

August 2, 2023

*Via Electronic Mail*

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

Re: **Notice of Exempt Modification – Facility Modification  
University of Hartford – Hillyer Dormitory  
200 Bloomfield Avenue, West Hartford, Connecticut**

Dear Attorney Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains a wireless telecommunications facility at the above-referenced address (the “Property”). The facility consists of a cannister antenna and remote radio head (“RRH”) attached to the tower mast on the roof of the Hillyer Dormitory building. Equipment associated with the facility is located inside the building. The facility was approved by the Siting Council in January of 2017 (Petition No. 1271). A copy of the Council’s Petition No. 1271 approval letter and Staff Report is included in Attachment 1.

Cellco now intends to modify its facility by removing the existing antenna and installing a new model cannister antenna on the same antenna mast. Cellco also intends to remove the existing RRH and install three (3) new RRHs on the existing antenna mast mounting frame. A set of project plans showing Cellco’s proposed facility modifications and the new antenna and RRH specification sheet are included in Attachment 2.

Please accept this letter as notification pursuant to R.C.S.A. § 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 West Hartford’s Chief Elected Official, Land Use Officer and the University of Hartford, the Property owner.

Melanie A. Bachman, Esq.  
August 2, 2023  
Page 2

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 antenna.
2. The proposed modifications will not involve any change to any of the equipment inside the building and, therefore, 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 installation of Cellco's new antenna will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. Cellco's Far Field emissions calculations are included in Attachment 3. The modified facility will not be capable of providing Cellco's 5G wireless service.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. According to the attached (Revised) Structural Analysis Report ("SA"), the existing structure (building) and ballast mounting structure have adequate capacity to support Cellco's proposed facility modifications. A copy of the SA is included in Attachment 4.

A copy of the parcel map and Property owner information is included in Attachment 5. A Certificate of Mailing verifying that this filing was sent to municipal officials is included in Attachment 6.

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

# Robinson+Cole

Melanie A. Bachman, Esq.  
August 2, 2023  
Page 3

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth C. Baldwin". The signature is fluid and cursive, with a long horizontal stroke at the end.

Kenneth C. Baldwin

Enclosures

Copy to:

Shari Cantor, West Hartford Mayor  
Todd Dumais, Town Planner  
University of Hartford, Property Owner  
Elizabeth Glidden  
Nicole O'Brien

# **ATTACHMENT 1**



# STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: [siting.council@ct.gov](mailto:siting.council@ct.gov)

[www.ct.gov/csc](http://www.ct.gov/csc)

### CERTIFIED MAIL RETURN RECEIPT REQUESTED

January 20, 2017

Kenneth C. Baldwin, Esq.  
Robinson & Cole LLP  
280 Trumbull Street  
Hartford, CT 06103-3597

RE: **PETITION NO. 1271** - Cellco Partnership d/b/a Verizon Wireless petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed installation of a small cell wireless telecommunications facility on the roof of the Hyllier dormitory building located at the University of Hartford, 200 Bloomfield Avenue, West Hartford, Connecticut.

Dear Attorney Baldwin:

At a public meeting held on January 19, 2017, the Connecticut Siting Council (Council) considered and ruled that the above-referenced proposal would not have a substantial adverse environmental effect, and pursuant to Connecticut General Statutes § 16-50k, would not require a Certificate of Environmental Compatibility and Public Need with the following conditions:

1. Use of off-road construction equipment that meets the latest EPA or California Air Resources Board standards, or in the alternative, equipment with the best available controls on diesel emissions, including, but not limited to, retrofitting with diesel oxidation catalysts, particulate filters and use of ultra-low sulfur fuel;
2. Compliance with the provisions of Section 22a-174-18(b)(3)(C) of the Regulations of Connecticut State Agencies that limit the idling of mobile sources to 3 minutes;
3. Approval of any minor project changes be delegated to Council staff;
4. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed within three years from the date of the mailing of the Council's decision, this decision shall be void, and the facility owner/operator shall dismantle the facility 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 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 facility owner/operator shall provide written notice to the Executive Director of any schedule changes as soon as is practicable;
5. Any request for extension of the time period to fully construct the facility shall be filed with the Council not later than 60 days prior to the expiration date of this decision and shall be served on all parties and intervenors, if applicable, and the Town of West Hartford, the City of Hartford, and the Town of Bloomfield;
6. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;



CONNECTICUT SITING COUNCIL  
Affirmative Action / Equal Opportunity Employer

7. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by the Petitioner shall be removed within 60 days of the date the antenna ceased to function;
8. The facility owner/operator 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;
9. This Declaratory Ruling may be transferred, provided the facility owner/operator/transferor is current with payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v and the transferee provides written confirmation that the transferee agrees to comply with the terms, limitations and conditions contained in the Declaratory Ruling, including timely payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v; and
10. If the facility owner/operator 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 facility within 30 days of the sale and/or transfer.

This decision is under the exclusive jurisdiction of the Council and is not applicable to any other modification or construction. All work is to be implemented as specified in the petition dated November 2, 2016.

Enclosed for your information is a copy of the staff report on this project.

Very truly yours,



Robert Stein  
Chairman

RS/MP/cm

Enclosure: Staff Report dated January 19, 2017

- c: The Honorable Shari Cantor, Mayor, Town of West Hartford  
Ronald Van Winkle, Town Manager, Town of West Hartford  
Todd Dumais, Town Planner, Town of West Hartford  
The Honorable Luke Bronin, Mayor, City of Hartford  
Jamie Bratt, Director of Planning and Economic Development, City of Hartford  
The Honorable Joan A. Gamble, Mayor, Town of Bloomfield  
Philip K. Schenck, Jr., Town Manager, Town of Bloomfield  
Jose Giner, Director of Planning, Town of Bloomfield



# STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: [siting.council@ct.gov](mailto:siting.council@ct.gov)

[www.ct.gov/csc](http://www.ct.gov/csc)

**Petition No. 1271**  
**Cellco Partnership d/b/a Verizon Wireless**  
**200 Bloomfield Avenue, West Hartford**  
**Small Cell Facility**  
**Staff Report**  
**January 19, 2017**

On November 3, 2016, the Connecticut Siting Council (Council) received a petition from Cellco Partnership d/b/a Verizon Wireless (Cellco) for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed installation of a small cell telecommunications facility at 200 Bloomfield Avenue, West Hartford, Connecticut. Cellco proposes to install the small cell facility to provide 2100 MHz service and provide customers with improved wireless services in the area.

Specifically, Cellco would install a small cell tower on the roof of the Hyllier dormitory building owned by the University of Hartford and located on the University of Hartford campus. The tower would have a single canister-type antenna, one remote radio head (RRH), one alternating current (AC) disconnect, and one fiber demarcation enclosure. The proposed small cell facility would extend to a maximum height of 42-feet 8-inches above ground level (agl). This is approximately 7-feet 4-inches above the existing rooftop parapet wall height of 35-feet 4-inches feet agl. Cellco's equipment would be installed inside the building. Electrical and telephone service would extend from existing service inside the building and would be routed along the roof and down the northeast façade of the building.

The proposed small cell facility would be located within the Multi-Use Mix District (MX-2). The visual impact is not expected to be significant due to the narrow profile of the tower and limited height (i.e. less than eight feet above the existing roof of the building). An outdoor equipment compound is not proposed.

The calculated power density would be 1.65 percent of the applicable limit using a -10 dB off-beam adjustment. Notice is not required to the Federal Aviation Administration.

Notice was provided to the Town of West Hartford, the City of Hartford, the Town of Bloomfield, the property owner, and abutting property owners on or about November 2, 2016. No comments have been received by the Council to date.

Cellco contends that this proposed project would not have a substantial adverse environmental impact.

Staff recommends the following conditions:

1. Use of off-road construction equipment that meets the latest EPA or California Air Resources Board standards, or in the alternative, equipment with the best available controls on diesel emissions, including, but not limited to, retrofitting with diesel oxidation catalysts, particulate filters and use of ultra-low sulfur fuel;
2. Compliance with the provisions of Section 22a-174-18(b)(3)(C) of the Regulations of Connecticut State Agencies that limit the idling of mobile sources to 3 minutes; and
3. Approval of any minor project changes be delegated to Council staff.

## Site Location



Photo-simulation as viewed from the driveway to the northwest





# **ATTACHMENT 2**

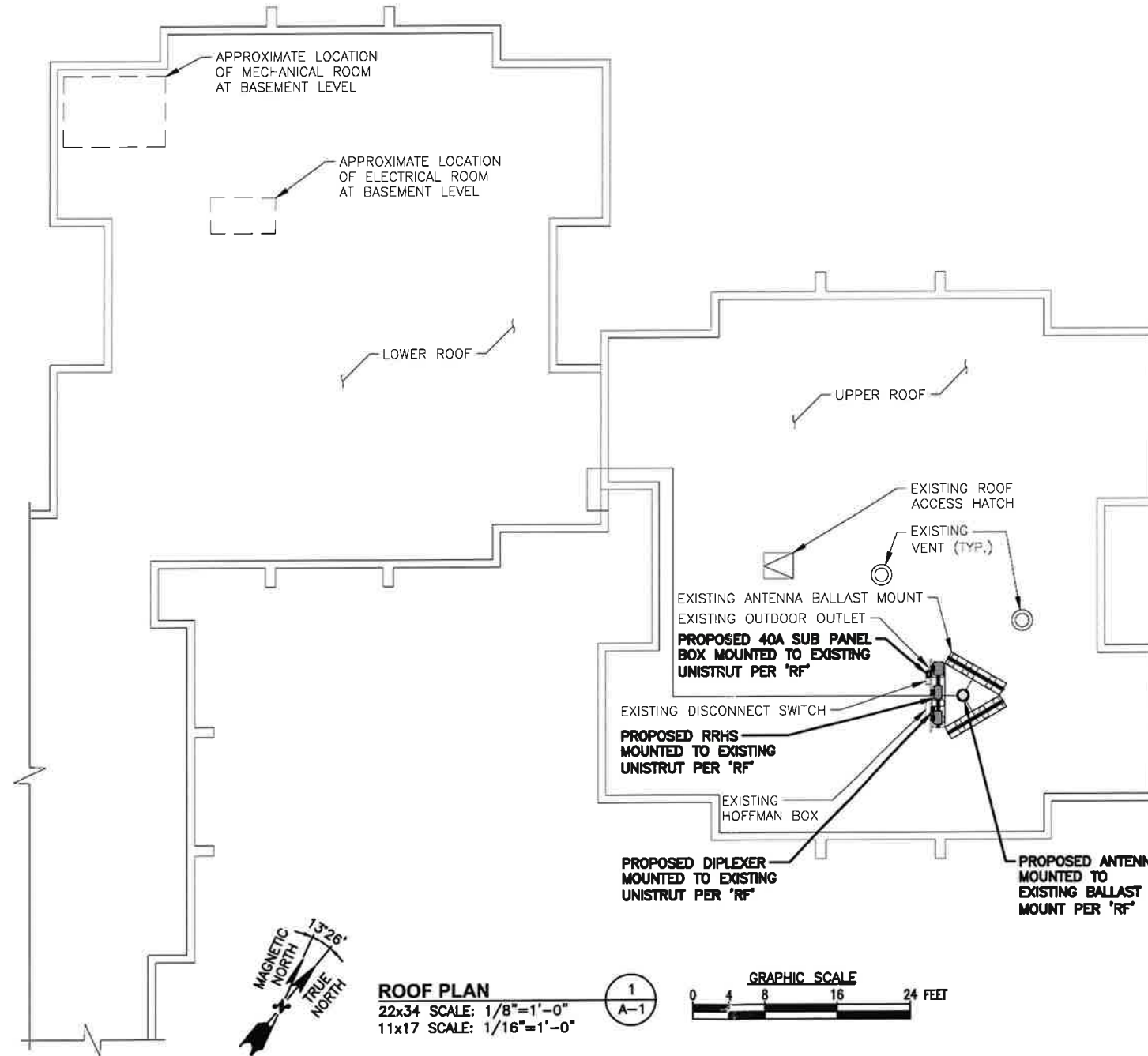


**VICINITY MAP**  
SCALE: N.T.S.

APPROXIMATE LATITUDE: N41° 48' 05.40"  
N41.8015  
COORDINATES: LONGITUDE: W72° 42' 54.13"  
W72.715036

**NOTE:**  
AN ANALYSIS OF THE CAPACITY OF THE EXISTING STRUCTURE TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: TEP NORTHEAST OPKO, LLC. DATED: JULY 14, 2023

**NOTE:**  
AN ASSESSMENT FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: TEP NORTHEAST OPKO, LLC. DATED: JULY 14, 2023



**ROOF PLAN**  
22x34 SCALE: 1/8"=1'-0"  
11x17 SCALE: 1/16"=1'-0"  
GRAPHIC SCALE: 0 4 8 16 24 FEET  
1 A-1

FIELD INSPECTION DATE: 06-21-2022

**SCOPE**

- EXISTING ANTENNA TO BE REMOVED, INSTALL (1) ANTENNA PER 'RF'.
- INSTALL (1) DIPLEXER PER 'RF'.
- ALL EXISTING RRH TO BE REMOVED, INSTALL (3) RRHS PER 'RF'.
- INSTALL (1) 40A SUB PANEL BOX PER 'RF'.
- ALL REPLACEMENT ANTENNAS TO MATCH EXISTING CONDITION & HEIGHTS.
- RECONFIGURE/RELOCATE EXISTING ANTENNA MOUNTS AS NECESSARY TO ACCOMMODATE HORIZONTAL SEPARATION, PROPOSED AZIMUTHS, AND ANTENNAS CONFIGURATION.
- CONTRACTOR TO REMOVE (2) EXISTING BALLAST BLOCKS PER TRAY (TOTAL OF 6 PER MOUNT) TO REDUCE LOAD UNDER EXISTING BALLAST MOUNT.

