

**PROJECT DESCRIPTION**

- TOWER SCOPE OF WORK:**
- EXISTING (1) ANTENNA PER SECTOR TO BE REMOVED
  - EXISTING (3) RRH PER SECTOR TO BE REMOVED
  - INSTALL (2) NEW ANTENNA PER SECTOR
  - INSTALL (4) NEW RRH PER SECTOR
- GROUND SCOPE OF WORK:**
- REMOVE (2) EXISTING HVAC UNITS
  - INSTALL (6) RECTIFIERS
  - INSTALL (2) NEW 4 TON HVAC UNITS WITH DC BLOWERS
  - INSTALL (2) ABIA, (1) ASIA, & (1) FSM4 WITH (1) ASIK AND (1) ABIL IN EXISTING LTE RACK



**SITE NAME: WIDFIELD WATER TANK RELO**  
**SITE NUMBER: COL02359**  
**CONSTRUCTION DRAWINGS**

AT&T MOBILITY  
 161 INVERNESS DR WEST, 2ND FLOOR  
 ENGLEWOOD, CO 80112

8502 E VIA DE VENTURA, SUITE 220  
 SCOTTSDALE, AZ 85258

2227 W. PECOS ROAD, SUITE 4,  
 CHANDLER AZ 85224

**ADDRESS**  
 82 WIDFIELD BLVD  
 COLORADO SPRINGS, CO 80911

**SITE NUMBER**  
 COL02359

**SITE NAME**  
 WIDFIELD WATER TANK RELO

**SCOPE OF WORK**

- 1C    3C    5C    7C    4TXRX
- 2C    4C    6C    2ND RRH ADD

**PROJECT INFORMATION**

SITE ADDRESS:	82 WIDFIELD BLVD COLORADO SPRINGS, CO 80911	ZONING DISTRICT:	CC
LATITUDE:	38° 44' 7.8144"	EXISTING USE:	UNMANNED TELECOMMUNICATIONS FACILITY
LONGITUDE:	-104° 43' 34.608"	NEW USE:	UNMANNED TELECOMMUNICATIONS FACILITY
JURISDICTION:	EL PASO COUNTY	CONSTRUCTION TYPE:	II-B
		A.P.N.:	6524100049

**RF DATA SHEET**

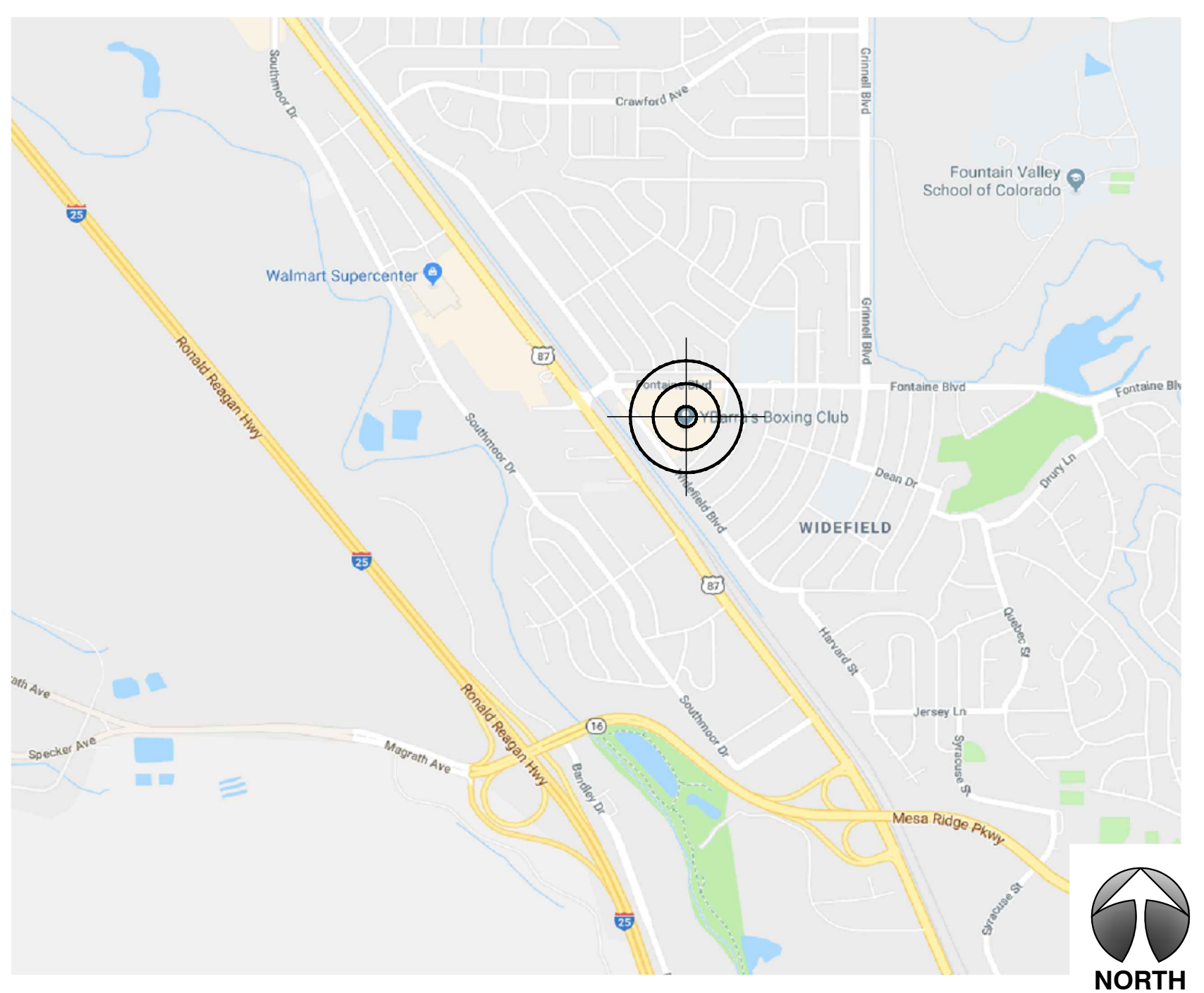
DATE ISSUED: 12/13/2018      VERSION: 2.01

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**VICINITY MAP**

**DIRECTIONS: (188 INVERNESS DR WEST, SUITE 400 ENGLEWOOD, CO 80112):**  
 GET ON I-25 S IN LONE TREE. HEAD SOUTH TOWARD INVERNESS DR W. TURN LEFT ONTO INVERNESS DR W. TURN RIGHT ONTO E COUNTY LINE RD. MERGE ONTO I-25 S VIA THE RAMP TO COLO SPRINGS. FOLLOW I-25 S TO PLUM CREEK PKWY. TAKE EXIT 181 FROM I-25 S. MERGE ONTO I-25 S. TAKE EXIT 181 FRONTAGE RD TOWARD WILCOX ST. GET ON I-25 S FROM S WILCOX ST. TURN LEFT ONTO PLUM CREEK PKWY. TURN RIGHT ONTO S WILCOX ST. TURN RIGHT ONTO SKY VIEW LN. TURN LEFT TO I-25 S. FOLLOW I-25 S TO US-85 S IN SECURITY-WIDFIELD. TAKE THE US-85 EXIT FROM S ACADEMY BLVD. MERGE ONTO I-25 S. TAKE EXIT 135 FOR ACADEMY BLVD. TURN LEFT ONTO S ACADEMY BLVD. TAKE THE US-85 EXIT TOWARD FOUNTAIN. FOLLOW US-85 S/US-87 S TO FONTAINE BLVD. TURN RIGHT ONTO US-85 S/US-87 S (SIGNS FOR FOUNTAIN). TURN LEFT ONTO FONTAINE BLVD. DESTINATION WILL BE ON THE RIGHT.



**APPLICABLE BLDG. CODES AND STANDARDS**

SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

BUILDING CODE:  
 [INTERNATIONAL BUILDING CODE (IBC), 2015 AS ADOPTED BY THE LOCAL JURISDICTION]

ELECTRICAL CODE:  
 [NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 70 - 2007, NATIONAL ELECTRICAL CODE, 2014 AS ADOPTED BY THE LOCAL JURISDICTION]

LIGHTNING PROTECTION CODE:  
 [NFPA 780 - 2002, LIGHTNING PROTECTION CODE]

SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS. AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ASD, THIRTEENTH EDITION ANSI/TIA 222-G, STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS

INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT

IEEE C2 NATIONAL ELECTRIC SAFETY CODE, LATEST VERSION

TELCORDIA GR-1275, GENERAL INSTALLATION REQUIREMENTS

ANSI T1.311, FOR TELECOM - DC POWER SYSTEMS - TELECOM, ENVIRONMENTAL PROTECTION

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

STRUCTURAL ANALYSIS OF TOWER BY OTHERS AND ANTENNA MOUNT ANALYSIS IS BY WYCO. BOTH THE GC AND BUILDING OFFICIAL MUST ENSURE THE STRUCTURAL ANALYSIS DOCUMENTS HAVE BEEN PROVIDED BY AT&T. GC TO ENSURE THAT ANY TOWER OR MOUNT MODIFICATIONS ARE MADE PRIOR TO INSTALLATION.

**SEAL**



**SITE PROJECT PARTICIPANTS**

	NAME	COMPANY	NUMBER
A/E	CHRIS WOLFE	WYCO FIELD SERVICES	602-281-0223
SAC	MACKENZIE HUNT	SMARTLINK, LLC	970-402-9001
RF	ROEL SIGUE	AT&T WIRELESS	703-599-6115
LANDLORD	TIFFANY MCCLURG	VERTICAL BRIDGE	206-719-1639

**DIG INFO**

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

**SCALING DRAWINGS**

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

IF USING 11"x17" PLOT, DRAWINGS WILL BE AT HALF SCALE.

DRAWN BY: CW    CHECKED BY: CW    APPROVED BY: CW

FA #: 13380989

REV	DATE	DESCRIPTION
A	07/20/18	PRELIMINARY CONSTRUCTION DRAWINGS
B	07/27/18	CX READY RFDS UPDATE
C	08/27/18	CLIENT COMMENTS
0	10/29/18	SUBMITTAL CONSTRUCTION DRAWINGS
1	12/14/18	REVISED RFDS
2	02/04/19	JDX COMMENTS

SHEET TITLE  
**TITLE SHEET**

SHEET NUMBER  
**T-1**



**GENERAL NOTES:**

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
  - 1.1. CONTRACTOR – T.B.D.
  - 1.2. SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
  - 1.3. OWNER – AT&T MOBILITY
  - 1.4. OEM – ORIGINAL EQUIPMENT MANUFACTURE
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
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. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
5. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
6. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.
7. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR. ROUTING OF TRENCHING SHALL BE APPROVED BY CONTRACTOR.
8. 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.
9. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OFF 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.
10. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
11. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
12. ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.
13. CONSTRUCTION SHALL COMPLY WITH SPECIFICATION 25741-000-3APS-A00Z-00002, GENERAL CONSTRUCTION SERVICES.
14. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
15. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK MAY NEED TO BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
16. 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.
17. WIRING, RACEWAY, AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.
18. SUBCONTRACTOR SHALL MODIFY EXISTING CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL.
19. CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
20. EACH END OF EVERY POWER, GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA, AND MATCH EXISTING INSTALLATION REQUIREMENTS.
21. POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC & OSHA AND MATCH EXISTING INSTALLATION REQUIREMENTS.
22. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PLANELOAD AND CIRCUIT ID’S).
23. PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
24. ALL TIE WRAPS WHERE PERMITTED SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES. USE LOW PROFILES TIE WRAPS.
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 AGAINST LIFE AND PROPERTY.



