SAI Group
12 Industrial Way
Salem, NH 03079
603-421-0470

March 3, 2023

Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Notice of Exempt Modification – New Cingular Wireless PCS, LLC (AT&T) – CT2592
139 North Main Street, West Hartford, CT 06107
N 41.770621
W 72.749543

Dear Ms. Bachman:

AT&T currently maintains twelve (12) antennas at the 60-foot level of the existing 90-foot stealth clock tower at 139 North Main Street (a/k/a 137 North Main St), West Hartford, CT. The tower is owned by Verizon and the property is owned by the American School for the Deaf. AT&T now intends to replace nine (9) antennas and remove (3) antennas. The new antennas will be installed at the 60-foot level of the tower. This modification may include B2, B5, B17, B14, B29, B30, B66 & n77 hardware that is 4G (LTE) and/or 5GNR capable through remote software configuration and either or both services may be turned on or off at various times.

AT&T Planned Modifications:

Remove:
(3) CCI Antennas
(3) RRUS-11 B12

Remove and Replace:
(3) CCI Antennas (REMOVE) - (3) Ericsson AIR 6449 B77D Antennas (REPLACE)
(3) CCI Antennas (REMOVE) - (3) CCI TPA65R-BU6DA-K Antennas (REPLACE)
(3) CCI Antennas (REMOVE) - (3) CCI OPA65R-BU8DA Antennas (REPLACE)
(3) Ericsson RRUS-11 B5 (REMOVE) - (3) Ericsson 4449 B5/B12 RRU (REPLACE)

Install New: N/A

Existing to Remain:
(3) Ericsson RRUS-32-B30
(3) Ericsson RRUS-32-B2
(3) Ericsson RRUS-32-B66A
(3) Ericsson 4478 B14 RRU
(4) Raycap Surge Units
(8) DC Lines
(3) Fiber Lines

AT&T's use of this facility was approved by the Connecticut Siting Council, Docket No. 434 on June 27, 2013. The approval included no conditions that could feasibly be violated by this proposed modification, including total facility height and mounting restrictions. This modification therefore complies with the aforementioned approvals.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Mayor Shari Cantor and Todd Dumais, Town Planner for the Town of West Hartford, as well as the tower and property owners.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above-referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Please feel free to call me at (860) 670-9068 with any questions regarding this matter. Thank you for your consideration.

Sincerely,

Mark Roberts

Mark Roberts
Consultant for SAI
Mark.Roberts@QCDevelopment.net

Attachments

Cc: Mayor Shari Cantor - Elected Official
Todd Dumais - Town Planner
American School for the Deaf at Hartford - Property Owner
Aleksey Tyurin – Verizon, Tower Owner

Exhibit A

Original Facility Approval

DOCKET NO. 434 – Cellco Partnership d/b/a Verizon Wireless Application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a relocated telecommunications facility at 139 North Main Street, West Hartford, Connecticut	}	Connecticut
	}	Siting
	}	Council
		June 27, 2013

Decision and Order

Pursuant to Connecticut General Statutes §16-50p and the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, maintenance, and operation of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Cellco Partnership d/b/a Verizon Wireless, hereinafter referred to as the Certificate Holder, for a telecommunications facility at the proposed site, located at 139 North Main Street, West Hartford, Connecticut.

Unless otherwise approved by the Council, the facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a stealth clock tower, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of the Certificate Holder and other entities, both public and private, but such tower shall not exceed a height of 90 feet above ground level at the top of the cupola dome.

2. All wireless telecommunications carriers' equipment and antennas shall be located inside the tower structure.

3. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of (West Hartford) for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
    a. a final site plan(s) of site development to include specifications for the clock tower, tower foundation, antennas, equipment room configuration, backup generator, radio equipment, access/parking area, garden wall, utility line, and landscaping; and
    b. construction plans for site clearing, grading, landscaping, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

4. The Eastern Box Turtle Protection Program shall be implemented to mitigate any possible impacts to Eastern Box Turtles in the event any are found in the vicinity of the site.

5. Prior to the commencement of operation, the Certificate Holder shall provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

6. Upon the establishment of any new state or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

7. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

8. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed with at least one fully operational wireless telecommunications carrier providing wireless service within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The Certificate Holder shall provide written notice to the Executive Director of any schedule changes as soon as is practicable.

9. Any request for extension of the time period referred to in Condition 8 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the Town of West Hartford. Any proposed modifications to this Decision and Order shall likewise be so served.

10. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

11. Any nonfunctioning antenna, and associated antenna mounting equipment, on this facility shall be removed within 60 days of the date the antenna ceased to function.

12. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction, and the commencement of site operation.

13. The Certificate Holder shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v.

14. This Certificate may be transferred in accordance with Conn. Gen. Stat. §16-50k(b), provided both the Certificate Holder/transferor and the transferee are current with payments to the Council for their respective annual assessments and invoices under Conn. Gen. Stat. §16-50v. In addition, both the Certificate Holder/transferor and the transferee shall provide the Council a written agreement as to the entity responsible for any quarterly assessment charges under Conn. Gen. Stat. §16-50v(b)(2) that may be associated with this facility.

15. The Certificate Holder shall maintain the facility and associated equipment, including but not limited to, the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line and landscaping in a reasonable physical and operational condition that is consistent with this Decision and Order and a Development and Management Plan to be approved by the Council.

16. If the Certificate Holder is a wholly-owned subsidiary of a corporation or other entity and is sold/transferred to another corporation or other entity, the Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the Certificate Holder within 30 days of the sale and/or transfer.

We hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed in the Service List, dated March 7, 2013, and notice of issuance published in The Hartford Courant.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

Exhibit B

Property Card

137 NORTH MAIN STREET

Location	137 NORTH MAIN STREET	**Mblu**	F7/ 3836/ 137/ /
Parcel ID	3836 1 137 0001	**Owner**	AMERICAN SCHOOL FOR THE
Assessment	$32,079,390	**Appraisal**	$45,827,700
Vision Id #	20037	**Building Count**	16

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$38,073,700	$7,754,000	$45,827,700
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$26,651,590	$5,427,800	$32,079,390

Owner of Record

Owner	AMERICAN SCHOOL FOR THE	**Sale Price**	$0
Co-Owner	DEAF AT HARTFORD	**Book & Page**	0382/0423
Address	139 NORTH MAIN STREET WEST HARTFORD, CT 06107	**Sale Date**	
		Instrument	U

Ownership History

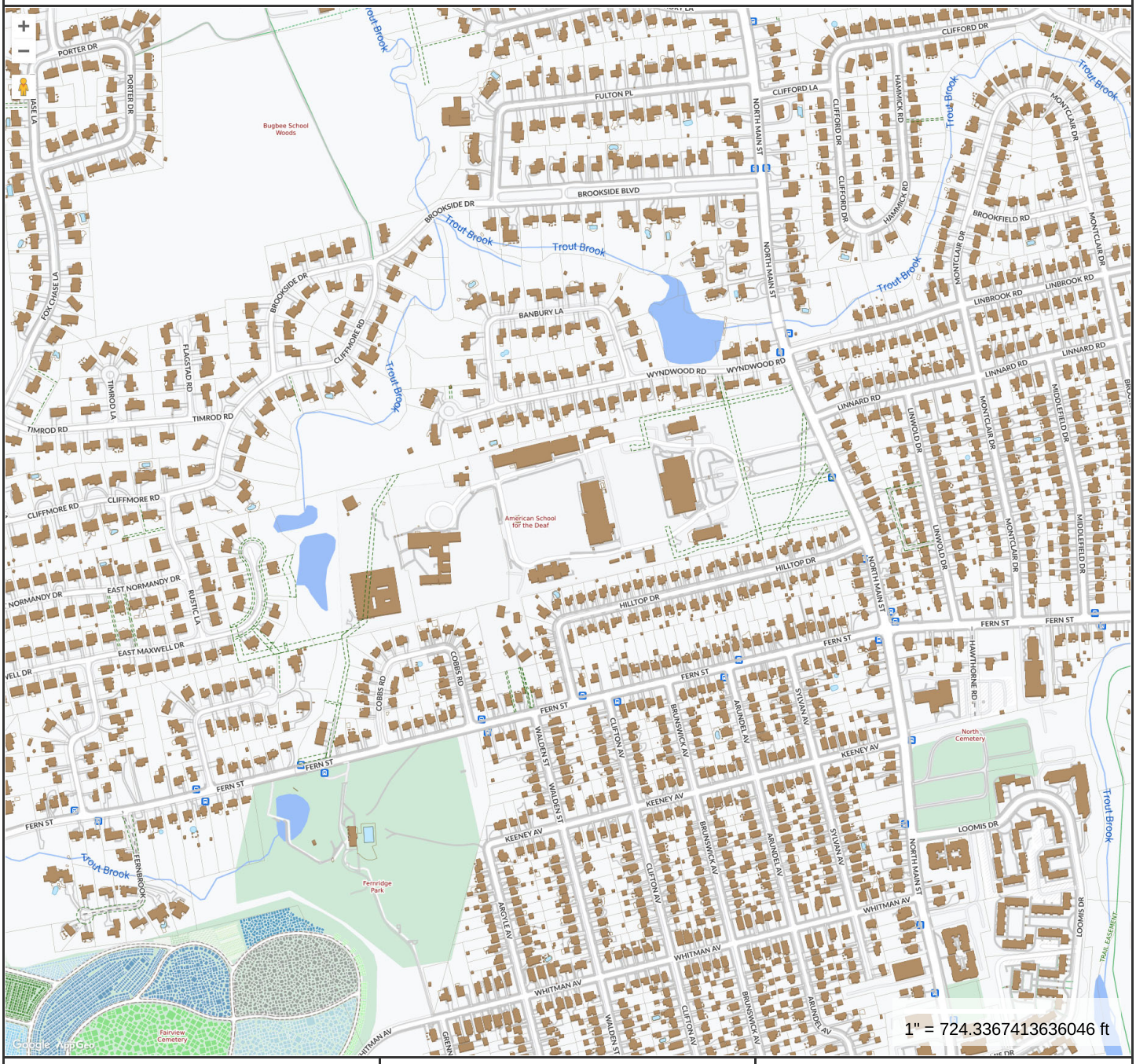
Ownership History				
Owner	**Sale Price**	**Book & Page**	**Instrument**	**Sale Date**
AMERICAN SCHOOL FOR THE	$0	0382/0423	U	
	$0	0343/0043	U	
	$0	0038/0059	U	

Building Information

Building 1 : Section 1

Year Built:	2013
Living Area:	60,992
Replacement Cost:	$25,588,656
Building Percent Good:	92

137 NORTH MAIN STREET



WEST HARTFORD

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town of West Hartford, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 12/23/2021
Data updated Daily