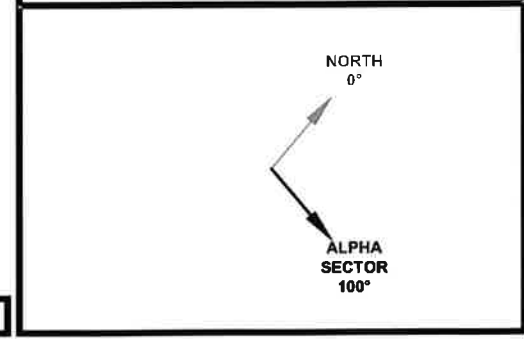
**NEW ANTENNA CONFIGURATION**

**NOTE TO GENERAL CONTRACTOR:**  
'RF' DESIGN AND EQUIPMENT IS BASED UPON RFDS ISSUED BY VZW DATED: JANUARY 12, 2022.  
  
THE CONTRACTOR OF RECORD SHALL CONTACT VZW PRIOR TO ANY AND ALL ORDERING/PURCHASING/INSTALLATION OF EQUIPMENT TO VERIFY THAT THE 'RF' LISTED IN THE DRAWING SET IS CURRENT AND UP TO DATE.

**NOTES**

- NORTH SHOWN AS APPROXIMATE.
- SOME EXISTING & PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
- ANTENNAS WILL BE CAMOUFLAGED WITH 3M WRAP OR SHERWIN-WILLIAMS PRO INDUSTRIAL DTM ACRYLIC PAINT, AS NEEDED, PER VERIZON WIRELESS AND BUILDING OWNER'S APPROVAL.
- PRIOR TO COMMENCEMENT OF ANY WORK, PROPOSED ANTENNA INSTALLATION IS PURSUANT TO FINDINGS DICTATED IN STRUCTURAL ANALYSIS. STRUCTURAL ANALYSIS TO VERIFY CAPACITY OF EXISTING STRUCTURE TO ENSURE STRUCTURAL INTEGRITY FOLLOWING INSTALLATION OF PROPOSED ANTENNAS, COAX CABLES AND REQUIRED HARDWARE. COPY OF STRUCTURAL ANALYSIS TO BE SENT TO DESIGN ENGINEER.
- CONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, VERIZON WIRELESS ANTENNA MOUNT LOCATION AND ANTENNAS TO BE INSTALLED.
- CONTRACTOR SHALL NOTIFY ENGINEERS IF FIELD CONDITIONS DIFFER FROM DESIGN.
- RAD CENTERS MEASURED IN THE FIELD WITH LASER BY HDG. RAD CENTERS MAY NOT MATCH RF ANTENNA DESIGN SHEET.

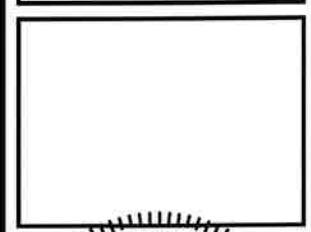
**ANTENNA ORIENTATION**



FOR CONSTRUCTION

PREPARED FOR:  
**verizon**  
900 CHELMSFORD STREET  
TOWER 2 FLOOR 5  
LOWELL, MA 01851

**TEP**  
**NORTHEAST**  
TEP OPKO, LLC  
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845  
TEL: (978) 557-5553



CHECKED BY: JX  
APPROVED BY: DPH

**SUBMITTALS**

REV.	DATE	DESCRIPTION	BY
3	07/25/23	REV. ADDRESS & RRHS	AH
2	01/03/23	REV. ELEC. CIRCUIT	TR
1	12/20/22	REV. ELEC. CIRCUIT	SLY
0	06/28/22	FOR CONSTRUCTION	SF

SITE NAME:  
UNIVERSITY OF HARTFORD SC 1  
CT - D  
  
SITE ADDRESS:  
200 BLOOMFIELD AVENUE  
WEST HARTFORD, CT 06117

SHEET TITLE  
ROOF PLAN

SHEET NUMBER  
**A-1**

FOR CONSTRUCTION

**NOTE:**  
 AN ASSESSMENT FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: TEP NORTHEAST OPCO, LLC. DATED: JULY 14, 2023

**NOTE:**  
 AN ANALYSIS OF THE CAPACITY OF THE EXISTING STRUCTURE TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: TEP NORTHEAST OPCO, LLC. DATED: JULY 14, 2023

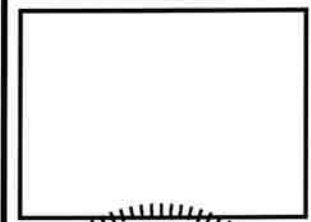

PREPARED FOR:



900 CHELMSFORD STREET  
 TOWER 2 FLOOR 5  
 LOWELL, MA 01851



TEP NORTHEAST  
 TEP OPCO, LLC  
 45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845  
 TEL: (978) 557-5553

*Daniel P. Hamm*

CHECKED BY: JX

APPROVED BY: DPH

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
3	07/25/23	REV. ADDRESS & NIPS	AM
2	01/03/23	REV. ELEC. CIRCUIT	TR
1	12/20/22	REV. ELEC. CIRCUIT	SLY
0	06/28/22	FOR CONSTRUCTION	SF

SITE NAME:  
 UNIVERSITY OF HARTFORD SC 1  
 CT - D

SITE ADDRESS:  
 200 BLOOMFIELD AVENUE  
 WEST HARTFORD, CT 06117

SHEET TITLE  
 ELEVATION

SHEET NUMBER  
 A-2

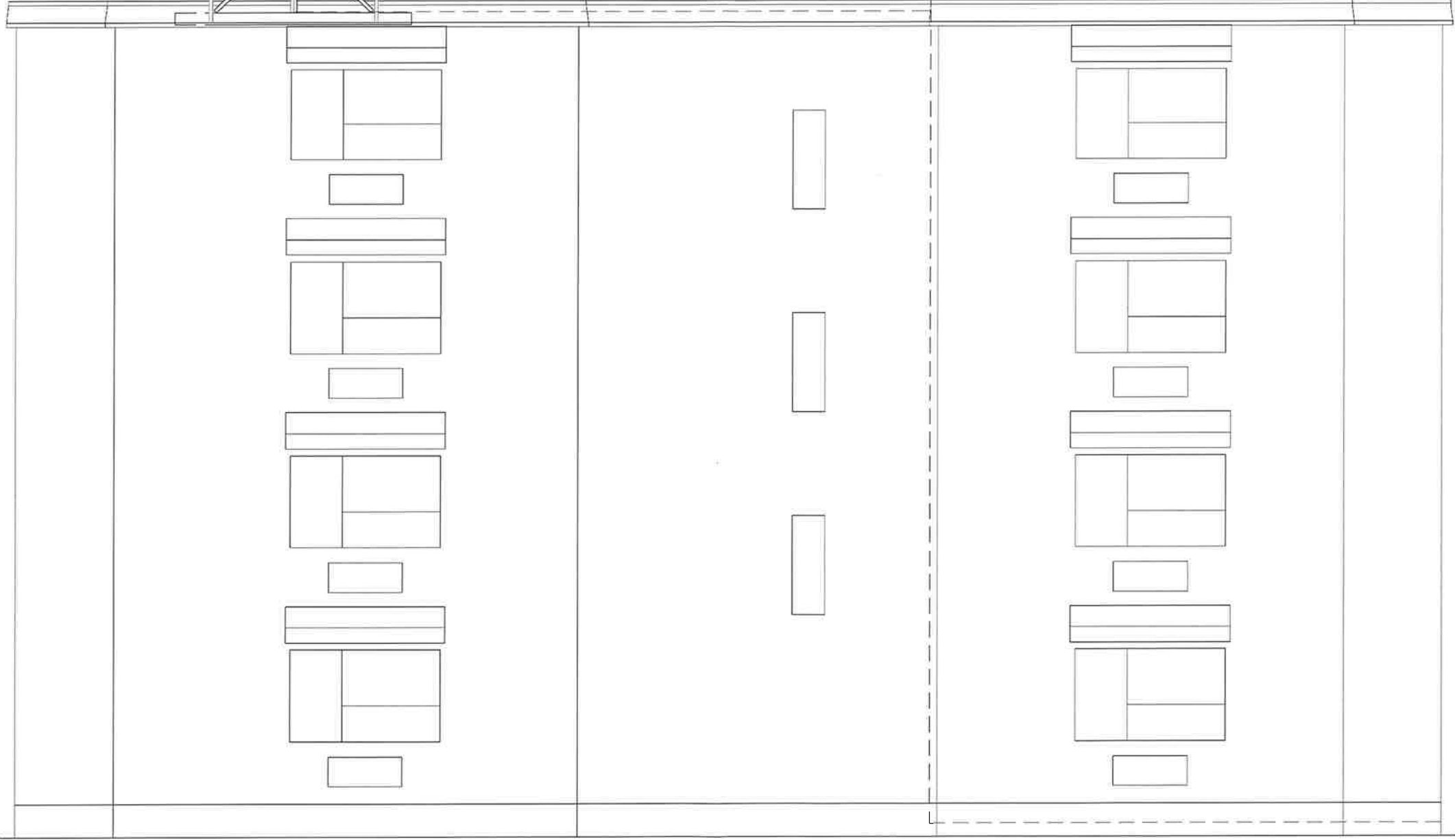
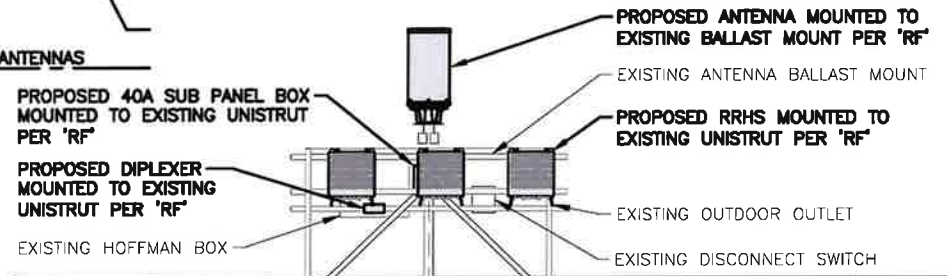
TOP OF PROPOSED VERIZON ANTENNAS / HIGHEST APPURTENANCE  
 ELEV. = 42'-7"± (AGL)  
 122'-7"± (AMSL)

☉ OF PROPOSED VERIZON ANTENNAS  
 ELEV. = 41'-6"± (AGL)  
 121'-6"± (AMSL)

TOP OF EXISTING ROOF  
 ELEV. = 34'-3"± (AGL)  
 114'-3"± (AMSL)

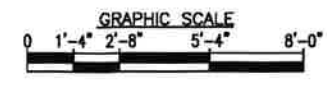
41'-6"±

GRADE  
 ELEV. = 0'-0"± (AGL)  
 80'-0"± (AMSL)