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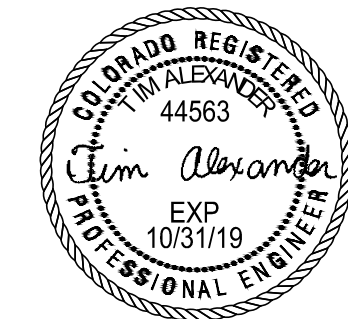
2227 W. PECOS ROAD, SUITE 4,  
CHANDLER AZ 85224

**ADDRESS**  
82 WIDEFIELD BLVD  
COLORADO SPRINGS, CO 80911

**SITE NUMBER**  
COLO2359

**SITE NAME**  
WIDEFIELD WATER TANK RELO

SEAL



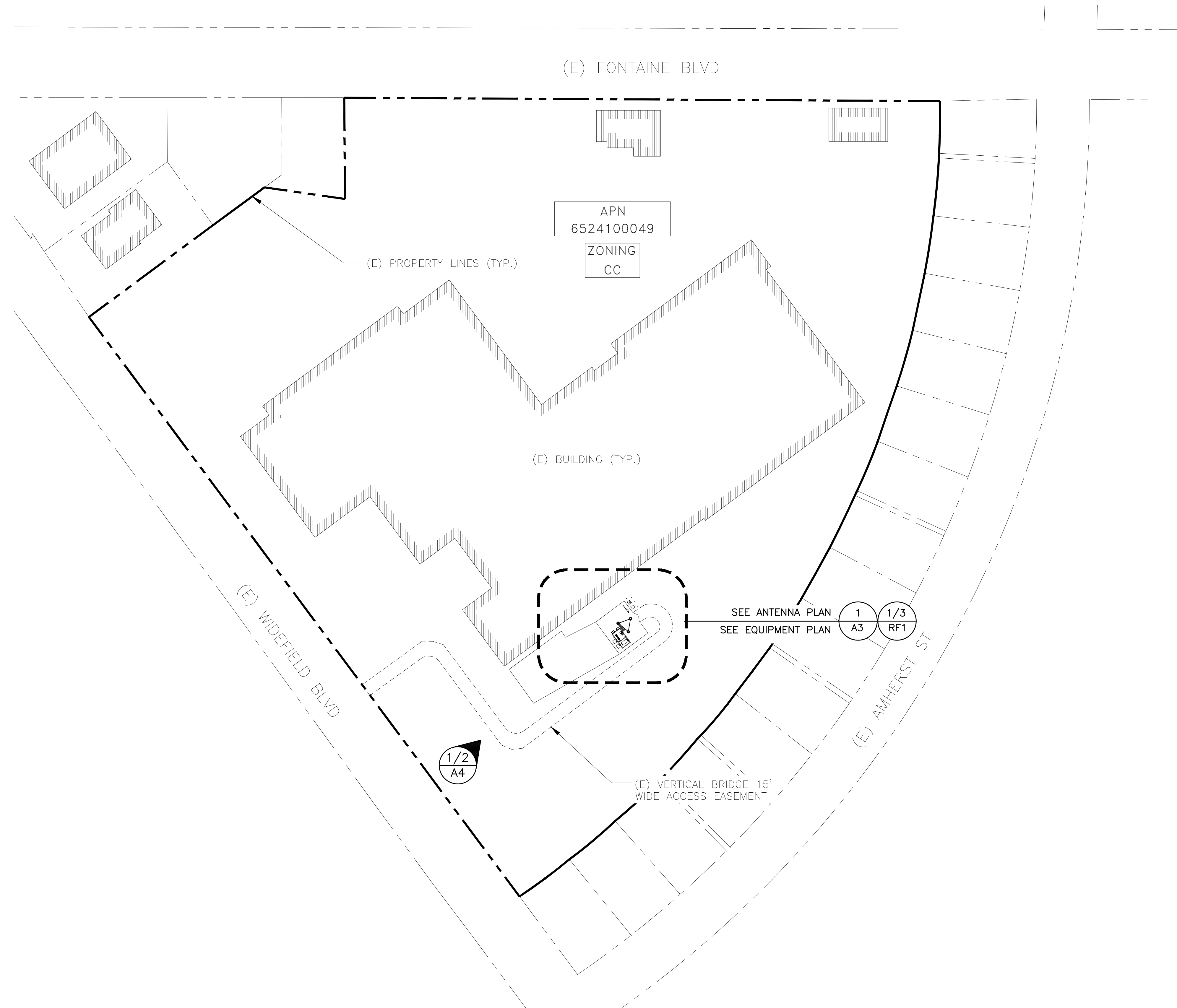
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SHEET TITLE

**GENERAL NOTES**

SHEET NUMBER

**GN-1**



- LEGEND**
- UTILITIES**
- UGP BURIED POWER LINE
  - BURIED GAS LINE
  - OHT OVERHEAD TELEPHONE LINE
  - UGT BURIED TELEPHONE LINE
  - W W BURIED WATER LINE
  - SS BURIED SANITARY SEWER
  - SD BURIED STORM DRAIN
  - OHP OVERHEAD POWER LINE
- LANDSCAPE**
- DITCH LINE/FLOW LINE
  - ROCK RETAINING WALL
  - VEGETATION LINE
  - x - x - x - CHAIN LINK FENCE
  - WOOD FENCE
  - BARBED WIRE FENCE
  - RAILROAD TRACKS
  - EDGE OF ROAD/STREET
  - CENTERLINE OF ROAD/STREET
- PROPERTY**
- PROPERTY LINE
  - RIGHT-OF-WAY CENTERLINE
  - RIGHT-OF-WAY LINE
  - ADJACENT BOUNDARY LINE
  - SECTIONAL BREAKDOWN LINE
- AT&T SITE PROPERTY**
- SUBJECT BOUNDARY LINE

- SYMBOL KEY**
- ⊕ FIRE HYDRANT
  - ⊗ GATE VALVE
  - ⊕ WATER METER
  - ⊕ FIRE STAND PIPE
  - ⊕ CATCH BASIN, TYPE I
  - ⊕ CATCH BASIN, TYPE II
  - ⊕ TRANSFORMER
  - ⊕ LIGHT STANDARD
  - ⊕ POWER VAULT
  - ⊕ UTILITY BOX
  - ⊕ UTILITY POLE
  - ⊕ POLE GUY WIRE
  - ⊕ GAS VALVE
  - ⊕ GAS METER
  - ⊕ TELEPHONE VAULT
  - ⊕ TELEPHONE RISER
  - ⊕ SIGN
  - ⊕ BOLLARD
  - ⊕ MAIL BOX
  - ⊕ SPOT ELEVATION

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where quality still counts.  
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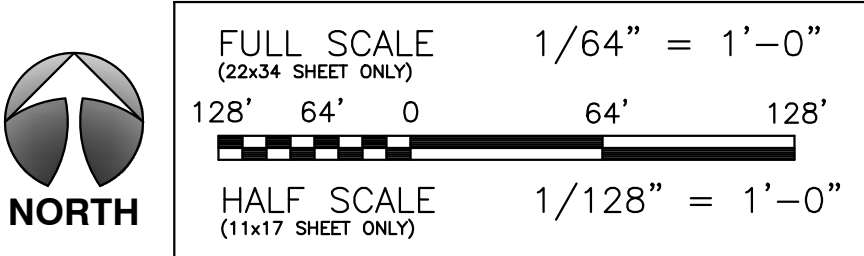
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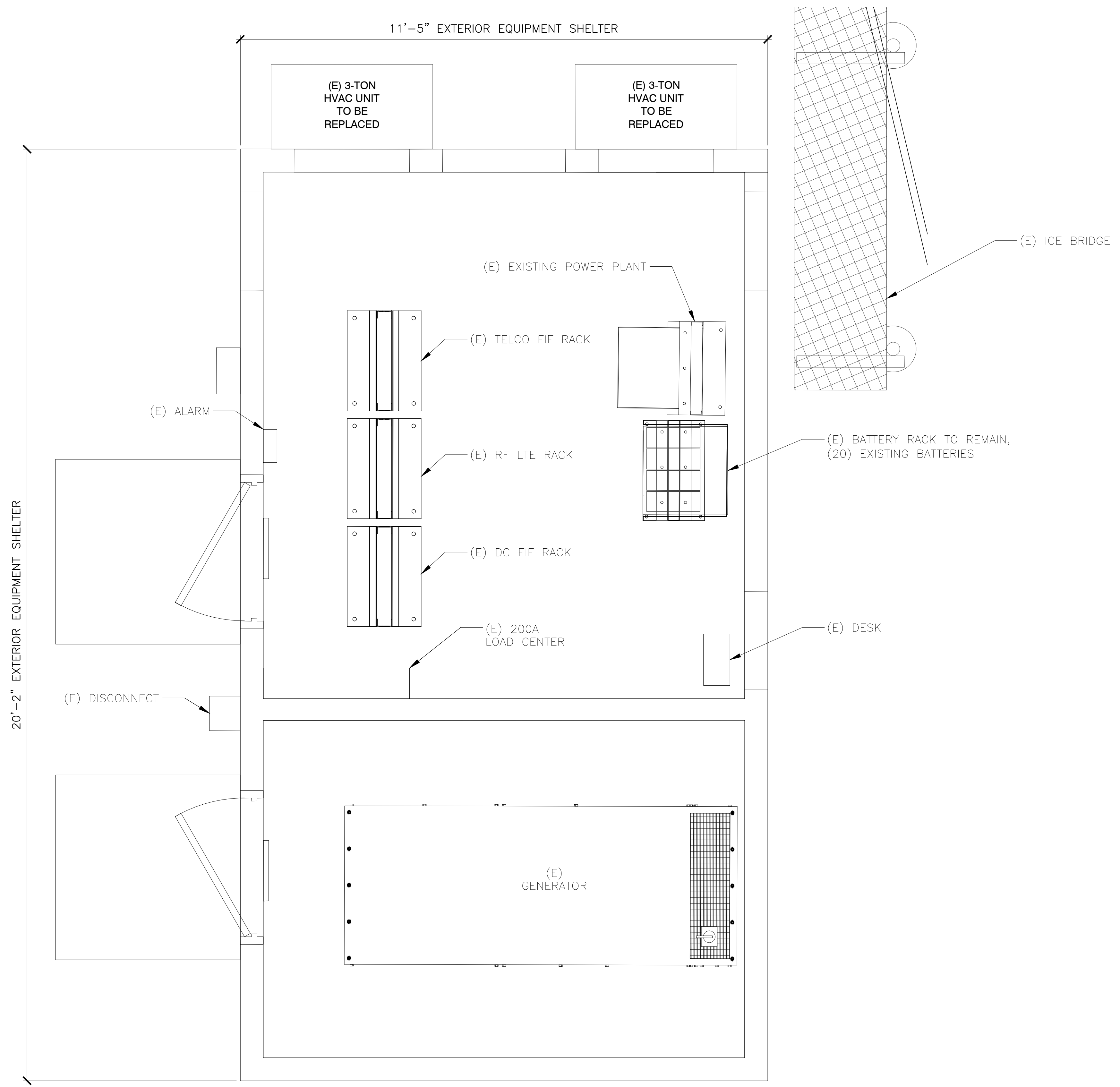
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SHEET TITLE  
**OVERALL SITE PLAN**