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

Exhibit C

Construction Drawings

PROJECT INFORMATION

SCOPE OF WORK:	ITEMS TO BE MOUNTED ON THE EXISTING STEALTH: • NEW AT&T ANTENNAS: AIR6449 B77 (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T ANTENNAS: TPA65R–BU6DA–K (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T ANTENNAS: OPA65R–BU8DA (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T RRUS: 4449 B5/B12 (850/700) (TYP. OF 1 PER SECTOR, TOTAL OF 3). • EXISTING AT&T RRUS: RRUS–32 B30 (WCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3) (TO BE RELOCATED TO POS. 2). • EXISTING AT&T RRUS: 4478 B14 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3) (TO BE RELOCATED TO POS. 4). • EXISTING AT&T RRUS: RRUS–32 B66A (AWS) (TYP. OF 1 PER SECTOR, TOTAL OF 3) (TO BE RELOCATED TO POS. 4). • EXISTING AT&T RRUS: RRUS–32 B2 (PCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3) (TO BE RELOCATED TO POS. 4). • ADD (3) Y–CABLES. ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION: • ADD 6648 + IDLe XCEDE. • ADD 6630 + IDLe. • ADD (3) RECTIFIERS. ITEMS TO BE REMOVED: • EXISTING AT&T ANTENNAS: HPA–65R–BUU–H8 (TYP. OF 4 PER SECTOR, TOTAL OF 12). • EXISTING AT&T RRUS: RRUS–11 B12 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3. • EXISTING AT&T RRUS: RRUS–11 B5 (850) (TYP. OF 1 PER SECTOR, TOTAL OF 3). • EXISTING (1) XMU. ITEMS TO REMAIN: • (12) RRU'S, (4) SURGE ARRESTORS, (8) DC POWER & (3) FIBER LINES.
SITE ADDRESS:	139 NORTH MAIN STREET DUP1 WEST HARTFORD, CT 06107
LATITUDE:	41.770620° N, 41° 46' 14.23" N
LONGITUDE:	72.749599° W, 72° 44' 58.55" W
TYPE OF SITE:	STEALTH / INDOOR EQUIPMENT
STRUCTURE HEIGHT:	89'–6"±
RAD CENTER:	58'–10"± (LTE), 56'–3"± (LTE) & 61'–7"± (C–BAND)
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
T–1	TITLE SHEET	2
GN–1	GENERAL NOTES	2
A–1	COMPOUND & EQUIPMENT PLANS	2
A–2	ANTENNA LAYOUTS	2
A–3	ELEVATION	2
A–4	DETAILS	2
A–5	DETAILS	2
G–1	GROUNDING DETAILS	2
RF–1	RF PLUMBING DIAGRAM	2

SITE NUMBER: CTL02592

SITE NAME: WEST HARTFORD ASD

FA CODE: 11588586

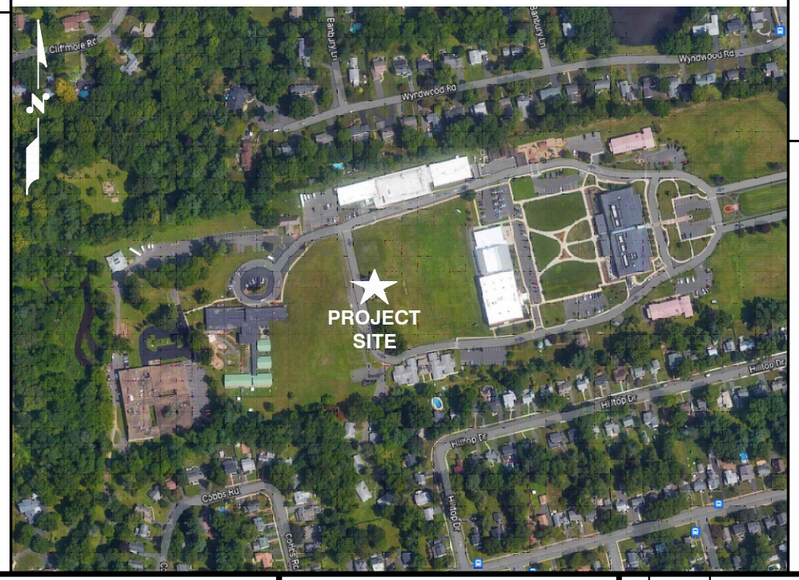
PACE ID: MRCTB051108, MRCTB050750, MRCTB051394, MRCTB051437

PROJECT: 5G NR 1SR CBAND_5G NR 1DR-1_BBU ADD UPGRADE

VICINITY MAP

DIRECTIONS TO SITE:

START OUT GOING EAST ON ENTERPRISE DR TOWARD CAPITAL BLVD. TURN LEFT ONTO CAPITAL BLVD. TURN LEFT ONTO WEST ST. MERGE ONTO I–91 N VIA THE RAMP ON THE LEFT TOWARD HARTFORD. MERGE ONTO I–84 W/US–6 W VIA EXIT 32A ON THE LEFT TOWARD WATERBURY. TAKE THE PARK ROAD EXIT, EXIT 43, TOWARD W HARTFORD CENTER. KEEP RIGHT TO TAKE THE PARK ROAD/TROUT BROOK DRIVE RAMP TOWARD KINGSWOOD–OXFORD/ST JOSEPH COLLEGE/SCIENCE CENTER/UNIV OF CT HARTFORD BRANCH. TURN RIGHT ONTO PARK RD. TAKE THE 1ST LEFT ONTO TROUT BROOK DR. TURN LEFT ONTO FERN ST. TURN RIGHT ONTO N MAIN ST. 139 N MAIN ST, WEST HARTFORD, CT 06107–1271, 139 N MAIN ST IS ON THE LEFT.



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

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

12 INDUSTRIAL WAY
SALEM, NH 03079

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

SITE NUMBER: CTL02592
SITE NAME: WEST HARTFORD ASD

139 NORTH MAIN STREET DUP1
WEST HARTFORD, CT 06107
HARTFORD COUNTY

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	01/25/23	ISSUED FOR CONSTRUCTION	DD	HC	DPH
1	09/08/22	ISSUED FOR CONSTRUCTION	DD	HC	DPH
A	06/27/22	ISSUED FOR REVIEW	VPP	HC	DPH

SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: VPP

STATE OF CONNECTICUT · DANIEL P. HAMM · No. 21178 · LICENSED PROFESSIONAL ENGINEER

AT&T

TITLE SHEET

5G NR 1SR CBAND_5G NR 1DR–1_BBU ADD UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02592	T–1	2

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

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

   CONTRACTOR – SAI
   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 2021 WITH 2022 CT STATE BUILDING CODE AMENDMENTS
    ELECTRICAL CODE: 2020 NATIONAL ELECTRICAL CODE (NFPA 70-2020)

    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

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL02592
SITE NAME: WEST HARTFORD ASD

139 NORTH MAIN STREET DUP1
WEST HARTFORD, CT 06107
HARTFORD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	01/25/23	ISSUED FOR CONSTRUCTION	DO	HC	DPH
1	09/08/22	ISSUED FOR CONSTRUCTION	DO	HC	DPH
A	06/27/22	ISSUED FOR REVIEW	VPP	HC	DPH

SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: VPP

STATE OF CONNECTICUT · DANIEL R. HAMM · No. 21178 · LICENSED PROFESSIONAL ENGINEER

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GENERAL NOTES

NR 1SR CBAND_5G NR 1DR-1_BBU ADD UPGRADE

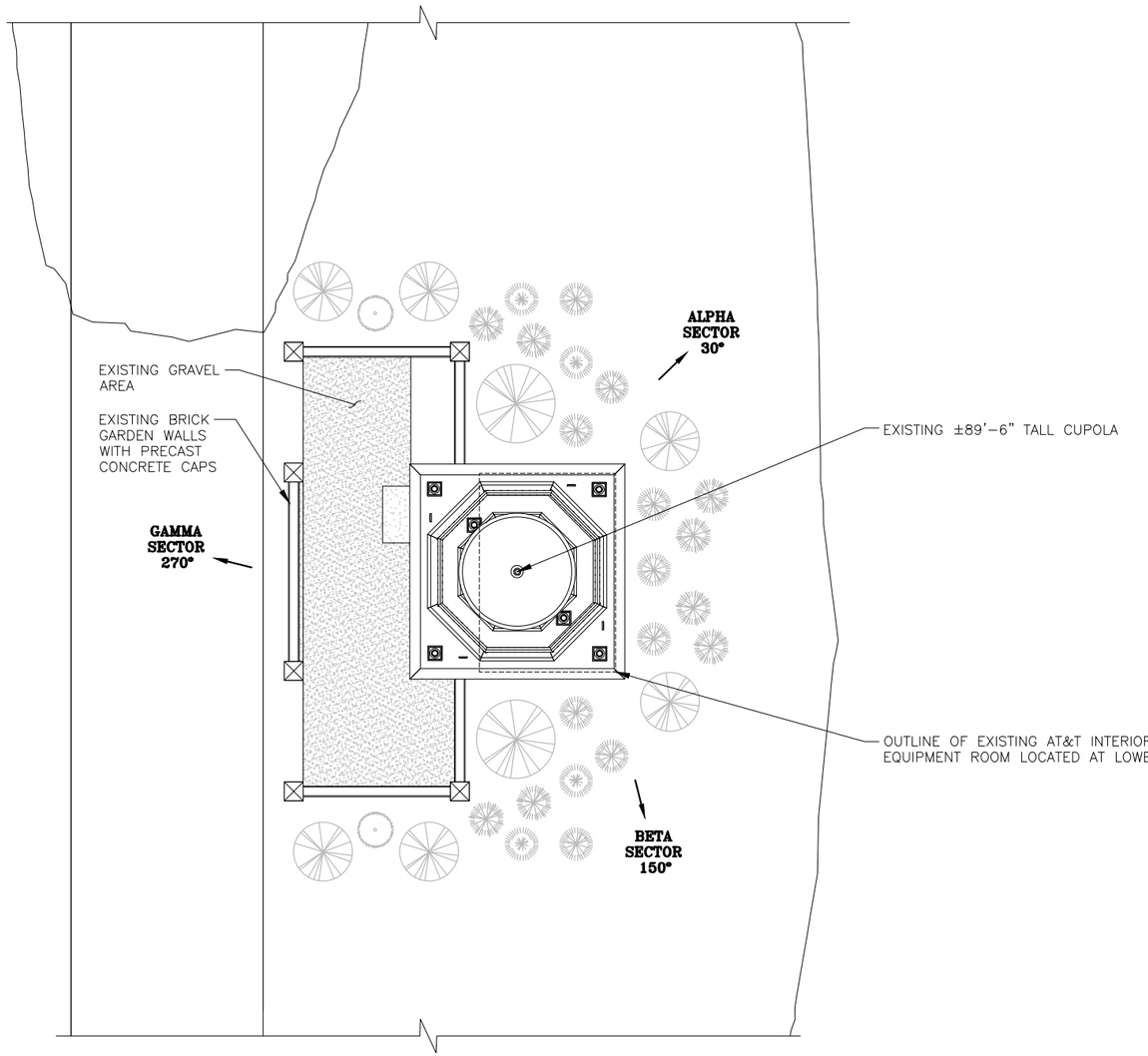
SITE NUMBER	DRAWING NUMBER	REV
CTL02592	GN-1	2

NOTE:

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

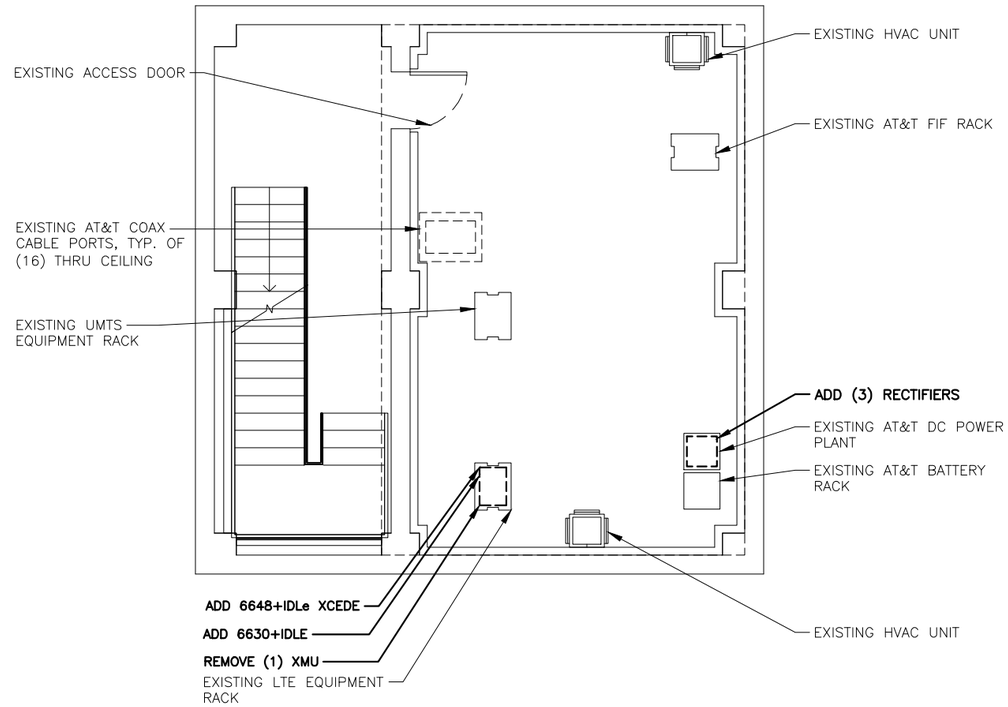
NOTE:

REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN ENGINEERING, PLLC, DATED: JANUARY 24, 2023 (REV 1) FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.



