P/B12P)
Product Number	KRC 118 056/1
Active antenna/radio	AWS 2 TX / 4 RX
Bypass antenna	700/850 MHz +/- 45°
Antenna HBW	68° (700/850 MHz) 65° (AWS)
Antenna VBW	TBD
Antenna Gain	13.3 dBd (700/850 MHz) 17.5 dBi (AWS)
Antenna Tilting Range	2-12° (700/850 MHz) 2-12° (AWS)
Supported Baseband	DUW, DUL ¹ , DUS ²
Dimensions (HxWxD)	78"x14.8"x8.6"
Weight	110 lbs
HW Availability	3Q '13
SW Dependency	L13A L13B (mixed mode)
Number of UMTS carriers	Up to 4

LTE	Up to 20 MHz 2x2 MIMO
Interface	Two optical fiber ports (CPRI) for active antenna/radio One power connector, -48 V DC Two 7/16 female connectors for passive antenna, with RET support (AISG 2.0)

NOTES:
 1. INSTALL ANTENNA TO EXISTING 2"Ø PIPE MAST USING MANUFACTURERS SUPPLIED BRACKETS AND MOUNTING HARDWARE FOR ALL SECTORS
 2. SET MECHANICAL DOWNTILT TO VALUE SPECIFIED IN LATEST RFDS

ANTENNA KRC 118 056/1B4A/B12P-B8P-6, 6' **N.T.S.** **1**



**SITE NUMBER:
BA02145A**

**SITE NAME:
PL145 ST MARY'S
COLLEGE H**

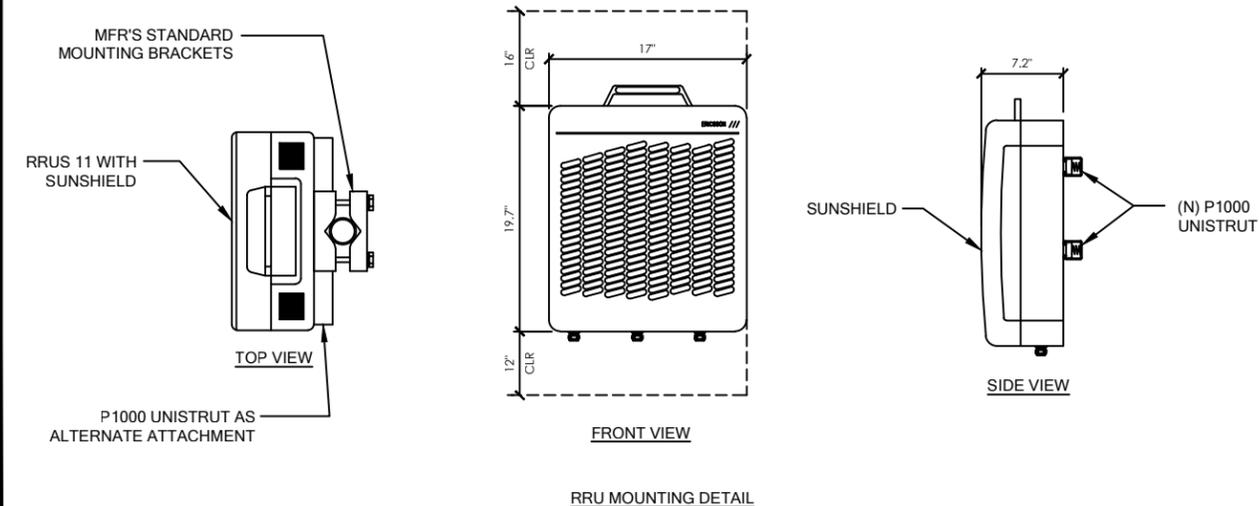
1600 POSEN AVE.
ALBANY, CA 94706



NOT USED

N.T.S. **4**

ERICSSON RRUS 11 B12 REMOTE RADIO UNIT
 COLOR: WHITE
 DIMENSIONS: 19.7" TALL X 17" WIDE X 7.2" DEEP (INCLUDING SUNSHIELD)
 WIEIGHT: +/- 50 LBS. (INCLUDING MOUNTING HARDWARE)



REV	DATE	DESCRIPTION	BY
1	11/20/15	CD 100% -ISSUED FOR CONSTRUCTION	GF
0	11/04/15	CD 100% -ISSUED FOR CONSTRUCTION	JO
A	10/28/15	CD 90% - ISSUED FOR REVIEW	PS