SHEET NUMBER  
**A-1**





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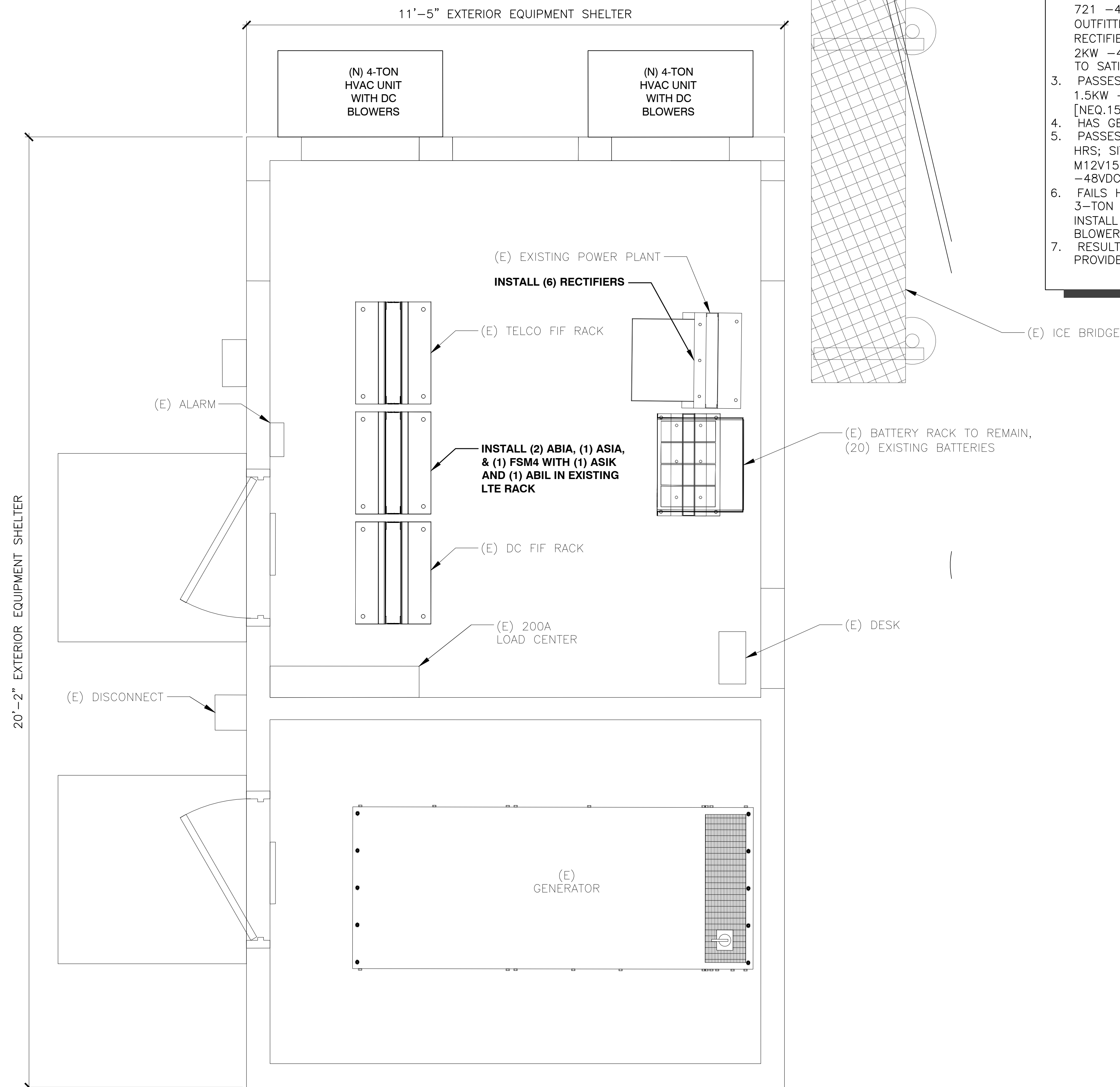
SHEET TITLE  
**EXISTING ENLARGED EQUIPMENT PLAN**

SHEET NUMBER  
**A-2**



FULL SCALE  
(22x34 SHEET ONLY) 3/4" = 1'-0"  
2' 1' 0' 1' 3'

HALF SCALE  
(11x17 SHEET ONLY) 3/8" = 1'-0"



- EQUIPMENT SOW SUMMARY:**
1. PROPOSED CONFIGURATION PER RFDS V2.00 07.25.18 (UPDATED 07.25.18)
  2. FAILS RECTIFIER; EXISTING EMERSON NETSURE 721 -48VDC POWER PLANT [NEQ.15920] IS OUTFITTED WITH (6) EA. HE 2KW -48VDC RECTIFIERS [NEQ.15930] INSTALL (6) NEW HE 2KW -48VDC RECTIFIERS FOR A TOTAL OF (12) TO SATISFY N+1.
  3. PASSES CONVERTERS; SITE HAS (2) EA. HE 1.5KW -48VDC/+24VDC CONVERTER MODULES [NEQ.15929].
  4. HAS GENERATOR ON SITE
  5. PASSES BATTERY RESERVE CAPACITY @ 8.38 HRS; SITE HAS (20) EXISTING MARATHON M12V155FT. I.E. (5) STRINGS CONFIGURED @ -48VDC NOMINAL.
  6. FAILS HVAC TONNAGE CAPACITY: THERE ARE (2) 3-TON HVAC UNITS ON SITE WITH DC BLOWERS. INSTALL (2) NEW 4-TON HVAC UNITS WITH DC BLOWERS.
  7. RESULTS BASED ON EQUIPMENT AUDIT TOOL PROVIDED BY AT&T.



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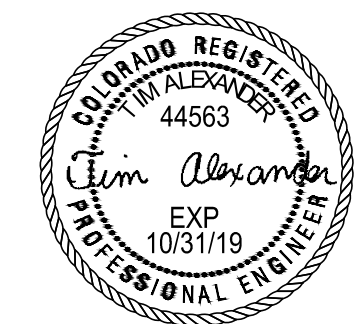
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SHEET TITLE

**NEW ENLARGED  
EQUIPMENT PLAN**

SHEET NUMBER

**A-3**



FULL SCALE 3/4" = 1'-0"  
(22x34 SHEET ONLY)  
2' 1' 0' 1' 3'  
HALF SCALE 3/8" = 1'-0"  
(11x17 SHEET ONLY)



NOTE:  
STRUCTURAL ANALYSIS OF TOWER BY OTHERS AND ANTENNA MOUNT ANALYSIS IS BY WYCO, GC TO ENSURE THAT ANY TOWER OR MOUNT MODIFICATIONS ARE MADE PRIOR TO INSTALLATION.



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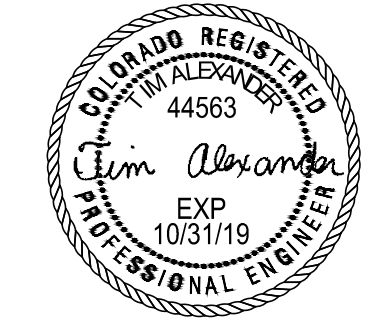
**FIELD SERVICES**  
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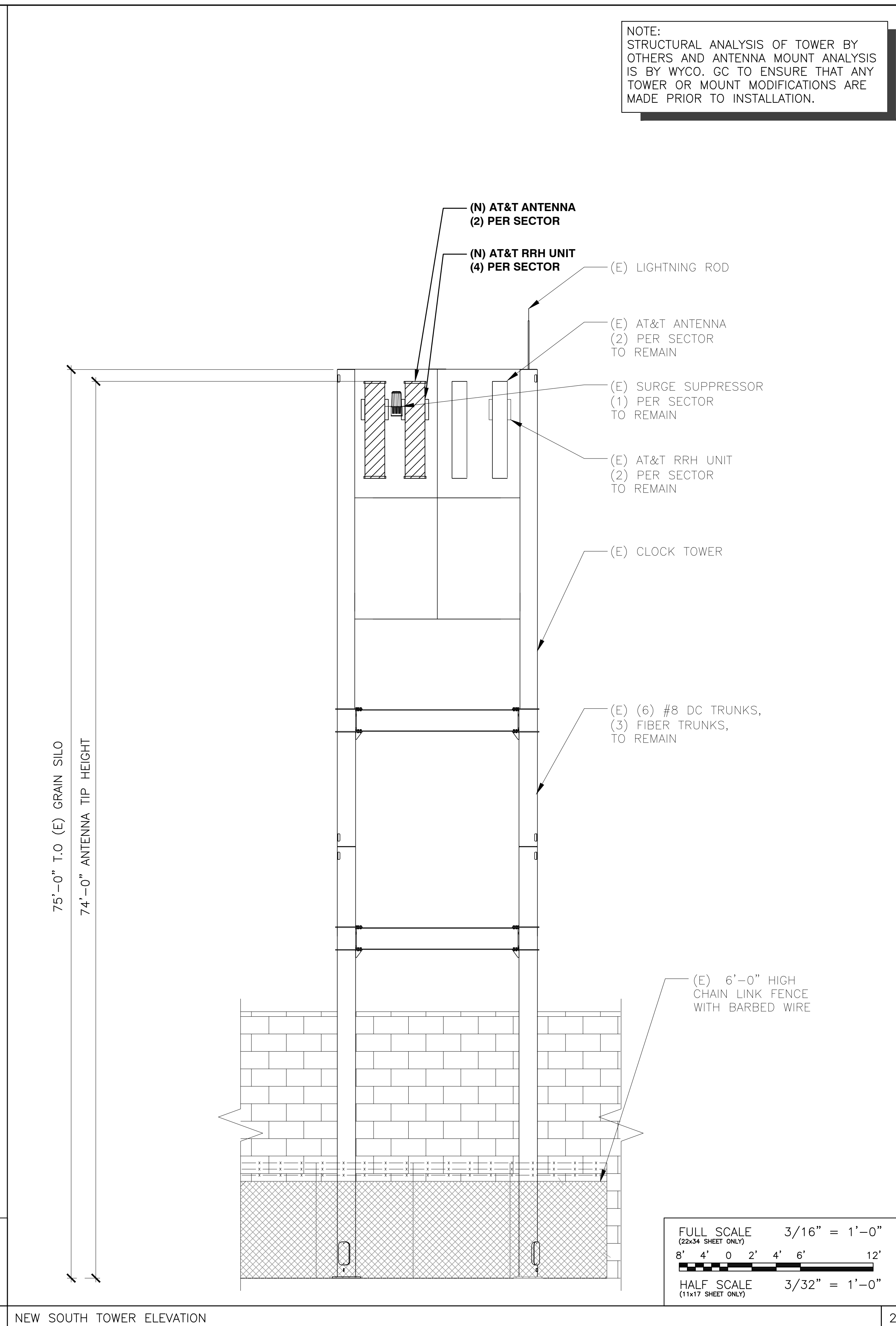
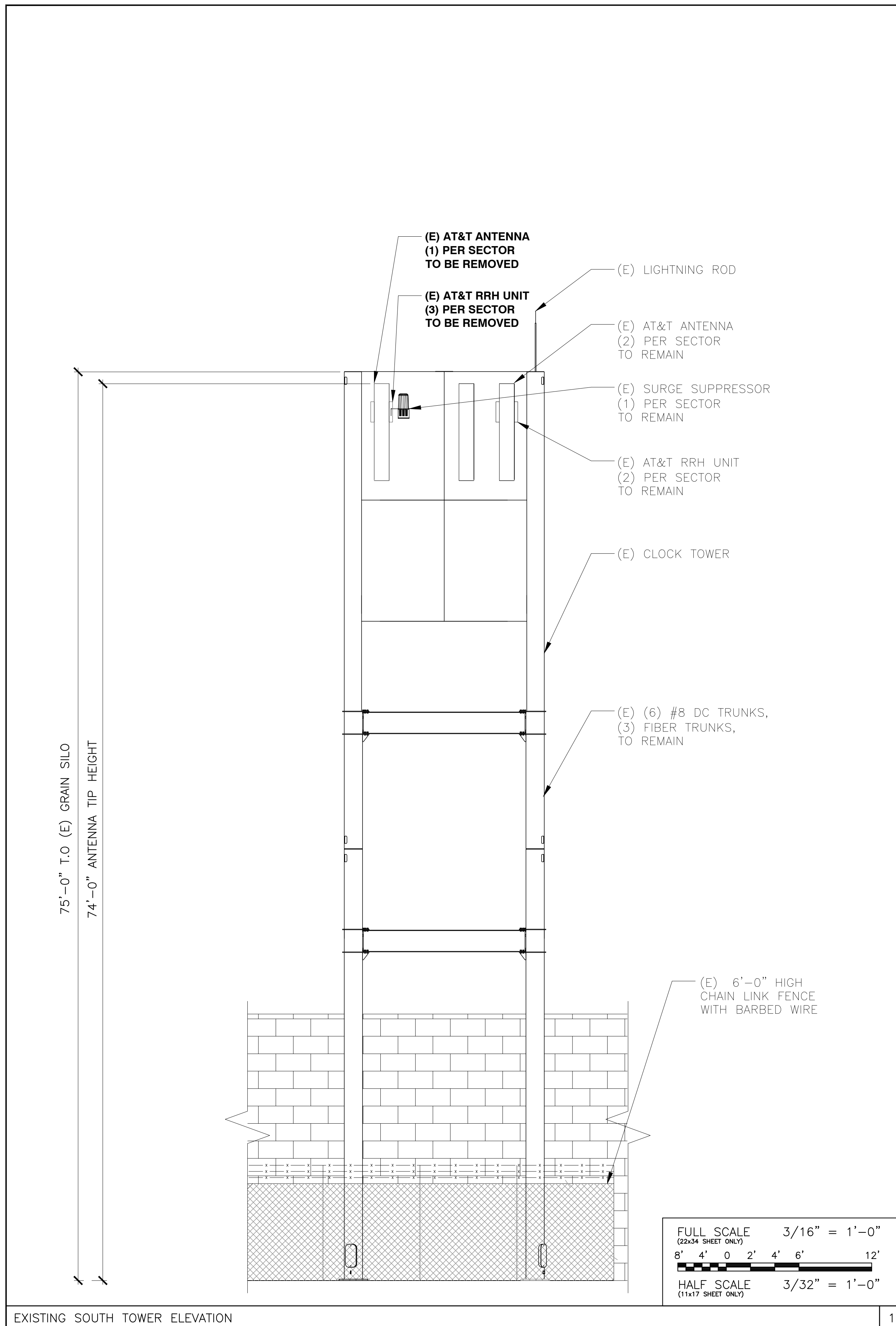
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SHEET TITLE  
**EXISTING & NEW TOWER ELEVATIONS**

