# Final Report of Special Inspections

Project: *CT1083 (10035111)*

Location: *Glastonbury Police Department, Glastonbury, CT 06033*

Owner: *AT&T (Glastonbury Police Department)*

*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 7, 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 (ANSI/TIA-222-H), and the following:

1. Final Construction Drawings dated 11/23/2022, prepared by Hudson Design Group LLC, entitled "*Antenna Modifications, 5G NR Activation, 5G NR Software Radio, 5G NR Radio, BBU Reconfigure., 5G NR 1SR CABND, 4TXRX Antenna Retrofit, 2022 Upgrade*."
2. Final Mount Structural Analysis dated 04-26-2022, prepared by Hudson Design Group LLC

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)

Signature

06-12-2023
Date

*Licensed Professional Seal*

p: 978.557.5553 a: 45 Beechwood Drive, N. Andover, MA 01845

## PROJECT INFORMATION

SCOPE OF WORK:

ITEMS TO BE MOUNTED ON THE EXISTING SELF SUPPORT:
- NEW AT&T ANTENNAS: QD6616-7 (TYP. OF 1 PER ALPHA & BETA SECTORS, TOTAL OF 2).
- NEW AT&T ANTENNAS: QD8616-7 (GAMMA SECTOR, TOTAL OF 1).
- NEW AT&T DUAL ANTENNAS: (AIR 6419 B77G) POS 3 (TYP. 1 PER SECTOR, TOTAL OF 3) (STACKED) (TOP).
- NEW AT&T DUAL ANTENNAS: (AIR 6449 B77D) POS 3 (TYP. 1 PER SECTOR, TOTAL OF 3) (STACKED) (BOTTOM).
- NEW AT&T RRUS: 4449 B5/B12 (700) @ POS. 4 (TYP. 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T SURGE ARRESTOR: DC9-48-60-24-8C-EV (TOTAL OF 1).
- NEW AT&T (3) Y-CABLES
- NEW AT&T (3) 6 AWG DC POWER CABLES & (1) 24 PAIRS OF FIBER RUNS.
- RELOCATED EXISTING AT&T ANTENNA: 800-10965 @ POS. 4 (TYP. OF 1 PER ALPHA & BETA SECTORS, TOTAL OF 2).
- RELOCATED EXISTING AT&T ANTENNA: 800-10966 @ POS. 4 (GAMMA SECTOR, TOTAL OF 1).

ITEMS TO BE MOUNTED IN EQUIPMENT LOCATION:
- INSTALL (1) 6648 +XCEDE CABLE.
-FINAL=1x5216-XMU+1x6630+IDLe.
- ADD (3) NEW RECTIFIERS FOR TOTAL (10) RECTIFIERS

ITEMS TO BE REMOVED:
- DECOMMISSION EXISTING AT&T ANTENNA: OPA-65R-LCUU-H6 (TYP. OF 2 PER ALPHA & BETA SECTOR, TOTAL OF 4).
- DECOMMISSION EXISTING AT&T ANTENNA: OPA-65R-LCUU-H8 (TYP. OF 2 PER GAMMA SECTOR, TOTAL OF 2).
- DECOMMISSION EXISTING AT&T TRIPLEXERS: TPX-070821 (TYP. OF 4 PER SECTOR, TOTAL OF 12).
- DECOMMISSION EXISTING AT&T RRUS-11 B12 (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- DECOMMISSION EXISTING AT&T RRUS-4478 B5 (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- DECOMMISSION EXISTING AT&T (6) 1-1/4" COAX CABLES.
- DECOMMISSION EXISTING AT&T DC6 SURGE ARRESTOR (TOTAL OF 1)
- DECOMMISSION EXISTING (2) 8 AWG DC TRUNKS

ITEMS TO REMAIN:
- (3) ANTENNAS, (15) RRU'S, (2) SURGE ARRESTOR, (6) 1-1/4" COAX CABLES, (4) DC POWER & (2) FIBER.

| | |
|---|---|
| SITE ADDRESS: | GLASTONBURY POLICE DEPARTMENT<br>GLASTONBURY, CT 06033 |
| LATITUDE: | 41.7062139° N, 41° 42' 22.37" N |
| LONGITUDE: | -72.6069161° W, 72° 36' 24.89" W |
| TYPE OF SITE: | SELF SUPPORT TOWER / INDOOR EQUIPMENT |
| STRUCTURE HEIGHT: | 170'-0"± |
| RAD CENTER: | 166'-0"± |
| CURRENT USE: | TELECOMMUNICATIONS FACILITY |
| PROPOSED USE: | TELECOMMUNICATIONS FACILITY |

## DRAWING INDEX

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| A-1 | COMPOUND & EQUIPMENT PLANS | 1 |
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Centerline Communications
Jill Stewart
3/31/2023 11:00 AM

at&t

# SITE NUMBER: CTL01083

# SITE NAME: GLASTONBURY PD

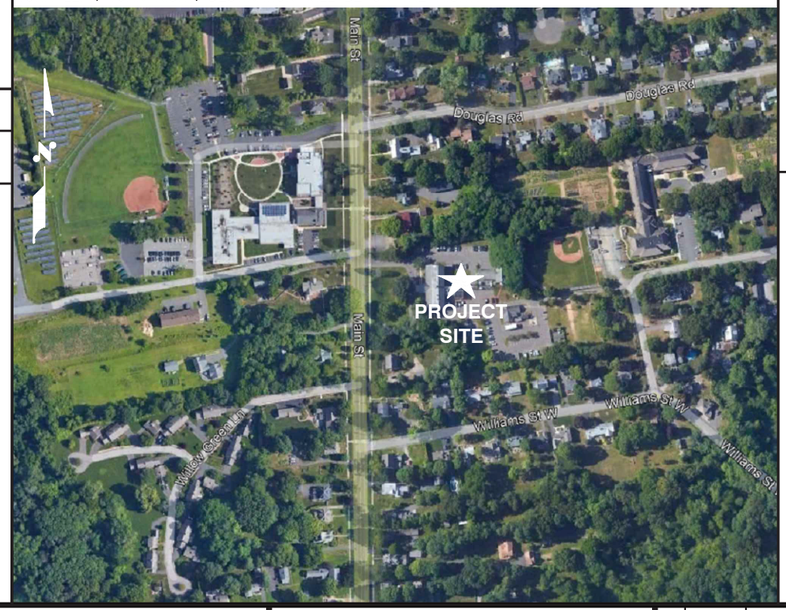
# FA CODE: 10035111

# PACE ID: MRCTB062515, MRCTB057900, MRCTB057753, MRCTB058148, MRCTB052352, MRCTB050834, MRCTB050977, MRCTB050960

# PROJECT: ANTENNA MODIFICATIONS, 5G NR ACTIVATION, 5G NR SOFTWARE RADIO, 5G NR RADIO, BBU RECONFIG., 5G NR 1SR CBAND, 4TXRX ANTENNA RETROFIT, 2022 UPGRADE