COMPOUND PLAN (1 / A-1)
22x34 SCALE: 3/32"=1'-0"
11x17 SCALE: 3/64"=1'-0"

0 5'-4" 10'-8" 21'-4" 32'-0"



EQUIPMENT PLAN (2 / A-1)
22x34 SCALE: 1/4"=1'-0"
11x17 SCALE: 1/8"=1'-0"

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

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ROOFTOP & EQUIPMENT PLANS

5G NR 1SR CBAND_5G NR 1DR-1_BBU ADD UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02592	A-1	2

NOTE:

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NOTE:

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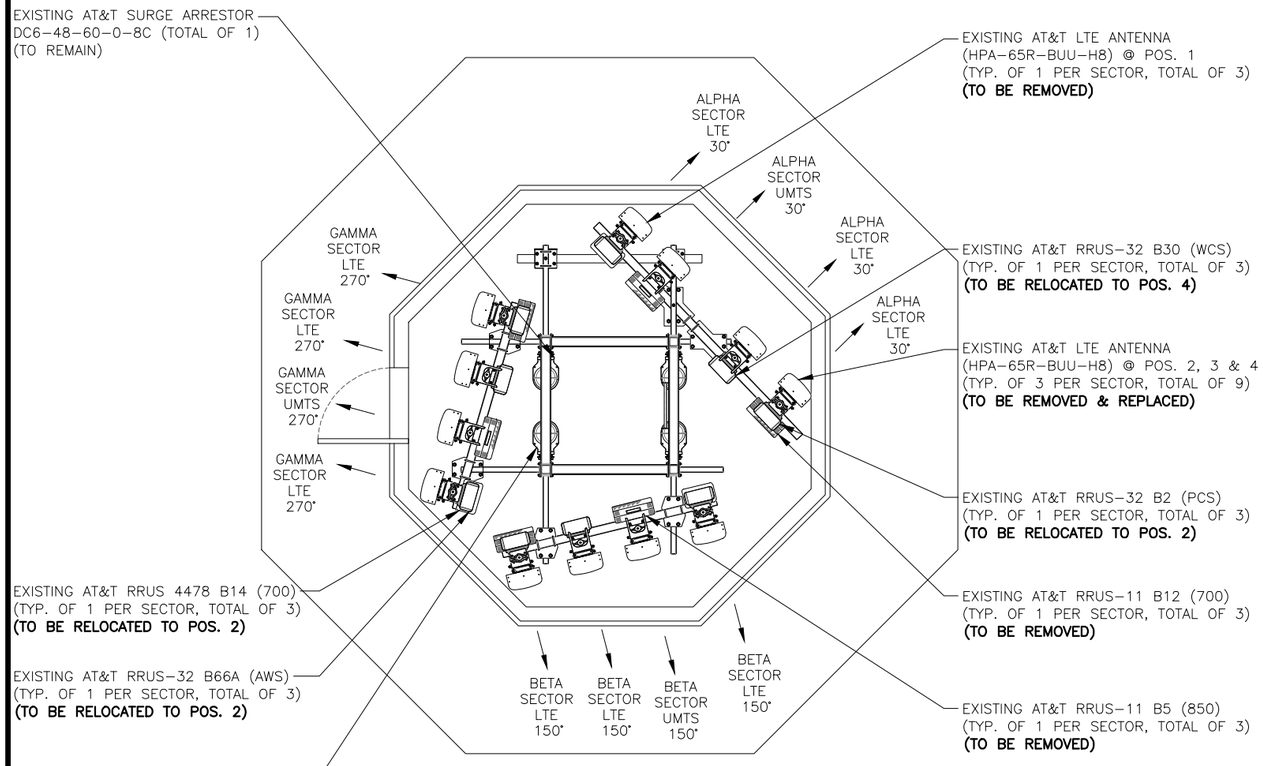
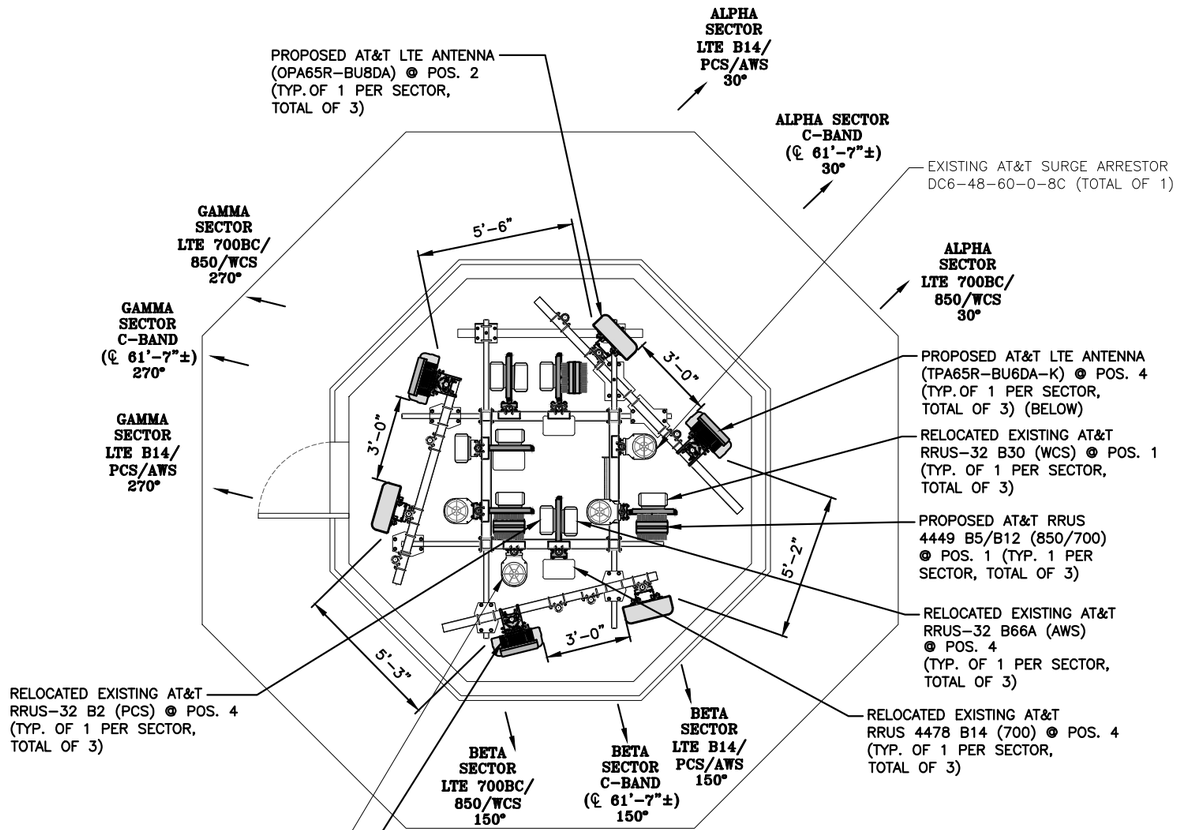


EXISTING ANTENNA LAYOUT (1 / A-2)
SCALE: N.T.S



PROPOSED ANTENNA LAYOUT (2 / A-2)
SCALE: N.T.S

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ANTENNA LAYOUTS

5G NR 1SR CBAND_5G NR 1DR-1_BBU ADD UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02592	A-2	2

NOTE:

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

NOTE:

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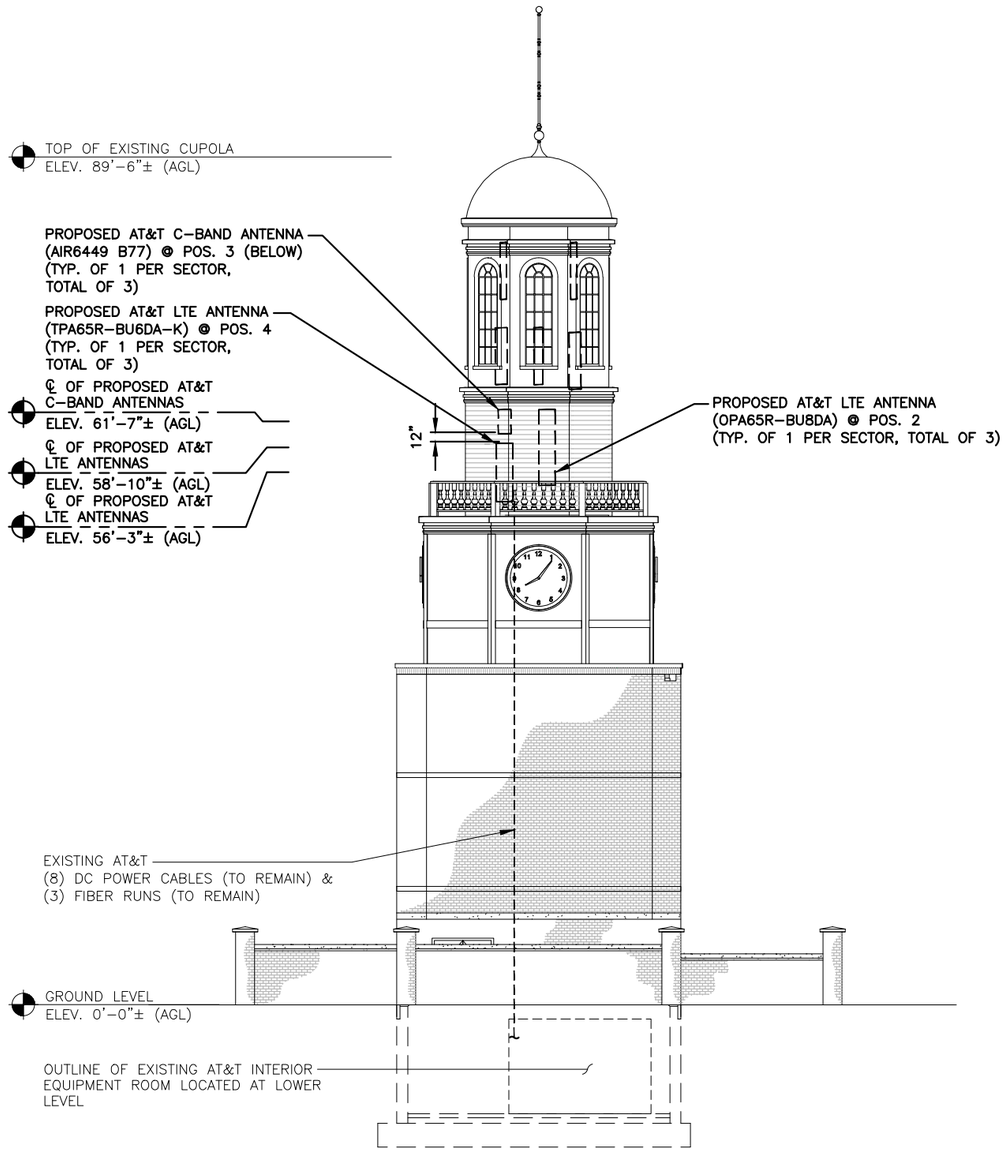