SHEET NUMBER  
**A-4**



EXISTING SOUTH TOWER ELEVATION

NEW SOUTH TOWER ELEVATION

1

2

EXISTING ANTENNA SCHEDULE					
SECTOR	POSITION	TECH	ANTENNA	RRH	FEED LINE TYPE
ALPHA	1	UMTS	96.1" PANEL	(2) UMTS	EXISTING FIBER TRUNK
ALPHA	2	LTE	96.1" PANEL	(1) LTE	-
ALPHA	3	-	-	-	-
ALPHA	4	LTE	96.1" PANEL	(2) LTE	EXISTING FIBER TRUNK
BETA	1	UMTS	96.1" PANEL	(2) UMTS	EXISTING FIBER TRUNK
BETA	2	LTE	96.1" PANEL	(1) LTE	-
BETA	3	-	-	-	-
BETA	4	LTE	96.1" PANEL	(2) LTE	EXISTING FIBER TRUNK
GAMMA	1	UMTS	96.1" PANEL	(2) UMTS	EXISTING FIBER TRUNK
GAMMA	2	LTE	96.1" PANEL	(1) LTE	-
GAMMA	3	-	-	-	-
GAMMA	4	LTE	96.1" PANEL	(2) LTE	EXISTING FIBER TRUNK

NEW ANTENNA SCHEDULE					
SECTOR	POSITION	TECH	ANTENNA	RRH	FEED LINE TYPE
ALPHA	1	UMTS	96.1" PANEL	(2) UMTS	EXISTING FIBER TRUNK
ALPHA	2	OTHER	96.1" PANEL	-	-
ALPHA	3	LTE	96" PANEL*	(2) LTE	EXISTING FIBER TRUNK
ALPHA	4	LTE	96" PANEL*	(2) LTE	EXISTING FIBER TRUNK
BETA	1	UMTS	96.1" PANEL	(2) UMTS	EXISTING FIBER TRUNK
BETA	2	OTHER	96.1" PANEL	-	-
BETA	3	LTE	96" PANEL*	(2) LTE	EXISTING FIBER TRUNK
BETA	4	LTE	96" PANEL*	(2) LTE	EXISTING FIBER TRUNK
GAMMA	1	UMTS	96.1" PANEL	(2) UMTS	EXISTING FIBER TRUNK
GAMMA	2	OTHER	96.1" PANEL	-	-
GAMMA	3	LTE	96" PANEL*	(2) LTE	EXISTING FIBER TRUNK
GAMMA	4	LTE	96" PANEL*	(2) LTE	EXISTING FIBER TRUNK

- NOTES:  
 1. **DO NOT** USE COAX LENGTHS FOR CUT LENGTHS: ESTIMATES ONLY  
 2. CONFIRM THAT GENERAL CONTRACTOR IS USING LATEST VERSION OF RFDS.  
 \* OR SIMILAR



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 ENGLEWOOD, CO 80112



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 SCOTTSDALE, AZ 85258



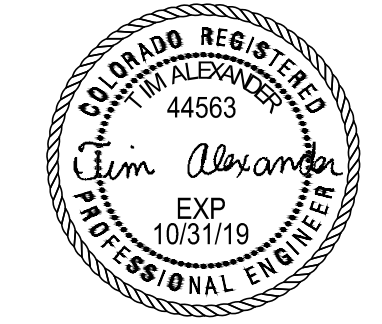
2227 W. PECOS ROAD, SUITE 4,  
 CHANDLER AZ 85224

ADDRESS  
 82 WIDEFIELD BLVD  
 COLORADO SPRINGS, CO 80911

SITE NUMBER  
 COLO2359

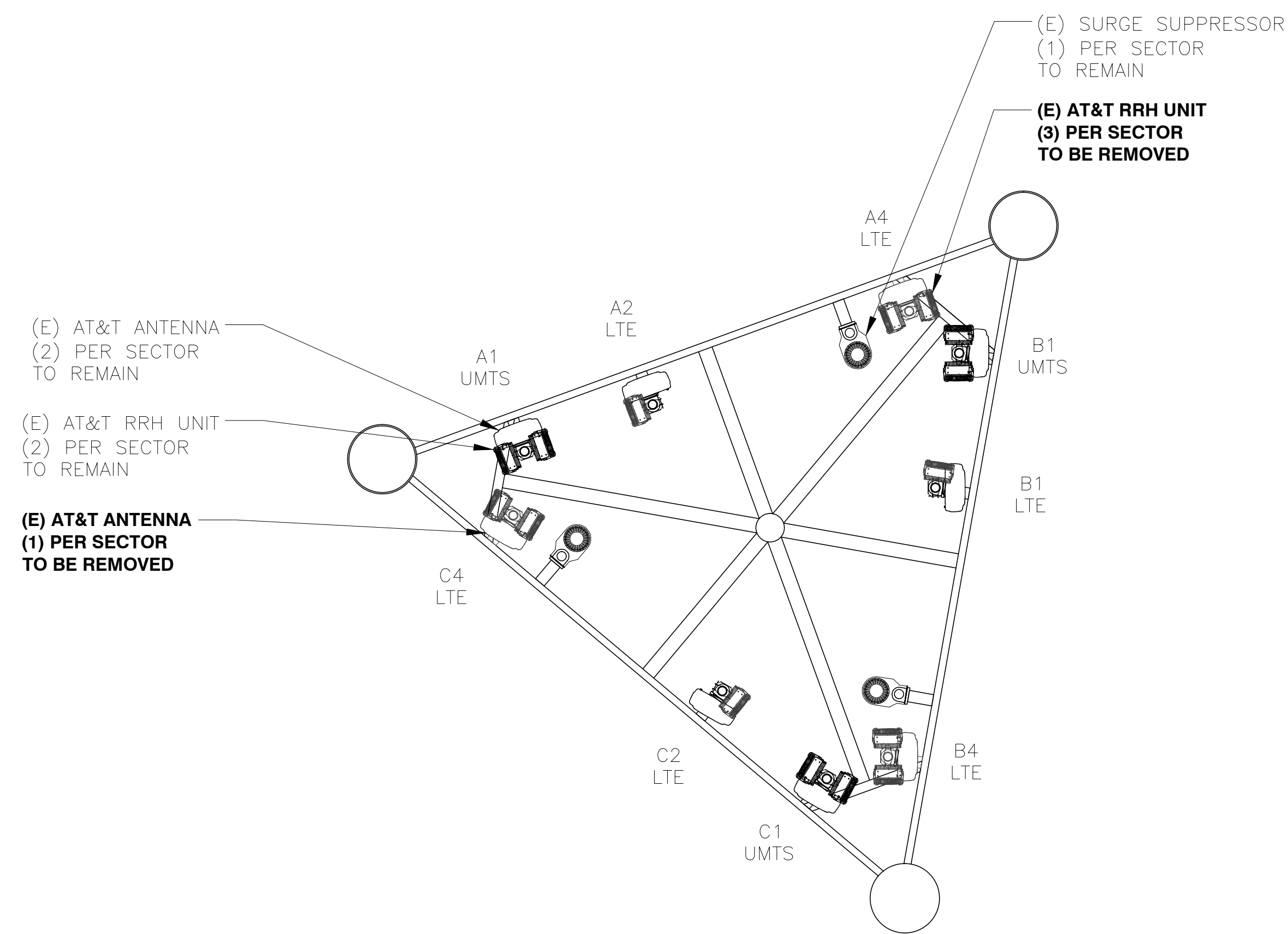
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 WIDEFIELD WATER TANK RELO

SEAL

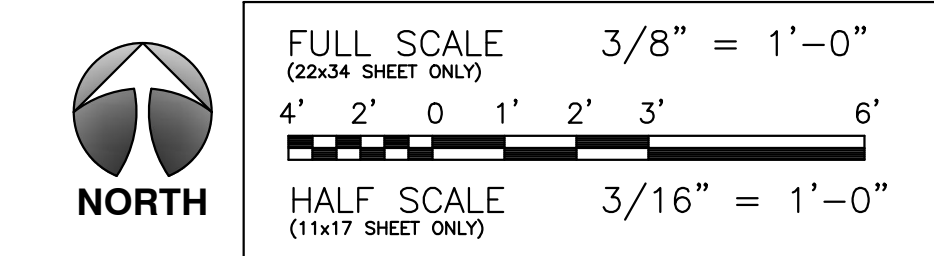
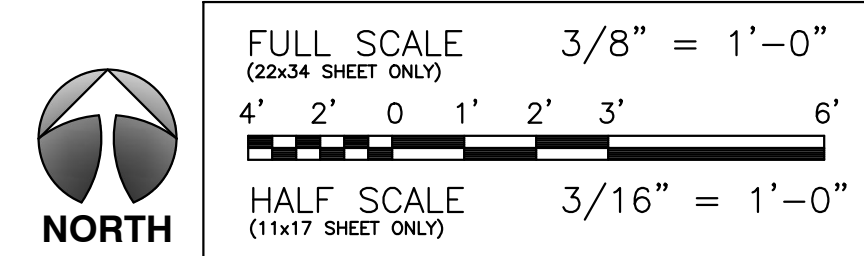
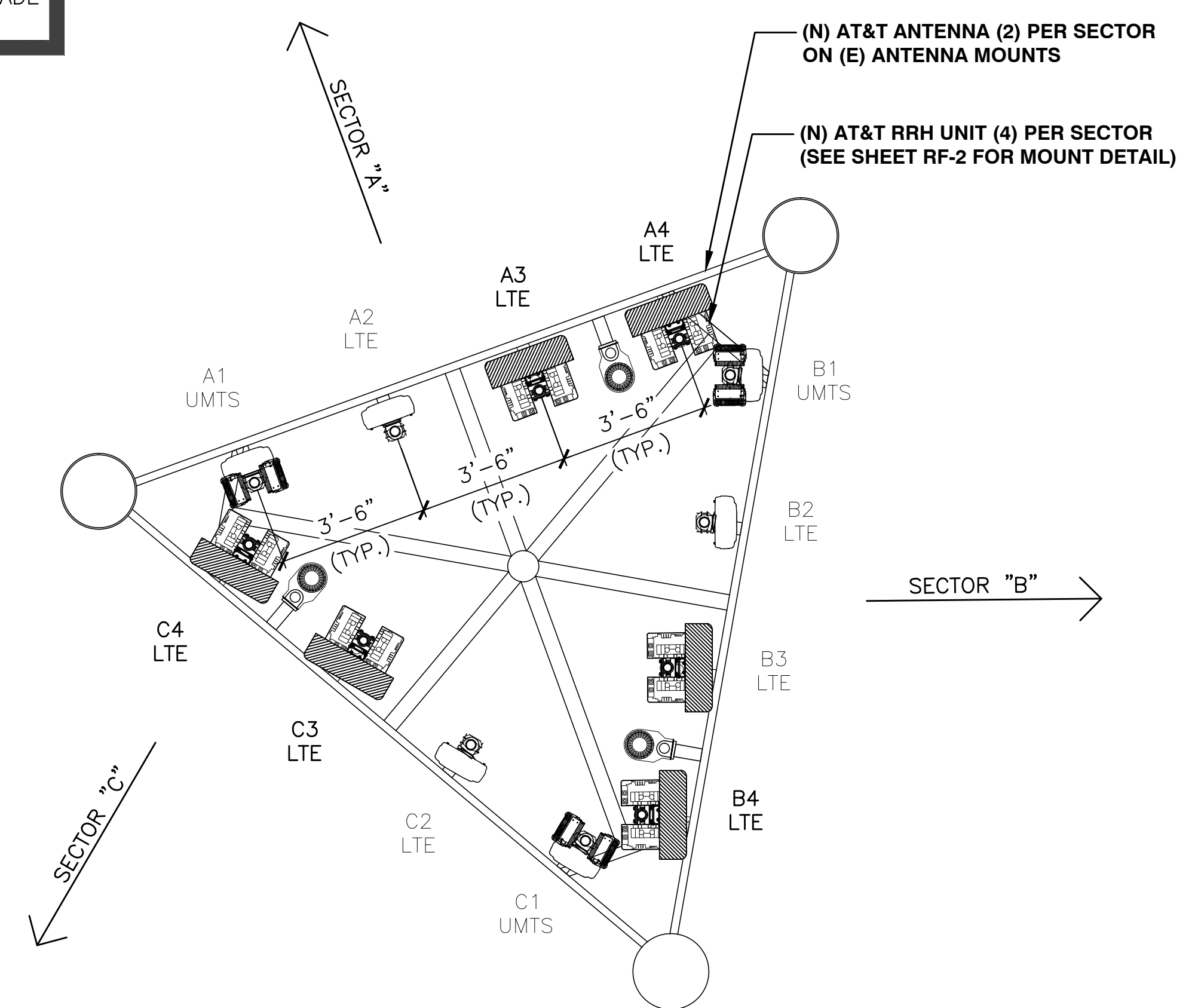