## VICINITY MAP

**DIRECTIONS TO SITE:**
HEAD SOUTHWEST, TURN RIGHT TOWARD LEGGATT MCCALL CONN, TURN LEFT ONTO LEGGATT MCCALL CONN, CONTINUE ONTO BURR ST, TURN LEFT ONTO COCHITUATE RD, USE THE RIGHT LANE TO MERGE WITH I-90 W VIA THE RAMP TO SPRINGFIELD, MERGE WITH I-90 W, TAKE EXIT 78 TOWARD I-84, CONTINUE ONTO I-84, ENTERING CONNECTICUT, TAKE EXIT 55 ON THE LEFT FOR CT-2 E TOWARD NORWICH, CONTINUE ONTO CT-2 E, TAKE EXIT 7 ON THE LEFT FOR CT-17 S TOWARD PORTLAND, CONTINUE ONTO CT-17 S/GLASTONBURY EXPY, TAKE THE EXIT TOWARD GLASTONBURY CENTER, MERGE WITH NEW LONDON TURNPIKE, TURN LEFT ONTO DOUGLAS RD, TURN LEFT ONTO MAIN ST, TURN LEFT, TURN RIGHT, DESTINATION WILL BE ON THE RIGHT.




## 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**

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER


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: CTL01083**
**SITE NAME: GLASTONBURY PD**

GLASTONBURY POLICE DEPARTMENT
GLASTONBURY, CT 06033
HARTFORD COUNTY


at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: VS

AT&T

TITLE SHEET
ANTENNA MODIFICATIONS, 5G NR ACTIVATION, 5G NR SOFTWARE RADIO, 5G NR RADIO, BBU RECONFIG., 5G NR 1SR CBAND, 4TXRX ANTENNA RETROFIT, 2022 UPGRADE

| SITE NUMBER | DRAWING NUMBER | REV |
|---|---|---|
| CTL01083 | 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

**As-Built**
**Centerline Communications**
**Jill Stewart**
**3/31/2023 11:00 AM**

## 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 | | |


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: CTL01083**
**SITE NAME: GLASTONBURY PD**

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GLASTONBURY, CT 06033
HARTFORD COUNTY


at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067


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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: VS

STATE OF CONNECTICUT · DANIEL P. HAMM · No. 24178 · LICENSED PROFESSIONAL ENGINEER

AT&T

GENERAL NOTES
ANTENNA MODIFICATIONS, 5G NR ACTIVATION, 5G NR SOFTWARE RADIO, 5G NR RADIO, BBU RECONFIG, 5G NR 1SR CBAND, 4TXRX ANTENNA RETROFIT 2022 UPGRADE

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| CTL01083 | GN-1 | 1 |

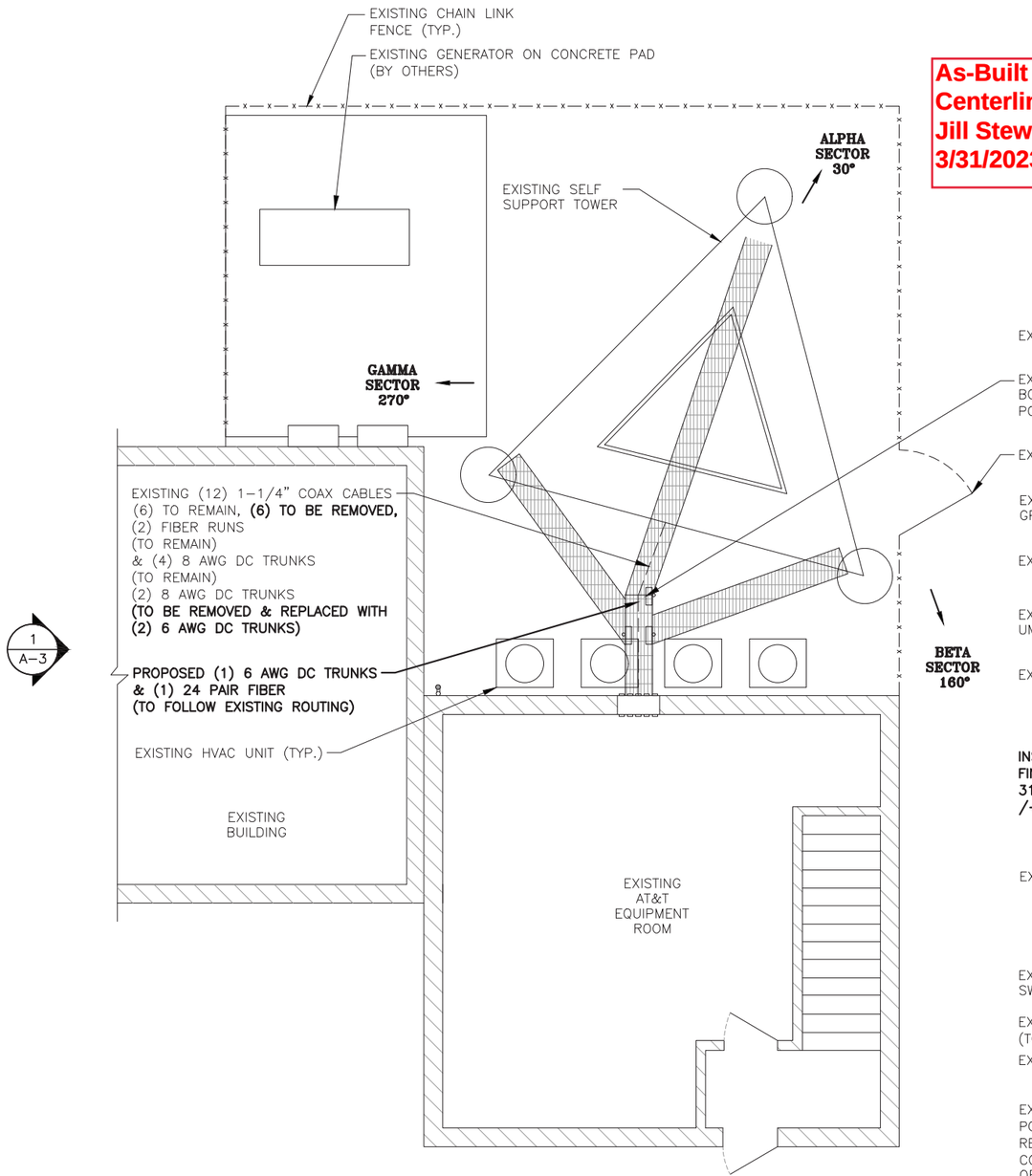
**As-Built**
**Centerline Communications**
**Jill Stewart**
**3/31/2023 11:00 AM**