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

1  
 A-2



**NOTE:**

AN ASSESSMENT FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: TEP NORTHEAST OPCO, LLC. DATED: JULY 14, 2023

**NOTE:**

AN ANALYSIS OF THE CAPACITY OF THE EXISTING STRUCTURE TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: TEP NORTHEAST OPCO, LLC. DATED: JULY 14, 2023

**FOR CONSTRUCTION**

PREPARED FOR:

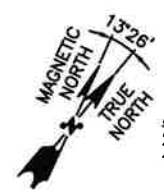
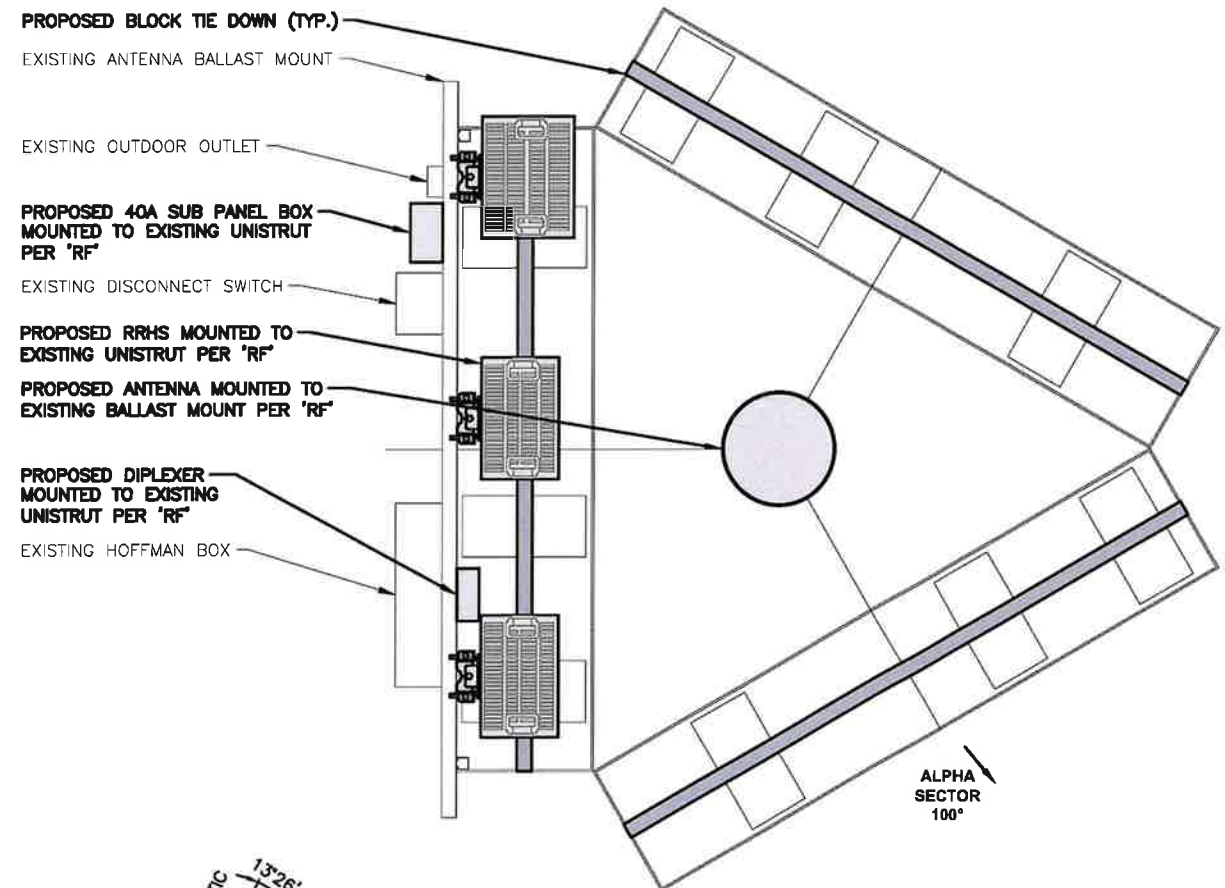


900 CHELMSFORD STREET  
TOWER 2 FLOOR 5  
LOWELL, MA 01851



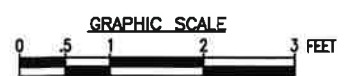
TEP NORTHEAST  
TEP OPCO, LLC  
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845  
TEL: (978) 557-5553

MINIMUM BALLAST REQUIREMENTS			
	EXISTING	PROPOSED	TOTAL
NUMBER OF BLOCKS PER TRAY	5	-2	3
SIZE OF BLOCKS	8"x8"x16" HOLLOW	8"x8"x16" HOLLOW	8"x8"x16" HOLLOW
WEIGHT OF BLOCKS	38 lbs. / EACH	38 LBS. / EACH	38 LBS. / EACH
TOTAL BALLAST WEIGHT	570 lbs.	-228 lbs.	342 lbs.



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

1  
A-3



*Daniel P. Hamm*

CHECKED BY: JX

APPROVED BY: DPH

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
3	07/25/23	REV. ADDRESS & RRHS	AM
2	01/03/23	REV. ELEC. CIRCUIT	TR
1	12/20/22	REV. ELEC. CIRCUIT	SJY
0	08/28/22	FOR CONSTRUCTION	SF

SITE NAME:  
UNIVERSITY OF  
HARTFORD SC 1  
CT - D

SITE ADDRESS:  
200 BLOOMFIELD AVENUE  
WEST HARTFORD, CT 06117

SHEET TITLE  
ANTENNA PLAN

SHEET NUMBER  
**A-3**

**STRUCTURAL NOTES:**

- DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-H STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
- DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
- STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
- STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
- STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
- ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
- ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
- FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
- CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND D.I.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL". 14TH EDITION.
- INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
- UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
- EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS, AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-270 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
- EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
- WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
- ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
- NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
- SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

**SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):**

**GENERAL:** WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE INSPECTION CHECKLIST ABOVE.

THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTOR FOR THE WORK DESIGNED BY THEM, PROVIDED THOSE PERSONNEL MEET THE QUALIFICATION REQUIREMENTS.

STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 107.1 AS A CONDITION FOR ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1705.

REPORT REQUIREMENT: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS SHALL BE SUBMITTED.

**SPECIAL INSPECTION CHECKLIST**

BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
N/A	ENGINEER OF RECORD APPROVED SHOP DRAWINGS <sup>1</sup>
N/A	MATERIAL SPECIFICATIONS REPORT <sup>2</sup>
N/A	FABRICATOR NDE INSPECTION
N/A	PACKING SLIPS <sup>3</sup>
ADDITIONAL TESTING AND INSPECTIONS:	
DURING CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS <sup>4</sup>
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION <sup>5</sup>
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT
ADDITIONAL TESTING AND INSPECTIONS:	
AFTER CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS <sup>6</sup>
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
REQUIRED	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

**NOTES:**

- REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
- PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
- PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
- HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
- ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 308.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH HAS BEEN BASED ON ACI 308.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO DRY HOLES DRILLED USING A CARBIDE BIT INTO CRACKED CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS REQUIRING CERTIFIED INSTALLATIONS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-11 D.9.2.2. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11 D.8.2.4.
- AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

**NOTES:**


- ALL CONNECTIONS TO BE SHOP WELDED & FIELD BOLTED USING 3/4" # A325-X BOLTS, UNLESS OTHERWISE NOTIFIED.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED BEFORE ORDERING MATERIAL.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED PRIOR TO STEEL FABRICATION.
- VERIFICATION OF EXISTING ROOF CONSTRUCTION IS REQUIRED PRIOR TO THE INSTALLATION OF THE ROOF PLATFORM. ENGINEER OF RECORD IS TO APPROVE EXISTING CONDITIONS IN ORDER TO MOVE FORWARD.
- CENTERLINE OF PROPOSED STEEL PLATFORM SUPPORT COLUMNS TO BE CENTRALLY LOCATED OVER THE EXISTING BUILDING COLUMNS.
- EXISTING BRICK MASONRY COLUMNS/BEARING TO BE REPAIRED/REPLACED AT ALL PROPOSED PLATFORM SUPPORT POINTS. ENGINEER OF RECORD TO REVIEW AND APPROVE.

**FOR CONSTRUCTION**

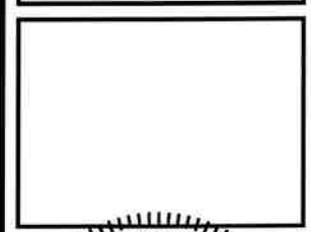

PREPARED FOR:



900 CHELMSFORD STREET  
TOWER 2 FLOOR 5  
LOWELL, MA 01851



TEP ENGINEERS  
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845  
TEL: (978) 557-5553

CHECKED BY: JX

APPROVED BY: DPH

**SUBMITTALS**

REV.	DATE	DESCRIPTION	BY
3	07/25/23	REV. ADDRESS & RIBS	AM
2	01/03/23	REV. ELEC. CIRCUIT	TR
1	12/20/22	REV. ELEC. CIRCUIT	SLY
0	09/28/22	FOR CONSTRUCTION	SF

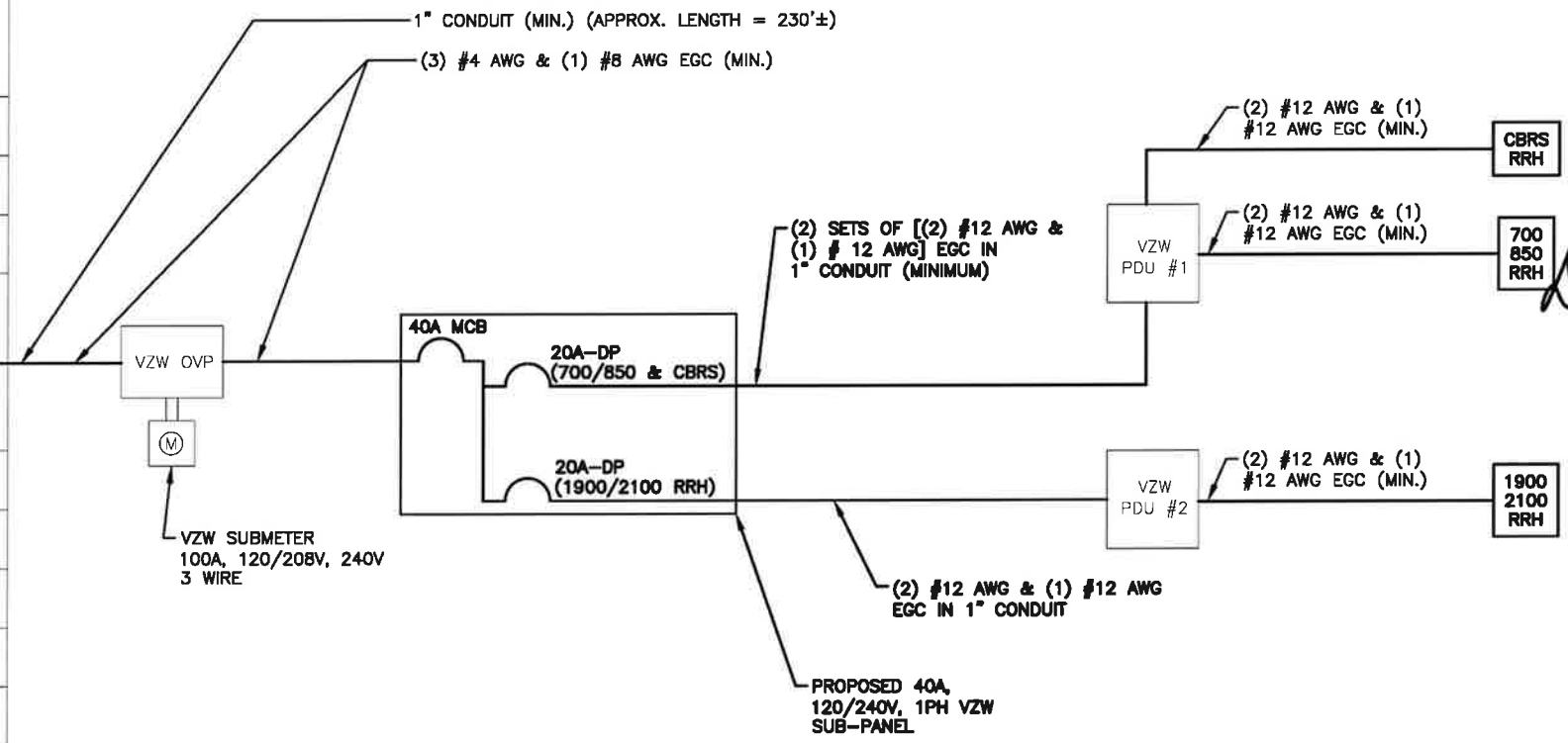
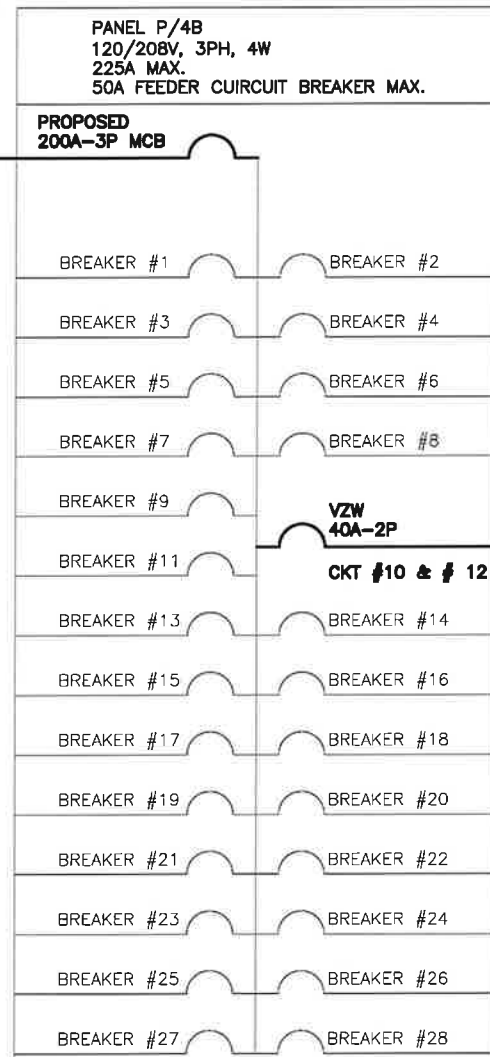
SITE NAME:  
UNIVERSITY OF  
HARTFORD SC 1  
CT - D

