



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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VIA ELECTRONIC MAIL

March 14, 2019

Nora Oliver
Empire Telecom USA, LLC
16 Esquire Road
Billerica, MA 01862

RE: **EM-AT&T-051-190204** – AT&T notice of intent to modify an existing telecommunications facility located at 100 Reef Road, Fairfield, Connecticut.

Dear Ms. Oliver:

The Connecticut Siting Council (Council) is in receipt of your correspondence of March 1, 2019 and March 6, 2019 submitted in response to the Council's February 27, 2019 and March 4, 2019 notification of an incomplete request for exempt modification with regard to the above-referenced matter.

The submission renders the request for exempt modification complete and the Council will process the request in accordance with the Federal Communications Commission 60-day timeframe.

Thank you for your attention and cooperation.

Sincerely,

A handwritten signature in blue ink, appearing to read "Melanie A. Bachman".

Melanie A. Bachman
Executive Director

MAB/IN/emr

Robidoux, Evan

From: Nora Oliver <noliver@empiretelecomm.com>
Sent: Wednesday, March 06, 2019 2:51 PM
To: Robidoux, Evan
Cc: CSC-DL Siting Council
Subject: Council 2nd Incomplete Letter for EM-AT&T-051-190204-ReefRd-Fairfield
Attachments: 18000.61 CT5022 Fairfield PD LTE 3C_4C_5C_6C_5G 850 - Rev1 CDs 19.03.06pdf

Hello,

Per the 2nd Incomplete Notice Letter please find attached the revised Plans.

I apologize for not including these on the previous email.

Please let me know if you have any questions.

Thank you
Nora

Nora Oliver
Empire Telecom USA
16 Esquire Road
Billerica, MA 01862
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Office: 978-608-8424
Email: Noliver@EmpireTelecomm.com
Website: <http://empiretelecomm.com/>

EMPIRE
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From: Robidoux, Evan [mailto:Evan.Robidoux@ct.gov]
Sent: Wednesday, March 6, 2019 9:34 AM
To: Nora Oliver <noliver@empiretelecomm.com>
Cc: CSC-DL Siting Council <Siting.Council@ct.gov>
Subject: Council 2nd Incomplete Letter for EM-AT&T-051-190204-ReefRd-Fairfield

Please see the attached correspondence.



WIRELESS COMMUNICATIONS FACILITY

CT5022 - LTE 3C WCS/4C AWS/5C 700 UPPER D/6C 5G 850

FAIRFIELD

100 REEF ROAD

FAIRFIELD, CT 06824

GENERAL NOTES

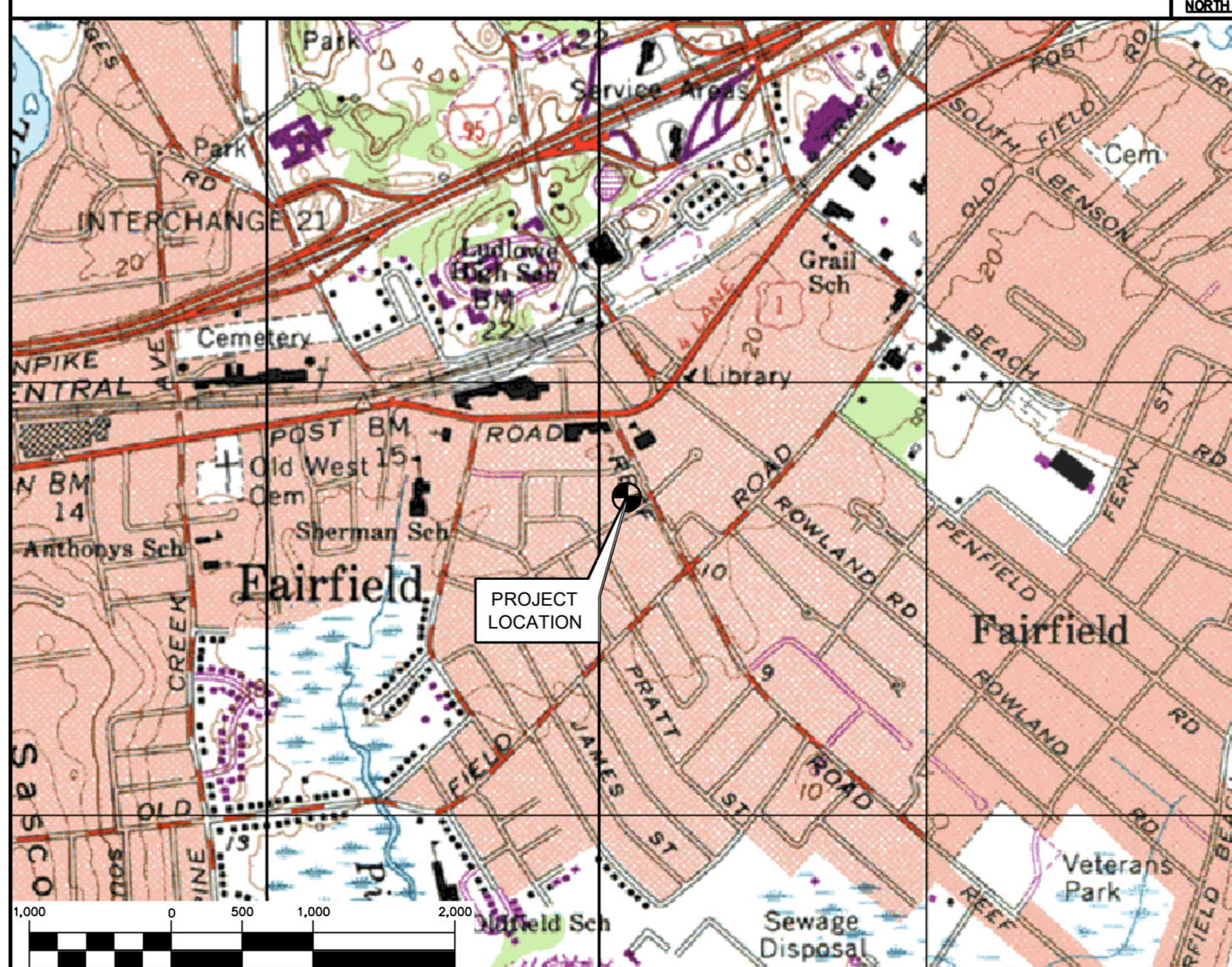
1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2015 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2018 CONNECTICUT STATE BUILDING CODE, INCLUDING THE TIA-222 REVISION "G" STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES, 2016 CONNECTICUT FIRE SAFETY CODE AND, NATIONAL ELECTRICAL CODE AND LOCAL CODES.
2. THE COMPOUND, TOWER, PRIMARY GROUND RING, ELECTRICAL SERVICE TO THE METER BANK AND TELEPHONE SERVICE TO THE DEMARCATION POINT ARE PROVIDED BY SITE OWNER. AS BUILT FIELD CONDITIONS REGARDING THESE ITEMS SHALL BE CONFIRMED BY THE CONTRACTOR. SHOULD ANY FIELD CONDITIONS PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH ANY AFFECTED WORK.
3. CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
4. CONTRACTOR SHALL PROVIDE A COMPLETE BUILD-OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS AND PROVIDE ALL ITEMS AS SHOWN OR INDICATED ON THE DRAWINGS OR IN THE WRITTEN SPECIFICATIONS.
5. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH LOCAL AND STATE GOVERNING AUTHORITIES AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.
6. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND ALL INSPECTIONS REQUIRED AND SHALL ALSO PAY FEES REQUIRED FOR THE GENERAL CONSTRUCTION, PLUMBING, ELECTRICAL AND HVAC. PERMITS SHALL BE PAID FOR BY THE RESPECTIVE SUBCONTRACTORS.
7. CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON SITE AT ALL TIMES AND INSURE DISTRIBUTION OF NEW DRAWINGS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. THE CONTRACTOR SHALL FURNISH AN "AS-BUILT" SET OF DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.
8. LOCATION OF EQUIPMENT, AND WORK SUPPLIED BY OTHERS THAT IS DIAGRAMMATICALLY INDICATED ON THE DRAWINGS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE LOCATIONS AND DIMENSIONS SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF THE SUBCONTRACTORS.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY. MAINTAIN EXISTING BUILDING'S/PROPERTY'S OPERATIONS, COORDINATE WORK WITH BUILDING/PROPERTY OWNER.
10. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
11. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
12. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY CONDITION PER MFR.'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
13. ANY AND ALL ERRORS, DISCREPANCIES, AND 'MISSED' ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF THE AT&T CONSTRUCTION MANAGER DURING THE BIDDING PROCESS BY THE CONTRACTOR. ALL THESE ITEMS ARE TO BE INCLUDED IN THE BID. NO 'EXTRA' WILL BE ALLOWED FOR MISSED ITEMS.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.
15. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE CONSTRUCTION MANAGER FOR REVIEW.
16. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES, AND EXISTING CONDITIONS AT THE SITE, PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.
17. COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUIT AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
18. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUB-CONTRACTORS FOR ANY CONDITION PER THE MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
19. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
20. THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" AT LEAST 48 HOURS PRIOR TO ANY EXCAVATIONS AT 1-800-922-4455. ALL UTILITIES SHALL BE IDENTIFIED AND CLEARLY MARKED PRIOR TO ANY EXCAVATION WORK. CONTRACTOR SHALL MAINTAIN AND PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.
21. CONTRACTOR SHALL COMPLY WITH OWNERS ENVIRONMENTAL ENGINEER ON ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES INCLUDING SOIL DISPOSAL. ALL BACKFILL MATERIALS TO BE PROVIDED BY THE CONTRACTOR.

SITE DIRECTIONS

FROM:	TO:
500 ENTERPRISE DRIVE ROCKY HILL, CONNECTICUT	100 REEF ROAD FAIRFIELD, CONNECTICUT
1. TURN LEFT ONTO CAPITAL BLVD.	0.36 MI
2. TURN LEFT ONTO WEST ST.	0.27 MI
3. TURN LEFT TO MERGE ONTO I-91 S TOWARD NEW HAVEN.	0.30 MI
4. TAKE EXIT 17 FOR CT-15 S/W CROSS PKWY.	9.59 MI
5. TAKE EXIT 52 FOR CT- 8 S.	30.24 MI
6. MERGE ONTO CT-8 S VIA EXIT 52 TOWARD BRIDGEPORT.	5.93 MI
7. MERGE ONTO I-95 S TOWARD NY CITY.	4.50 MI
8. TAKE THE MILL PLAIN ROAD EXIT, EXIT 21.	0.26 MI
9. TURN LEFT ONTO MILL PLAIN RD.	0.32 MI
10. TURN LEFT ONTO POST RD/US-1 N.	0.29 MI
11. TURN RIGHT ONTO REEF RD.	0.11 MI

VICINITY MAP

SCALE: 1" = 1000'



PROJECT SUMMARY

1. THE PROPOSED SCOPE OF WORK CONSISTS OF A MODIFICATION TO THE EXISTING UNMANNED TELECOMMUNICATIONS FACILITY INCLUDING THE FOLLOWING:
 - A. AT ANTENNA SECTORS:
 - REMOVE (3) EXISTING ANTENNAS AT POS.4 (1 PER SECTOR)
 - RELOCATE (3) EXISTING ANTENNAS FROM POS.3 TO POS.2
 - INSTALL (3) NEW 8-PORT ANTENNAS AT POS.3 (1 PER SECTOR)
 - INSTALL (3) NEW 6-PORT ANTENNAS AT POS.4 (1 PER SECTOR)
 - INSTALL (3) NEW B14 4478 ASSIGNED TO POS.3 (1 PER SECTOR)
 - INSTALL (3) NEW 4478 B5 ASSIGNED TO POS.3 (1 PER SECTOR)
 - INSTALL (3) NEW 4426 B66 ASSIGNED TO POS.3 (1 PER SECTOR)
 - INSTALL (3) NEW RRUS-32 ASSIGNED TO POS.4 (1 PER SECTOR)
 - INSTALL (6) NEW LOW-BAND COMBINERS AT POS.3 (2 PER SECTOR)
 - INSTALL (1) NEW DC FIBER SQUID
 - INSTALL (1) NEW DC SQUID ONLY
 - INSTALL (6) NEW SWIVEL MOUNTS AT POS.3 & POS.4 (2) PER SECTOR)
 - INSTALL (4) DC CABLES
 - INSTALL (1) 18 PAIR FIBER CABLES
 - B. AT THE EQUIPMENT SHELTER
 - REMOVE (12) EXISTING DIPLEXERS
 - REMOVE (6) EXISTING RRUW'S
 - REMOVE AND DECOMMISSION (2) EXISTING GSM EQUIP. CABINETS
 - INSTALL (3) NEW LOWBAND COMBINERS
 - REMOVE EXISTING BBU WITH 2x 5216 UNITS
 - INSTALL 2ND XMU+IDLE
 - INSTALL (1) NEW RBS 6630
 - INSTALL (1) NEW DC-12-48-60-25E

PROJECT INFORMATION

AT&T SITE NUMBER:	CT5022
AT&T SITE NAME:	FAIRFIELD
SITE ADDRESS:	100 REEF ROAD FAIRFIELD, CT 06824
LESSEE/APPLICANT:	AT&T MOBILITY 500 ENTERPRISE DRIVE, SUITE 3A ROCKY HILL, CT 06067
AT&T PACE ID NUMBER:	PACE JOB 1 - MRCTB031119 PACE JOB 2 - MRCTB031921 PACE JOB 3 - MRCTB031461 PACE JOB 4 - MRCTB031662
AT&T FA LOCATION CODE:	10108711
ENGINEER:	CEN TEK ENGINEERING, INC. 63-2 NORTH BRANFORD RD. BRANFORD, CT 06405
PROJECT COORDINATES:	LATITUDE: 41°-08'-22.53" N LONGITUDE: 73°-15'-26.54" W GROUND ELEVATION: ±12' AMSL SITE COORDINATES AND GROUND ELEVATION REFERENCED FROM GOOGLE EARTH.

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PROFESSIONAL ENGINEER SEAL



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AT&T MOBILITY
WIRELESS COMMUNICATIONS FACILITY
FAIRFIELD
CT5022 - LTE 3C/4C/5C/6C 5G 850
100 REEF ROAD
FAIRFIELD, CT 06824

DATE: 08/27/18
SCALE: AS NOTED
JOB NO. 18000.61

TITLE SHEET

T-1
Sheet No. 1 of 8

REV.	DATE	BY	CHK'D	DESCRIPTION
1	3/6/19	TJL		
0	10/17/18	DMD		

CAG	CONSTRUCTION DRAWINGS	REVISED CODE REFERENCE

NOTES AND SPECIFICATIONS

DESIGN BASIS:

GOVERNING CODE: 2015 INTERNATIONAL BUILDING (IBC) AS MODIFIED BY THE 2018 CT STATE BUILDING CODE AND AMENDMENTS.

