

June 8, 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  
14-20 Isham Road, West Hartford, Connecticut**

Dear Attorney Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains an existing wireless telecommunications facility at the above-referenced property address (the “Property”). The facility consists of antennas and remote radio heads attached to an existing roof-top tower and related equipment also on the roof of the existing commercial building at the Property. The tower was approved by the Town of West Hartford (“Town”) in August of 1997. Cellco’s shared use of the tower was approved by the Siting Council (“Council”) in September of 2008 (EM-VER-155-080729). A copy of the Town’s 1997 approval and the Council’s EM-VER-155-080729 approval are included in Attachment 1.

Cellco now intends to modify its facility by removing six (6) antennas and installing three (3) new Samsung MT6413-77A antennas on its existing antenna mounting structure. A set of project plans showing Cellco’s proposed facility modifications and specifications for the new antennas 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 and Land Use Officer.

Melanie A. Bachman, Esq.  
June 8, 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 tower. Cellco's replacement antennas will be installed on Cellco's existing antenna mounts.

2. The proposed modifications will not involve any change to ground-mounted equipment 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 antennas will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A Calculate Radio Frequency Emissions Report for Cellco's modified facility are included in Attachment 3. The modified facility will 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 May 12, 2023 letter from Benjamin Revette, P.E., Associate Vice President at Dewberry Engineers Inc., (the "Dewberry Letter") the existing tower and antenna mounts can support the proposed facility modifications described above. The Dewberry Letter confirms that the April 27, 2022 Structural Analysis ("SA") and March 16, 2022 Mount Analysis ("MA") that were filed with the Council as part of the July 25, 2022 close out package, remain valid and that the proposed modifications described herein are consistent with the SA and MA, the 2022 CT State Building Code and the TIA-222-Rev H Standards. A copy of the Dewberry Letter 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 and the property owner 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.

June 8, 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, Mayor for the Town of West Hartford

Todd Dumais, Town Planner

M&R Gassner Family LLC, the Property Owner

Sharon Horne, Verizon Wireless

# **ATTACHMENT 1**

**DEPARTMENT OF  
COMMUNITY SERVICES**

August 11, 1997

Michael Gassner  
10 Isham Road  
West Hartford, CT 06107

Subject: 14-20 Isham Road - Site Plan Approval

Dear Mr. Gassner:

Donald R. Foster, Town Planner, has approved the site plan application for the subject property with the following conditions.

1. Site Plan approval is limited to 1,000 square feet of office area to be occupied by "General Communications" with a rooftop communication tower as an accessory use. The tower should be no greater than 100 feet in height.
2. The remaining portion of the building, approximately 13,500 square feet, should remain vacant until such time that a comprehensive site plan is submitted demonstrating compliance with the zoning regulations for additional uses.

Please submit to the Planning Office one (1) mylar of the approved plan, signed and sealed by the professional responsible for preparing the plan.

If you have comments or questions, please call me at 523-3123.

Very truly yours,



Mila Limson  
Senior Planner

c: Ron Van Winkle, Director of Community Services  
Don Foster, Town Planner  
Pat Alair, Asst. Corp. Counsel

14-20Isham



TOWN OF WEST HARTFORD 50 SOUTH MAIN STREET  
WEST HARTFORD, CONNECTICUT 06107-2431  
(860) 523-3123 FAX: (860) 523-3200

 Printed on Recycled Paper

SP 781



Daniel F. Caruso  
Chairman

## 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)  
Internet: [ct.gov/csc](http://ct.gov/csc)

September 16, 2008

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

RE: **EM-VER-155-080729** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 14-20 Isham Road, West Hartford, Connecticut.

Dear Attorney Baldwin:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies, with the following conditions:

- A letter and/or plans sealed by a Professional Engineer duly licensed in the State of Connecticut shall be provided to the Council prior to the installation of the equipment shelter to certify that the building can support the equipment shelter on the roof.
- The applicant shall take steps to reduce the post-construction percent capacity (regarding the tower mast shear reaction) to not more than 100 percent; and
- A signed letter from a Professional Engineer duly licensed in the State of Connecticut shall be submitted to the Council to certify that a post-construction percent capacity (regarding the tower mast shear reaction) of not more than 100 percent have been achieved.

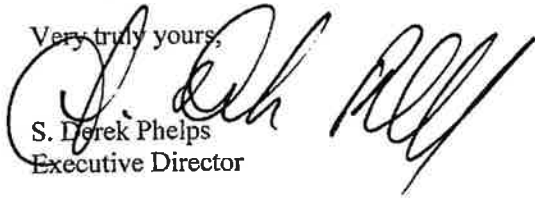
The proposed modifications are to be implemented as specified here and in your notice dated July 29, 2008, including the placement of all necessary equipment and shelters within the tower compound. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

EM-VER-155-080729  
Page 2

Thank you for your attention and cooperation.

Very truly yours,

A handwritten signature in black ink, appearing to read "S. Derek Phelps", written over the typed name and title.

S. Derek Phelps  
Executive Director

SDP/MP/jb

c: The Honorable Scott Slifka, Mayor, Town of West Hartford  
Barry M. Feldman, Town Manager, Town of West Hartford  
Mila Linson, Town Planner, Town of West Hartford  
M&R Gassner Family II, LLC

# **ATTACHMENT 2**





# WEST HARTFORD CENTER CT

14-20 ISHAM ROAD  
WEST HARTFORD, CT 06107

FUZE PROJECT ID: 17082761

PSLC: 535840



VERIZON WIRELESS  
99 EAST RIVER DRIVE  
EAST HARTFORD, CT 06108

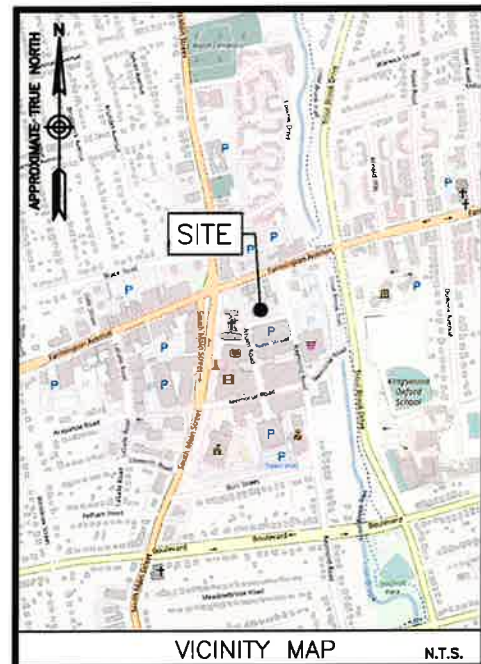
WEST HARTFORD  
CENTER CT

ANTMO DRAWINGS

NO.	DATE	DESCRIPTION
1	05/19/23	FOR SUBMITTAL
0	05/15/23	FOR SUBMITTAL



Dewberry Engineers Inc.  
99 SUMMER STREET  
SUITE 700  
BOSTON, MA 02110  
PHONE: 617.695.3400  
FAX: 617.695.3310



**ENGINEER**  
DEWBERRY ENGINEERS INC.  
99 SUMMER ST.  
SUITE 700  
BOSTON, MA 02110  
PHONE # (617) 531-0800  
CONTACT: BENJAMIN REVETTE, PE

**CONSTRUCTION**  
VERIZON WIRELESS  
99 EAST RIVER DRIVE  
EAST HARTFORD, CT 06108

**LAND OWNER**  
M+R GASSNER FAMILY II LLC  
P.O. BOX 354  
MILDALE, CT 06467

**COORDINATES\*:**  
LATITUDE: 41° 45' 41.80" (41.761558) N  
LONGITUDE: 72° 44' 25.35" (72.740375) W  
\*PER RFDS

**GROUND ELEVATION\*:**  
93'±  
\*PER GOOGLE EARTH

PROJECT INFORMATION

VZW LOCATION CODE (PSLC): 535840  
FUZE NUMBER: 17082761

CONTRACTOR PMI REQUIREMENTS

THIS DOCUMENT WAS DEVELOPED TO REFLECT A SPECIFIC SITE AND ITS SITE CONDITIONS AND IS NOT TO BE USED FOR ANOTHER SITE OR WHEN OTHER CONDITIONS PERTAIN. REUSE OF THIS DOCUMENT IS AT THE SOLE RISK OF THE USER.

A.D.A. COMPLIANCE:  
FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.

- REMOVE (3) EXISTING MT6407-77A ANTENNAS.
- REMOVE (3) EXISTING CDMA ANTENNAS.
- INSTALL (3) MT6413-77A WITH INTEGRATED RRH ANTENNA/RADIO UNITS.
- INSTALL NEW JUMPER CABLING BETWEEN OVPS AND ANTENNAS AS REQUIRED.

NOTE:  
1. SCOPE OF WORK BASED ON ANTENNA REC FOR W HARTFORD W CT RELO MA DATED 04/20/23. VERIFY SCOPE OF WORK WITH FINAL RFDS PRIOR TO CONSTRUCTION.