ELEVATION (1 / A-3)
22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"

0 4'-0" 8'-0" 16'-0" 24'-0"

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ELEVATION

5G NR 1SR CBAND_5G NR 1DR-1_BBU ADD UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02592	A-3	2

ANTENNA SCHEDULE

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	ANTENNA TIP HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	–	–	–	–	–	–	–	–	–	–	–	(E) (E) (1) RAYCAP DC6-48-60-18-8F (1) RAYCAP DC6-48-60-C-8C
A2	PROPOSED	LTE 700 BC/850/WCS	OPA65R-BU8DA	96X21X7.8	58'-10"±	62'-10"	30°	–	(P)(1) 4449 B5/B12 (850/700) (E)(1) RRUS-32 B30 (WCS)	17.9X13.2X10.4 –	(E)(4) DC POWER, (E)(1) FIBER	
A3	PROPOSED	C-BAND	AIR6449 B77D	30.6X15.9X10.6	61'-7"±	62'-10"	30°	–	–	–	–	
A4	PROPOSED	LTE 700 B14/PCS/AWS	TPA65R-BU6DA-K	71.2X20.7X7.7	56'-3"±	59'-6"	30°	–	(E)(1) 4478 B14 (700) (E)(1) RRUS-32 B2 (PCS) (E)(1) RRUS-32 B66A (AWS)	– – –	(P)(1) Y-CABLE	
B1	–	–	–	–	–	–	–	–	–	–	–	(E) (1) RAYCAP DC6-48-60-18-8F
B2	PROPOSED	LTE 700 BC/850/WCS	OPA65R-BU8DA	96X21X7.8	58'-10"±	62'-10"	150°	–	(P)(1) 4449 B5/B12 (850/700) (E)(1) RRUS-32 B30 (WCS)	17.9X13.2X10.4 –	(E)(2) DC POWER & (E)(1) FIBER	
B3	PROPOSED	C-BAND	AIR6449 B77D	30.6X15.9X10.6	61'-7"±	62'-10"	150°	–	–	–	–	
B4	PROPOSED	LTE 700 B14/PCS/AWS	TPA65R-BU6DA-K	71.2X20.7X7.7	56'-3"±	59'-6"	150°	–	(E)(1) 4478 B14 (700) (E)(1) RRUS-32 B2 (PCS) (E)(1) RRUS-32 B66A (AWS)	– – –	(P)(1) Y-CABLE	
C1	–	–	–	–	–	–	–	–	–	–	–	(E) (1) RAYCAP DC6-48-60-18-8F
C2	PROPOSED	LTE 700 BC/850/WCS	OPA65R-BU8DA	96X21X7.8	58'-10"±	62'-10"	270°	–	(P)(1) 4449 B5/B12 (850/700) (E)(1) RRUS-32 B30 (WCS)	17.9X13.2X10.4 –	(E)(2) DC POWER & (E)(1) FIBER	
C3	PROPOSED	C-BAND	AIR6449 B77D	30.6X15.9X10.6	61'-7"±	62'-10"	270°	–	–	–	–	
C4	PROPOSED	LTE 700 B14/PCS/AWS	TPA65R-BU6DA-K	71.2X20.7X7.7	56'-3"±	59'-6"	270°	–	(E)(1) 4478 B14 (700) (E)(1) RRUS-32 B2 (PCS) (E)(1) RRUS-32 B66A (AWS)	– – –	(P)(1) Y-CABLE	

NOTE:

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

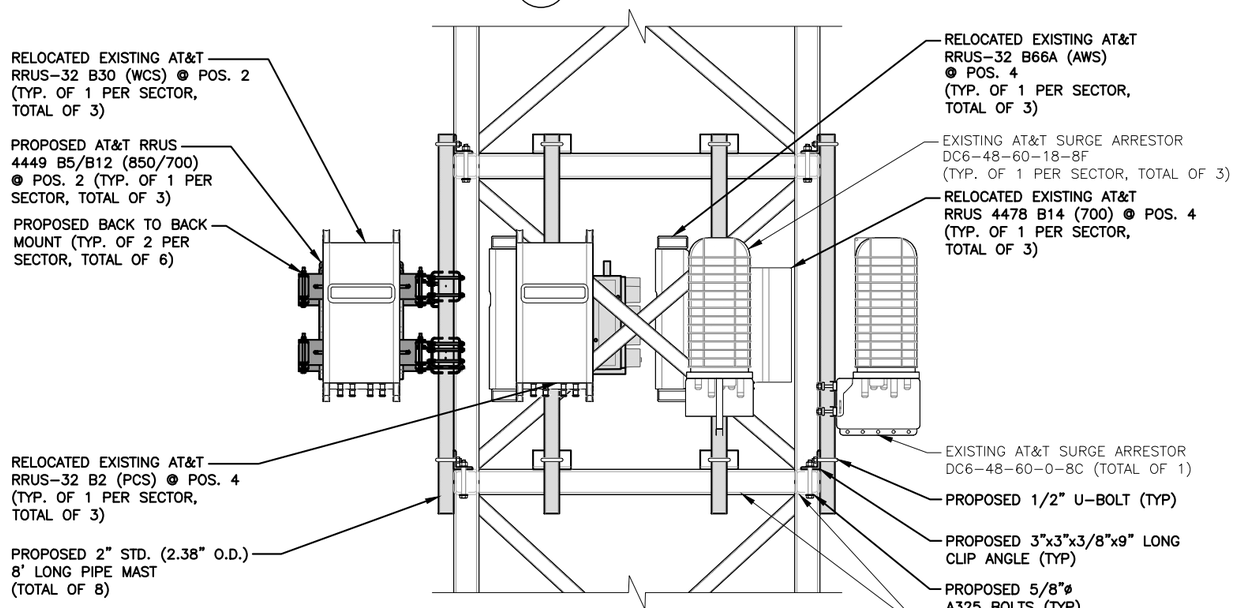
NOTE:

REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN ENGINEERING, PLLC, DATED: JANUARY 24, 2023 (REV 1) FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

FINAL ANTENNA SCHEDULE

SCALE: N.T.S

1 / A-4



PROPOSED RRUS MOUNTING DETAIL

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

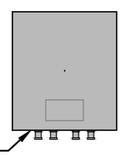
3 / A-4

0 0'-6" 1'-0" 2'-0" 3'-0"

RRU CHART		
QUANTITY	MODEL	SIZE (L x W x D)
P(3)	4449 (850/700)	17.9"x13.2"x10.4"
E(3)	4478 B14 (700)	18.1"x13.4"x8.3"
E(3)	RRUS-32 B66A (AWS)	27.2"x12.1"x7.0"
E(3)	RRUS-32 B30 (WCS)	27.2"x12.1"x7.0"
E(3)	RRUS-32 B2 (PCS)	27.2"x12.1"x7.0"
NOTE: MOUNT PER MANUFACTURER'S SPECIFICATIONS		

NOTE:

SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER



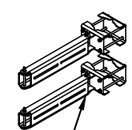
PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

PROPOSED RRUS DETAIL

SCALE: N.T.S

2 / A-4



DUAL RRU MOUNT (ROSENBERGER PART# D220RRUDSM) (TYP. OF 2 PER SECTOR, TOTAL OF 6)

DUAL RRU MOUNT DETAIL

SCALE: N.T.S

4 / A-4

HUDSON Design Group LLC
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STATE OF CONNECTICUT DANIEL P. HAMM No. 24178 LICENSED PROFESSIONAL ENGINEER

AT&T

DETAILS

5G NR 1SR CBAND_5G NR 1DR-1_BBU ADD UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02592	A-4	2

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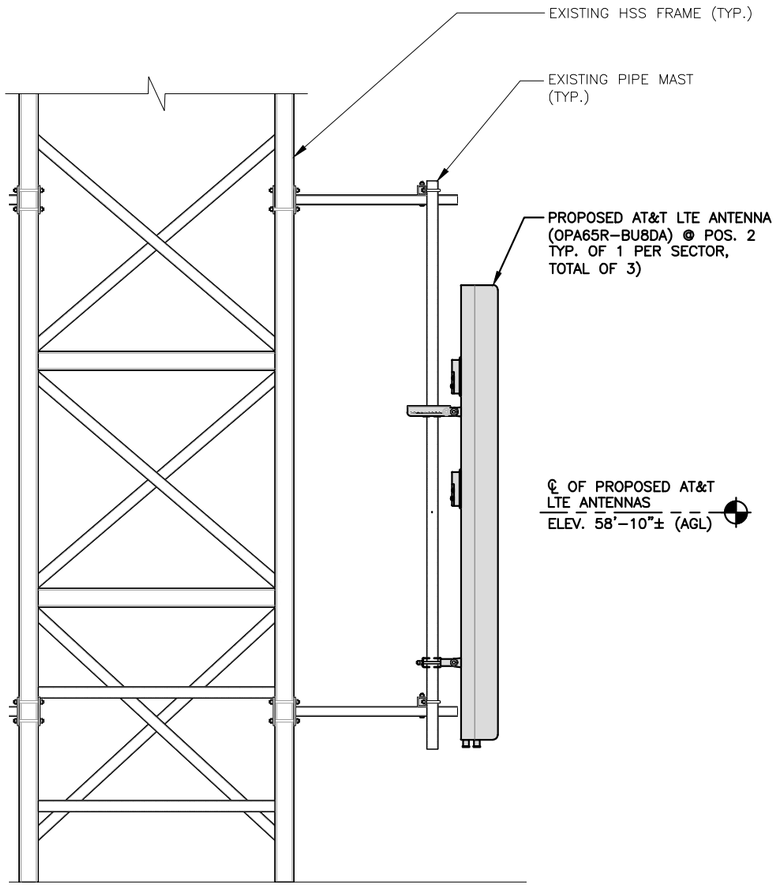
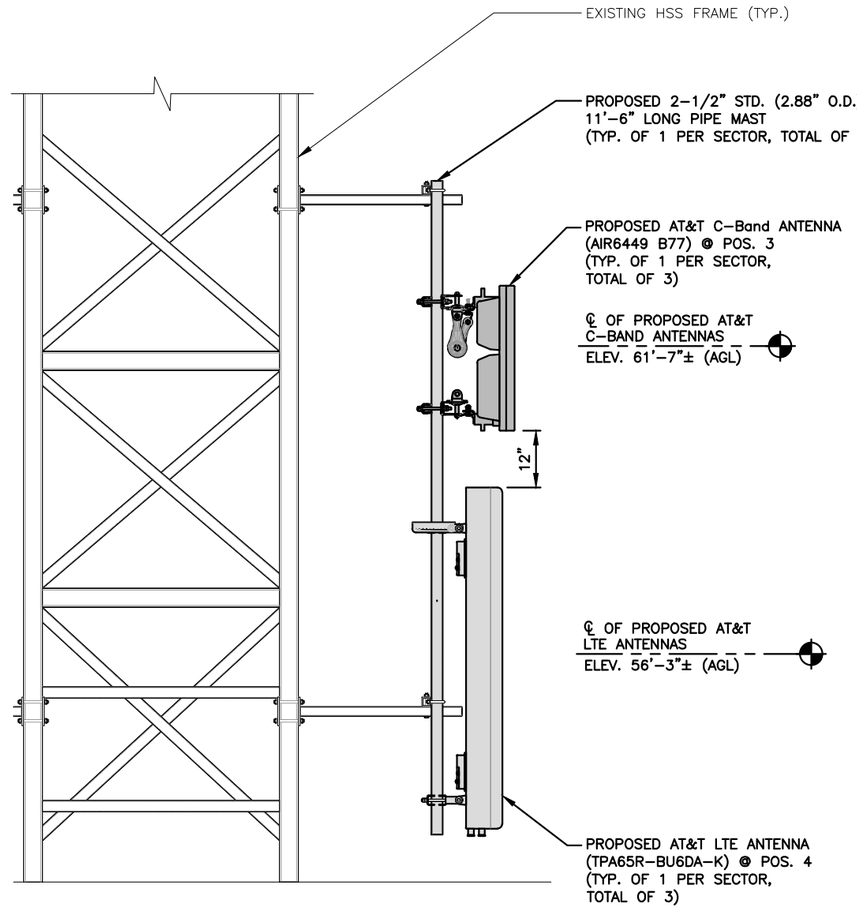