NOTE:

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

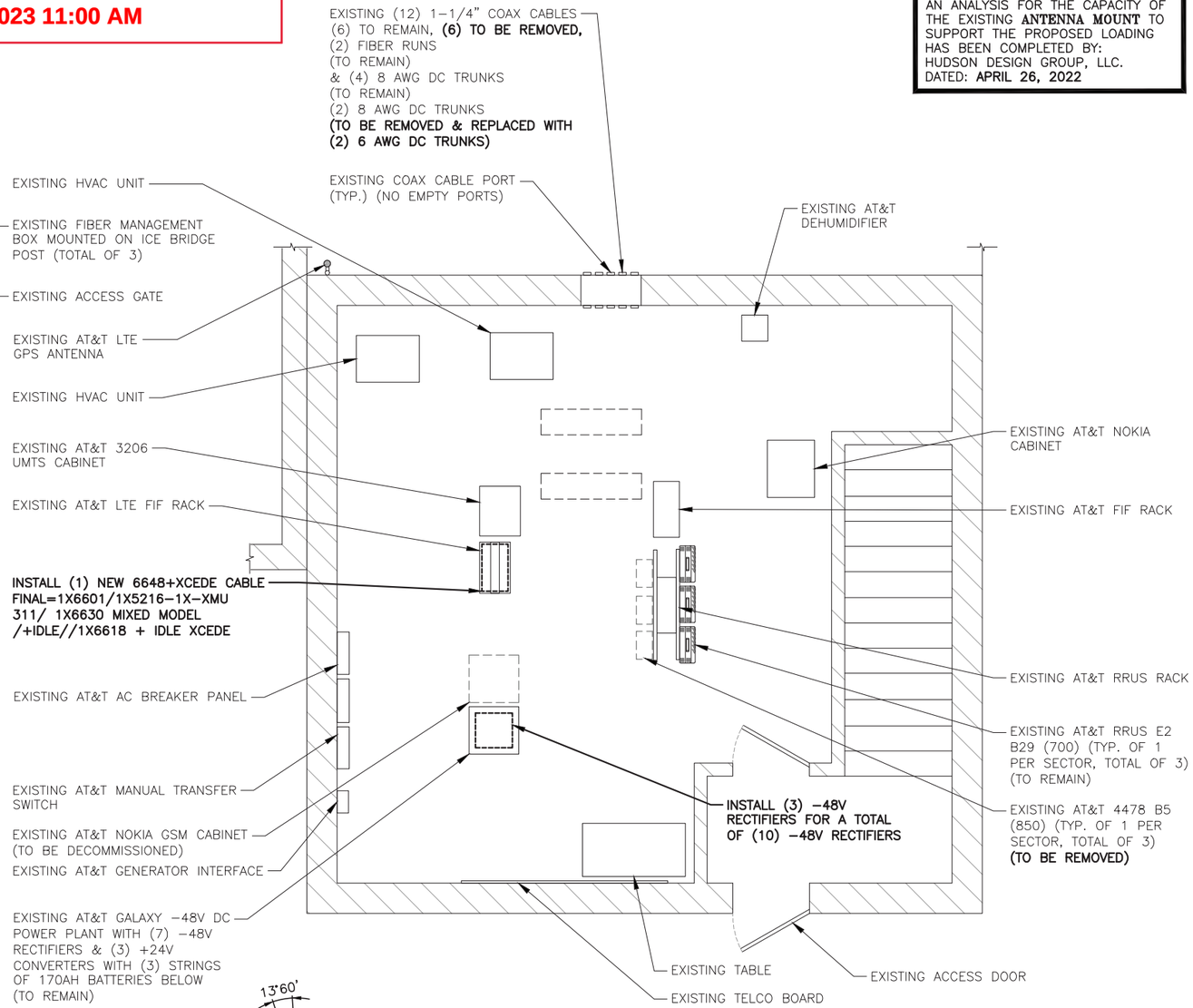
NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:
HUDSON DESIGN GROUP, LLC.
DATED: **APRIL 26, 2022**




**COMPOUND PLAN** 1 A-1
22x34 SCALE: 1/4"=1'-0"
11x17 SCALE: 1/8"=1'-0"

0 2'-0" 4'-0" 8'-0" 12'-0"




**EQUIPMENT PLAN** 2 A-1
22x34 SCALE: 3/8"=1'-0"
11x17 SCALE: 3/16"=1'-0"

0 4'-0" 8'-0"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STATE OF CONNECTICUT DANIEL P. HAMM No. 24178 LICENSED PROFESSIONAL ENGINEER

AT&T

COMPOUND & EQUIPMENT PLANS
ANTENNA MODIFICATIONS, 5G NR ACTIVATION, 5G NR SOFTWARE RADIO, 5G NR RADIO, BBU RECONFIG., 5G NR 1SR CBAND, 4TXRX ANTENNA RETROFIT 2022 UPGRADE