SCOPE OF WORK

SHT. NO.	DESCRIPTION
T-1	TITLE SHEET
GN-1	GENERAL NOTES
C-1	ROOF PLAN
C-2	ELEVATION
C-3	EXISTING & PROPOSED ANTENNA PLANS
C-4	CONSTRUCTION DETAILS
C-5	FINAL EQUIPMENT CONFIGURATION

SHEET INDEX

DRAWN BY: 05/19/2023 JG  
REVIEWED BY: CDH  
CHECKED BY: BBR  
PROJECT NUMBER: 50121487  
JOB NUMBER: 50164391  
SITE NUMBER:  
535840  
SITE ADDRESS  
14-20 ISHAM ROAD  
WEST HARTFORD,  
CT 06107  
SHEET TITLE  
TITLE SHEET  
SHEET NUMBER  
T-1

**GENERAL CONSTRUCTION NOTES :**

- ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, AND COMPLY WITH VERIZON WIRELESS SPECIFICATIONS.
- CONTRACTOR SHALL CONTACT "DIG SAFE" (888-344-7233) FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
- CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
- ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
- DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
- DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
- THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
- CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
- INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING.
- EACH CONTRACTOR SHALL COOPERATE WITH THE OWNER'S REPRESENTATIVE, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
- CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE VERIZON WIRELESS CONSTRUCTION MANAGER.
- ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
- WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR WILL NOTIFY ENGINEER, VERIZON WIRELESS PROJECT CONSTRUCTION MANAGER, AND LANDLORD IMMEDIATELY.
- CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
- ALL ROOF WORK SHALL BE DONE BY A QUALIFIED AND EXPERIENCED ROOFING CONTRACTOR IN COORDINATION WITH ANY CONTRACTOR WARRANTING THE ROOF TO ENSURE THAT THE WARRANTY IS MAINTAINED.
- CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
- CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH LANDLORD AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
- CONTRACTOR SHALL FURNISH VERIZON WIRELESS WITH THREE AS-BUILT SETS OF DRAWINGS UPON COMPLETION OF WORK.
- ANTENNAS AND CABLES ARE TYPICALLY PROVIDED BY VERIZON WIRELESS. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH PROJECT MANAGER TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED BY VERIZON WIRELESS. ALL ITEMS NOT PROVIDED BY VERIZON WIRELESS SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED BY VERIZON WIRELESS.
- PRIOR TO SUBMISSION OF BID, CONTRACTOR WILL COORDINATE WITH VERIZON WIRELESS PROJECT MANAGER TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY VERIZON WIRELESS. ALL REQUIRED PERMITS NOT OBTAINED BY VERIZON WIRELESS MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
- GENERAL CONTRACTOR SHALL HAVE A LICENSED HVAC CONTRACTOR START THE HVAC UNITS, SYNCHRONIZE THE THERMOSTATS, ADJUST ALL SETTINGS ON EACH UNIT ACCORDING TO VERIZON WIRELESS CONSTRUCTION MANAGER'S SPECIFICATIONS, AND THOROUGHLY TEST AND BALANCE EACH UNIT TO ENSURE PROPER OPERATION PRIOR TO TURNING THE SITE OVER TO OWNER.
- CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH VERIZON WIRELESS SPECIFICATIONS AND REQUIREMENTS.
- CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
- UNLESS OTHERWISE NOTED VERIZON WIRELESS SHALL PROVIDE ALL REQUIRED RF MATERIAL FOR CONTRACTOR TO INSTALL, INCLUDING ANTENNAS, TMA'S, BIAS-T'S, COMBINERS, PDU, DC BLOCKS, SURGE ARRESTORS, GPS ANTENNA, GPS SURGE ARRESTOR, COAXIAL CABLE.
- PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL VERIFY ALL EQUIPMENT TO BE PROVIDED BY VERIZON WIRELESS FOR INSTALLATION BY CONTRACTOR.
- ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO VERIZON WIRELESS SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
- DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
- CONTRACTOR SHALL NOTIFY THE ENGINEER A MINIMUM OF 48 HOURS IN ADVANCE PRIOR TO CONSTRUCTION START, MORE SPECIFICALLY BEFORE SEALING ANY FLOOR, WALL OR ROOF PENETRATION, FINAL UTILITY CONNECTIONS, POURING CONCRETE, BACKFILLING UTILITY TRENCHES AND STRUCTURAL POST OR MOUNTING CONNECTIONS, FOR ENGINEERING REVIEW AND INSPECTION.
- SEAL PENETRATIONS THROUGH FIRE RATED AREAS WITH UL LISTED D FIRE CODE APPROVED MATERIALS.
- REPAIR ANY DAMAGE DURING CONSTRUCTION TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE CONSTRUCTION MANAGER AND LANDLORD.
- ALL DISRUPTIVE WORK AND WORK WITHIN TENANT SPACES TO BE COORDINATED WITH BUILDING REPRESENTATIVE.

**CODE SPECIFICATIONS:**

- ALL WORK SHALL COMPLY WITH THE FOLLOWING APPLICABLE CODES:  
 2022 CONNECTICUT STATE BUILDING CODE WITH THE FOLLOWING APPLICABLE CODES:  
 2021 INTERNATIONAL RESIDENTIAL CODE (IRC)  
 2021 INTERNATIONAL EXISTING BUILDING CODE (IEBC)  
 2021 INTERNATIONAL BUILDING CODE (IBC)  
 2021 INTERNATIONAL MECHANICAL CODE (IMC)  
 2020 NATIONAL ELECTRICAL CODE (NEC) (NFPA 70)  
 2021 INTERNATIONAL PLUMBING CODE (IPC)  
 2021 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)  
 ANSI/TIA-222-H STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES (TIA)  
 IN THE EVENT OF CONFLICT, THE MOST RESTRICTIVE CODE SHALL PREVAIL.
- ALL STRUCTURAL WORK TO BE DONE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL, 13TH EDITION (AISC 13TH ED.)
- ALL CONCRETE WORK TO BE DONE IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE (ACI 301) SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 318) AND BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
- ALL REINFORCING STEEL WORK TO BE DONE IN ACCORDANCE WITH THE (ACI 315) MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES.

**GROUNDING NOTES:**

- GROUNDING SHALL COMPLY WITH NEC ART. 250.
- GROUNDING CONDUCTORS SHALL BE #8 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR INDOOR USE.
- ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
- ROUTE GROUNDING CONNECTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NOT BE BENT AT RIGHT ANGLE. ALWAYS MAKE 12" RADIUS BENDS. #8 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY.
- CONNECTIONS TO GROUNDING BAR SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
- TEST COMPLETED GROUNDING SYSTEM AND RECORD RESISTANCE VALUES FOR PROJECT CLOSE-OUT DOCUMENTATION. GROUND RESISTANCE SHALL NOT EXCEED 5 OHMS.
- GROUNDING CONDUCTORS BETWEEN MGB AND WATERMAIN SHALL BE #2/0. BONDING JUMPERS FROM METALLIC SURFACES SHALL BE #2 MINIMUM. ALL GROUND CONDUCTORS AND BONDING JUMPERS SHALL BE SOFT DRAWN ANNEALED, TINNED, BARE STRANDED COPPER WIRE. COAXIAL CABLES SHALL BE GROUNDED AT A MINIMUM OF TWO LOCATIONS USING VERIZON PROVIDED GROUNDING KITS. EXACT LOCATIONS SHALL BE FINALIZED IN THE FIELD BY THE CONSTRUCTION MANAGER.

**STRUCTURAL STEEL NOTES:**

- STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
- STRUCTURAL STEEL ROLLED SHAPES, PLATES, AND BARS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:  
 ALL W SHAPES, UNLESS NOTED OR A992 OTHERWISE.  
 ALL OTHER ROLLED SHAPES, PLATES AND BARS UNLESS NOTED OTHERWISE.  
 HSS SECTION (SQUARE, RECTANGULAR, ROUND)  
 ALL BOLTS FOR CONNECTING STRUCTURAL MEMBERS.  
 ALL ANCHORS BOLTS, UNLESS NOTED OTHERWISE.  
 STEEL PIPE
- ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1 WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 14TH EDITION, WHERE WELD LENGTH IS NOT INDICATED, USE FULL LENGTH WELD. AT THE COMPLETION OF ALL WELDING, ALL DAMAGE TO GALVANIZED COATING SHALL BE REPAIRED.
- BOLTED CONNECTIONS SHALL USE BEARING TYPE GALVANIZED ASTM A325 BOLTS (3/4" DIA.) SUPPLIED WITH A NUT AND WASHER UNDER TURNED END AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
- DO NOT DRILL HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
- NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. GALVANIZED ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.
- USE PRECAUTIONS & PROCEDURES PER AWS D1.1 WHEN WELDING GALVANIZED METALS.
- ALL EXISTING BEAM AND COLUMN DIMENSIONS SHALL BE FIELD VERIFY BY CONTRACTOR PRIOR TO FABRICATION. ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THOSE SHOWN SHALL BE REPORTED TO DEWBERRY ENGINEER IMMEDIATELY.
- CONNECTION DESIGN BY FABRICATOR WILL BE SUBJECT TO REVIEW AND APPROVAL BY ENGINEER.
- ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH SPECIFICATION ASTM A123/A123M-00 HOT-DIP GALVANIZED FINISH UNLESS OTHERWISE NOTED. GALVANIZING SHALL BE PERFORMED AFTER SHOP FABRICATION TO THE GREATEST EXTENT POSSIBLE. ALL DINGS, SCRAPES, WARS, AND WELDS IN THE GALVANIZED AREAS SHALL BE REPAIRED. REPAIR DAMAGED GALVANIZED COATINGS ON GALVANIZED ITEMS WITH GALVANIZED REPAIR PAINT ACCORDING TO ASTM A780 AND MANUFACTURER'S WRITTEN INSTRUCTIONS. PRIOR TO COMPLETION OF WORK, TOUCHUP ALL DAMAGED GALVANIZED STEEL WITH APPROVED COLD ZINC, "GALVANOX", "DRY GALV", "ZINC-IT", OR APPROVED EQUIVALENT, IN ACCORDANCE WITH MANUFACTURERS GUIDELINES. TOUCHUP DAMAGED NON GALVANIZED STEEL WITH SAME PAINT APPLIED IN SHOP OR FIELD.
- ALL WELDED COMPONENTS TO BE SHOP WELDED PRIOR TO INSTALLATION. NO WELDING ACTIVITIES IS PERMITTED DURING INSTALLATION OF PROPOSED EQUIPMENTS AND/OR HARDWARE ON SITE.