DESIGN CRITERIA:

- WIND LOAD: PER TIA 222 G (ANTENNA MOUNTS): 90-110 MPH (3 SECOND GUST)
- RISK CATEGORY: II (BASED ON IBC TABLE 1604.5)
- NOMINAL DESIGN SPEED (OTHER STRUCTURE): 97 MPH (V_{asd}) (EXPOSURE B/IMPORTANCE FACTOR 1.0 BASED ON ASCE 7-10) PER 2015 INTERNATIONAL BUILDING CODE (IBC) AS MODIFIED BY THE 2018 CONNECTICUT STATE BUILDING CODE.
- SEISMIC LOAD (DOES NOT CONTROL): PER ASCE 7-10 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES.

GENERAL NOTES:

- ALL CONSTRUCTION SHALL BE IN COMPLIANCE WITH THE GOVERNING BUILDING CODE.
- DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
- BEFORE BEGINNING THE WORK, THE CONTRACTOR IS RESPONSIBLE FOR MAKING SUCH INVESTIGATIONS CONCERNING PHYSICAL CONDITIONS (SURFACE AND SUBSURFACE) AT OR CONTIGUOUS TO THE SITE WHICH MAY AFFECT PERFORMANCE AND COST OF THE WORK.
- DIMENSIONS AND DETAILS SHALL BE CHECKED AGAINST EXISTING FIELD CONDITIONS.
- THE CONTRACTOR SHALL VERIFY AND COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS, SLEEVES AND ANCHOR BOLTS AS REQUIRED BY ALL TRADES.
- ALL DIMENSIONS, ELEVATIONS, AND OTHER REFERENCES TO EXISTING STRUCTURES, SURFACE, AND SUBSURFACE CONDITIONS ARE APPROXIMATE. NO GUARANTEE IS MADE FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS, ELEVATIONS, ANGLES WITH EXISTING CONDITIONS AND WITH ARCHITECTURAL AND SITE DRAWINGS BEFORE PROCEEDING WITH ANY WORK.
- AS THE WORK PROGRESSES, THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY CONDITIONS WHICH ARE IN CONFLICT OR OTHERWISE NOT CONSISTENT WITH THE CONSTRUCTION DOCUMENTS AND SHALL NOT PROCEED WITH SUCH WORK UNTIL THE CONFLICT IS SATISFACTORILY RESOLVED.
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING AND MAINTAINING ADEQUATE SHORING, BRACING, AND BARRICADES AS MAY BE REQUIRED FOR THE PROTECTION OF EXISTING PROPERTY, CONSTRUCTION WORKERS, AND FOR PUBLIC SAFETY.
- THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY. MAINTAIN EXISTING SITE OPERATIONS, COORDINATE WORK WITH NORTHEAST UTILITIES
- THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER FOUNDATION REMEDIATION WORK IS COMPLETE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, TEMPORARY BRACING, GUYS OR TIEDOWNS, WHICH MIGHT BE NECESSARY.
- ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
- SHOP DRAWINGS, CONCRETE MIX DESIGNS, TEST REPORTS, AND OTHER SUBMITTALS PERTAINING TO STRUCTURAL WORK SHALL BE FORWARDED TO THE OWNER FOR REVIEW BEFORE FABRICATION AND/OR INSTALLATION IS MADE. SHOP DRAWINGS SHALL INCLUDE ERECTION DRAWINGS AND COMPLETE DETAILS OF CONNECTIONS AS WELL AS MANUFACTURER'S SPECIFICATION DATA WHERE APPROPRIATE. SHOP DRAWINGS SHALL BE CHECKED BY THE CONTRACTOR AND BEAR THE CHECKER'S INITIALS BEFORE BEING SUBMITTED FOR REVIEW.
- NO DRILLING WELDING OR TAPING ON EVERSOURCE OWNED EQUIPMENT.
- REFER TO DRAWING T1 FOR ADDITIONAL NOTES AND REQUIREMENTS.

STRUCTURAL STEEL

- ALL STRUCTURAL STEEL IS DESIGNED BY ALLOWABLE STRESS DESIGN (ASD)
 - STRUCTURAL STEEL (W SHAPES)---ASTM A992 (FY = 50 KSI)
 - STRUCTURAL STEEL (OTHER SHAPES)---ASTM A36 (FY = 36 KSI)
 - STRUCTURAL HSS (RECTANGULAR SHAPES)---ASTM A500 GRADE B, (FY = 46 KSI)
 - STRUCTURAL HSS (ROUND SHAPES)---ASTM A500 GRADE B, (FY = 42 KSI)
 - PIPE---ASTM A53 (FY = 35 KSI)
 - CONNECTION BOLTS---ASTM A325-N
 - U-BOLTS---ASTM A36
 - ANCHOR RODS---ASTM F 1554
 - WELDING ELECTRODE---ASTM E 70XX
- CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING: SECTION PROFILES, SIZES, CONNECTION ATTACHMENTS, REINFORCING, ANCHORAGE, SIZE AND TYPE OF FASTENERS AND ACCESSORIES. INCLUDE ERECTION DRAWINGS, ELEVATIONS AND DETAILS.
- STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST PROVISIONS OF AISC MANUAL OF STEEL CONSTRUCTION.
- PROVIDE ALL PLATES, CLIP ANGLES, CLOSURE PIECES, STRAP ANCHORS, MISCELLANEOUS PIECES AND HOLES REQUIRED TO COMPLETE THE STRUCTURE.
- FIT AND SHOP ASSEMBLE FABRICATIONS IN THE LARGEST PRACTICAL SECTIONS FOR DELIVERY TO SITE.
- INSTALL FABRICATIONS PLUMB AND LEVEL, ACCURATELY FITTED, AND FREE FROM DISTORTIONS OR DEFECTS.
- AFTER ERECTION OF STRUCTURES, TOUCHUP ALL WELDS, ABRASIONS AND NON-GALVANIZED SURFACES WITH A 95% ORGANIC ZINC RICH PAINT IN ACCORDANCE WITH ASTM 780.
- ALL STEEL MATERIAL (EXPOSED TO WEATHER) SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT DIPPED GALVANIZED) COATINGS" ON IRONS AND STEEL PRODUCTS.
- ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE".
- THE ENGINEER SHALL BE NOTIFIED OF ANY INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON CONFORMING MATERIALS OR CONDITIONS TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER REVIEW.
- CONNECTION ANGLES SHALL HAVE A MINIMUM THICKNESS OF 1/4 INCHES.
- STRUCTURAL CONNECTION BOLTS SHALL CONFORM TO ASTM A325. ALL BOLTS SHALL BE 3/4" DIAMETER MINIMUM AND SHALL HAVE A MINIMUM OF TWO BOLTS, UNLESS OTHERWISE ON THE DRAWINGS.
- LOCK WASHER ARE NOT PERMITTED FOR A325 STEEL ASSEMBLIES.
- SHOP CONNECTIONS SHALL BE WELDED OR HIGH STRENGTH BOLTED.
- MILL BEARING ENDS OF COLUMNS, STIFFENERS, AND OTHER BEARING SURFACES TO TRANSFER LOAD OVER ENTIRE CROSS SECTION.
- FABRICATE BEAMS WITH MILL CAMBER UP.
- LEVEL AND PLUMB INDIVIDUAL MEMBERS OF THE STRUCTURE TO AN ACCURACY OF 1:500, BUT NOT TO EXCEED 1/4" IN THE FULL HEIGHT OF THE COLUMN.
- COMMENCEMENT OF STRUCTURAL STEEL WORK WITHOUT NOTIFYING THE ENGINEER OF ANY DISCREPANCIES WILL BE CONSIDERED ACCEPTANCE OF PRECEDING WORK.
- INSPECTION AND TESTING OF ALL WELDING AND HIGH STRENGTH BOLTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY.
- FOUR COPIES OF ALL INSPECTION TEST REPORTS SHALL BE SUBMITTED TO THE ENGINEER WITHIN TEN (10) WORKING DAYS OF THE DATE OF INSPECTION.

PAINT NOTES

PAINTING SCHEDULE:

ANTENNA PANELS:

- SHERWIN WILLIAMS POLANE-B
- COLOR TO BE MATCHED WITH EXISTING TOWER STRUCTURE.

COAXIAL CABLES:

- ONE COAT OF DTM BONDING PRIMER (2-5 MILS. DRY FINISH)
- TWO COATS OF DTM ACRYLIC PRIMER/FINISH (2.5-5 MILS. DRY FINISH)
- COLOR TO BE FIELD MATCHED WITH EXISTING STRUCTURE.

EXAMINATION AND PREPARATION:

- DO NOT APPLY PAINT IN SNOW, RAIN, FOG OR MIST OR WHEN RELATIVE HUMIDITY EXCEEDS 85%. DO NOT APPLY PAINT TO DAMP OR WET SURFACES.
- VERIFY THAT SUBSTRATE CONDITIONS ARE READY TO RECEIVE WORK. EXAMINE SURFACE SCHEDULED TO BE FINISHED PRIOR TO COMMENCEMENT OF WORK. REPORT ANY CONDITION THAT MAY POTENTIALLY AFFECT PROPER APPLICATION.
- TEST SHOP APPLIED PRIMER FOR COMPATIBILITY WITH SUBSEQUENT COVER MATERIALS.
- PERFORM PREPARATION AND CLEANING PROCEDURE IN STRICT ACCORDANCE WITH COATING MANUFACTURER'S INSTRUCTIONS FOR EACH SUBSTRATE CONDITION.
- CORRECT DEFECTS AND CLEAN SURFACES WHICH AFFECT WORK OF THIS SECTION. REMOVE EXISTING COATINGS THAT EXHIBIT LOOSE SURFACE DEFECTS.
- IMPERVIOUS SURFACE: REMOVE MILDEW BY SCRUBBING WITH SOLUTION OF TRI-SODIUM PHOSPHATE AND BLEACH. RINSE WITH CLEAN WATER AND ALLOW SURFACE TO DRY.
- ALUMINUM SURFACE SCHEDULED FOR PAINT FINISH: REMOVE SURFACE CONTAMINATION BY STEAM OR HIGH-PRESSURE WATER. REMOVE OXIDATION WITH AICD ETCH AND SOLVENT WASHING. APPLY ETCHING PRIMER IMMEDIATELY FOLLOWING CLEANING.
- FERROUS METALS: CLEAN UNGALVANIZED FERROUS METAL SURFACES THAT HAVE NOT BEEN SHOP COATED; REMOVE OIL, GREASE, DIRT, LOOSE MILL SCALE, AND OTHER FOREIGN SUBSTANCES. USE SOLVENT OR MECHANICAL CLEANING METHODS THAT COMPLY WITH THE STEEL STRUCTURES PAINTING COUNCIL'S (SSPC) RECOMMENDATIONS. TOUCH UP BARE AREAS AND SHOP APPLIED PRIME COATS THAT HAVE BEEN DAMAGED. WIRE BRUSH, CLEAN WITH SOLVENTS RECOMMENDED BY PAINT MANUFACTURER, AND TOUCH UP WITH THE SAME PRIMER AS THE SHOP COAT.
- GALVANIZED SURFACES: CLEAN GALVANIZED SURFACES WITH NON-PETROLEUM-BASED SOLVENTS SO SURFACE IS FREE OF OIL AND SURFACE CONTAMINANTS. REMOVE PRETREATMENT FROM GALVANIZED SHEET METAL FABRICATED FROM COIL STOCK BY MECHANICAL METHODS.
- ANTENNA PANELS: REMOVE ALL OIL, DUST, GREASE, DIRT, AND OTHER FOREIGN MATERIAL TO ENSURE ADEQUATE ADHESION. PANELS MUST BE WIPED WITH METHYL ETHYL KETONE (MEK).
- COAXIAL CABLES: REMOVE ALL OIL, DUST, GREASE, DIRT, AND OTHER FOREIGN MATERIAL TO ENSURE ADEQUATE ADHESION.

CLEANING:

- COLLECT WASTE MATERIAL, WHICH MAY CONSTITUTE A FIRE HAZARD, PLACE IN CLOSED METAL CONTAINERS AND REMOVE DAILY FROM SITE.

APPLICATION:

- APPLY PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- DO NOT APPLY FINISHES TO SURFACES THAT ARE NOT DRY.
- APPLY EACH COAT TO UNIFORM FINISH.
- APPLY EACH COAT OF PAINT SLIGHTLY DARKER THAN PRECEDING COAT UNLESS OTHERWISE APPROVED.
- SAND METAL LIGHTLY BETWEEN COATS TO ACHIEVE REQUIRED FINISH.
- VACUUM CLEAN SURFACES FREE OF LOOSE PARTICLES. USE TACK CLOTH JUST PRIOR TO APPLYING NEXT COAT.
- ALLOW APPLIED COAT TO DRY BEFORE NEXT COAT IS APPLIED.

COMPLETED WORK:

- SAMPLES: PREPARE 24" X 24" SAMPLE AREA FOR REVIEW.
- MATCH APPROVED SAMPLES FOR COLOR, TEXTURE AND COVERAGE. REMOVE REFINISH OR REPAINT WORK NOT IN COMPLIANCE WITH SPECIFIED REQUIREMENTS.