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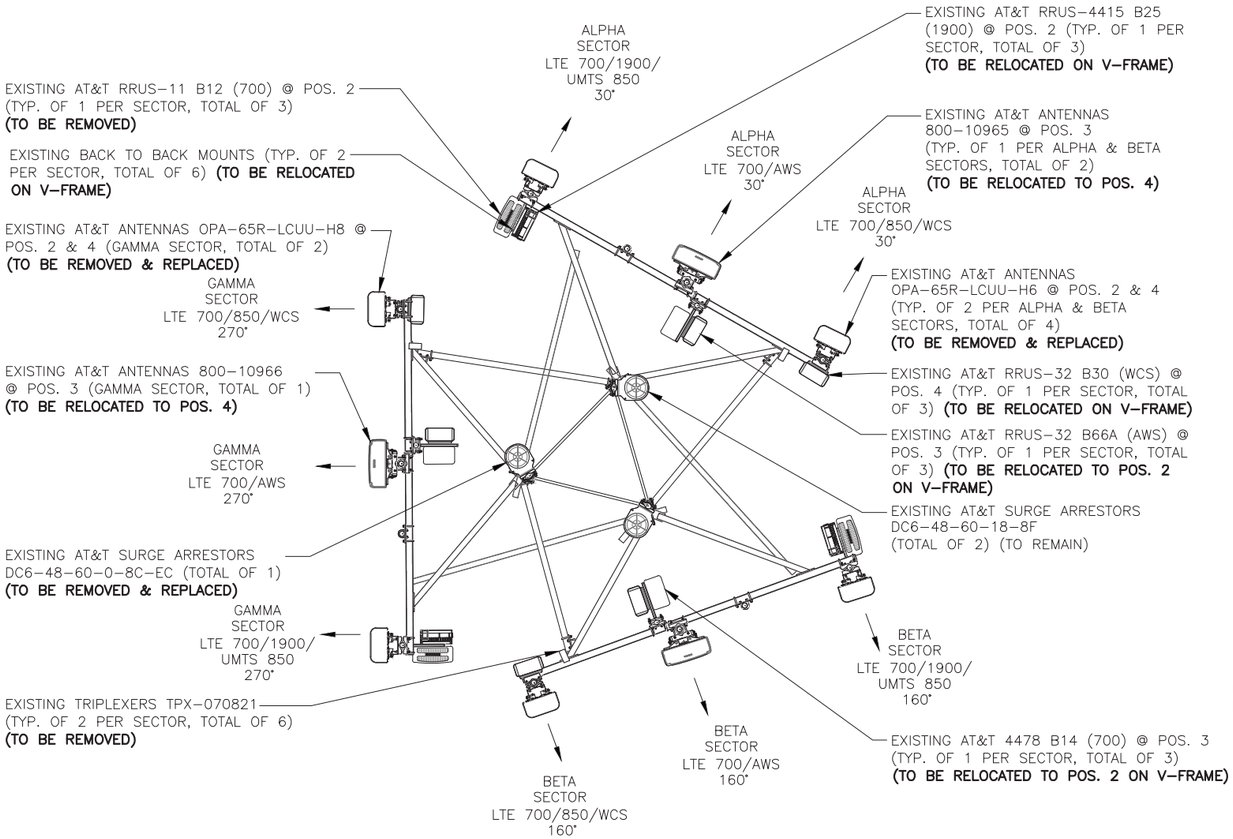


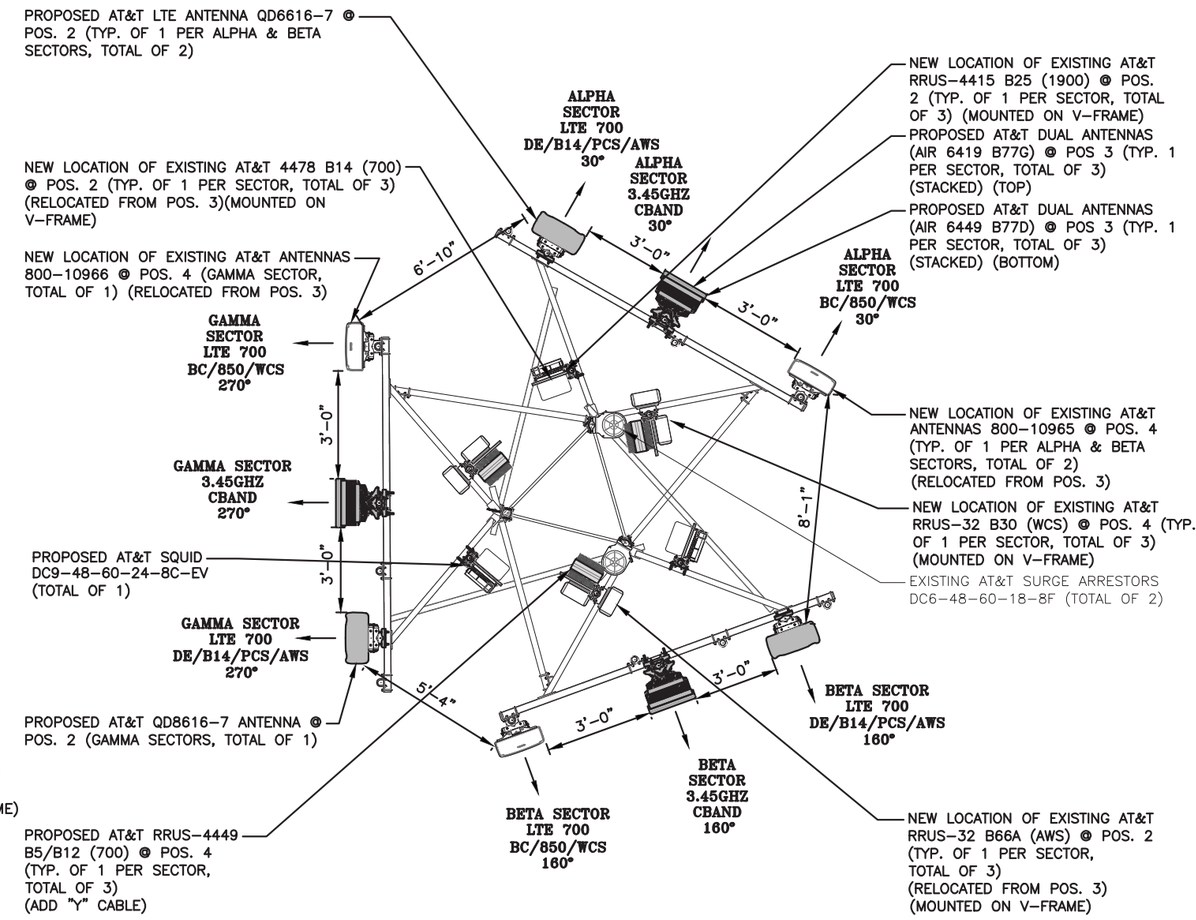



**EXISTING ANTENNA PLAN** (1 / A-2)
22x34 SCALE: 3/8"=1'-0"
11x17 SCALE: 3/16"=1'-0"
0 5'-4" 10'-8" 21'-4" 32'-0"


**PROPOSED ANTENNA PLAN** (2 / A-2)
22x34 SCALE: 3/8"=1'-0"
11x17 SCALE: 3/16"=1'-0"
0 5'-4" 10'-8" 21'-4" 32'-0"


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: CTL01083**
**SITE NAME: GLASTONBURY PD**