**WEST HARTFORD  
CENTER CT**

ANTMO DRAWINGS

1	05/19/23	FOR SUBMITTAL
0	05/15/23	FOR SUBMITTAL



Dewberry Engineers Inc.  
99 SUMMER STREET  
SUITE 700  
BOSTON, MA 02110  
PHONE: 617.695.3400  
FAX: 617.695.3310



DRAWN BY: 05/19/2023 JG  
 REVIEWED BY: COH  
 CHECKED BY: BBR  
 PROJECT NUMBER: 50121487  
 JOB NUMBER: 50164391  
 SITE NUMBER:

535840

SITE ADDRESS  
 14-20 ISHAM ROAD  
 WEST HARTFORD,  
 CT 06107  
 SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-1



VERIZON WIRELESS  
99 EAST RIVER DRIVE  
EAST HARTFORD, CT 06108

**WEST HARTFORD  
CENTER CT**

ANTMO DRAWINGS

1	05/19/23	FOR SUBMITTAL
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Dewberry Engineers Inc.  
99 SUMMER STREET  
SUITE 700  
BOSTON, MA 02110  
PHONE: 617.696.3400  
FAX: 617.696.3310



DRAWN BY:	05/19/2023	JG
REVIEWED BY:		CDH
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PROJECT NUMBER:		50121487
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SITE NUMBER:		

535840

SITE ADDRESS

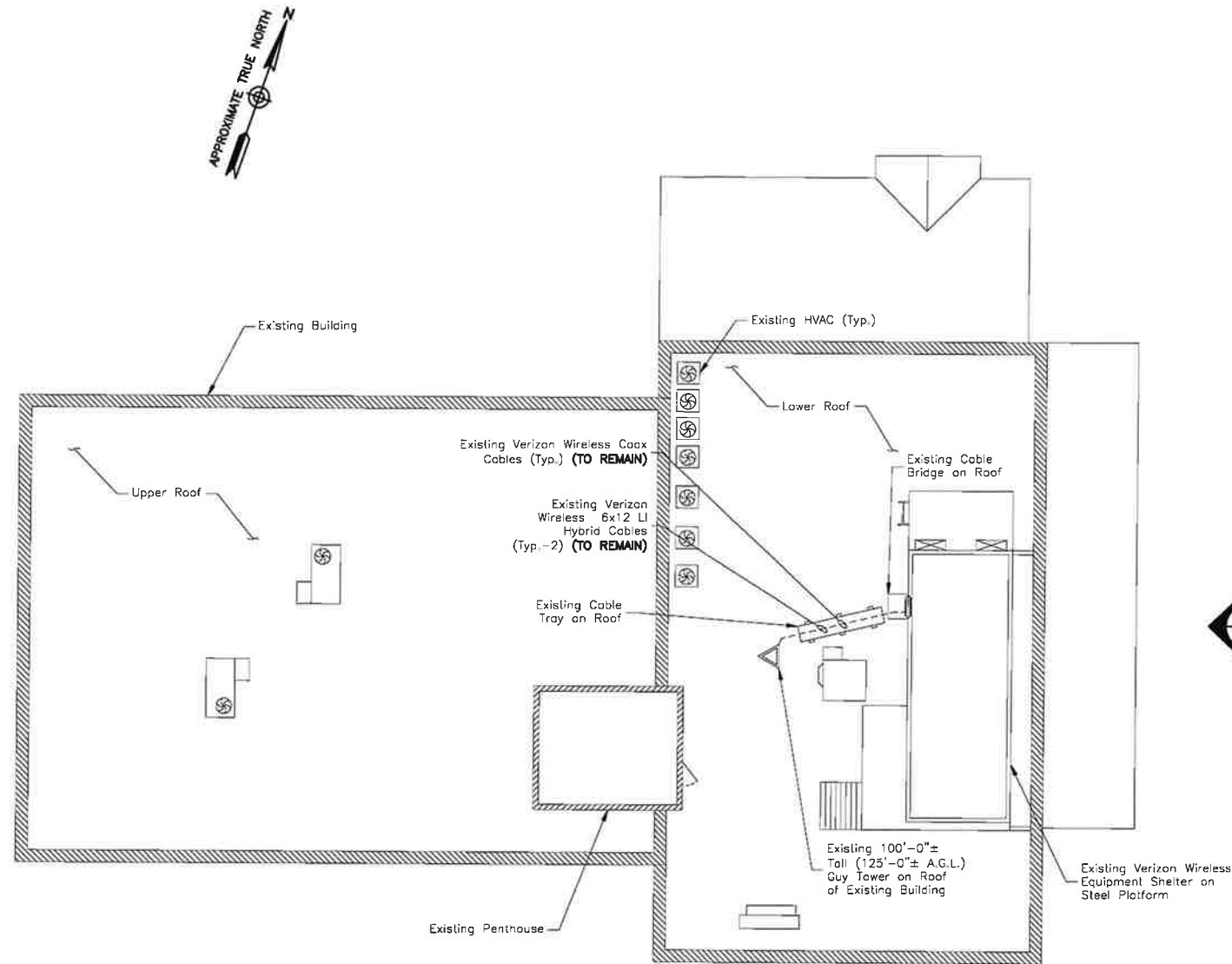
14-20 ISHAM ROAD  
WEST HARTFORD,  
CT 06107

SHEET TITLE

ROOF PLAN

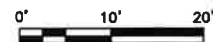
SHEET NUMBER

C-1



**ROOF PLAN**

SCALE: 1"=20' FOR 11'x17'  
1"=10' FOR 22'x34'



**NOTES:**

1. NORTH SHOWN AS APPROXIMATE.
2. SOME EXISTING AND PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
3. EXISTING ANTENNAS SHOWN AS APPROXIMATE. ELEVATION BASED ON EXISTING INFORMATION AND VISUAL INSPECTION AND HAVE NOT BEEN VERIFIED THROUGH AN ANTENNA MAPPING.
4. MOUNT ALL PROPOSED EQUIPMENT IN ACCORDANCE WITH STRUCTURAL ASSESSMENT COMPLETED BY DEWBERRY ENGINEERS DATED 05/12/23.



VERIZON WIRELESS  
99 EAST RIVER DRIVE  
EAST HARTFORD, CT 06108

**WEST HARTFORD  
CENTER CT**

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1	05/19/23	FOR SUBMITTAL
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Dewberry Engineers Inc.  
99 SUMMER STREET  
SUITE 700  
BOSTON, MA 02110  
PHONE: 617.695.3400  
FAX: 617.695.3310



DRAWN BY:	05/19/2023 JG
REVIEWED BY:	CDH
CHECKED BY:	BBR
PROJECT NUMBER:	50121487
JOB NUMBER:	50164391
SITE NUMBER:	

535840

SITE ADDRESS

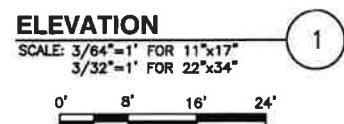
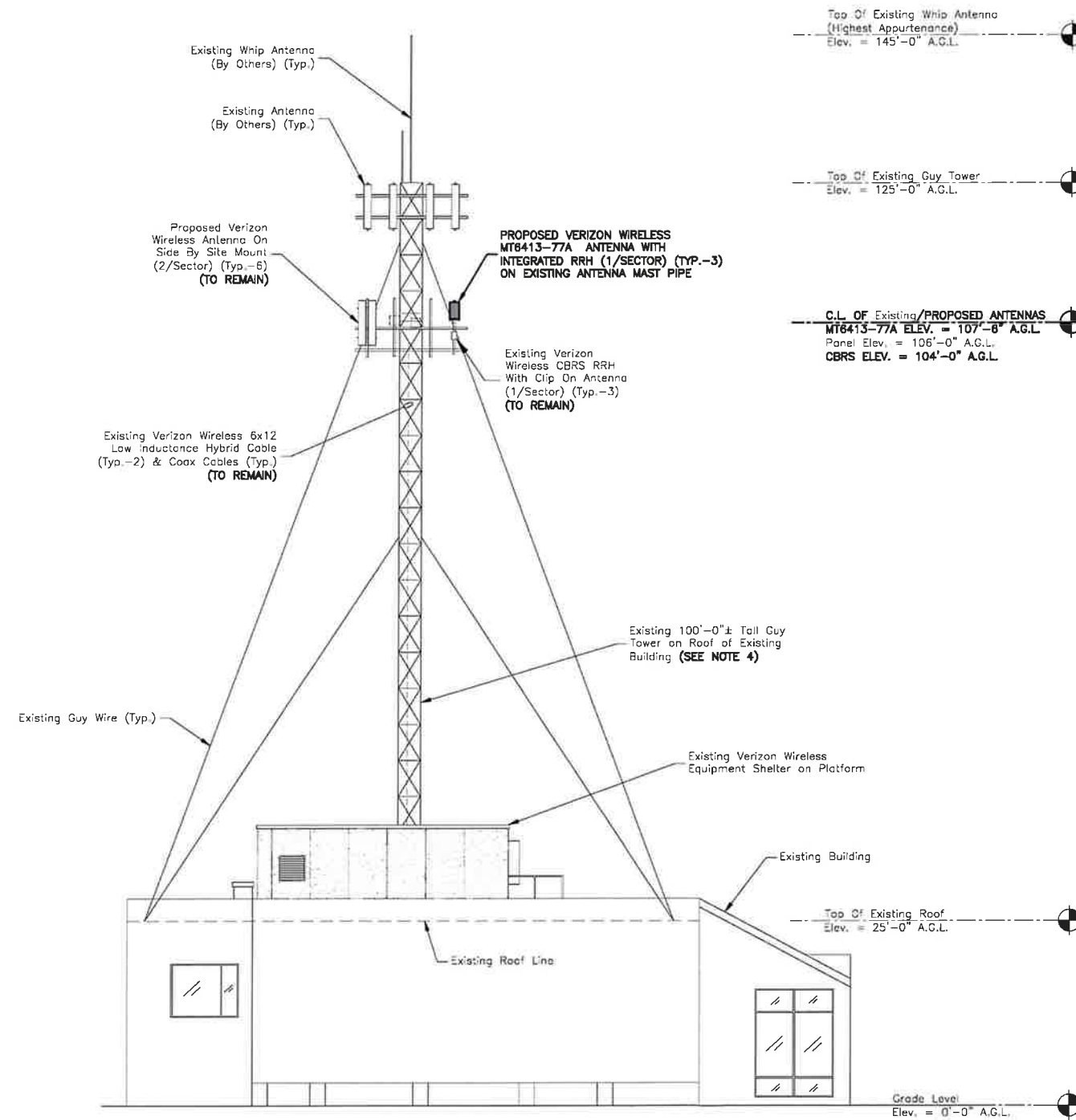
14-20 ISHAM ROAD  
WEST HARTFORD,  
CT 06107