ANTENNA SCHEDULE

SECTOR	EXISTING/PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA H HEIGHT	AZIMUTH	(E/P) TMA/DIPLEXER/TRIPLEXER (QTY)	(E/P) RRU (QTY)	FEEDER/LENGTH (QTY)	(E/P) RAYCAP (QTY)
A1	EXISTING	UMTS 850	POWERWAVE (7770)	55 x 11 x 5	130'	30'	(E) POWERWAVE: TMA: LGP21401 (2) (E) POWERWAVE: DIPLEXER: LGP 21901 (2)	(E) RRUS-12 (1)	ANDREW: 1-1/4# COAX (2) LENGTH: ±170	(E) RAYCAP DC6-48-60-18-8C (1)
A2	EXISTING	LTE 1900	POWERWAVE (P65-16-XLH-RR)	72 x 12 x 6	130'	30'	(P) KAEIUS: DIPLEXER: DBC0061F1V51-2 (1)	(E) RRUS-12 (1)	ANDREW: 1-1/4# COAX (2) LENGTH: ±170	(E) RAYCAP DC6-48-60-18-8C-EV (1)
A3	PROPOSED	LTE 700/850/AWS/5G 850	KATHRIEN (800-10965)	78.7 x 20 x 6.9	130'	30'	(P) KAEIUS: DIPLEXER: DBCT108F1V92-1 (2)	(P) B14 4478 (1), (P) 4478 B5 (1), (P) 4426 B66 (1)	FEEDER AND DC POWER	(P) RAYCAP DC6-48-60-18-8C-EV (1)
A4	PROPOSED	LTE 700/WCS	CCI (HPA-65R-BUU-H6)	72 x 14.8 x 9	130'	30'		(E) RRUS-11 (REUSE ONLY) (1), (P) RRUS-32 (1)	FEEDER AND DC POWER	(P) RAYCAP DC6-48-60-0-8C-EV (1)
B1	EXISTING	UMTS 850	POWERWAVE (7770)	55 x 11 x 5	130'	150'	(E) POWERWAVE: TMA: LGP21401 (2) (E) POWERWAVE: DIPLEXER: LGP 21901 (2)	(E) RRUS-12 (1)	ANDREW: 1-1/4# COAX (2) LENGTH: ±170	
B2	EXISTING	LTE 1900	POWERWAVE (P65-16-XLH-RR)	72 x 12 x 6	130'	150'	(P) KAEIUS: DIPLEXER: DBC0061F1V51-2 (1)	(E) RRUS-12 (1)	ANDREW: 1-1/4# COAX (2) LENGTH: ±170	
B3	PROPOSED	LTE 700/850/AWS/5G 850	KATHRIEN (800-10965)	78.7 x 20 x 6.9	130'	150'	(P) KAEIUS: DIPLEXER: DBCT108F1V92-1 (2)	(P) B14 4478 (1), (P) 4478 B5 (1), (P) 4426 B66 (1)	FEEDER AND DC POWER	
B4	PROPOSED	LTE 700/WCS	CCI (HPA-65R-BUU-H6)	72 x 14.8 x 9	130'	150'		(E) RRUS-11 (REUSE ONLY) (1), (P) RRUS-32 (1)	FEEDER AND DC POWER	
C1	EXISTING	UMTS 850	POWERWAVE (7770)	55 x 11 x 5	130'	270'	(E) POWERWAVE: TMA: LGP21401 (2) (E) POWERWAVE: DIPLEXER: LGP 21901 (2)	(E) RRUS-12 (1)	ANDREW: 1-1/4# COAX (2) LENGTH: ±170	
C2	EXISTING	LTE 1900	POWERWAVE (P65-16-XLH-RR)	72 x 12 x 6	130'	270'	(P) KAEIUS: DIPLEXER: DBC0061F1V51-2 (1)	(E) RRUS-12 (1)	ANDREW: 1-1/4# COAX (2) LENGTH: ±170	
C3	PROPOSED	LTE 700/850/AWS/5G 850	KATHRIEN (800-10965)	78.7 x 20 x 6.9	130'	270'	(P) KAEIUS: DIPLEXER: DBCT108F1V92-1 (2)	(P) B14 4478 (1), (P) 4478 B5 (1), (P) 4426 B66 (1)	FEEDER AND DC POWER	
C4	PROPOSED	LTE 700/WCS	CCI (HPA-65R-BUU-H6)	72 x 14.8 x 9	130'	270'		(E) RRUS-11 (REUSE ONLY) (1), (P) RRUS-32 (1)	FEEDER AND DC POWER	

RRU	SIZE (INCHES) (L x W x D)
RRUS-11	19.7 x 17 x 7.2
RRUS-12	20.4 x 18.5 x 7.5
RRUS-32	27.2 x 12.1 x 7
B14 4478	14.9 x 13.1 x 7.3
4478 B5	16.5 x 13.4 x 7.7
4426 B66	15.0 x 13.2 x 5.8

CONSTRUCTION DRAWINGS - REVISED CODE REFERENCE
CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION

CAG CAG
DATE DRAWN BY/CHK'D BY
3/6/19 TUL
10/11/18 DMJ
1 0
REV.

PROFESSIONAL ENGINEER SEAL
STATE OF CONNECTICUT
JAMES J. FAIRFIELD
No. 26824

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DATE: 08/27/18
SCALE: AS NOTED
JOB NO. 18000.61

NOTES,
SPECIFICATIONS &
ANTENNA
SCHEDULE

N-1

Sheet No. 2 of 8

TOP OF EXISTING MONOPOLE
EL. ±150' A.G.L.

EXISTING/PROPOSED AT&T ANTENNAS
EL. ±130' A.G.L.

EXISTING ±150' TALL MONOPOLE

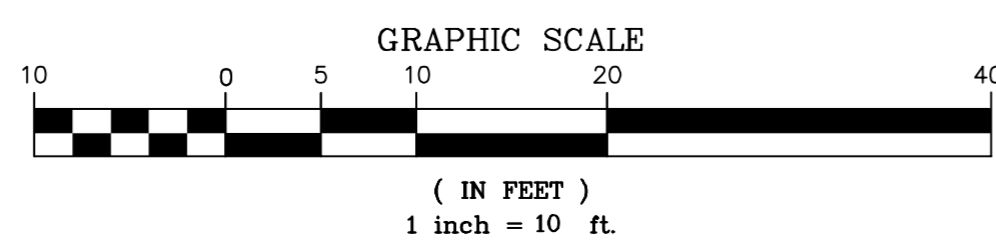
PROPOSED AT&T CABLES ROUTED FROM
EXISTING EQUIPMENT SHELTER TO
ANTENNA LOCATION

- (4) DC CABLES
- (1) 18 PAIR FIBER CABLES

EXISTING AT&T EQUIPMENT SHELTER
EXISTING EQUIPMENT
SHELTER (BY OTHERS)

TOWER STRUCTURAL NOTES:

1. REFER TO STRUCTURAL ANALYSIS REPORT PREPARED BY CENTEK ENGINEERING, INC., PROJ. NO. 18000.61, DATED FEBRUARY 28, 2019 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
2. ALL ANTENNAS AND COAX TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY CENTEK ENGINEERING AND FINAL AT&T RF DATA SHEET.

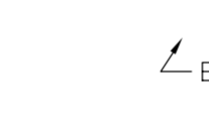


3 PARTIAL NORTHWEST ELEVATION - PROPOSED
C-1 SCALE: 1" = 10'

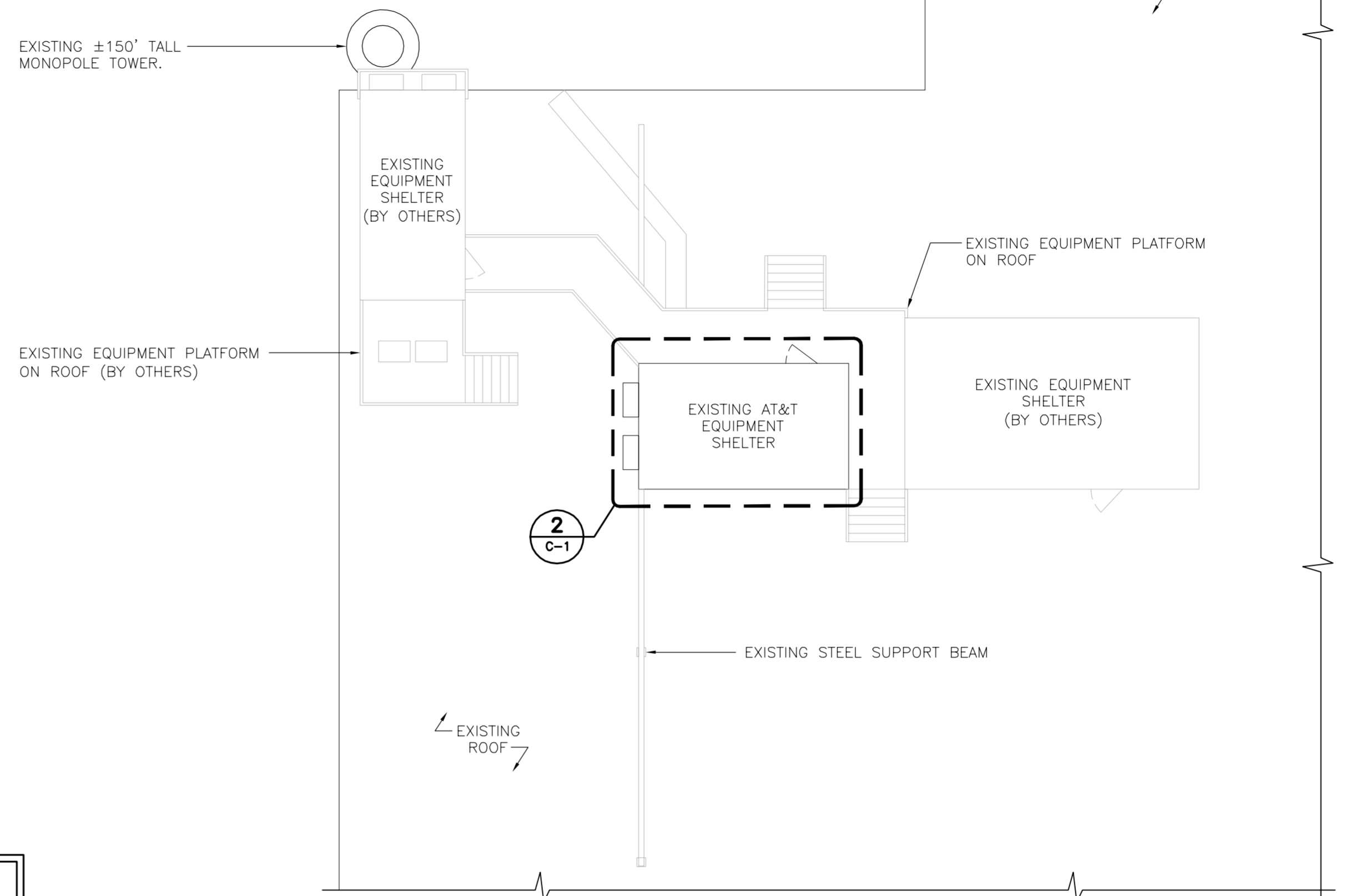
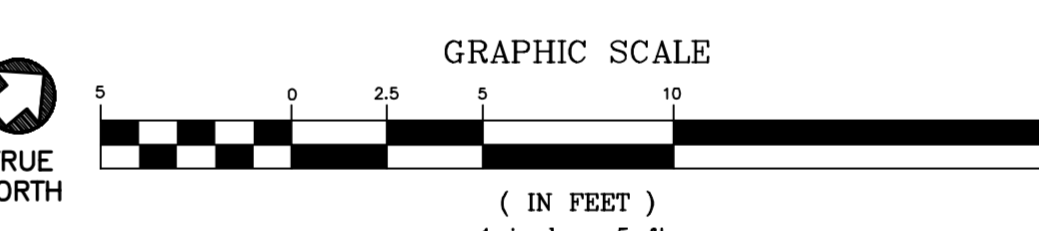
EXISTING ±150' TALL
MONOPOLE TOWER.



EXISTING EQUIPMENT PLATFORM
ON ROOF (BY OTHERS)



1 PARTIAL ROOF/SITE PLAN
C-1 SCALE: 1" = 5'-0"



PROPOSED AT&T COAX CABLES

- (4) DC CABLES
- (1) 18 PAIR FIBER CABLES

EXISTING AT&T COAX CABLE, TYP. ROUTED
THRU EQUIPMENT SHELTER FLOOR

EXISTING AT&T DIPLEXER RACK (ABOVE)

- REMOVE (12) EXISTING DIPLEXERS
- INSTALL (3) NEW LOW-BAND COMBINERS (P/N: DBC0061F1V51-2)

EXISTING AT&T UMTS CABINET

EXISTING AT&T EQUIPMENT SHELTER HVAC
TYP.

EXISTING AT&T FLOOR-MOUNTED BATTERY RACK

EXISTING AT&T DC POWER PLANT

EXISTING AT&T FIB RACK

EXISTING AT&T AC PANEL

EXISTING AT&T DISCONNECT

EXISTING AT&T UMTS RRWU'S MOUNTED
TO EQUIPMENT RACK, TYP. OF (6)
TO BE DECOMMISSIONED AND REMOVED

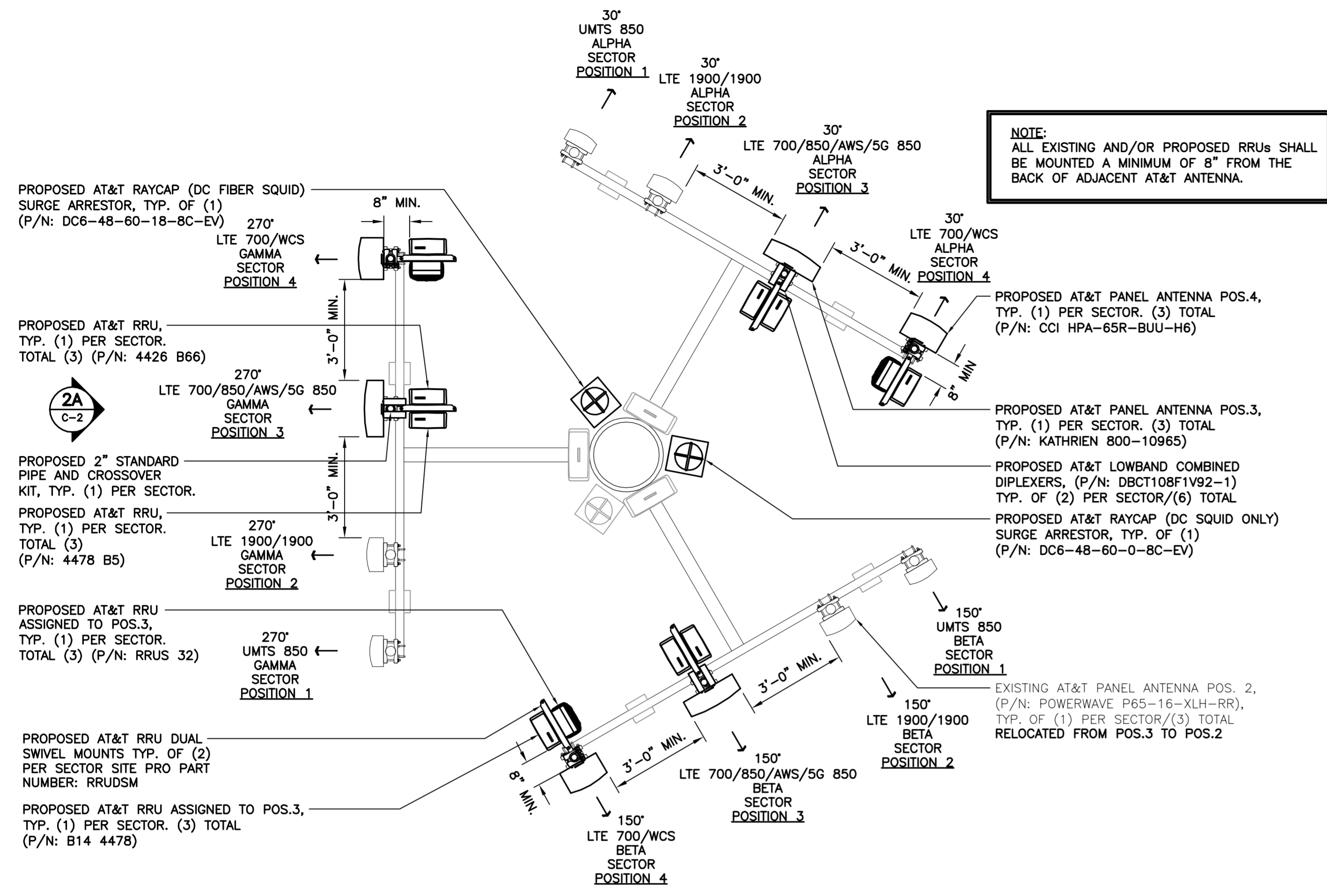
EXISTING AT&T LTE EQUIPMENT RACK

- REMOVE AND REPLACE EXISTING BBU WITH (2) 5216 UNITS
- INSTALL 2ND XMU UNIT+IDLE
- INSTALL NEW RBS 6630
- INSTALL (1) NEW DC-12-48-60-25E

