

**From:** Josh Costa <jcosta@clinellc.com>  
**Sent:** Wednesday, July 5, 2023 2:55 PM  
**To:** CSC-DL Siting Council <Siting.Council@ct.gov>  
**Subject:** 151 Sand Hill Rd, South Windsor - CTL01139 - EM-AT&T-132-220922

Hi,

We have completed all work on site. Attached is redlined cd's FCCA and photos.

 [CCA Pics](#)

Thanks,



**Joshua Costa** | Master Electrician

750 West Center St Suite 301 | West Bridgewater, MA 02379

Mobile: 508-967-5985

[jcosta@clinellc.com](mailto:jcosta@clinellc.com) | [www.centerlinecommunications.com](http://www.centerlinecommunications.com)

**Building a better network.**

Smart design. Quality construction. Reliable maintenance.

## Final Report of Special Inspections

Project: CT1139 (10035389)

Location: 151 Sand Hill Road, South Windsor, CT 06074

Owner: SBA Communications

Engineer of Record: Daniel P. Hamm, P.E.

Tower Engineering Professionals, LLC (TEP OPCO, LLC)

To the best of my information, knowledge and belief, the Special Inspections required by Chapter 17 for the project have been performed and all discovered discrepancies have been reported and resolved.

Representatives of TEP Northeast performed the Final Inspections after the construction of the telecommunications facility at the above-referenced address. The Final Inspection was performed on June 1, 2023.

Based on my knowledge, information and belief the wireless installation substantially conforms to the approved plans, IBC 2015 with 2018 CT State Building Code Amendments, Structural Standards for Antenna Supporting Structures and Antennas (EIA/TIA-222-H), and the following:

1. Final Construction Drawings dated 12/07/2022, prepared by Hudson Design Group LLC, entitled "5G NR Radio, 5G NR 1SR CBAND, 5G NR Software Radio, 5G NR Activation, 4T4R, 2022 Upgrade."
2. Final Mount Analysis dated 09/01/2022, prepared by Tower Engineering Professionals.

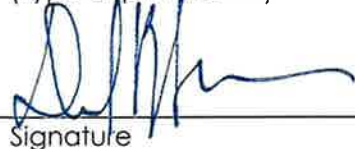
All deviations from the approved plans do not endanger the intended occupancy of the facility and equipment substitutions are approved as equivalent to the original specifications. This report does not include inspections for the findings of the global stability analysis and modifications to the structure. Those modification inspections, if required, are strictly the responsibility of the tower owner & general contractor performing such design and installation.

Interim reports submitted prior to this final report form a basis for and are to be considered an integral part of this final report.

Respectfully submitted,  
Special Inspector

Daniel P. Hamm, P.E.

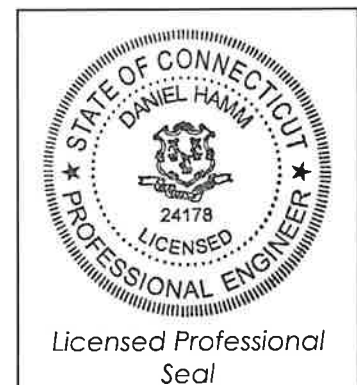
(Type or print name)

A handwritten signature in blue ink, appearing to read 'Daniel P. Hamm', written over a horizontal line.

Signature

06-06-2023

Date



**PROJECT INFORMATION**

SCOPE OF WORK: ITEMS TO BE MOUNTED ON THE EXISTING SELF SUPPORT:

- NEW AT&T ANTENNAS: QD6616-7 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T ANTENNAS: AIR6419 B77G (TYP. OF 1 PER SECTOR, TOTAL OF 3) (STACKED) (TOP).
- NEW AT&T ANTENNAS: AIR6449 B77D (TYP. OF 1 PER SECTOR, TOTAL OF 3) (STACKED) (BOTTOM).
- NEW AT&T RRUS: 4478 B14 (1 PER GAMMA SECTOR, TOTAL OF 1).
- NEW AT&T SURGE ARRESTOR: DC6-48-60-18-8F (TOTAL OF 1).
- NEW AT&T (2) 6 AWG DC POWER CABLES & (1) 18 PAIR OF FIBER RUNS.
- RELOCATE (2) EXISTING 4478 B14 FROM SHELTER TO TOWER
- NEW AT&T LOW PROFILE PLATFORM, SITEPRO-1 PART# RMQLP-4210-H10

ITEMS TO BE MOUNTED IN EQUIPMENT LOCATION:

- INSTALL (1) FRONTHAUL GATEWAY (FHG) 6648 +XCEDE CABLE. FINAL=1x6601/1x5216/1xXMU03/1x6630 Mixed-Mode+IDLe/1x6648+IDLe Xcede.
- INSTALL (2) -48v RECTIFIERS FOR TOTAL OF (10) -48v RECTIFIERS.
- INSTALL (12) VERTIV UP CONVERTERS.

ITEMS TO BE REMOVED:

- DECOMMISSION EXISTING AT&T ANTENNA: HPA65R-BU6A (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- DECOMMISSION EXISTING AT&T ANTENNA: HPA-65R-BUU-H6 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- DECOMMISSION EXISTING AT&T DIPLEXERS: DBCT108F1V92-1 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- DECOMMISSION EXISTING AT&T (6) 1-5/8" COAX CABLES.

ITEMS TO REMAIN:

- (3) ANTENNAS, (14) RRU'S, (2) SURGE ARRESTOR, (4) DC POWER, (2) FIBER, & (6) 1-5/8" COAX CABLES

SITE ADDRESS: 151 SAND HILL ROAD  
SOUTH WINDSOR, CT 06074

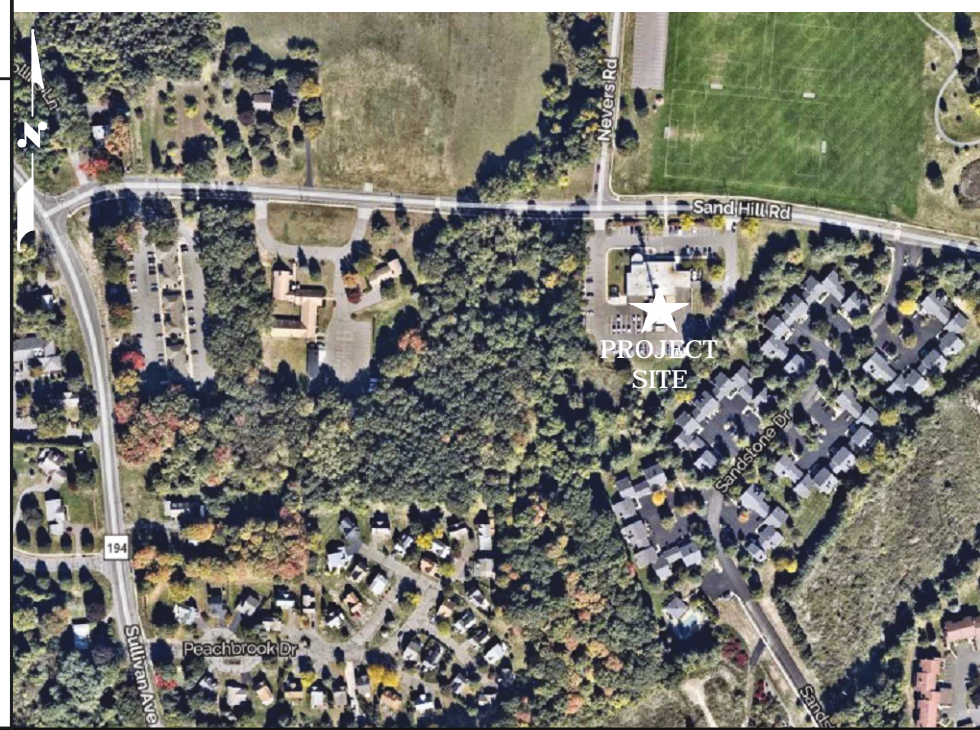
LATITUDE: 41.8359919° N, 41° 50' 9.57" N  
LONGITUDE: 72.5519989° W, 72° 33' 7.19" W  
TYPE OF SITE: MONOPOLE / INDOOR EQUIPMENT  
STRUCTURE HEIGHT: 187'-0"±  
RAD CENTER: 170'-0"±  
CURRENT USE: TELECOMMUNICATIONS FACILITY  
PROPOSED USE: TELECOMMUNICATIONS FACILITY

