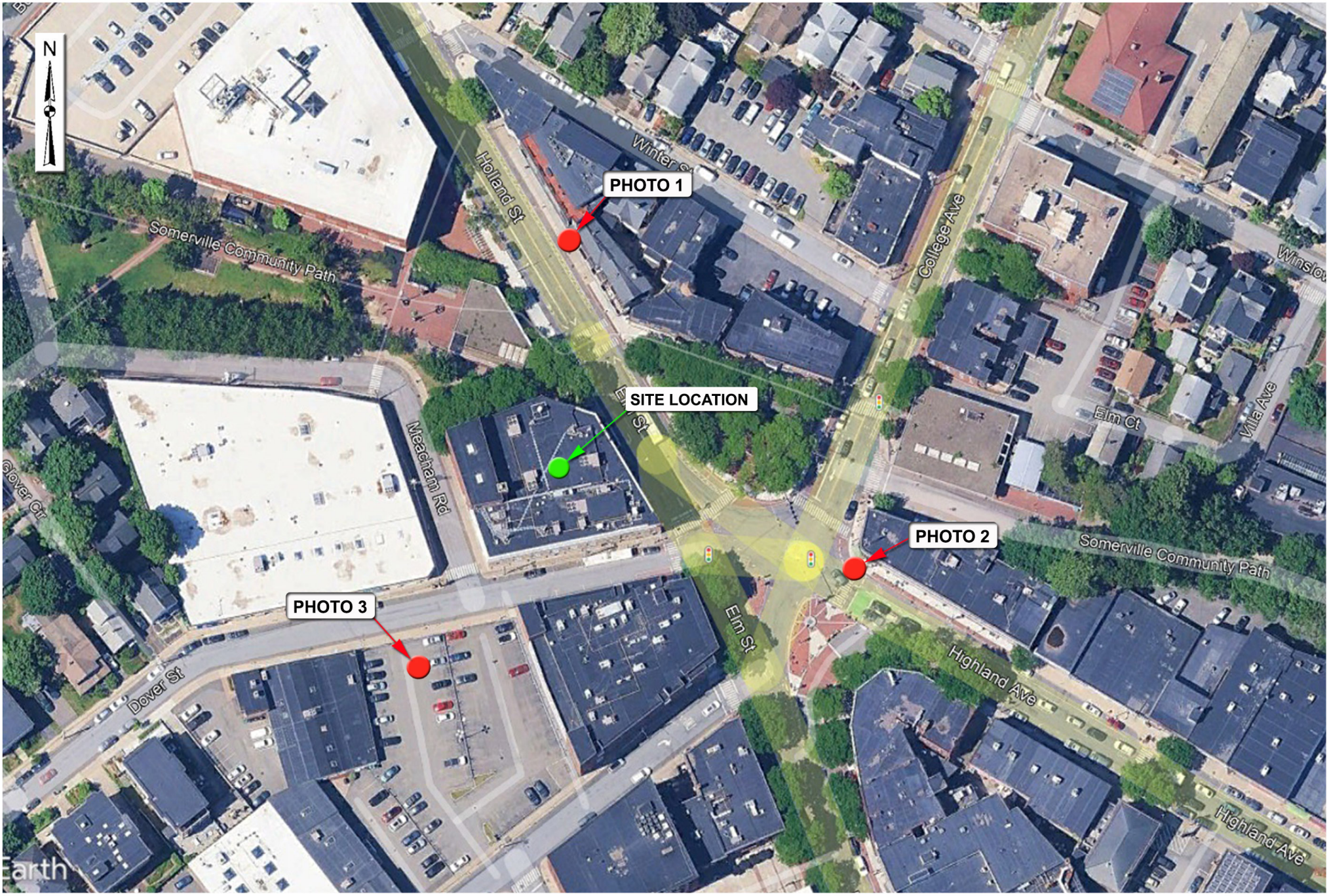
Simulations Based On Rev-2 Construction Drawings By Dewberry Engineers Inc.
Photos Taken On: 07/29/25.

verizon

Somerville 7 MA
49 Davis Square
Somervielle, MA 02144

Dewberry



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Somerville 7 MA
49 Davis Square
Somervielle, MA 02144
(Page 2 of 8)

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Existing View

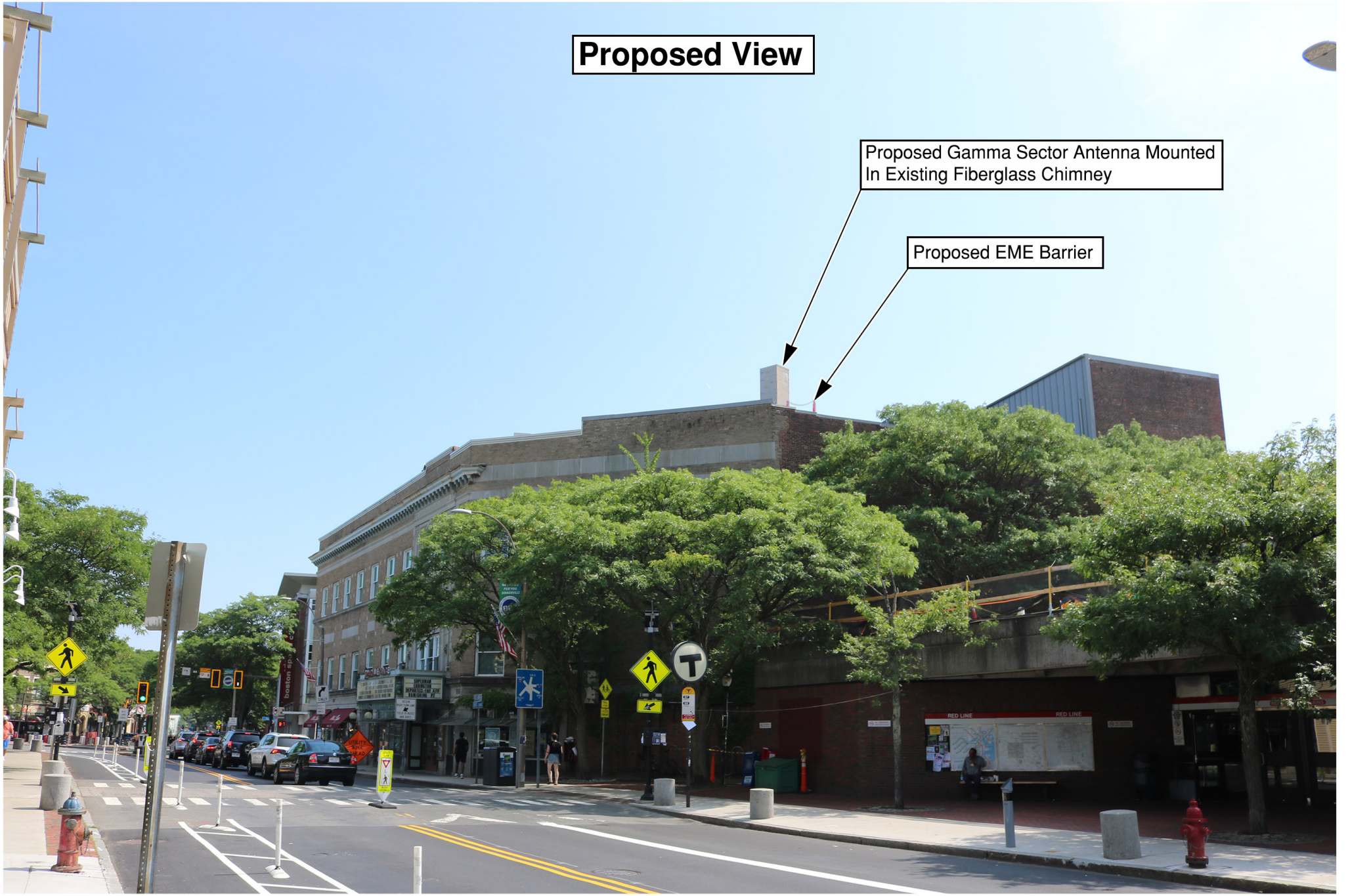
verizon

Somerville 7 MA

Photo 1A

View Facing South From Holland Street

Dewberry



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Somerville 7 MA

Photo 1B

View Facing South From Holland Street

(Page 4 of 8)

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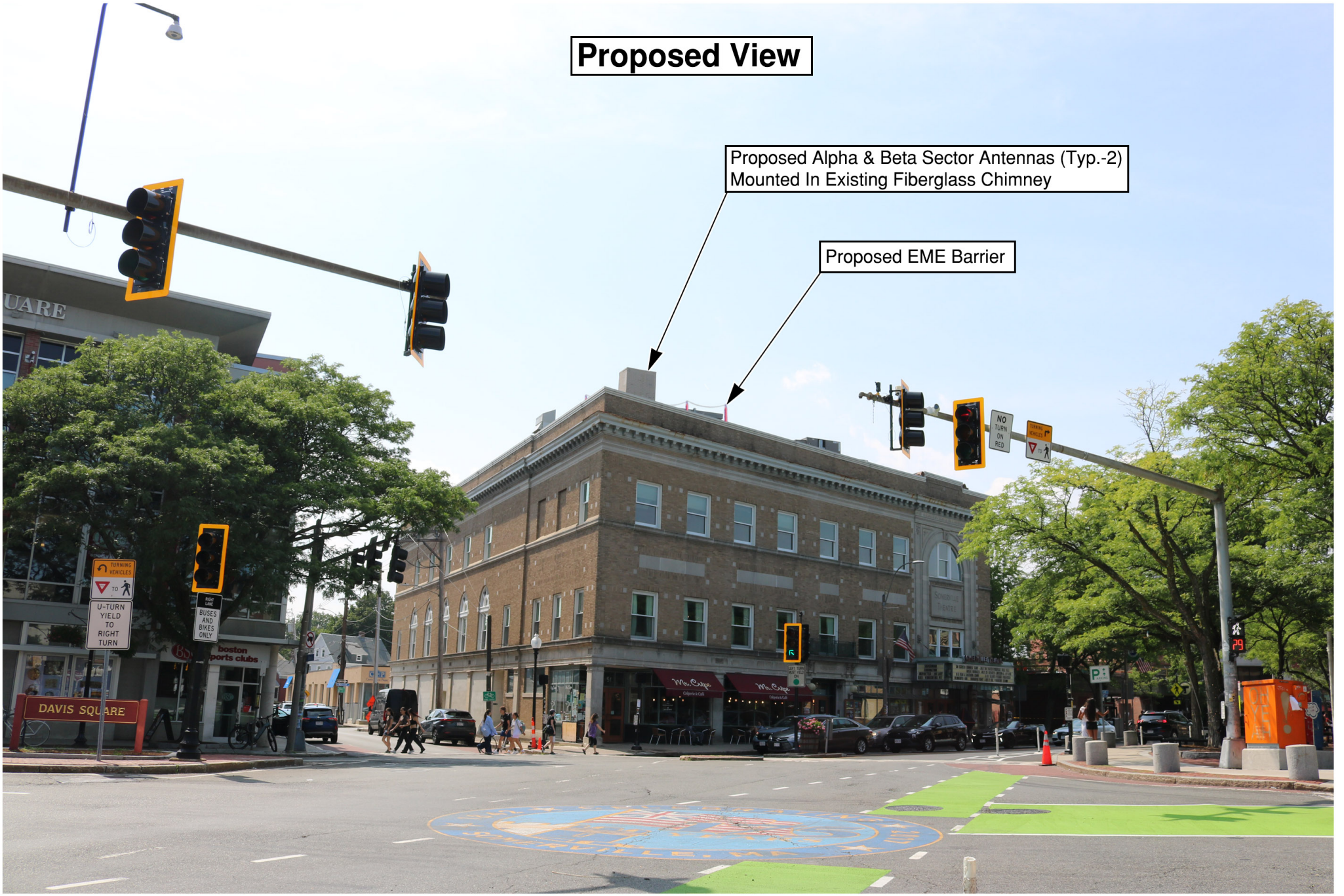
Somerville 7 MA

Photo 2A

View Facing Northwest From Highland Avenue

Dewberry



verizon

Somerville 7 MA

Photo 2B

View Facing Northwest From Highland Avenue

(Page 6 of 8)

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Somerville 7 MA

Photo 3A

View Facing Northeast Off Of Dover Street

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Somerville 7 MA

Photo 3B

View Facing Northeast Off Of Dover Street

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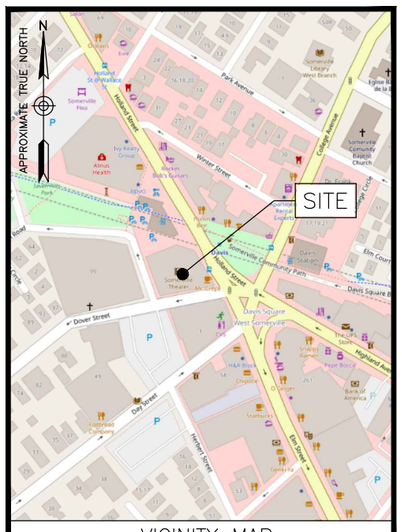
SOMERVILLE 7 MA

49 DAVIS SQUARE
SOMERVILLE, MA 02144

FUZE PROJECT ID: 16272470
PSLC: 295712



VICINITY MAP N.T.S.

ENGINEER:
DEWBERRY ENGINEERS INC.
99 SUMMER ST.
SUITE 700
BOSTON, MA 02110

PHONE # (617) 531-0800

CONTACT: BENJAMIN REVETTE, PE

CONSTRUCTION:
VERIZON WIRELESS
51 ALDER STREET
MEDWAY, MA 02053

BUILDING OWNER:
B F SOMERVILLE PROPERTIES LLC
220 MASSACHUSETTS AVE
ARLINGTON, MA 02474

COORDINATES*:
LATITUDE: 42° 23' 47.28" (42.396466) N
LONGITUDE: 71° 7' 23.52" (71.1232) W
*PER RFDS

GROUND ELEVATION*:
23.8'±
*PER FAA2C

PROJECT INFORMATION

PMI ACCESSED AT:	HTTPS://PMI.VZWSMART.COM
SMART TOOL VENDOR PROJECT NUMBER:	10267071
VZW LOCATION CODE (PSLC):	295712
FUZE NUMBER:	16272470
MOUNT MODIFICATION REQUIRED?	NO

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 ANTENNAS (1/SECTOR) FROM WITHIN EXISTING FIBERGLASS CHIMNEYS
- INSTALL (3) NEW PANEL ANTENNAS WITHIN EXISTING FIBERGLASS CHIMNEYS
- REMOVE (2) EXISTING DIPLEXERS & INSTALL (6) NEW DIPLEXERS & (3) RRH'S ON EXISTING BALLAST FRAMES
- CAP & WEATHERPROOF UNUSED PORTS/CONNECTORS.
- REMOVE ALL EXISTING CMU BALLAST FRAME ALPHA/BETA SECTOR ANTENNA FRAMES

NOTE:

1. SCOPE OF WORK BASED ON ANTENNA RFD FOR SOMERVILLE_7_MA DATED 09/23/24. 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	PROPOSED ROOF PLAN
C-2	EAST ELEVATION
C-3	ANTENNA SECTOR PLANS
C-4	CONSTRUCTION DETAILS & EQUIPMENT CONFIGURATION
C-5	ALPHA & BETA SECTOR FALSE CHIMNEY DETAILS
C-6	GAMMA SECTOR FALSE CHIMNEY DETAILS
RF-1	EME BARRIER PLAN

SHEET INDEX

VERIZON WIRELESS
51 ALDER STREET
MEDWAY, MA 02053

SOMERVILLE 7 MA

CONSTRUCTION DRAWINGS		
2	07/29/25	FOR SUBMITTAL
1	02/17/25	FOR SUBMITTAL
0	04/22/22	FOR SUBMITTAL
A	03/29/22	FOR REVIEW

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SUITE 700
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FAX: 617.695.3310

COMMONWEALTH OF MASSACHUSETTS
BENJAMIN B. REVETTE
CIVIL
No. 49220
REGISTERED PROFESSIONAL ENGINEER

DRAWN BY: 07/29/2025 JG
REVIEWED BY: CDH
CHECKED BY: BBR
PROJECT NUMBER: 50121487
JOB NUMBER: 50185523
SITE NUMBER
295712
SITE ADDRESS
49 DAVIS SQUARE
SOMERVILLE, MA 02144
SHEET TITLE
TITLE SHEET
SHEET NUMBER
T-1

GENERAL CONSTRUCTION NOTES :

1. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, AND COMPLY WITH VERIZON WIRELESS SPECIFICATIONS.
2. CONTRACTOR SHALL CONTACT "DIG SAFE" (888-344-7233) FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
4. 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.
5. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
6. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
7. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
8. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
9. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
10. 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.
11. EACH CONTRACTOR SHALL COOPERATE WITH THE OWNER'S REPRESENTATIVE, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
12. 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.
13. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
14. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR WILL NOTIFY ENGINEER, VERIZON WIRELESS PROJECT CONSTRUCTION MANAGER, AND LANDLORD IMMEDIATELY.
15. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
16. 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.
17. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
18. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH LANDLORD AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
19. CONTRACTOR SHALL FURNISH VERIZON WIRELESS WITH THREE AS-BUILT SETS OF DRAWINGS UPON COMPLETION OF WORK.
20. 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.
21. 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.
22. 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.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH VERIZON WIRELESS SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. 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.
26. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL VERIFY ALL EQUIPMENT TO BE PROVIDED BY VERIZON WIRELESS FOR INSTALLATION BY CONTRACTOR.
27. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO VERIZON WIRELESS SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
28. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
29. 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.
30. 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.
31. SEAL PENETRATIONS THROUGH FIRE RATED AREAS WITH UL LISTED D FIRE CODE APPROVED MATERIALS.
32. REPAIR ANY DAMAGE DURING CONSTRUCTION TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE CONSTRUCTION MANAGER AND LANDLORD.
33. ALL DISRUPTIVE WORK AND WORK WITHIN TENANT SPACES TO BE COORDINATED WITH BUILDING REPRESENTATIVE.

CODE SPECIFICATIONS:

1. ALL WORK SHALL COMPLY WITH THE FOLLOWING APPLICABLE CODES:

   MASSACHUSETTS STATE BUILDING CODE, 10TH EDITION, CONSISTENT WITH THE FOLLOWING CODES:
   2021 INTERNATIONAL RESIDENTIAL CODE (IRC)
   2021 INTERNATIONAL BUILDING CODE (IBC)
   2021 INTERNATIONAL EXISTING BUILDING CODE (IEBC)
   2023 NATIONAL ELECTRICAL CODE (NEC)

   IN THE EVENT OF CONFLICT, THE MOST RESTRICTIVE CODE SHALL PREVAIL.
2. ALL STRUCTURAL WORK TO BE DONE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL, 13TH EDITION (AISC 13TH ED.)
3. 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.
4. ALL REINFORCING STEEL WORK TO BE DONE IN ACCORDANCE WITH THE (ACI 315) MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES.

GROUNDING NOTES:

1. GROUNDING SHALL COMPLY WITH NEC ART. 250.
2. GROUNDING CONDUCTORS SHALL BE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR INDOOR USE.
3. 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.
4. 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. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY.
5. CONNECTIONS TO GROUNDING BAR SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
6. TEST COMPLETED GROUNDING SYSTEM AND RECORD RESISTANCE VALUES FOR PROJECT CLOSE-OUT DOCUMENTATION. GROUND RESISTANCE SHALL NOT EXCEED 5 OHMS.
7. 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:

1. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
2. STRUCTURAL STEEL ROLLED SHAPES, PLATES, AND BARS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:

ASTM A-992, GRADE 50	ALL W SHAPES, UNLESS NOTED OR A992 OTHERWISE.
ASTM A-36	ALL OTHER ROLLED SHAPES, PLATES AND BARS UNLESS NOTED OTHERWISE.
ASTM A-500, GRADE B	HSS SECTION (SQUARE, RECTANGULAR, ROUND)
ASTM A-325, TYPE SC OR N	ALL BOLTS FOR CONNECTING STRUCTURAL MEMBERS.
F1554, GRADE 36	ALL ANCHORS BOLTS, UNLESS NOTED OTHERWISE.
ASTM A-53, GRADE B	STEEL PIPE

3. 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.
4. 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.
5. DO NOT DRILL HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
6. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. GALVANIZED ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.
7. USE PRECAUTIONS & PROCEDURES PER AWS D1.1 WHEN WELDING GALVANIZED METALS.
8. 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.
9. CONNECTION DESIGN BY FABRICATOR WILL BE SUBJECT TO REVIEW AND APPROVAL BY ENGINEER.
10. 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, MARS, 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.
11. ALL WELDED COMPONENTS TO BE SHOP WELDED PRIOR TO INSTALLATION. NO WELDING ACTIVITIES IS PERMITTED DURING INSTALLATION OF PROPOSED EQUIPMENT5 AND/OR HARDWARE ON SITE.

verizon

VERIZON WIRELESS
51 ALDER STREET
MEDWAY, MA 02053

SOMERVILLE 7 MA

CONSTRUCTION DRAWINGS		
2	07/29/25	FOR SUBMITTAL
1	02/17/25	FOR SUBMITTAL
0	04/22/22	FOR SUBMITTAL
A	03/29/22	FOR REVIEW

Dewberry®
Dewberry Engineers Inc.
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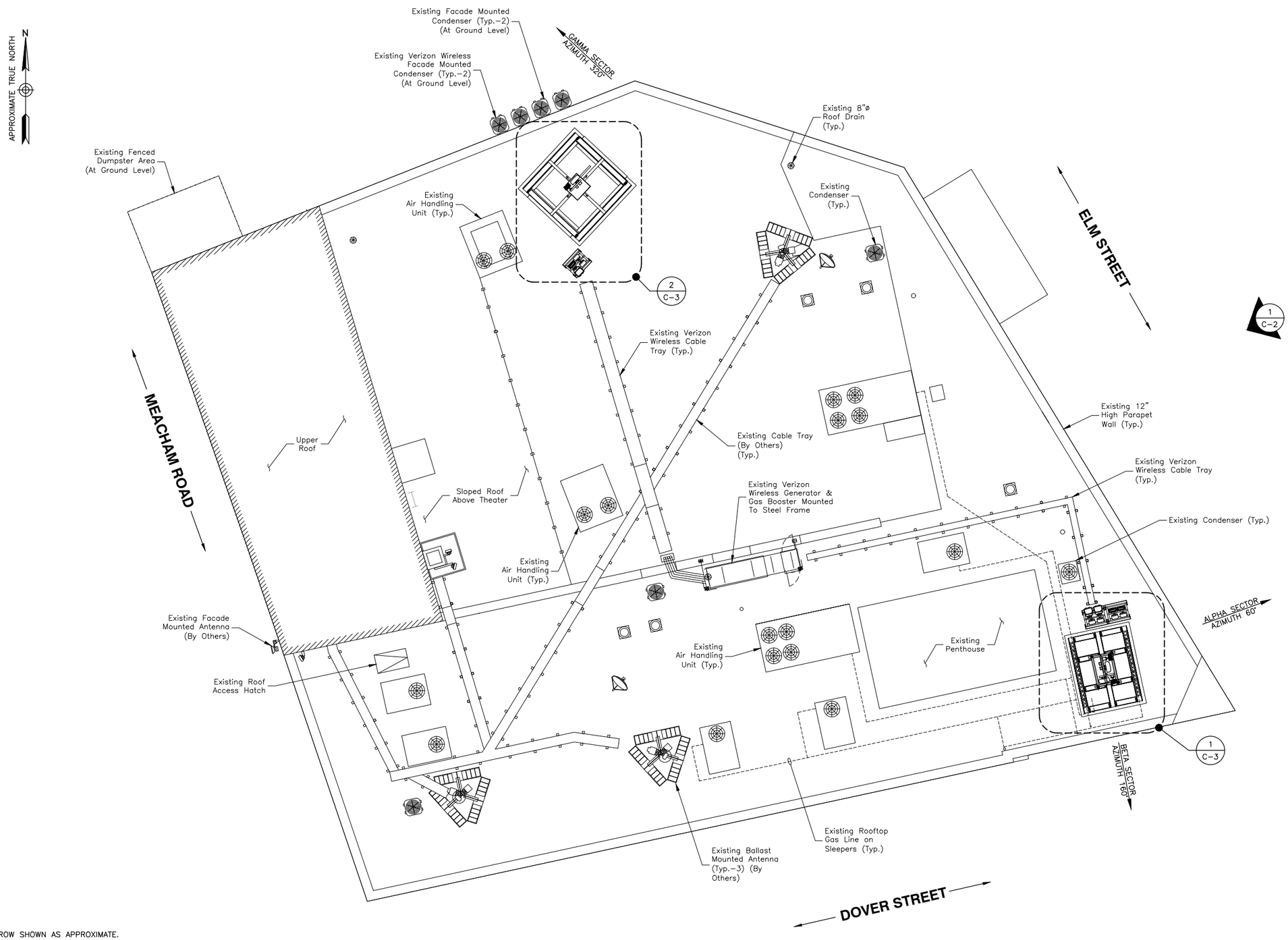
FAX: 617.695.3310

COMMONWEALTH OF MASSACHUSETTS
BENJAMIN B. REVETTE
CIVIL
No. 49220
REGISTERED PROFESSIONAL ENGINEER

DRAWN BY: 07/29/2025 JG
REVIEWED BY: CDH
CHECKED BY: BBR
PROJECT NUMBER: 50121487
JOB NUMBER: 50185523
SITE NUMBER
295712
SITE ADDRESS
49 DAVIS SQUARE
SOMERVILLE, MA 02144
SHEET TITLE
GENERAL NOTES
SHEET NUMBER
GN-1



PROPOSED ROOF PLAN

1

SCALE: 1/16"=1' FOR 11"x17"
1/8"=1' FOR 22"x34"

0' 4' 8' 16'

SITE NOTES:

1. NORTH ARROW SHOWN AS APPROXIMATE.
2. SOME EXISTING AND PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
3. INSTALL ALL EQUIPMENT PER MANUFACTURER RECOMMENDATIONS PER MOUNT ANALYSIS BY NB+C 12/10/24 & STRUCTURAL ANALYSIS BY DEWBERRY ENGINEERS DATED 02/04/25.
4. PLANS BASED ON DRAWINGS BY DEWBERRY ENGINEERS INC. DATED 06/11/21, AND SITE VISIT BY DEWBERRY ENGINEERS INC. ON 02/17/22.