EXISTING ANTENNAS AND COAX CONFIGURATION AND SCHEDULE

NEW ANTENNA AND COAX CONFIGURATION AND SCHEDULE



NOTE:  
 ANTENNA MOUNT ANALYSIS IS BY  
 WYCO. GC TO ENSURE THAT ANY  
 MOUNT MODIFICATIONS ARE MADE  
 PRIOR TO INSTALLATION.



EXISTING ANTENNA CONFIGURATION

NEW ANTENNA CONFIGURATION

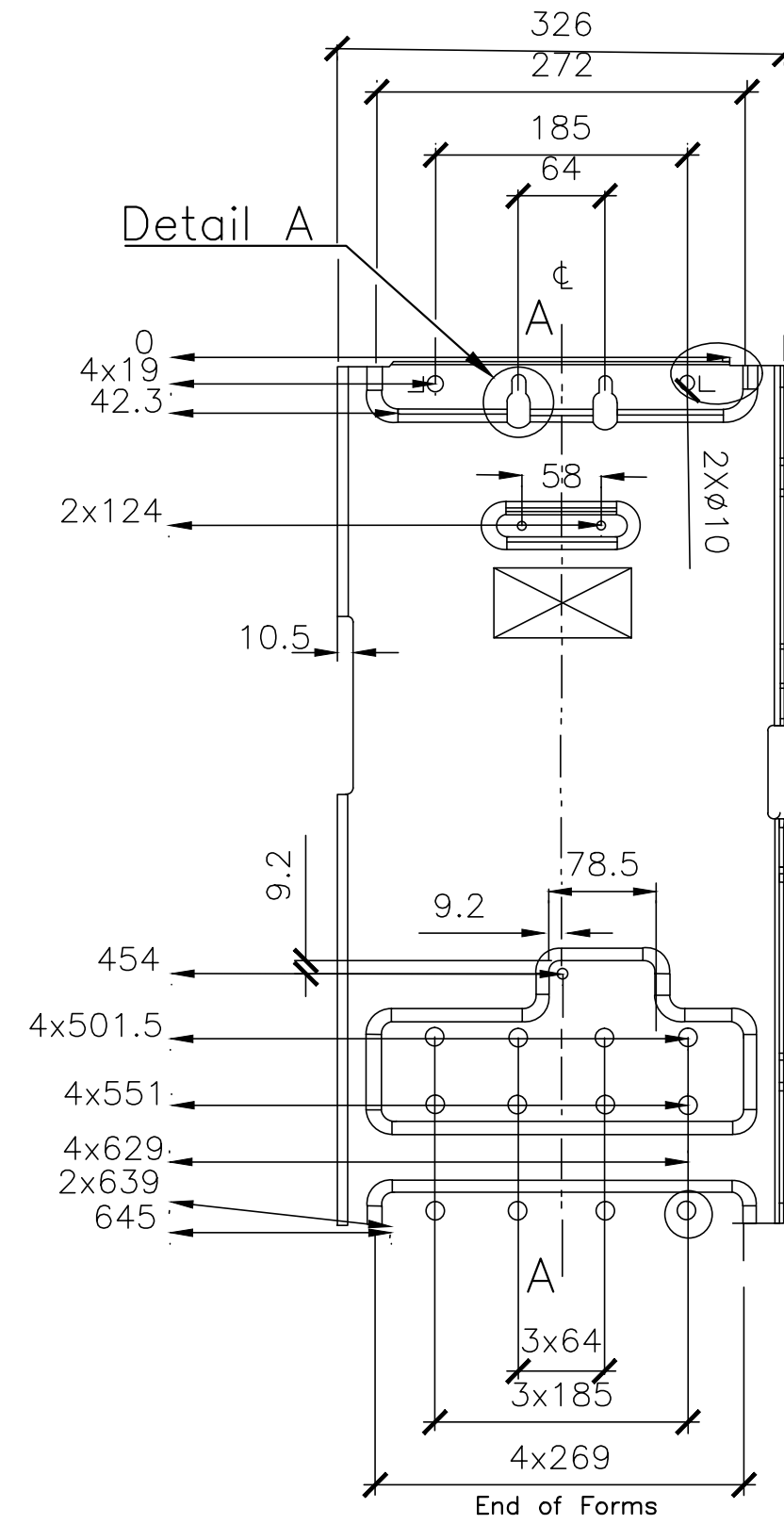
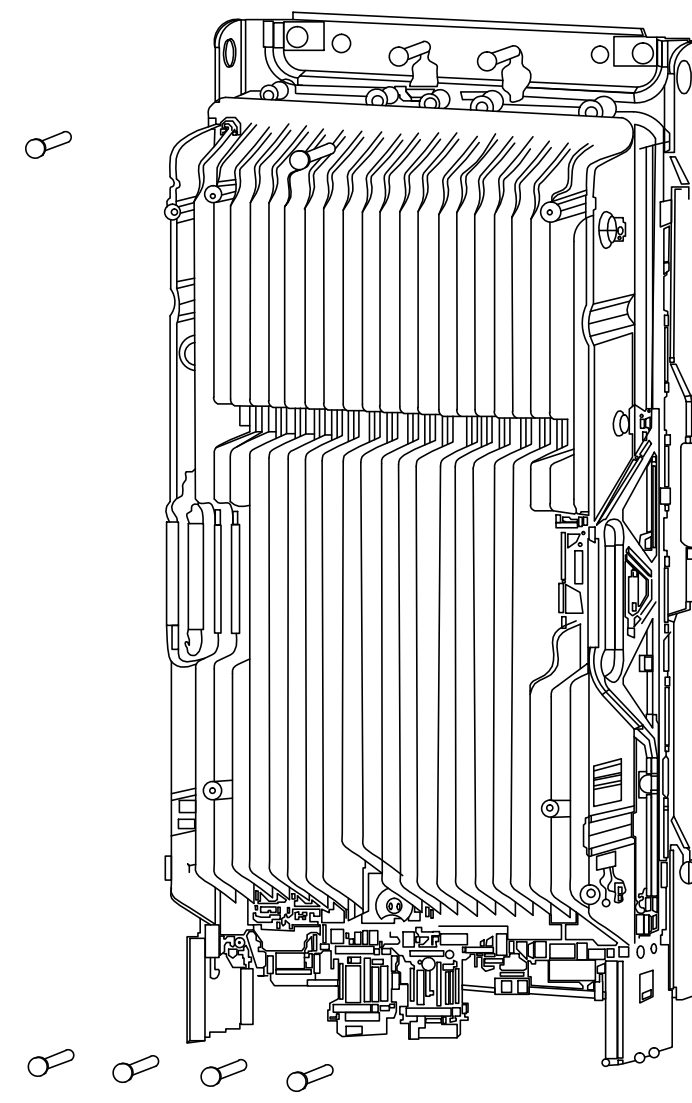
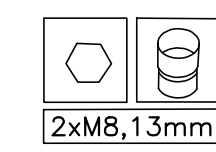
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B	07/27/18	CX READY RFDS UPDATE
C	08/27/18	CLIENT COMMENTS
0	10/29/18	SUBMITTAL CONSTRUCTION DRAWINGS
1	12/14/18	REVISED RFDS
2	02/04/19	JDX COMMENTS