SHEET TITLE

DETAILS 1

SHEET NUMBER

D01

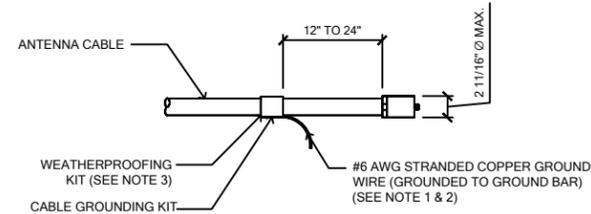
NOT USED **N.T.S.** **2**

RRU SPEC & MOUNTING DETAIL **N.T.S.** **3**

- ALL ELECTRICAL WORK SHALL COMPLY WITH THE LATEST EDITION OF THE CALIFORNIA ELECTRICAL CODE, AS WELL AS WITH ALL LOCAL, STATE, AND NATIONAL CODES, LAWS, AND ORDINANCES APPLICABLE TO ELECTRICAL WORK.
- THE ELECTRICAL CONTRACTOR SHALL VISIT THE JOBSITE AND VERIFY EXISTING CONDITIONS BEFORE BIDDING AND SHALL INCLUDE IN HIS/HER BID, THE NECESSARY COSTS TO CONSTRUCT THIS PROJECT IN ACCORDANCE WITH THE INTENT OF THE ELECTRICAL DRAWINGS, SPECIFICATIONS, AND ALL APPLICABLE CODES.
- ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).
- ALL WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER, AND SHALL PRESENT A NEAT MECHANICAL APPEARANCE WHEN COMPLETED.
- EACH END OF EVERY POWER, GROUNDING, CONTROL AND ALARM CONDUCTOR AND CABLE SHALL BE LABELED OR IDENTIFIED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA, AND MATCH EXISTING INSTALLATION REQUIREMENTS.
- ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL BE LISTED BY UNDERWRITER'S LABORATORIES.
- THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING RELATED TO ELECTRICAL WORK, UNLESS OTHERWISE NOTED AND COORDINATED WITH THE GENERAL CONTRACTOR.
- POWER AND EQUIPMENT GROUND WIRING SHALL BE 12 AWG OR LARGER, 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- CONTROL AND ALARM WIRING SHALL BE COPPER, 300V OR 600V LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- UPON COMPLETION OF THE ELECTRICAL WORK, THE INSTALLATION SHALL BE FREE FROM GROUNDS AND SHORT CIRCUITS.
- ELECTRICAL CONTRACTOR SHALL FURNISH AS-BUILT DRAWINGS TO THE ARCHITECT/ENGINEER UPON COMPLETION OF THE JOB.
- ALL POWER AND EQUIPMENT GROUND WIRE CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS OR WIRENUTS. LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).
- CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
- 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.
- THE NOTE, SPECIFICATION OR CODE WHICH PRESCRIBES AND ESTABLISHES THE HIGHEST STANDARD OF PERFORMANCE SHALL PREVAIL IN THE EVENT OF ANY CONFLICT OR INCONSISTENCY BETWEEN ITEMS SHOWN ON THE PLANS AND/OR SPECIFICATIONS.
- ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- PENETRATIONS OF ALL WALLS OR CEILINGS SHALL BE SEALED AND FIRE RATING MAINTAINED IN ACCORDANCE WITH ALL LOCAL AND NATIONAL CODES.
- SCHEDULE 80 PVC CONDUIT SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
- RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
- ALL DETAILS/SCHEMATICS SHOWN ARE IN GENERAL TERMS, AND INSTALLATION MAY VARY DUE TO SPECIFIC SITE CONDITIONS.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- METALLIC CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE, GALVANIZED AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE. MYERS™ HUBS OR APPROVED LOCKNUTS SHALL BE FITTED AT ALL BOX CONNECTIONS TO MAINTAIN NEC.
- CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.
- THE CONTRACTOR AGREES THAT, IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY, AND HOLD OWNER AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT.
- WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
- 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
- RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE PVC OR 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.
- 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.
- THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.
- ALL ENTRIES TO EQUIPMENT ASSOCIATED WITH THE FIXED GENERATOR PROJECT SHALL BE SEALED TO KEEP WATER OUT.