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51 ALDER STREET
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PROJECT NUMBER: 50121487
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SITE NUMBER

295712

SITE ADDRESS

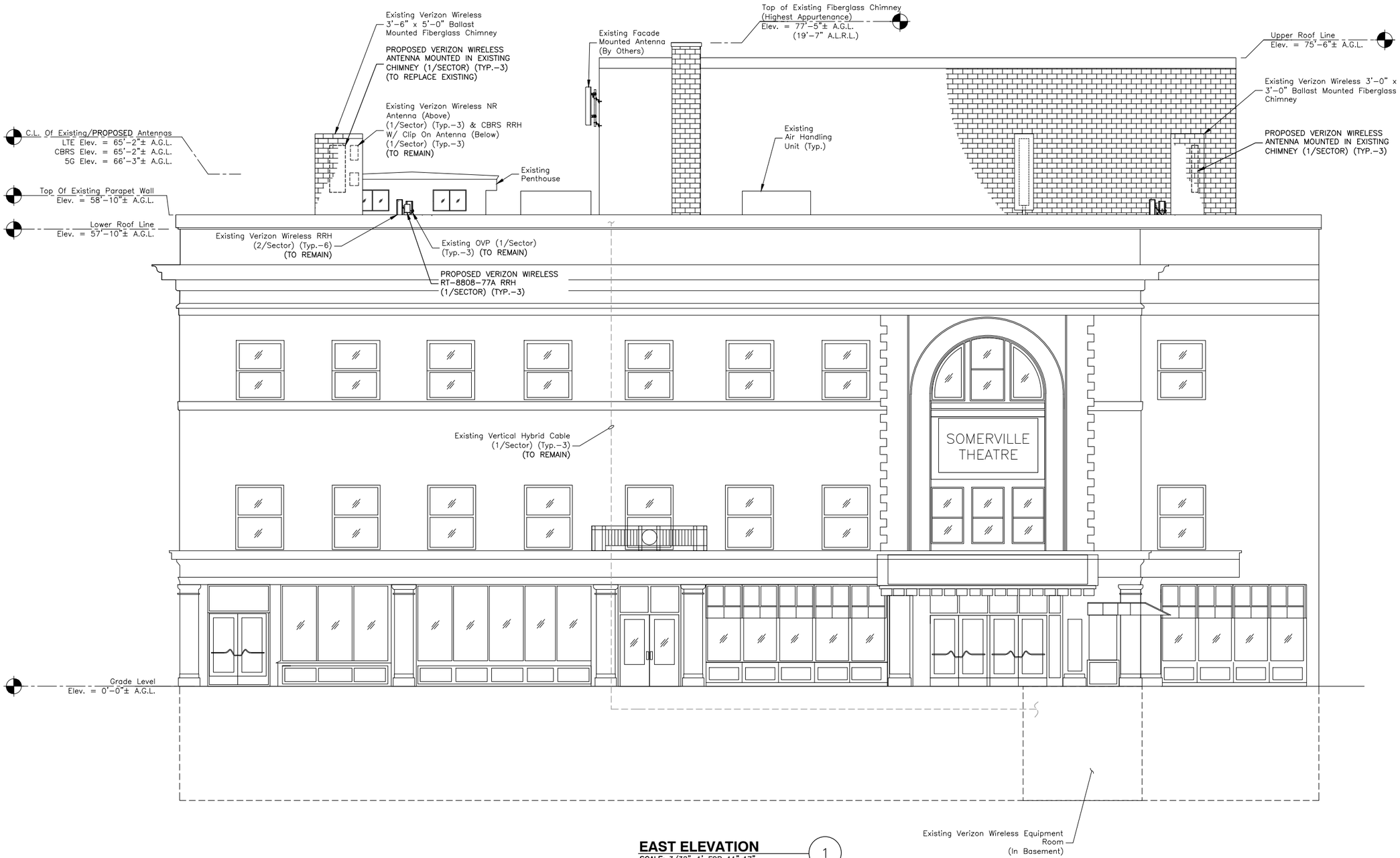
49 DAVIS SQUARE
SOMERVILLE, MA 02144

SHEET TITLE

PROPOSED
ROOF PLAN

SHEET NUMBER

C-1



EAST ELEVATION

SCALE: 3/32"=1' FOR 11"x17"
3/16"=1' FOR 22"x34"

1

0' 4' 8' 12'

NOTES:

1. ELEVATION SHOWN AS APPROXIMATE.
2. SOME EXISTING AND PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
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5. A.G.L. = ABOVE GRADE LEVEL
   C.L. = CENTERLINE

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VERIZON WIRELESS
51 ALDER STREET
MEDWAY, MA 02053

SOMERVILLE 7 MA

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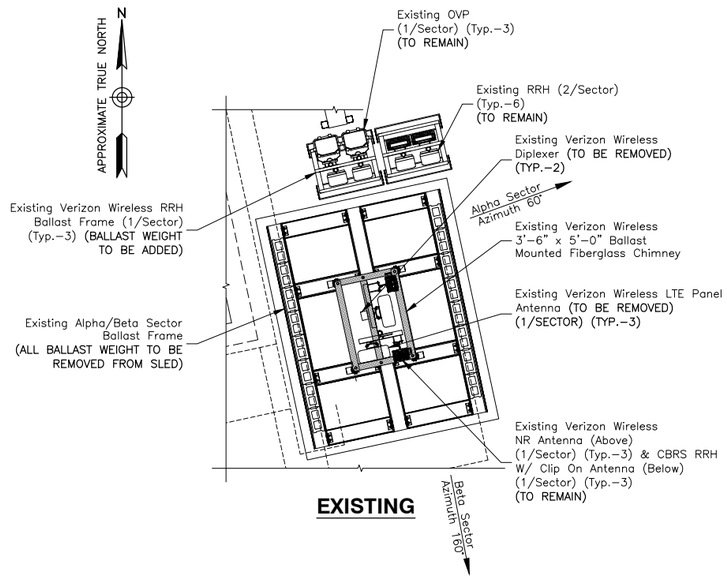
JOB NUMBER: 50185523
SITE NUMBER
295712
SITE ADDRESS
49 DAVIS SQUARE
SOMERVILLE, MA 02144
SHEET TITLE
EAST
ELEVATION
SHEET NUMBER
C-2



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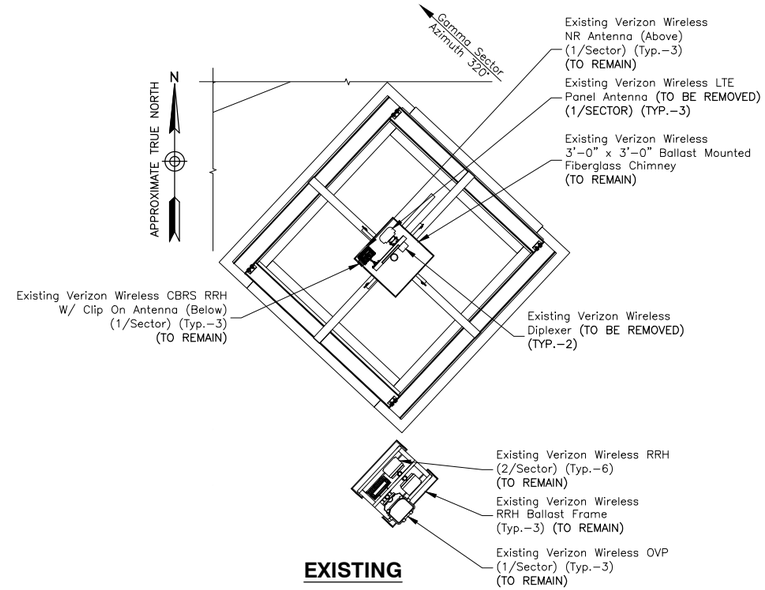

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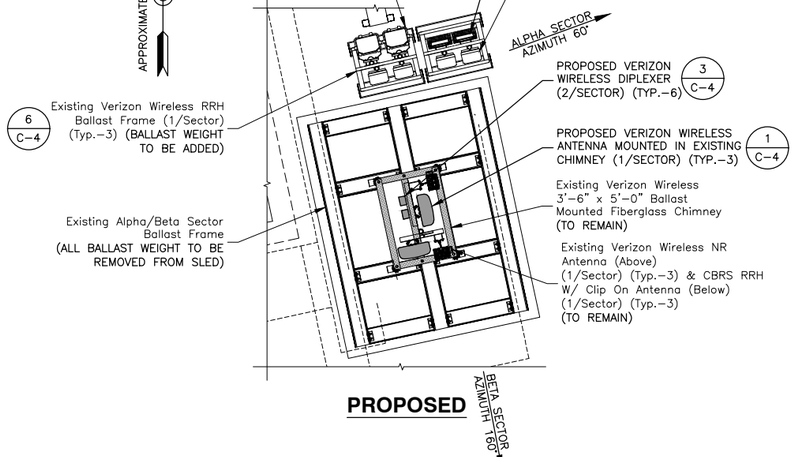
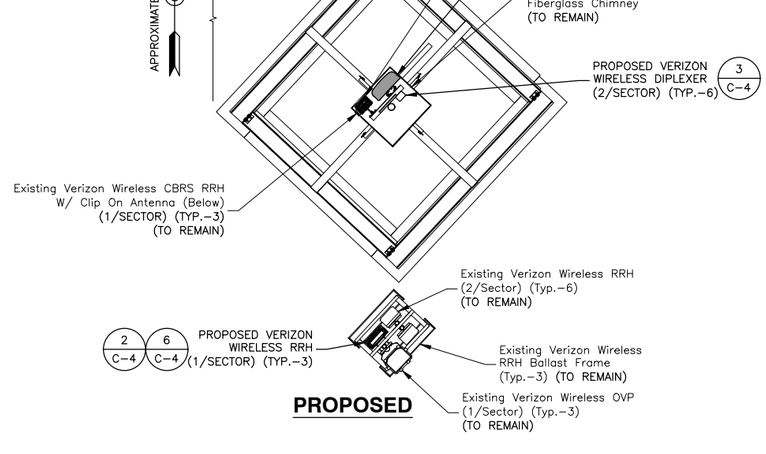


PROPOSED

ALPHA & BETA SECTOR PLAN 1

SCALE: 1/8"=1' FOR 11"x17"
1/4"=1' FOR 22"x34"

0' 2' 4' 8'



PROPOSED

GAMMA SECTOR PLAN 2

SCALE: 1/16"=1' FOR 11"x17"
1/8"=1' FOR 22"x34"

0' 4' 8' 16'

SITE NOTES:

1. NORTH ARROW SHOWN AS APPROXIMATE.
2. SOME EXISTING AND PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
3. INSTALL ALL EQUIPMENT PER MANUFACTURER RECOMMENDATIONS PER MOUNT ANALYSIS BY NB+C 12/10/24 & STRUCTURAL ANALYSIS BY DEWBERRY ENGINEERS DATED 02/04/25.
4. PLANS BASED ON DRAWINGS BY DEWBERRY ENGINEERS INC. DATED 06/11/21, AND SITE VISIT BY DEWBERRY ENGINEERS INC. ON 02/17/22.

verizon

VERIZON WIRELESS
51 ALDER STREET
MEDWAY, MA 02053

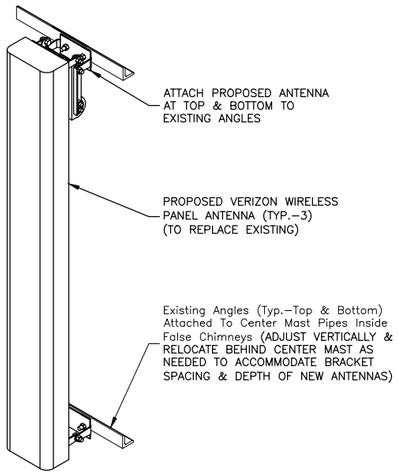
SOMERVILLE 7 MA

CONSTRUCTION DRAWINGS		
2	07/29/25	FOR SUBMITTAL
1	02/17/25	FOR SUBMITTAL
0	04/22/22	FOR SUBMITTAL
A	03/29/22	FOR REVIEW

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

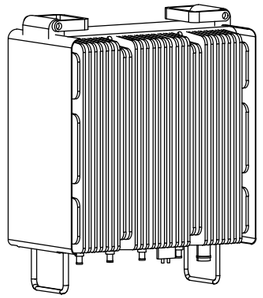
COMMONWEALTH OF MASSACHUSETTS
BENJAMIN B. REVETTE
CIVIL
No. 49220
REGISTERED PROFESSIONAL ENGINEER

DRAWN BY: 07/29/2025 JG
REVIEWED BY: CDH
CHECKED BY: BBR
PROJECT NUMBER: 50121487
JOB NUMBER: 50185523
SITE NUMBER
295712
SITE ADDRESS
49 DAVIS SQUARE
SOMERVILLE, MA 02144
SHEET TITLE
ANTENNA SECTOR PLANS
SHEET NUMBER
C–3



MANUFACTURER:	JMA
PART NUMBER:	MX16FIT465-02
DIMENSIONS:	59.0"H X 20.0"W X 8.0"D
WEIGHT:	53.9 LBS

PANEL ANTENNA DETAIL 1
SCALE: N.T.S

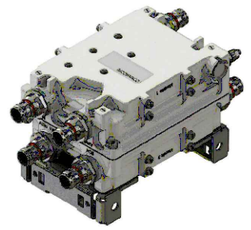


PROPOSED 5G	
MANUFACTURER:	SAMSUNG
MODEL:	5G RRH RT-8808-77A
DIMENSIONS:	15.0"H X 15.0"W X 6.8"D
WEIGHT:	59.5 LBS

NOTE:

1. CONTRACTOR TO VERIFY WITH CONSTRUCTION MANAGER FOR FINAL MANUFACTURER SPECIFICATIONS PRIOR TO CONSTRUCTION.

REMOTE UNIT DETAIL 2
SCALE: N.T.S.

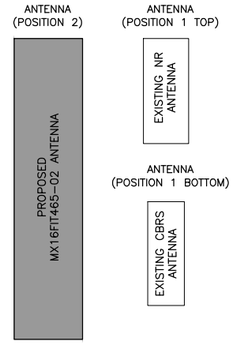


MANUFACTURER:	COMMSCOPE
MODEL:	CBC1923T-DS-43
DIMENSIONS:	6.95H X 5.52"W X 3.98"D
WEIGHT:	8.38 LBS

NOTE:

1. CONTRACTOR TO VERIFY WITH CONSTRUCTION MANAGER FOR FINAL MANUFACTURER SPECIFICATIONS PRIOR TO CONSTRUCTION.

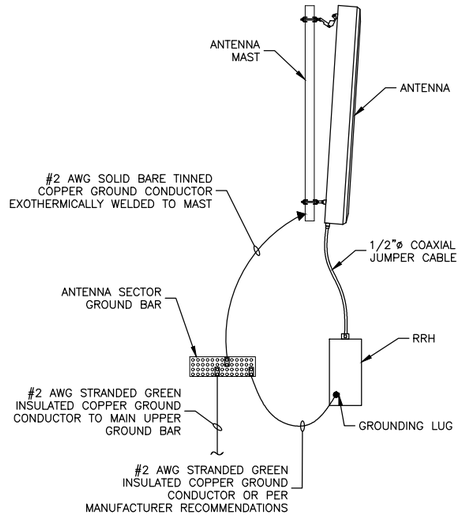
DIPLEXER DETAIL 3
SCALE: N.T.S.



NOTES:

1. AS VIEWED STANDING BEHIND THE ANTENNAS.
2. ANTENNA CONFIGURATION BASED ON ANTENNA REC DATED 09/23/24. VERIFY SCOPE OF WORK WITH FINAL RFDS PRIOR TO CONSTRUCTION.

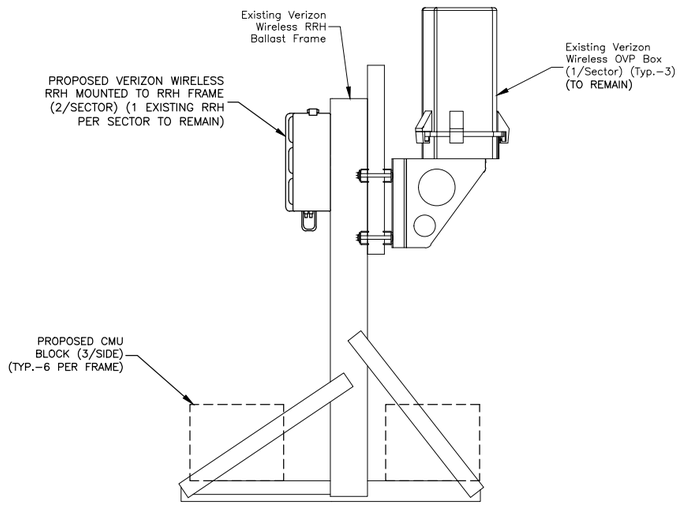
ANTENNA CONFIGURATION 4
SCALE: N.T.S.



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 & MANUFACTURER'S RECOMMENDATIONS.

TYPICAL ANTENNA/RRH GROUNDING DETAIL 5
SCALE: N.T.S



CMU BLOCK WEIGHT
8"x8"x16" HOLLOW CMU BLOCK = 37 LB EACH 222 LB TOTAL

NOTES:

1. INSTALL ALL EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS.
2. ALL EQUIPMENT SHALL BE GROUNDED PER VERIZON WIRELESS STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.
3. DETAIL IS SCHEMATIC AND TYPICAL FOR ALL SECTORS.
4. ALL MOUNTING HARDWARE TO BE GALVANIZED.

OVP MOUNTING DETAIL 6
SCALE: N.T.S.

FINAL EQUIPMENT CONFIGURATION

SECTOR	POSITION	TECHNOLOGY	VENDOR	ANTENNA MODEL	CENTERLINE	AZIMUTH	RRH (QTY./MODEL)	OVP	HYBRID CABLE TYPE	FEED LINE LENGTH*
ALPHA	A1	5G	SAMSUNG	(1) (E) VZ-AT1K01	66'-3"±	60°	(1) (E) B2/B66A RRH-BR049	(E) (1) OVP-6	(E) (1) LI 6X12 (TO REMAIN)	225'
		LTE		(1) (E) XXDWMM-12.5-65-8T-CBRS	65'-2"±		(1) (E) B5/B13 RRH-BR04C			
	A2	5G	JMA	(1) (P) MX16FIT465-02	65'-2"±		(1) (P) RT-8808-77A			
BETA	B1	5G	SAMSUNG	(1) (E) VZ-AT1K01	66'-3"±	160°	(1) (E) B2/B66A RRH-BR049	(E) (1) OVP-6	(E) (1) LI 6X12 (TO REMAIN)	265'
		LTE		(1) (E) XXDWMM-12.5-65-8T-CBRS	65'-2"±		(1) (E) B5/B13 RRH-BR04C			
	B2	5G	JMA	(1) (P) MX16FIT465-02	65'-2"±		(1) (P) RT-8808-77A			
GAMMA	G1	5G	SAMSUNG	(1) (E) VZ-AT1K01	66'-3"±	320°	(1) (E) B2/B66A RRH-BR049	(E) (1) OVP-6	(E) (1) LI 6X12 (TO REMAIN)	230'
		LTE		(1) (E) XXDWMM-12.5-65-8T-CBRS	65'-2"±		(1) (E) B5/B13 RRH-BR04C			
	G2	5G	JMA	(1) (P) MX16FIT465-02	65'-2"±		(1) (P) RT-8808-77A			

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

(E) = Existing
(P) = PROPOSED

FINAL EQUIPMENT CONFIGURATION 7
SCALE: N.T.S.

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VERIZON WIRELESS
51 ALDER STREET
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SOMERVILLE 7 MA

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COMMONWEALTH OF MASSACHUSETTS
BENJAMIN B. REVETTE
CIVIL
No. 49220
REGISTERED PROFESSIONAL ENGINEER

DRAWN BY: 07/29/2025 JG
REVIEWED BY: CDH
CHECKED BY: BBR
PROJECT NUMBER: 50121487
JOB NUMBER: 50185523
SITE NUMBER
295712
SITE ADDRESS
49 DAVIS SQUARE
SOMERVILLE, MA 02144
SHEET TITLE
CONSTRUCTION DETAILS & EQUIPMENT CONFIGURATION
SHEET NUMBER
C-4

SITE NOTES:

1. NORTH ARROW SHOWN AS APPROXIMATE.
2. SOME EXISTING AND PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
3. INSTALL ALL EQUIPMENT PER MANUFACTURER RECOMMENDATIONS PER MOUNT ANALYSIS BY NB+C 12/10/24 & STRUCTURAL ANALYSIS BY DEWBERRY ENGINEERS DATED 02/04/25.
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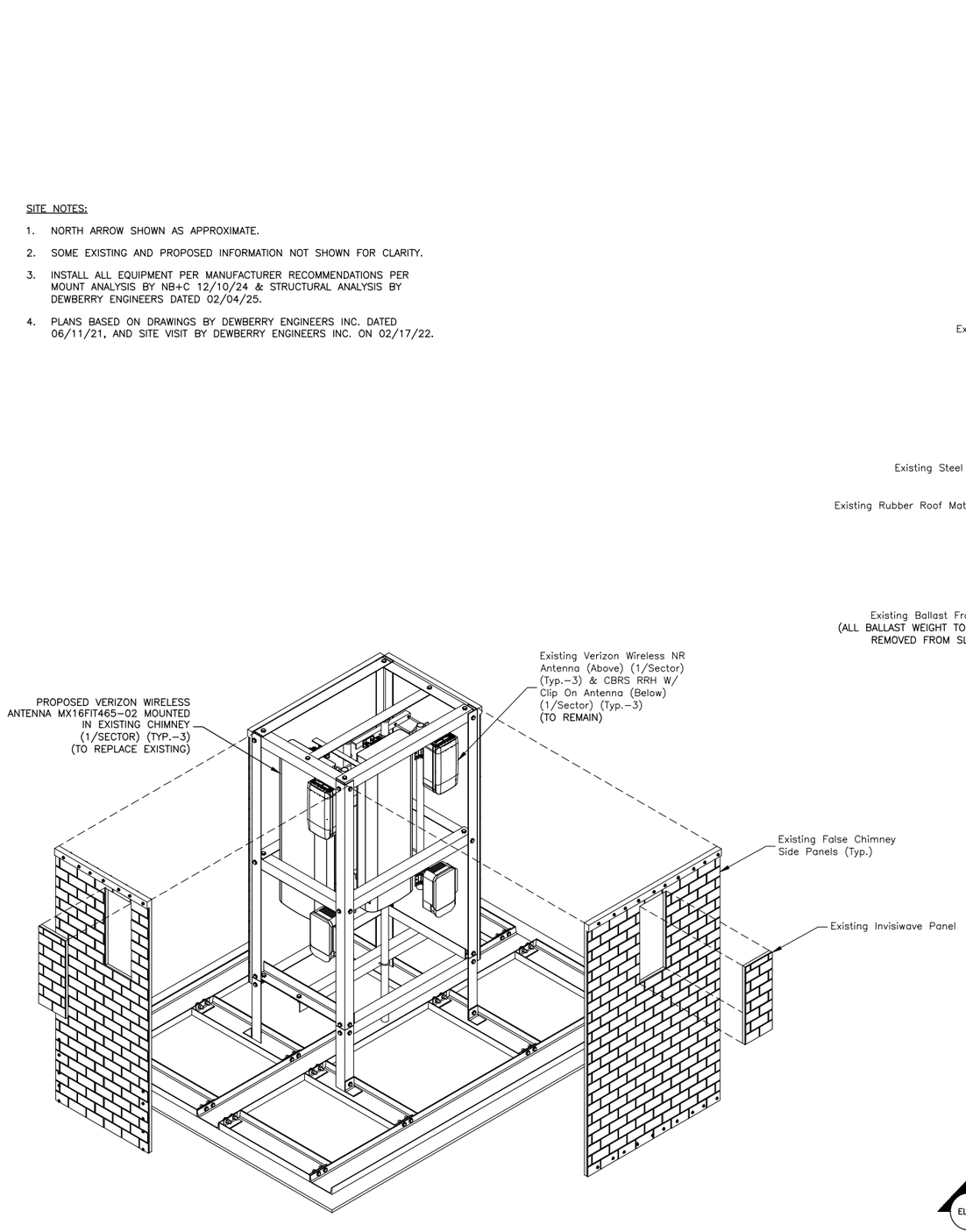
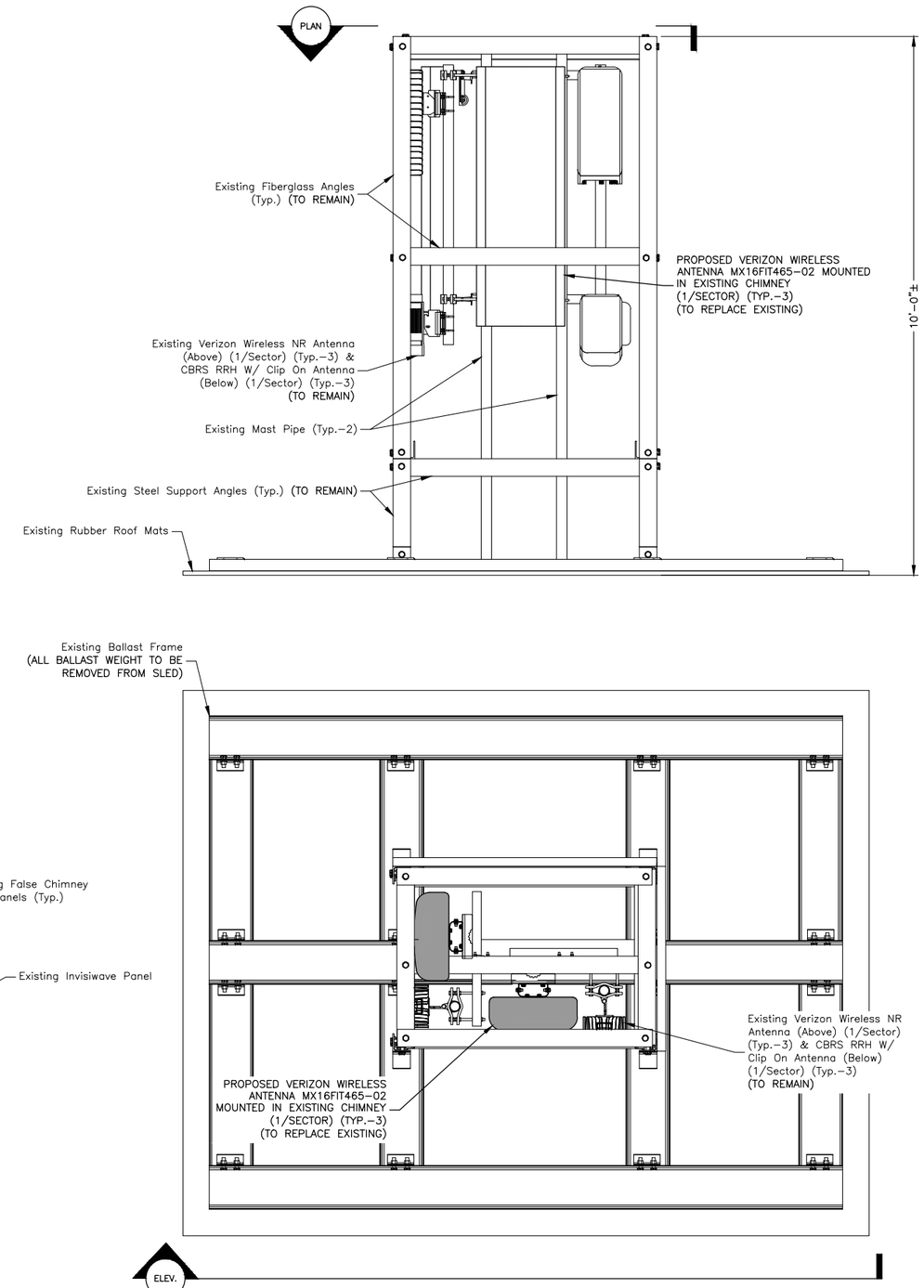


ALPHA & BETA SECTORS FALSE CHIMNEY ISOMETRIC 1

SCALE: N.T.S.