**DRAWING INDEX**

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	1
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A-2	ANTENNA LAYOUT PLANS & ELEVATION	1
A-3	DETAILS	1
G-1	GROUNDING DETAILS	1
RF-1	RF PLUMBING DIAGRAM	1

**VICINITY MAP**

DIRECTIONS TO SITE:  
HEAD SOUTHEAST TOWARD CAPITAL BLVD, TURN LEFT ONTO CAPITAL BLVD, USE THE LEFT LANE TO TURN LEFT ONTO STATE HWY 411, TURN LEFT TO MERGE WITH I-91 N, MERGE WITH I-91 N, USE THE LEFT LANE TO TAKE EXIT 29 FOR U.S.5 N/CONNECTICUT 15 N/I-84 E TOWARD E HARTFORD/BOSTON, MERGE WITH US-5 N, CONTINUE ONTO CT-15 N, TAKE THE EXIT ON THE LEFT ONTO I-84 E TOWARD BOSTON, TAKE EXIT 62 FOR BUCKLAND STREET, USE THE LEFT 2 LANES TO TURN LEFT ONTO BUCKLAND ST, CONTINUE ONTO CT-194 W, TURN RIGHT ONTO SAND HILL RD, TURN RIGHT ONTO SAND HILL DR, DESTINATION WILL BE ON THE RIGHT.



**SBA APPROVED**

By Stephen Roth at 3:02:32 AM, 12/5/2022



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Jill Stewart  
04/17/2023 5:11 PM

**SITE NUMBER: CTL01139**

**SITE NAME: SOUTH WINDSOR SAND HILL RD**

**FA CODE: 10035389**

**PACE ID: MRCTB053539, MRCTB055316, MRCTB054747,  
MRCTB056457, MRCTB061753**

**PROJECT: 5G NR RADIO, 5G NR 1SR CBAND, 5G NR SOFTWARE  
RADIO, 5G NR ACTIVATION, 4T4R, 2022 UPGRADE**

**GENERAL NOTES**

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T MOBILITY REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
4. CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN.

**72 HOURS**

**CALL BEFORE YOU DIG**

CALL TOLL FREE 1-800-922-4455  
OR CALL 811

**UNDERGROUND SERVICE ALERT**

**HGD HUDSON Design Group LLC**

45 BEECHWOOD DRIVE  
NORTH ANDOVER, MA 01845  
TEL: (978) 557-5553  
FAX: (978) 336-5586

**CENTERLINE COMMUNICATIONS**

750 WEST CENTER STREET, SUITE #301  
WEST BRIDGEWATER, MA 02379

**SITE NUMBER: CTL01139**  
**SITE NAME: SOUTH WINDSOR SAND HILL RD**

151 SAND HILL ROAD  
SOUTH WINDSOR, CT 06074  
HARTFORD COUNTY

**at&t**

500 ENTERPRISE DRIVE, SUITE 3A  
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	10/18/22	ISSUED FOR CONSTRUCTION	KW	MKT	DPH
C	08/30/22	ISSUED FOR PERMITTING	SG	MKT	DPH
B	08/15/22	ISSUED FOR PERMITTING	KW	MKT	DPH
A	04/26/22	ISSUED FOR REVIEW	GD	MKT	DPH

SCALE: AS SHOWN    DESIGNED BY: AT    DRAWN BY: GD

AT&T		
TITLE SHEET		
5G NR RADIO, 5G NR 1SR CBAND, 5G NR SOFTWARE RADIO, 5G NR ACTIVATION, 4T4R, 2022 UPGRADE		
SITE NUMBER	DRAWING NUMBER	REV
CTL01139	T-1	1



**GROUNDING NOTES**

1. 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.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81 STANDARDS) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS AND #2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

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**GENERAL NOTES**

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:  
CONTRACTOR – CENTERLINE  
SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)  
OWNER – AT&T MOBILITY
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
9. 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.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."
17. 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.
18. 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 SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
19. SINCE THE CELL SITE IS 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 ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
20. **APPLICABLE BUILDING CODES:**  
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: IBC 2015 WITH 2018 CT STATE BUILDING CODE AMENDMENTS  
ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE (NFPA 70-2017)**

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, FOURTEENTH EDITION;**

**TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-H, STRUCTURAL STANDARDS FOR STEEL**

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.

**ABBREVIATIONS**

AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BTCW	BARE TINNED SOLID COPPER WIRE	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BGR	BURIED GROUND RING	MIN	MINIMUM	TBRR	TO BE REMOVED AND REPLACED
BTS	BASE TRANSCEIVER STATION	P	PROPOSED	TYP	TYPICAL
E	EXISTING	NTS	NOT TO SCALE	UG	UNDER GROUND
EGB	EQUIPMENT GROUND BAR	RAD	RADIATION CENTER LINE (ANTENNA)	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		



45 BEECHWOOD DRIVE  
NORTH ANDOVER, MA 01845  
TEL: (978) 557-5553  
FAX: (978) 336-5586



750 WEST CENTER STREET, SUITE #301  
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CTL01139  
SITE NAME: SOUTH WINDSOR SAND HILL RD

151 SAND HILL ROAD  
SOUTH WINDSOR, CT 06074  
HARTFORD COUNTY



500 ENTERPRISE DRIVE, SUITE 3A  
ROCKY HILL, CT 06067

1	10/18/22	ISSUED FOR CONSTRUCTION	KW	MKT	DPH
C	08/30/22	ISSUED FOR PERMITTING	SG	MKT	DPH
B	08/15/22	ISSUED FOR PERMITTING	KW	MKT	DPH
A	04/26/22	ISSUED FOR REVIEW	GD	MKT	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: GD		

**AT&T**

GENERAL NOTES  
5G NR RADIO, 5G NR 1SR CBAND, 5G NR SOFTWARE RADIO, 5G NR ACTIVATION, 4T4R, 2022 UPGRADE

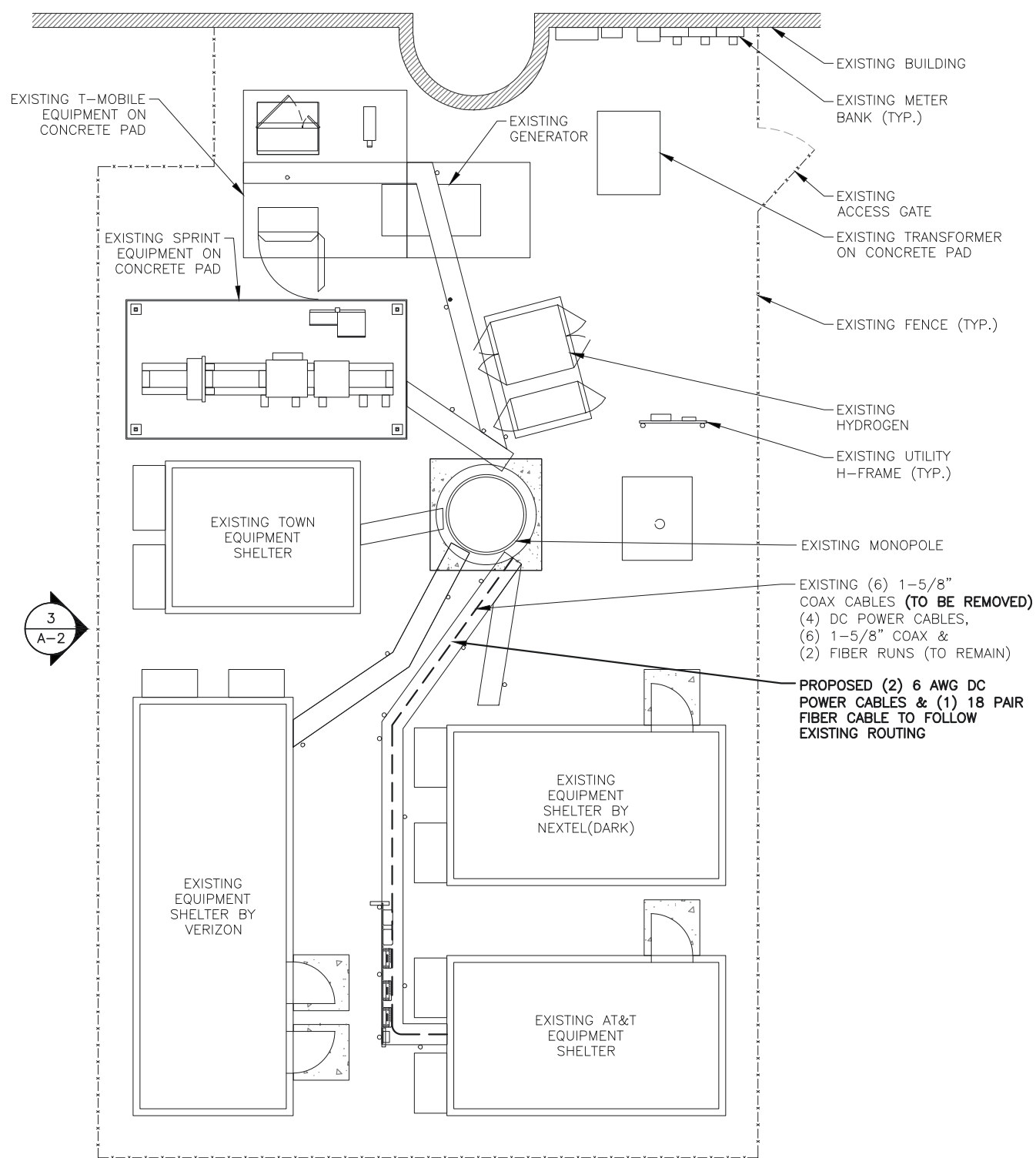
SITE NUMBER	DRAWING NUMBER	REV
CTL01139	GN-1	1