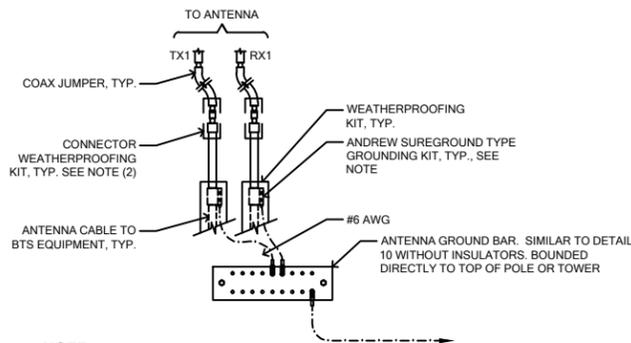
ELECTRICAL NOTES

N.T.S. 1



- NOTE:**
- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT WIRE DOWN TO GROUND BAR.
 - GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
 - WEATHER PROOFING SHALL BE (TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.)

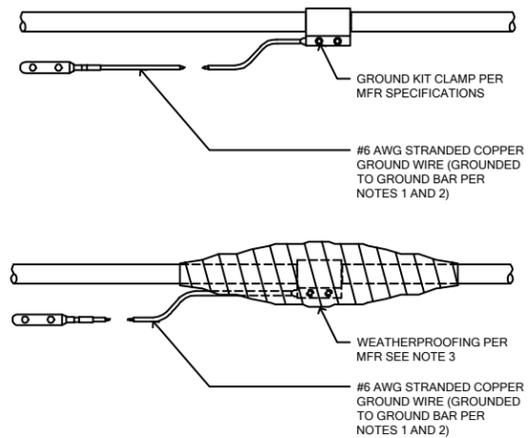
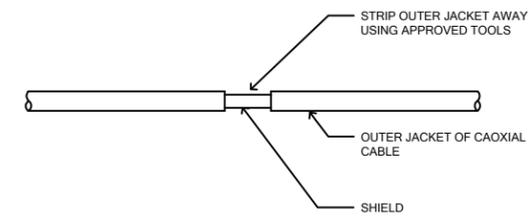
CONNECTION OF GRND KIT TO ANTENNA CABLE



- NOTE:**
- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
 - WEATHER PROOFING SHALL BE ANDREW TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED

GRND CONNECTION TO GRND BAR

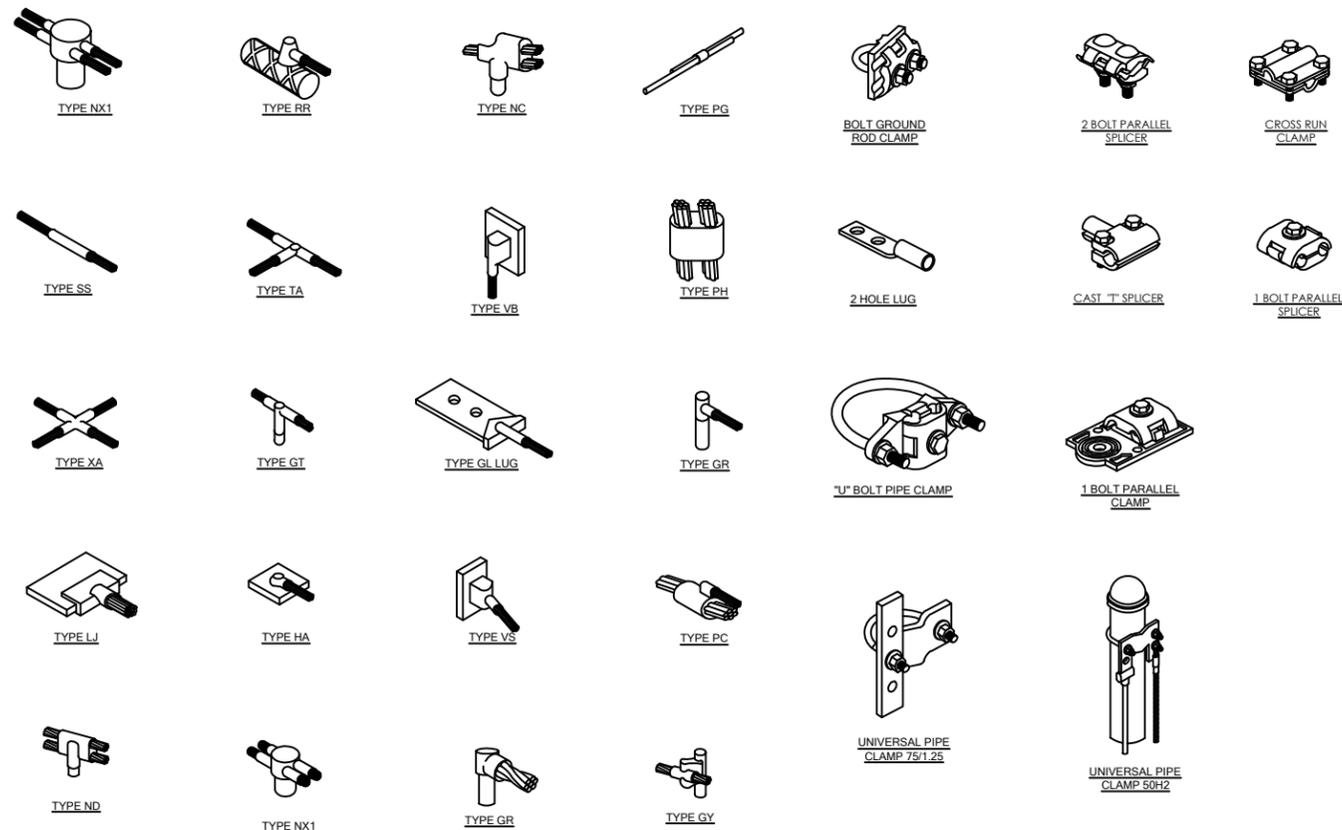
- NOTES:**
- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR
 - GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MFR
 - WEATHER PROOFING SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY THE CABLE MFR