ISO.



FALSE CHIMNEY PLAN & ELEVATION 2

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

0' 1' 2' 3'

verizon

VERIZON WIRELESS
51 ALDER STREET
MEDWAY, MA 02053

SOMERVILLE 7 MA

CONSTRUCTION DRAWINGS		
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0	04/22/22	FOR SUBMITTAL
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COMMONWEALTH OF MASSACHUSETTS
BENJAMIN B. REVETTE
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No. 49220
REGISTERED PROFESSIONAL ENGINEER

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PROJECT NUMBER:	50121487
JOB NUMBER:	50185523
SITE NUMBER	

295712

SITE ADDRESS

49 DAVIS SQUARE
SOMERVILLE, MA 02144

SHEET TITLE

ALPHA & BETA SECTOR FALSE CHIMNEY DETAILS

SHEET NUMBER

C-5

SITE NOTES:

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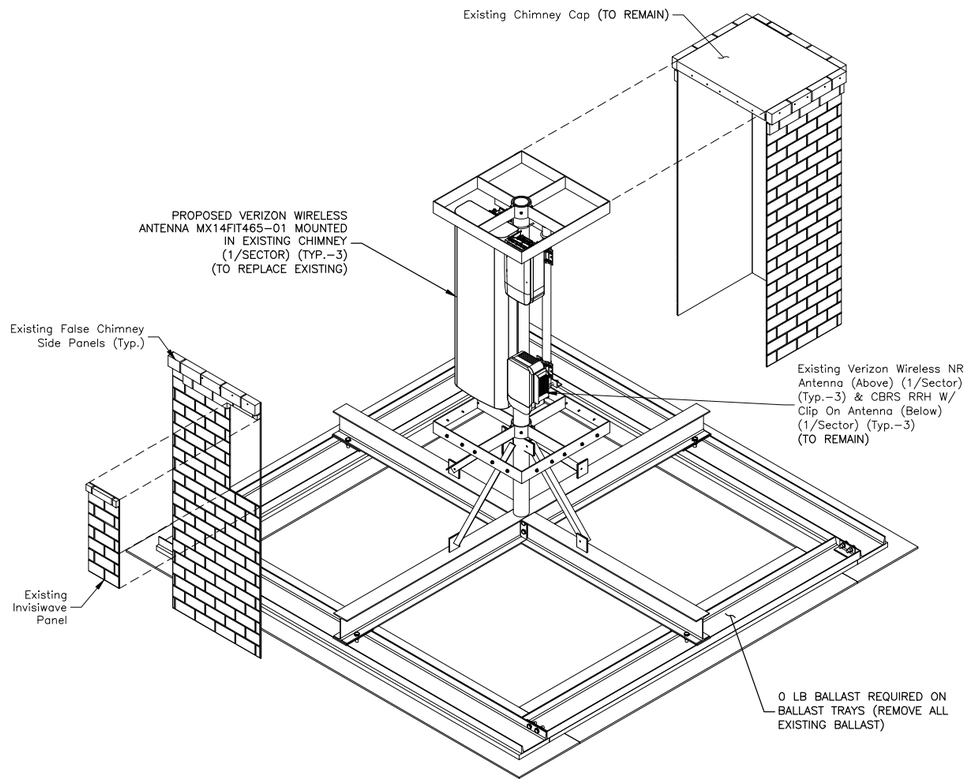
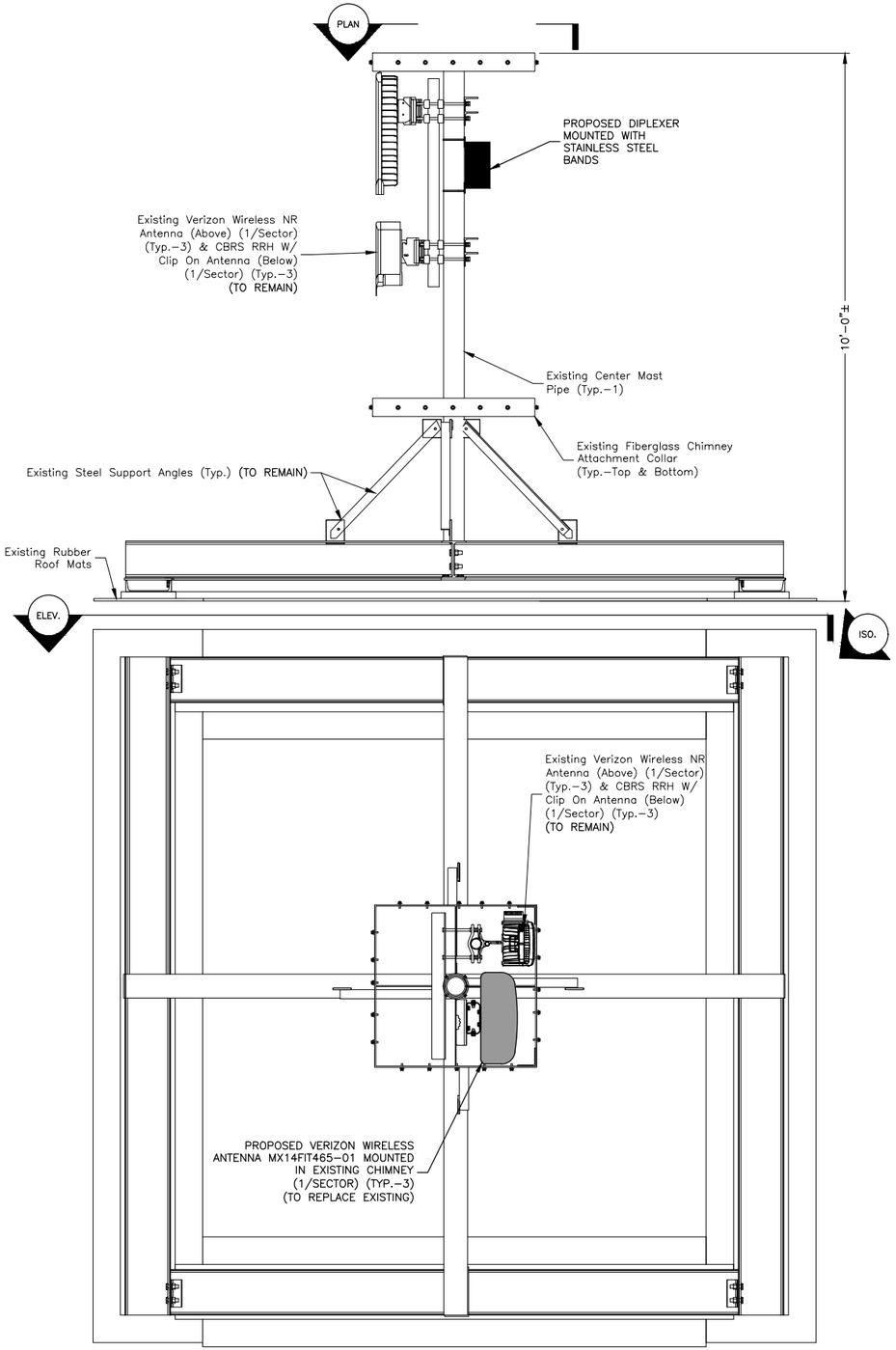


GAMMA SECTOR FALSE CHIMNEY ISOMETRIC 1

SCALE: N.T.S.



FALSE CHIMNEY PLAN & ELEVATION 2

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

0' 1' 2' 3'

verizon

VERIZON WIRELESS
51 ALDER STREET
MEDWAY, MA 02053

SOMERVILLE 7 MA

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COMMONWEALTH OF MASSACHUSETTS
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DRAWN BY: 07/29/2025 JG
REVIEWED BY: CDH
CHECKED BY: BBR
PROJECT NUMBER: 50121487
JOB NUMBER: 50185523
SITE NUMBER

295712

SITE ADDRESS

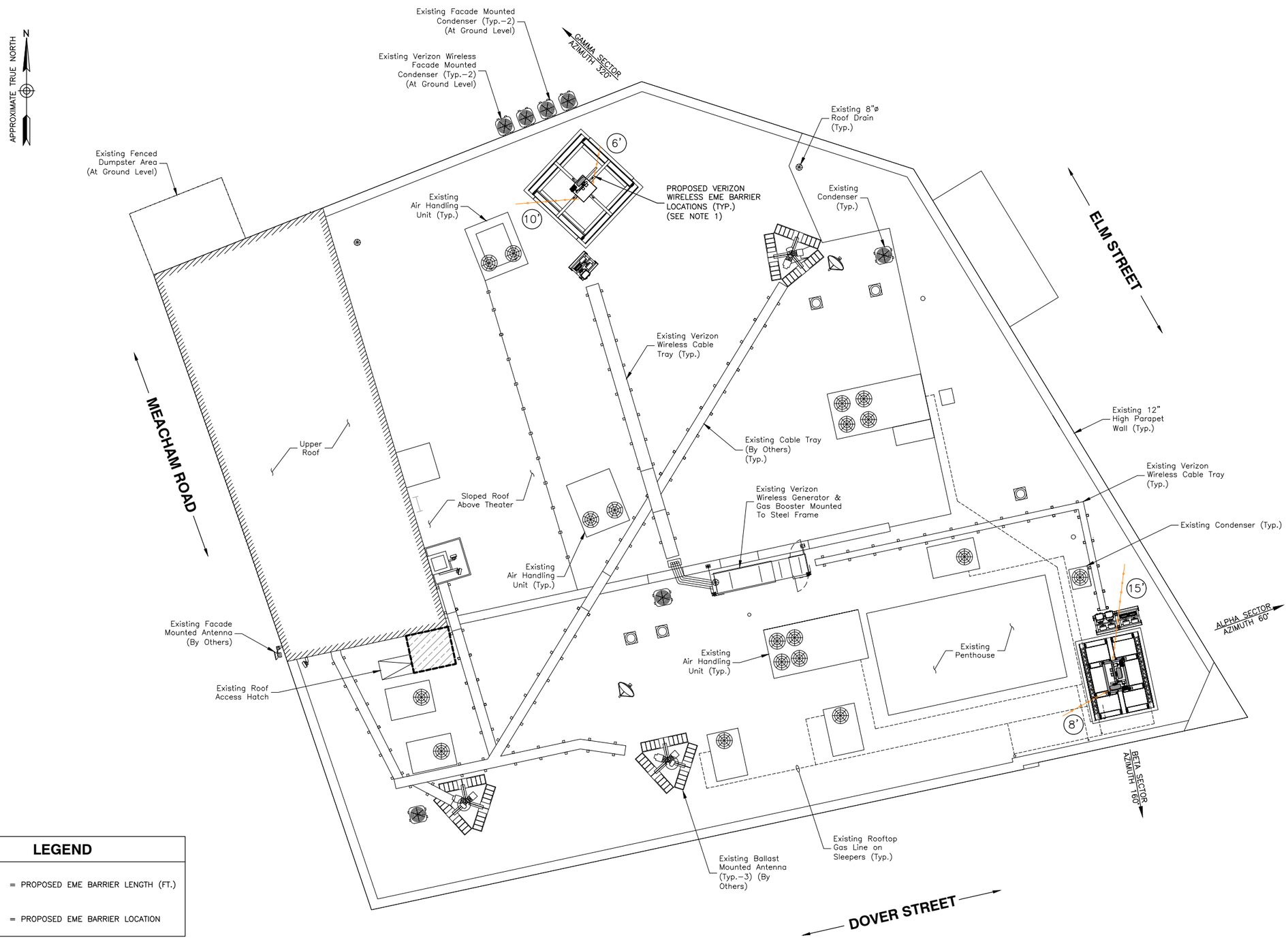
49 DAVIS SQUARE
SOMERVILLE, MA 02144

SHEET TITLE

GAMMA SECTOR FALSE CHIMNEY DETAILS

SHEET NUMBER

C-6



LEGEND

X'	= PROPOSED EME BARRIER LENGTH (FT.)
	= PROPOSED EME BARRIER LOCATION

NOTE:

1. APPROXIMATE BARRIER LOCATIONS BASED ON 'RADIO FREQUENCY – ELECTROMAGNETIC ENERGY (RF–EME) SITE COMPLIANCE REPORT' SITE NAME SOMERVILLE 7 MA BY TELNET, INC. DATED 06/24/25. SEE FULL REPORT FOR SIGNAGE AND BARRIER DETAILS.

EME BARRIER PLAN 1

SCALE: 1/16"=1' FOR 11"x17"
1/8"=1' FOR 22"x34"

0' 4' 8' 16'

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VERIZON WIRELESS
51 ALDER STREET
MEDWAY, MA 02053

SOMERVILLE 7 MA

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SITE NUMBER	

295712

SITE ADDRESS

49 DAVIS SQUARE
SOMERVILLE, MA 02144

SHEET TITLE

EME BARRIER PLAN

SHEET NUMBER

C–7

Radio Frequency - Electromagnetic Energy

(RF-EME) Jurisdictional Report

SOMERVILLE_7_MA - BF Somerville Rooftop
49 Davis Square
Somerville, MA 02144

42°23'47.28"N, 71°7'23.52"W

August 13th, 2025

RE: Verizon Wireless RFE Site/ Jurisdictional Compliance

To Whom It May Concern,

We write to inform you that Verizon Wireless (Verizon) has performed a radio frequency (RF) compliance post-construction evaluation for the above-noted existing antenna. Based on the result of the evaluation, this site is complying with Federal Communications Commission (FCC) regulations if the required mitigations are implemented. The information in this compliance document was prepared by Telnet, Inc (Telnet), an approved Verizon vendor.

The FCC has established safety rules relating to potential RF exposure from cell sites. The rules are codified at 47 C.F.R § 1.1310. The FCC provides guidance on how to ensure compliance with its rules in the FCC Office of Engineering and Technology Bulletin 65 (available at https://transition.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet65/oet65.pdf). The FCC developed the RF standards, known as Maximum Permissible Exposure (MPE) limits, in consultation with numerous other federal agencies, including the Environmental Protection Agency, the Food and Drug Administration, and the Occupational Safety and Health Administration (OSHA). The OSHA provides information on its standards regarding RF on its website at https://www.osha.gov/radiofrequency-and-microwave-radiation/standards.

Questions related to compliance with federal regulations should be directed to VZWRFCompliance@verizonwireless.com.

Introduction

Verizon is proposing to add RF transmitting technology at 49 Davis Square, Somerville, MA 02144.

Verizon is licensed by the FCC to provide wireless communications services. As required by the FCC, wireless system operators must perform an assessment of the potential human exposure to RF emissions emanating from transmitting antennas at the site. Telnet was hired by Verizon to perform the required RF emission study of the RF environment surrounding the facilities installed by Verizon at this location. Verizon's RF exposure policy complies with FCC and OSHA requirements.

FCC Limits for MPE

Verizon's telecommunications equipment and networks comply with FCC RF safety standards.

Those standards were adopted after examining the RF research that scientists in the US and around the world have conducted for decades. The research continues to this day, and agencies continue to monitor it. Based on that research, federal agencies have concluded that equipment and networks that comply with the safety standards pose no known health risks.

Different perimeters (limits) apply for occupational and public exposure conditions. Public exposure limits generally are five times more restrictive than occupational exposure limits. These limits apply for perpetual exposures and are intended to provide a cautious margin of safety for all persons, regardless of age, gender, size, or health. The FCC provides information regarding RF safety in its RF Safety FAQ, available at https://www.fcc.gov/engineering-technology/electromagnetic-compatibility-division/radio-frequency-safety/faq/rf-safety.

The FCC exposure limits of undefined duration to radio frequency energy for the following personal wireless services:

Personal Wireless Service	Approx. Frequency	Occupational Limit	Public Limit
Personal Communication ("PCS")	1950 MHz	5.00 mW/cm^2	1.00 mW/cm^2
Cellular Telephone	870 MHz	2.90 mW/cm^2	0.58 mW/cm^2
Specialized Mobile Radio	855 MHz	2.85 mW/cm^2	0.57 mW/cm^2

❖ At this location there are 9 Verizon antennas are operating.

Antenna Number	Sector Name	Operator	Type	Tx Freq (MHz)	Technology	Input Power (Watts)	Tx or Carrier Count	Tx Loss (dB)	EDT (deg.)	MDT (deg.)	Manufacturer	Model	Azimuth (deg.)	Aperture (ft)
1	Alpha	VZW	Panel	28000	5G	1.58	1	0	0	0	SAMSUNG	AU-AT1K01	60	1.40
2	Alpha	VZW	Panel	3500	CBRS	5	4	0	8	0	SAMSUNG	XXDWMM-12.5-65-8T-CBRS	60	1.00
3	Alpha	VZW	Panel	746	LTE	40	4	0	2 to 16	0	JMA	MX16FIT465-xx	60	4.58
3	Alpha	VZW	Panel	850	LTE	40	4	0	2 to 16	0	JMA	MX16FIT465-xx	60	4.58
3	Alpha	VZW	Panel	1900	LTE	40	4	0	0 to 9	0	JMA	MX16FIT465-xx	60	4.58
3	Alpha	VZW	Panel	2100	LTE	40	4	0	0 to 9	0	JMA	MX16FIT465-xx	60	4.58
3	Alpha	VZW	Panel	L-Sub6	-	320	1	0	2 to 12	0	JMA	MX16FIT465-xx	60	4.58
4	Beta	VZW	Panel	28000	5G	1.58	1	0	0	0	SAMSUNG	AU-AT1K01	160	1.40
5	Beta	VZW	Panel	3500	CBRS	5	4	0	8	0	SAMSUNG	XXDWMM-12.5-65-8T-CBRS	160	1.00
6	Beta	VZW	Panel	746	LTE	40	4	0	2 to 16	0	JMA	MX16FIT465-xx	160	4.58
6	Beta	VZW	Panel	850	LTE	40	4	0	2 to 16	0	JMA	MX16FIT465-xx	160	4.58
6	Beta	VZW	Panel	1900	LTE	40	4	0	0 to 9	0	JMA	MX16FIT465-xx	160	4.58
6	Beta	VZW	Panel	2100	LTE	40	4	0	0 to 9	0	JMA	MX16FIT465-xx	160	4.58
6	Beta	VZW	Panel	L-Sub6	-	320	1	0	2 to 12	0	JMA	MX16FIT465-xx	160	4.58
7	Gamma	VZW	Panel	28000	5G	1.58	1	0	0	0	SAMSUNG	AU-AT1K01	320	1.40
8	Gamma	VZW	Panel	3500	CBRS	5	4	0	8	0	SAMSUNG	XXDWMM-12.5-65-8T-CBRS	320	1.00
9	Gamma	VZW	Panel	746	LTE	40	4	0	2 to 16	0	JMA	MX16FIT465-xx	320	4.58
9	Gamma	VZW	Panel	850	LTE	40	4	0	2 to 16	0	JMA	MX16FIT465-xx	320	4.58
9	Gamma	VZW	Panel	1900	LTE	40	4	0	0 to 9	0	JMA	MX16FIT465-xx	320	4.58
9	Gamma	VZW	Panel	2100	LTE	40	4	0	0 to 9	0	JMA	MX16FIT465-xx	320	4.58
9	Gamma	VZW	Panel	L-Sub6	-	320	1	0	2 to 12	0	JMA	MX16FIT465-xx	320	1.00
10	Alpha	UNK	Panel	3500	-	5	4	0	8	0	Unknown	Unknown	340	4.58
11	Alpha	UNK	Panel	700	-	40	4	0	2 to 16	0	Unknown	Unknown	345	4.58
11	Alpha	UNK	Panel	850	-	40	4	0	2 to 16	0	Unknown	Unknown	345	4.58
11	Alpha	UNK	Panel	1900	-	40	4	0	0 to 9	0	Unknown	Unknown	345	4.58
11	Alpha	UNK	Panel	2100	-	40	4	0	0 to 9	0	Unknown	Unknown	345	4.58
11	Alpha	UNK	Panel	3700	-	320	1	0	2 to 12	0	Unknown	Unknown	345	4.58
12	Beta	UNK	Panel	3500	-	5	4	0	8	0	Unknown	Unknown	120	1.00
13	Beta	UNK	Panel	700	-	40	4	0	2 to 16	0	Unknown	Unknown	100	4.58
13	Beta	UNK	Panel	850	-	40	4	0	2 to 16	0	Unknown	Unknown	100	4.58
13	Beta	UNK	Panel	1900	-	40	4	0	0 to 9	0	Unknown	Unknown	100	4.58
13	Beta	UNK	Panel	2100	-	40	4	0	0 to 9	0	Unknown	Unknown	100	4.58
13	Beta	UNK	Panel	3700	-	320	1	0	2 to 12	0	Unknown	Unknown	100	4.58
14	Gamma	UNK	Panel	3500	-	5	4	0	8	0	Unknown	Unknown	225	1.00
15	Gamma	UNK	Panel	700	-	40	4	0	2 to 16	0	Unknown	Unknown	240	4.58
15	Gamma	UNK	Panel	850	-	40	4	0	2 to 16	0	Unknown	Unknown	240	4.58
15	Gamma	UNK	Panel	1900	-	40	4	0	0 to 9	0	Unknown	Unknown	240	4.58
15	Gamma	UNK	Panel	2100	-	40	4	0	0 to 9	0	Unknown	Unknown	240	4.58
15	Gamma	UNK	Panel	3700	-	320	1	0	2 to 12	0	Unknown	Unknown	240	4.58
16	-	MW	-	5000	-	0.8	1	0	0	0	Unknown	Unknown	260	2.00

Antenna Number	Z Antennas Level (ft)	Z Roof (ft)	Z PH1 (ft)	Z PH2 (ft)	Z Lower Roof (ft)	Z Adj. Roof 1 / 3 (ft)	Z Adj. Roof 2 (ft)	Z Light Pole 1 (ft)	Z Light Pole 2 (ft)	Z Sign (ft)	Z Traffic Light (ft)	Z Utility Pole (ft)	Z In-Building (ft)	Z Ground (ft)
1	3.46	8.42	-9.25	1.42	52.25	51.25	24.25	46.25	31.25	56.25	51.25	29.25	18.42	66.25
2	2.37	7.33	-10.34	0.33	51.16	50.16	23.16	45.16	30.16	55.16	50.16	28.16	17.33	65.16
3	2.29	7.25	-10.42	0.25	51.08	50.08	23.08	45.08	30.08	55.08	50.08	28.08	17.25	65.08
4	3.46	8.42	-9.25	1.42	52.25	51.25	24.25	46.25	31.25	56.25	51.25	29.25	18.42	66.25
5	2.37	7.33	-10.34	0.33	51.16	50.16	23.16	45.16	30.16	55.16	50.16	28.16	17.33	65.16
6	2.29	7.25	-10.42	0.25	51.08	50.08	23.08	45.08	30.08	55.08	50.08	28.08	17.25	65.08
7	3.46	8.42	-9.25	1.42	52.25	51.25	24.25	46.25	31.25	56.25	51.25	29.25	18.42	66.25
8	2.37	7.33	-10.34	0.33	51.16	50.16	23.16	45.16	30.16	55.16	50.16	28.16	17.33	65.16
9	2.29	7.25	-10.42	0.25	51.08	50.08	23.08	45.08	30.08	55.08	50.08	28.08	17.25	65.08
10	1.71	6.67	-11.00	-0.33	50.50	49.50	22.50	44.50	29.50	54.50	49.50	27.50	16.67	64.50
11	10.21	15.17	-2.50	8.17	59.00	58.00	31.00	53.00	38.00	63.00	58.00	36.00	25.17	73.00
12	1.71	6.67	-11.00	-0.33	50.50	49.50	22.50	44.50	29.50	54.50	49.50	27.50	16.67	64.50
13	10.21	15.17	-2.50	8.17	59.00	58.00	31.00	53.00	38.00	63.00	58.00	36.00	25.17	73.00
14	1.71	6.67	-11.00	-0.33	50.50	49.50	22.50	44.50	29.50	54.50	49.50	27.50	16.67	64.50
15	10.21	15.17	-2.50	8.17	59.00	58.00	31.00	53.00	38.00	63.00	58.00	36.00	25.17	73.00
16	11.71	16.67	-1.00	9.67	60.50	59.50	32.50	54.50	39.50	64.50	59.50	37.50	26.67	74.50

RF Modeling

The modeling calculations include all carriers' antennas located at the site and assume that the proposed antennas are operating at 100% capacity, that all proposed antenna channels (also called "radios") 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. As a result, the predicted signal levels are more conservative (higher) than the actual signal levels will be. The results of the modeling calculations are all based on "worst case" assumptions, which means that the actual power density level might be lower.