SHEET TITLE  
**EXISTING & NEW  
 ANTENNA CONFIGURATION**

SHEET NUMBER  
**RF-1**

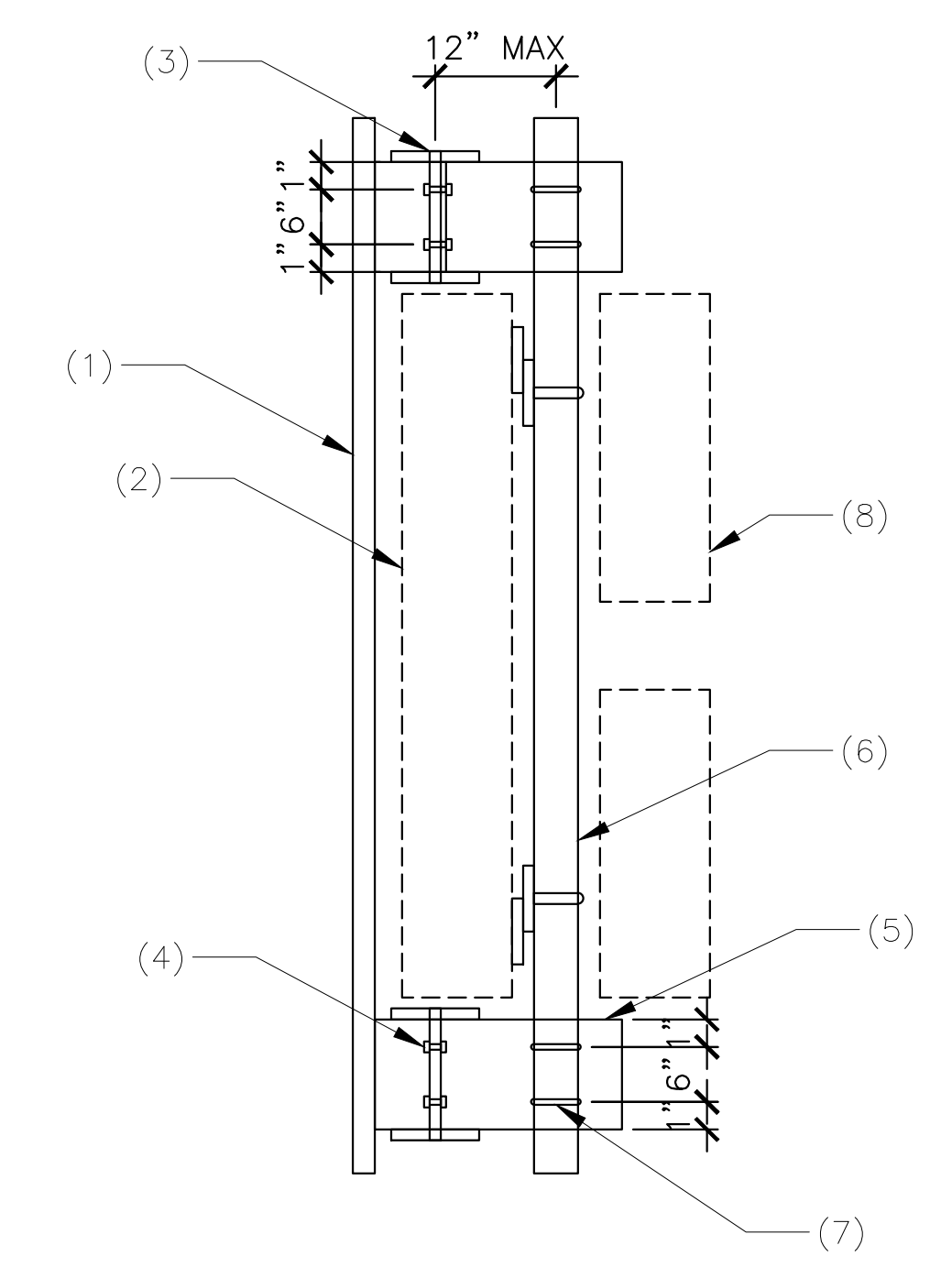
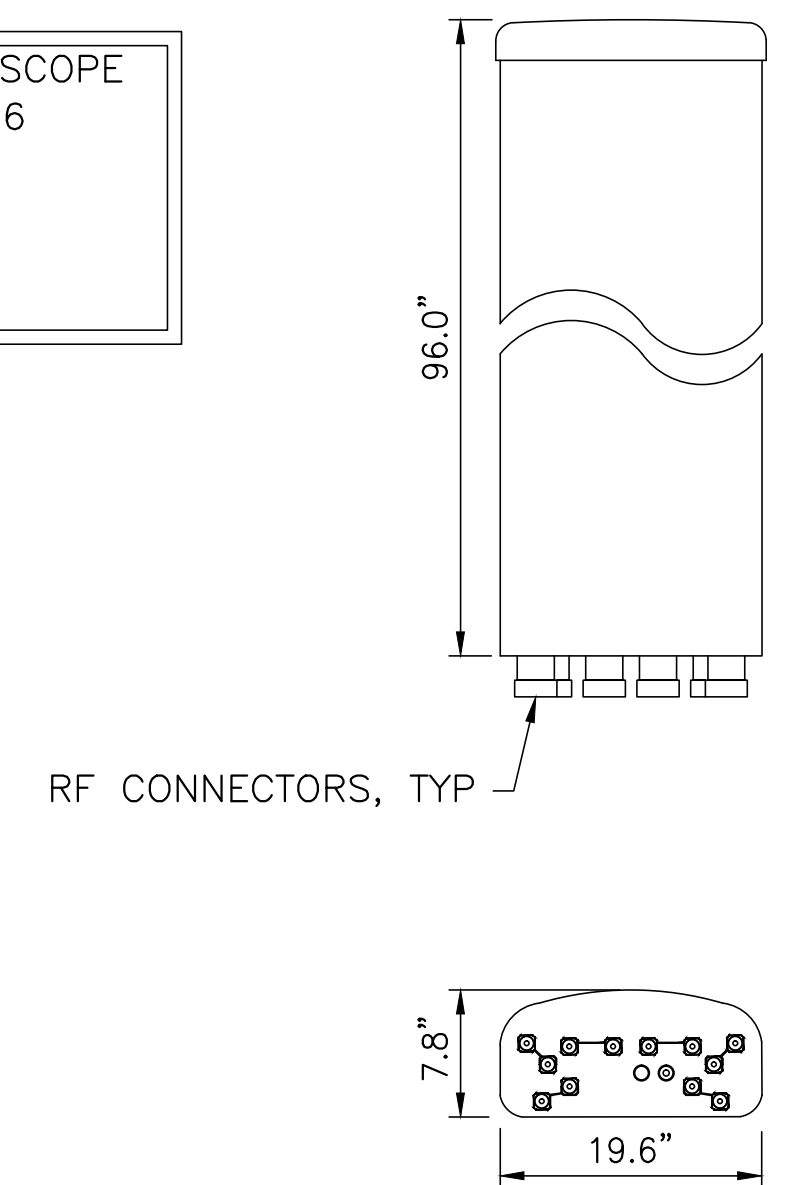


AHFIB  
Figure 45 Fixing six M8 screws.



MANUFACTURER: COMMSCOPE  
PART #: NNH4-65C-R6  
LENGTH: 96.0"  
WIDTH: 19.6"  
DEPTH: 7.8"  
WEIGHT: 99.2 lbs.

\* OR SIMILAR



- NOTES:
- EXISTING CLOCK TOWER SCREENING
  - NEW ANTENNA - INSTALL PER MANUFACTURER
  - EXISTING W10X15 BEAM
  - (2) 1/4" A307 THRU BOLT
  - 3/8"X4"X14" A36 STEEL BENT PLATE
  - 2" STD SCH 40 PIPE
  - 1/2" A307 U-BOLT
  - NEW RRH - INSTALL PER MANUFACTURER

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where quality still counts.  
2227 W. PECOS ROAD, SUITE 4,  
CHANDLER AZ 85224

ADDRESS  
82 WIDEFIELD BLVD  
COLORADO SPRINGS, CO 80911

SITE NUMBER  
COLO2359

SITE NAME  
WIDEFIELD WATER TANK RELO

SEAL

NOALBSED RRH MOUNTING

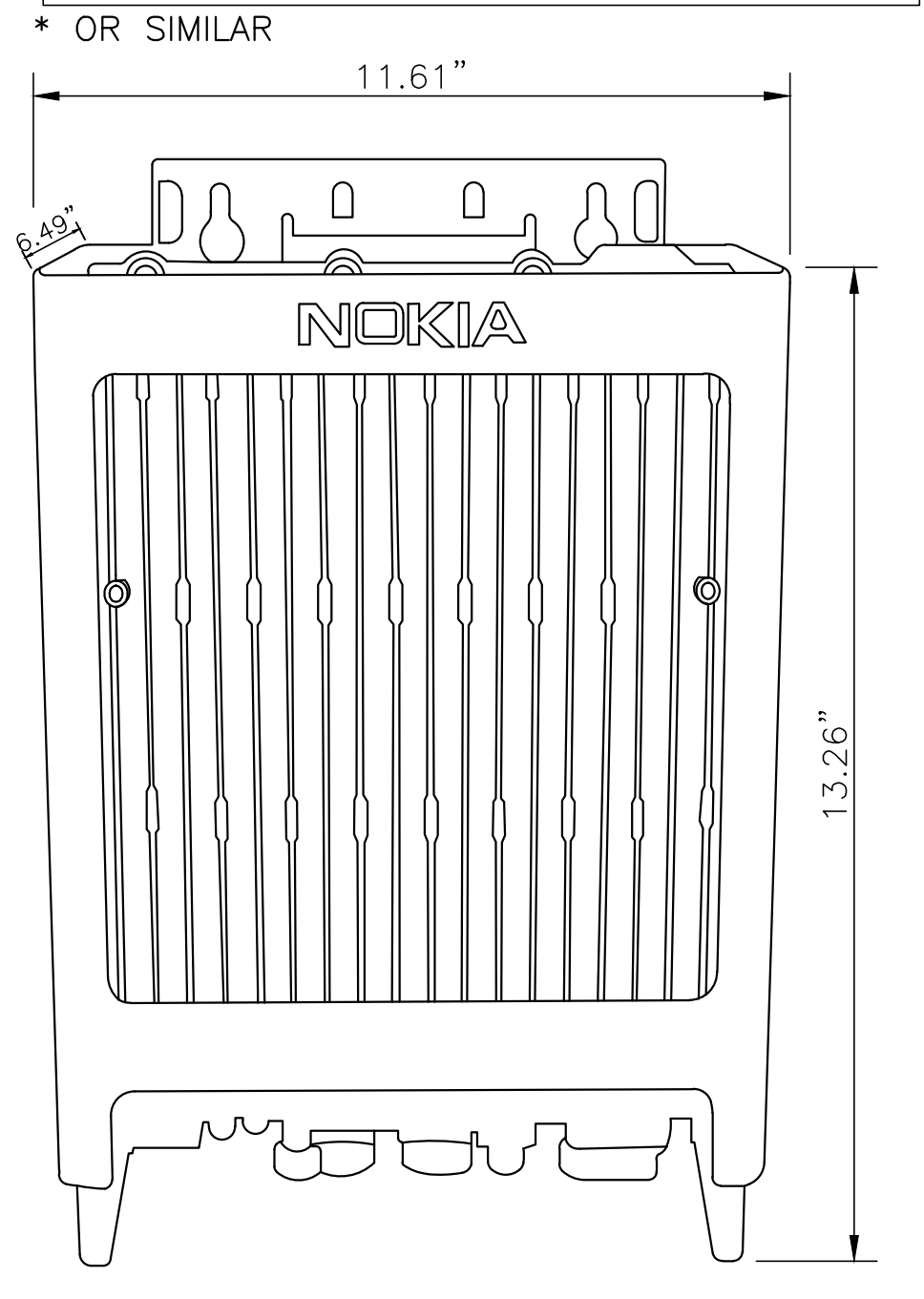
7 NEW ANTENNA DETAIL

6 NOT USED

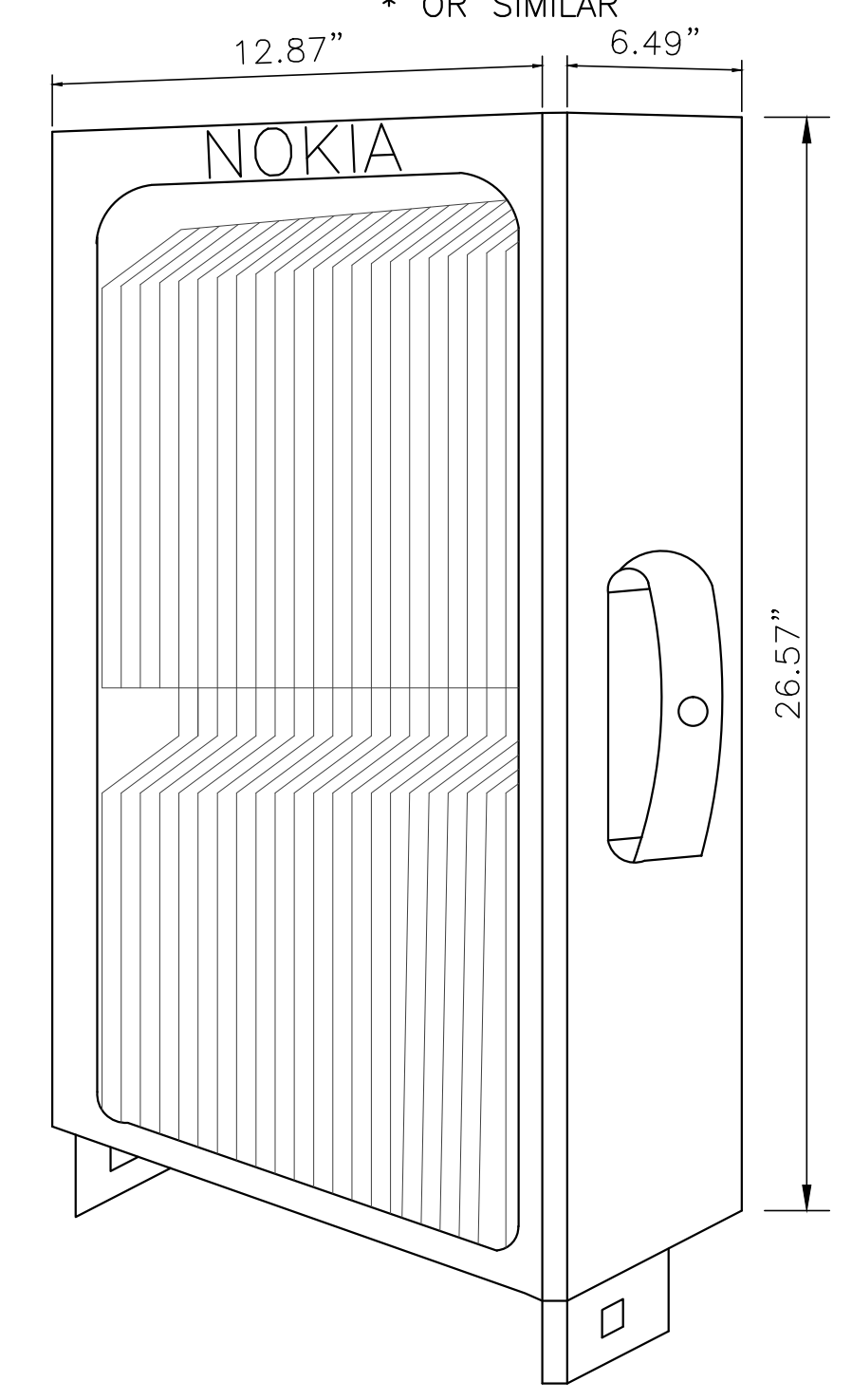
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FTTA POWER CALC SUMMARY		
MAXIMUM TRUNK CABLE LENGTH	MAXIMUM CURRENT	ALLOWABLE VOLTAGE DROP
241'	33A	12V
INPUT VALUES		
MAX RRU DC POWER CONSUMPTION	1200 W	
TRUNK CONDUCTOR SIZE	8 AWG	
JUMPER CONDUCTOR SIZE	8 AWG	
JUMPER LENGTH	15'	
MAXIMUM TEMPERATURE	50 °C	
SUPPLY VOLTAGE	48 V	
MINIMUM RRH VOLTAGE	36 V	
ALLOWABLE VOLTAGE DROP	12 V	