GROUND KIT

GROUND KIT DETAILS

N.T.S. 3



**SITE NUMBER:
BA02145A**

**SITE NAME:
PL145 ST MARY'S
COLLEGE H**

1600 POSEN AVE.
ALBANY, CA 94706



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1	11/20/15	CD 100% - ISSUED FOR CONSTRUCTION	GF
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SHEET TITLE

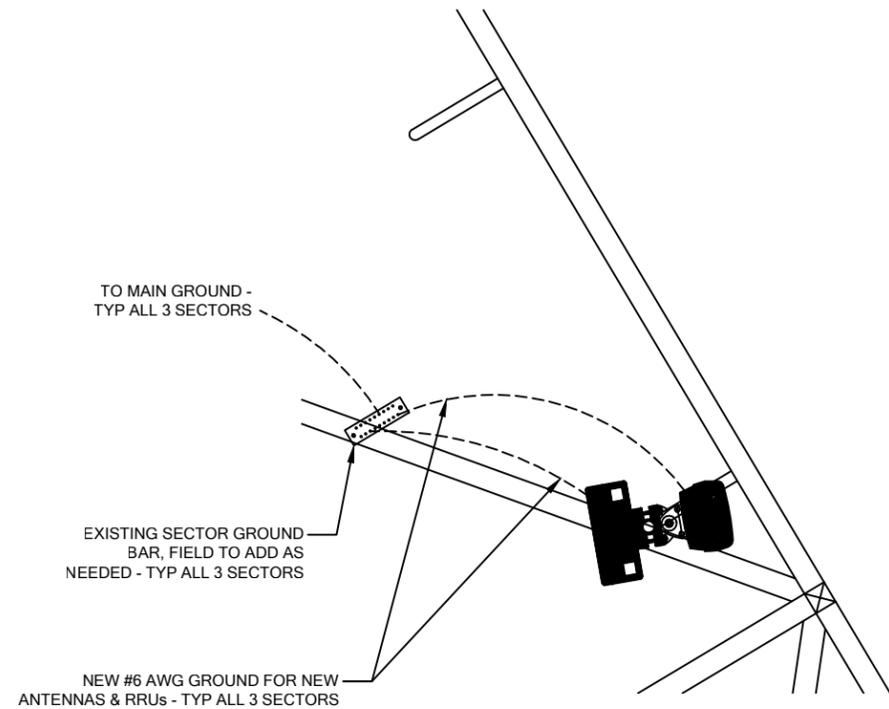
**ELECTRICAL NOTES &
GROUNDING DETAILS**