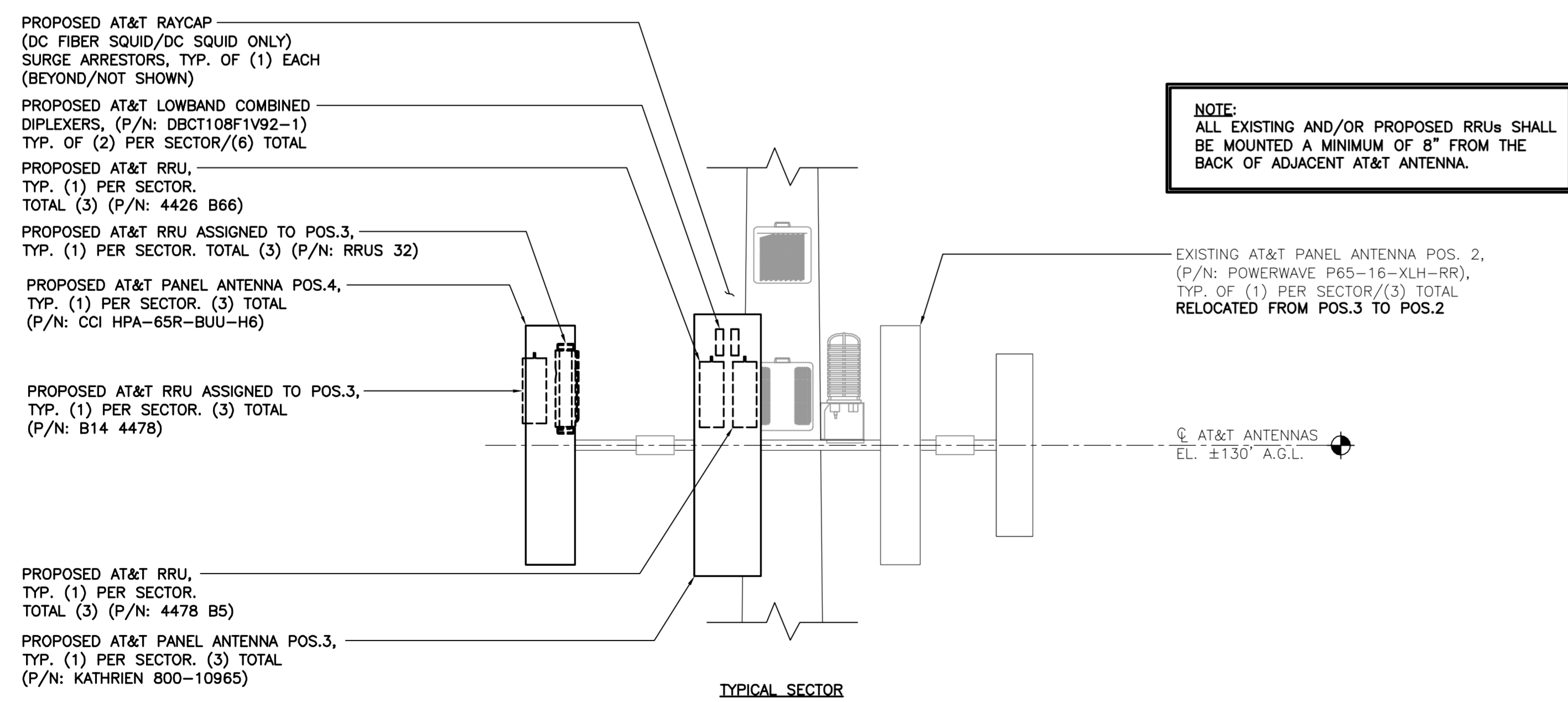
EXISTING AT&T GSM CABINETS, TYP. (2)
TO BE DECOMMISSIONED AND REMOVED

2 EQUIPMENT LAYOUT PLAN - PROPOSED
C-1 SCALE: 3/8" = 1'-0"

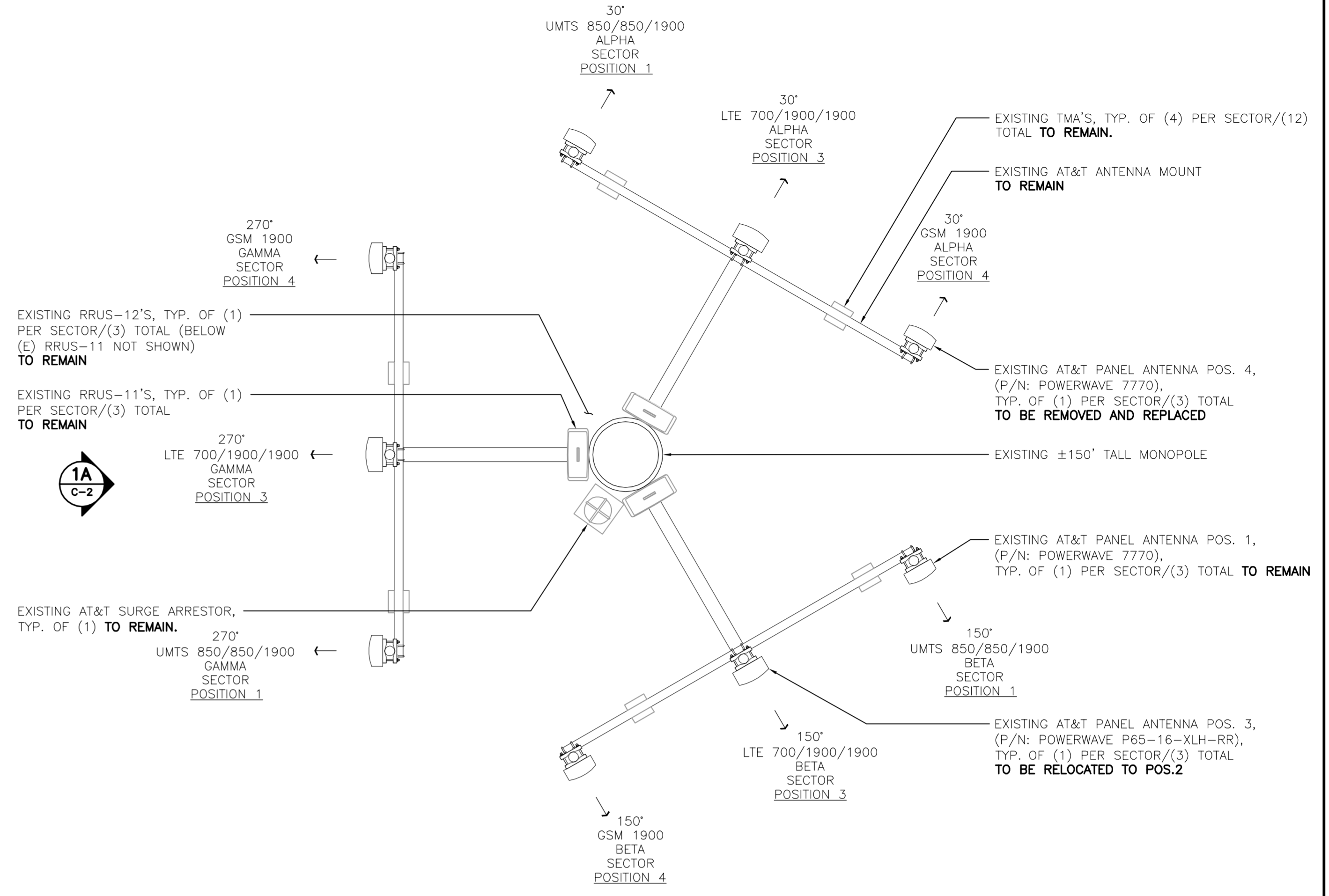
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DATE: 08/27/18						
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JOB NO. 18000.61						
PLANS AND ELEVATION						
C-1						
Sheet No. 3 of 8						



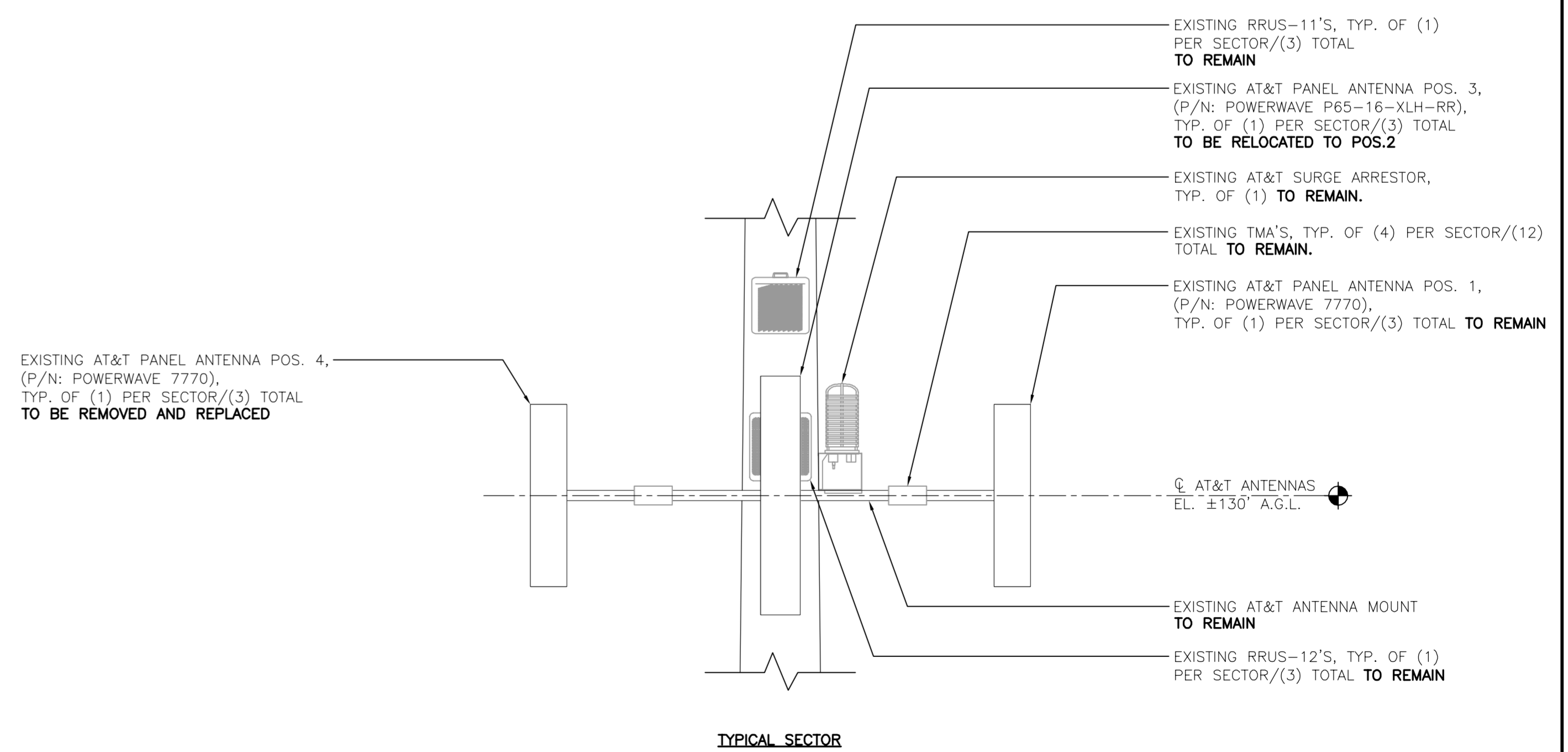
2 PROPOSED ANTENNA PLAN
 SCALE: 3/8" = 1'-0"
 TRUE NORTH



2A PROPOSED ANTENNA SECTOR ELEVATION
 SCALE: 3/8" = 1'-0"

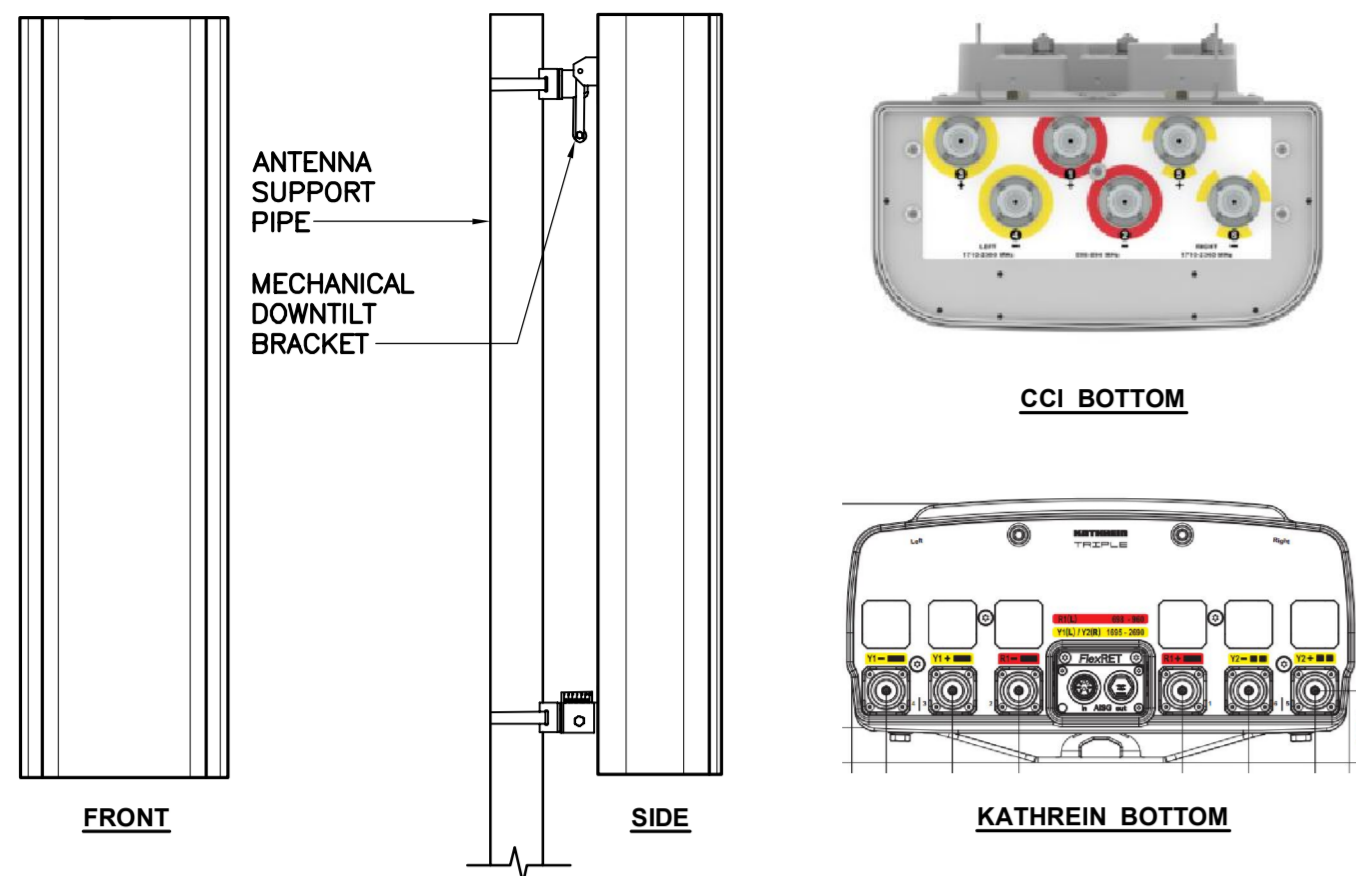


1 EXISTING ANTENNA PLAN
 SCALE: 3/8" = 1'-0"
 TRUE NORTH



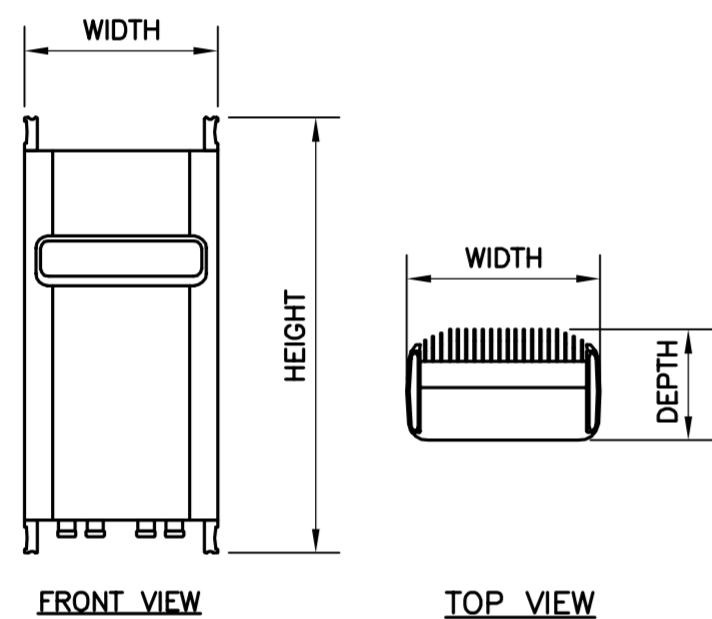
1A EXISTING ANTENNA SECTOR ELEVATION
 SCALE: 3/8" = 1'-0"