If power density measurements were to be made at this site at any time, Telnet believes the real-time measurements would produce levels below those shown in this report. Modeling in this way produces conservative exclusion areas (areas not to be entered without some sort of mitigation, such as wearing a personal RF monitor, having the carrier reduce power, or undertaking real-time measurements to show real-time exposure levels).

The maximum cumulative MPE is calculated to be 33960% of the general population exposure limit at Antenna Level, 4541% of the general population exposure limit at rooftop Level, and below 100% of the general population exposure limit at PH1, PH2, Lower Roof, Adj. Roof 1/3, Adj. Roof 2, Light Pole 1/2, Sign, Traffic light, Utility Pole and inbuilding levels, 4.09% of the general population exposure limit on the ground (power density at ground level is 0.04 mW/cm2). Readings are generated through simulations which are based on proposed site.

Signage/Barrier requirement:

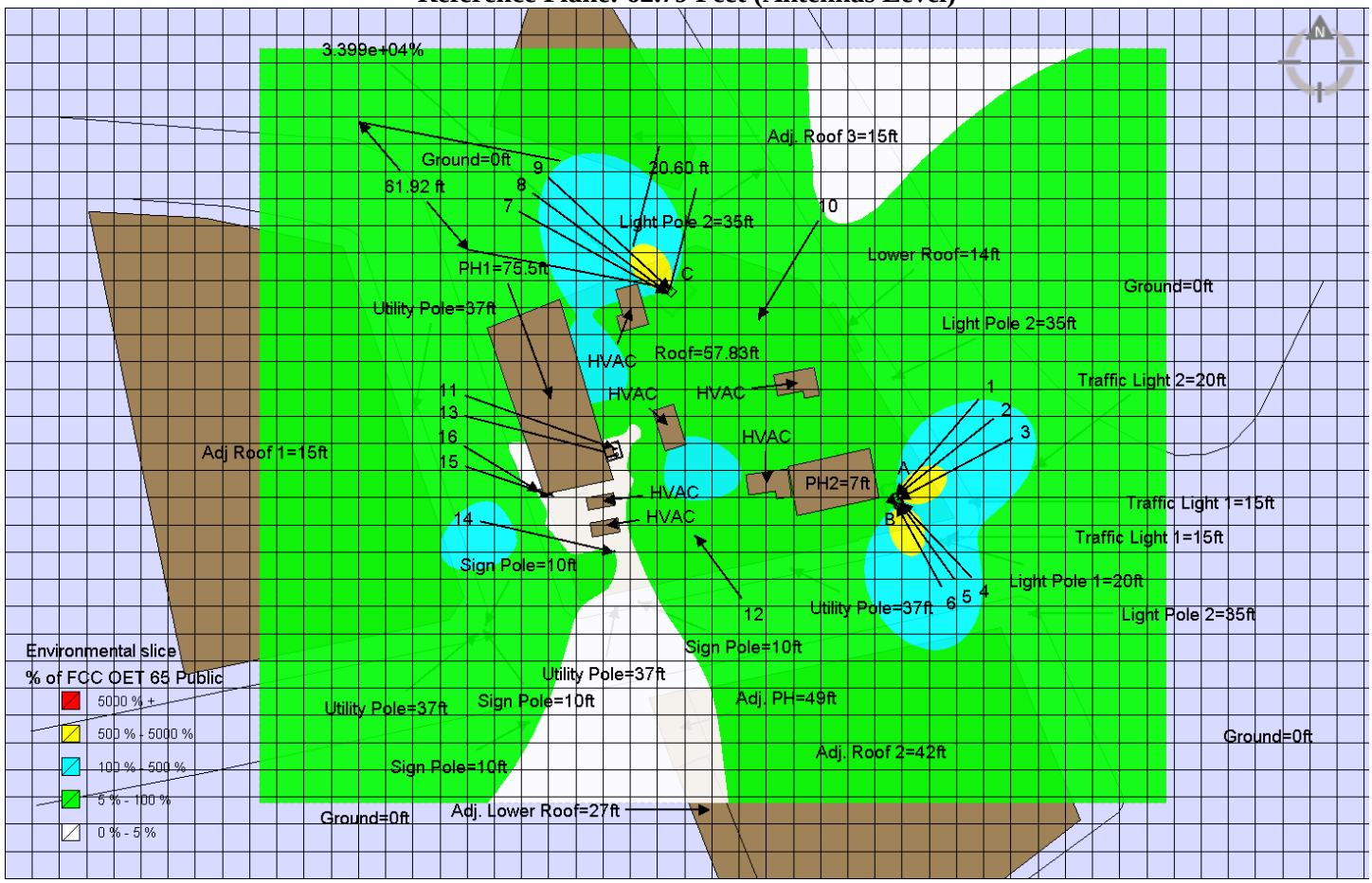
SPECIAL MITIGATION INSTRUCTIONS	
Items to be Installed	**Roof's Access Hatch:** Install NOC and Guidelines signs. **Sector A:** Install proposed barriers (15') on the right side of the sector on the roof level. Install Caution, Caution left signs on the proposed barriers. Install Caution sign behind the sector on the roof level. **Sector B:** Install proposed barriers (8') on the left side of the sector on the roof level. Install Caution, Caution right signs on the proposed barriers. Install Caution sign behind the sector on the roof level. **Sector C:** Install proposed barriers (6') on the left side of the sector and (10') on the right side of the sector on the roof level. Install Caution, Caution right on the proposed barriers. Install Caution left sign on HVAC facing the roof level Install Caution sign behind the sector on the roof level.

Analysis:

a. **Predictive Modeling: All Transmitters**

Is the areas being modeled ONLY accessible to persons trained to work in an RF environment (Occupational Area)?	**☒ YES ☐ NO**

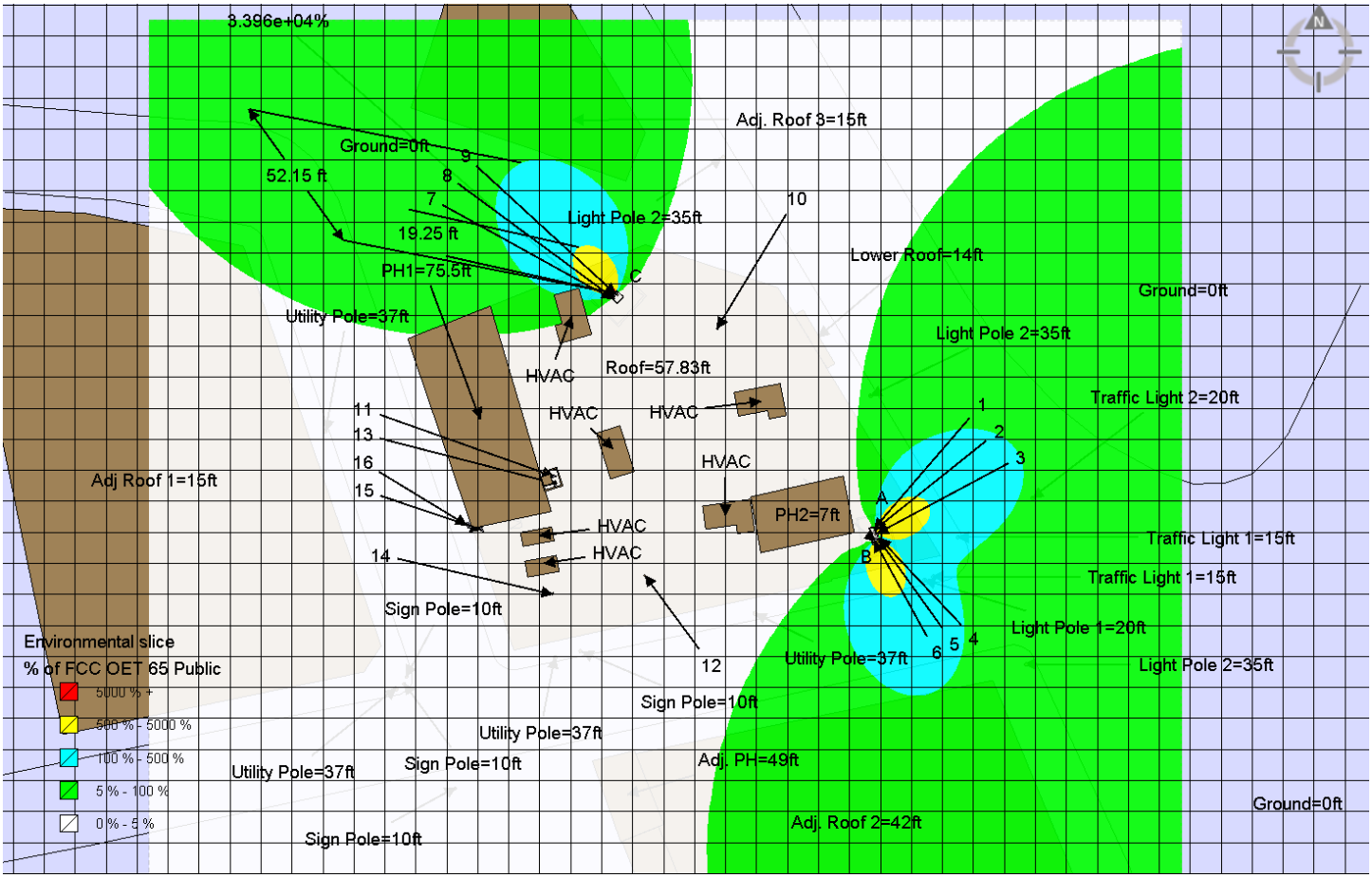
Reference Plane: 62.79 Feet (Antennas Level)



General Public Horizontal safe distance = 61.92ft	**Occupational Horizontal safe distance = 20.60ft**

b. **Predictive Modeling: Verizon Transmitters**

Reference Plane: 14 Feet (Antennas Level)

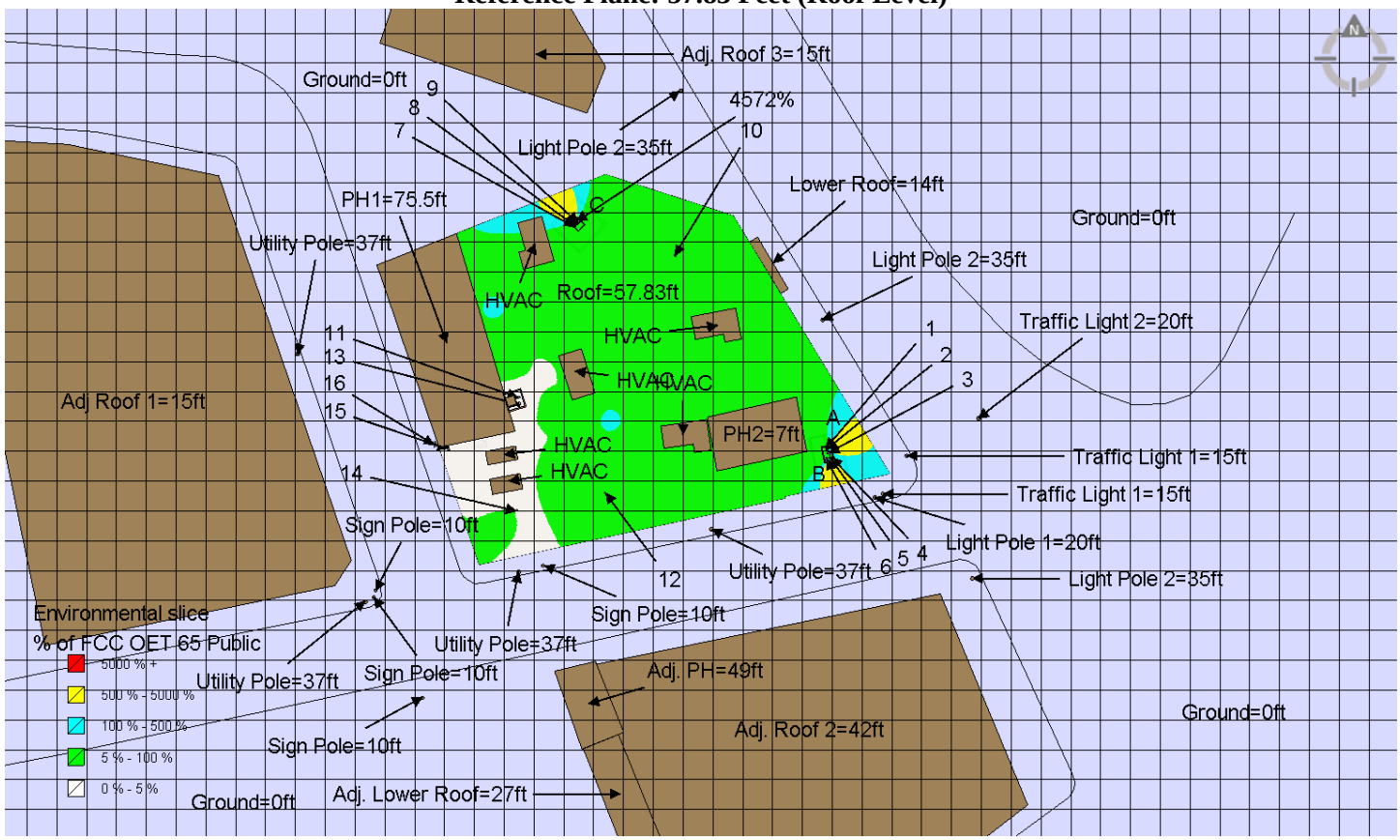


General Public Horizontal safe distance = 52.15ft	Occupational Horizontal safe distance = 19.25ft

d. **Predictive Modeling: All Transmitters**

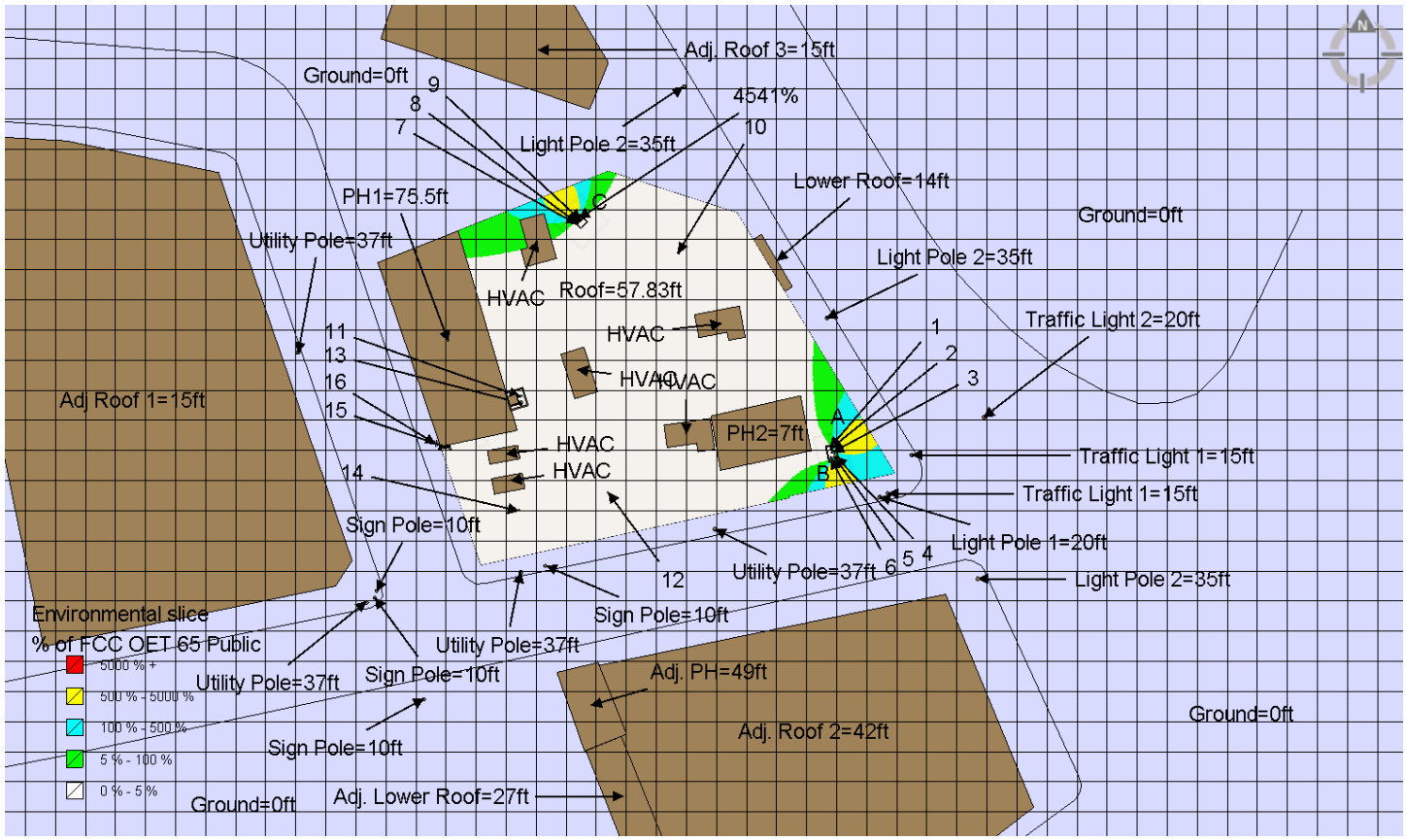
Is the areas being modeled ONLY accessible to persons trained to work in an RF environment (Occupational Area)?	☐ **YES** ☒ **NO**

Reference Plane: 57.83 Feet (Roof Level)



e. **Predictive Modeling: Verizon Transmitters**

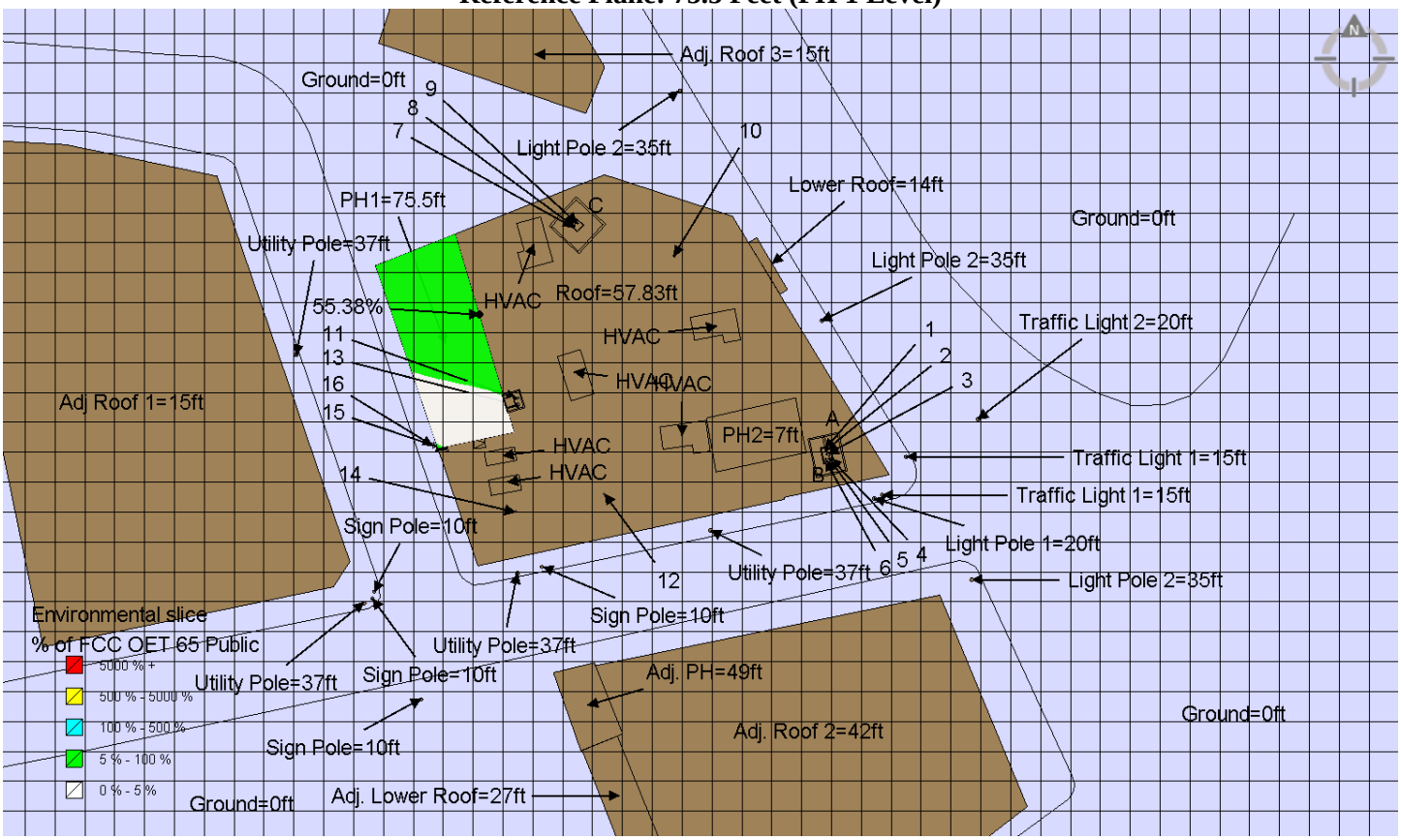
Reference Plane: 57.83 Feet (Roof Level)



f. **Predictive Modeling: All Transmitters**

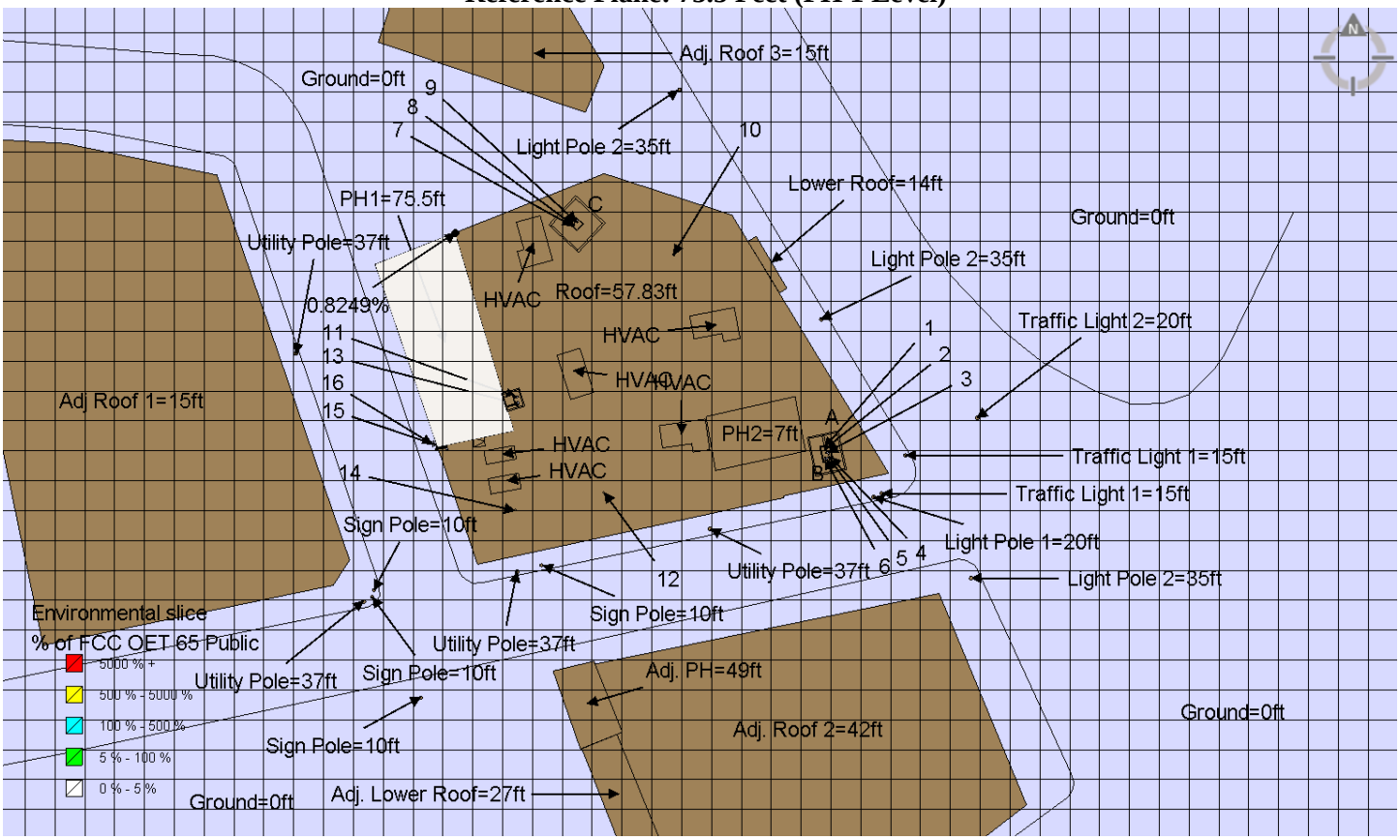
Is the areas being modeled ONLY accessible to persons trained to work in an RF environment (Occupational Area)?	☐ **YES** ☒ **NO**