SHEET TITLE

ELEVATION

SHEET NUMBER

C-2



**NOTES:**

- ELEVATION SHOWN AS APPROXIMATE.
- SOME EXISTING AND PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
- EXISTING ANTENNAS SHOWN AS APPROXIMATE. ELEVATION BASED ON EXISTING INFORMATION AND VISUAL INSPECTION AND HAVE NOT BEEN VERIFIED THROUGH AN ANTENNA MAPPING.
- MOUNT ALL PROPOSED EQUIPMENT IN ACCORDANCE WITH STRUCTURAL ASSESSMENT COMPLETED BY DEWBERRY ENGINEERS DATED 05/12/23.
- A.G.L. = ABOVE GROUND LEVEL.



VERIZON WIRELESS  
99 EAST RIVER DRIVE  
EAST HARTFORD, CT 06108

**WEST HARTFORD  
CENTER CT**

**ANTMO DRAWINGS**

1	05/19/23	FOR SUBMITTAL
0	05/15/23	FOR SUBMITTAL



Dewberry Engineers Inc.  
99 SUMMER STREET  
SUITE 700  
BOSTON, MA 02110  
PHONE: 617.695.3400  
FAX: 617.695.3310



DRAWN BY:	05/19/2023 JG
REVIEWED BY:	COH
CHECKED BY:	BBR
PROJECT NUMBER:	50121487
JOB NUMBER:	50164391
SITE NUMBER:	

535840

SITE ADDRESS

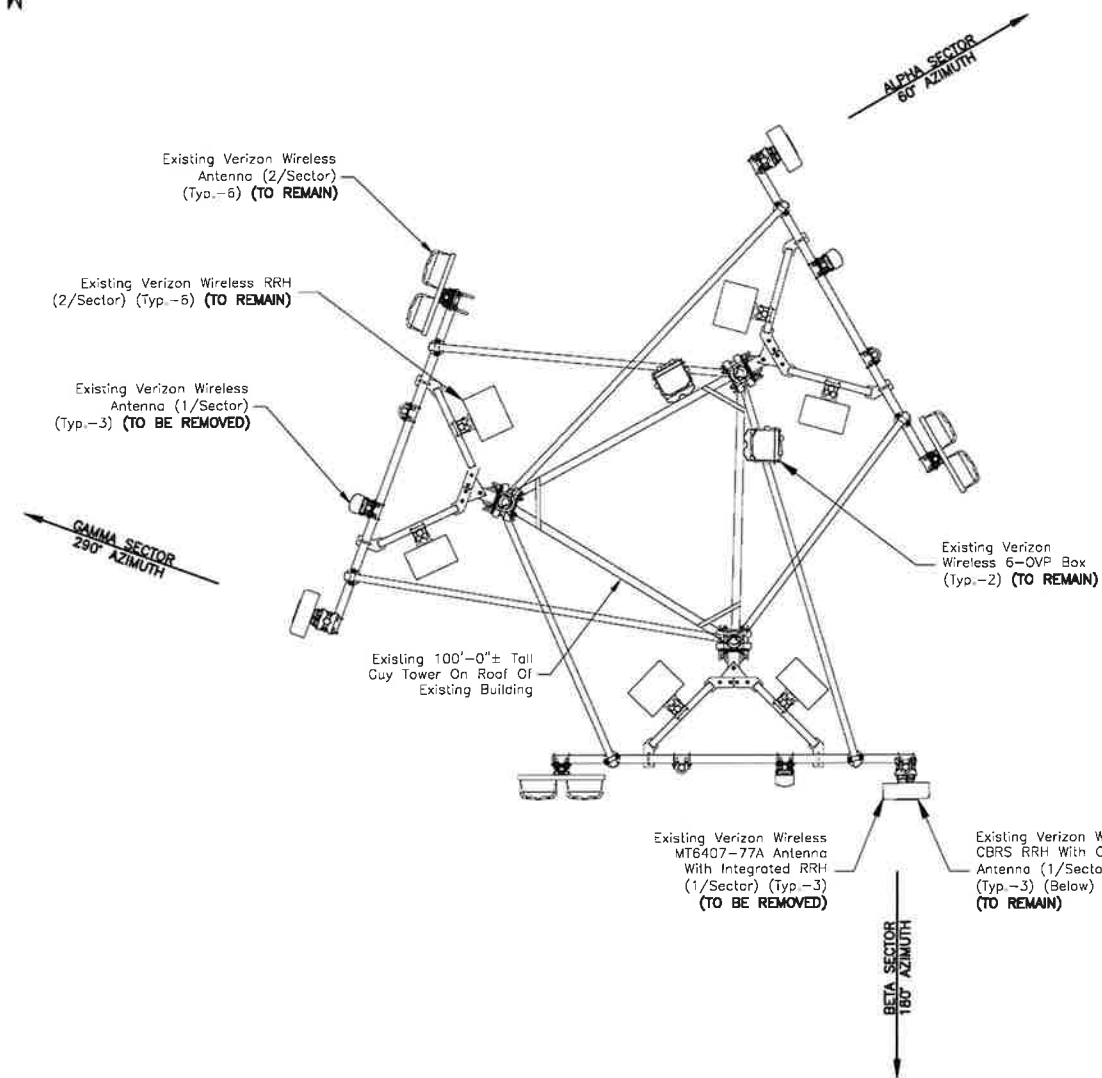
14-20 ISHAM ROAD  
WEST HARTFORD,  
CT 06107

SHEET TITLE

EXISTING & PROPOSED  
ANTENNA PLANS

SHEET NUMBER

C-3



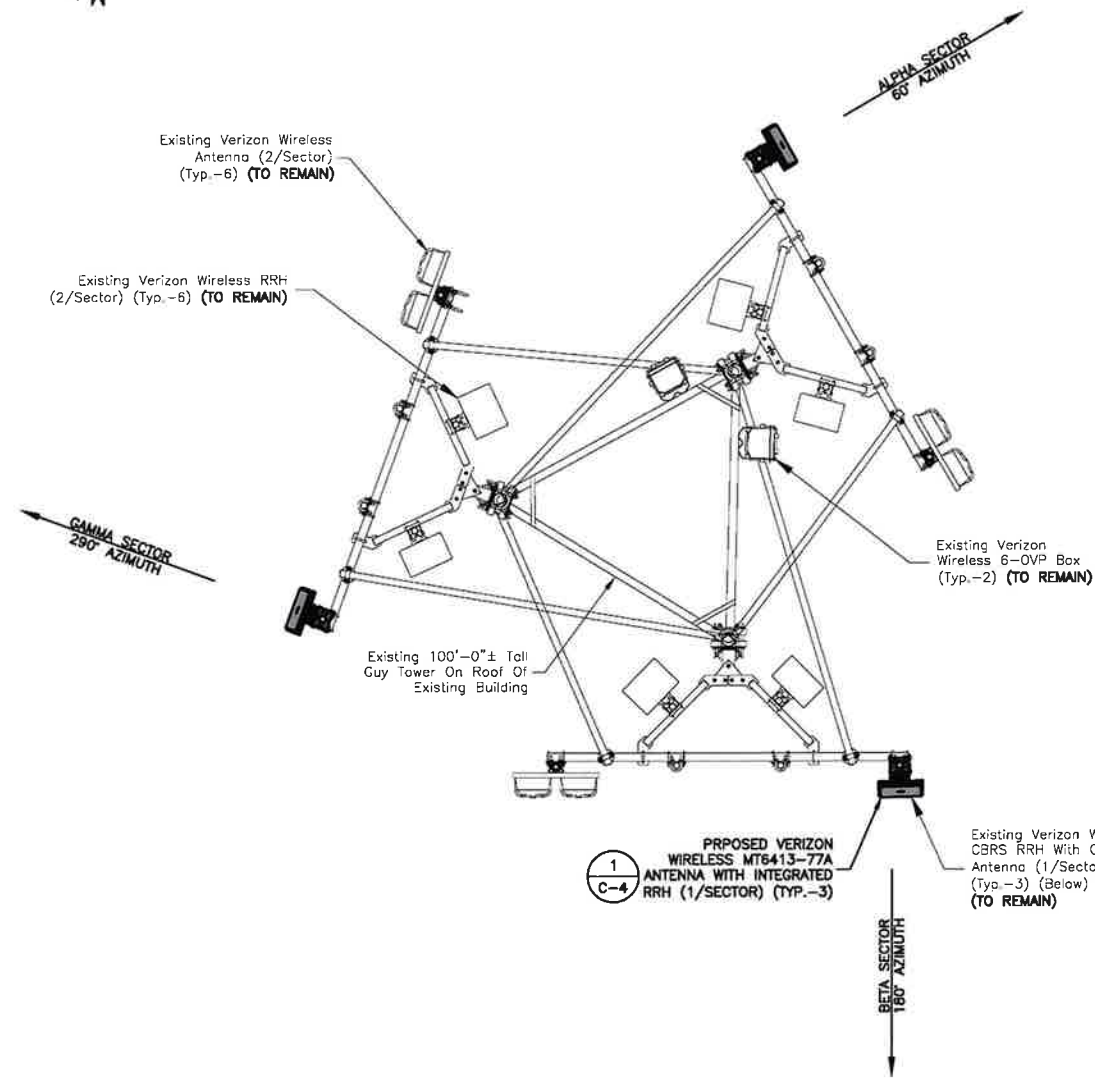
**EXISTING ANTENNA PLAN**

SCALE: N.T.S.