SHEET NUMBER

E01

TYPICAL GROUND CONNECTIONS

N.T.S. 2



**SITE NUMBER:
BA02145A**

**SITE NAME:
PL145 ST MARY'S
COLLEGE H**

1600 POSEN AVE.
ALBANY, CA 94706



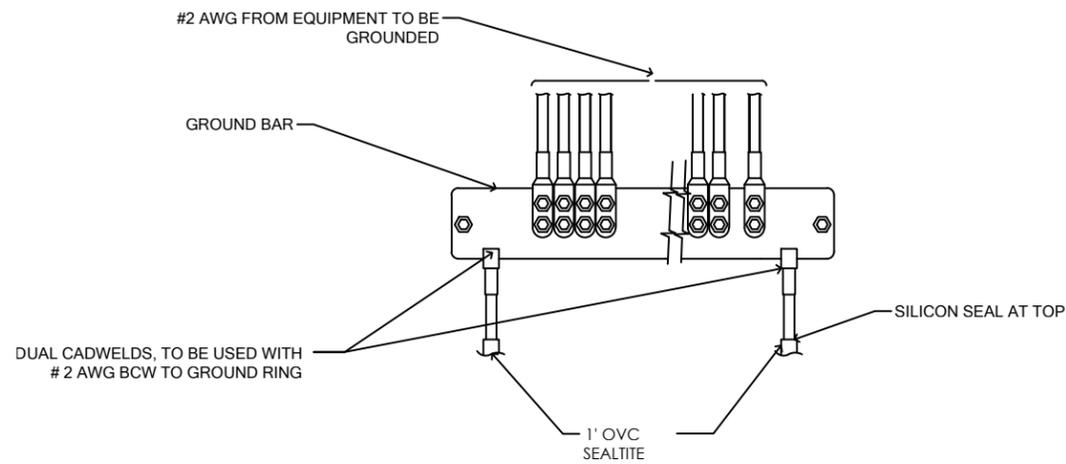
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TYP. ANTENNA GROUNDING

N.T.S. 1

NOT USED

N.T.S. 4

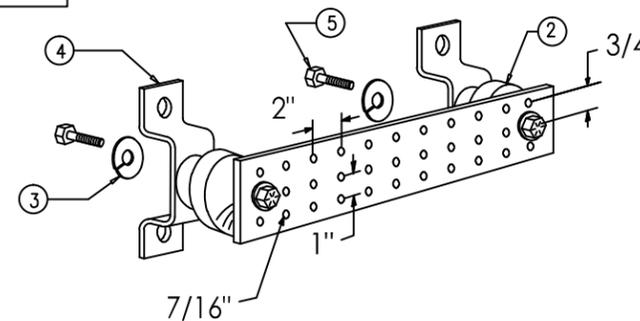


NOTE:
1. CONTRACTOR TO UTILIZE KOPR-SHIELD (THOMAS & BETTS) ON ALL LUG CONNECTIONS OR APPROVED EQUAL
2. ALL LUGS TO BE DUAL HOLE LONG BARREL AND CRIMPED TWICE WITH MFR'S RECOMMENDED TOOL

GROUND BAR DETAIL

N.T.S. 2

NOTE: ALL HARDWARE SHALL BE STAINLESS STEEL



- LEGEND:**
1. COPPER GROUND BAR, 12"x1/4"x20", NEWTON INSTRUMENT CO. CAT. NO. B-6142 OR EQUAL. HOLE CENTERS TO MATCH MEMA DOUBLE LUG CONFIGURATION (ACTUAL GROUND BAR SIZE WILL VARY BASED ON NUMBER OF GROUND CONNECTIONS)
 2. INSULATORS, NEWTON INSTRUMENT CAT. NO. 3064-4 OR EQUAL
 3. 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8 OR EQUAL
 4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT. NO. A-6056 OR EQUAL
 5. 5/8"-11x1" HHCS BOLTS, NEWTON INSTRUMENT CO. CAT. NO. 3012-1 OR EQUAL
 6. INSULATORS SHALL BE ELIMINATED WHEN BONDING DIRECTLY TO TOWER/MONOPOLE STRUCTURE. CONNECTION TO TOWER/MONOPOLE STRUCTURE SHALL BE PER MANUFACTURERS RECOMMENDATIONS.