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**Centerline Communications**  
**Jill Stewart**  
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**NOTE:**  
 REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

**NOTE:**  
 AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: TOWER ENGINEERING PROFESSIONALS DATED: SEPTEMBER 1, 2022



EXISTING FIBER MANAGEMENT BOX (TOTAL OF 2) (TO REMAIN)

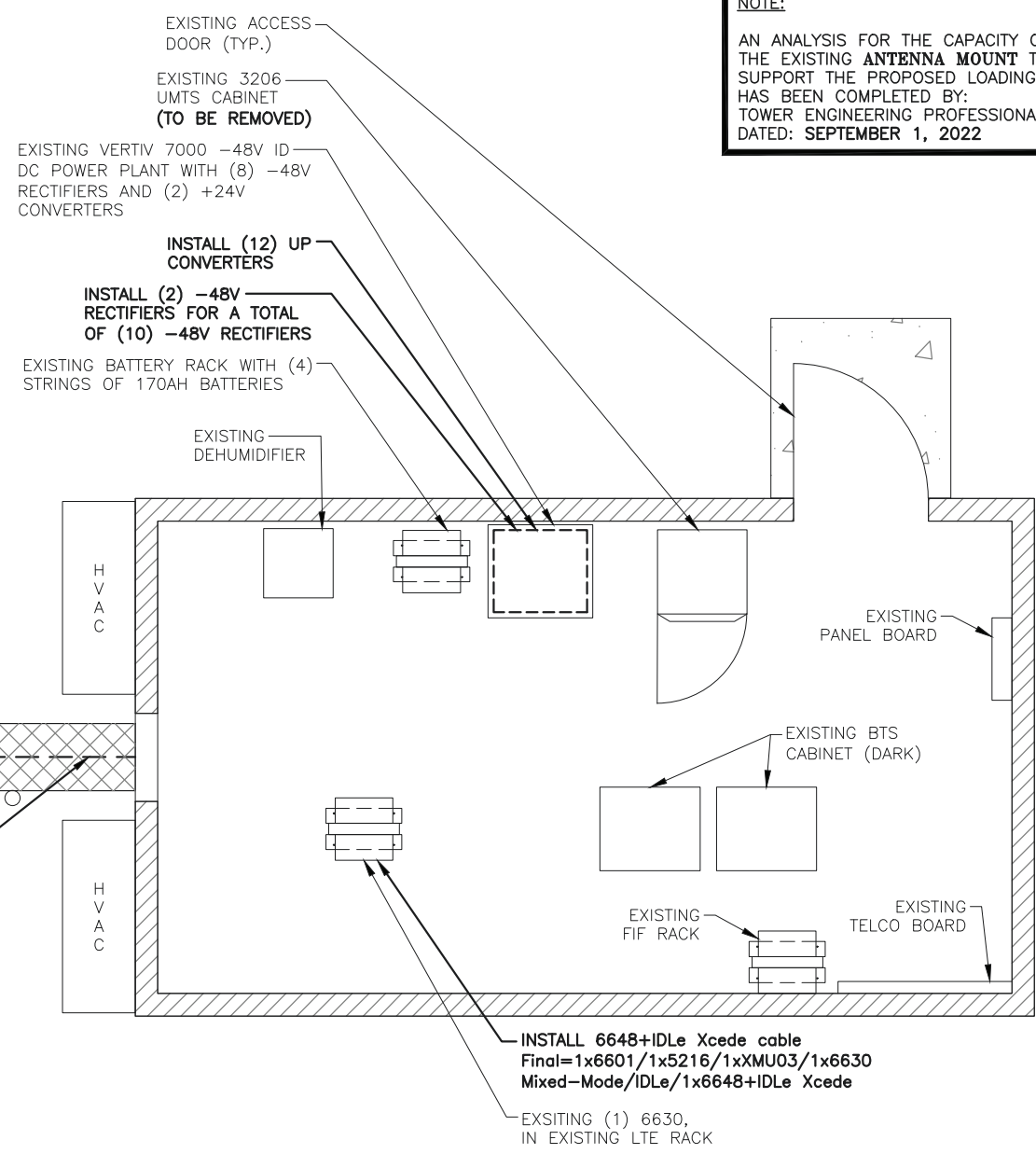
EXISTING AT& RUS 4478 B14 (700) (TYP. OF 1 PER ALPHA & BETA SECTOR, TOTAL OF 2) (TO BE RELOCATED TO TOWER)

EXISTING RUS-E2 B29 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3) (TO REMAIN)

EXISTING RAYCAP DC12 (TOTAL OF 1) (TO REMAIN)

EXISTING (6) 1-5/8" COAX CABLES (TO BE REMOVED)  
 (4) DC POWER CABLES,  
 (6) 1-5/8" COAX &  
 (2) FIBER RUNS (TO REMAIN)

PROPOSED (2) 6 AWG DC POWER CABLES & (1) 18 PAIR FIBER CABLE TO FOLLOW EXISTING ROUTING



INSTALL (12) UP CONVERTERS

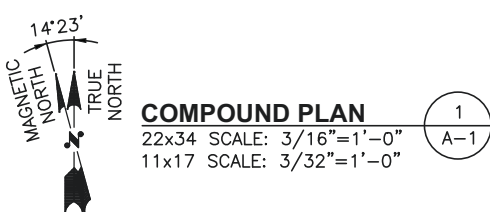
INSTALL (2) -48V RECTIFIERS FOR A TOTAL OF (10) -48V RECTIFIERS

EXISTING BATTERY RACK WITH (4) STRINGS OF 170AH BATTERIES

INSTALL 6648+IDLe Xcede cable  
 Final=1x6601/1x5216/1xXMU03/1x6630  
 Mixed-Mode/IDLe/1x6648+IDLe Xcede

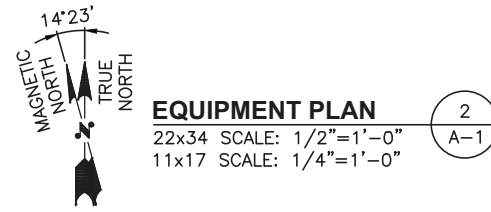
EXISTING (1) 6630, IN EXISTING LTE RACK

3  
A-2



**COMPOUND PLAN**  
 22x34 SCALE: 3/16"=1'-0"  
 11x17 SCALE: 3/32"=1'-0"

1  
A-1



**EQUIPMENT PLAN**  
 22x34 SCALE: 1/2"=1'-0"  
 11x17 SCALE: 1/4"=1'-0"

2  
A-1

**HG HUDSON Design Group LLC**  
 45 BEECHWOOD DRIVE  
 NORTH ANDOVER, MA 01845  
 TEL: (978) 557-5553  
 FAX: (978) 336-5586