CONSTRUCTION DRAWINGS - REVISED CODE REFERENCE	
CONSTRUCTION DRAWINGS	
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DATE	3/6/19
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DATE:	08/27/18
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JOB NO.	18000.61
ANTENNA CONFIGURATION DETAILS	
<h1>C-2</h1>	
Sheet No. 4 of 8	



ALPHA/BETA/GAMMA ANTENNA		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: KATHREIN MODEL: 800-10965	78.7"L x 20"W x 6.9"D	108.6 LBS.
MAKE: CCI MODEL: HPA-65R-BUU-H6	72"L x 14.8"W x 9"D	51 LBS.

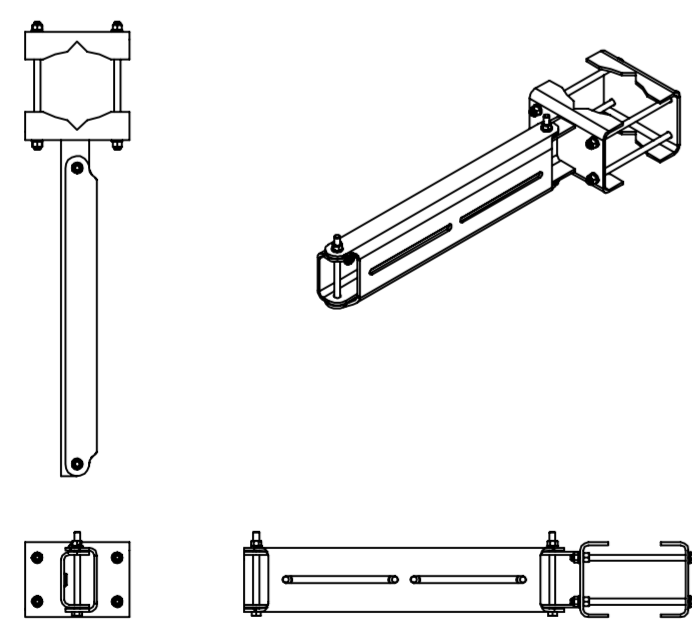
1 PROPOSED ANTENNA DETAIL
C-3 SCALE: NTS



RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: RRUS-32	27.17"H x 12.05"W x 7.01"D	52.91 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.

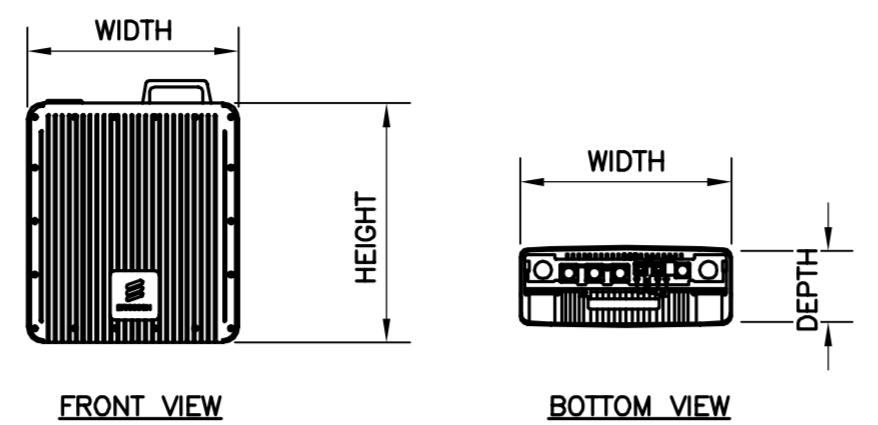
NOTES:
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

5 ERICSSON RRUS 32 DETAIL
C-3 SCALE: 1" = 1'-0"



RRU DUAL SWIVEL MOUNT		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: SITE PRO 1 PART NO.: RRUDSM	27.75"L x 6.5"W x 4.7"D	39.4 LBS.

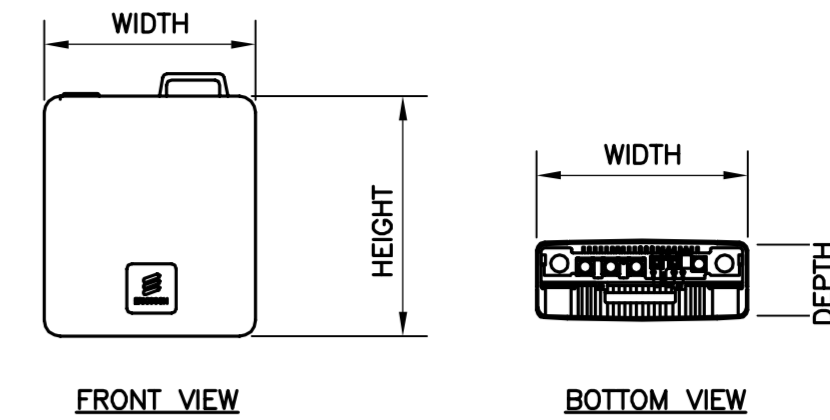
7 RRH DUAL SWIVEL MOUNT DETAIL
C-3 NOT TO SCALE



RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: 4426 B66	15.0"L x 13.2"W x 5.8"D	48.5 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.

NOTES:
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

2 ERICSSON 4426 B66 DETAIL
C-3 SCALE: 1" = 1'-0"



RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: 4478 B5	16.5"L x 13.4"W x 7.7"D	59.9 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.

NOTES:
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

3 ERICSSON 4478 B5 DETAIL
C-3 NOT TO SCALE

RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: B14 4478	14.9"L x 13.1"W x 7.3"D	60 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.

NOTES:
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

4 ERICSSON B14 4478 DETAIL
C-3 SCALE: 1" = 1'-0"



DIPLEXER 600-700/850		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: KAELUS MODEL: DBCT108F1V92-1	10.71"H x 6.77"W x 3.52"D	13.9 LBS.

NOTES:
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

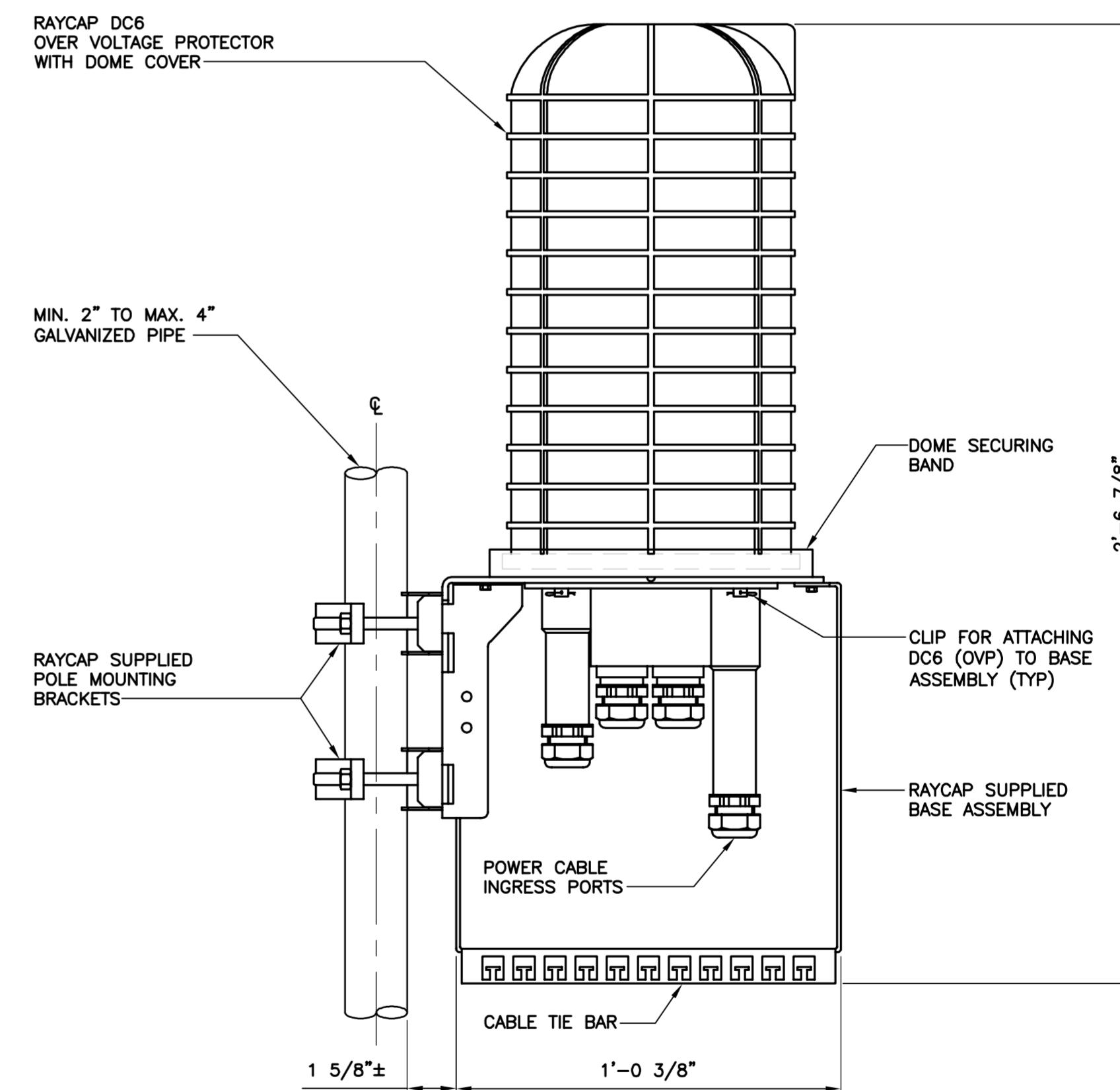
6 KAELUS DBC0061FV51-2 DETAIL
C-3 SCALE: NOT TO SCALE



DIPLEXER 700/850		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: KAELUS MODEL: DBC0061FV51-2	8"H x 6.45"W x 6.2"D	18.3 LBS.

NOTES:
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

8 KAELUS DBC0061FV51-2 DETAIL
C-3 NOT TO SCALE

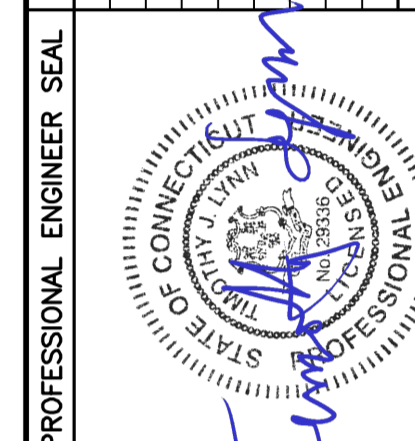


SITE TYPE	ARRESTOR MAKE/MODEL	QTY REQUIRED	ARRESTOR LOCATION	WEIGHT
	MAKE: RAYCAP (SQUID ONLY) MODEL: DC6-48-60-0-8C-EV	(1) PER SITE	ADJACENT TO AT&T RRUS.	20 LBS. (WITHOUT MOUNT)
	MAKE: RAYCAP (DC/FIBER SQUID) MODEL: DC6-48-60-18-8C-EV	(1) PER SITE	ADJACENT TO AT&T RRUS.	20 LBS. (WITHOUT MOUNT)

NOTES:
1. CONTRACTOR TO COORDINATE FINAL SURGE ARRESTOR MODEL SELECTION(S) WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.
2. CONTRACTOR TO INSTALL ARRESTOR IN CONFORMANCE WITH MANUFACTURERS RECOMMENDATIONS.
3. RAYCAP VIA AT&T SUPPLIES THE DC6 OVER VOLTAGE PROTECTOR AND PIPE MOUNTING BRACKETS. SUBCONTRACTOR SHALL SUPPLY THE PIPE.