1

**NOTES:**

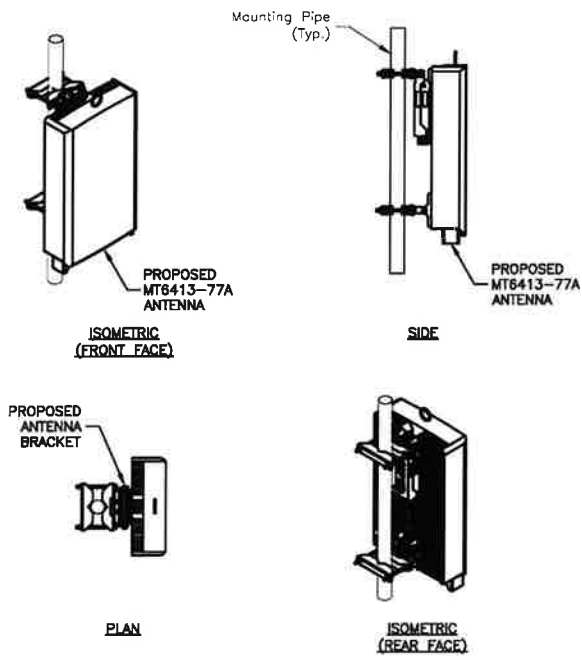
1. NORTH SHOWN AS APPROXIMATE.
2. SOME EXISTING AND PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
3. EXISTING ANTENNAS SHOWN AS APPROXIMATE. ELEVATION BASED ON EXISTING INFORMATION AND VISUAL INSPECTION AND HAVE NOT BEEN VERIFIED THROUGH AN ANTENNA MAPPING.
4. MOUNT ALL PROPOSED EQUIPMENT IN ACCORDANCE WITH STRUCTURAL ASSESSMENT COMPLETED BY DEWBERRY ENGINEERS DATED 05/12/23.



**PROPOSED ANTENNA PLAN**

SCALE: N.T.S.

2



MODEL: MT6413-77A  
 DIMENSIONS: 28.9"H X 15.7"W X 5.5"D (NOT TO EXCEED)  
 WEIGHT: 57.3 LBS (NOT TO EXCEED)

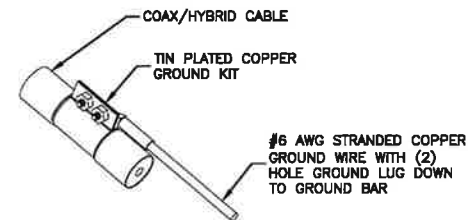
**NOTE:**

1. INSTALL ALL EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. USE APPROPRIATE MOUNTING HARDWARE FOR CONSTRUCTION TYPE.

**MT6413-77A ANTENNA DETAILS**

SCALE: N.T.S.

1



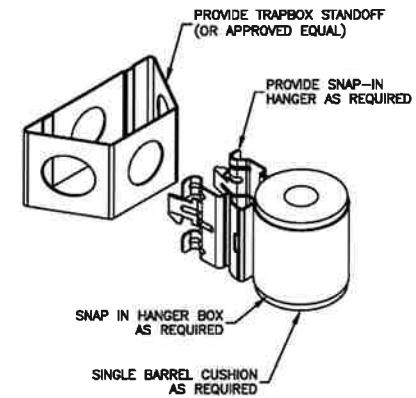
**NOTES:**

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND. ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TIN PLATED COPPER WITH TWO-HOLE LUG, SIZE PER COAX DIAMETER.
3. WEATHER SEAL GROUND KIT PER CARRIER REQUIREMENTS.
4. COAX CABLE GROUND KIT LOCATION & QUANTITY SHALL BE PER CARRIER SPECIFICATIONS & STANDARDS.

**COAX/HYBRID GROUNDING DETAIL**

SCALE: N.T.S.

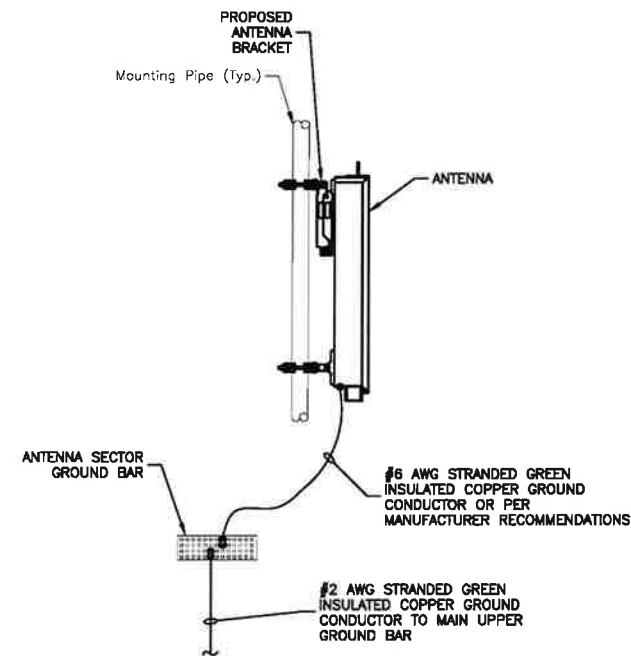
3



**JUMPER MOUNT**

SCALE: N.T.S.

2



**NOTES:**

1. VERIFY EXISTING GROUNDING SYSTEM IS INSTALLED PER VERIZON WIRELESS STANDARDS.
2. BOND NEW EQUIPMENT INTO EXISTING GROUND SYSTEM IN ACCORDANCE WITH VERIZON WIRELESS STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.

**TYPICAL ANTENNA GROUNDING DETAIL**

SCALE: N.T.S.

4



VERIZON WIRELESS  
 99 EAST RIVER DRIVE  
 EAST HARTFORD, CT 06108

**WEST HARTFORD  
 CENTER CT**

**ANTMO DRAWINGS**

1	05/19/23	FOR SUBMITTAL
0	05/15/23	FOR SUBMITTAL



Dewberry Engineers Inc.  
 99 SUMMER STREET  
 SUITE 700  
 BOSTON, MA 02110  
 PHONE: 617.695.3400  
 FAX: 617.695.3310



DRAWN BY:	05/19/2023 JG
REVIEWED BY:	CDH
CHECKED BY:	BBR
PROJECT NUMBER:	50121487
JOB NUMBER:	50164391
SITE NUMBER:	

535840

SITE ADDRESS  
 14-20 ISHAM ROAD  
 WEST HARTFORD,  
 CT 06107

SHEET TITLE

CONSTRUCTION DETAILS

SHEET NUMBER

C-4



VERIZON WIRELESS  
99 EAST RIVER DRIVE  
EAST HARTFORD, CT 06108

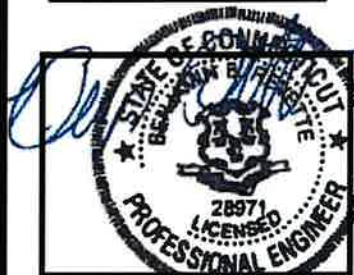
**WEST HARTFORD  
CENTER CT**

ANTMO DRAWINGS

1	05/19/23	FOR SUBMITTAL
0	05/15/23	FOR SUBMITTAL



Dewberry Engineers Inc.  
99 SUMMER STREET  
SUITE 700  
BOSTON, MA 02110  
PHONE: 617.695.3400  
FAX: 617.695.3310



DRAWN BY: 05/19/2023 JG

REVIEWED BY: CDH

CHECKED BY: BBR

PROJECT NUMBER: 50121487

JOB NUMBER: 50164391

SITE NUMBER:

535840

SITE ADDRESS

14-20 ISHAM ROAD  
WEST HARTFORD,  
CT 06107

SHEET TITLE

FINAL EQUIPMENT  
CONFIGURATION

SHEET NUMBER

C-5

**FINAL EQUIPMENT CONFIGURATION**

SECTOR	POSITION	TECHNOLOGY	ANTENNA MODEL	VENDOR	RRH (QTY./MODEL)	CENTERLINE	AZIMUTH	OVP	HYBRID CABLE TYPE	FEED LINE LENGTH*
ALPHA	A1	5G	(P) MT6413-77A	SAMSUNG	-	107'-6"±	60°	(2) (E) 6-OVP BOX TO REMAIN	(2) (E) 6X12 HYBRID CABLE TO REMAIN	160'±
	A2	LTE CBRS	(E) XXDWMM-12.5-65-BT	SAMSUNG	(1) (E) RT4401-48A	104'-0"±	60°			
	A3	LTE 700/850	(E) SBNHH-1D65B	ANDREW	(1) (E) B5/B13 RFV01U-D2A	106'-0"±	60°			
	A4	LTE 1900/AWS	(E) SBNHH-1D65B	ANDREW	(1) (E) B2/B66A RFV01U-D1A	106'-0"±	60°			
BETA	B1	5G	(P) MT6413-77A	SAMSUNG	-	107'-6"±	180°			
	B2	LTE CBRS	(E) XXDWMM-12.5-65-BT	SAMSUNG	(1) (E) RT4401-48A	104'-0"±	180°			
	B3	LTE 700/850	(E) SBNHH-1D65B	ANDREW	(1) (E) B5/B13 RFV01U-D2A	106'-0"±	180°			
	B4	LTE 1900/AWS	(E) SBNHH-1D65B	ANDREW	(1) (E) B2/B66A RFV01U-D1A	106'-0"±	180°			
GAMMA	G1	5G	(P) MT6413-77A	SAMSUNG	-	107'-6"±	290°			
	G2	LTE CBRS	(E) XXDWMM-12.5-65-BT	SAMSUNG	(1) (E) RT4401-48A	104'-0"±	290°			
	G3	LTE 700/850	(E) SBNHH-1D65B	ANDREW	(1) (E) B5/B13 RFV01U-D2A	106'-0"±	290°			
	G4	LTE 1900/AWS	(E) SBNHH-1D65B	ANDREW	(1) (E) B2/B66A RFV01U-D1A	106'-0"±	290°			

\*CONTRACTOR TO FIELD VERIFY HYBRID CABLE LENGTHS PRIOR TO CONSTRUCTION. LENGTH IS ESTIMATED FROM THE BASE EQUIPMENT OVP TO SECTOR OVP. NO HYBRID CABLES ARE PROPOSED UNDER CURRENT SCOPE OF WORK.

(E) = Existing  
(P) = PROPOSED

**FINAL EQUIPMENT CONFIGURATION**

SCALE: N.T.S.

1

# C-band 64T64R

SAMSUNG

## Gen 2

Gen 2 : Higher conducted power radio with reduced size/volume/weight vs Gen 1 and also SOC embedded for flexibility to support new features



※ Preliminary Design: External appearance and mechanical design can be subject to change

Gen 2. 64T64R C-band MMU Dimensions	
Size (WxHxD)	400 x 734 x 140 mm (15.75 x 28.90 x 5.51 inch)
Weight	26kg (57.3 lb)

Item	Gen 2 64T64R (MT6413-77A)
Air Technology	NR n77/TDD
Frequency	3700 – 3980 MHz
IBW	200 MHz
OBW	200 MHz
Carrier Bandwidth	20(HW ready)/40/60/80/100 MHz
# of Carriers	2 carriers
Layer	DL : 16L, UL : 16RX (8L)
RF Chain	64T64R
Antenna Configuration	4V16H with 192 AE
EIRP	80.5 dBm @320W (55 dBm + 25.5 dBi)
Conductive Power	320W
Spectrum Analyzer	TX/RX support
RX Sensitivity	Typical -97.8dBm @1Rx, 18.36MHz with 30kHz,51RBs
Modulation	DL 256QAM support, (DL 1024QAM with 1~2dB power back-off)
Function Split	DL/UL option 7-2x
Input Power	-48 VDC (-38 VDC to -57 VDC)
Power Consumption	1,287W (100% load, room temp.)
Size (WHD)	400 x 734 x 140 mm (15.75 x 28.90 x 5.51 inch)
Volume	41.1L
Weight	26kg (57.3 lb)
Operating Temperature	-40°C - 55°C (w/o solar load)
Cooling	Natural convection
Unwanted Emission	3GPP 38.104
	FCC 47 CFR 27.53 : < -13dBm/MHz
	< -40 dBm/MHz @ above 4 GHz
	<-50 dBm /MHz @ 4,040 ~ 4,050 MHz <-60 dBm /MHz @ above 4,050 MHz
Optic Interface	15km, 4 ports (25Gbps x 4), SFP28, single mode, Bi-di (Option: Duplex)
Mounting Options	Pole, wall
NB-IoT	Not support
External Alarm	4RX
Fronthaul Interface	eCPRI



# **ATTACHMENT 3**



C Squared Systems, LLC  
65 Dartmouth Drive  
Auburn, NH 03032  
(603) 644-2800  
[support@csquaredsystems.com](mailto:support@csquaredsystems.com)

---

## Calculated Radio Frequency Emissions Report



West Hartford Center  
14-20 Isham Road, West Hartford, CT 06107

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June 7, 2023

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## 1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed modification of Verizon's antenna arrays to be mounted at 97.6', 99.2', and 101' AGL on an existing guyed tower located at 14-20 Isham Road in West Hartford, CT. The coordinates of the guyed tower are 41° 45' 41.62" N, 72° 44' 25.57" W.

Verizon is proposing the following:

- 1) Increase power for C-Band antenna;
- 2) Retain twelve (12) antennas, four (4) per sector to support its commercial LTE network;

This report considers the planned antenna configuration for Verizon<sup>1</sup> and the existing omni-antennas to derive the resulting % MPE of its proposed installation.

## 2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. 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 cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm<sup>2</sup>). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment C of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment C contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

---

<sup>1</sup> As referenced to Verizon's Radio Frequency Design Sheet updated 04/10/2023.

### 3. RF Exposure Prediction Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left( \frac{GRF^2 \times 1.64 \times ERP}{4\pi \times R^2} \right) \times \text{Off Beam Loss}$$

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial Distance =  $\sqrt{(H^2 + V^2)}$

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Off Beam Loss is determined by the selected antenna patterns

Ground reflection factor of 1.6

These calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not take into account actual terrain elevations which could attenuate the signal. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the final installations.

#### 4. Antenna Inventory

Table 1 below outlines Verizon’s proposed antenna configuration for the site. The associated data sheets and antenna patterns for these specific antenna models are included in Attachments C.

Operator	Sector / Call Sign	TX Freq (MHz)	Power at Antenna (Watts)	Ant Gain (dBi)	Power EIRP (Watts)	Antenna Model	Beam Width	Mech. Tilt	Length (ft)	Antenna Centerline Height (ft)
Verizon	Alpha / 60°	700	160	14.9	4944	SBNHH-1D65B	68	0	6.0	99.2
		850	160	14.7	4722		65.5			
		1900	160	18.2	10571		66.2			
		2100	160	18.6	11591		63			
		3500	20	12.8	381	XXDWMM-12.5-65	61.7	0	1.03	97.6
		3700	200	25.5	70963	MT6407-77A	-	0	2.92	101
	Beta / 180°	700	160	14.9	4944	SBNHH-1D65B	68	0	6.0	99.2
		850	160	14.7	4722		65.5			
		1900	160	18.2	10571		66.2			
		2100	160	18.6	11591		63			
		3500	20	12.8	381	XXDWMM-12.5-65	61.7	0	1.03	97.6
		3700	200	25.5	70963	MT6407-77A	-	0	2.92	101
	Gamma / 290°	700	160	14.9	4944	SBNHH-1D65B	68	0	6.0	99.2
		850	160	14.7	4722		65.5			
		1900	160	18.2	10571		66.2			
		2100	160	18.6	11591		63			
		3500	20	12.8	381	XXDWMM-12.5-65	61.7	0	1.03	97.6
		3700	200	25.5	70963	MT6407-77A	-	0	2.92	101

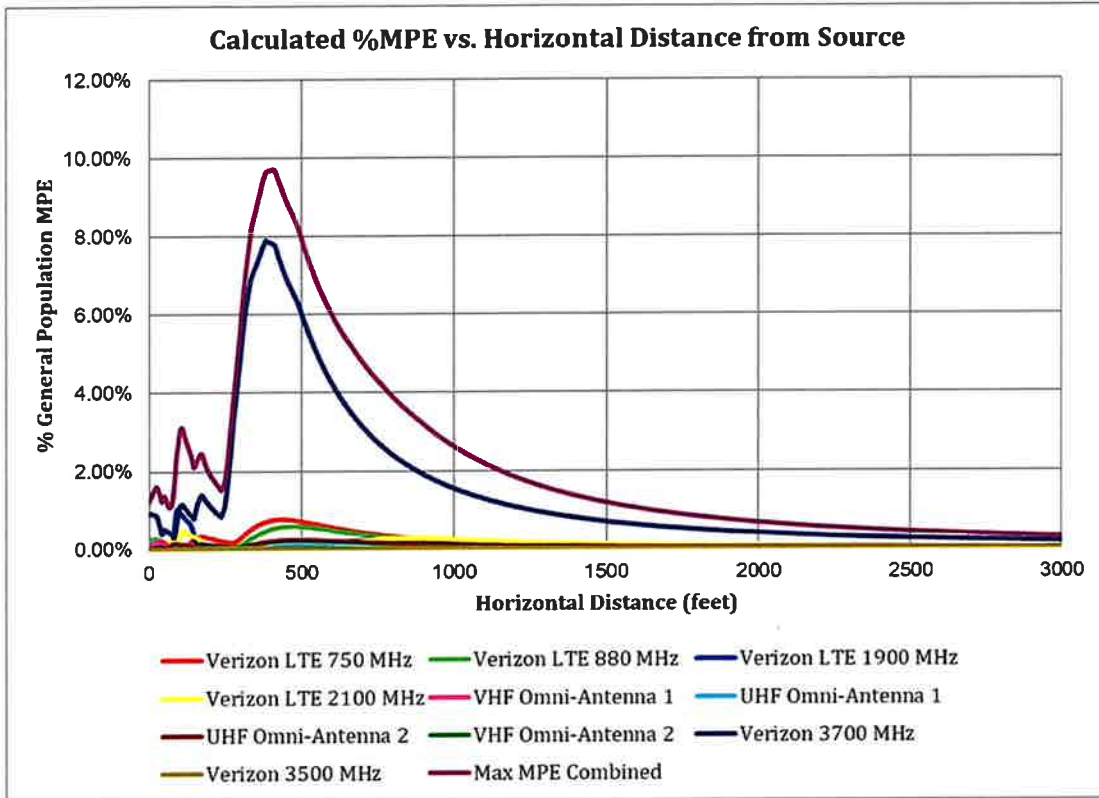
**Table 1: Proposed Antenna Inventory<sup>2 3</sup>**

<sup>2</sup> Antenna heights are in reference to Verizon’s Radio Frequency Design Sheet updated 4/10/2023.