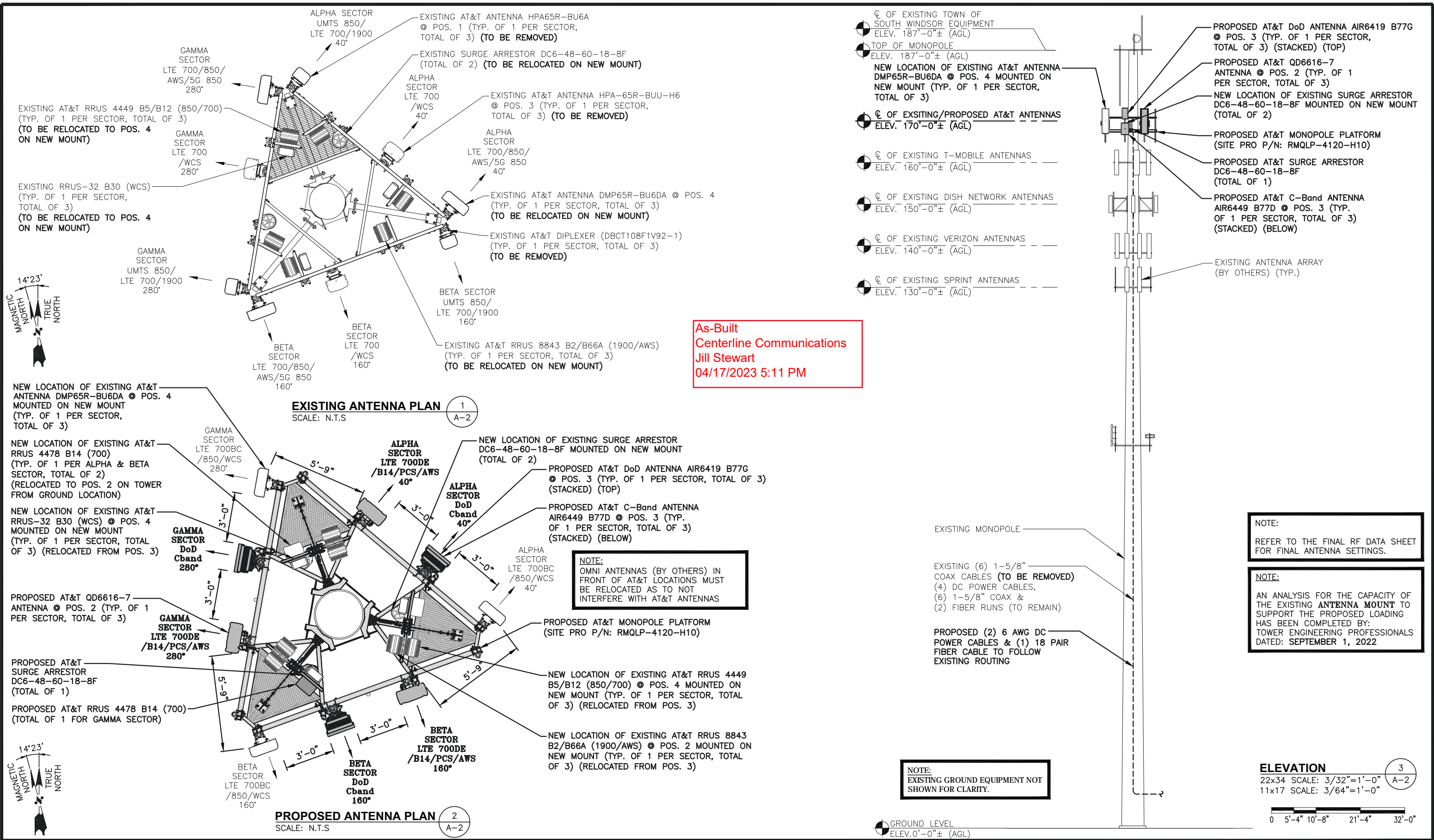
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 750 WEST CENTER STREET, SUITE #301  
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**AT&T**  
 COMPOUND & EQUIPMENT PLANS  
 5G NR RADIO, 5G NR 1SR CBAND, 5G NR SOFTWARE RADIO, 5G NR ACTIVATION, 4T4R, 2022 UPGRADE  
 SITE NUMBER: CTL01139  
 DRAWING NUMBER: A-1  
 REV: 1



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Centerline Communications  
Jill Stewart  
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**EXISTING ANTENNA PLAN** 1  
SCALE: N.T.S.

**PROPOSED ANTENNA PLAN** 2  
SCALE: N.T.S.

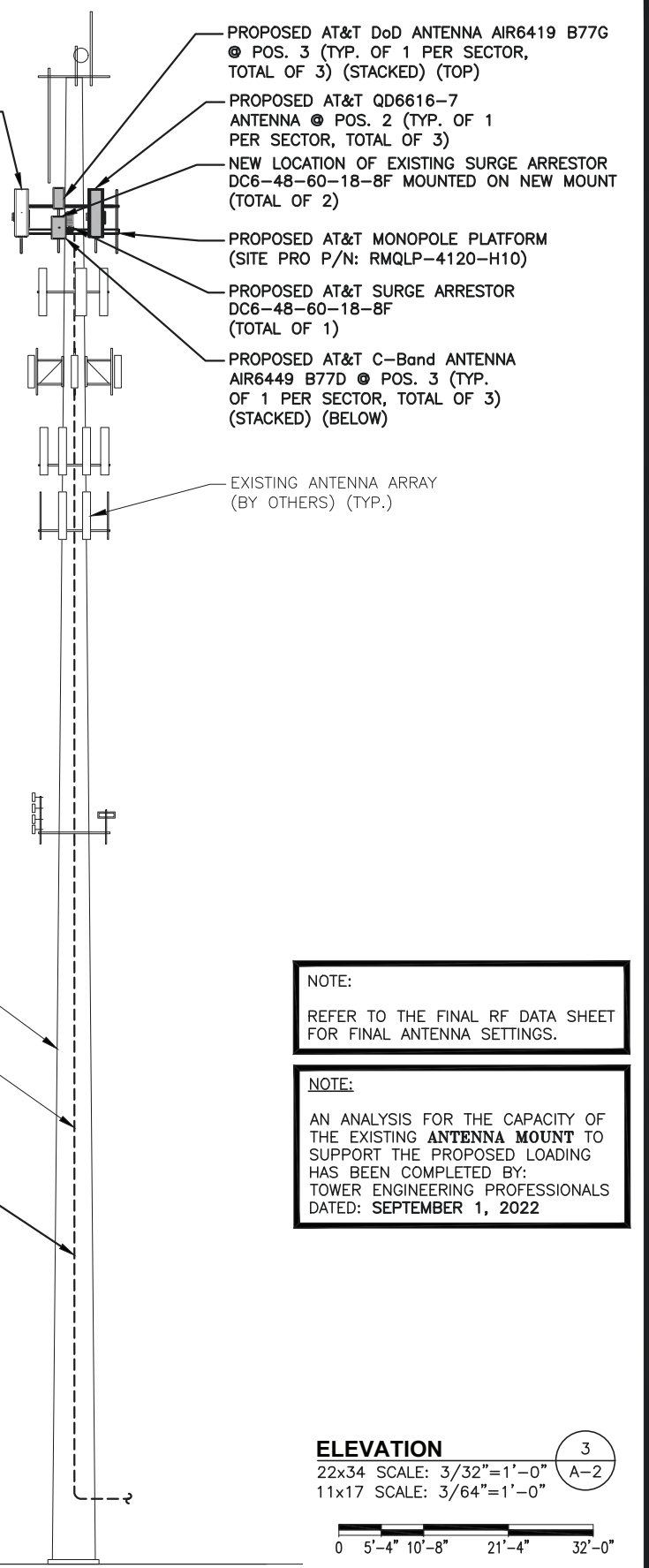
**NOTE:**  
OMNI ANTENNAS (BY OTHERS) IN FRONT OF AT&T LOCATIONS MUST BE RELOCATED AS TO NOT INTERFERE WITH AT&T ANTENNAS

**NOTE:**  
EXISTING GROUND EQUIPMENT NOT SHOWN FOR CLARITY.

**NOTE:**  
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

**NOTE:**  
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: TOWER ENGINEERING PROFESSIONALS DATED: SEPTEMBER 1, 2022