SITE ADDRESS:  
200 BLOOMFIELD AVENUE  
WEST HARTFORD, CT 06117

SHEET TITLE  
STRUCTURAL NOTES  
&  
SPECIAL INSPECTIONS

SHEET NUMBER  
**SN-1**

**NOTE:**  
ELECTRICIAN TO VERIFY THAT  
CABLE/CONDUIT FEEDING  
POWER TO PANEL P/4B IS  
SIZED FOR 200A OR GREATER  
AND UPGRADE IF NECESSARY.



**ONE-LINE DIAGRAM**  
SCALE: N.T.S. 1  
E-1

**FOR CONSTRUCTION**

PREPARED FOR:

**verizon** ✓

900 CHELMSFORD STREET  
TOWER 2 FLOOR 5  
LOWELL, MA 01851

**TEP** ✓  
**NORTHEAST**

TEP GROUP LLC  
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845  
TEL: (978) 557-5553

STATE OF CONNECTICUT  
DANIEL P. HAMM  
LICENSED PROFESSIONAL ENGINEER

CHECKED BY: JX

APPROVED BY: DPH

**SUBMITTALS**

REV.	DATE	DESCRIPTION	BY
3	07/25/23	REV. ADDRESS & RRHS	AM
2	01/03/23	REV. ELEC. CIRCUIT	TR
1	12/20/22	REV. ELEC. CIRCUIT	SLY
0	08/28/22	FOR CONSTRUCTION	SF

SITE NAME:  
UNIVERSITY OF  
HARTFORD SC 1  
CT - D

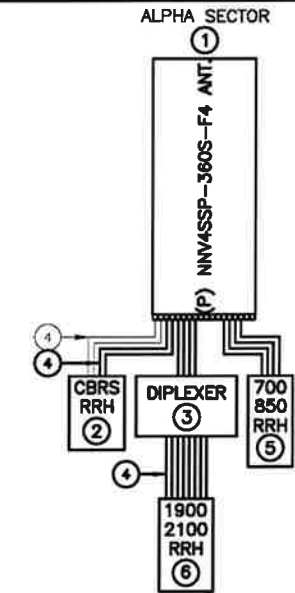
SITE ADDRESS:  
200 BLOOMFIELD AVENUE  
WEST HARTFORD, CT 06117

SHEET TITLE  
ROOF PLAN

SHEET NUMBER  
**E-1**

BILL OF MATERIALS				
SITE NAME: UNIVERSITY OF HARTFORD SC 1 CT - D				
ITEM	DESCRIPTION	QTY	LENGTH	COMMENTS
①	PROPOSED COMMSCOPE NN4SSP-360S-F4 ANTENNA	1		MOUNTED TO EXISTING BALLAST FRAME
②	PROPOSED CBRS RRH	1		SAMSUNG CBRS RRH-RT4401-48A UNISTRUT MOUNTED
③	PROPOSED DIPLEXER	1		COMMSCOPE SDX1926Q-43 UNISTRUT MOUNTED
④	EXISTING 1/2" TOP COAX JUMPERS	2	15 FT.	
④	PROPOSED 1/2" TOP COAX JUMPERS	18	15 FT.	ROUTE FROM DIPLEXER/RRH TO ANTENNA
⑤	PROPOSED LTE 700/850 RRH	1		SAMSUNG RRH B5/B13 RF4440D-13A UNISTRUT MOUNTED
⑥	PROPOSED PCS/AWS 1900/2100 RRH	1		SAMSUNG RRH B2/B66A RF4439D-25A UNISTRUT MOUNTED

THE ABOVE RF-BOM SHEET IS BASED ON INFORMATION LISTED ON ANTENNA RECOMMENDATION SHEET DATED 01/12/22

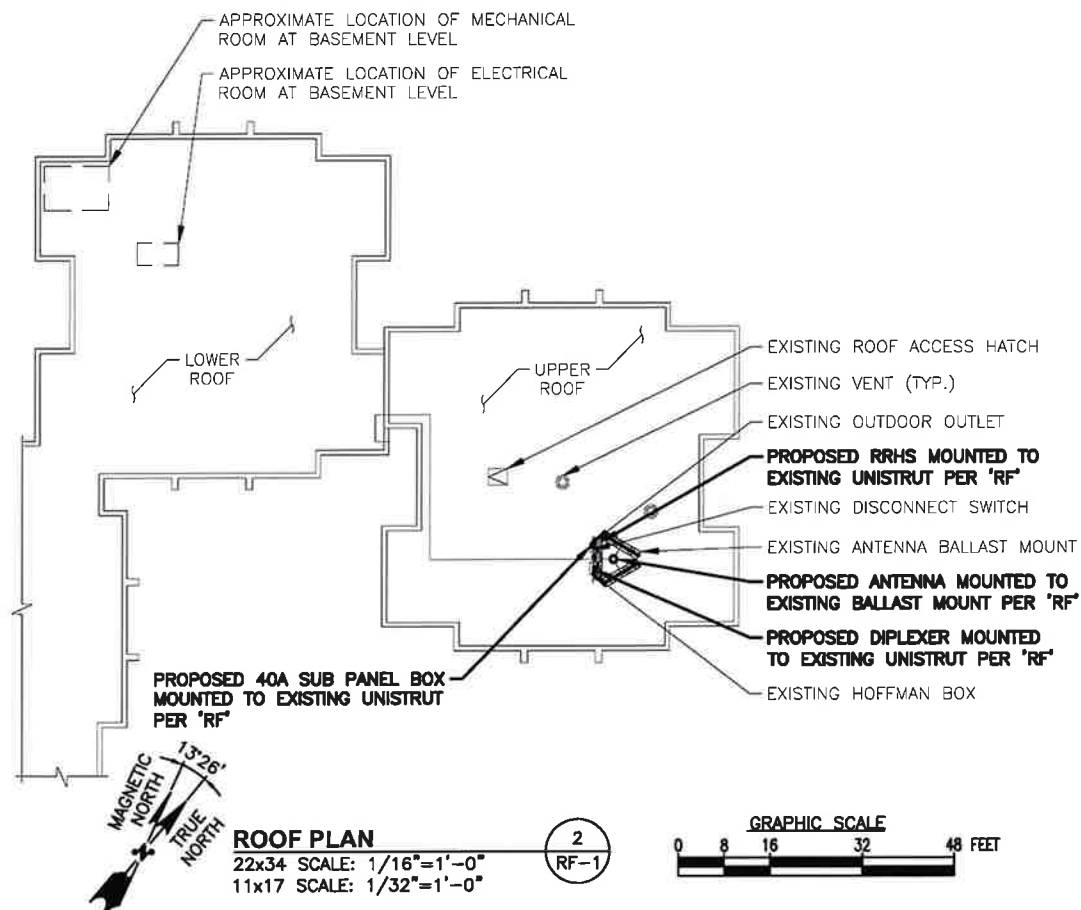


(ANTENNA CONFIGURATION WHEN VIEWED FROM BEHIND)

RF CABLE PLUMBING DIAGRAM

SCALE: N.T.S.

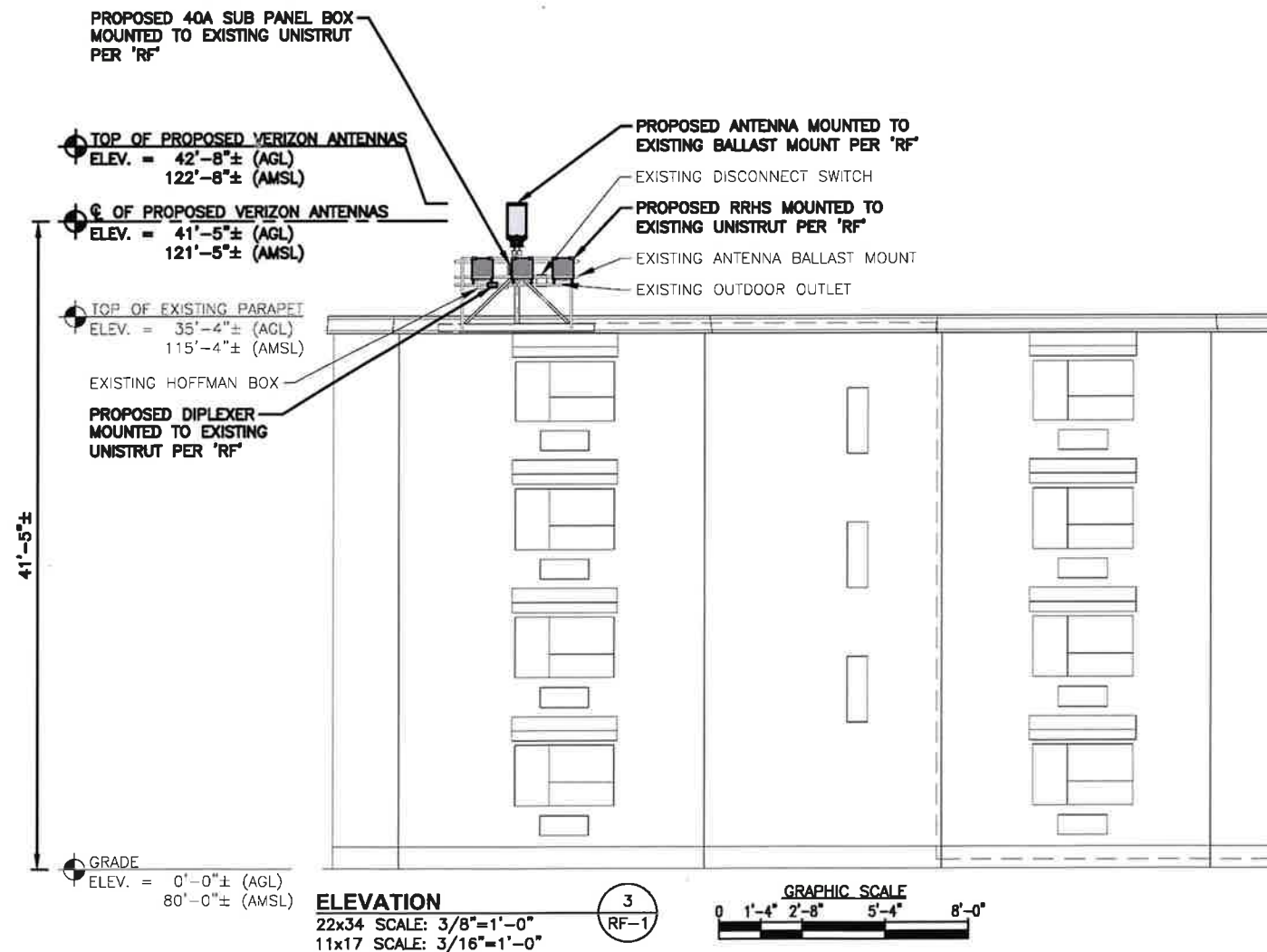
1  
RF-1



ROOF PLAN

22x34 SCALE: 1/16"=1'-0"  
11x17 SCALE: 1/32"=1'-0"