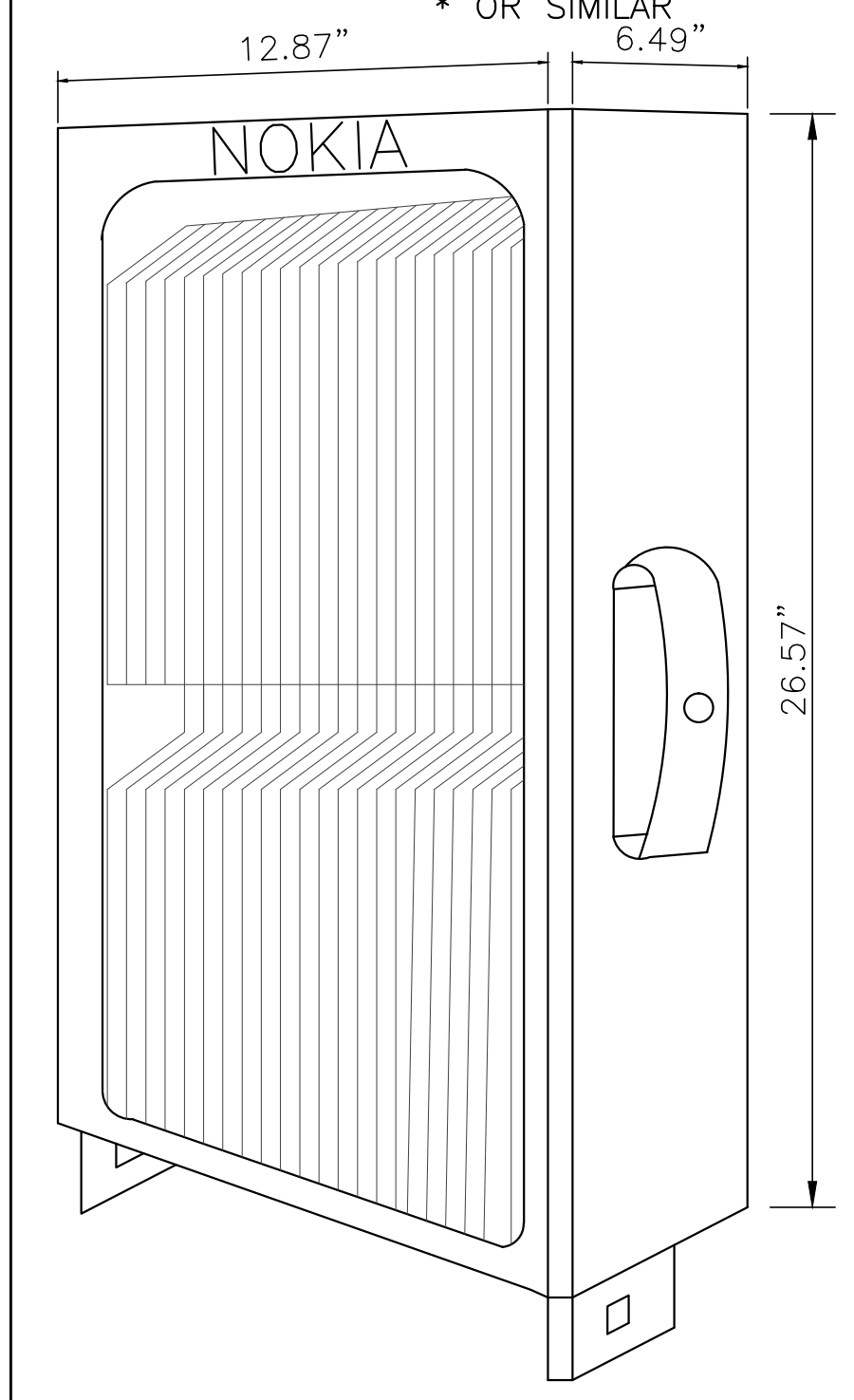
MANUFACTURER: NOKIA  
MODEL: AIRSCALE RRH 4T4R B5 160W  
HEIGHT: 13.26" (337mm)  
WIDTH: 11.61" (295mm)  
DEPTH: 6.49" (165mm)  
WEIGHT: 36.82 LBS (16.7KG)



MANUFACTURER: NOKIA  
MODEL: AIRSCALE RRH 4T4R B12/B14 320W  
HEIGHT: 26.57" (675mm)  
WIDTH: 12.87" (327mm)  
DEPTH: 6.49" (165mm)  
WEIGHT: <101.41 LBS (46.0KG)



MANUFACTURER: NOKIA  
MODEL: AIRSCALE RRH 4T4R B25/B66 320W  
HEIGHT: 26.57" (675mm)  
WIDTH: 12.87" (327mm)  
DEPTH: 6.49" (165mm)  
WEIGHT: <88.18 LBS (40.0KG)



FTTA POWER CALC SUMMARY TABLE

4 NEW RRH DETAIL

3 NEW RRH DETAIL

2 NEW RRH DETAIL

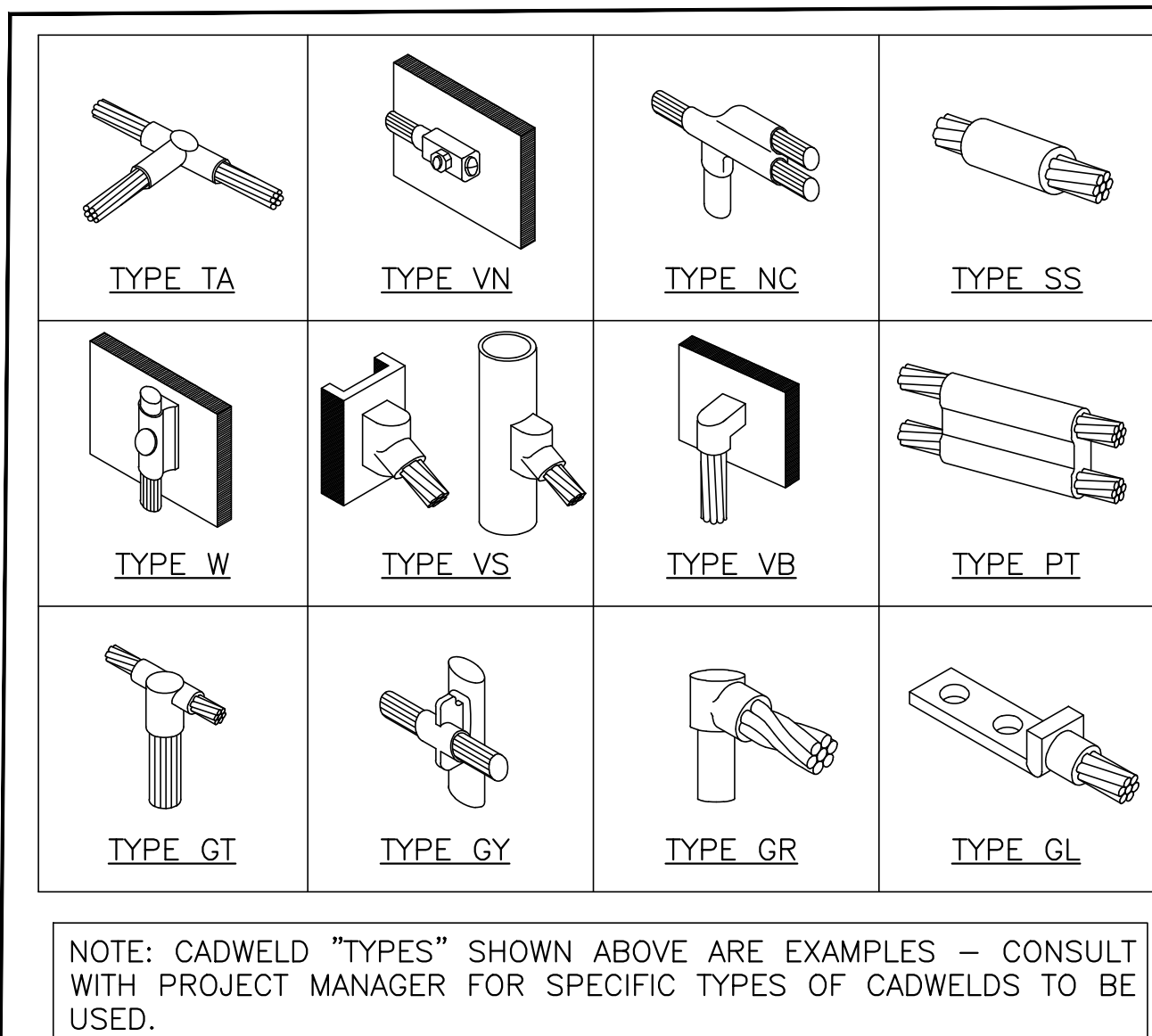
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DRAWN BY: CW	CHECKED BY: CW	APPROVED BY: CW	FA #: 13380989					
			REV	DATE				
			A	07/20/18				
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1	12/14/18							
2	02/04/19							
DESCRIPTION			PRELIMINARY CONSTRUCTION DRAWINGS	CX READY RFDS UPDATE	CLIENT COMMENTS	SUBMITTAL CONSTRUCTION DRAWINGS	REVISED RFDS	JDX COMMENTS