PROPOSED LTE ANTENNA MOUNTING DETAIL 1/A-5

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

0 8" 1'-4" 2'-8" 4'-0"



PROPOSED LTE + C-BAND ANTENNA MOUNTING DETAIL 2/A-5

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

0 8" 1'-4" 2'-8" 4'-0"

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STATE OF CONNECTICUT
DANIEL P. HAMM
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LICENSED PROFESSIONAL ENGINEER

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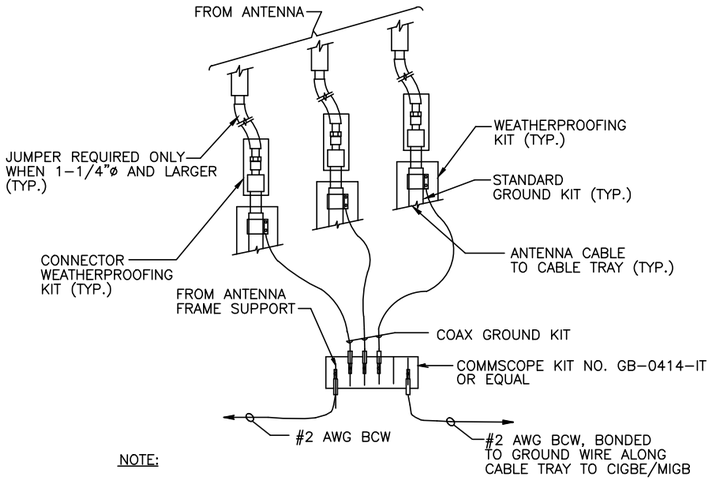
DETAILS

5C NR 1SR CBAND_5G NR 1DR-1_BBU ADD UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02592	A-5	2



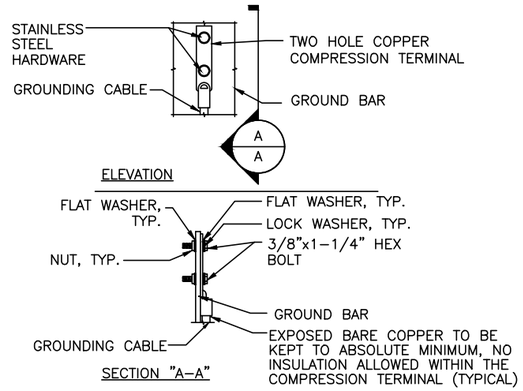
NOTE:

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

1 / G-1

SCALE: N.T.S



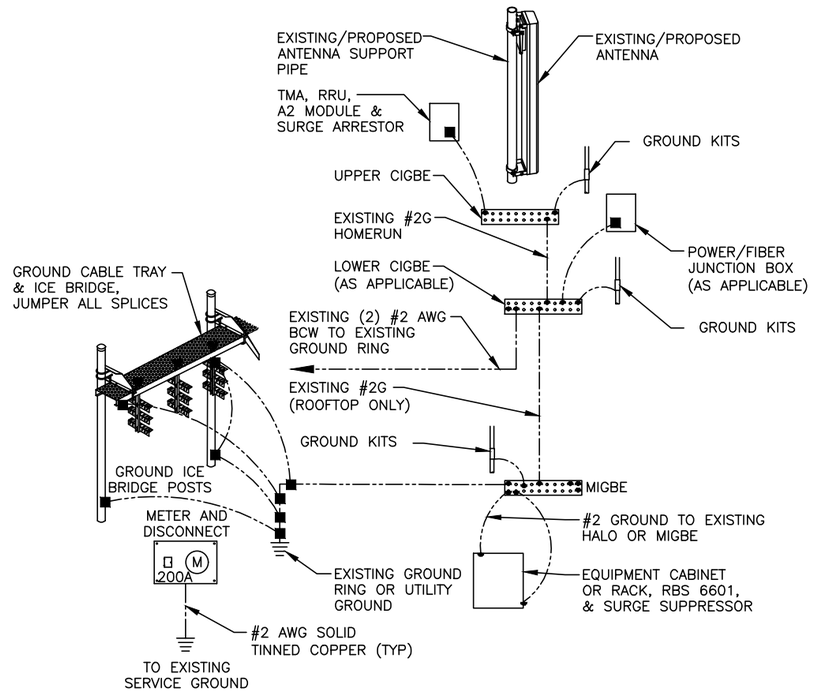
NOTES:

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

3 / G-1

SCALE: N.T.S



GROUNDING RISER DIAGRAM

2 / G-1

SCALE: N.T.S

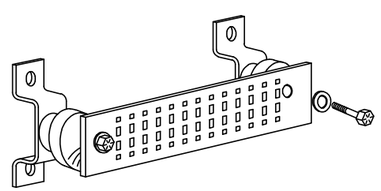
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

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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STATE OF CONNECTICUT · DANIEL P. HAMM · No. 21178 · LICENSED PROFESSIONAL ENGINEER

AT&T

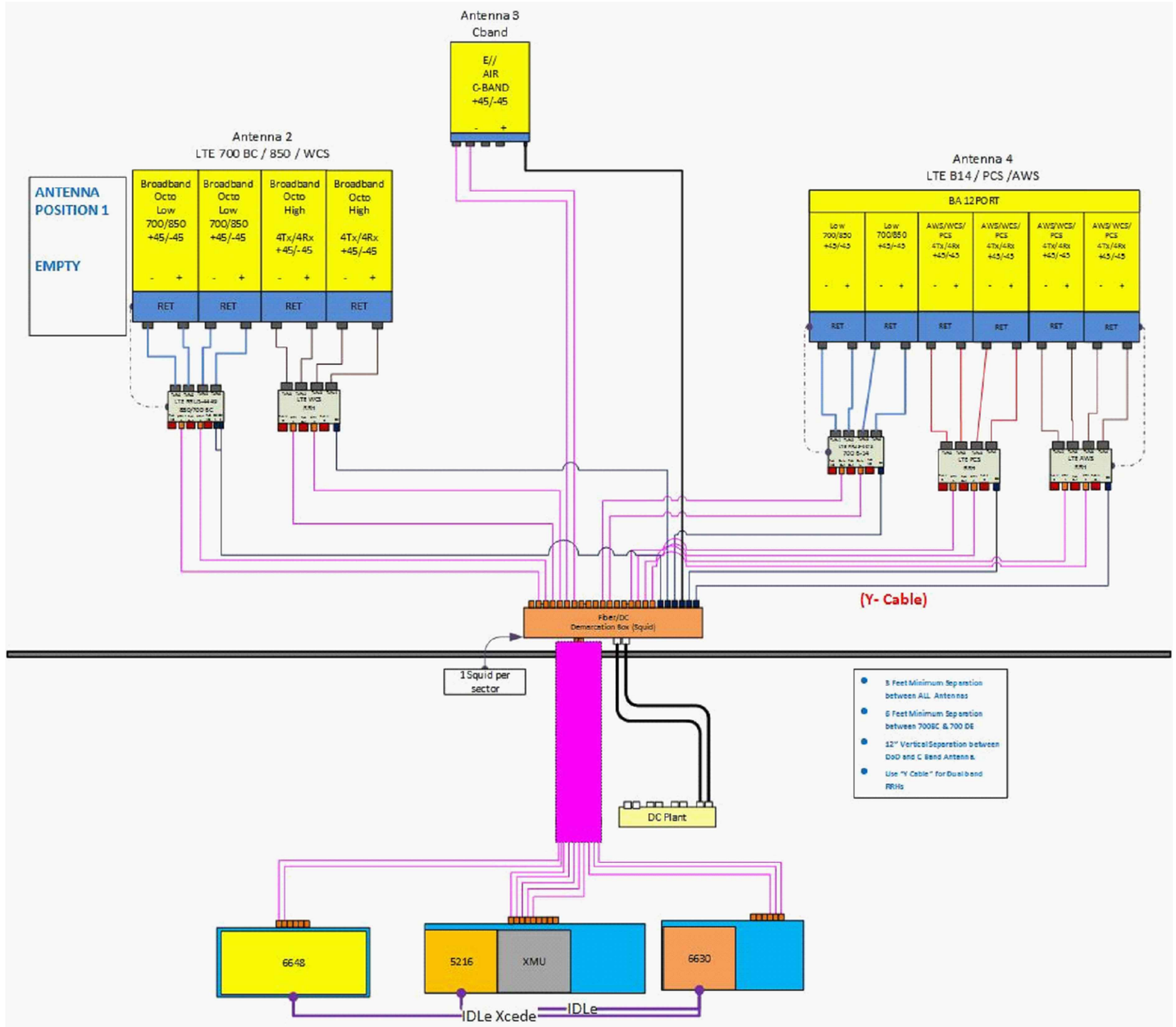
GROUNDING DETAILS

NR 1SR CBAND_5G NR 1DR-1_BBU ADD UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02592	G-1	2

NOTE:

REV: 3
DATED: 08/02/2022
RFDS ID: 4555455



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

NOTE:
1. CONTRACTOR TO CONFIRM ALL PARTS.
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS.
3. RFDS USED FOR REFERENCE.