2  
RF-1



ELEVATION

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

3  
RF-1

PREPARED FOR:

**verizon**

900 CHELMSFORD STREET  
TOWER 2 FLOOR 5  
LOWELL, MA 01851

**TEP**  
**NORTHEAST**

TEP GROUP LLC  
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845  
TEL: (978) 557-5553

CHECKED BY: JX

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
3	07/21/23	REV. ADDRESS & RRHS	AM
2	01/03/23	REV. ELEC. CIRCUIT	TR
1	12/20/22	REV. ELEC. CIRCUIT	SLY
0	08/26/22	BILL OF MATERIAL	SF

SITE NAME:  
UNIVERSITY OF  
HARTFORD SC 1 CT  
- D

SITE ADDRESS:  
200 BLOOMFIELD AVENUE  
WEST HARTFORD, CT 06117

SHEET TITLE  
RF PLUMBING  
DIAGRAM & BILL OF  
MATERIAL

SHEET NUMBER  
**RF-1**

# NNV4SSP-360S-F4



18-port small cell antenna, 4x 698-896, 8x 1695-2690, 4x 3400-3800 and 2x 5150-5925 MHz, 360° Horizontal Beamwidth, fixed tilt.

## General Specifications

<b>Antenna Type</b>	Small Cell
<b>Band</b>	Multiband
<b>Grounding Type</b>	RF connector inner conductor and body grounded to reflector and mounting bracket
<b>Performance Note</b>	Outdoor usage   Wind loading figures are validated by wind tunnel measurements described in white paper WP-112534-EN
<b>Radome Material</b>	ASA, UV stabilized
<b>Radiator Material</b>	Low loss circuit board
<b>Reflector Material</b>	Aluminum
<b>RF Connector Interface</b>	4.3-10 Female
<b>RF Connector Location</b>	Bottom
<b>RF Connector Quantity, high band</b>	14
<b>RF Connector Quantity, low band</b>	4
<b>RF Connector Quantity, total</b>	18

## Dimensions

<b>Length</b>	680 mm   26.772 in
<b>Net Weight, without mounting kit</b>	17.2 kg   37.919 lb
<b>Outer Diameter</b>	370 mm   14.567 in

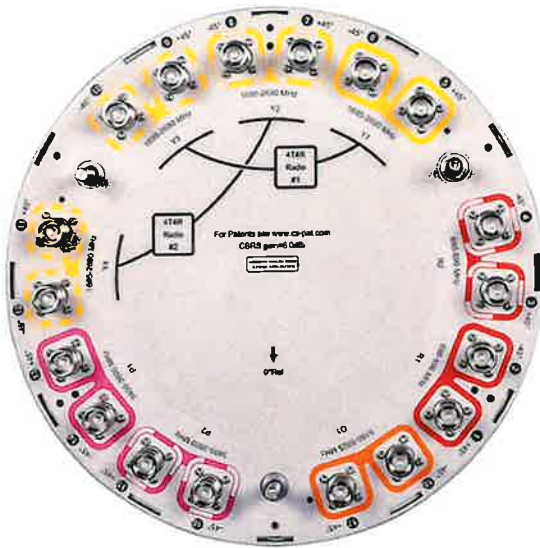
## 5 GHz Port Power Table

5 GHz FCC Power Requirements				
U-NII Band	U-NII 1	U-NII 2A	U-NII 2C	U-NII 3
Frequency (MHz)	5150 - 5250	5250 - 5350	5470 - 5725	5725 - 5850
Max Input power per port to align with FCC Title 47 Part 15 (Watts)	0.5	0.125	0.125	0.5



# NNV4SSP-360S-F4

## Port Configuration



## Electrical Specifications

<b>Impedance</b>	50 ohm
<b>Operating Frequency Band</b>	1695 – 2690 MHz   3300 – 3800 MHz   5150 – 5925 MHz   698 – 894 MHz
<b>Polarization</b>	±45°
<b>Total Input Power, maximum</b>	900 W @ 50 °C

## Electrical Specifications

Frequency Band, MHz	698–806	806–896	1695–1920	1920–2180	2300–2690	3400–3800	5150–5925
<b>Gain, dBi</b>	5.4	5.5	7.8	8.2	9	6.4	4.6
<b>Beamwidth, Horizontal, degrees</b>	360	360	360	360	360	360	360
<b>Beamwidth, Vertical, degrees</b>	34.2	36.2	19.8	16.5	14.2	32.5	24.2
<b>Beam Tilt, degrees</b>	4	4	4	4	4	0	0
<b>USLS (First Lobe), dB</b>	12	8	15	15	11	21	6
<b>Isolation, Cross Polarization, dB</b>	25	25	25	25	25	25	25
<b>Isolation, Inter-band, dB</b>	25	25	25	25	25	25	25
<b>VSWR   Return loss, dB</b>	1.5   14.0	1.5   14.0	1.5   14.0	1.5   14.0	1.5   14.0	1.5   14.0	1.5   14.0

# NNV4SSP-360S-F4

<b>PIM, 3rd Order, 2 x 20 W, dBc</b>	-153	-153	-153	-153	-153		
<b>Input Power per Port at 50°C, maximum, watts</b>	75	75	75	75	75	35	5

## Electrical Specifications, BASTA

<b>Frequency Band, MHz</b>	<b>698-806</b>	<b>806-896</b>	<b>1695-1920</b>	<b>1920-2180</b>	<b>2300-2690</b>	<b>3400-3800</b>	<b>5150-5925</b>
<b>Gain by all Beam Tilts, average, dBi</b>	5	5.2	7	7.3	8.4	6	3.9
<b>Gain by all Beam Tilts Tolerance, dB</b>	±0.9	±0.5	±1.2	±0.9	±1.1	±0.6	±0.3
<b>Beamwidth, Vertical Tolerance, degrees</b>	±5.2	±11.2	±4.7	±1.9	±1.7	±7.3	±3.3
<b>CPR at Boresight, dB</b>	13	16	12	17	18	10	14

## Mechanical Specifications

<b>Effective Projective Area (EPA), frontal</b>	0.17 m <sup>2</sup>   1.83 ft <sup>2</sup>
<b>Effective Projective Area (EPA), lateral</b>	0.17 m <sup>2</sup>   1.83 ft <sup>2</sup>
<b>Wind Loading @ Velocity, maximum</b>	144.0 N @ 150 km/h (32.4 lbf @ 150 km/h)
<b>Wind Speed, maximum</b>	241 km/h   149.75 mph

## Packaging and Weights

<b>Width, packed</b>	478 mm   18.819 in
<b>Depth, packed</b>	464 mm   18.268 in
<b>Length, packed</b>	966 mm   38.032 in
<b>Weight, gross</b>	21.7 kg   47.84 lb

## Regulatory Compliance/Certifications

<b>Agency</b>	<b>Classification</b>
CHINA-ROHS	Above maximum concentration value
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system
ROHS	Compliant/Exempted
UK-ROHS	Compliant/Exempted



### \* Footnotes

# NNV4SSP-360S-F4

---

**Performance Note**

Severe environmental conditions may degrade optimum performance

# SAMSUNG

## AWS/PCS MACRO RADIO

### DUAL-BAND AND HIGH POWER FOR MACRO COVERAGE

Samsung's future proof dual-band radio is designed to help effectively increase the coverage areas in wireless networks. This AWS/PCS 4T4R dual-band radio has 4Tx/4Rx to 2Tx/2Rx RF chains options and a total output power of 320W, making it ideal for macro sites.

**Model Code** RF4439d-25A



Homepage  
[samsungnetworks.com](http://samsungnetworks.com)

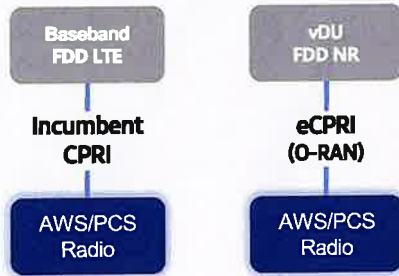


Youtube  
[www.youtube.com/samsung5g](http://www.youtube.com/samsung5g)

## Points of Differentiation

### Continuous Migration

Samsung's AWS/PCS macro radio can support each incumbent CPRI interface as well as advanced eCPRI interfaces. This feature provides installable options for both legacy LTE networks and added NR networks.



### O-RAN Compliant

A standardized O-RAN radio can help in implementing cost-effective networks, which are capable of sending more data without compromising additional investments.

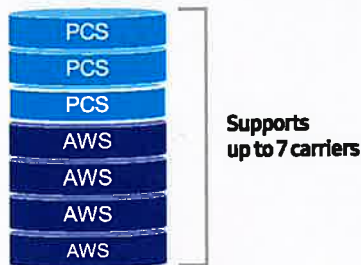
Samsung's state-of-the-art O-RAN technology will help accelerate the effort toward constructing a solid O-RAN ecosystem.



### Optimum Spectrum Utilization

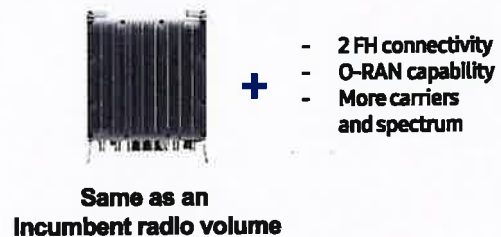
The number of required carriers varies according to site (region). Supporting many carriers is essential for using all frequencies that the operator has available.

The new AWS/PCS dual-band radio can support up to 3 carriers in the PCS (1.9GHz) band and 4 carriers in the AWS (2.1GHz) band, respectively.



### Brand New Features in a Compact Size

Samsung's AWS/PCS macro radio offers several features, such as dual connectivity for baseband for both CDU and vDU, O-RAN capability, more carriers and an enlarged PCS spectrum, combined into an incumbent radio volume of 36.8L.



## Technical Specifications

Item	Specification
Tech	LTE / NR
Brand	B25(PCS), B66(AWS)
Frequency Band	DL: 1930 – 1995MHz, UL: 1850 – 1915MHz DL: 2110 – 2200MHz, UL: 1710 – 1780MHz
RF Power	(B25) 4 × 40W or 2 × 60W (B66) 4 × 60W or 2 × 80W
IBW/OBW	(B25) 65MHz / 30MHz (B66) DL 90MHz, UL 70MHz / 60MHz
Installation	Pole, Wall
Size/Weight	14.96 x 14.96 x 10.04inch (36.8L) / 74.7lb

# SAMSUNG

## 700/850MHZ MACRO RADIO

### DUAL-BAND AND HIGH POWER FOR MACRO COVERAGE

Samsung's future proof dual-band radio is designed to help effectively increase the coverage areas in wireless networks. This 700/850MHz 4T4R dual-band radio has 4Tx/4Rx to 2Tx/2Rx RF chains options and a total output power of 320W, making it ideal for macro sites.