GLASTONBURY POLICE DEPARTMENT
GLASTONBURY, CT 06033
HARTFORD COUNTY


at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067


| NO. | DATE | REVISIONS | BY | CHK | APP'D |
|---|---|---|---|---|---|
| 1 | 11/23/22 | ISSUED FOR CONSTRUCTION | JS | MKT | DPH |
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| A | 04/13/22 | ISSUED FOR REVIEW | VS | MKT | DPH |

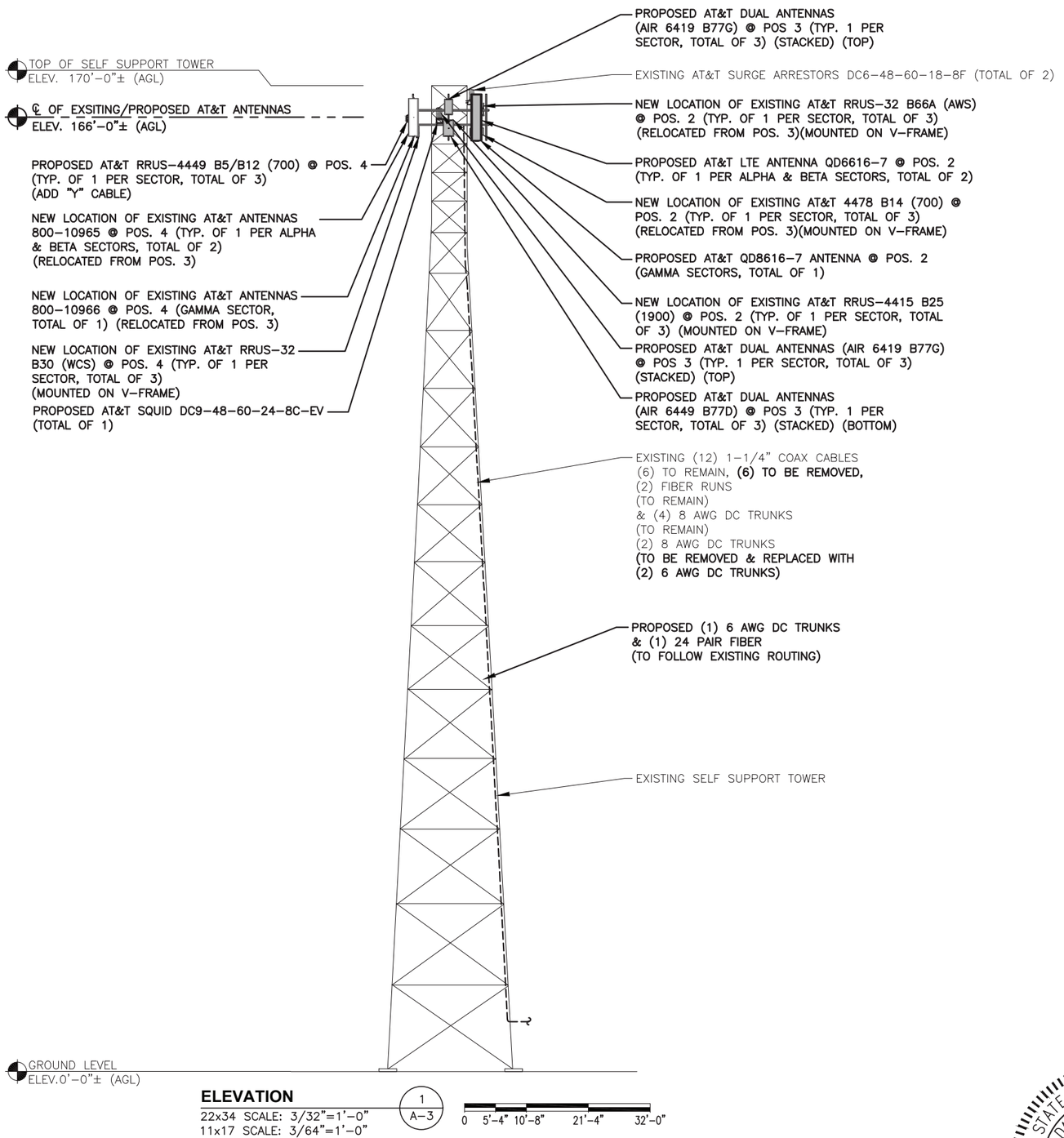
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: VS

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

EXISTING & PROPOSED ANTENNA LAYOUT PLANS
ANTENNA MODIFICATIONS, 5G NR ACTIVATION, 5G NR SOFTWARE RADIO, 5G NR RADIO, BBU RECONFIG., 5G NR 1SR CBAND, 4TXRX ANTENNA RETROFIT 2022 UPGRADE

| SITE NUMBER | DRAWING NUMBER | REV |
|---|---|---|
| CTL01083 | A-2 | 1 |




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

1 / A-3

0 5'-4" 10'-8" 21'-4" 32'-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:
HUDSON DESIGN GROUP, LLC.
DATED: **APRIL 26, 2022**

**As-Built**
**Centerline Communications**
**Jill Stewart**
**3/31/2023 11:00 AM**

NOTE:
EXISTING GROUND EQUIPMENT NOT SHOWN FOR CLARITY.

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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: VS

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DANIEL P. HAMM
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LICENSED PROFESSIONAL ENGINEER