- ☉ OF EXISTING TOWN OF SOUTH WINDSOR EQUIPMENT ELEV. 187'-0"± (AGL)
- ☉ TOP OF MONOPOLE ELEV. 187'-0"± (AGL)
- ☉ NEW LOCATION OF EXISTING AT&T ANTENNA DMP65R-BU6DA @ POS. 4 MOUNTED ON NEW MOUNT (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- ☉ ☉ OF EXISTING/PROPOSED AT&T ANTENNAS ELEV. 170'-0"± (AGL)
- ☉ ☉ OF EXISTING T-MOBILE ANTENNAS ELEV. 160'-0"± (AGL)
- ☉ ☉ OF EXISTING DISH NETWORK ANTENNAS ELEV. 150'-0"± (AGL)
- ☉ ☉ OF EXISTING VERIZON ANTENNAS ELEV. 140'-0"± (AGL)
- ☉ ☉ OF EXISTING SPRINT ANTENNAS ELEV. 130'-0"± (AGL)



**ELEVATION** 3  
22x34 SCALE: 3/32"=1'-0" A-2  
11x17 SCALE: 3/64"=1'-0"

<p>45 BEECHWOOD DRIVE NORTH ANDOVER, MA 01845 TEL: (978) 557-5553 FAX: (978) 336-5586</p>	<p>750 WEST CENTER STREET, SUITE #301 WEST BRIDGEWATER, MA 02379</p>	<p>SITE NUMBER: CTL01139 SITE NAME: SOUTH WINDSOR SAND HILL RD</p> <p>151 SAND HILL ROAD SOUTH WINDSOR, CT 06074 HARTFORD COUNTY</p>	<p>500 ENTERPRISE DRIVE, SUITE 3A ROCKY HILL, CT 06067</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>1</td> <td>10/18/22</td> <td>ISSUED FOR CONSTRUCTION</td> <td>KW</td> <td>MKT</td> <td>DPH</td> </tr> <tr> <td>C</td> <td>08/30/22</td> <td>ISSUED FOR PERMITTING</td> <td>SG</td> <td>MKT</td> <td>DPH</td> </tr> <tr> <td>B</td> <td>08/15/22</td> <td>ISSUED FOR PERMITTING</td> <td>KW</td> <td>MKT</td> <td>DPH</td> </tr> <tr> <td>A</td> <td>04/26/22</td> <td>ISSUED FOR REVIEW</td> <td>GD</td> <td>MKT</td> <td>DPH</td> </tr> <tr> <td>NO.</td> <td>DATE</td> <td>REVISIONS</td> <td>BY</td> <td>CHK</td> <td>APP'D</td> </tr> <tr> <td colspan="2">SCALE: AS SHOWN</td> <td>DESIGNED BY: AT</td> <td colspan="3">DRAWN BY: GD</td> </tr> </table>	1	10/18/22	ISSUED FOR CONSTRUCTION	KW	MKT	DPH	C	08/30/22	ISSUED FOR PERMITTING	SG	MKT	DPH	B	08/15/22	ISSUED FOR PERMITTING	KW	MKT	DPH	A	04/26/22	ISSUED FOR REVIEW	GD	MKT	DPH	NO.	DATE	REVISIONS	BY	CHK	APP'D	SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: GD			<p><b>AT&amp;T</b></p> <p>ANTENNA LAYOUT PLANS &amp; ELEVATION 5G NR RADIO, 5G NR 1SR CBAND, 5G NR SOFTWARE RADIO, 5G NR ACTIVATION, 4T4R, 2022 UPGRADE</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>SITE NUMBER</td> <td>DRAWING NUMBER</td> <td>REV</td> </tr> <tr> <td>CTL01139</td> <td>A-2</td> <td>1</td> </tr> </table>	SITE NUMBER	DRAWING NUMBER	REV	CTL01139	A-2	1
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**ANTENNA SCHEDULE**

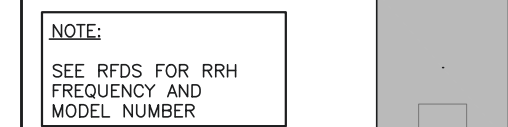
SECTOR	EXISTING/PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA Ø HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	-	-	-	-	-	-	-	-	-	(2) 1-5/8" COAX	(E) (1) RAYCAP DC6-48-60-18-8F
A2	PROPOSED	LTE 700DE /B14/PCS/AWS	QD6616-7	72"x22"x9.6"	170'-0"±	40°	-	(E)(1)RRUS-4478 B14 (700) (E)(1)RRUS-8843 B2/B66A (1900/AWS) (E)(1)RRUS-E2 B29 (700)(GROUND)	-	(E)(2) DC POWER (1) FIBER (E)(1)(Y-CABLE)	(E) (1) RAYCAP DC6-48-60-18-8F
A3	PROPOSED	DoD C-BAND	AIR6419 B77G AIR6449 B77D	31.1"x16.1"x7.3" 30.4"x15.9"x8.1"	170'-0"±	40°	-	-	-	-	(E) (1) RAYCAP DC6-48-60-18-8F
A4	EXISTING	LTE 700BC /850/WCS	DMP65R-BU6DA	71.2"x20.7"x7.7"	170'-0"±	40°	-	(E)(1)RRUS-4449 B5/B12 (850/700) (E)(1)RRUS-32 B30 (WCS)	-	(E)(1)(Y-CABLE)	(E) (1) RAYCAP DC6-48-60-18-8F
B1	-	-	-	-	-	-	-	-	-	(2) 1-5/8" COAX	(E) (1) RAYCAP DC6-48-60-18-8F
B2	PROPOSED	LTE 700DE /B14/PCS/AWS	QD6616-7	72"x22"x9.6"	170'-0"±	160°	-	(E)(1)RRUS-4478 B14 (700) (E)(1)RRUS-8843 B2/B66A (1900/AWS) (E)(1)RRUS-E2 B29 (700)(GROUND)	-	(E)(2) DC POWER (1) FIBER (E)(1)(Y-CABLE)	(E) (1) RAYCAP DC6-48-60-18-8F
B3	PROPOSED	DoD C-BAND	AIR6419 B77G AIR6449 B77D	31.1"x16.1"x7.3" 30.4"x15.9"x8.1"	170'-0"±	160°	-	-	-	-	(E) (1) RAYCAP DC6-48-60-18-8F
B4	EXISTING	LTE 700BC /850/WCS	DMP65R-BU6DA	71.2"x20.7"x7.7"	170'-0"±	160°	-	(E)(1)RRUS-4449 B5/B12 (850/700) (E)(1)RRUS-32 B30 (WCS)	-	(E)(1)(Y-CABLE)	(E) (1) RAYCAP DC6-48-60-18-8F
C1	-	-	-	-	-	-	-	-	-	(2) 1-5/8" COAX	(P) (1) RAYCAP DC6-48-60-18-8F
C2	PROPOSED	LTE 700DE /B14/PCS/AWS	QD6616-7	72"x22"x9.6"	170'-0"±	280°	-	(P)(1)RRUS-4478 B14 (700) (E)(1)RRUS-8843 B2/B66A (1900/AWS) (E)(1)RRUS-E2 B29 (700)(GROUND)	18.1"x13.4"x8.3"	(P)(2) 6 AWG DC POWER (P)(1) 18 PAIR FIBER (E)(1)(Y-CABLE)	(P) (1) RAYCAP DC6-48-60-18-8F
C3	PROPOSED	DoD C-BAND	AIR6419 B77G AIR6449 B77D	31.1"x16.1"x7.3" 30.4"x15.9"x8.1"	170'-0"±	280°	-	-	-	-	(P) (1) RAYCAP DC6-48-60-18-8F
C4	EXISTING	LTE 700BC /850/WCS	DMP65R-BU6DA	71.2"x20.7"x7.7"	170'-0"±	280°	-	(E)(1)RRUS-4449 B5/B12 (850/700) (E)(1)RRUS-32 B30 (WCS)	-	(E)(1)(Y-CABLE)	(P) (1) RAYCAP DC6-48-60-18-8F

**RRU CHART**

QUANTITY	MODEL	SIZE (L x W x D)
P(1)	4478 B14 (700)	18.1"x13.4"x8.3"
E(2)	4478 B14 (700)	18.1"x13.4"x8.3"
E(3)	RRUS-E2 B29 (700)	20.4"x18.5"x7.5"
E(3)	4449 B5/B12 (700/850)	17.9"x13.2"x10.4"
E(3)	8843 B2/B66A(1900/AWS)	14.9"x13.2"x10.9"
E(3)	RRUS-32 B30 (WCS)	27.2"x12.1"x7.0"