**Model Code** RF4440d-13A



Homepage  
[samsungnetworks.com](http://samsungnetworks.com)

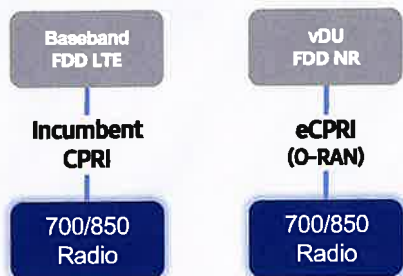


Youtube  
[www.youtube.com/samsung5g](http://www.youtube.com/samsung5g)

## Points of Differentiation

### Continuous Migration

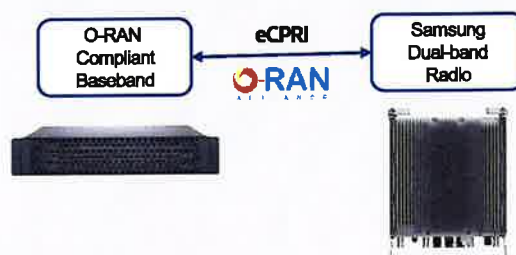
Samsung's 700/850MHz macro radio can support each incumbent CPRI interface as well as an advanced eCPRI interface. This feature provides installable options for both legacy LTE networks and added NR networks.



### O-RAN Compliant

A standardized O-RAN radio can help when implementing cost-effective networks because it is capable of sending more data without compromising additional investments.

Samsung's state-of-the-art O-RAN technology will help accelerate the effort toward constructing a solid O-RAN ecosystem.



### Optimum Spectrum Utilization

The number of required carriers varies according to site (region). The ability to support many carriers is essential for using all frequencies that the operator has available.

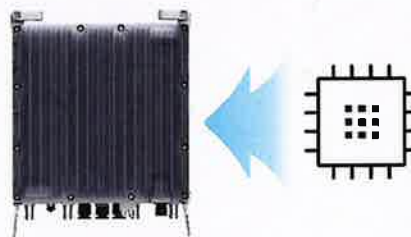
The new 700/850MHz dual-band radio can support up to 2 carriers in the B13 (700MHz) band and 3 carriers in the B5 (850MHz) band, respectively.



### Secured Integrity

Access to sensitive data is allowed only to authorized software.

The Samsung radio's CPU can protect root of trust, which is credential information to verify SW integrity, and secure storage provides access control to sensitive data by using dedicated hardware (TPM).



## Technical Specifications

Item	Specification
Tech	LTE / NR
Brand	B13(700MHz), B5(850MHz)
Frequency Band	DL: 746 – 756MHz, UL: 777 – 787MHz DL: 869 – 894MHz, UL: 824 – 849MHz
RF Power	(B13) 4 × 40W or 2 × 60W (B5) 4 × 40W or 2 × 60W
IBW/OBW	(B13) 10MHz / 10MHz (B5) 25MHz / 25MHz
Installation	Pole, Wall
Size/ Weight	14.96 x 14.96 x 9.05inch (33.2L) / 70.33 lb

# Specifications

The table below outlines the main specifications of the RRH.

**Table 1. Specifications**

Item	RT4401-48A
Air Technology	LTE
Band	Band 48 (3.5 GHz)
Operating Frequency (MHz)	3550 to 3700
RF Chain	4TX/4RX
Input Power	-48 V DC (-38 to -57 V DC, 1 SKU), with clip-on AC-DC converter (Option)
Dimension (W × D × H) (mm)	8.55 in. (217.4) × 4.15 in. (105.5) × 13.91 in. (353.5) * RRH only 11.39 in. (289.4) × 5.45 in. (138.5) × 16.16 in. (410.5) * with Clip-on antenna, AC-DC power unit
Cooling	Natural convection
Unwanted Emission	3GPP 36.104 Category A [B48]: FCC 47 CFR 96.41 e)
Spectrum Analyzer	TX/RX Support
Antenna Type	Integrated (Clip-on) antenna (Option), External antenna (Option)
Operating Humidity	5 to 100 [%] (RH), condensing, not to exceed 30 g/m <sup>3</sup> absolute humidity
Altitude	-60 to 1,800 m
Earthquake	Telcordia Earthquake Risk Zone4 (Telcordia GR-63-CORE)
Vibration in Use Transportation Vibration	Office Vibration Transportation Vibration
Noise	Fanless (natural convection cooling)
Wind Resistance	Telcordia GR-487-CORE, Section 3.34
EMC	FCC Title 47, CFR Part 96
Safety	UL 60950-1 2nd ED



---

<b>Item</b>	RT4401-48A
	UL 62368-1 UL 60950-22
<b>RF</b>	FCC Title 47, CFR Part 96

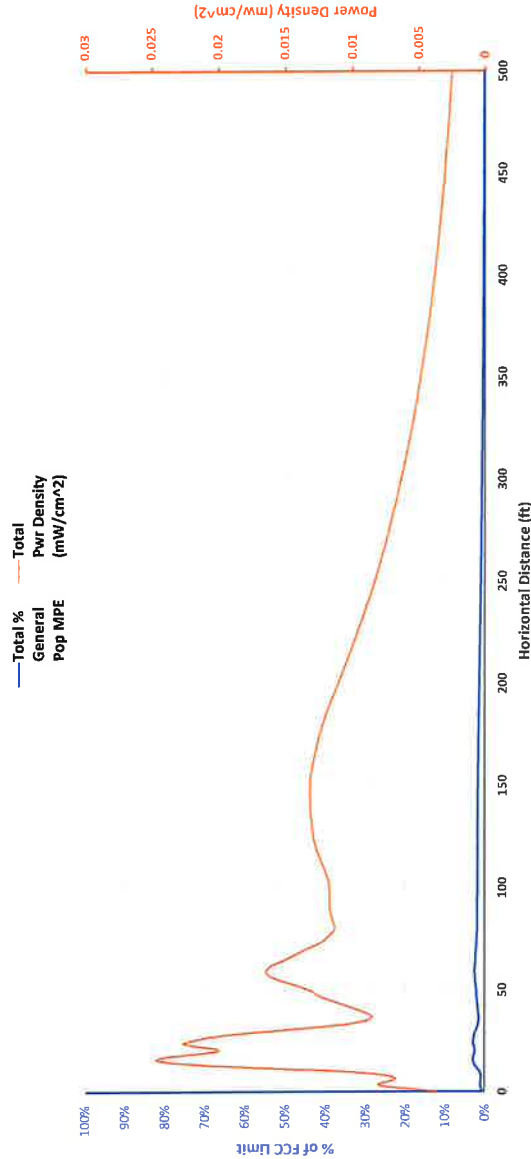
---

The table below outlines the AC/DC power unit specifications of the RRH system.

# **ATTACHMENT 3**

Location		University of Hartford SC 1 CT				
Date	7/11/2023					
Band	CBS	AWS	PCS	850	700	
Operating Frequency (MHz)	3.550	2.145	1.970	880	746	
General Population MPE (mW/cm <sup>2</sup> )	1	1	1	0.58666667	0.49733333	
ERP Per Transmitter (Watts)	50	216	158	79	63	
Number of Transmitters	4	4	4	4	4	
Antenna Centerline (feet)	41.5	41.5	41.5	41.5	41.5	
Total ERP (Watts)	200	864	632	316	252	
Total ERP (dBm)	53	59	58	55	54	
Maximum % of General Population Served	29%					

### RF Exposure 6ft Above Ground Level Far Field Formula (per FCC OET65)



Angle Below Horizon	Power Density (mW/cm <sup>2</sup> )					Percent of General Population MPE										Total Pwr Density (mW/cm <sup>2</sup> )	Distance	Total % General Pop MPE
	CBS	AWS	PCS	850-LTE	700 MHz	30GHz	38GHz	C-Band	CBRS	AWS	PCS	Cellular	CDMA	700 MHz				
90	5.18104E-05	0.000679049	0.000554793	0.00197276	0.000222222	0.00%	0.00%	0.00%	0.00%	0.01%	0.07%	0.07%	0.00%	0.04%	0.003580654	0.52%		
89	3.83076E-05	0.00126537	0.000610903	0.002482801	0.000232624	0.00%	0.00%	0.00%	0.00%	0.00%	0.06%	0.06%	0.00%	0.05%	0.004491233	0.85%		
88	7.72481E-05	0.001745298	0.000569606	0.002982256	0.000243365	0.00%	0.00%	0.00%	0.00%	0.01%	0.17%	0.17%	0.00%	0.05%	0.005615774	0.80%		
87	0.000195986	0.002348063	0.000530778	0.003418873	0.000266438	0.00%	0.00%	0.00%	0.00%	0.02%	0.23%	0.23%	0.00%	0.05%	0.006760139	0.94%		
86	0.000345381	0.002816971	0.000505608	0.003965576	0.000298311	0.00%	0.00%	0.00%	0.00%	0.03%	0.28%	0.28%	0.00%	0.06%	0.007622048	1.05%		
85	0.000428653	0.002941639	0.00050442	0.003817356	0.000326194	0.00%	0.00%	0.00%	0.00%	0.04%	0.29%	0.29%	0.00%	0.07%	0.008018262	1.10%		
84	0.000396868	0.002865033	0.000526421	0.003804547	0.000364768	0.00%	0.00%	0.00%	0.00%	0.04%	0.29%	0.29%	0.00%	0.07%	0.007987635	1.10%		
83	0.000239482	0.002725225	0.000574918	0.003618892	0.000398372	0.00%	0.00%	0.00%	0.00%	0.03%	0.27%	0.27%	0.00%	0.08%	0.007615989	1.06%		
82	0.000225903	0.002626986	0.000642111	0.003210552	0.000434804	0.00%	0.00%	0.00%	0.00%	0.02%	0.27%	0.27%	0.00%	0.09%	0.007164335	0.99%		
81	0.000344238	0.002637186	0.000733405	0.002846519	0.000474272	0.00%	0.00%	0.00%	0.00%	0.02%	0.26%	0.26%	0.00%	0.10%	0.00692562	0.94%		
80	0.000318508	0.002682896	0.000818101	0.002408669	0.000505232	0.00%	0.00%	0.00%	0.00%	0.03%	0.27%	0.27%	0.00%	0.10%	0.006733406	0.89%		
79	0.000452179	0.002921766	0.000912005	0.002036889	0.000537874	0.00%	0.00%	0.00%	0.00%	0.05%	0.29%	0.29%	0.00%	0.11%	0.006661713	0.86%		
78	0.000641081	0.00318207	0.000992917	0.001761501	0.000572264	0.00%	0.00%	0.00%	0.00%	0.06%	0.32%	0.32%	0.00%	0.12%	0.007122833	0.89%		
77	0.000805128	0.00362534	0.001080319	0.001669253	0.000594615	0.00%	0.00%	0.00%	0.00%	0.08%	0.36%	0.36%	0.00%	0.12%	0.007746654	0.96%		
76	0.001042858	0.004127709	0.001174661	0.001655322	0.000631824	0.00%	0.00%	0.00%	0.00%	0.10%	0.41%	0.41%	0.00%	0.13%	0.008632374	1.04%		
75	0.001365541	0.004686653	0.001336657	0.001840651	0.000670927	0.00%	0.00%	0.00%	0.00%	0.14%	0.47%	0.47%	0.00%	0.13%	0.0095103	1.19%		
74	0.00170518	0.005464924	0.001555204	0.002141694	0.000717985	0.00%	0.00%	0.00%	0.00%	0.18%	0.55%	0.55%	0.00%	0.13%	0.011644326	1.39%		
73	0.002175754	0.006502697	0.001893637	0.002548396	0.000737871	0.00%	0.00%	0.00%	0.00%	0.22%	0.65%	0.65%	0.00%	0.15%	0.013858954	1.64%		



# **ATTACHMENT 4**

**(REVISED)**  
**STRUCTURAL ANALYSIS REPORT**

For

**Verizon Site Name: UNIVERSITY OF HARTFORD SC 1 CT-D**

TEP Project Number: 256435.867104

200 Bloomfield Avenue  
West Hartford, CT 06117

**Antenna Mounted on Tripod Ballast Mount on Roof**



Prepared for:

**verizon** ✓

20 Alexander Drive, 2nd Floor  
Wallingford, CT 06492

Dated: July 14, 2023 (Rev.1)  
August 26, 2022

Prepared by:

**TEP**   
**NORTHEAST**

(TEP OPCO, LLC)  
45 Beechwood Drive  
North Andover, MA 01845  
(P) 978.557.5553  
[www.tepgroup.net](http://www.tepgroup.net)





**SCOPE OF WORK:**

TEP Northeast (TEP NE) has been authorized by Verizon to conduct a structural evaluation of the structure supporting the proposed equipment located in the areas depicted in the latest TEP NE construction drawings.

This report represents this office's findings, conclusions and recommendations pertaining to the support of Verizon's proposed antennas listed below.