9 TYPICAL SURGE PROTECTION DETAILS
C-3 NOT TO SCALE

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
1	3/6/19	TJL	CAG	CONSTRUCTION DRAWINGS - REVISED CODE REFERENCE
0	10/11/18	DMJ	CAG	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION

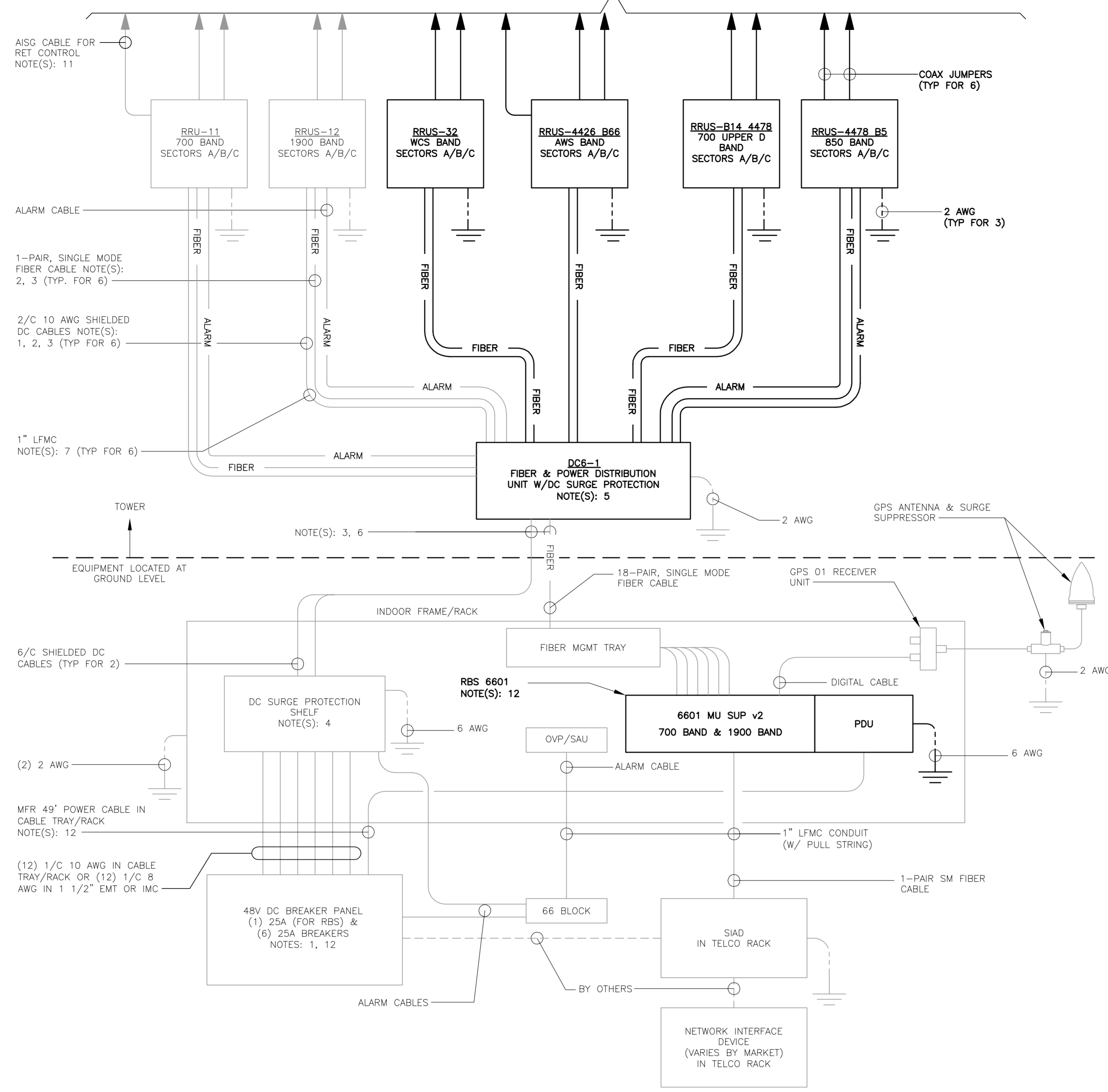


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SCALE: AS NOTED
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DETAILS



1 SCHEMATIC DIAGRAM
E-1 NOT TO SCALE

SCHEMATIC DIAGRAM NOTES:

- BREAKERS TO BE TAGGED AND LOCKED OUT. A 20A (MIN.) OR 30A (MAX.) BREAKER FOR RRUS MAY BE SUBSTITUTED FOR THE RECOMMENDED 25A BREAKER. SIZE 12 CONDUCTORS MAY BE USED ONLY WITH 20A BREAKERS.
- LEAVE COILED AND PROTECTED UNTIL TERMINATED.
- DC AND FIBER CABLE SHALL BE ROUTED WITH THE EXISTING COAX CABLE.
- DC SURGE PROTECTION SHELF SHALL BE RAYCAP DCx-48-60-RM.
- FIBER & DC DISTRIBUTION BOX W/DC SURGE PROTECTION SHALL BE RAYCAP DC6-48-60-18-BF.
- SUPPORT FIBER & DC POWER CABLES WITH SNAP-IN HANGERS SPACED NO GREATER THAN 3 FEET APART ON TOWER. SUPPORT FIBER AND DC POWER CABLES INSIDE MONOPOLE WITH CABLE HOISTING GRIPS AT 250 FT MAXIMUM INTERVALS. DRESS CABLES TO PREVENT CONTACT WITH ENTRANCE AND EXIT OPENINGS.
- CONDUIT TO BE USED ON A TOWER IF THE RRU IS MORE THAN 10' FROM THE DISTRIBUTION UNITS. MAX CABLE LENGTH IS 16 FEET.
- SINGLE-CONDUCTOR DC POWER CABLES SHALL BE TELCOFLEX® OR KS24194", COPPER, UL LISTED RHH NON-HALOGEN, LOW SMOKE WITH BRAIDED COVER, TYPE TC (1/0 AND LARGER). UNLESS OTHERWISE NOTED, STRANDING SHALL BE CLASS B (TYPE III) FOR CABLES SIZES 14, 12 & 10 AWG AND CLASS I (TYPE IV) FOR SIZES 8 AWG AND LARGER. CABLES SHALL BE COLOR CODED RED FOR +24V, BLUE FOR -48V AND GRAY FOR 24V AND 48V RETURN CONDUCTORS. MULTI-CONDUCTOR DC POWER CABLES SHALL BE COPPER, CLASS B STRANDING WITH FLAME RETARDANT PVC JACKET, TYPE TC, UL LISTED FOR 90°C DRY/75°C WET INSTALLATION.
- GROUNDING WIRES SHALL BE COPPER, GREEN THHN/THWN UL LISTED FOR 90°C DRY/75°C WET INSTALLATION. MINIMUM SIZE IS 6 AWG UNLESS NOTED OTHERWISE.
- FIBER OPTIC CABLES SHALL BE INSTALLED IN FLEXIBLE CONDUIT AS SCOPED BY MARKET.
- RET CONTROL FROM THE RRU IS AN OPTIONAL METHOD OF CONNECTION. REFER TO RF DATA SHEET FOR APPLICABILITY.
- RBS 6601 VARIANT 2 REQUIRES A 25A BREAKER AND 10 AWG (MIN.) CONDUCTORS. REPLACE EXISTING 15A OR 20A BREAKERS AND 12 AWG CONDUCTORS WHEN UPGRADING AN EXISTING RBS 6601 VARIANT 1.

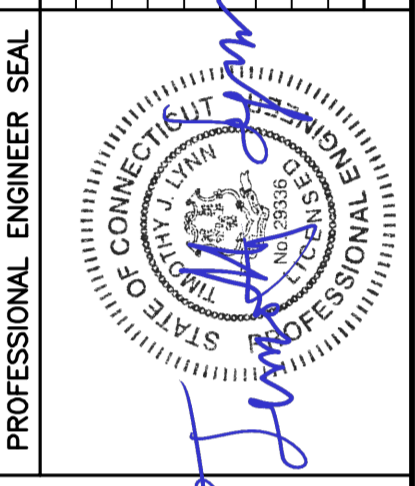
ELECTRICAL NOTES

- PRIOR TO START OF CONSTRUCTION CONTRACTOR SHALL COORDINATE WITH OWNER FOR ALL CONSTRUCTION STANDARDS AND SPECIFICATIONS, AND ALL MANUFACTURER DOCUMENTATION FOR ALL EQUIPMENT TO BE INSTALLED.
- INSTALL ALL EQUIPMENT IN ACCORDANCE WITH LOCAL BUILDING CODE, NATIONAL ELECTRIC CODE, OWNER AND MANUFACTURER'S SPECIFICATIONS.
- CONNECT ALL NEW EQUIPMENT TO EXISTING TELCO AS REQUIRED BY MANUFACTURER.
- MAINTAIN ALL CLEARANCES REQUIRED BY NEC AND EQUIPMENT MANUFACTURER.
- PRIOR TO INSTALLATION CONTRACTOR SHALL MEASURE EXISTING ELECTRICAL LOAD AND VERIFY EXISTING AVAILABLE CAPACITY FOR PROPOSED INSTALLATION. IF INADEQUATE CAPACITY IS AVAILABLE, CONTRACTOR SHALL COORDINATE WITH LOCAL ELECTRIC UTILITY COMPANY TO UPGRADE EXISTING ELECTRIC SERVICE.
- CONTRACTOR SHALL INSPECT EXISTING GROUNDING AND LIGHTNING PROTECTION SYSTEM AND ENSURE THAT IT IS IN COMPLIANCE WITH NEC, AND SITE OWNER'S SPECIFICATIONS. THE RESULTS OF THIS INSPECTION SHALL BE PRESENTED TO OWNERS REPRESENTATIVE, AND ANY DEFICIENCIES SHALL BE CORRECTED.
- ALL TRANSMISSION TOWER SITES CONTAIN AN EXTENSIVE BURIED GROUNDING SYSTEM. ALL GROUNDING WORK MUST BE COORDINATED WITH, AND APPROVED BY, THE TOWER OWNER'S SITE REPRESENTATIVE. ALL OF THE TOWER OWNER'S SPECIFICATIONS MUST BE STRICTLY FOLLOWED.
- PROVIDE AND INSTALL GROUND KITS FOR ALL NEW COAXIAL CABLES AND BOND TO EXISTING OWNERS GROUNDING SYSTEM PER OWNERS SPECIFICATIONS AND NEC.
- ALL CONDUCTORS SHALL BE TYPE THWN (INT. APPLICATION) AND XHHW (EXT. APPLICATION), 75 DEGREE C, 600 VOLT INSULATION, SOFT ANNEALED STRANDED COPPER. #10 AWG AND SMALLER SHALL BE SPLICED USING ACCEPTABLE SOLDERLESS PRESSURE CONNECTORS. #8 AWG AND LARGER SHALL BE SPLICED USING COMPRESSION SPLIT-BOLT TYPE CONNECTORS. #12 AWG SHALL BE THE MINIMUM SIZE CONDUCTOR FOR LINE VOLTAGE BRANCH CIRCUITS. REFER TO PANEL SCHEDULE FOR BRANCH CIRCUIT CONDUCTOR SIZE(S). CONDUCTORS SHALL BE COLOR CODED FOR CONSISTENT PHASE IDENTIFICATION.
- MINIMUM BENDING RADIUS FOR CONDUCTORS SHALL BE 12 TIMES THE LARGEST DIAMETER OF BRANCH CIRCUIT CONDUCTOR.
- THE ENTIRE ELECTRICAL INSTALLATION SHALL BE MADE IN STRICT ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES AND REGULATIONS WHICH MAY APPLY AND NOTHING IN THE DRAWINGS OR SPECIFICATIONS SHALL BE INTERPRETED AS AN INFRINGEMENT OF SUCH CODES OR REGULATIONS.
- THE ELECTRICAL CONTRACTOR IS TO BE RESPONSIBLE FOR THE COMPLETE INSTALLATION AND COORDINATION OF THE ENTIRE ELECTRICAL SERVICE. ALL ACTIVITIES TO BE COORDINATED THROUGH OWNER'S REPRESENTATIVE, DESIGN ENGINEER AND OTHER AUTHORITIES HAVING JURISDICTION OF TRADES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND PAY ALL FEES AS MAY BE REQUIRED FOR THE ELECTRICAL WORK AND FOR SCHEDULING OF ALL INSPECTIONS AS MAY BE REQUIRED BY THE LOCAL AUTHORITY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE SITE AND/OR BUILDING OWNER FOR NEW AND/OR DEMOLITION WORK INVOLVED.
- THE CONTRACTOR SHALL GUARANTEE ALL NEW WORK FOR A PERIOD OF ONE YEAR FROM THE ACCEPTANCE DATE BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING WARRANTIES FROM ALL EQUIPMENT MANUFACTURERS FOR SUBMISSION TO THE OWNER.
- DRAWINGS INDICATE GENERAL ARRANGEMENT OF WORK INCLUDED IN CONTRACT. CONTRACTOR SHALL WITHOUT EXTRA CHARGE, MAKE MODIFICATIONS TO THE LAYOUT OF THE WORK TO PREVENT CONFLICT WITH WORK OF OTHER TRADES AND FOR THE PROPER INSTALLATION OF WORK. CHECK ALL DRAWINGS AND VISIT JOB SITE TO VERIFY SPACE AND TYPE OF EXISTING CONDITIONS IN WHICH WORK WILL BE DONE, PRIOR TO SUBMITTAL OF BID.
- ALL NON-CURRENT CARRYING PARTS OF THE ELECTRICAL AND TELEPHONE CONDUIT SYSTEMS SHALL BE MECHANICALLY AND ELECTRICALLY CONNECTED TO PROVIDE AN INDEPENDENT RETURN PATH TO THE EQUIPMENT GROUNDING SOURCES.
- GROUNDING SYSTEM WILL BE IN ACCORDANCE WITH THE LATEST ACCEPTABLE EDITION OF THE NATIONAL ELECTRICAL CODE AND REQUIREMENTS PER LOCAL INSPECTOR HAVING JURISDICTION.
- EACH EQUIPMENT GROUND CONDUCTOR SHALL BE SIZED IN ACCORDANCE WITH THE N.E.C. ARTICLE 250-122. (MIN. #12 AWG).
- CONTRACTOR SHALL PROVIDE A CELLULAR GROUNDING SYSTEM WITH THE MAXIMUM AC RESISTANCE TO GROUND OF 5 OHM BETWEEN ANY POINT ON THE GROUNDING SYSTEM AS MEASURED BY 3-POINT GROUNDING TEST. (REFER TO SECTION 16960).

TESTS BY INDEPENDENT ELECTRICAL TESTING FIRM

- CONTRACTOR SHALL RETAIN THE SERVICES OF A LOCAL INDEPENDENT ELECTRICAL TESTING FIRM (WITH MINIMUM 5 YEARS COMMERCIAL EXPERIENCE IN THE ELECTRICAL TESTING INDUSTRY) AS SPECIFIED BY OWNER TO PERFORM:
 - TEST 1: RESISTANCE TO GROUND TEST ON THE CELLULAR GROUNDING SYSTEM.
 THE TESTING FIRM SHALL INCLUDE THE FOLLOWING INFORMATION WITH THE REPORT:
 - TESTING PROCEDURE INCLUDING THE MAKE AND MODEL OF TEST EQUIPMENT.
 - CERTIFICATION OF TESTING EQUIPMENT CALIBRATION WITHIN SIX (6) MONTHS OF DATE OF TESTING. INCLUDE CERTIFICATION LAB ADDRESS AND TELEPHONE NUMBER.
 - GRAPHICAL DESCRIPTION OF TESTING METHOD ACTUALLY IMPLEMENTED.
- TESTING SHALL BE PERFORMED IN THE PRESENCE AND TO THE SATISFACTION OF OWNERS CONSTRUCTION REPRESENTATIVE. TESTING DATA SHALL BE INITIALED AND DATED BY THE CONSTRUCTION AND INCLUDED WITH THE WRITTEN REPORT/ANALYSIS.
- THE CONTRACTOR SHALL FORWARD SIX (6) COPIES OF THE INDEPENDENT ELECTRICAL TESTING FIRM REPORT/ANALYSIS TO ENGINEER A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO THE JOB TURNOVER.
- CONTRACTOR TO PROVIDE A MINIMUM OF ONE (1) WEEK NOTICE TO OWNER AND ENGINEER FOR ALL TESTS REQUIRING WITNESSING.