Reference Plane: 75.5 Feet (PH 1 Level)



g. **Predictive Modeling: Verizon Transmitters**

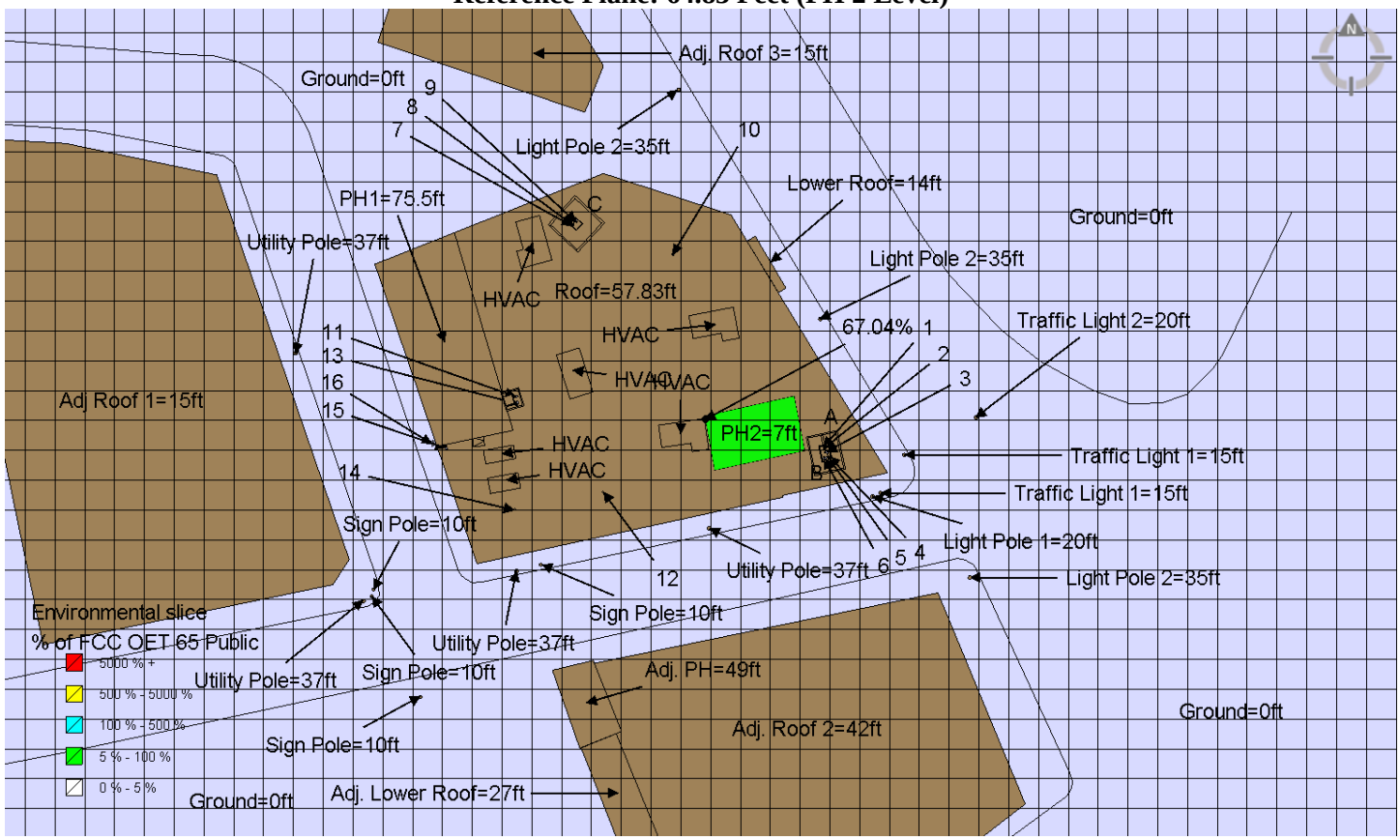
Reference Plane: 75.5 Feet (PH 1 Level)



h. **Predictive Modeling: All Transmitters**

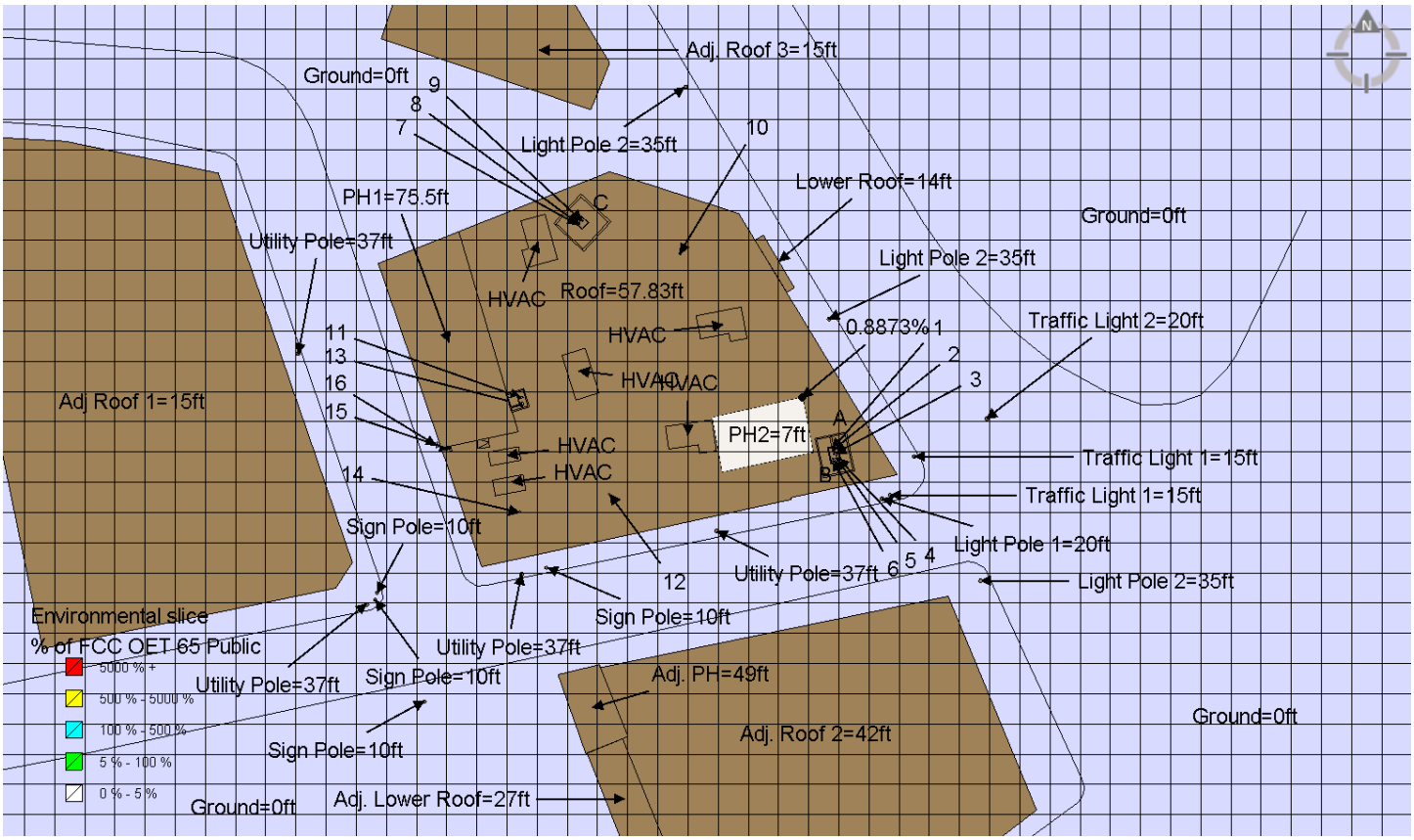
Is the areas being modeled ONLY accessible to persons trained to work in an RF environment (Occupational Area)?	☐ **YES** ☒ **NO**

Reference Plane: 64.83 Feet (PH 2 Level)



i. **Predictive Modeling: Verizon Transmitters**

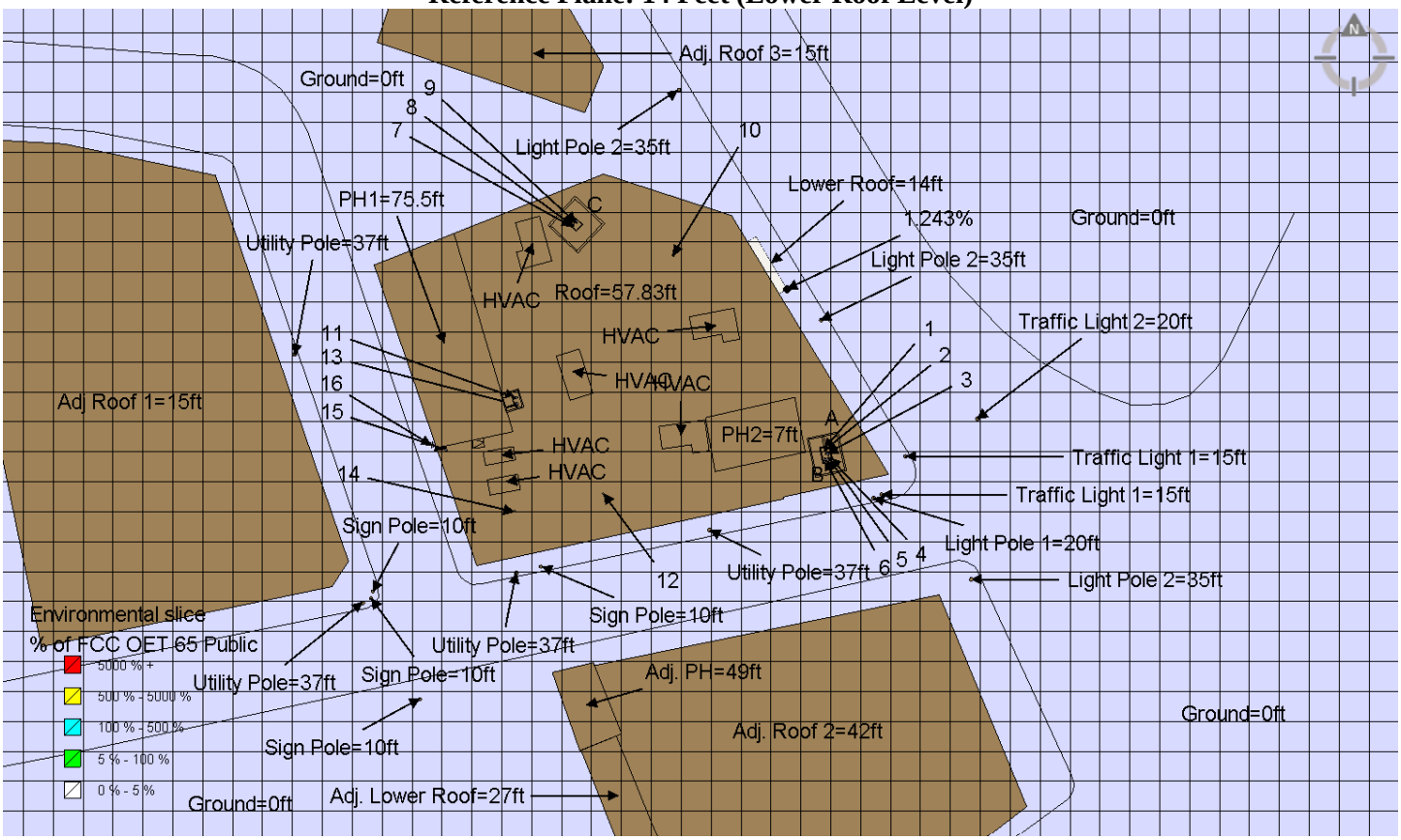
Reference Plane: 64.83 Feet (PH 2 Level)



j. **Predictive Modeling: All Transmitters**

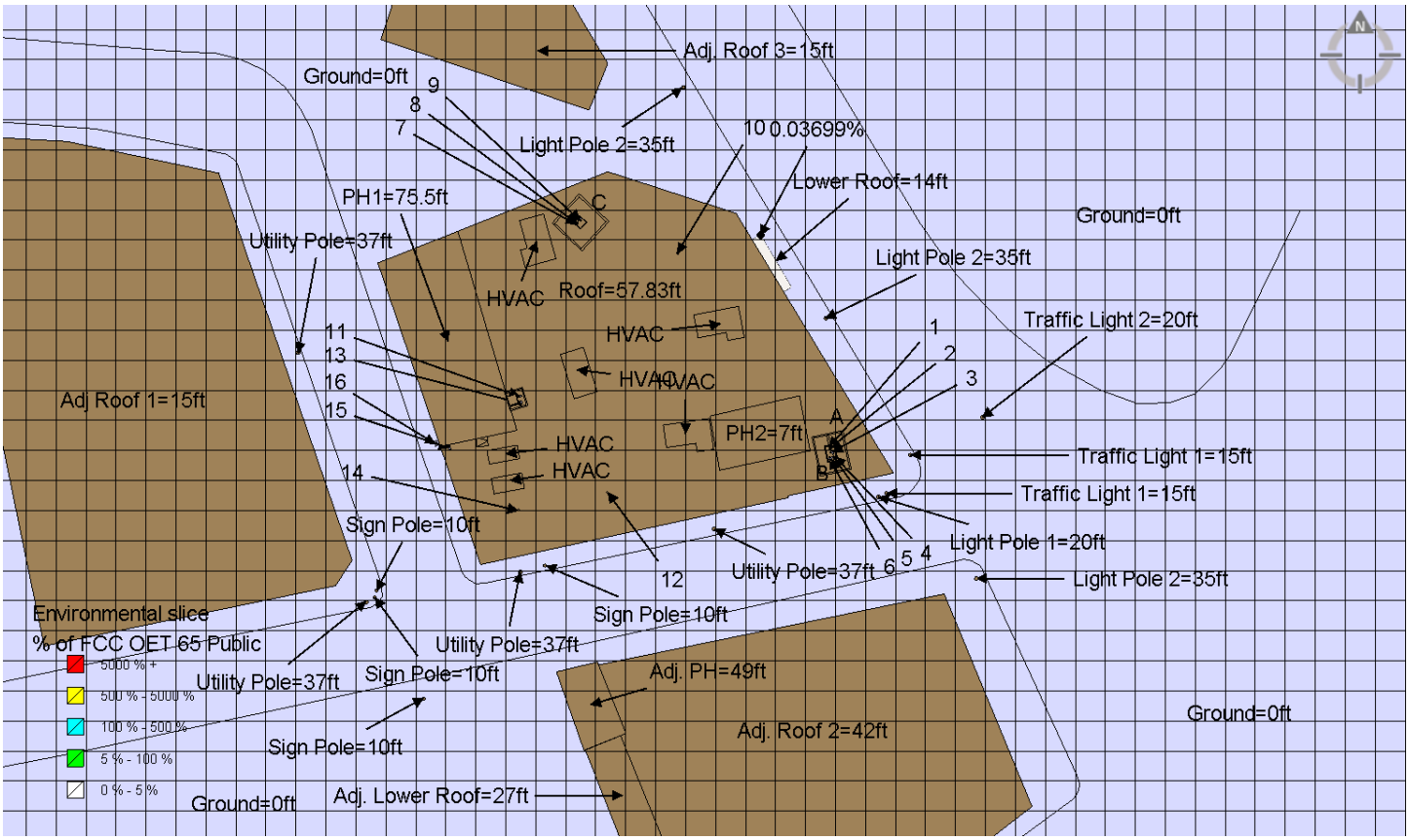
Is the areas being modeled ONLY accessible to persons trained to work in an RF environment (Occupational Area)?	☐ **YES** ☒ **NO**

Reference Plane: 14 Feet (Lower Roof Level)



k. **Predictive Modeling: Verizon Transmitters**

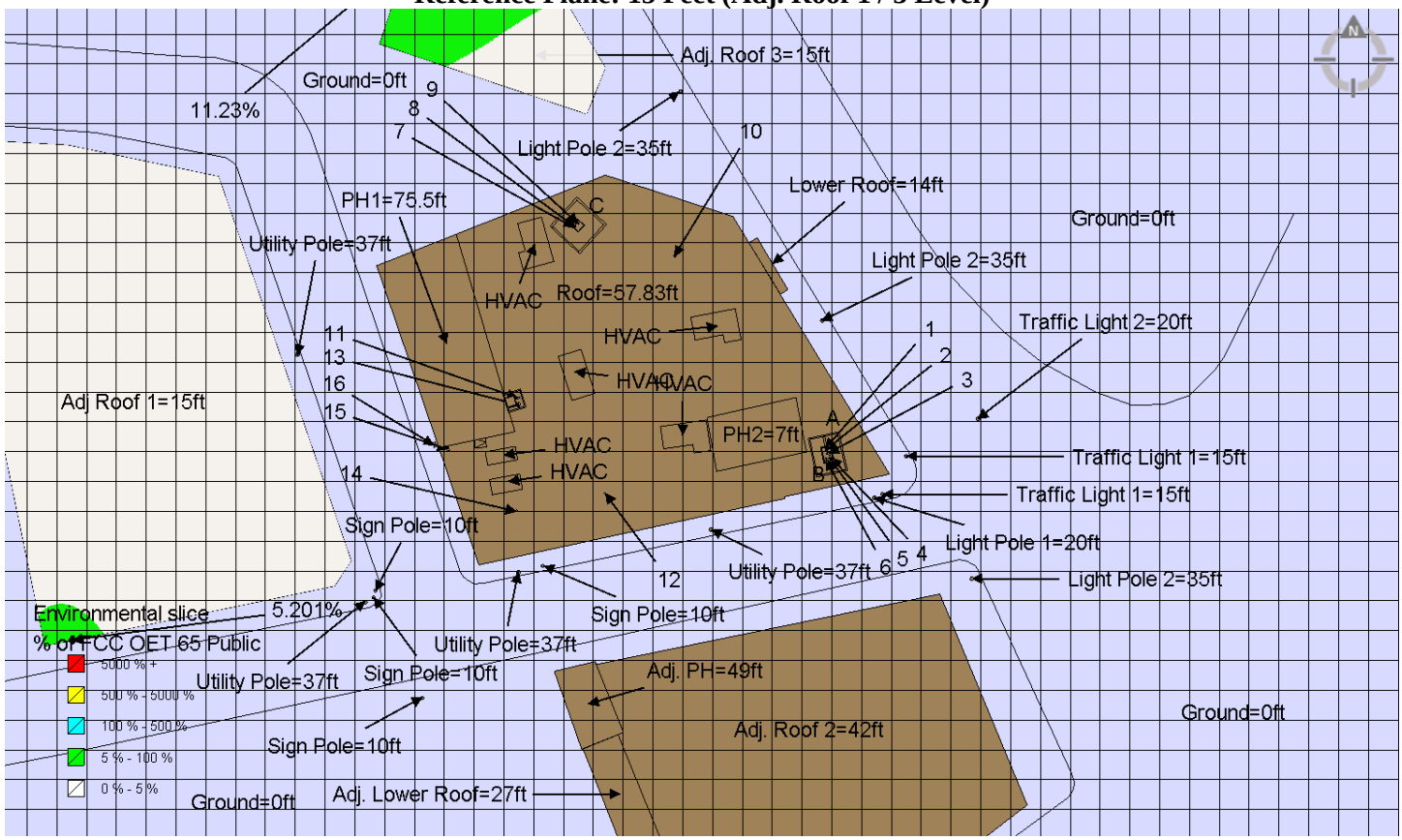
Reference Plane: 14 Feet (Lower Roof Level)



l. **Predictive Modeling: All Transmitters**

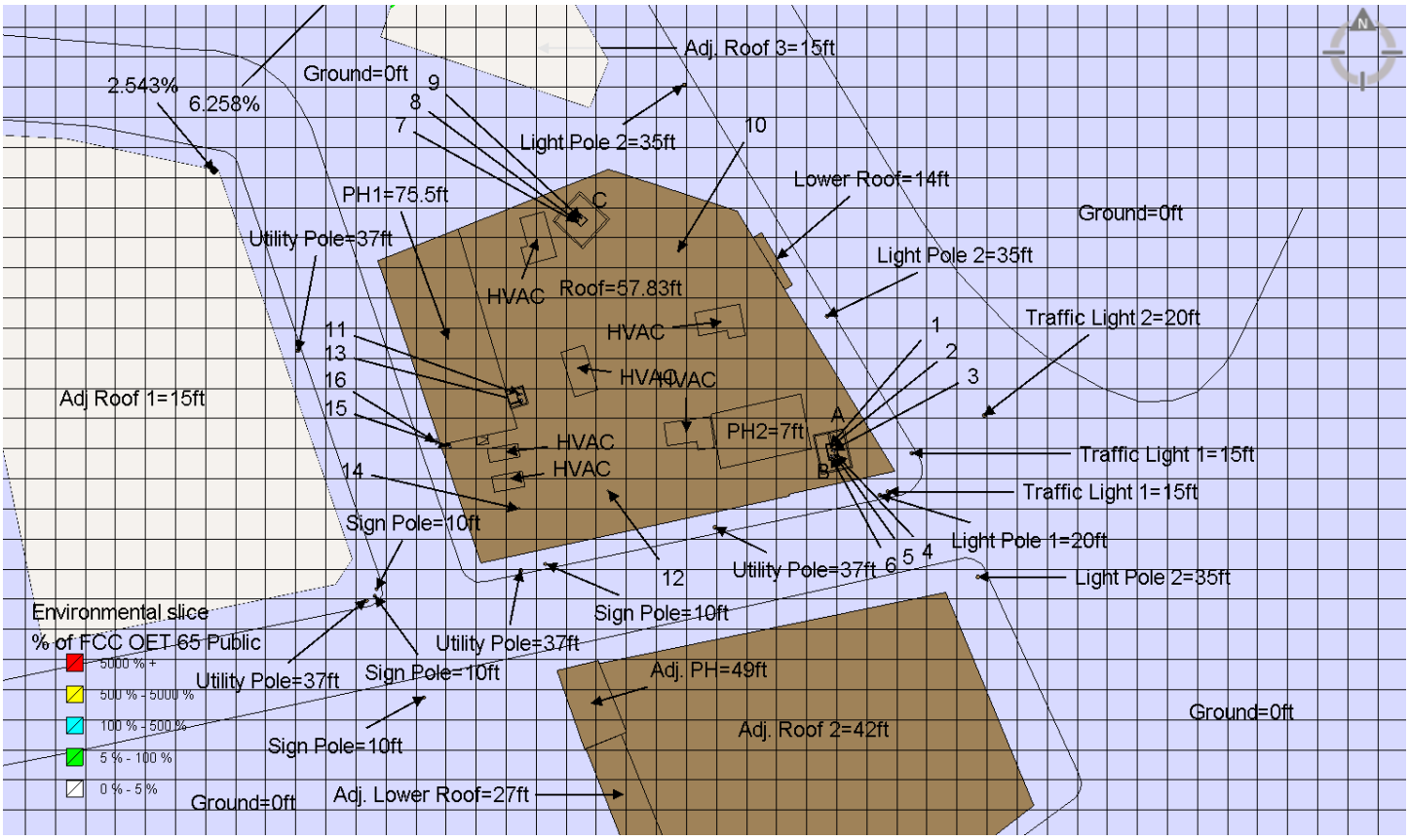
Is the areas being modeled ONLY accessible to persons trained to work in an RF environment (Occupational Area)?	☐ **YES** ☒ **NO**