SHEET TITLE

**GROUNDING DETAILS
& GROUNDING
SCHEME**

SHEET NUMBER

E02

GROUND BAR DETAIL

N.T.S. 3



**SITE NUMBER:
BA02145A**

**SITE NAME:
PL145 ST MARY'S
COLLEGE H**

1600 POSEN AVE.
ALBANY, CA 94706



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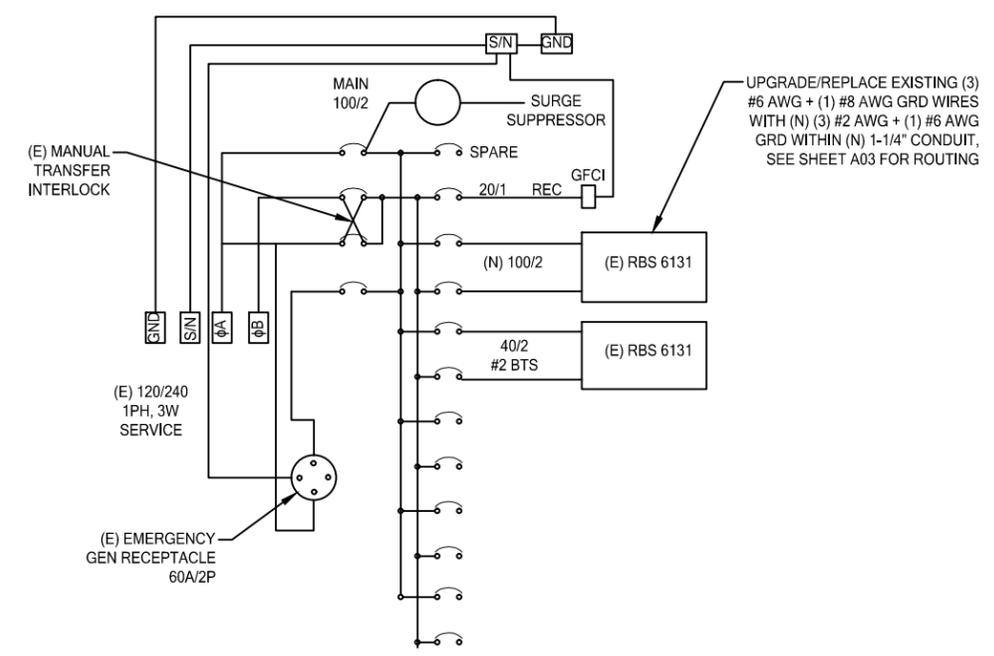


SHEET TITLE

**PANEL SCHEDULE &
SINGLE-LINE DIAGRAM**

SHEET NUMBER

E03



- NOTES:**
- SERVICE POWER SHALL BE 100A, 120/240V, 1 ϕ 3W
 - UTILITY RECEPTACLE IS A GFCI DUPLEX OUTLET INSTALLED IN THE DEADFRONT OF THE PPC
 - PROVIDE A MIN. 36" WORK CLEARANCE IN FRONT OF PANEL/SERVICE EQUIPMENT
 - ALL BREAKERS IN THE PANEL ARE RATED 10,000 RMS SYMMETRICAL AMPS, 240V MAX, 90'
 - ALL WIRING SHALL BE RATED FOR 90'
 - CONDUIT REQUIREMENTS (TYP U.N.O.): UNDERGROUND PVC (SCH 40 OR 80), INDOOR: EMT (RGS IN TRAFFIC AREAS) OUTDOOR (ABOVE GRADE): RGS
 - UPGRADE EXISTING #6 AWG WIRES WITH NEW #2 AWG WIRES FROM NEW 100A BREAKER TO EXISTING CABINET

SINGLE-LINE DIAGRAM **N.T.S.** **2**

120/240V, 1 ϕ , 3W		
MAIN BREAKER RATING (A): 100		
SYSTEM VOLTAGE (V): 120/240		
DESCRIPTION	BKR	POSN
BLANK	20	1
RECEPTACLE	20	2
RBS 6131	60	3
		4
BTS (1)	40	5
		6
MAIN UTILITY SUPPLY	100	7
		8

(E) PANEL SCHEDULE

120/240V, 1 ϕ , 3W		
MAIN BREAKER RATING (A): 100		
SYSTEM VOLTAGE (V): 120/240		
DESCRIPTION	BKR	POSN
BLANK	20	1
RECEPTACLE	20	2
RBS 6131	100	3
		4
BTS (1)	40	5
		6
MAIN UTILITY SUPPLY	100	7
		8

(P) PANEL SCHEDULE

- NOTE:**
- BREAKER CHANGES ARE IN BOLD
 - ALL PANEL WORK SHALL BE PERFORMED BY A QUALIFIED ELECTRICIAN
 - ALL WORK WITHIN AC PANEL SHALL COMPLY WITH NEC & T-MOBILE QUALITY AND SAFETY STANDARDS
 - REPLACE (3) (E) #6 AWG WIRE WITH (3) (N) #2 AWG WIRE FROM NEW 100A BREAKER TO EXISTING CABINET IN THE EQUIPMENT AREA

PANEL SCHEDULE **N.T.S.** **1**