CONSTRUCTION DRAWINGS - REVISED CODE REFERENCE	
CONSTRUCTION DRAWINGS	
CAG	
DATE	3/6/19
REV.	0
DRAWN BY	CHK'D BY



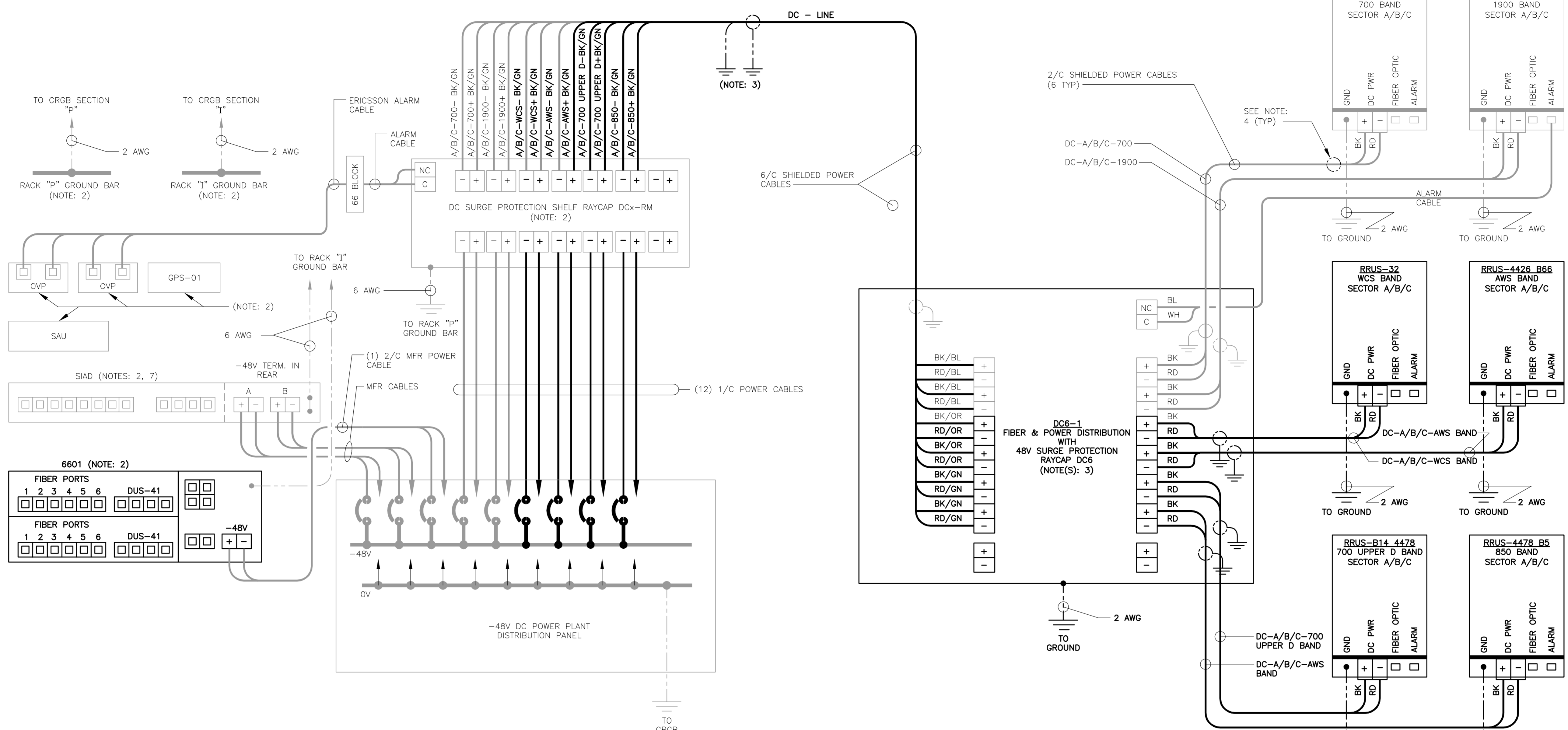
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 JOB NO. 18000.61

SCHEMATIC
 DIAGRAM
 AND NOTES

E-1
 Sheet No. 6 of 8



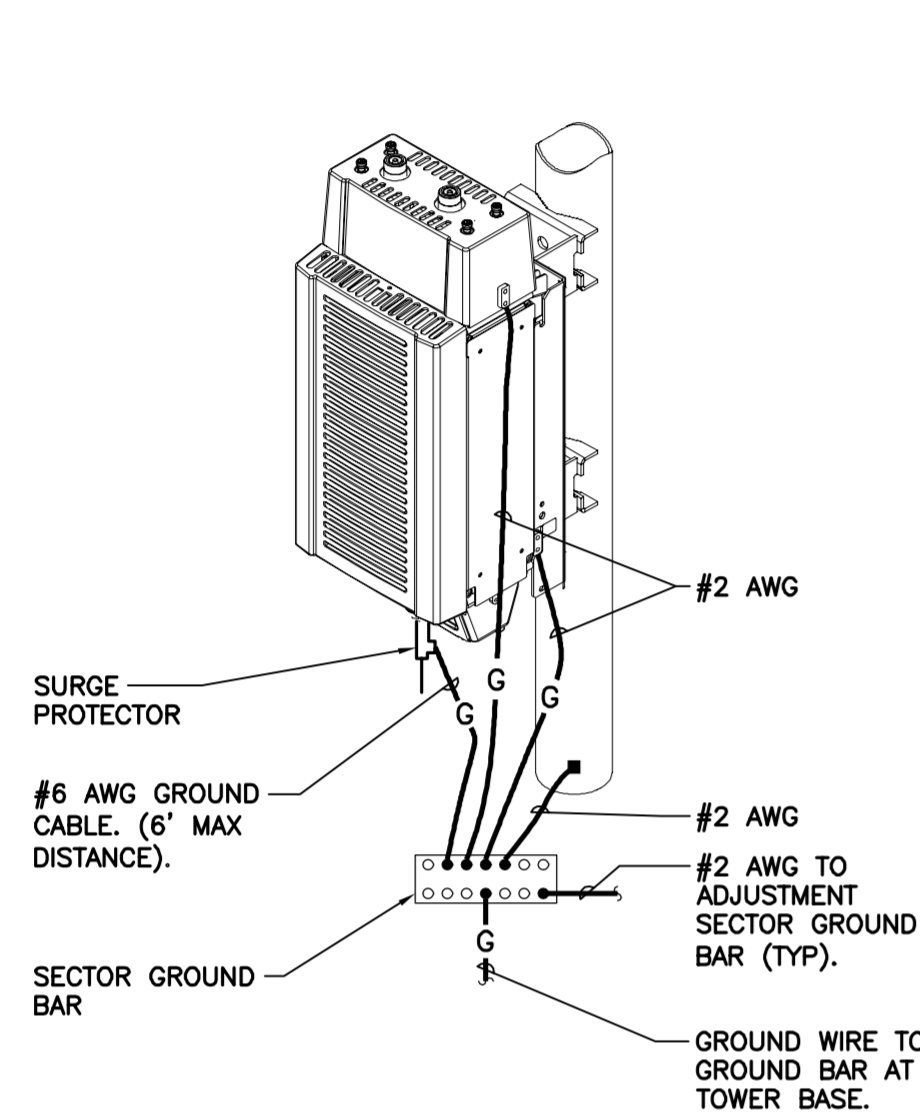
1 WIRING DIAGRAM
E-2 NOT TO SCALE

LTE WIRING DIAGRAM NOTES:

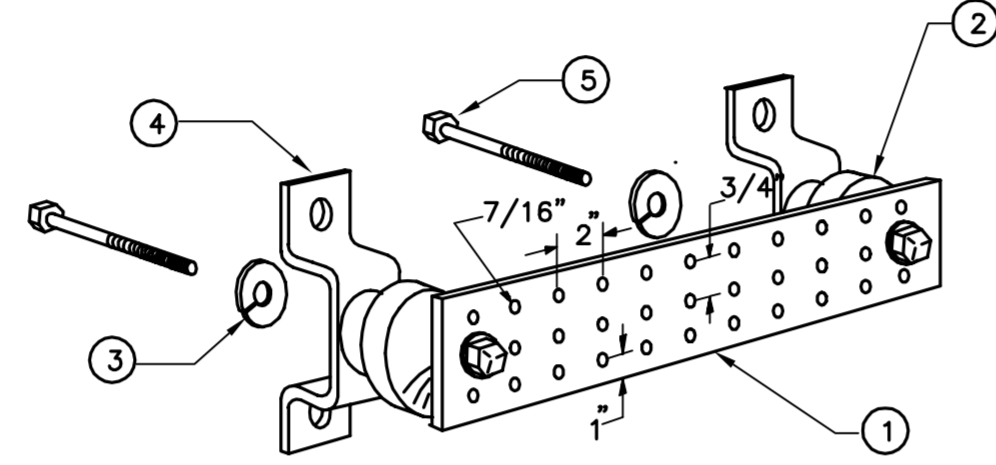
- LABEL THE DC POWER CABLES AT BOTH ENDS OF EVERY WIRE AND IN ANY PULL BOX IF USED. LABEL SHALL BE DURABLE, SELF ADHESIVE, WRAPPED LONGITUDINALLY ALONG THE CABLE AND STATE THE SECTOR, FREQUENCY BAND AND POLARITY; I.E. "A-1900+". CABLE AND WIRE LABELS SHOWN ARE REPRESENTATIVE AND MAY BE MODIFIED AS DIRECTED BY AT&T.
- INSTALL ON BASEBAND EQUIPMENT RACK.
- THE BARE GROUND WIRE OF EACH MULTI-CONDUCTOR CABLE SHALL BE CONNECTED TO THE "P" GROUND BAR ON THE RACK. WHEN A SHIELDED CABLE IS USED, THE DRAIN WIRE ALSO SHALL BE CONNECTED TO THE "P" GROUND BAR.
- CABLE GROUND WIRE AND SHIELD DRAIN WIRE TO BE LEFT UN-TERMINATED AT RRU AND DC POWER PLANT.
- SEE LTE SCHEMATIC DIAGRAM DETAIL 1/E-1 FOR BREAKER RATING.

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WIRING DIAGRAM	
E-2 Sheet No. 2 of 8	

EACH RRH CABINET SHALL BE GROUNDED IN THE FOLLOWING MANNER:
 1. AT TOP OF THE CABINET
 2. AT RIGHT SIDE OF THE CABINET.



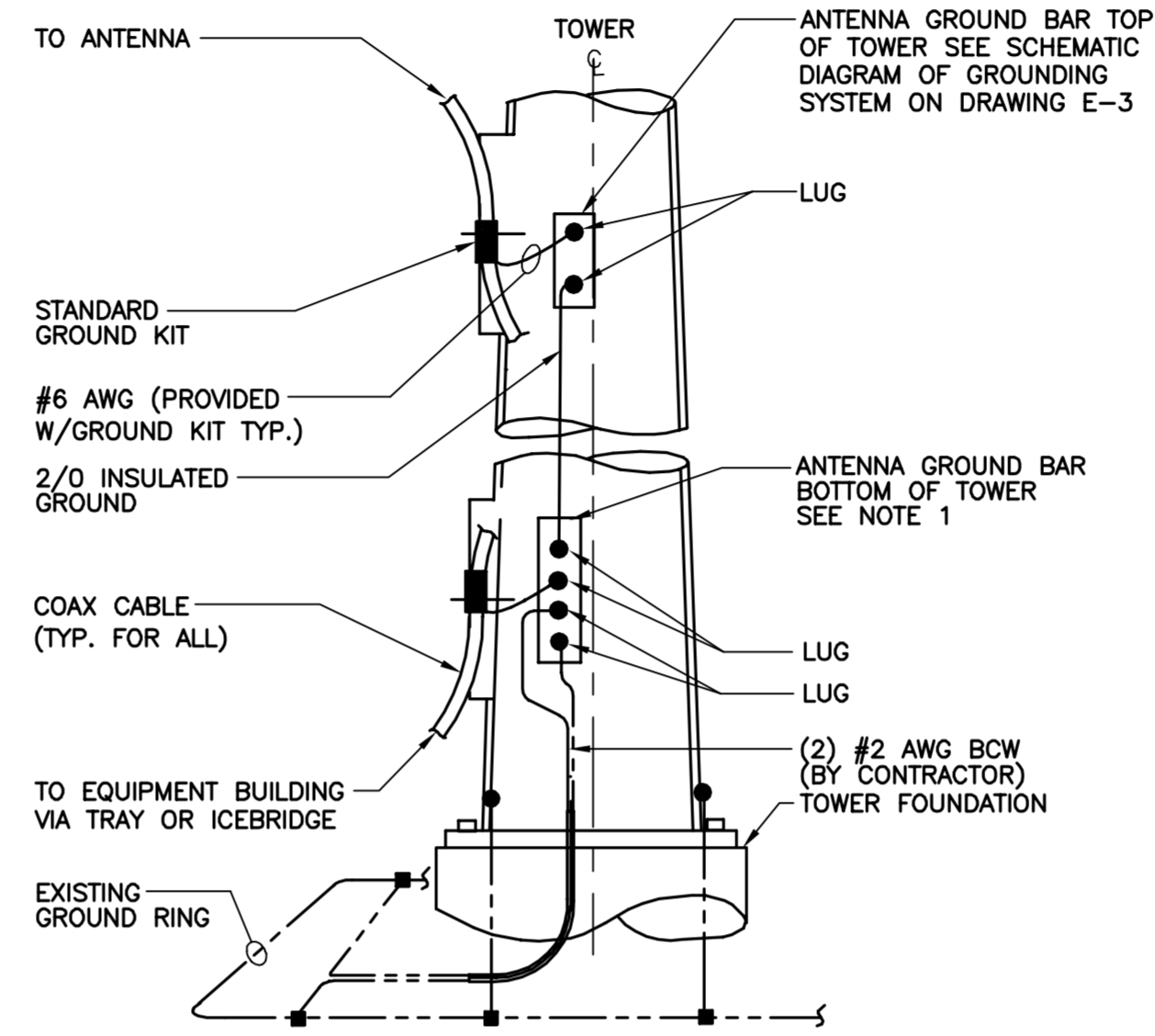
4 RRU POLE MOUNT GROUNDED
 E-3 NOT TO SCALE



LEGEND

1. TINNED COPPER GROUND BAR, 1/4" x 4" x 20", NEWTON INSTRUMENT CO. HOLE CENTERS TO MATCH NEMA DOUBLE LUG .
2. INSULATORS, NEWTON INSTRUMENT CAT. NO. 2, 3061-4.
3. 5/8" LOCK WASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8.
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT. NO. A-6056.
5. STAINLESS STEEL SECURITY SCREWS.