Reference Plane: 15 Feet (Adj. Roof 1 / 3 Level)



m. **Predictive Modeling: Verizon Transmitters**

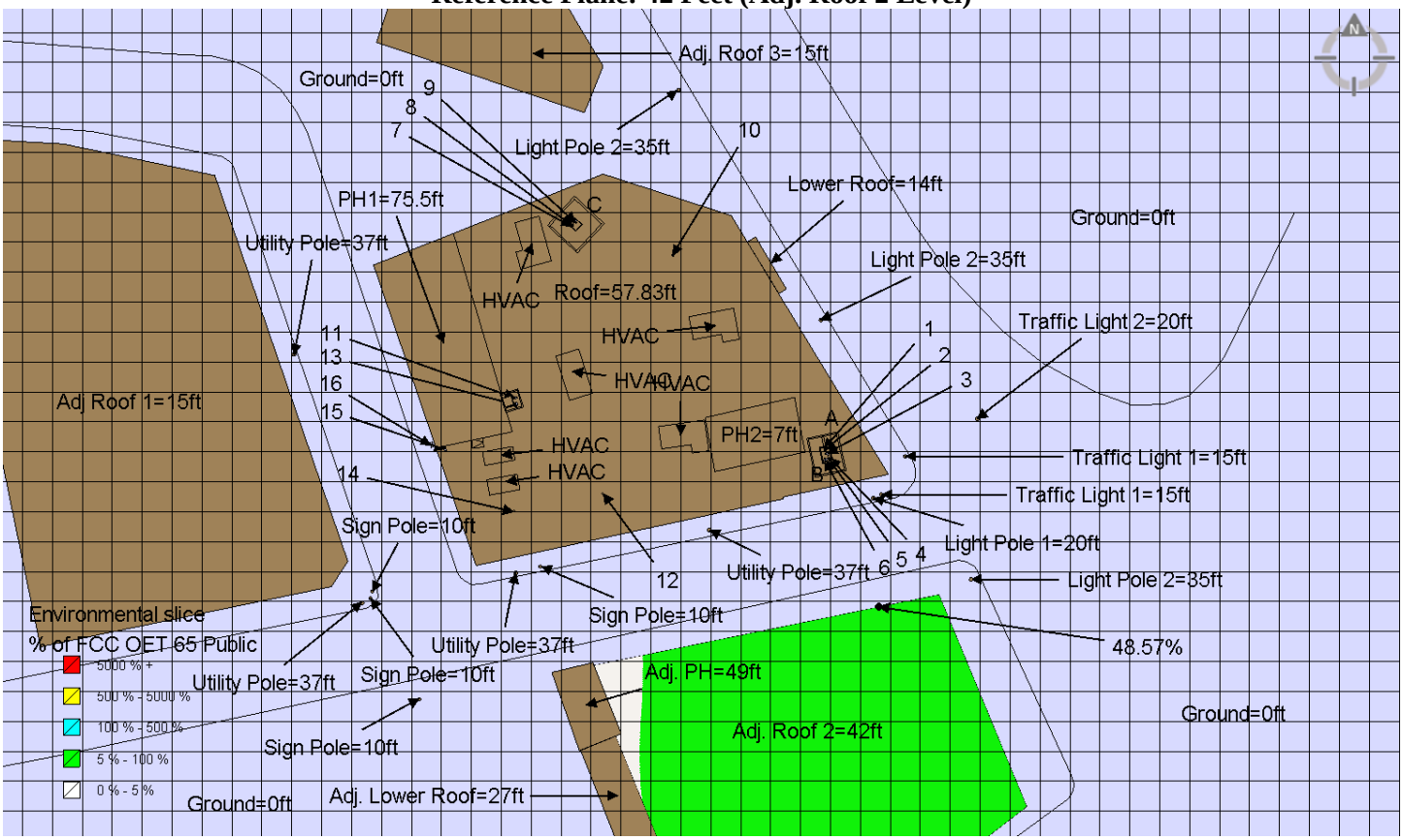
Reference Plane: 15 Feet (Adj. Roof 1 / 3 Level)



n. **Predictive Modeling: All Transmitters**

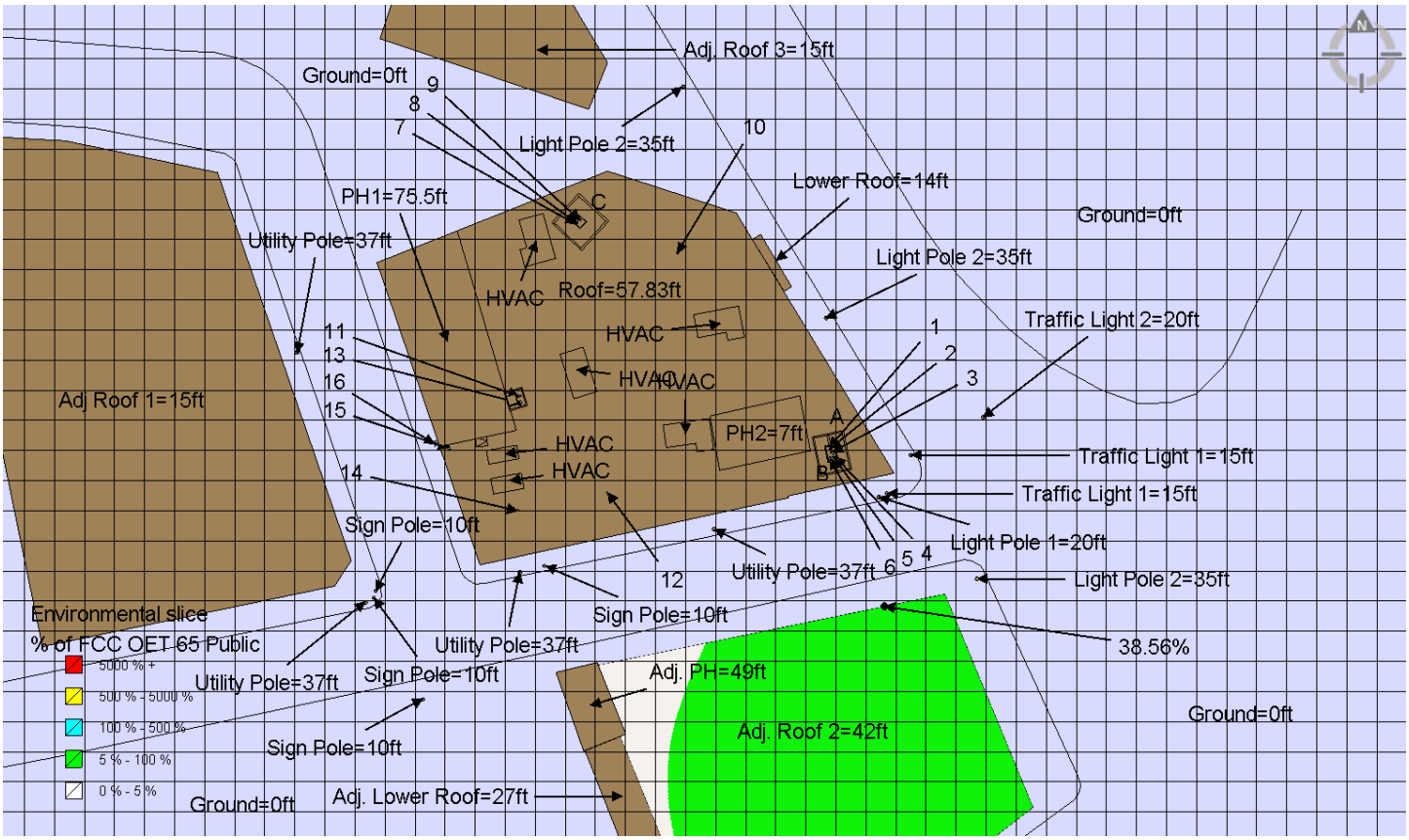
Is the areas being modeled ONLY accessible to persons trained to work in an RF environment (Occupational Area)?	☐ **YES** ☒ **NO**

Reference Plane: 42 Feet (Adj. Roof 2 Level)



o. **Predictive Modeling: Verizon Transmitters**

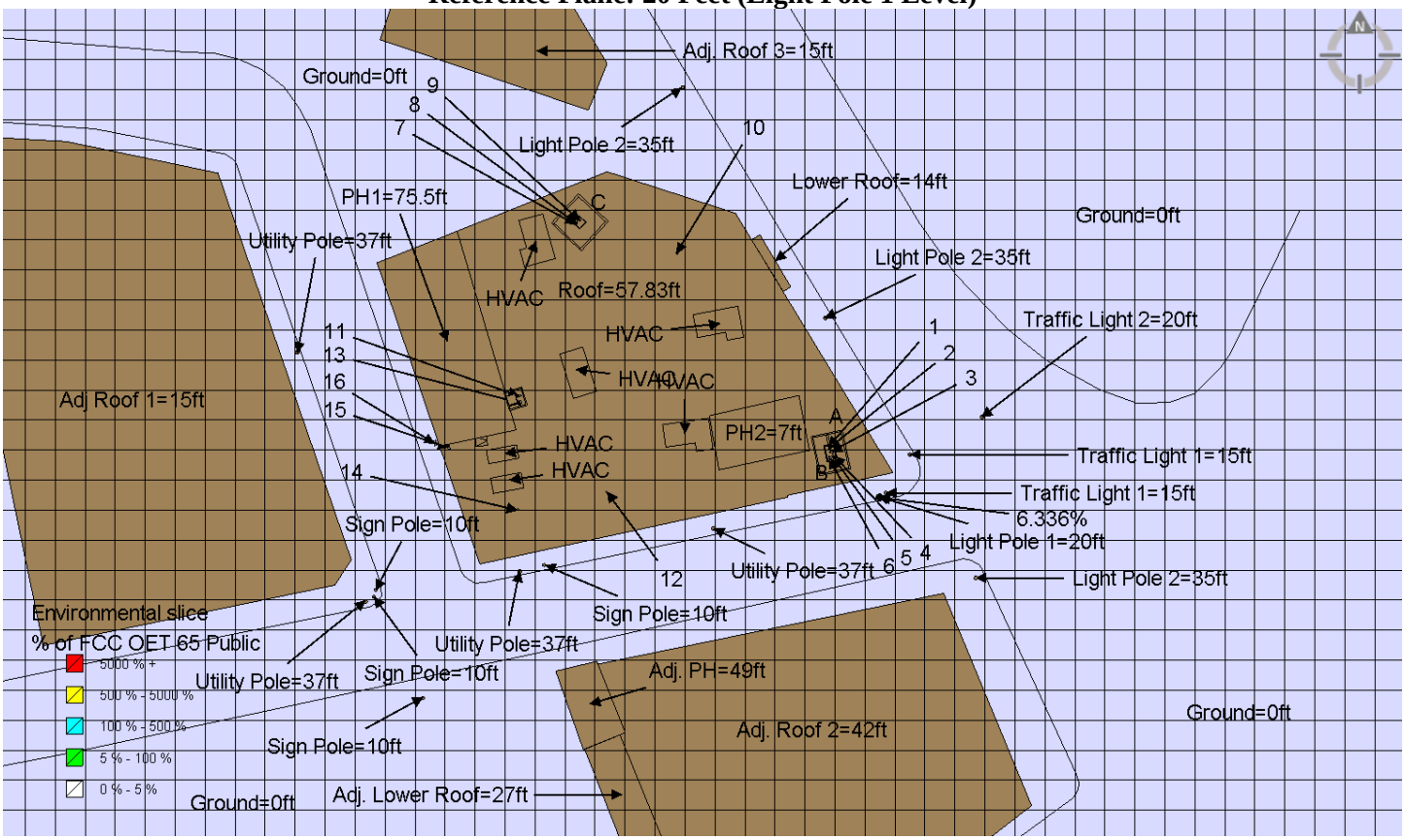
Reference Plane: 42 Feet (Adj. Roof 2 Level)



p. **Predictive Modeling: All Transmitters**

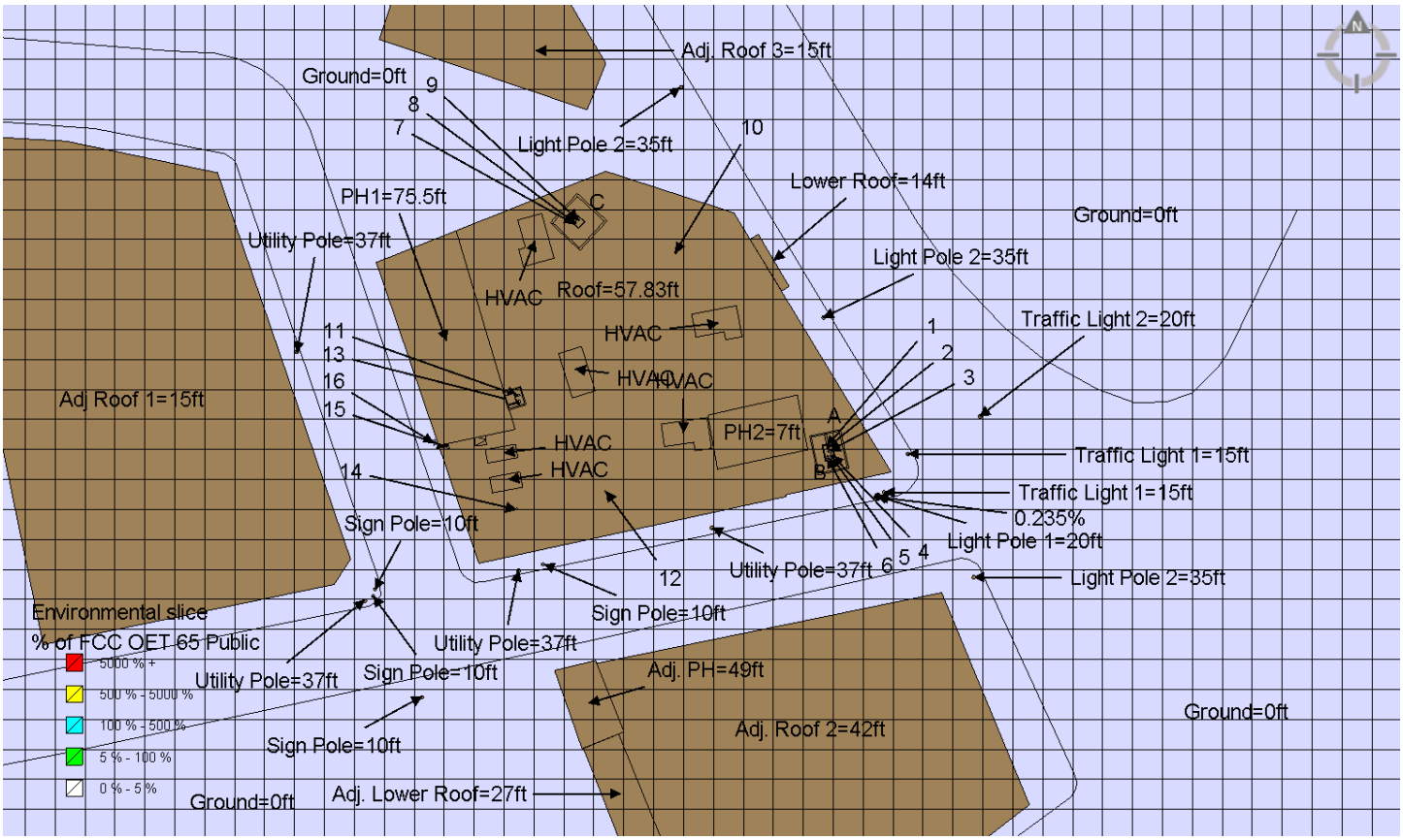
Is the areas being modeled ONLY accessible to persons trained to work in an RF environment (Occupational Area)?	☐ **YES** ☒ **NO**

Reference Plane: 20 Feet (Light Pole 1 Level)



q. **Predictive Modeling: Verizon Transmitters**

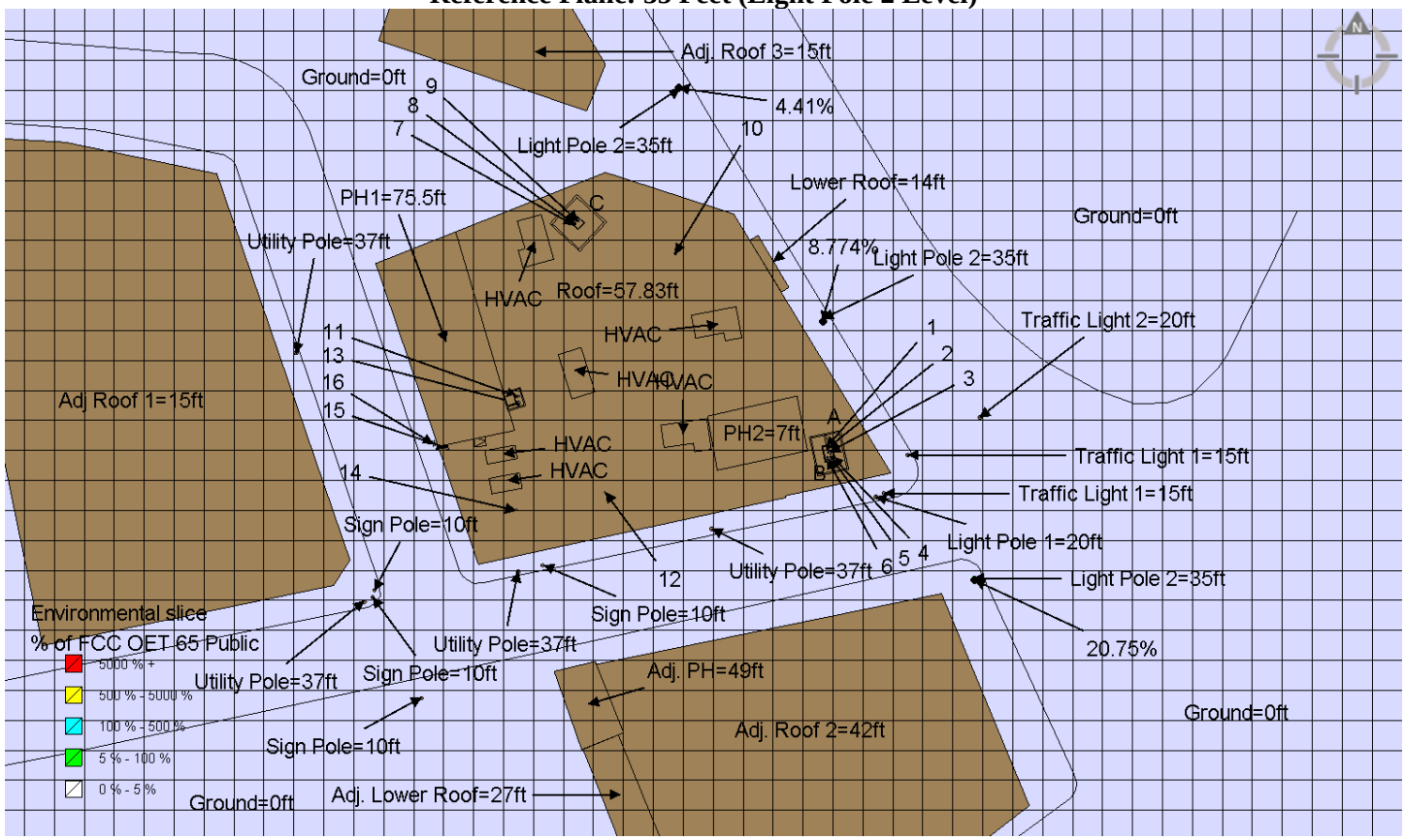
Reference Plane: 20 Feet (Light Pole 1 Level)



r. **Predictive Modeling: All Transmitters**

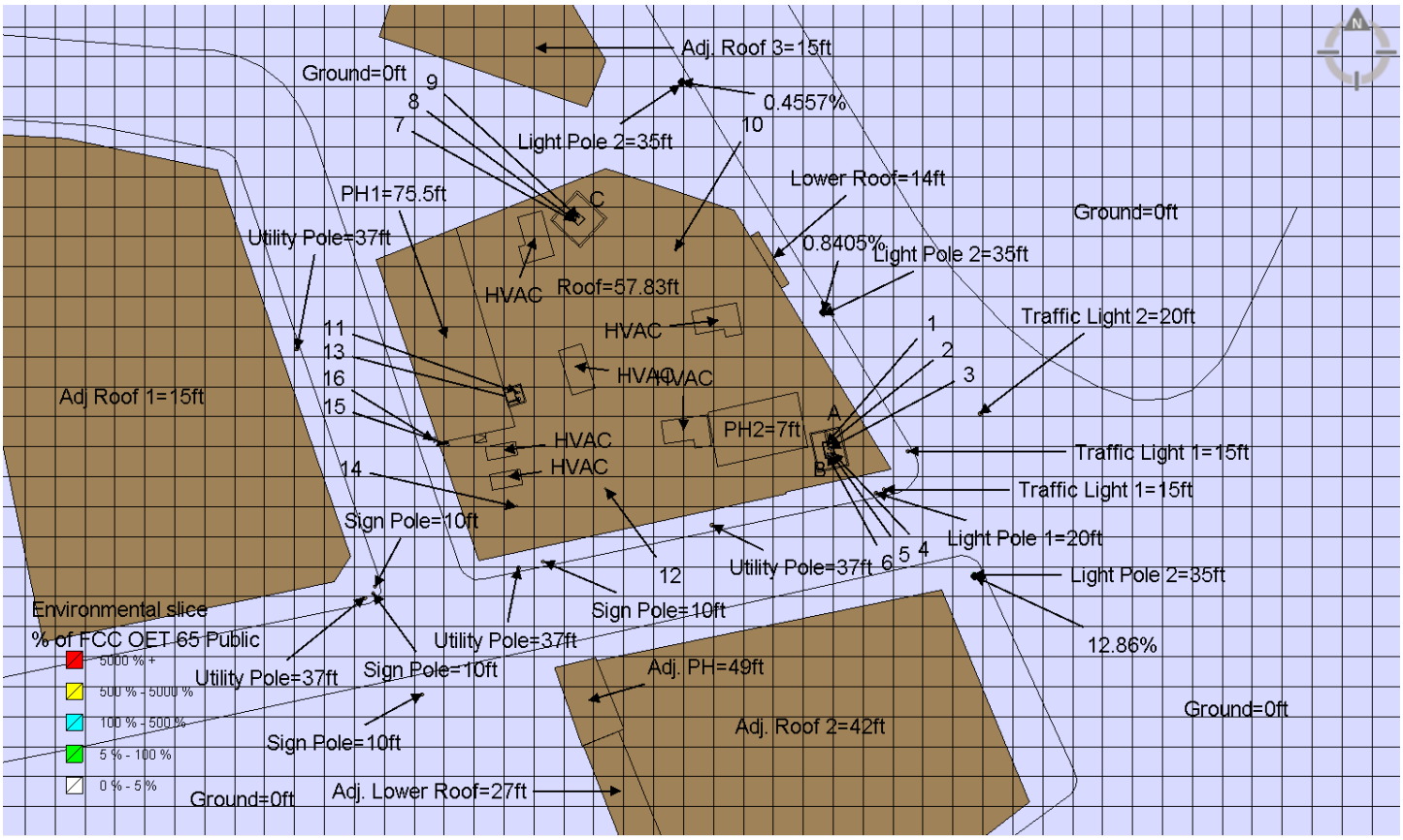
Is the areas being modeled ONLY accessible to persons trained to work in an RF environment (Occupational Area)?	☐ **YES** ☒ **NO**