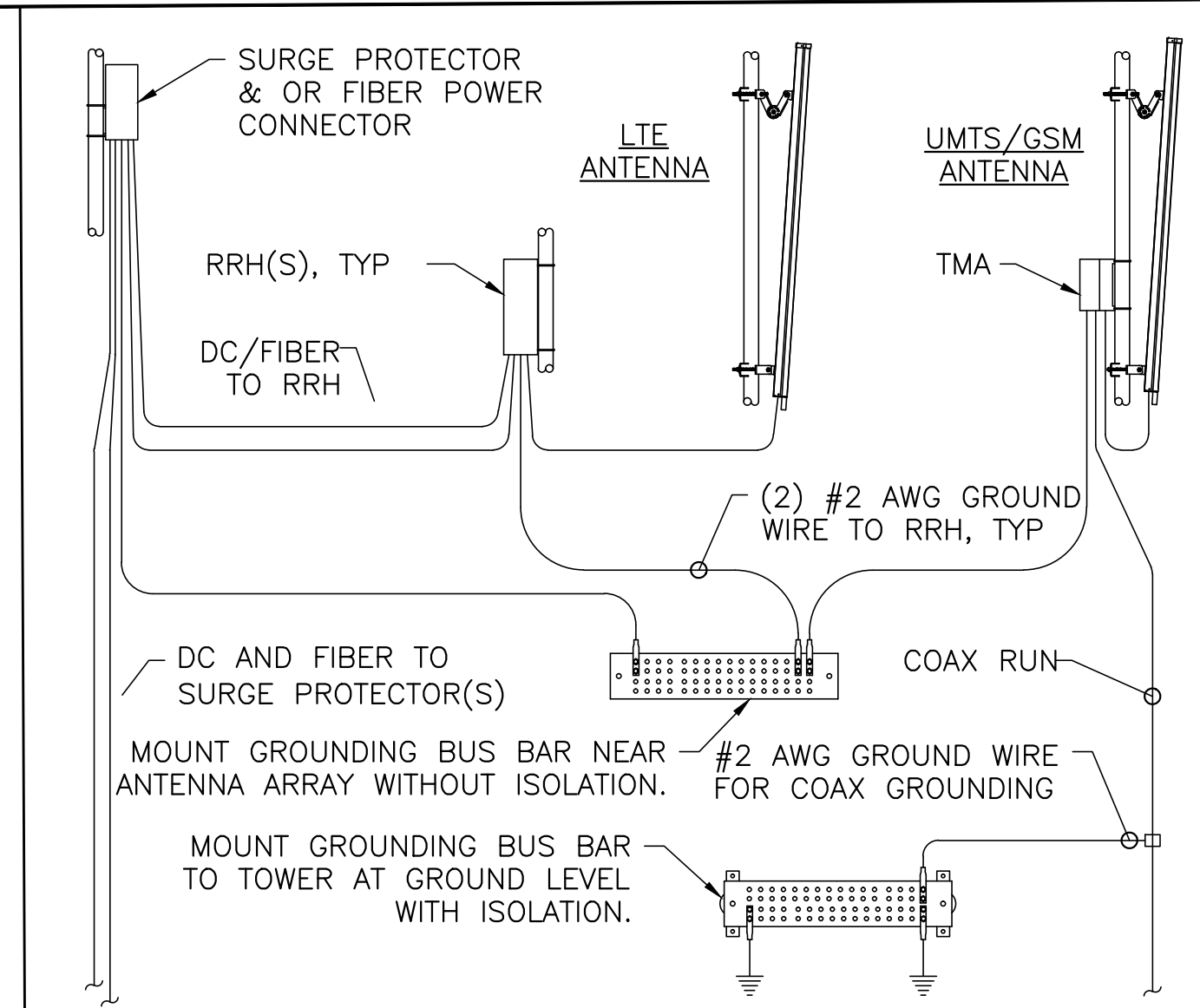
SHEET TITLE  
**RF & EQUIPMENT DETAILS**

SHEET NUMBER  
**RF-2**



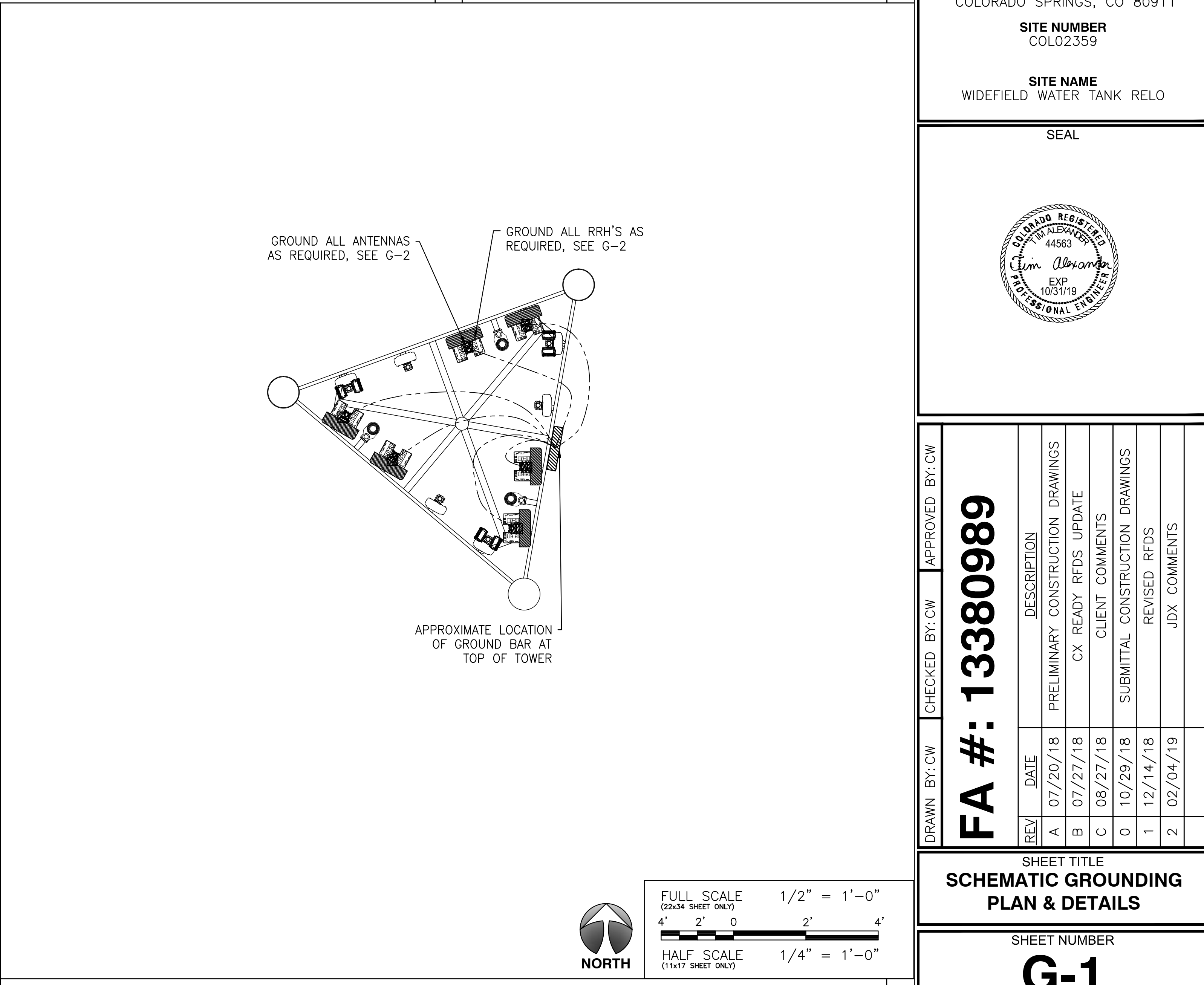
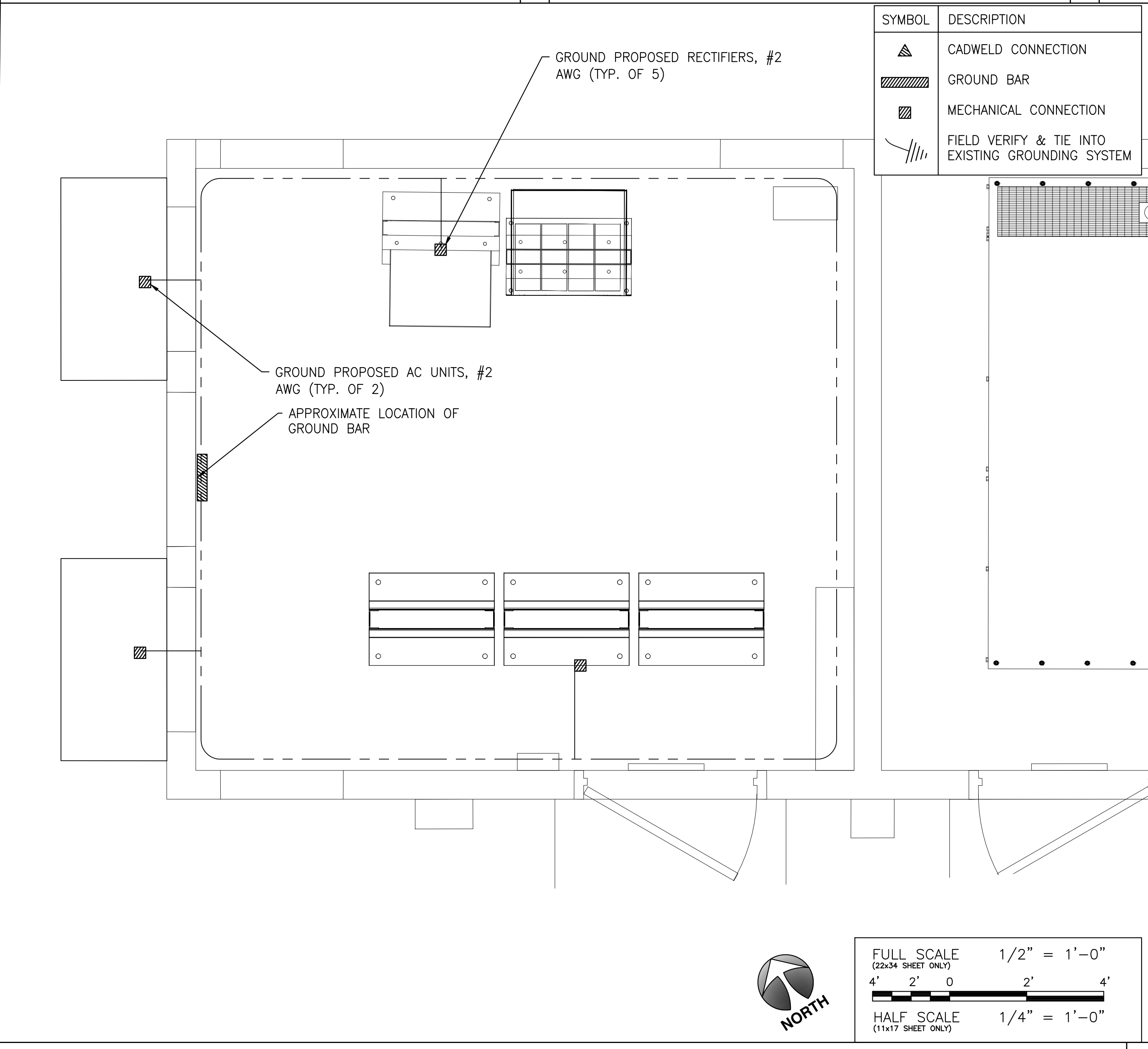


NOTE: CADWELD "TYPES" SHOWN ABOVE ARE EXAMPLES - CONSULT WITH PROJECT MANAGER FOR SPECIFIC TYPES OF CADWELDS TO BE USED.



- GENERAL GROUNDING NOTES:**
1. ALL DETAILS ARE SHOWN IN GENERAL TERMS. ACTUAL INSTALLATION AND CONSTRUCTION MAY VARY DUE TO SITE SPECIFIC CONDITIONS.
  2. GROUND ALL ANTENNA BASES, FRAMES, CABLE RUNS, AND OTHER METALLIC COMPONENTS USING GROUND WIRES AND CONNECT TO SURFACE MOUNTED BUS BARS. FOLLOW ANTENNA AND BTS MANUFACTURERS PRACTICES FOR GROUNDING REQUIREMENTS. GROUND COAX SHIELD AT BOTH ENDS AND EXIT FROM TOWER OR POLE USING MFR'S PRACTICES.
  3. ALL WIRES SHALL BE COPPER THHN/THWN. ALL GROUND WIRE SHALL BE GREEN INSULATED WIRE ABOVE GROUND.
  4. CONTRACTOR TO VERIFY AND TEST GROUND TO SOURCE. GROUNDING AND OTHER OPERATIONAL TESTING WILL BE WITNESSED BY AT&T REPRESENTATIVE.
  5. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

6	CAD WELD EXAMPLES	5	ANTENNA GROUNDING DIAGRAM	4	GROUNDING NOTES	3	NOT USED
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2	GROUNDING PLAN	1	ANTENNA PLAN
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SHEET TITLE  
**SCHEMATIC GROUNDING  
PLAN & DETAILS**

SHEET NUMBER  
**G-1**