AT&T

ELEVATION
ANTENNA MODIFICATIONS, 5G NR ACTIVATION, 5G NR SOFTWARE RADIO, 5G NR RADIO, BBU RECONFIG., 5G NR 1SR CBAND, 4TXRX ANTENNA RETROFIT 2022 UPGRADE

| SITE NUMBER | DRAWING NUMBER | REV |
|---|---|---|
| CTL01083 | A-3 | 1 |

## ANTENNA SCHEDULE

| SECTOR | EXISTING/ PROPOSED | BAND | ANTENNA | SIZE (INCHES) (L x W x D) | ANTENNA ℄ HEIGHT | AZIMUTH | TMA/ DIPLEXER | RRU | SIZE (INCHES) (L x W x D) | FEEDER | RAYCAP |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A1 | – | – | – | – | – | – | – | – | – | (E)(2) 1-1/4" COAX | (E) (1) RAYCAP DC6-48-60-18-8F |
| **A2** | **PROPOSED** | **LTE 700 DE/B14/PCS/AWS** | **QD6616-7** | **72"X22"X9.6"** | **166'-0"±** | **30°** | – | (E)(1)RRUS-4478 B14 (700)<br>(E)(1)RRUS-4415 B25 (1900)<br>(E)(1)RRUS-32 B66A (AWS)<br>(E)(1)RRUS-E2 B29 (700)(SHELTER) | –<br>–<br>–<br>– | (E)(2) DC POWER (1) FIBER | |
| **A3** | **PROPOSED** | **3.45GHZ CBAND** | **AIR6419 B77G AIR6449 B77D** | **31.1"X16.1"X7.3" 30.4"X15.9"X8.1"** | **166'-0"±** | **30°** | – | – | – | – | |
| A4 | EXISTING | LTE 700 BC/850/WCS | 800-10965 | 78.7"X20.0"X6.9" | 166'-0"± | 30° | – | **(P)(1)RRUS-4449 B5/B12 (700)**<br>(E)(1)RRUS-32 B30 (WCS) | **17.9"x13.2"x10.4"**<br>– | **(P)(1)(Y-CABLE)** | |
| **B1** | – | – | – | – | – | – | – | – | – | (E)(2) 1-1/4" COAX | (E) (1) RAYCAP DC6-48-60-18-8F |
| **B2** | **PROPOSED** | **LTE 700 DE/B14/PCS/AWS** | **QD6616-7** | **72"X22"X9.6"** | **166'-0"±** | **160°** | – | (E)(1)RRUS-4478 B14 (700)<br>(E)(1)RRUS-4415 B25 (1900)<br>(E)(1)RRUS-32 B66A (AWS)<br>(E)(1)RRUS-E2 B29 (700)(SHELTER) | –<br>–<br>–<br>– | (E)(2) DC POWER (1) FIBER | |
| **B3** | **PROPOSED** | **3.45GHZ CBAND** | **AIR6419 B77G AIR6449 B77D** | **31.1"X16.1"X7.3" 30.4"X15.9"X8.1"** | **166'-0"±** | **160°** | – | – | – | – | |
| B4 | EXISTING | LTE 700 BC/850/WCS | 800-10965 | 78.7"X20.0"X6.9" | 166'-0"± | 160° | – | **(P)(1)RRUS-4449 B5/B12 (700)**<br>(E)(1)RRUS-32 B30 (WCS) | **17.9"x13.2"x10.4"**<br>– | **(P)(1)(Y-CABLE)** | |
| C1 | – | – | – | – | – | – | – | – | – | (E)(2) 1-1/4" COAX | **(P) (1) RAYCAP DC9-48-60-24-8C-EV** |
| **C2** | **PROPOSED** | **LTE 700 DE/B14/PCS/AWS** | **QD8616-7** | **96"X22"X9.6"** | **166'-0"±** | **270°** | – | (E)(1)RRUS-4478 B14 (700)<br>(E)(1)RRUS-4415 B25 (1900)<br>(E)(1)RRUS-32 B66A (AWS)<br>(E)(1)RRUS-E2 B29 (700)(SHELTER) | –<br>–<br>–<br>– | **(P)(3) 6AWG DC POWER & (1) 24PAIR FIBER (APPROX. LENGTH 180'-0"±)** | |
| **C3** | **PROPOSED** | **3.45GHZ CBAND** | **AIR6419 B77G AIR6449 B77D** | **31.1"X16.1"X7.3" 30.4"X15.9"X8.1"** | **166'-0"±** | **270°** | – | – | – | – | |
| C4 | EXISTING | LTE 700 BC/850/WCS | 800-10966 | 96.0"X20.0"X6.9" | 166'-0"± | 270° | – | **(P)(1)RRUS-4449 B5/B12 (700)**<br>(E)(1)RRUS-32 B30 (WCS) | **17.9"x13.2"x10.4"**<br>– | **(P)(1)(Y-CABLE)** | |

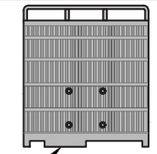
## RRU CHART

| QUANTITY | MODEL | SIZE (L x W x D) |
|---|---|---|
| E(3) | 4478 B14 (700) | 18.1"x13.4"x8.3" |
| E(3) | RRUS-4415 B25 (1900) | 16.5"x13.4"x5.9" |
| E(3) | RRUS-32 B66 (AWS) | 27.2"x12.1"x7.0" |
| E(3)(G) | RRUS-E2 B29 (700) | 20.4"x18.5"x7.5" |
| **P(3)** | **4449 B5/B12 (700)** | **17.9"x13.2"x10.4"** |
| E(3) | RRUS-32 B30 (WCS) | 27.2"x12.1"x7.0" |

**NOTE:**
MOUNT PER MANUFACTURER'S SPECIFICATIONS

NOTE:

SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER



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

NOTE:

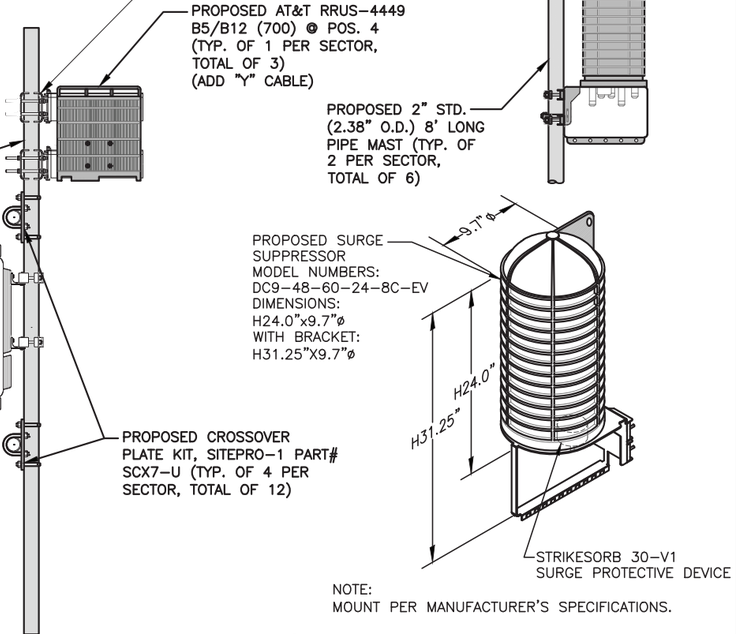
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:
HUDSON DESIGN GROUP, LLC.
DATED: **APRIL 26, 2022**