Reference Plane: 35 Feet (Light Pole 2 Level)



s. **Predictive Modeling: Verizon Transmitters**

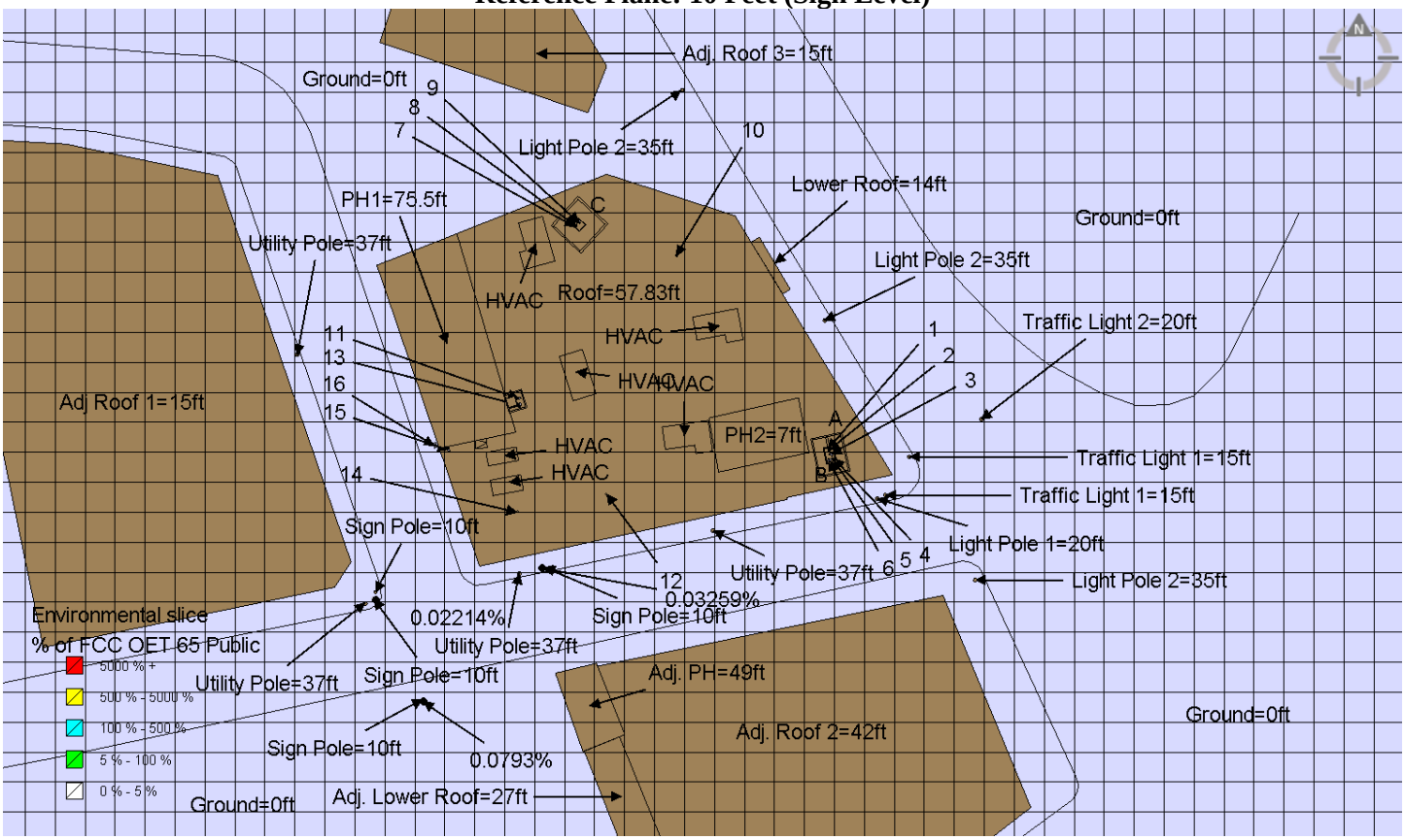
Reference Plane: 35 Feet (Light Pole 2 Level)



t. **Predictive Modeling: All Transmitters**

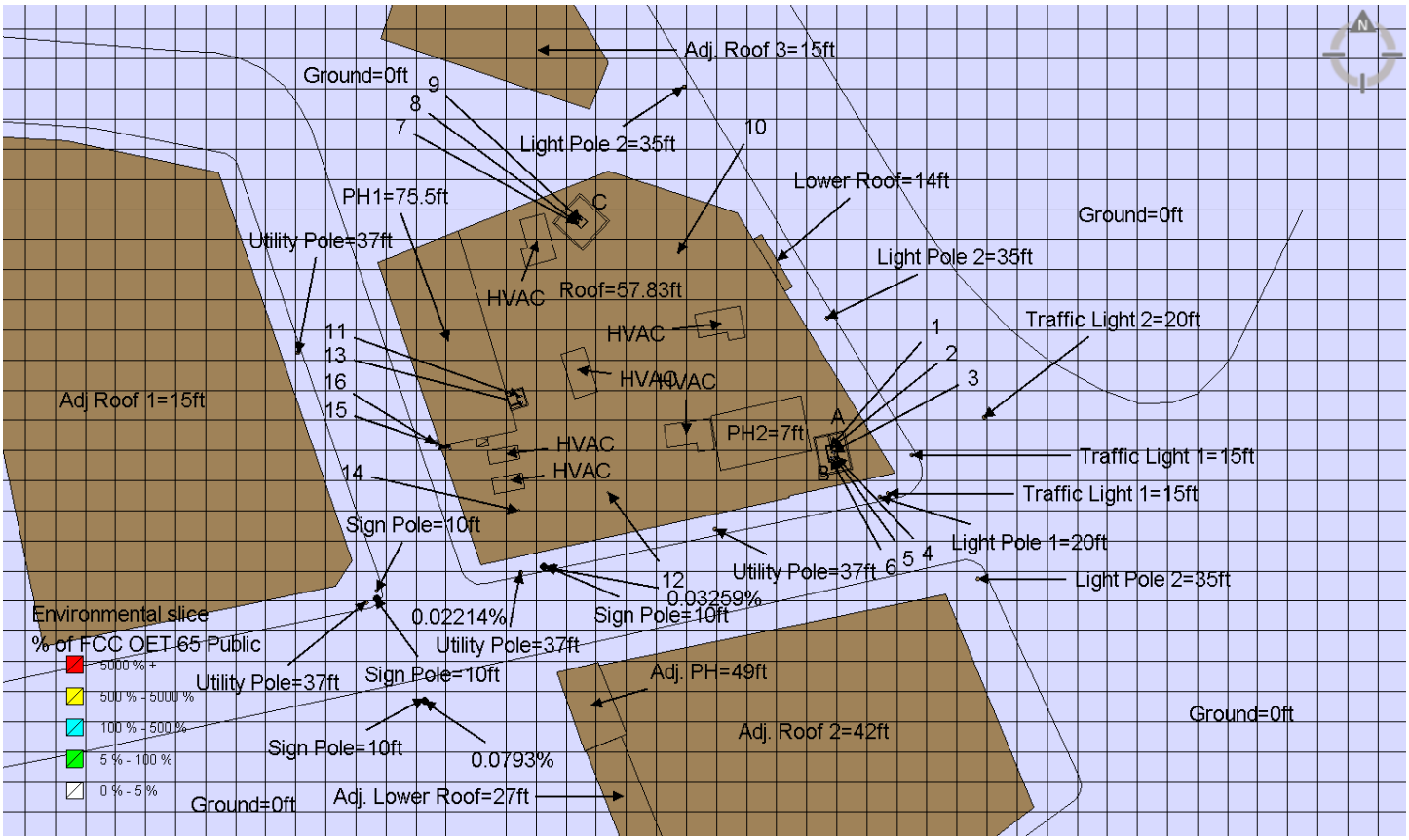
Is the areas being modeled ONLY accessible to persons trained to work in an RF environment (Occupational Area)?	☐ **YES** ☒ **NO**

Reference Plane: 10 Feet (Sign Level)



u. **Predictive Modeling: Verizon Transmitters**

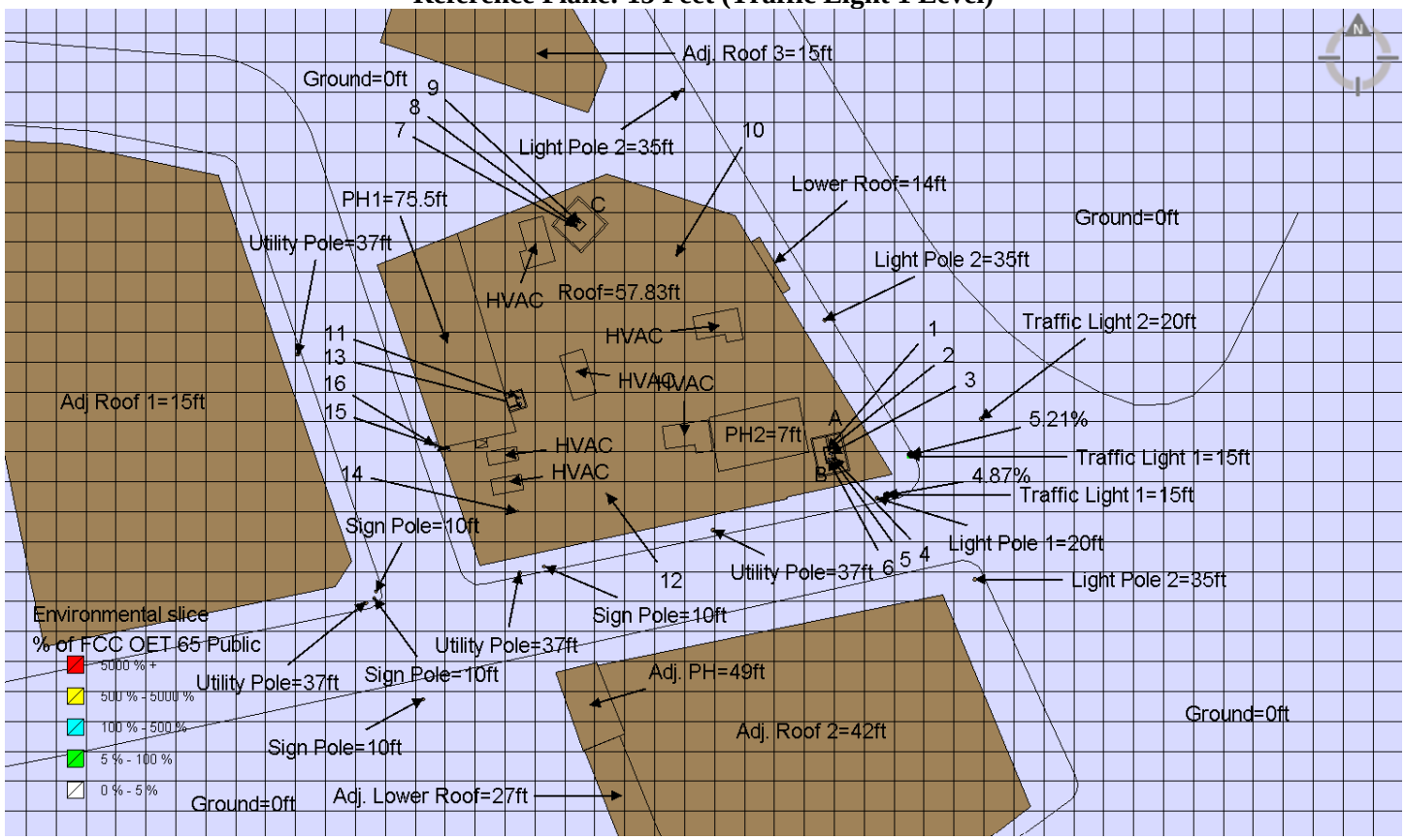
Reference Plane: 10 Feet (Sign Level)



v. Predictive Modeling: All Transmitters

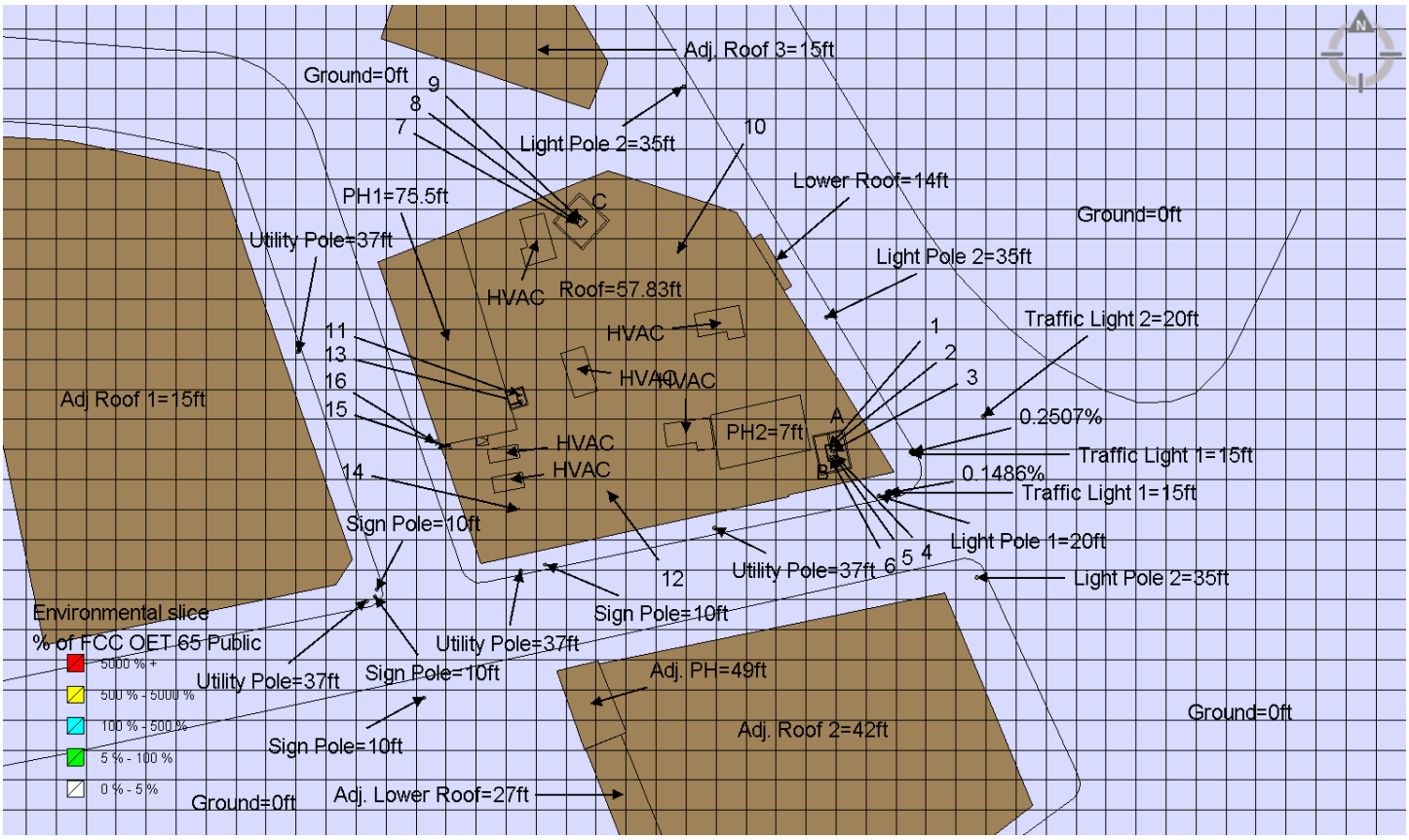
Is the areas being modeled ONLY accessible to persons trained to work in an RF environment (Occupational Area)?	☐ YES ☒ NO

Reference Plane: 15 Feet (Traffic Light 1 Level)



w. **Predictive Modeling: Verizon Transmitters**

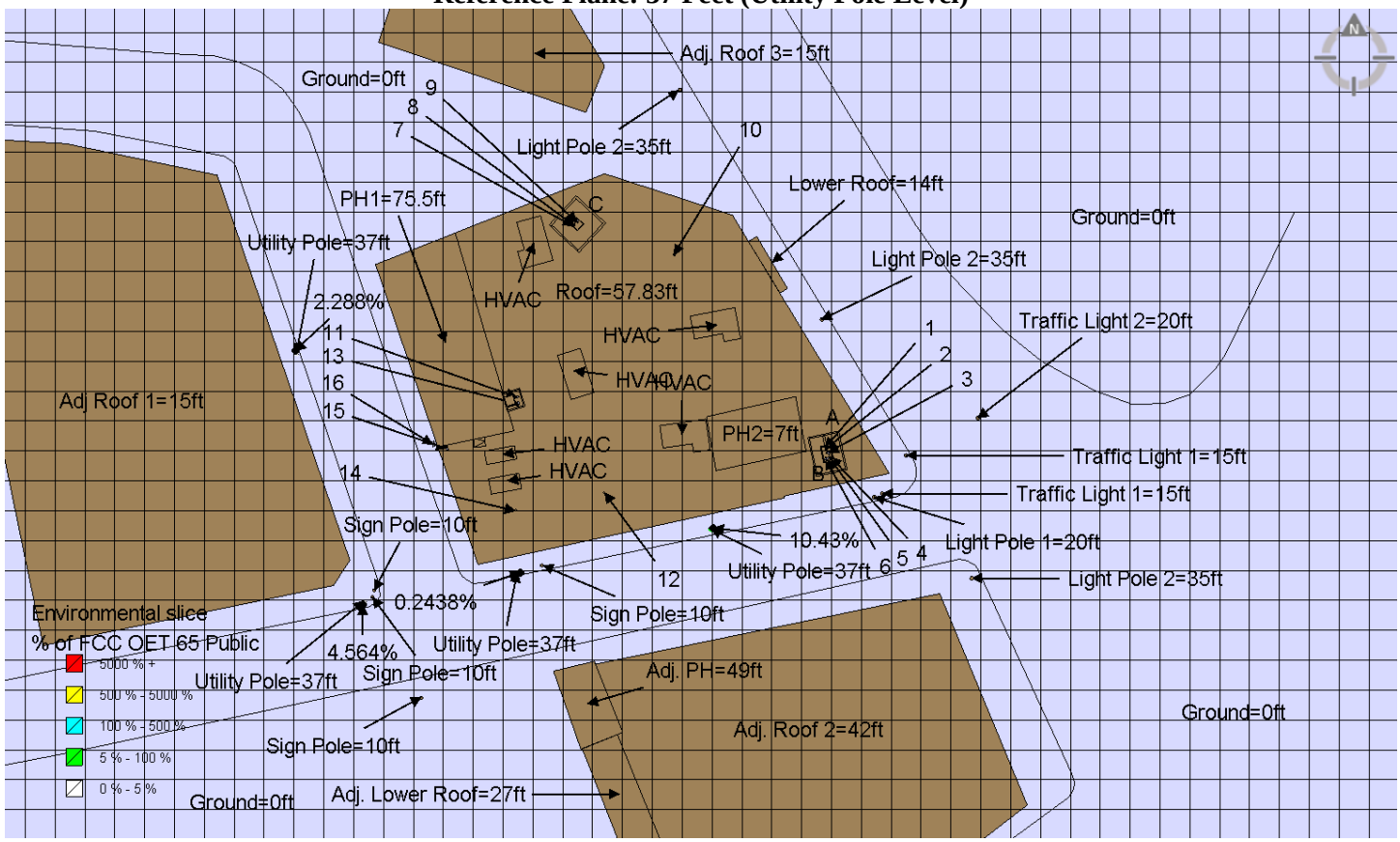
Reference Plane: 15 Feet (Traffic Light 1 Level)



x. **Predictive Modeling: All Transmitters**

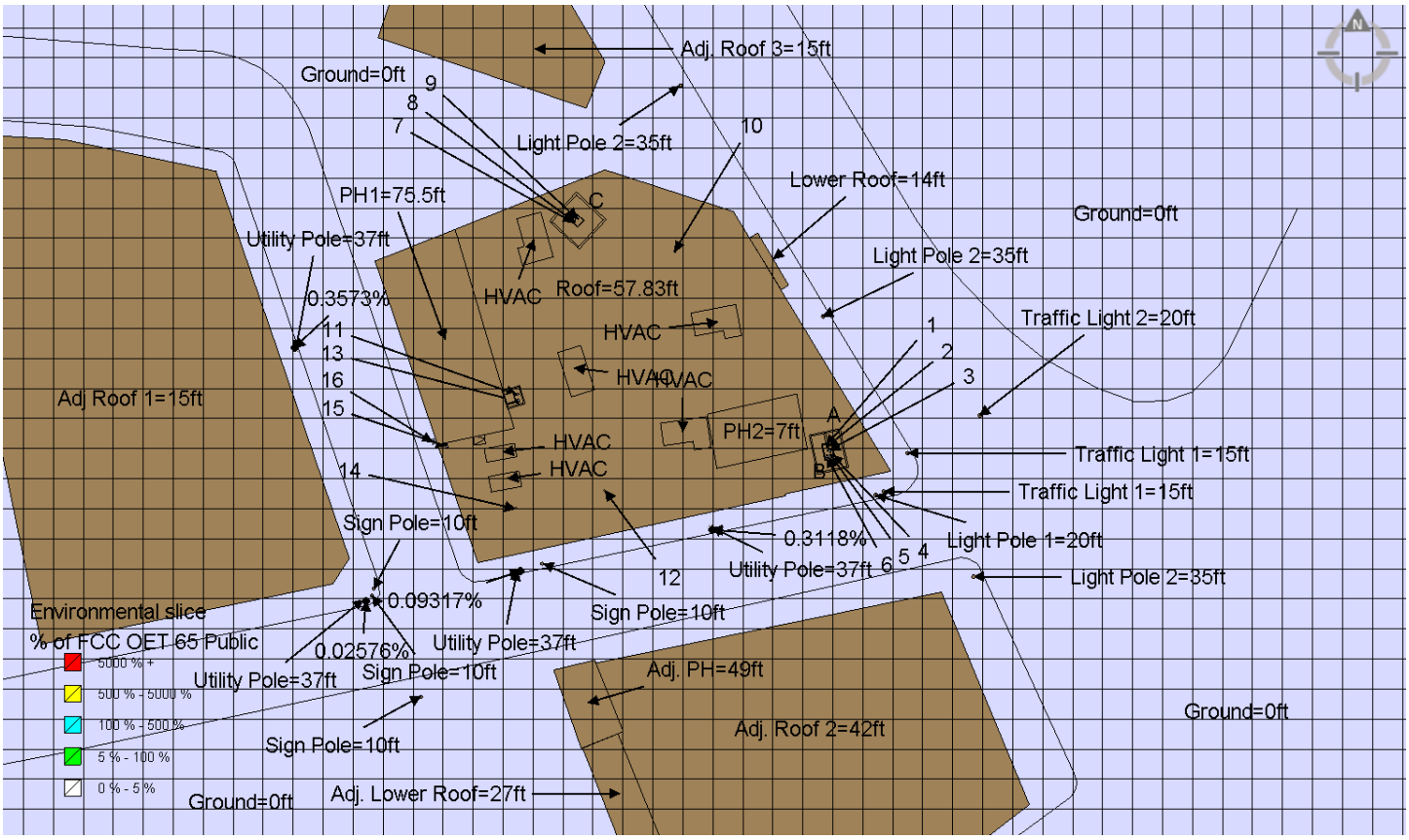
Is the areas being modeled ONLY accessible to persons trained to work in an RF environment (Occupational Area)?	☐ **YES** ☒ **NO**

Reference Plane: 37 Feet (Utility Pole Level)



y. **Predictive Modeling: Verizon Transmitters**

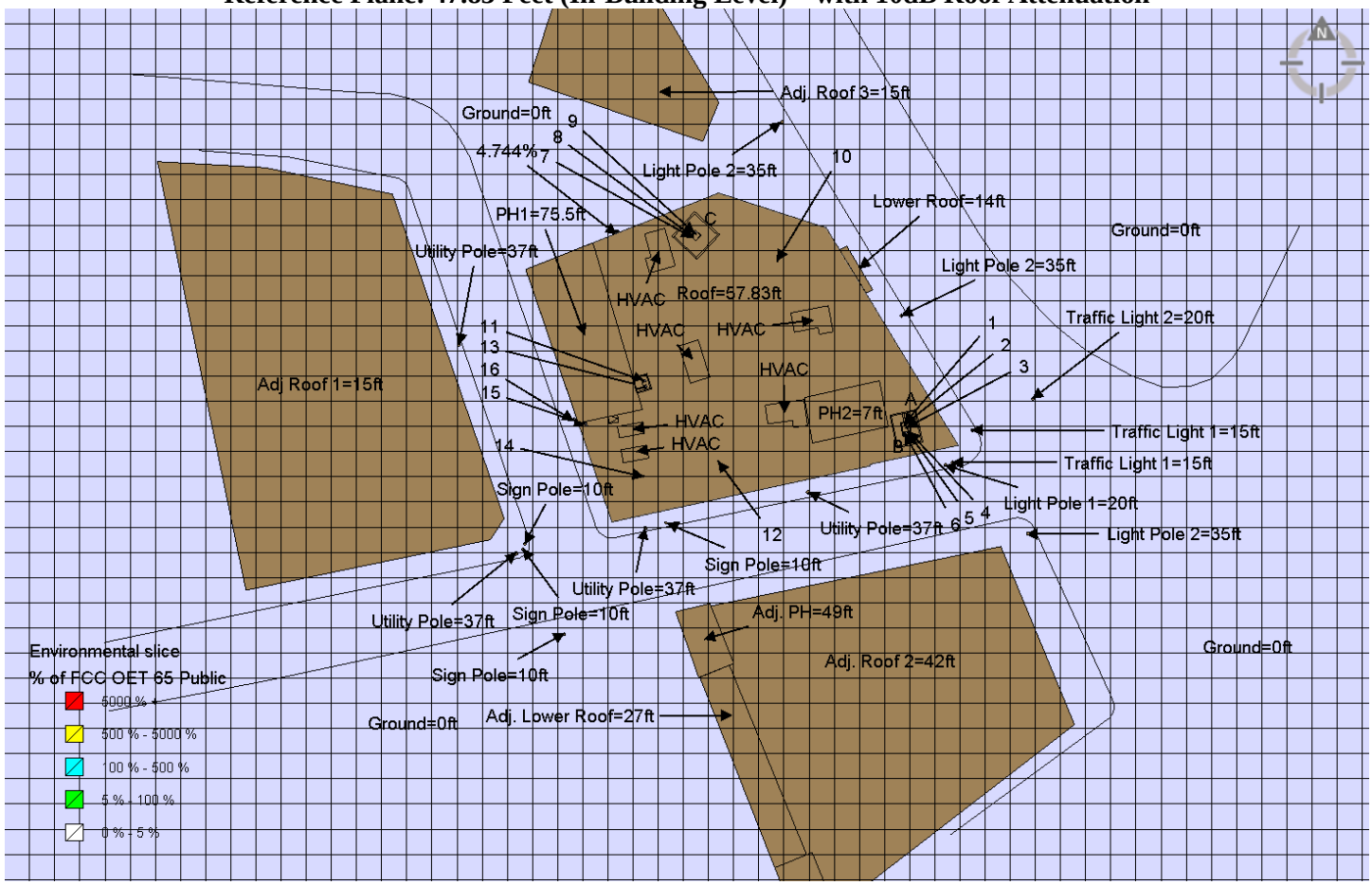
Reference Plane: 37 Feet (Utility Pole Level)



z. **Predictive Modeling: All Transmitters**

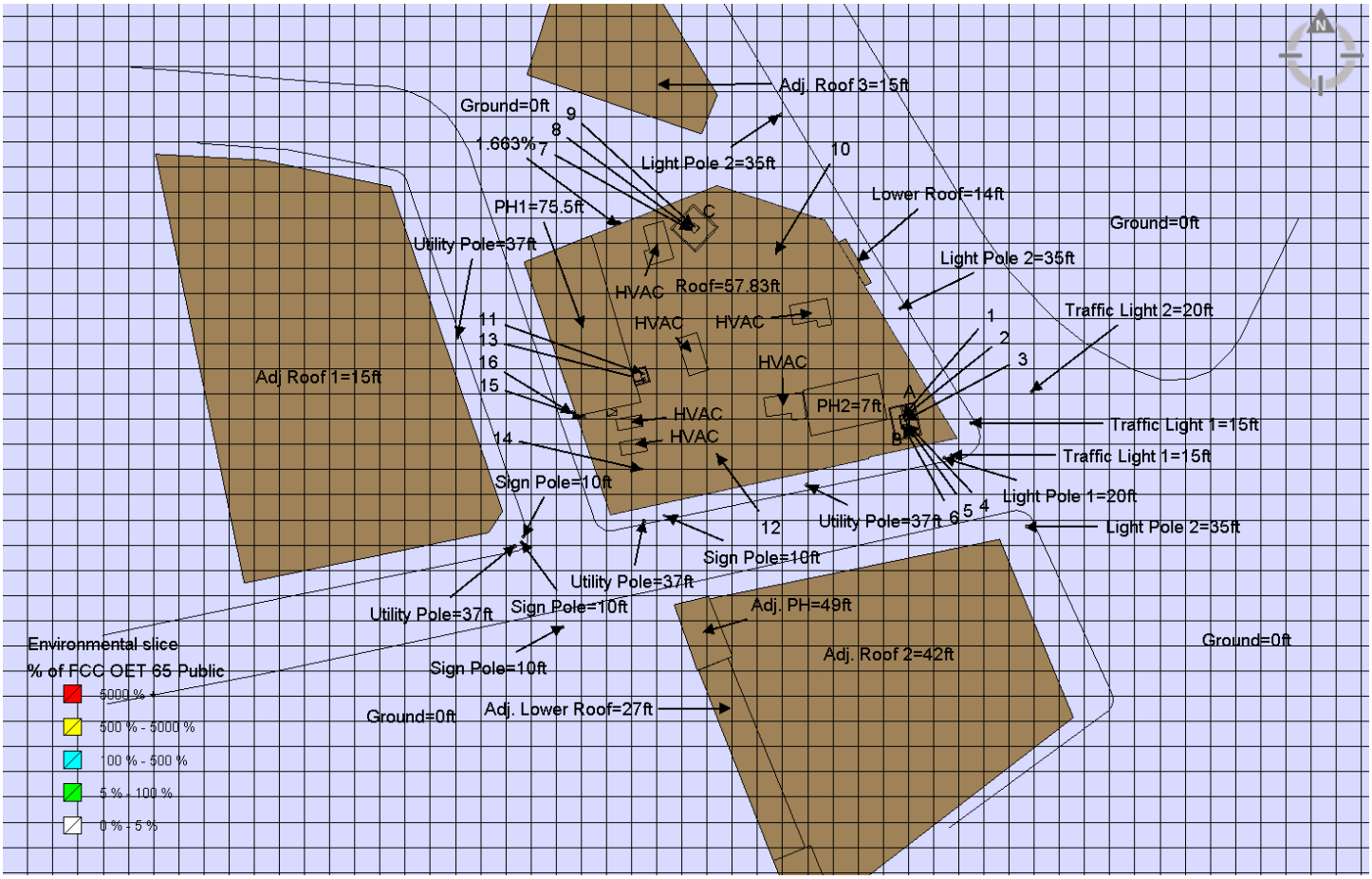
Is the areas being modeled ONLY accessible to persons trained to work in an RF environment (Occupational Area)?	☐ **YES** ☒ **NO**