<sup>3</sup> Transmit power assumes 0 dB of cable loss.

## 5. Calculation Results

The calculated power density results are shown in Figure 1 below. For completeness, the calculations for this analysis range from 0 feet horizontal distance (directly below the antennas) to a value of 3,000 feet horizontal distance from the site. In addition to the other worst-case scenario considerations that were previously mentioned, the power density calculations to each horizontal distance point away from the antennas was completed using a local maximum off beam antenna gain (within  $\pm 5$  degrees of the true mathematical angle) to incorporate a realistic worst-case scenario.



**Figure 1: Graph of General Population % MPE vs. Distance**

The highest percent of MPE (9.69% of the General Population limit) is calculated to occur at a horizontal distance of 404 feet from antennas. Please note that the percent of MPE calculations close to the site take into account off beam loss, which is determined from the vertical pattern of the antennas used. Therefore, RF power density levels may increase as the distance from the site increases. At distances of approximately 1500 feet and beyond, one would now be in the main beam of the antenna pattern and off beam loss is no longer considered. Beyond this point, RF levels become calculated solely on distance from the site and the percent of MPE decreases significantly as distance from the site increases.

Table 2 below lists percent of MPE values as well as the associated parameters that were included in the calculations. The highest percent of MPE value was calculated to occur at a horizontal distance of 404 feet from the site (reference Figure 1).

As stated in Section 3, all calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings etc.) that would normally attenuate the signal are not taken into account. In addition, a six foot height offset was considered in this analysis to account for average human height. As a result, the predicted signal levels are significantly higher than the actual signal levels will be from the final configuration. The results presented in Figure 1 and Table 2 assume level ground elevation from the base of the tower out to the horizontal distances calculated.

Carrier	Number of Transmitters	Power out of Base Station Per Transmitter (Watts)	Antenna Height (Feet)	Distance to the Base of Antennas (Feet)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	% MPE
UHF Omni-Antenna 1	1	100.0	104.0	404	0.000331	0.300	0.11%
UHF Omni-Antenna 2	1	100.0	102.0	404	0.000630	0.300	0.21%
Verizon 3500 MHz	1	20.0	97.6	404	0.000292	1.000	0.03%
Verizon 3700 MHz	1	200.0	101.0	404	0.078139	1.000	7.81%
Verizon LTE 1900 MHz	1	160.0	99.2	404	0.000349	1.000	0.03%
Verizon LTE 2100 MHz	1	160.0	99.2	404	0.000345	1.000	0.03%
Verizon LTE 750 MHz	1	160.0	99.2	404	0.003759	0.500	0.75%
Verizon LTE 880 MHz	1	160.0	99.2	404	0.002998	0.567	0.53%
VHF Omni-Antenna 1	1	100.0	106.0	404	0.000280	0.200	0.14%
VHF Omni-Antenna 2	1	100.0	103.0	404	0.000325	1.000	0.03%
						<b>Total</b>	<b>9.69%</b>

**Table 2: Maximum Percent of General Population Exposure Values**



## 6. Conclusion

The above analysis verifies that RF exposure levels from the site with Verizon's proposed antenna configuration will be well below the maximum permissible levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Using the conservative calculation methods and parameters detailed above, the maximum cumulative percent of MPE in consideration of all transmitters is calculated to be **9.69% of the FCC limit (General Population/Uncontrolled)**. This maximum cumulative percent of MPE value is calculated to occur 404 feet away from the site.

## 7. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in ANSI/IEEE Std. C95.3, ANSI/IEEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.



Report Prepared By: \_\_\_\_\_  
Ram Acharya  
RF Engineer 1  
C Squared Systems, LLC

June 6, 2023  
Date



Reviewed/Approved By: \_\_\_\_\_  
Martin J. Lavin  
Senior RF Engineer  
C Squared Systems, LLC

June 7, 2023  
Date

## Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

IEEE C95.1-2005, IEEE Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz IEEE-SA Standards Board

IEEE C95.3-2002 (R2008), IEEE Recommended Practice for Measurements and Computations of Radio Frequency Electromagnetic Fields With Respect to Human Exposure to Such Fields, 100 kHz-300 GHz IEEE-SA Standards Board

Verizon's Radio Frequency Design Sheet updated 10/21/2022

AT&T's filing, Connecticut Siting Council Notice of Exempt Modification – Antenna Add - 14-20 Isham Road(aka 1 Service Road) West Hartford, CT, dated 9/23/2022

As referenced to Dish Wireless LLC's filing, Connecticut Siting Council Tower Share Application – 780 Prospect Hill Road, West Hartford, CT, dated 11/19/2021

T-Mobile's filing, Connecticut Siting Council Notice of Exempt Modification – 780 Prospect Hill Road, West Hartford, CT, dated 10/1/2020

**Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)**

**(A) Limits for Occupational/Controlled Exposure<sup>4</sup>**

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f <sup>2</sup> )*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5	6

**(B) Limits for General Population/Uncontrolled Exposure<sup>5</sup>**

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f <sup>2</sup> )*	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

**Table 3: FCC Limits for Maximum Permissible Exposure**

<sup>4</sup> 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 occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

<sup>5</sup> 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 cannot exercise control over their exposure.

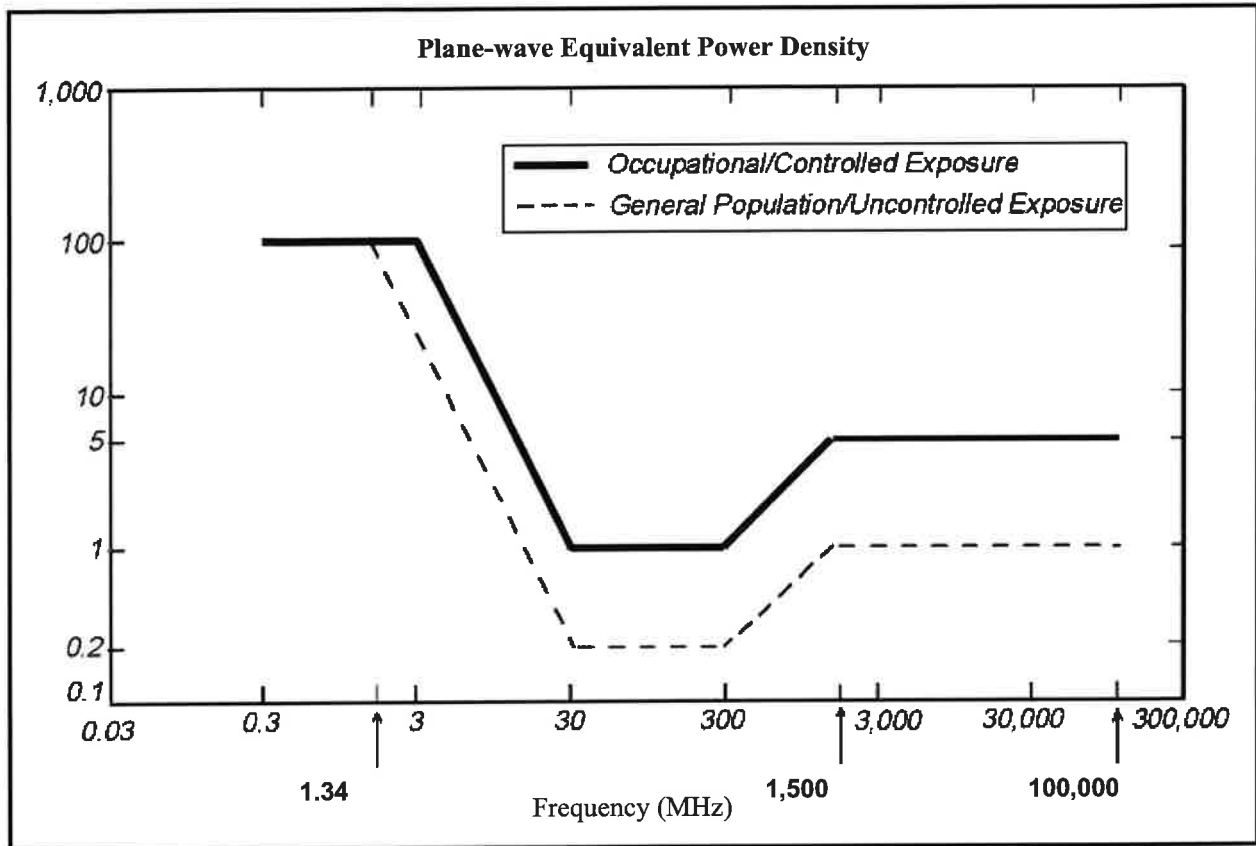
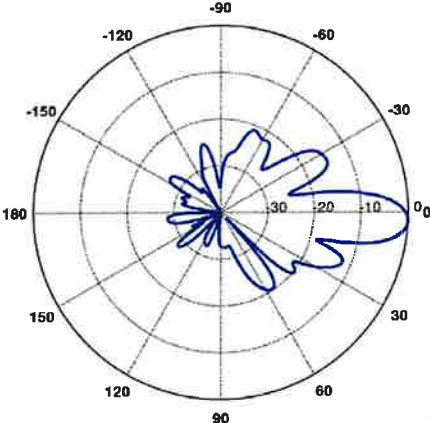
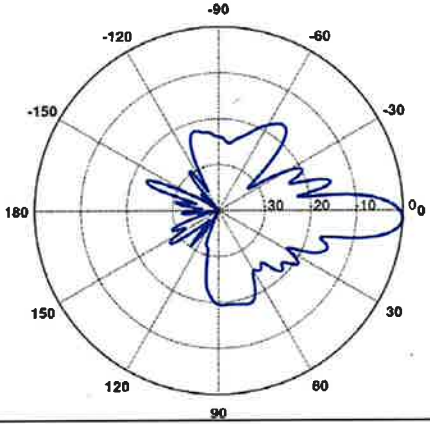
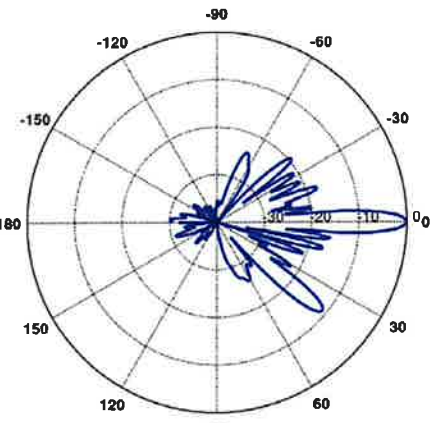