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

### PROPOSED RRUS DETAIL (2 / A-4)
SCALE: N.T.S

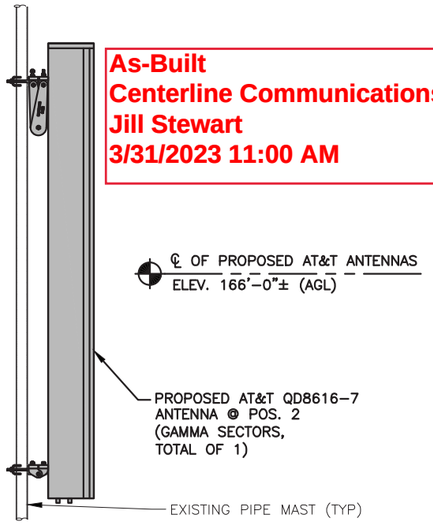



### PROPOSED RRHS MOUNTING DETAIL
SCALE: N.T.S

### PROPOSED SURGE PROTECTOR (7 / A-4)
SCALE: N.T.S

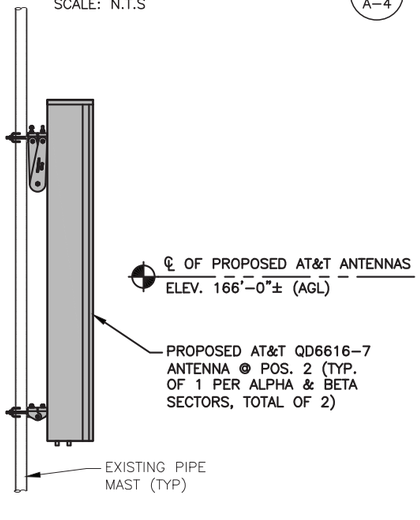
### FINAL ANTENNA SCHEDULE (1 / A-4)
SCALE: N.T.S

**As-Built**
**Centerline Communications**
**Jill Stewart**
**3/31/2023 11:00 AM**



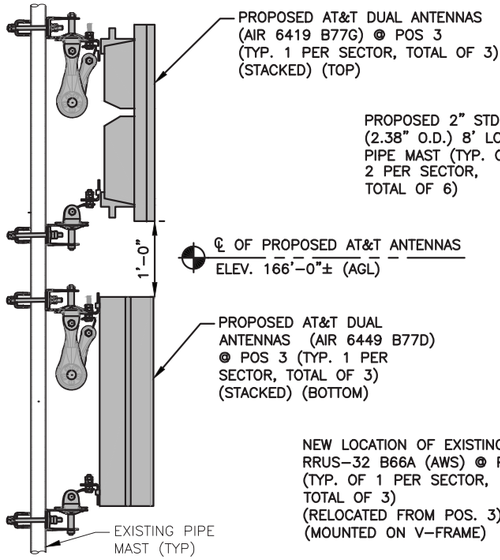

(GAMMA SECTOR)

### PROPOSED ANTENNA @ POS. 2 (3 / A-4)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
0 8" 1'-4" 2'-8" 4'-0"




(ALPHA & BETA SECTORS)

### PROPOSED ANTENNA @ POS. 2 (4 / A-4)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
0 8" 1'-4" 2'-8" 4'-0"




### PROPOSED ANTENNA @ POS. 3 (5 / A-4)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"
0 0'-6" 1'-0" 2'-0" 3'-0"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500 ENTERPRISE DRIVE, SUITE 3A
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**SITE NUMBER: CTL01083**
**SITE NAME: GLASTONBURY PD**

GLASTONBURY POLICE DEPARTMENT
GLASTONBURY, CT 06033
HARTFORD COUNTY

| NO. | DATE | REVISIONS | BY | CHK | APP'D |
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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: VS

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

DETAILS
ANTENNA MODIFICATIONS, 5G NR ACTIVATION, 5G NR SOFTWARE RADIO, 5G NR RADIO, BBU RECONFIG, 5G NR 1SR CBAND, 4TXRX ANTENNA RETROFIT 2022 UPGRADE

| SITE NUMBER | DRAWING NUMBER | REV |
|---|---|---|
| CTL01083 | A-4 | 1 |

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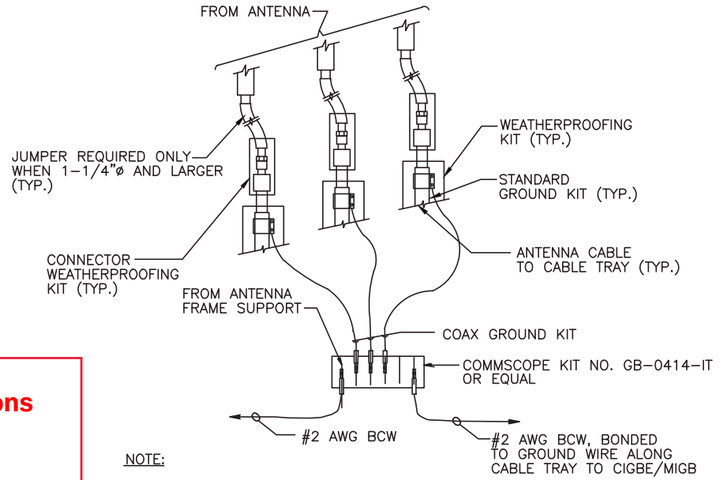
**Centerline Communications**
**Jill Stewart**
**3/31/2023 11:00 AM**