NOTE:

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SITE NUMBER: CTL02592
SITE NAME: WEST HARTFORD ASD

139 NORTH MAIN STREET DUP1
WEST HARTFORD, CT 06107
HARTFORD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	01/25/23	ISSUED FOR CONSTRUCTION	DO	HC	DPH
1	09/08/22	ISSUED FOR CONSTRUCTION	GA	HC	DPH
A	06/27/22	ISSUED FOR REVIEW	VPP	HC	DPH

SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: VPP

AT&T

RF PLUMBING DIAGRAM
5G NR 1SR CBAND_5G NR 1DR–1_BBU ADD UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02592	RF–1	2

Exhibit D

Structural Analysis Report

(REVISED)
STRUCTURAL ANALYSIS REPORT

For

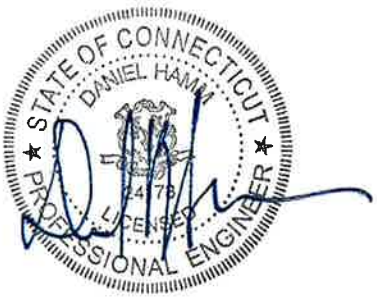
CT2592
WEST HARTFORD ASD
139 North Main Street Dup1
West Hartford, CT 06107

Antennas Mounted within Cupola

Prepared for:

SAI at&t

Dated: January 24, 2023 (Rev. 1)
June 7, 2022



Prepared by:

TEP NORTHEAST

(TEP OPCO, LLC)
45 Beechwood Drive
North Andover, MA 01845
(P) 978.557.5553
www.tepgroup.net

SCOPE OF WORK:

TEP Northeast (TEP NE) has been authorized by AT&T to conduct a structural evaluation of the structure supporting the proposed equipment located in the areas depicted in the latest Hudson Design Group, LLC construction drawings.

This report represents this office's findings, conclusions and recommendations pertaining to the support of AT&T's proposed antennas listed below.

ProVertic, LLC conducted an on-site visual survey of the above site on February 14, 2022.

The following documents were used for our reference:

- Mount Mapping Report prepared by ProVertic LLC., dated January 26, 2022.

CONCLUSION SUMMARY:

Based on our evaluation, we have determined that the existing structure **IS CAPABLE** of supporting the proposed equipment loading. The proposed equipment configuration reduced the amount of weight on the structure compared to the weight applied by the existing equipment.

Based on our evaluation, we have determined that the existing mounts **ARE CAPABLE** of supporting the proposed equipment loading.

	Member	Stress Ratio	Pass/Fail
Antenna Mount	Unistrut	62%	**PASS**

APPURTENANCE CONFIGURATION:

Appurtenances	Dimensions	Weight	**Elevation	Mount
(3) 4478 B14 RRH's	18.1"x13.4"x8.3"	60 lbs	-	Steel Frame
(3) RRUS-32 B2 RRH's	27.2"x12.1"x7.0"	60 lbs	-	Steel Frame
(3) RRUS-32 B30 RRH's	27.2"x12.1"x7.0"	60 lbs	-	Steel Frame
(3) RRUS-32 B66A RRH's	27.2"x12.1"x7.0"	60 lbs	-	Steel Frame
(3) DC6-48-60-18-8F Surge Arrestors	31.4"x10.2"Ø	29 lbs	-	Steel Frame
(3) TPA65R-BU6DA-K Antennas	71.2"x20.7"x7.7"	69 lbs	56' – 5"	Steel Frame
(3) AIR6449 Antennas	30.6"x15.9"x10.6"	82 lbs	61' – 9"	Steel Frame
(3) OPA65R-BU8DA Antennas	96.0"x20.7"x7.7"	77 lbs	59' – 0"	Steel Frame
(3) 4449 B5/B12 RRH's	17.9"x13.2"x9.4"	73 lbs	-	Steel Frame

** Proposed equipment shown in bold.*
*** Elevation to antenna centerline.*

DESIGN CRITERIA:

International Building Code (IBC) 2021 with 2022 Connecticut State Building Code Amendments, and ASCE 7-16 (Minimum Design Loads for Buildings and Other Structures).		
Wind		
Reference Wind Speed:	120 mph	(2022 CSBC Appendix P)
Exposure Category:	B	(ASCE 7-16 Chapter 26)
Risk Category:	II	(ASCE 7-16 Table 1.5-1)
Snow		
Ground Snow, P_g:	30	(2022 CSBC Appendix P)
Importance Factor (I_s):	1.0	(ASCE 7-16 Table 1.5-2)
Exposure Factor (C_e):	1.0	(Partially Exposed, Table 7-2)
Thermal Factor (C_t):	1.0	(ASCE 7-16 Table 7-3)
Flat Roof Snow Load:	21 psf	(ASCE 7-16 Equation 7.3-1)
Min. Flat Roof Snow Load:	30 psf	
EIA/TIA-222-H Structural Standards for Steel Antenna Towers and Antenna Supporting Structures		
Wind		
City/Town:	West Hartford	
County:	Hartford	
Wind Load:	120 mph	(TIA-222-H Figure B-2)
Ice		
Design Ice Thickness (t_i):	1.50 in	(TIA-222-H Figure B-9)
Structure Class:	II	(TIA-222-H Table 2-1)
Importance Factor (I_i):	1.0	(TIA-222-H Table 2-3)
Factored Thickness of Radial Ice (t_{iz}):	1.06 in	(TIA-222-H Sec. 2.6.10)

ANTENNA/RRH/SURGE ARRESTOR SUPPORT RECOMMENDATIONS:

The proposed antennas, RRH's, and surge arrestors are to be installed on existing pipe masts mounted on existing Unistrut components supported by the existing cupola framing.

Additional wind load will not be applicable in this case due to the proposed antennas being enclosed within the existing cupola. HDG is under the assumption that the existing cupola has been constructed properly and adequately secured to the building structure.

Limitations and Assumptions:

1. Reference the latest Hudson Design Group, LLC construction drawings for all the equipment locations and details.
2. All detail requirements will be designed and furnished in the construction drawings.
3. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.
4. TEP NE is not responsible for any modifications completed prior to and hereafter which TEP NE was not directly involved.
5. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer requirements.
6. If field conditions differ from what is assumed in this report, then the engineer of record is to be notified as soon as possible.

FIELD PHOTOS:

Photo 1: Sample photo illustrating the existing Alpha Sector.

Photo 2: Sample photo illustrating the existing Beta Sector.

FIELD PHOTOS (CONT.):

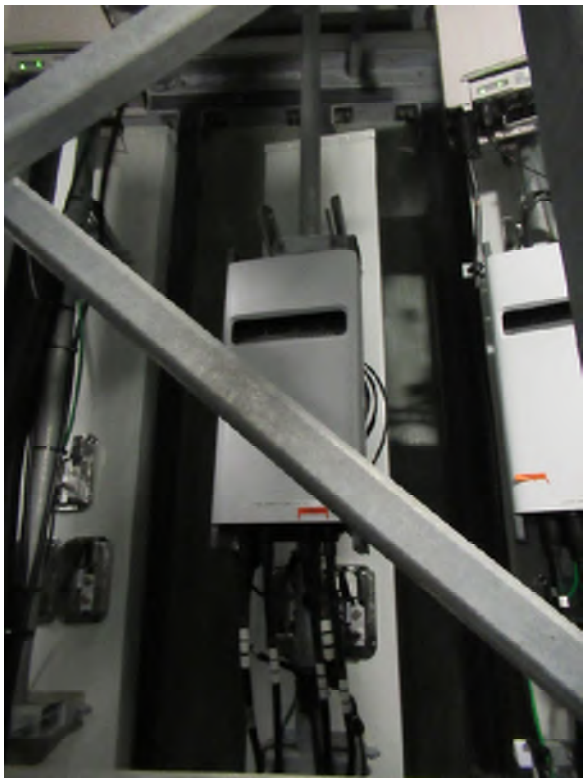


Photo 3: Sample photo illustrating the existing Gamma Sector.

Antenna Mount Calculations

Date: 1/20/2023
Project Name: WEST HARTFORD ASD
Project No.: CT2592
Designed By: JC **Checked By:** MSC

HUDSON Design Group LLC

CHECK UNCANTILEVERED UNISTRUT CAPACITY:

Assume P1000 Unistrut

Length	4.667	ft.+/-
Resisting Moment	5.07	in-kip
Weight	1.89	plf

Load Breakdown:

TPA65R-BU6DA-K Antenna	69	lbs.
AIR6449 Antenna	82	lbs.
Pipe	67	lbs.

The total weight of appurtenance is assumed to be supported by (2) unistruts

Point Load 1	=	109	lbs.
Point Load 2	=	34	lbs.

Calculate End Reactions

Reaction A	54.68	lbs.	***Connections O.K by inspection**
Reaction B	96.64	lbs.	***Connections O.K by inspection**

Calculate Resistant Moment

Moment = $wl^2/8 + Pab/l + Pab/l$

=	115.47	ft-lb				
=	1.39	in-kip	<	5.07	in-kip	**O.K!**

Conclusion

The existing unistruts are capable of supporting the proposed and the existing loads. If field conditions differ from what is assumed in this report, then the engineer of record is to be notified as soon as possible.

Date: 1/20/2023
Project Name: WEST HARTFORD ASD
Project No.: CT2592
Designed By: JC **Checked By:** MSC

CHECK CANTILEVERED UNISTRUT CAPACITY:

Assume P1000 Unistrut

Length	4.667	ft.+/-
Resisting Moment	5.07	in-kip
Weight	1.89	plf

Load Breakdown:

TPA65R-BU6DA-K Antenna	69	lbs.
AIR6449 Antenna	82	lbs.
Pipe	67	lbs.

The total weight of appurtenance is assumed to be supported by (2) unistruts

Point Load 1 = 109 lbs.

Calculate End Reactions

Reaction A	58.91 lbs.	***Connections O.K by inspection**
Reaction B	58.91 lbs.	***Connections O.K by inspection**

Calculate Resistant Moment

Moment = $wl^2/6 + Pb$

= 261.21 ft-lb
= 3.13 in-kip < 5.07 in-kip **O.K!**

Conclusion

The existing unistruts are capable of supporting the proposed and the existing loads. If field conditions differ from what is assumed in this report, then the engineer of record is to be notified as soon as possible.

Date: 1/24/2023
Project Name: WEST HARTFORD ASD
Project No.: CT2592
Designed By: JC **Checked By:** MSC

Appurtenance Load Comparison:

Existing Dead Load:

Apputenance	Load (lbs.)	Qty.	Total (lbs.)
HPA-65R-BUU-H8 Antenna	68	4	272
4478 B14 RRH	60	1	60
RRUS-32 RRH	60	3	180
RRUS-11 RRH	51	2	102
DC6 Surge Arrestor	29	1	29

Total= 643 lbs.

Proposed Dead Load:

Apputenance	Load (lbs.)	Qty.	Total (lbs.)
TPA65R-BU6DA-K Antenna	69	1	69
AIR6449 Antenna	82	1	82
OPA65R-BU8DA Antenna	77	1	77
4478 B14 RRH	60	1	60
RRUS-32 RRH	60	3	180
4449 B5/B12 RRH	73	1	73
DC6 Surge Arrestor	29	1	29

Total= 570 lbs.

Percent Increase

(Proposed Load) / (Existing Load) ≤ 105% ----→ **88.6%** **<** **100% Therefore, OK!**

There is no increase in dead load, therefore, a structure capacity check is not required.