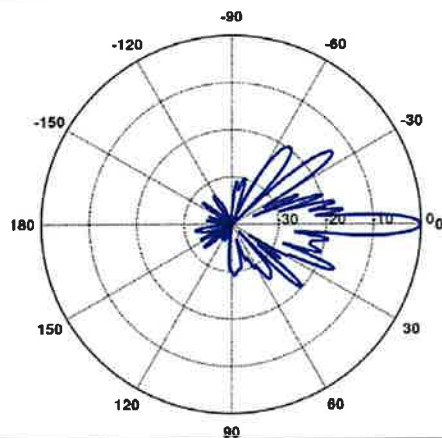
Figure 2: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

**Attachment C: Verizon Antenna Model Data Sheets and Electrical Patterns**

<p><b>750 MHz</b></p> <p>Manufacturer: COMMSCOPE            Model #: SBNHH-1D65B            Frequency Band: 698-806 MHz            Gain: 14.9 dBi            Vertical Beamwidth: 12.1°            Horizontal Beamwidth: 68°            Polarization: ±45°            Dimensions (L x W x D): 72.8" x 11.8" x 7.08"</p>	 <p>A polar plot showing the radiation pattern for the 750 MHz antenna. The plot is circular with concentric grid lines representing gain levels. The radial axis is labeled with values 10, 20, and 30. The angular axis is labeled with values from -180 to 180 in increments of 30. The pattern shows a main lobe centered at 0 degrees, with a peak gain of approximately 30 dB. There are several side lobes, with the most prominent ones between 30 and 150 degrees.</p>
<p><b>885 MHz</b></p> <p>Manufacturer: COMMSCOPE            Model #: SBNHH-1D65B            Frequency Band: 806-896 MHz            Gain: 14.7 dBi            Vertical Beamwidth: 10.7°            Horizontal Beamwidth: 65.5°            Polarization: ±45°            Dimensions (L x W x D): 72.8" x 11.8" x 7.08"</p>	 <p>A polar plot showing the radiation pattern for the 885 MHz antenna. The plot is circular with concentric grid lines representing gain levels. The radial axis is labeled with values 10, 20, and 30. The angular axis is labeled with values from -180 to 180 in increments of 30. The pattern shows a main lobe centered at 0 degrees, with a peak gain of approximately 30 dB. There are several side lobes, with the most prominent ones between 30 and 150 degrees.</p>
<p><b>1900 MHz</b></p> <p>Manufacturer: COMMSCOPE            Model #: SBNHH-1D65B            Frequency Band: 1850-1990 MHz            Gain: 18.2 dBi            Vertical Beamwidth: 5.2°            Horizontal Beamwidth: 66.2°            Polarization: ±45°            Dimensions (L x W x D): 72.8" x 11.8" x 7.08"</p>	 <p>A polar plot showing the radiation pattern for the 1900 MHz antenna. The plot is circular with concentric grid lines representing gain levels. The radial axis is labeled with values 10, 20, and 30. The angular axis is labeled with values from -180 to 180 in increments of 30. The pattern shows a main lobe centered at 0 degrees, with a peak gain of approximately 30 dB. There are several side lobes, with the most prominent ones between 30 and 150 degrees.</p>

**2100 MHz**

Manufacturer: COMMSCOPE  
Model #: SBNHH-1D65B  
Frequency Band: 1920-2200 MHz  
Gain: 18.6 dBi  
Vertical Beamwidth: 5°  
Horizontal Beamwidth: 63°  
Polarization: ±45°  
Dimensions (L x W x D): 72.8" x 11.8" x 7.08"



# **ATTACHMENT 4**



Dewberry Engineers Inc. | 617.695.3400  
 99 Summer Street, Suite 700 | 617.695.3310 fax  
 Boston, MA 02110-1200 | www.dewberry.com

May 12, 2023

Verizon Wireless  
 99 East River Drive  
 East Hartford, CT 06108

**Re: West Hartford Center CT  
 PLSC: 535840  
 Fuze #: 17082761  
 14-20 Isham Road  
 West Hartford, CT**

To Whom It May Concern:

Verizon Wireless has proposed to remove (3) MT6407-77A 5G antennas w/ integrated RRHs, (2) SLCP 2x6014 antennas, (1) BXA-80063/4CF antennas and install (3) MT6413-77A 5G antennas at a centerline elevation of 102' AGL on the guyed tower at the site referenced above. The previous Tower Structural Analysis Report by Dewberry Engineers, Inc. dated 04/27/22 passed at 83.8% and the previous Mount Analysis Report by Maser Consulting dated 03/16/22 passed at 42.0%. No further modifications have been proposed on the existing tower since these analyses.

The existing and proposed installation consist of the following EPA and weight:

Scope	EPA Per sector (sf)	Ka	EPA * Ka * 3 Total (sf)	Weight No Ice Total (lb)
Current Configuration	34.4	0.8	82.5	1,255
Proposed Configuration	33.5	0.8	80.3	1,166
(3) Sector Total Difference			<b>-2.2</b>	<b>-89</b>

Dewberry Engineers, Inc. (Dewberry) has reviewed the latest RFDS, dated 04/10/2023, provided by Verizon Wireless and has determined, with the use of the 2022 CT State Building Code and TIA-222-Rev H, that the previous Structural Analysis by Dewberry & previous Mount Analysis by Maser Consulting is still valid. The proposed installation is an overall decrease in surface area EPA and equipment weight. The tower capacity of 83.8% remains and does not require a further rigorous structural analysis. This assessment assumes the new antennas, RRHs, Surge Arrestors, and associated equipment are installed per the latest Construction Drawings by Dewberry.

Our assessment is based on the assumption that the existing tower was constructed in conformance with all applicable state and local building codes. If during construction any damage or deterioration is noticed, Dewberry is to be notified to assess any deviation from the assumed condition. Any alteration in equipment loading described above and on the associated plans will void any conclusions expressed herein and will require further analysis and design. No structural qualification is made or implied by this structural letter for existing structural members not supporting the proposed installation.

If you have any questions, please do not hesitate to call me at 617-531-0744.

Sincerely,  
**Dewberry Engineers Inc.**



Benjamin Revette, P.E.  
 Associate Vice President

05/12/2023



# **ATTACHMENT 5**

Town of West Hartford, CT  
**Tax Assessor Map**



Trunk  
Snow  
Snow-40  
Sidewalk  
Other Street  
Other  
Other Street  
Other  
Other  
Other

Map Revised June 2020  
**APPGeo**  
CT Form Price 04/19/20

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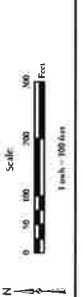
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### 20 ISHAM ROAD

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

**Location** 20 ISHAM ROAD

**Mblu** F9/ 2901/ 20/ /

**Parcel ID** 2901 2 20 0001

**Owner** M + R GASSNER FAMILY II LLC

**Assessment** \$1,526,910

**Appraisal** \$2,181,300

**Vision Id #** 10289

**Building Count** 1

#### Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2020	\$932,700	\$1,248,600	\$2,181,300
Assessment			
Valuation Year	Improvements	Land	Total
2020	\$652,890	\$874,020	\$1,526,910

#### Owner of Record

**Owner** M + R GASSNER FAMILY II LLC

**Sale Price** \$0

**Co-Owner**

**Certificate**

**Address** PO BOX 354  
MILLDALE, CT 06467

**Book & Page** 2394/0221

**Sale Date** 12/31/1998

**Instrument** U

# **ATTACHMENT 6**

**Certificate of Mailing — Firm**



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	TOTAL NO. of Pieces Received at Post Office™  3	Affix Stamp Here Postmark with Date of Receipt.  
	Postmaster, per (name of receiving employee)  		

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.	M&R Gassner Family LLC P.O. Box 354 West Hartford, CT 06467				
4.					
5.					
6.					