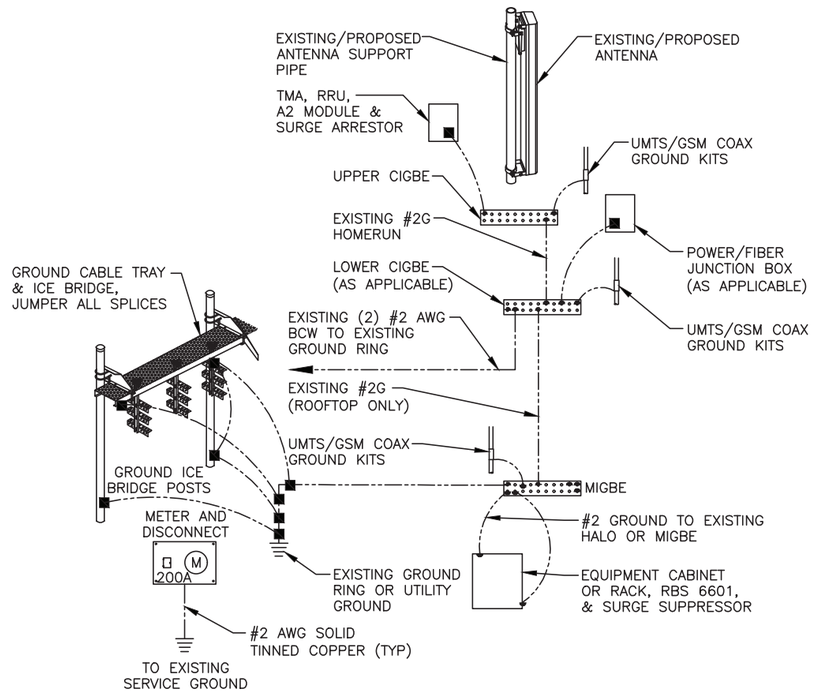

NOTE:

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

## GROUND WIRE TO GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

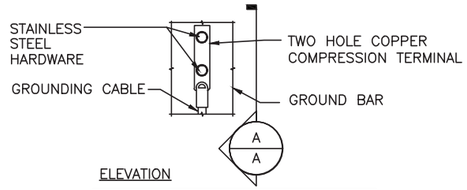
1 / G-1




## GROUNDING RISER DIAGRAM

SCALE: N.T.S

2 / G-1




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

## TYPICAL GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

3 / G-1

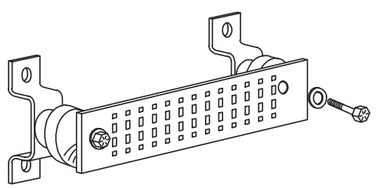
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

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)

SCALE: N.T.S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GROUNDING DETAILS
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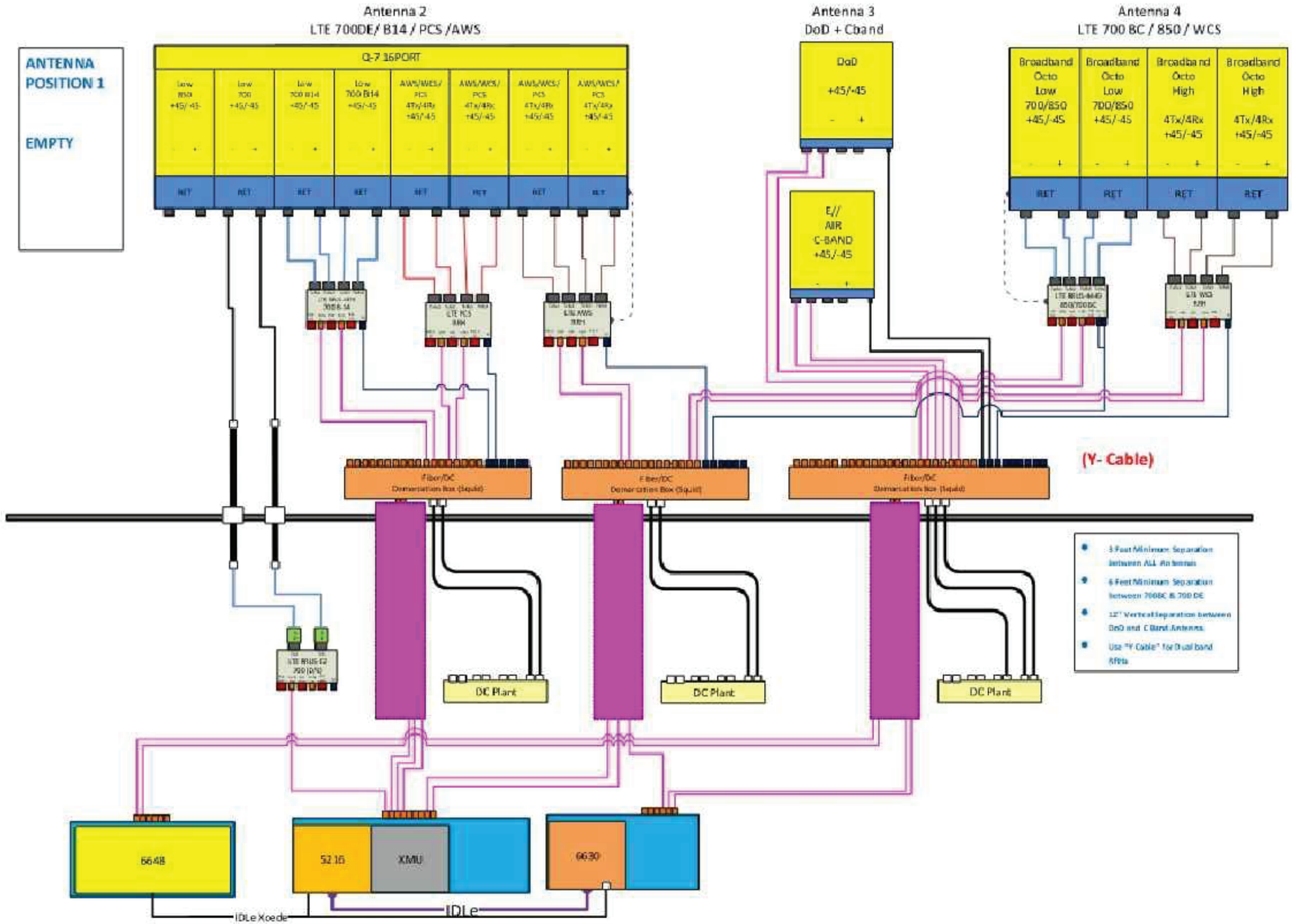
| CTL01083 | G-1 | 1 |




**RF PLUMBING DIAGRAM** (1 / RF–1)
SCALE: N.T.S

**As-Built**
**Centerline Communications**
**Jill Stewart**
**3/31/2023 11:00 AM**

**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.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RF PLUMBING DIAGRAM
ANTENNA MODIFICATIONS, 5G NR ACTIVATION, 5G NR SOFTWARE RADIO, 5G NR RADIO, BBU RECONFIG., 5G NR 1SR CBAND, 4TXRX ANTENNA RETROFIT 2022 UPGRADE

| SITE NUMBER | DRAWING NUMBER | REV |
|---|---|---|
| CTL01083 | RF–1 | 1 |