Exhibit E

Power Density/RF Emissions Report

SAI Group
12 Industrial Way
Salem, NH 03079
(603) 421-0470
www.saigrp.com

Radio Frequency Exposure Theoretical Study

Prepared For:

AT&T Mobility

Site Name:	West Hartford ASD
FA#:	11588586
Site ID:	CTL02592
Address:	139 North Main Street DUP1, West Hartford, CT 06107

Prepared by: **SAI Group**
12 Industrial Way
Salem, NH 03079
(603) 421-0470

Date of Report: March 01, 2023

Statement of Compliance

AT&T's proposed antenna installation along with other existing antennas is calculated to be within *11.9%* of FCC Standard for General Public/Uncontrolled Maximum Permissible Exposure (MPE).

Table of Contents

1 General Summary 3
2 Site Compliance Summary 3
3 RF Design Specifications 4
4 Conclusion 6
Appendix A – FCC Rules and Regulations 7
Appendix B – Calculations Methodology and Assumptions 9
Appendix C – Informative References 10

1 General Summary

SAI Group was contracted by AT&T Mobility to conduct a Radio Frequency (RF) Analysis for a wireless facility located at 139 North Main Street DUP1, West Hartford, CT to determine whether the radio facility is in compliance with Federal Communications Commission (FCC) regulations and standards regarding RF exposure.

RF exposure is calculated in accordance with FCC's suggested prediction methods.

2 Site Compliance Summary

Compliance Summary (General Public Limit)	
Site Compliance	Yes
Maximum Calculated %MPE at 0-6' Ground Level (Cumulative)	11.9% at about 167ft West from the tower.

3 RF Design Specifications

Table below shows the technical data used for the calculation of cumulative %MPE results.

Ant ID	Operator	Antenna Make	Antenna Model	Type	TX Freq (MHz)	Az (Deg)	Ant Gain (dBd)	Total ERP (Watts)	Z Rad Center (ft)
1	AT&T	CCI	OPA65R-BU8DA	Panel	700	30	13.15	1652	58.83
1	AT&T	CCI	OPA65R-BU8DA	Panel	2300	30	14.95	3126	58.83
1	AT&T	CCI	OPA65R-BU8DA	Panel	850	30	13.75	1000	58.83
2	AT&T	ERICSSON	AIR6449	Panel	3700	30	23.5	24268	61.58
3	AT&T	CCI	TPA65R-BU6DA	Panel	700	30	11.75	2394	56.25
3	AT&T	CCI	TPA65R-BU6DA	Panel	1900	30	14.55	1140	56.25
3	AT&T	CCI	TPA65R-BU6DA	Panel	1900	30	14.55	1140	56.25
3	AT&T	CCI	TPA65R-BU6DA	Panel	2100	30	15.55	2871	56.25
3	AT&T	CCI	TPA65R-BU6DA	Panel	1900	30	14.55	2281	56.25
3	AT&T	CCI	TPA65R-BU6DA	Panel	2100	30	15.55	2871	56.25
4	AT&T	CCI	OPA65R-BU8DA	Panel	700	150	13.15	1652	58.83
4	AT&T	CCI	OPA65R-BU8DA	Panel	2300	150	14.95	3126	58.83
4	AT&T	CCI	OPA65R-BU8DA	Panel	850	150	13.75	1000	58.83
5	AT&T	ERICSSON	AIR6449	Panel	3700	150	23.5	24268	61.58
6	AT&T	CCI	TPA65R-BU6DA	Panel	700	150	11.75	2394	56.25
6	AT&T	CCI	TPA65R-BU6DA	Panel	1900	150	14.55	1140	56.25
6	AT&T	CCI	TPA65R-BU6DA	Panel	1900	150	14.55	1140	56.25
6	AT&T	CCI	TPA65R-BU6DA	Panel	2100	150	15.55	2871	56.25
6	AT&T	CCI	TPA65R-BU6DA	Panel	1900	150	14.55	2281	56.25
6	AT&T	CCI	TPA65R-BU6DA	Panel	2100	150	15.55	2871	56.25
7	AT&T	CCI	OPA65R-BU8DA	Panel	700	270	13.15	1652	58.83
7	AT&T	CCI	OPA65R-BU8DA	Panel	2300	270	14.95	3126	58.83
7	AT&T	CCI	OPA65R-BU8DA	Panel	850	270	13.75	1000	58.83
8	AT&T	ERICSSON	AIR6449	Panel	3700	270	23.5	24268	61.58
9	AT&T	CCI	TPA65R-BU6DA	Panel	700	270	11.75	2394	56.25
9	AT&T	CCI	TPA65R-BU6DA	Panel	1900	270	14.55	1140	56.25
9	AT&T	CCI	TPA65R-BU6DA	Panel	1900	270	14.55	1140	56.25
9	AT&T	CCI	TPA65R-BU6DA	Panel	2100	270	15.55	2871	56.25
9	AT&T	CCI	TPA65R-BU6DA	Panel	1900	270	14.55	2281	56.25
9	AT&T	CCI	TPA65R-BU6DA	Panel	2100	270	15.55	2871	56.25
10	VZW	SAMSUNG	MT6407	Panel	3700	40	23.45	26557	78.00
11	VZW	COMMSCOPE	SBNHH-1D65B	Panel	700	40	12.38	2768	78.00
11	VZW	COMMSCOPE	SBNHH-1D65B	Panel	850	40	12.67	2959	78.00
12	VZW	COMMSCOPE	SBNHH-1D65B	Panel	1900	40	15.89	6210	78.00
12	VZW	COMMSCOPE	SBNHH-1D65B	Panel	2100	40	16.44	7049	78.00
13	VZW	AMPHENOL	LPA-80063-6CF	Panel	850	40	14.5	498	68.50
14	VZW	AMPHENOL	LPA-80063-6CF	Panel	850	40	14.5	498	68.50

15	VZW	SAMSUNG	MT6407	Panel	3700	140	23.45	26557	78.00
16	VZW	COMMSCOPE	SBNHH-1D65B	Panel	700	140	12.38	2768	78.00
16	VZW	COMMSCOPE	SBNHH-1D65B	Panel	850	140	12.67	2959	78.00
17	VZW	COMMSCOPE	SBNHH-1D65B	Panel	1900	140	15.89	6210	78.00
17	VZW	COMMSCOPE	SBNHH-1D65B	Panel	2100	140	16.44	7049	78.00
18	VZW	AMPHENOL	LPA-80063-6CF	Panel	850	140	14.5	498	68.50
19	VZW	AMPHENOL	LPA-80063-6CF	Panel	850	140	14.5	498	68.50
20	VZW	SAMSUNG	MT6407	Panel	3700	270	23.45	26557	78.00
21	VZW	COMMSCOPE	SBNHH-1D65B	Panel	700	270	12.38	2768	78.00
21	VZW	COMMSCOPE	SBNHH-1D65B	Panel	850	270	12.67	2959	78.00
22	VZW	COMMSCOPE	SBNHH-1D65B	Panel	1900	270	15.89	6210	78.00
22	VZW	COMMSCOPE	SBNHH-1D65B	Panel	2100	270	16.44	7049	78.00
23	VZW	AMPHENOL	LPA-80063-6CF	Panel	850	270	14.5	498	68.50
24	VZW	AMPHENOL	LPA-80063-6CF	Panel	850	270	14.5	498	68.50

NOTE: The Z value indicates the distance of radiation center of the antenna height above the ground site level unless otherwise indicated. Effective Radiated Power (ERP) is provided by the operator or calculated based on SAI Group experience. SAI Group has assumed transmission parameters for “Unknown” RF emitters based on either similar installations found at other radio communications sites or from the latest data available for the site. “Generic” antenna models have been used where existing antenna part numbers or radiation patterns are not available. The frequencies presented in this table may have been assumed in order to represent the approximate band of operation and to support a worst-case calculation of power density

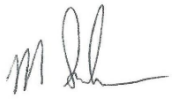
4 Conclusion

I certify to the best of my knowledge that the statements contained in this report are true and accurate. The theoretical computations contained are based on FCC recommended methods, with industry standard assumptions & formulas, and complies with FCC mandated Maximum Permissible RF Exposure requirements.

A comprehensive field survey was not performed prior to the generation of this report. If questions arise regarding the calculations herein, SAI Group recommends that a comprehensive field survey be performed to resolve any disputes.

Sanket Joshi
RF Engineer
SAI Group

March 01, 2023
Date



Matthew Smelcer
RF Engineering Manager

March 01, 2023
Date

Appendix A – FCC Rules and Regulations

In 1996, the Federal Communication Commission (FCC) adopted procedures and guidelines for evaluating of the effects of RF exposure. This guideline from the FCC Office of Engineering and Technology is Bulletin 65 ("OET Bulletin 65"), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996 the FCC periodically reviews these rules and regulations as per their congressional mandate.

Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following Tables and diagram:

Table 1. MPE Limits for General Population/ Uncontrolled Exposure

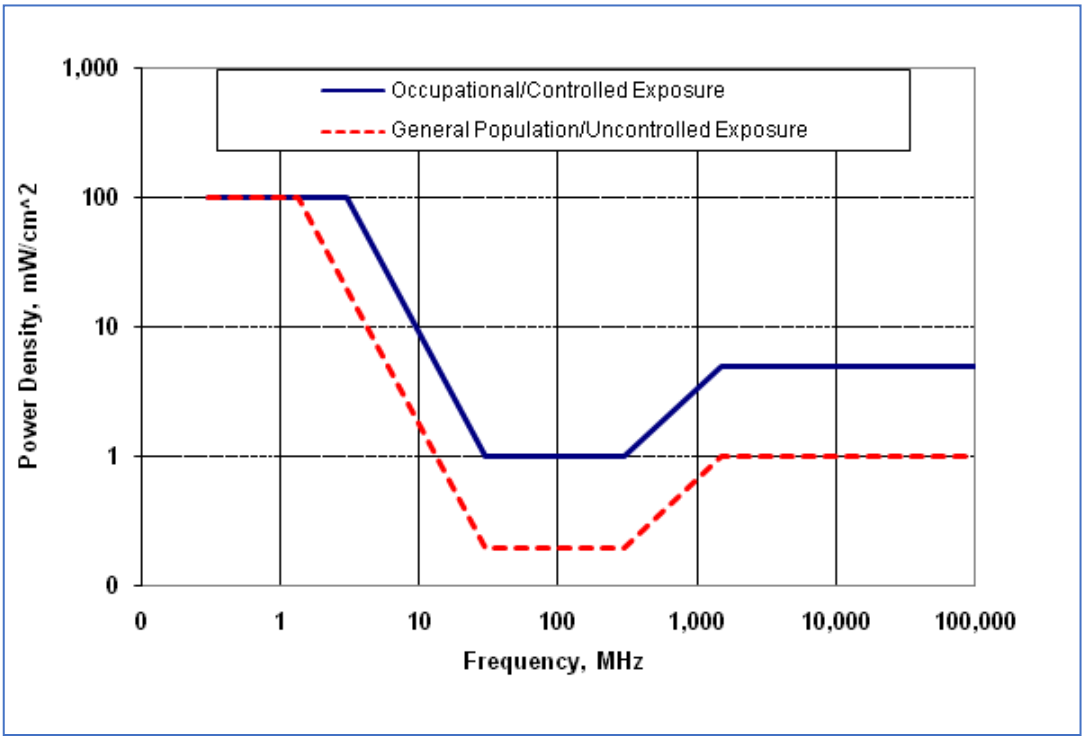
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time for $\|E\|^2$, $\|H\|^2$, or S (Minutes)
0.3 – 1.34	614	1.63	(100)*	30
1.34 -30	824/f	2.19/f	$(180/f^2)$*	30
30 – 300	27.5	0.073	0.2	30
300 – 1500	--	--	f/1500	30
1500– 100,000	--	--	1.0	30
f = frequency in MHz		* = Plane wave equivalent power density		

General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can't exercise control over their exposure. A site is evaluated with General Public limits if there is no access controls or no RF warning signage present.