NOTE:  
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:  
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:  
TOWER ENGINEERING PROFESSIONALS  
DATED: SEPTEMBER 1, 2022



NOTE:  
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

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Centerline Communications  
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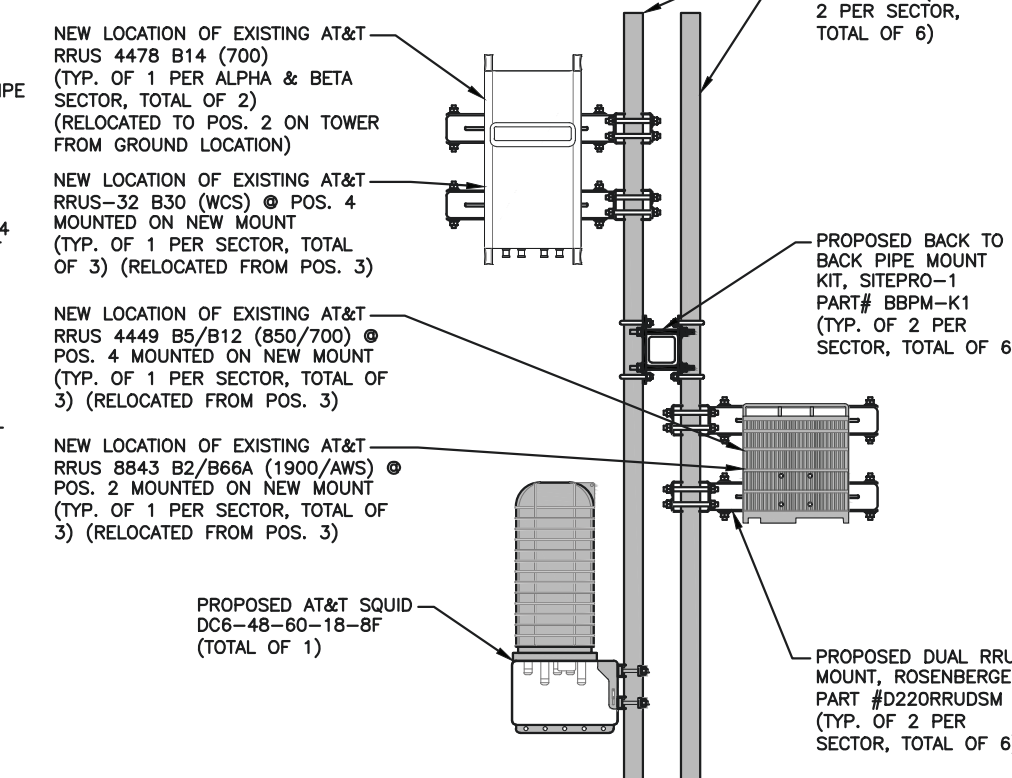
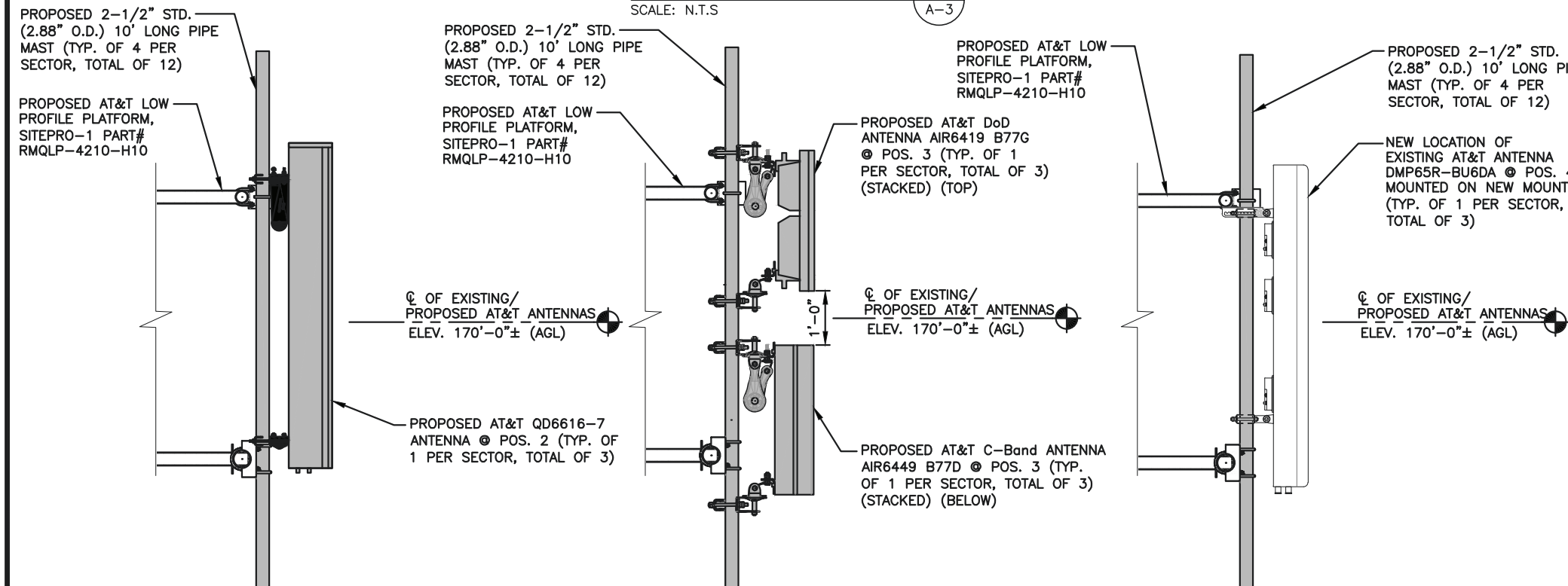
PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

NOTE:  
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

**PROPOSED RRU DETAIL** 2/A-3  
SCALE: N.T.S

**FINAL ANTENNA SCHEDULE**

SCALE: N.T.S



**PROPOSED ANTENNA @ POS. 2** 3/A-3

22x34 SCALE: 3/4"=1'-0"  
11x17 SCALE: 3/8"=1'-0"

**PROPOSED ANTENNA @ POS. 3** 4/A-3

22x34 SCALE: 3/4"=1'-0"  
11x17 SCALE: 3/8"=1'-0"

**PROPOSED ANTENNA @ POS. 4** 5/A-3

22x34 SCALE: 3/4"=1'-0"  
11x17 SCALE: 3/8"=1'-0"

**PROPOSED RRH & SURGE PROTECTOR MOUNTING DETAIL** 6/A-3

22x34 SCALE: 1"=1'-0"  
11x17 SCALE: 1/2"=1'-0"

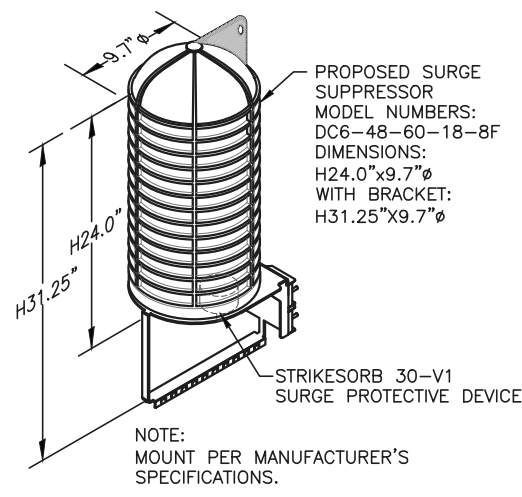
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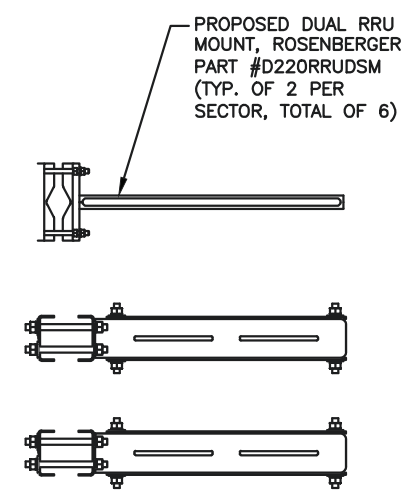
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NOTE:  
 REFER TO THE FINAL RF DATA SHEET  
 FOR FINAL ANTENNA SETTINGS.