This office conducted an on-site visual survey of the above site on June 21, 2022.

The following documents were used for our reference:

- Construction Drawings prepared by EBI Consulting dated January 26, 2017.
- Structural Analysis prepared by EBI Consulting dated January 26, 2017.

**CONCLUSION SUMMARY:**

Based on our evaluation, we have determined that the existing structure **IS CAPABLE** of supporting the proposed equipment loading with the following modification:

- **Contractor to remove (2) existing ballast blocks per tray (total of 6 per mount) to reduce load under existing ballast mount.**

	Roof Design Live Load	Ballast mount Area Load	Pass/Fail
<b>Roof Capacity</b>	20 psf	15.8 psf	<b>PASS</b>

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

	Controlling Load Case	Stress Ratio	Pass/Fail
<b>Existing Tripod Ballast</b>	Sliding	91%	<b>PASS</b>

Reference the table below for the minimum ballast requirements:

<b>MINIMUM BALLAST REQUIREMENTS</b>			
	Existing	Proposed	Total
<b>Number of Blocks Per Tray</b>	5	-2	3
<b>Size of Blocks</b>	8"x8"x16" Hollow	8"x8"x16" Hollow	8"x8"x16" Hollow
<b>Weight of Blocks</b>	38 lbs. /each	38 lbs. /each	38 lbs. /each
<b>Total Ballast Weight</b>	570 lbs.	-228 lbs.	342 lbs.

\*Reference documents attached.



**APPURTENANCE CONFIGURATION:**

Appurtenances	Dimensions	Weight	**Elevation	Mount
(1) Hoffman Box	16.0"x16.0"x8.0"	50 lbs	-	Ballast
<b>(1) NNV4SSP-360S-F4 Antenna</b>	26.8"x14.6"Ø	38 lbs	41'-6"	Ballast
<b>(1) RF4439d-25A RRH's</b>	15.0"x15.0"x10.0"	75 lbs	-	Ballast
<b>(1) RF4440d-13A RRH's</b>	15.0"x15.0"x9.1"	71 lbs	-	Ballast
<b>(1) CBRS RRH-RT4401-48A RRH's</b>	16.2"x11.4"x5.5"	19 lbs	-	Ballast
<b>(1) SDX1926Q-43 Diplexer</b>	4.2"x6.9"x2.9"	7 lbs	-	Ballast

\* 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:	C	(ASCE 7-16 Chapter 26)
Risk Category:	II	(ASCE 7-16 Table 1.5-1)
Snow		
Ground Snow, P <sub>g</sub> :	30	(2022 CSBC Appendix P)
Importance Factor (I <sub>s</sub> ):	1.0	(ASCE 7-16 Table 1.5-2)
Exposure Factor (C <sub>e</sub> ):*	0.9	(Fully Exposed, Table 7.3-1)
Thermal Factor (C <sub>t</sub> ):	1.0	(ASCE 7-16 Table 7.3-2)
Flat Roof Snow Load:	19 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 <sub>i</sub> ):	1.5 in	(TIA-222-H Figure B-9)
Risk Category:	II	(TIA-222-H Table 2-1)
Importance Factor (I <sub>i</sub> ):	1.0	(TIA-222-H Table 2-3)
Factored Thickness of Radial Ice (t <sub>z</sub> ):	1.53 in	(TIA-222-H Sec. 2.6.10)





### **EXISTING ROOF CONSTRUCTION:**

The existing roof construction is assumed to consist of a loose laid gravel over a roofing membrane over concrete slab supported by concrete beams, columns and CMU bearing walls.

The existing roof structure was not accessible during the inspection. If field conditions differ from what is assumed in this report, then the engineer of record is to be notified immediately.

### **ANTENNA/RRH SUPPORT RECOMMENDATIONS:**

The proposed antenna and RRH's are to be mounted on existing non-penetrating tripod ballast mount located on the roof.

#### Limitations and Assumptions:

1. Reference the latest TEP NE 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 antenna and RRH.



**Photo 2:** Sample photo illustrating the existing antenna and RRH.

**FIELD PHOTOS (CONT.):**



**Photo 3:** Sample photo illustrating the existing roof construction.



**Photo 4:** Sample photo illustrating the existing roof construction.

**Wind and Ice  
Calculations**

Date: 7/14/2023  
 Project Name: UNIVERSITY OF HARTFORD SC 1 CT-D  
 Designed By: KSBM Checked By: MSC



**2.6.5.2 Velocity Pressure Coeff:**

$$K_z = 2.01 (z/z_g)^{2/\alpha}$$

$z = 41.5$  (ft)  
 $z_g = 900$  (ft)  
 $\alpha = 9.5$

**$K_z = 1.052$**

$K_{zmin} \leq K_z \leq 2.01$

**Table 2-4**

Exposure	$Z_g$	$\alpha$	$K_{zmin}$	$K_c$
B	1200 ft	7.0	0.70	0.9
C	900 ft	9.5	0.85	1.0
D	700 ft	11.5	1.03	1.1

**2.6.6.2 Topographic Factor:**

**Table 2-5**

Topo. Category	$K_t$	f
2	0.43	1.25
3	0.53	2.0
4	0.72	1.5

$$K_{zt} = [1 + (K_c K_t / K_h)]^2$$

$$K_h = e^{(fz/H)}$$

**$K_{zt} = 1$**

$K_h = 1$   
 $K_c = 1.0$  (from Table 2-4)  
 $K_t = 0$  (from Table 2-5)  
 $f = 0$  (from Table 2-5)  
 $z = 41.5$   
 $z_s = 80$  (Mean elevation of base of structure above sea level)  
 $H = 0$  (Ht. of the crest above surrounding terrain)  
 $K_{zt} = 1.00$  (from 2.6.6.2.1)  
 $K_e = 1.00$  (from 2.6.8)

*(If Category 1 then  $K_{zt} = 1.0$ )*

**Category = 1**

**2.6.10 Design Ice Thickness**

Max Ice Thickness =  
 Importance Factor =

$t_i = 1.50$  in  
 $I = 1.00$  (from Table 2-3)  
 $K_{iz} = 1.02$  (from Sec. 2.6.10)

$$t_{iz} = t_i * I * K_{iz} * (K_{zt})^{0.35}$$

**$t_{iz} = 1.53$  in**

Date: 7/14/2023  
 Project Name: UNIVERSITY OF HARTFORD SC 1 CT-D  
 Designed By: KSBM Checked By: MSC



**2.6.9 Gust Effect Factor**

2.6.9.1 Self Supporting Lattice Structures

$G_h = 1.0$  Latticed Structures > 600 ft

$G_h = 0.85$  Latticed Structures 450 ft or less

$G_h = 0.85 + 0.15 [h/150 - 3.0]$   $h =$  ht. of structure

$h = 34.25$   $G_h = 0.85$

2.6.9.2 Guyed Masts  $G_h = 0.85$

2.6.9.3 Pole Structures  $G_h = 1.1$

2.6.9 Appurtenances  $G_h = 1.0$

2.6.9.4 Structures Supported on Other Structures

*(Cantilevered tubular or latticed spines, pole, structures on buildings (ht. : width ratio > 5))*

$G_h = 1.35$   $G_h = 1.00$

**2.6.11.2 Design Wind Force on Appurtenances**

$F = q_z * G_h * (EPA)_A$

$q_z = 0.00256 * K_z * K_{zt} * K_s * K_e * K_d * V_{max}^2$

$q_z = 36.72$   
 $q_z (ice) = 6.38$   
 $q_z (30) = 2.30$

$K_z = 1.052$  (from 2.6.5.2)  
 $K_{zt} = 1.0$  (from 2.6.6.2.1)  
 $K_s = 1.0$  (from 2.6.7)  
 $K_e = 1.00$  (from 2.6.8)  
 $K_d = 0.95$  (from Table 2-2)  
 $V_{max} = 120$  mph (Ultimate Wind Speed)  
 $V_{max (ice)} = 50$  mph  
 $V_{30} = 30$  mph

**Table 2-2**

Structure Type	Wind Direction Probability Factor, Kd
Latticed structures with triangular, square or rectangular cross sections	0.85
Tubular pole structures, latticed structures with other cross sections, appurtenances	0.95
Tubular pole structures supporting antennas enclosed within a cylindrical shroud	1.00

Date: 7/14/2023  
 Project Name: UNIVERSITY OF HARTFORD SC 1 CT-D  
 Designed By: KSBM Checked By: MSC



**Determine Ca:**

**Table 2-9**

Force Coefficients (Ca) for Appurtenances				
Member Type		Aspect Ratio ≤ 2.5	Aspect Ratio = 7	Aspect Ratio ≥ 25
		Ca	Ca	Ca
Flat		1.2	1.4	2.0
Square/Rectangular HSS		1.2 - 2.8(r <sub>s</sub> ) ≥ 0.85	1.4 - 4.0(r <sub>s</sub> ) ≥ 0.90	2.0 - 6.0(r <sub>s</sub> ) ≥ 1.25
Round	C < 39 (Subcritical)	0.7	0.8	1.2
	39 ≤ C ≤ 78 (Transitional)	4.14/(C <sup>0.485</sup> )	3.66/(C <sup>0.415</sup> )	46.8/(C <sup>1.0</sup> )
	C > 78 (Supercritical)	0.5	0.6	0.6

Aspect Ratio is the overall length/width ratio in the plane normal to the wind direction.  
 (Aspect ratio is independent of the spacing between support points of a linear appurtenance.)

Note: Linear interpolation may be used for aspect ratios other than those shown.

Ice Thickness = 1.53 in      Angle = 0 (deg)      Equivalent Angle = 180 (deg)

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)
NNV4SSP-360S-F4 Antenna	26.8	14.6	14.6	2.72	1.84	1.20	120	28
RF4439d-25A RRH	15.0	15.0	10.0	1.56	1.00	1.20	69	17
RF4440d-13A RRH	15.0	15.0	9.1	1.56	1.00	1.20	69	17
CBRS RRH - RT4401-48A RRH	16.2	11.4	5.5	1.28	1.42	1.20	57	15
SDX1926Q-43 Diplexer	4.2	6.9	2.9	0.20	0.61	1.20	9	4
Hoffman Box	16.0	16.0	8.0	1.78	1.00	1.20	78	19
4" Pipe	4.5	12.0		0.38	0.38	1.20	17	

Date: 7/14/2023

Project Name: UNIVERSITY OF HARTFORD SC 1 CT-D

Designed By: KSBM Checked By: MSC



### ICE WEIGHT CALCULATIONS

Thickness of ice: 1.53 in.

Density of ice: 56 pcf

#### NNV4SSP-360S-F4 Antenna

Weight of ice based on total radial SF area:

Depth (in): 26.8

Diameter (in): 14.6

Total weight of ice on object: 67 lbs

Weight of object: 38.0 lbs

Combined weight of ice and object: 105 lbs

#### RF4439d-25A RRH

Weight of ice based on total radial SF area:

Height (in): 15.0

Width (in): 15.0

Depth (in): 10.0

Total weight of ice on object: 46 lbs

Weight of object: 75.0 lbs

Combined weight of ice and object: 121 lbs

#### RF4440d-13A RRH

Weight of ice based on total radial SF area:

Height (in): 15.0

Width (in): 15.0

Depth (in): 9.1

Total weight of ice on object: 45 lbs

Weight of object: 71.0 lbs

Combined weight of ice and object: 116 lbs

#### CBRS RRH - RT4401-48A RRH

Weight of ice based on total radial SF area:

Height (in): 16.2

Width (in): 11.4

Depth (in): 5.5

Total weight of ice on object: 36 lbs

Weight of object: 19.0 lbs

Combined weight of ice and object: 55 lbs

#### SDX1926Q-43 Diplexer

Weight of ice based on total radial SF area:

Height (in): 4.2

Width (in): 6.9

Depth (in): 2.9

Total weight of ice on object: 6 lbs

Weight of object: 7.0 lbs

Combined weight of ice and object: 13 lbs

#### Hoffman Box

Weight of ice based on total radial SF area:

Height (in): 16.0

Width (in): 16.0

Depth (in): 8.0

Total weight of ice on object: 48 lbs

Weight of object: 50.0 lbs

Combined weight of ice and object: 98 lbs

#### 4" Pipe

Per foot weight of ice:

diameter (in): 4.5

Per foot weight of ice on object: 11 plf





## Antenna Mount Calculations

Date: 7/14/2023  
 Project Name: UNIVERSITY OF HARTFORD SC 1 CT-D  
 Designed By: KSBM Checked By: MSC



**Ballast Requirements:**

**\*Use SitePro Equation (includes a 1.5 factor of safety for overturning)\***

Horizontal Antenna Load, $A_{L1}$	120 lbs.
Horizontal RRH's/Diplexer Load, $A_{L2}$	282 lbs.
Antenna & RRH Weight, $A_W$	260 lbs.
Height from roof to center of Antenna, $H_1$	7 ft.
Height from roof to center of RRH's/Diplexer, $H_2$	4 ft.
Horizontal Mast Load, $M_L$	46.8 lbs.
Length of Mast, $L$	5.5 ft.
Estimated Tripod Weight, $T_W$	259.4 lbs.

$$W = [(A_{L1} * H_1) + (A_{L2} * H_2) + (M_L * L/2) - (T_W * 2.92) - (A_W * 2.92)] * 0.515$$

Total Ballast Required,  $W$  298.7 lbs.