Table 2. MPE Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time for $\|E\|^2$, $\|H\|^2$, or S (Minutes)
0.3 – 3.0	614	1.63	(100)*	6
3.0 – 30	1842/f	4.89/f	$(900/f^2)$*	6
30 – 300	61.4	0.163	1.0	6
300 – 1500	--	--	f/300	6
1500– 100,000	--	--	5.0	6
f = frequency in MHz		* = Plane wave equivalent power density		

Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where such occupational/controlled limits apply provided he or she is made aware of the potential for exposure. Typical criteria to remediate controlled environment are restricted access to the areas where antennas are located along with appropriate RF warning signage. A site with Controlled environment is evaluated with Occupational limits.



Maximum Permissible Exposures. Occupational/Controlled and General Population/Uncontrolled MPE's are functions of frequency.

Appendix B – Calculations Methodology and Assumptions

SAI Group has performed theoretical analysis using Waterford Consultants' RoofMaster™ 2020 Version 30.5.26.2022 which uses a cylindrical model for very conservative power density calculations within the near field of the antenna where the antenna pattern has not truly formed yet. The Cylindrical Model is used to determine the spatially averaged power density in the near field directly in front of an antenna. In order to implement this model in all directions, the calculations utilize the antenna manufacturer horizontal pattern data. Additionally, the model also incorporates factors that reduce the power density by inverse square of horizontal and vertical distances beyond the near field region.

RoofMaster™ uses far field model to calculate the spatial peak power density. The RoofMaster™ implementation of this model incorporated manufacturer's horizontal and vertical pattern data to determine the power density in all directions.

The calculations are based on worst-case assumptions that, all antennas are always operating at full power.

The site has been modeled with these assumptions to show the maximum RF energy density. Areas modeled with exposure greater than 100% of the General Public MPE level may not actually occur, but are shown as a prediction that could be realized.

Appendix C – Informative References

The following references can be followed for further information about RF Health and Safety.

FCC Radio Frequency Safety
http://www.fcc.gov/encyclopedia/radio-frequency-safety

FCC OET Bulletin 56
https://transition.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet56/oet56e4.pdf

FCC OET Bulletin 65
https://transition.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet65/oet65.pdf

National Council on Radiation Protection and Measurements (NCRP)
http://www.ncrponline.org

American National Standards Institute (ANSI)
http://www.ansi.org

Environmental Protection Agency (EPA)
https://www3.epa.gov/radtown/wireless-technology.html

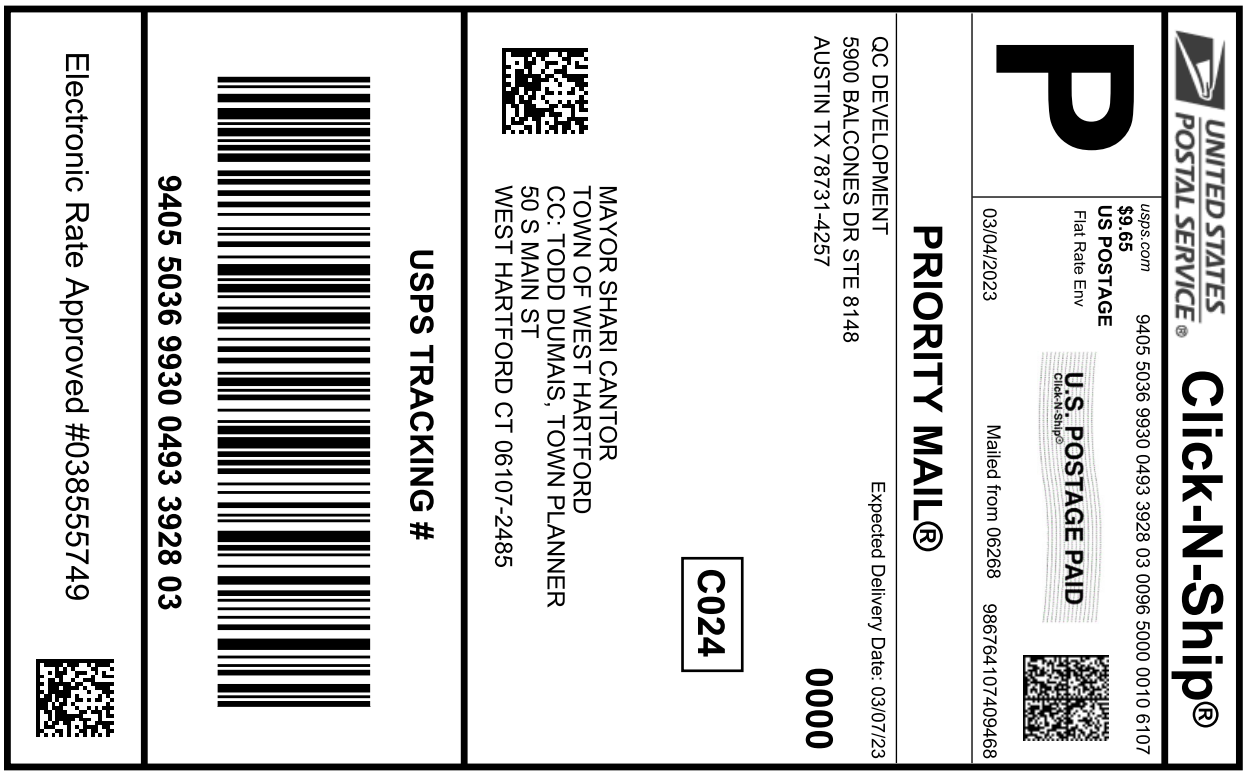
National Institutes of Health (NIH)
http://www.niehs.nih.gov/health/topics/agents/emf/

Occupational Safety and Health Agency (OSHA)
http://www.osha.gov/SLTC/radiofrequencyradiation/

International Commission on Non-Ionizing Radiation Protection (ICNIRP)
http://www.icnirp.org/

Exhibit F

Recipient Mailings



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2. **Place your label so it does not wrap around the edge of the package.**
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4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

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9405 5036 9930 0493 3928 03

Trans. #:	583818197
Print Date:	03/03/2023
Ship Date:	03/04/2023
Expected Delivery Date:	03/07/2023

Priority Mail® Postage:	**$9.65**
Total:	**$9.65**

From: QC DEVELOPMENT
5900 BALCONES DR STE 8148
AUSTIN TX 78731-4257

To: MAYOR SHARI CANTOR
TOWN OF WEST HARTFORD
CC: TODD DUMAIS, TOWN PLANNER
50 S MAIN ST
WEST HARTFORD CT 06107-2485

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MONDAY

6 March 2023 ⓘ

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Accepted

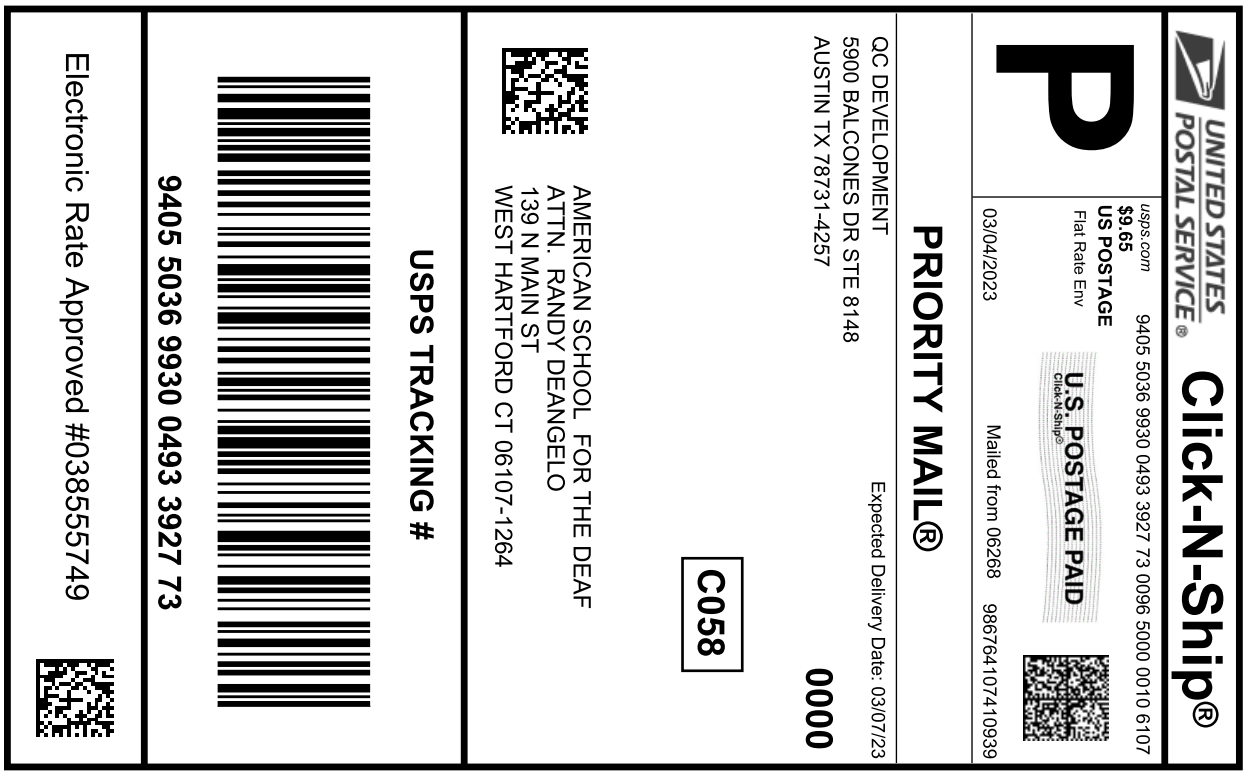
USPS in possession of item

STORRS MANSFIELD, CT 06268
March 4, 2023, 12:31 pm

Pre-Shipment Info Sent to USPS, USPS Awaiting Item

March 3, 2023

Feedback



Cut on dotted line.

Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
2. **Place your label so it does not wrap around the edge of the package.**
3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0493 3927 73

Trans. #:	583818197
Print Date:	03/03/2023
Ship Date:	03/04/2023
Expected Delivery Date:	03/07/2023

Priority Mail® Postage:	**$9.65**
Total:	**$9.65**

From: QC DEVELOPMENT
5900 BALCONES DR STE 8148
AUSTIN TX 78731-4257

To: AMERICAN SCHOOL FOR THE DEAF
ATTN. RANDY DEANGELO
139 N MAIN ST
WEST HARTFORD CT 06107-1264

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com

USPS Tracking®

FAQs >

Remove ×

Tracking Number:

9405503699300493392773

Copy Add to Informed Delivery (https://informeddelivery.usps.com/)

Expected Delivery by

MONDAY

6 March 2023 ⓘ

by **9:00pm** ⓘ

USPS is now in possession of your item as of 12:31 pm on March 4, 2023 in STORRS MANSFIELD, CT 06268.

Get More Out of USPS Tracking:

USPS Tracking Plus®

Delivered

Out for Delivery

Preparing for Delivery

In Transit

Accepted

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