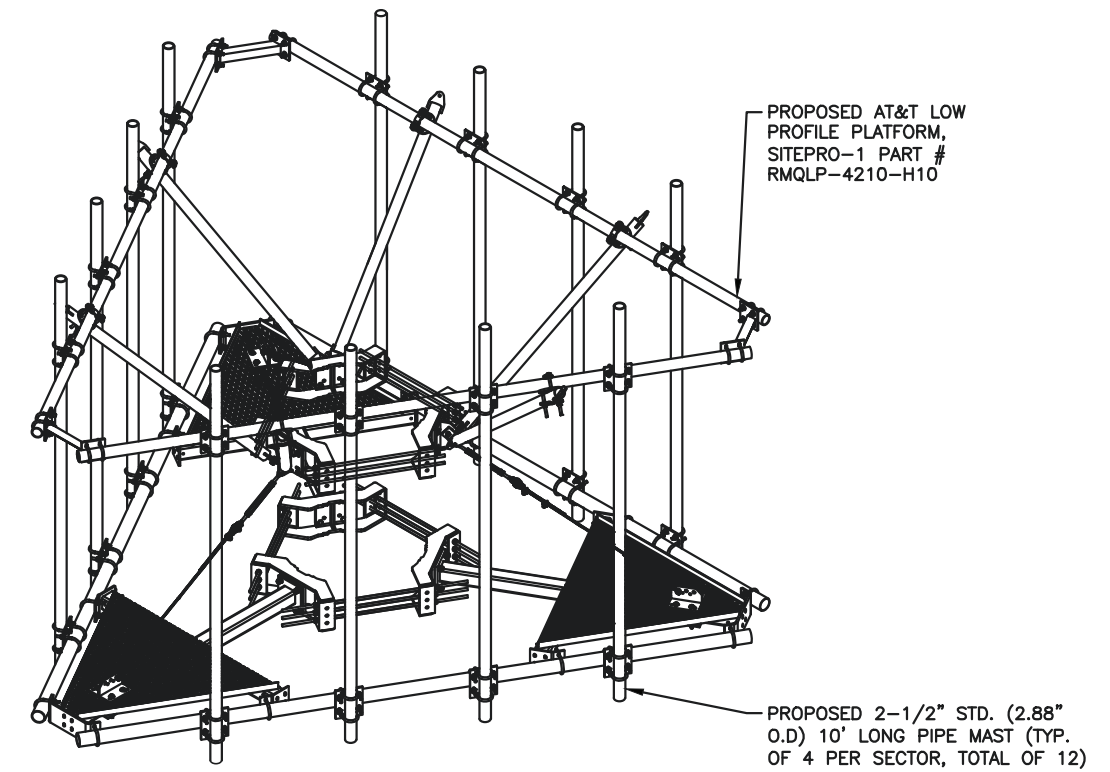
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 DATED: SEPTEMBER 1, 2022



**DC SURGE SUPPRESSOR DETAIL** 1  
 SCALE: N.T.S. A-4



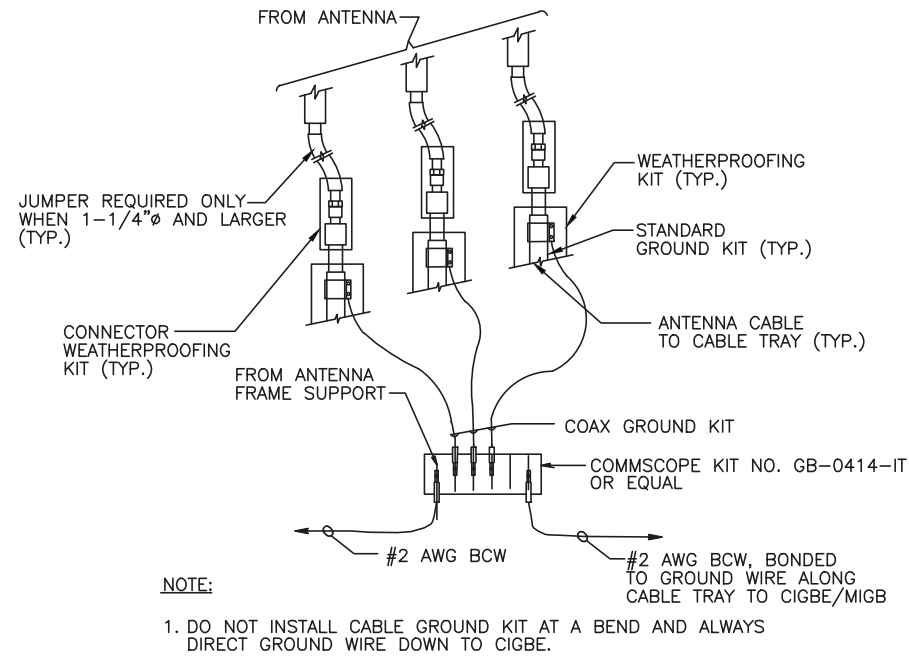
**BACK TO BACK RRU MOUNT DETAIL** 2  
 SCALE: N.T.S. A-4



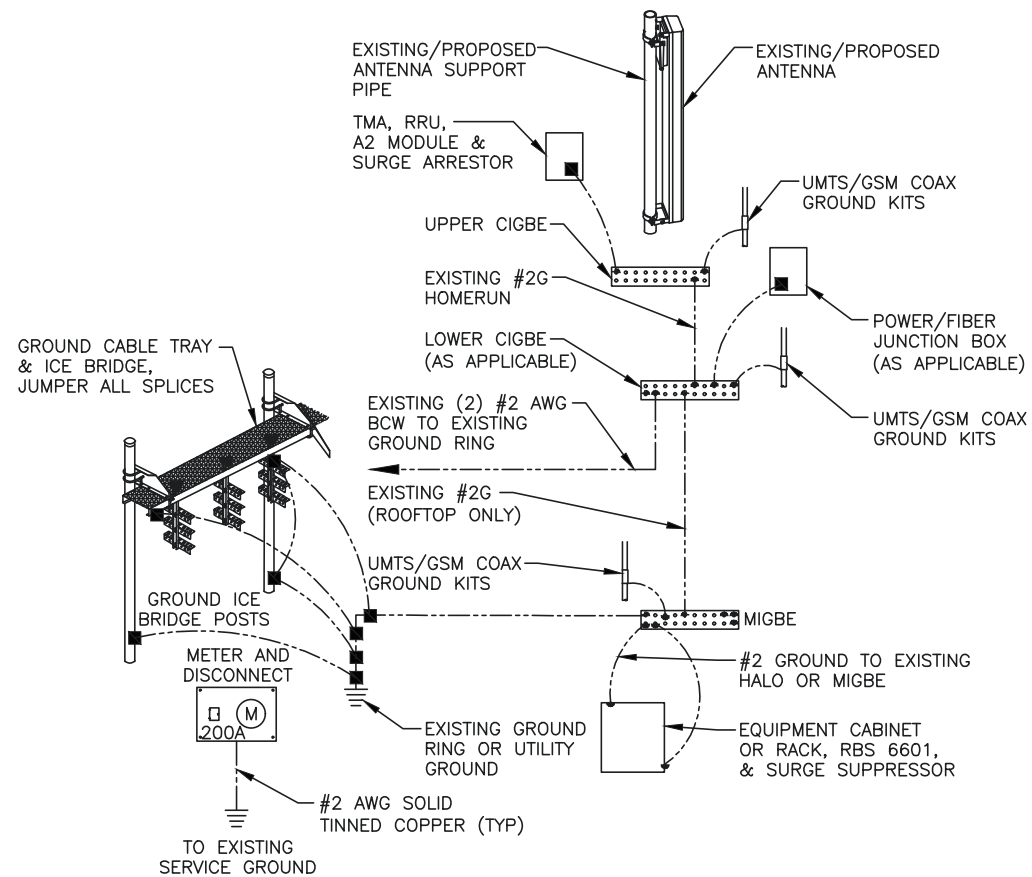
**14'-6" LOW PROFILE PLATFORM  
 (RMQLP-4120-H10)** 3  
 SCALE: N.T.S. A-4