Required Ballast per Tray,  $W/3$  99.55 lbs.

**Total Weight of Tripod & Equipment** 519.4 lbs.

**\*Ballast is Required**

**No. of Block per side** 3

**Weight per Block (8x8x16" Hollow)** 38 lbs.

**Total Ballast per Side** 114

=	100 lbs.	<	114 lbs.	O.K!
---	----------	---	----------	------

**Load on Roof**

Total Weight of Tripod, Equipment & Ballast 861.4 lbs.

Footprint Area Under Ballast Frame 54.5 ft<sup>2</sup>

Distributed Load Under Ballast Frame 15.8 psf < 20 psf O.K!

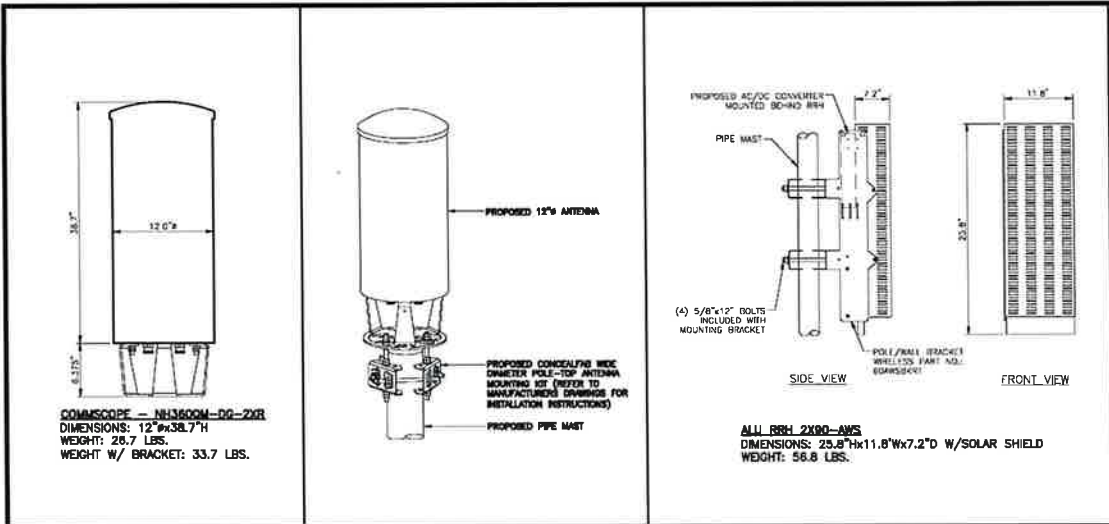
**Check Sliding**

Friction Factor	1.15
Safety Factor	2

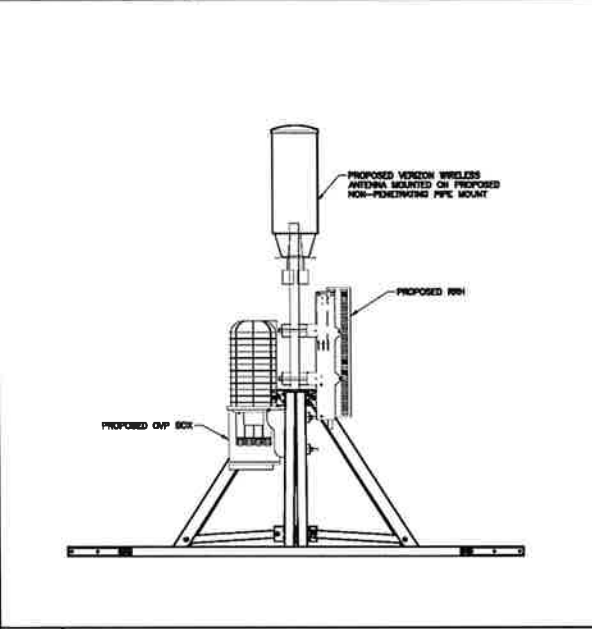
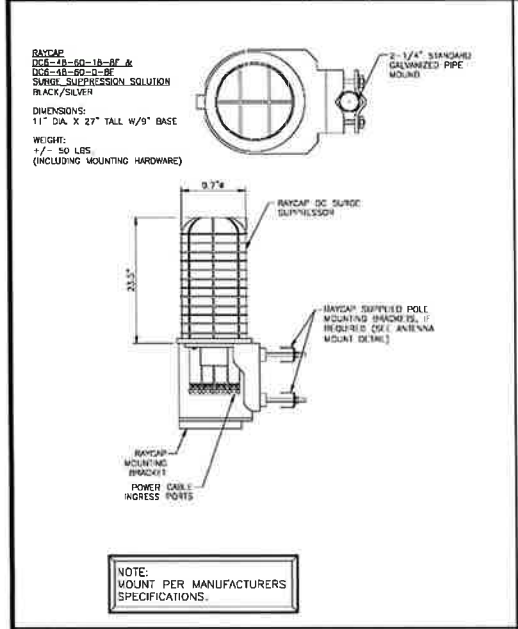
**Sliding =**  $(A_L + M_L) * SF / \text{Friction Factor}$

=	780 lbs.	<	861.4 lbs.	O.K!
---	----------	---	------------	------

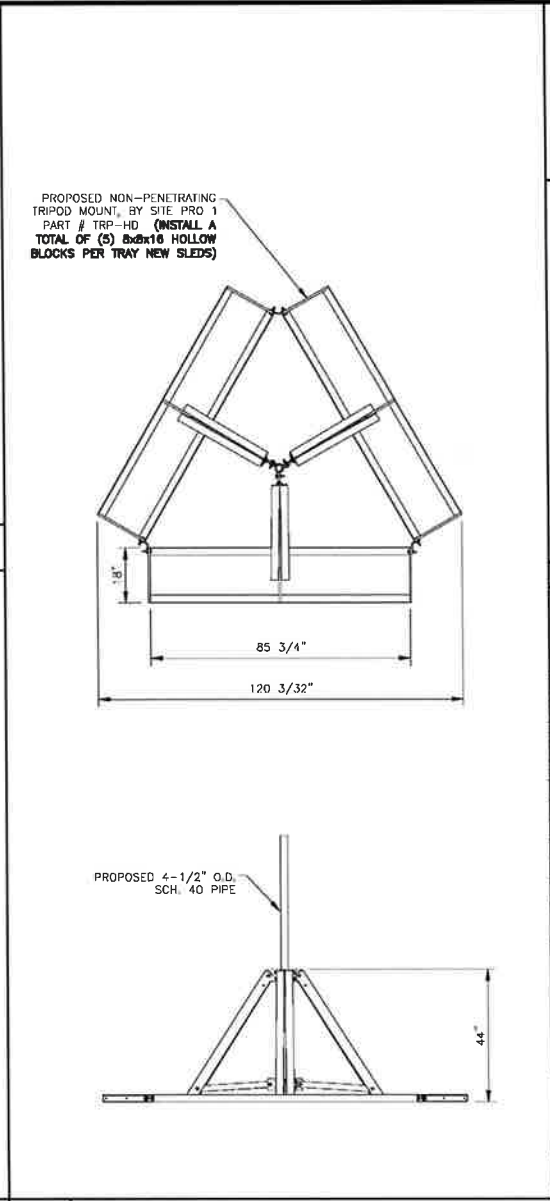
**Reference Documents**



1	ANTENNA SPECIFICATION	N.T.S.	2	ANTENNA MOUNT DETAIL	N.T.S.	3	RRH SPECIFICATION & DETAIL	N.T.S.
---	-----------------------	--------	---	----------------------	--------	---	----------------------------	--------



4	OVP SPECIFICATION & DETAIL	N.T.S.	5	ANTENNA MOUNTING DETAIL	N.T.S.
---	----------------------------	--------	---	-------------------------	--------



6	NON-PENETRATING TRIPOD MOUNT DETAIL	N.T.S.
---	-------------------------------------	--------

APPLICANT:  
**verizon**  
 99 EAST RIVER DRIVE -- 9th FLOOR  
 EAST HARTFORD, CT 06108

PREPARED BY:  
**EBI Consulting**  
 environmental engineering | Our 40th year  
 21 B Street | Burlington, MA 01803  
 Tel: (781) 273-2500 | Fax: (781) 273-3311  
 www.ebiconsulting.com

ENGINEER STAMP/SIGNATURE

THIS DOCUMENT IS THE DESIGN PROPERTY & COPYRIGHT OF EBI CONSULTING & FOR THE EXCLUSIVE USE OF THE TITLE CLIENT. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT OF THE CREATOR IS STRICTLY PROHIBITED.

SUBMITTALS			
NO.	DATE	DESCRIPTION	BY
A	01/28/17	FOR CONSTRUCTION	SL

EBI JOB NO: 8117000064

SITE INFO:  
**UNIVERSITY OF HARTFORD SC 1**  
 200 BLOOMFIELD AVENUE  
 HARTFORD, CT 06117

SHEET TITLE:  
**DETAILS**

DESIGNED BY: SL	SHEET NO: <b>A-3</b>
CHECKED BY: JS	
DATE: 01/28/17	

# **ATTACHMENT 5**





[Search](#) [Street Listing](#) [Sales Search](#) [Feedback](#) [Back](#) [Home](#)

200 BLOOMFIELD AVENUE

[Sales](#) [Print](#) [Map It](#)

**Location** 200 BLOOMFIELD AVENUE **Mblu** H2/ 0471/ 200/ /

**Parcel ID** 0471 2 200 0001 **Owner** THE UNIVERSITY OF HARTFORD

**Assessment** \$7,390,530 **Appraisal** \$10,557,900

**Vision Id #** 2024 **Building Count** 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2022	\$10,314,300	\$243,600	\$10,557,900
Assessment			
Valuation Year	Improvements	Land	Total
2022	\$7,220,010	\$170,520	\$7,390,530

Owner of Record

**Owner** THE UNIVERSITY OF HARTFORD **Sale Price** \$0

**Co-Owner** **Book & Page** 2872/0272

**Address** 200 BLOOMFIELD AVENUE **Sale Date** 04/03/2002

WEST HARTFORD, CT 06117 **Instrument** U

# **ATTACHMENT 6**





Name and Address of Sender  Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103	TOTAL NO. of Pieces Listed by Sender  <div style="text-align: center; font-size: 2em;">3</div>	TOTAL NO. of Pieces Received at Post Office™  <div style="text-align: center; font-size: 2em;">3</div>	Affix Stamp Here <i>Postmark with Date of Receipt.</i>  <div style="text-align: right; color: red;">                     neopost®                      08/02/2023  <b>US POSTAGE \$003.19<sup>0</sup></b> </div> <div style="text-align: right; color: red; margin-top: 10px;">                      ZIP 06103                      041L12203937                 </div>
Postmaster, per (name of receiving employee)  <div style="text-align: center; font-size: 2em;"> </div>			

USPS® Tracking Number Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee	Special Handling	Parcel Airlift
1.	Shari Cantor, Mayor Town of West Hartford 50 South Main Street West Hartford, CT 06107				
2.	Todd Dumais, Town Planner Town of West Hartford 50 South Main Street West Hartford, CT 06107				
3.	University of Hartford 200 Bloomfield Avenue West Hartford, CT 06117				
4.					
5.					
6.					