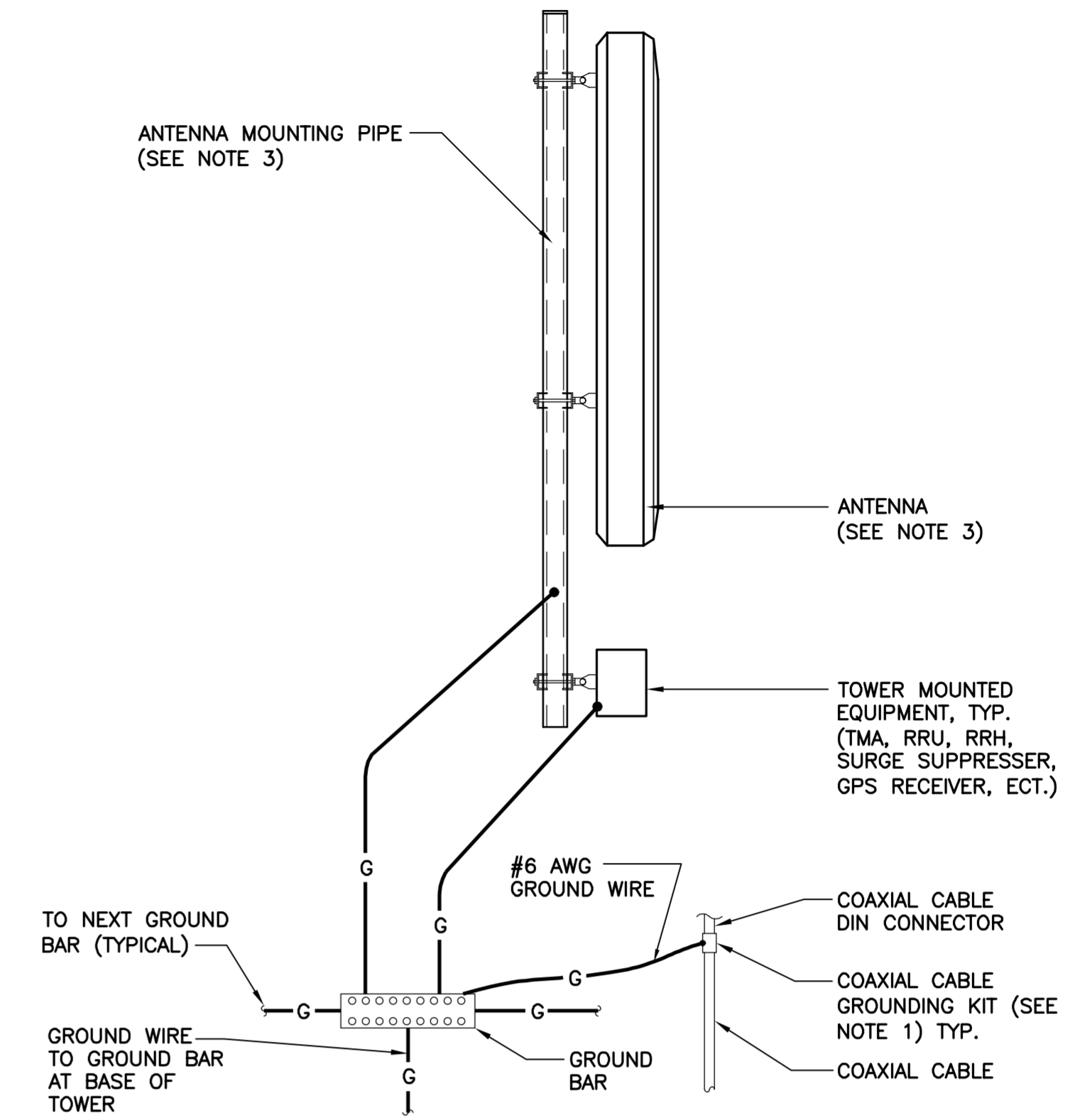
3 GROUND BAR DETAIL
 E-3 NOT TO SCALE



NOTES:

1. NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, LOCATION AND CONNECTION ORIENTATION. PROVIDE AS REQUIRED.
2. A SEPARATE GROUND BAR TO BE USED FOR GPS ANTENNA IF REQUIRED.

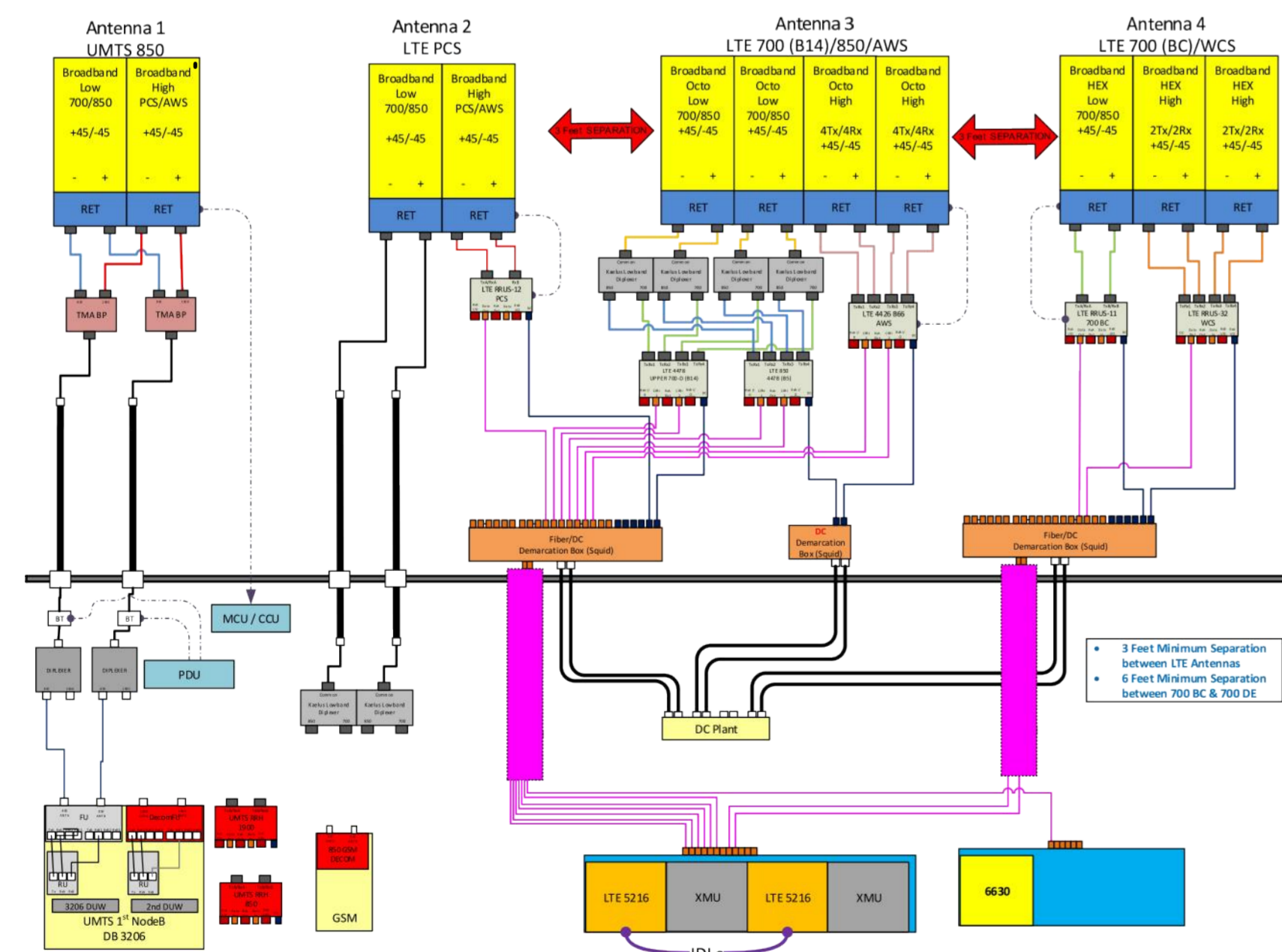
2 ANTENNA CABLE GROUNDED - TOWER
 E-3 NOT TO SCALE



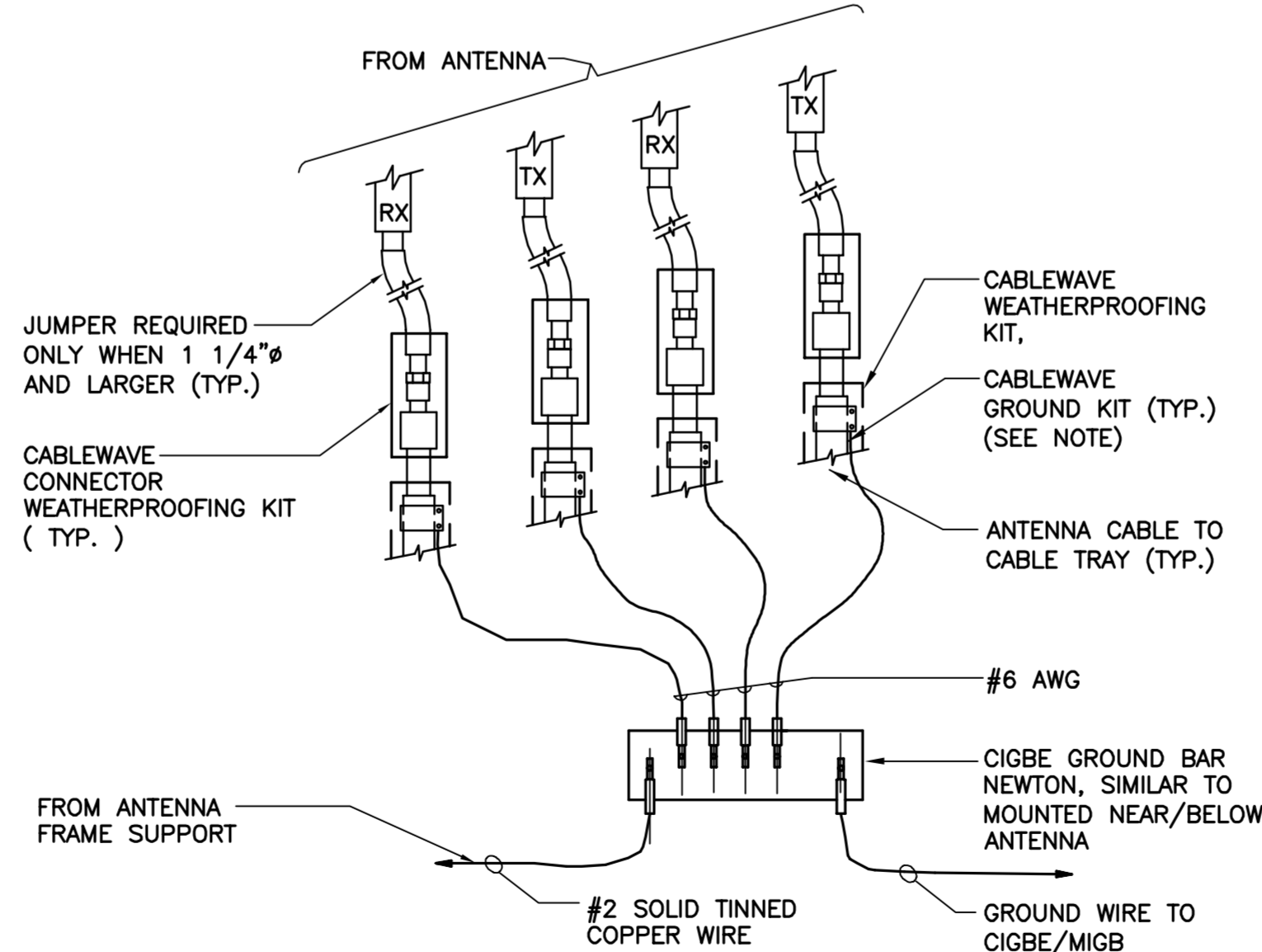
NOTES:

1. BOND COAXIAL CABLE GROUND KITS TO EACH OWNER'S GROUND BAR ALONG ENTIRE COAX RUN FROM ANTENNA TO SHELTER.
2. BOND ALL EQUIPMENT TO GROUND PER NEC AND MANUFACTURERS SPECIFICATIONS.
3. DETAIL IS TYPICAL FOR ALL ANTENNA SECTORS, INCLUDING GPS ANTENNA.

1 TYPICAL ANTENNA GROUNDED DETAIL
 E-3 NOT TO SCALE



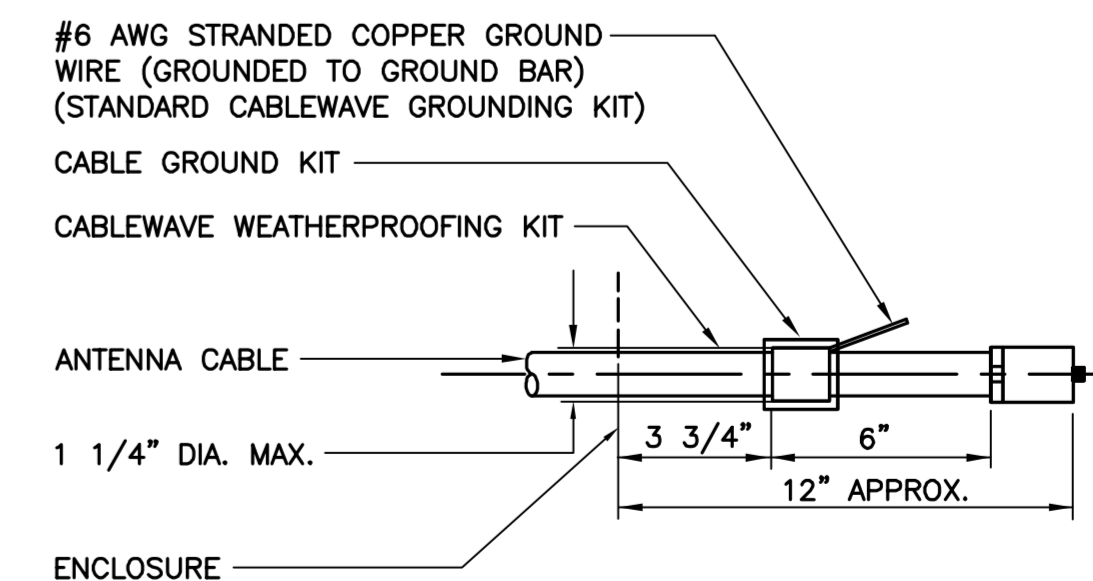
5 RF PLUMBING DIAGRAM
 E-3 NOT TO SCALE



NOTE:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE

6 CONNECTION OF GROUND WIRES TO GROUND BAR
 E-3 NOT TO SCALE

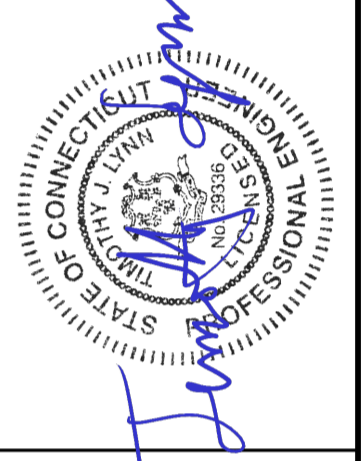


NOTE:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.

5 ANTENNA CABLE GROUNDED DETAIL
 E-3 NOT TO SCALE

REV.	DATE	BY	CHK'D	DESCRIPTION
1	3/6/19	TJL	DMD	
0	10/11/18			



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TYPICAL ELECTRICAL DETAILS