1	10/18/22	ISSUED FOR CONSTRUCTION	KW	MKT	DPH
C	08/30/22	ISSUED FOR PERMITTING	SG	MKT	DPH
B	08/15/22	ISSUED FOR PERMITTING	KW	MKT	DPH
A	04/26/22	ISSUED FOR REVIEW	GD	MKT	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: GD		

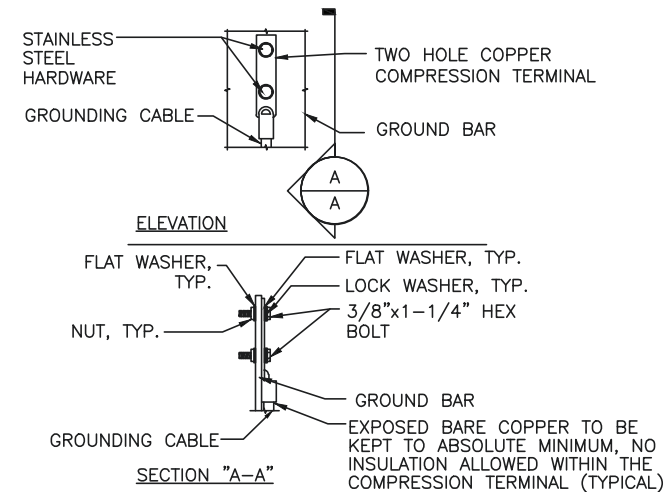
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04/17/2023 5:11 PM



**GROUND WIRE TO GROUND BAR CONNECTION DETAIL** 1  
SCALE: N.T.S. G-1



**GROUNDING RISER DIAGRAM** 2  
SCALE: N.T.S. G-1



- NOTES:
- "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
  - OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATION.
  - CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB

**TYPICAL GROUND BAR CONNECTION DETAIL** 3  
SCALE: N.T.S. G-1

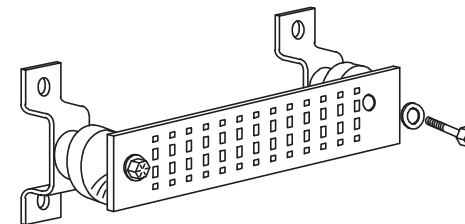
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

**SECTION "P" - SURGE PRODUCERS**

- CABLE ENTRY PORTS (HATCH PLATES) (#2 AWG)
- GENERATOR FRAMEWORK (IF AVAILABLE) (#2 AWG)
- TELCO GROUND BAR
- COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2 AWG)
- +24V POWER SUPPLY RETURN BAR (#2 AWG)
- 48V POWER SUPPLY RETURN BAR (#2 AWG)
- RECTIFIER FRAMES.

**SECTION "A" - SURGE ABSORBERS**

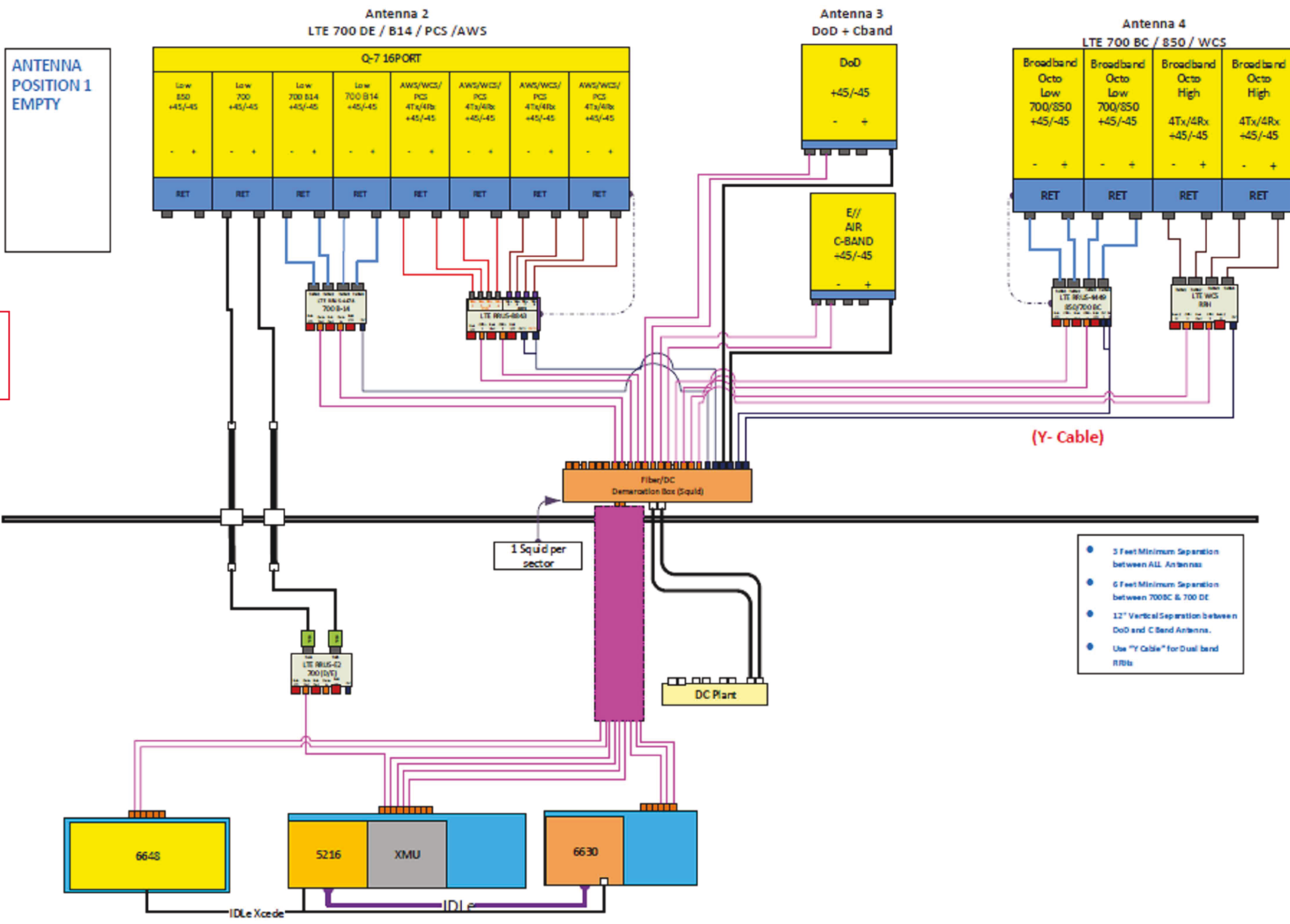
- INTERIOR GROUND RING (#2 AWG)
- EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2 AWG)
- METALLIC COLD WATER PIPE (IF AVAILABLE) (#2 AWG)
- BUILDING STEEL (IF AVAILABLE) (#2 AWG)



**GROUND BAR - DETAIL (AS REQUIRED)** 4  
SCALE: N.T.S. G-1

1	10/18/22	ISSUED FOR CONSTRUCTION	KW	MKT	DPH
C	08/30/22	ISSUED FOR PERMITTING	SG	MKT	DPH
B	08/15/22	ISSUED FOR PERMITTING	KW	MKT	DPH
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SCALE: AS SHOWN			DESIGNED BY: AT	DRAWN BY: GD	

<b>AT&amp;T</b>		
GROUNDING DETAILS 5G NR RADIO, 5G NR 1SR CBAND, 5G NR SOFTWARE RADIO, 5G NR ACTIVATION, 4T4R, 2022 UPGRADE		
SITE NUMBER	DRAWING NUMBER	REV
CTL01139	G-1	1



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ANTENNA  
POSITION 1  
EMPTY

- 3 Feet Minimum Separation between ALL Antennas
- 6 Feet Minimum Separation between 700BC & 700 DE
- 12" Vertical Separation between DoD and C-Band Antennas.
- Use "Y Cable" for Dual band RRHs

**NOTE:**  
1. CONTRACTOR TO CONFIRM ALL PARTS.  
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS

**NOTE:**  
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

**RF PLUMBING DIAGRAM** 1  
SCALE: N.T.S. RF-1

1	10/18/22	ISSUED FOR CONSTRUCTION	KW	MKT	DPH
C	08/30/22	ISSUED FOR PERMITTING	SG	MKT	DPH
B	08/15/22	ISSUED FOR PERMITTING	KW	MKT	DPH
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