Reference Plane: 47.83 Feet (In-Building Level) – with 10dB Roof Attenuation



aa. **Predictive Modeling: Verizon Transmitters**

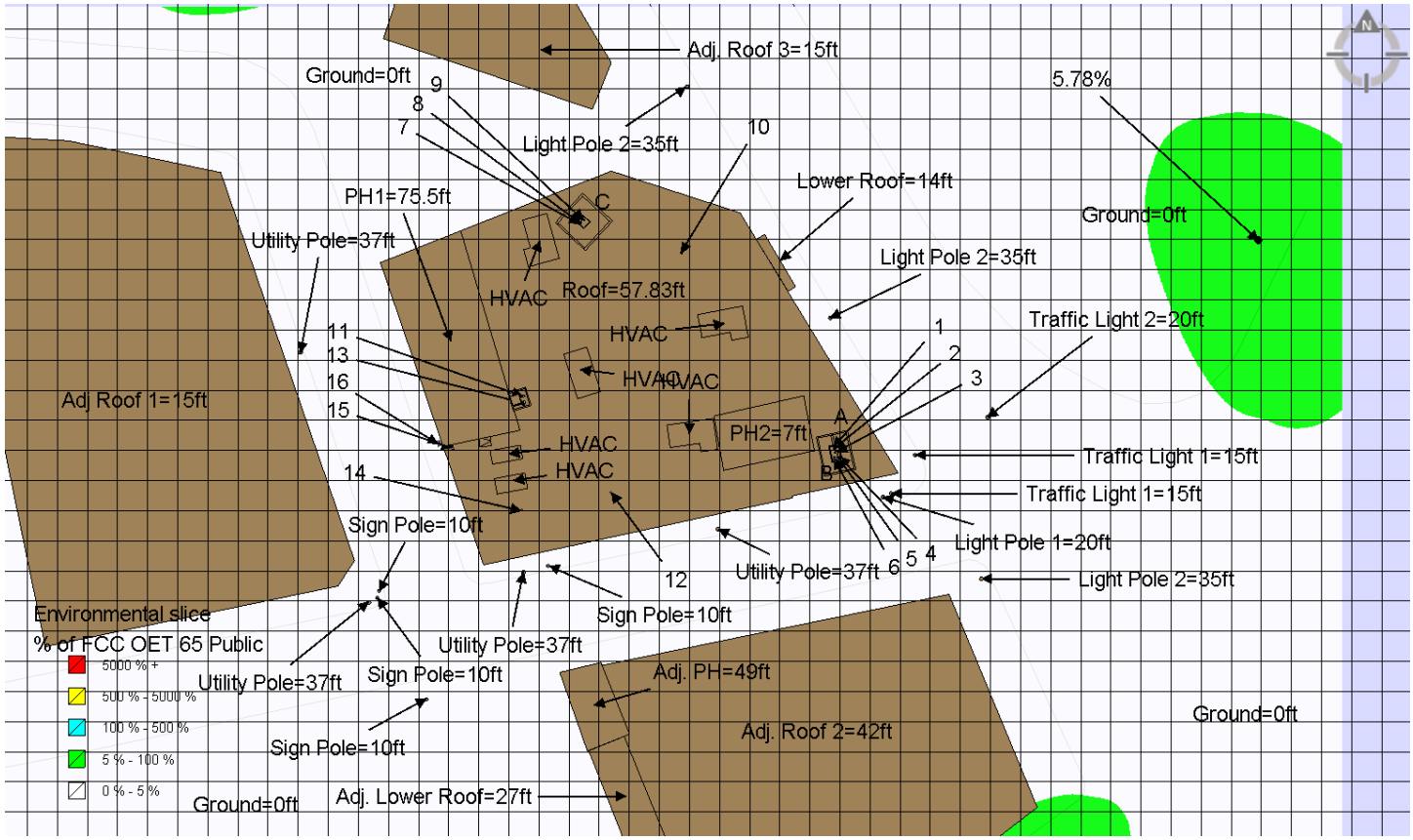
Reference Plane: 47.83 Feet (In-Building Level) – with 10dB Roof Attenuation



bb. **Predictive Modeling: All Transmitters**

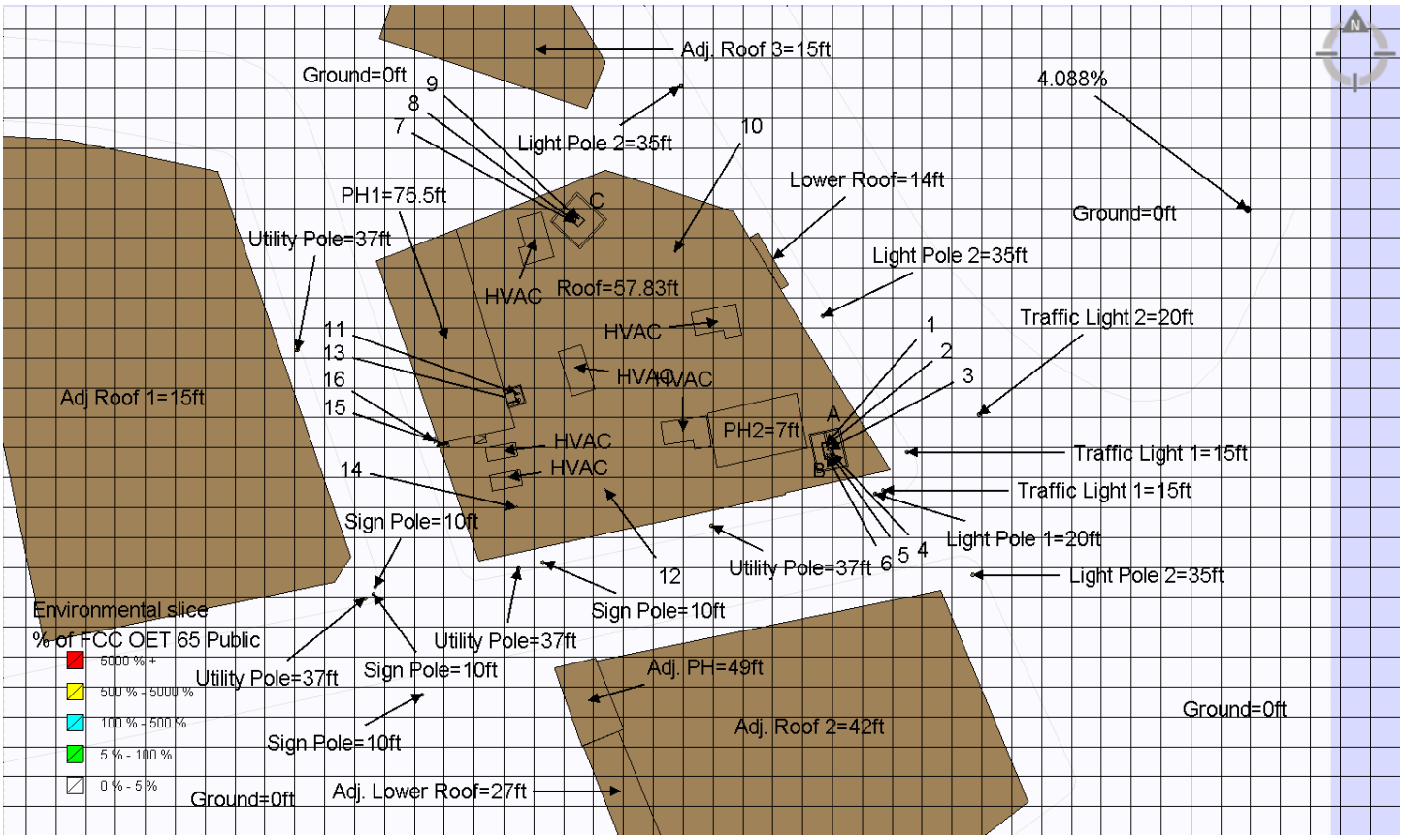
Is the areas being modeled ONLY accessible to persons trained to work in an RF environment (Occupational Area)?	☐ **YES** ☒ **NO**

Reference Plane: Ground Level



cc. **Predictive Modeling: Verizon Transmitters**

Reference Plane: Ground Level



Modeling color code		
Green	Less than 100%	BELOW the General Population MPE limit
Blue	100%-500%	ABOVE the General Population MPE limit and BELOW the Occupational MPE limit
Yellow	500%-5000%	ABOVE the Occupational MPE limit and BELOW 10x the Occupational MPE limit
Red	More than 5000%	ABOVE 10x the Occupational MPE limit

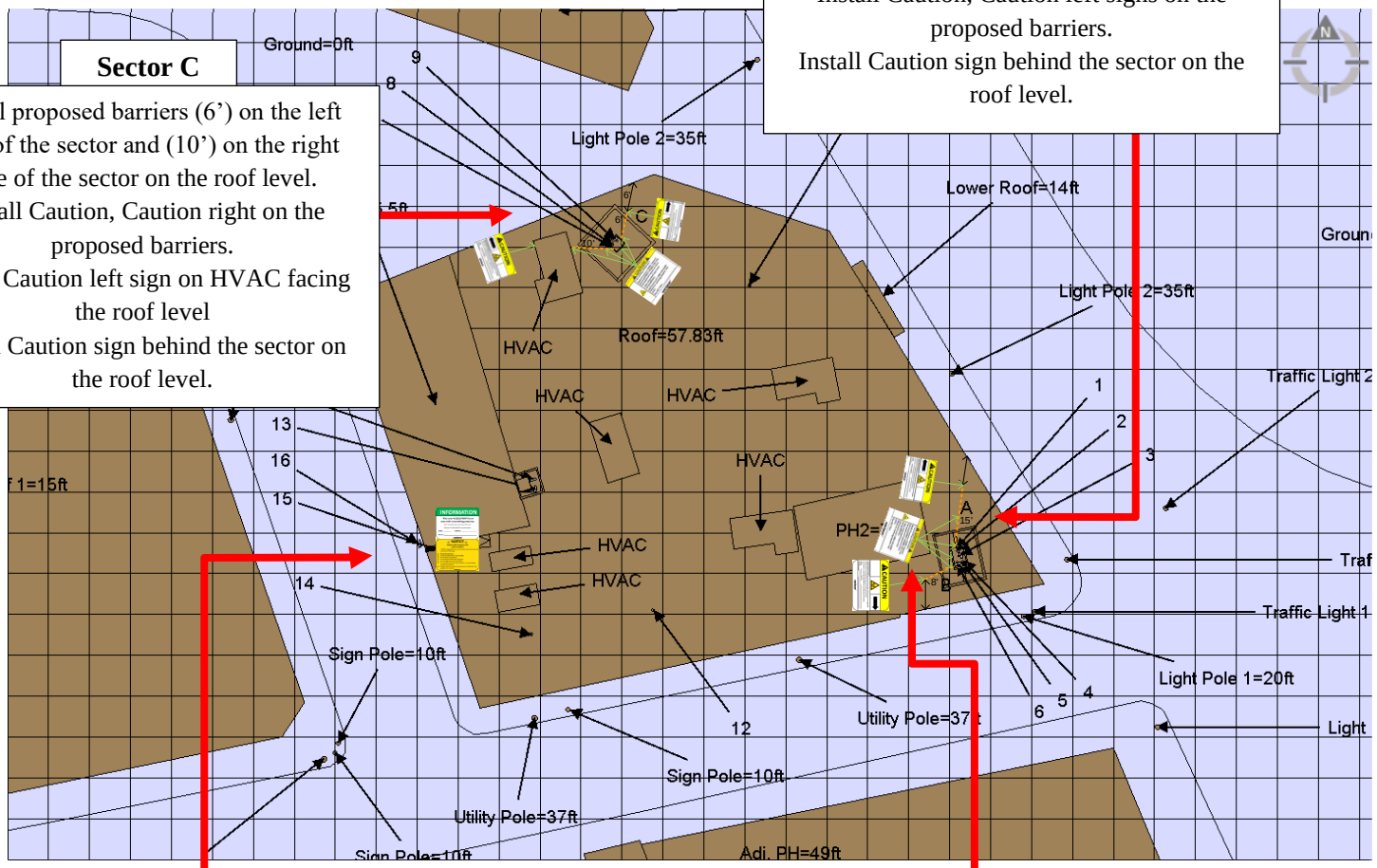
Signage/Barrier Diagram:

Sector A

Install proposed barriers (15') on the right side of the sector on the roof level.
Install Caution, Caution left signs on the proposed barriers.
Install Caution sign behind the sector on the roof level.

Sector C

Install proposed barriers (6') on the left side of the sector and (10') on the right side of the sector on the roof level.
Install Caution, Caution right on the proposed barriers.
Install Caution left sign on HVAC facing the roof level
Install Caution sign behind the sector on the roof level.



Roof's Access Hatch

Install NOC and Guidelines signs.

Sector B

Install proposed barriers (8') on the left side of the sector on the roof level.
Install Caution, Caution right signs on the proposed barriers.
Install Caution sign behind the sector on the roof level.

Signature:

Engineering Certification

I, Kenneth D. Gilbert, P.E., PMP provide that:

- I am a Registered Professional Engineer in the state of Massachusetts, license # 50087 expiration date 06/30/2026.

- I am familiar with the rules and regulations of the Federal Communications Commission (FCC) as well as the regulations of the Occupational Safety and Health Administration (OSHA), both in general and specifically as they apply to the FCC OET Bulletin 65, Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields.

- I reviewed the RFE-EME compliance report for the Verizon site.

Site Name:	SOMERVILLE_7_MA - BF Somerville Rooftop
Address:	49 Davis Square Somerville, MA 02144

and based on supplied data evaluated by industry standard RF compliance software designed for modeling the RF environment on rooftops, towers, small cell and Distributed Antenna Systems, and to the best of my knowledge, I believe the report to be true and accurate.

Kenneth D. Gilbert, P.E., PMP
Registered Professional Engineer

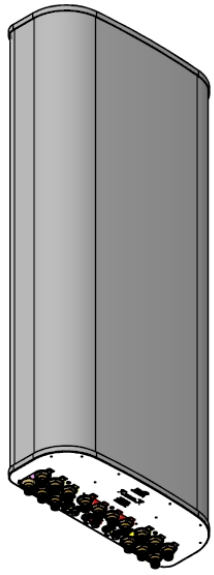
MX16FIT465-02

NWAV™ X-Pol 16-Port Antenna

X-Pol 16-Port 4 ft, 65° Form In Tighter, with Smart Bias Ts, 698-3980 MHz:

4 ports 698-894 MHz, 8 ports 1695-2690 MHz, and 4 ports 3400-3980 MHz

- 16-Port antenna offering the same functionality as 2 Hex Port antennas in a single unit
- Full mid band arrays for maximum gain
- Fully integrated (iRETs) with independent RET control for low band and mid band
- Optimized CBRS radiation patterns for improved RSRP and maximum EIRP
- FET configured with internal RET for CBRS and ease of future network optimization
- Excellent passive intermodulation (PIM) performance reduces harmful interference.
- SON-Ready array spacing supports beamforming capabilities.
- Suitable for 3G, 4G, and 5G interface technologies
- Integrated Smart Bias-Ts reduce leasing costs
- Optimized form factor for reduced wind loading



Electrical specification (minimum/maximum)	Ports 1, 2, 3, 4		Ports 5, 6, 7, 8, 9, 10, 11, 12				
Frequency bands, MHz	698-806	806-894	1695-1880	1850-1990	1920-2180	2300-2360	2496-2690
Polarization	± 45°		± 45°				
Average gain over all tilts, dBi	12.9	13.5	16.6	16.8	17.1	17.2	17.3
Horizontal beamwidth (HBW), degrees[1]	70	63	67	64	61	60	58
Front-to-back ratio, co-polar power @180°± 30°, dB	>25.0	>25.0	>25.0	>25.0	>25.0	>25.0	>25.0
X-Pol discrimination (CPR) at boresight, dB	>20.0	>18.0	>19	>18	>18	>18	>18
Vertical beamwidth (VBW), degrees[1]	17.5	16.0	7.8	7.1	6.9	6.7	6.5
Electrical downtilt (EDT) range, degrees	2-16		0-9				
First upper side lobe (USLS) suppression, dB[1]	≤-15.0	≤-15.0	≤-16.0	≤-16.0	≤-16.0	≤-16.0	≤-16.0
Cross-polar isolation, port-to-port, dB[1]	25	25	25	25	25	25	25
Max VSWR / return loss, dB	1.5:1 / -14.0		1.5:1 / -14.0				
Max passive intermodulation (PIM), 2x20W carrier, dBc	-153		-153				
Max input power per any port, watts	300		250				
Total composite power all ports, watts	1500						

[1] Typical value over frequency and tilt

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MX16FIT465-02

NWAV™ X-Pol 16-Port Antenna

Electrical specification (minimum/maximum)	Ports 13, 14, 15, 16	
Frequency bands, MHz	3400-3550	3550-3980
Polarization	± 45°	
Average gain over all tilts, dBi	13.6	13.8
Horizontal beamwidth (HBW), degrees	65	62
Front-to-back ratio, co-polar power @180°± 30°, dB	>25	>25
Vertical beamwidth (VBW), degrees[1]	20.0	19.6
Electrical downtilt (EDT) range, degrees	2-12	
First upper side lobe (USLS) suppression, dB[1]	≤-15	≤-15
Cross-polar isolation, port-to-port, dB[1]	25	25
Max VSWR / return loss, dB	1.5:1 / -14.0	
Max input power per any port, watts	150	
Total composite power all ports (1-10), watts	1500	

Ordering information	
Antenna model	**Description**
MX16FIT465-02	4F X- Pol 16 PORT FIT 65º 2-16º/ 0-9º/2-12º, 4.3-10 & SBT
Optional accessories	
AISG cables	M/F cables for AISG connections
PCU-1000 RET controller	Stand-alone controller for RET control and configurations
91900314-02	Dual Mount Bracket (see 91900314 bracket document for details)

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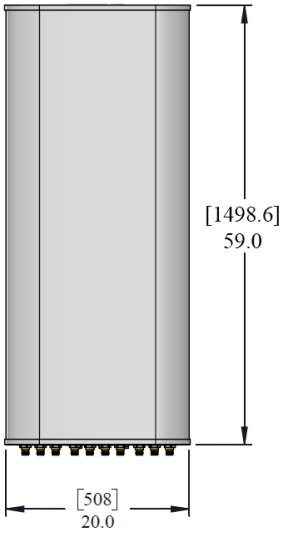
MX16FIT465-02

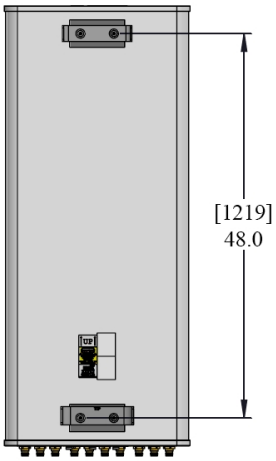
NWAV™ X-Pol 16-Port Antenna

Mechanical specifications	
Dimensions height/width/depth, inches (mm)	59/ 20.0/ 8.0 (1498.6/ 508.0/ 203.2)
Shipping dimensions length/width/height, inches (mm)	60/ 26/ 15 (1524/ 600/ 381)
No. of RF input ports, connector type, and location	16 x 4.3-10 female, bottom
RF connector torque	96 lbf·in (10.85 N·m or 8 lbf·ft)
Net antenna weight, lb (kg)	53.9 (24.4)
Shipping weight, lb (kg)	94.6 (42.9)
Antenna mounting and downtilt kit included with antenna	91900318
Net weight of the mounting and downtilt kit, lb (kg)	18 (8.2)
Range of mechanical up/down tilt	-2° to 12°
Rated wind survival speed, mph (km/h)	150 (241)
Frontal and lateral wind loading @ 150 km/h, lbf (N)	105.9 (471.1), 49.0 (218.0)
EPA frontal and lateral, ft^2, (m^2)	4.8 (0.45), 2.2 (0.20)

Front view



Back view



Bottom view

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Remote electrical tilt (RET 1000) information	
RET location	Integrated into antenna
RET interface connector type	8-pin AISG connector per IEC 60130-9 or RF port bias-t
RET connector torque	Min 0.5 N·m to max 1.0 N·m (hand pressure & finger tight)
RET interface connector quantity	3 pairs of AISG male/female connectors and 3 RF port Bias Ts
RET interface connector location	Bottom of the antenna
Total no. of internal RETs 698-894 MHz	1
Total no. of internal RETs 1695-2690 MHz	2
Total no. of internal RETs 3400-3980 MHz	1
RET input operating voltage, vdc	10-30
RET max power consumption, idle state, W	≤ 2.0
RET max power consumption, normal operating conditions, W	≤ 13.0
RET communication protocol	AISG 2.0 / 3GPP

RET and RF connector topology

Each RET device can be controlled either via the designated external AISG connector or RF smart bias-t port as shown below:

Band	RF port
1695-2690	5-8
3400-3980	13-16

Band	RF port
698-894	1-4

Band	RF port
1695-2690	9-12

Note: The RET Device for 3400-3980 MHz is connected via the 1695-2690 Port 5 Bias T port or 1695-2690/3400-3980 MHz AISG ports.

Array topology

6 sets of radiating arrays

R1: 698-894 MHz
R2: 698-894 MHz
Y1: 1695-2690 MHz
Y2: 1695-2690 MHz
Y3: 1695-2690 MHz
Y4: 1695-2690 MHz
P1: 3400-3980 MHz
P2: 3400-3980 MHz

Band	RF port
698-894	1-4
1695-2690	5-12
3400-3980	13-16

SAMSUNG NETWORKS

5G NR mmWave Access Unit

28GHz (n257)

AT1K01

Samsung's AT1K01 is an integrated Access Unit targeting rapid deployment of first-wave 5G networks using high-frequency millimeter wave, ideal for high-density deployments with strict footprint requirements.

The AT1K01 Access Unit (AU) targets support for NR Band 257 (28GHz) and an incredibly compact footprint, which makes it ideal for deployment of ultra-high capacity 5G coverage.

The AU combines both RF (Radio Frequency) and baseband processing functionality as well as a built-in antenna array into a single form-factor enabling robust coverage and high throughput connectivity. The range and line-of-sight challenges introduced by high-frequency millimeter wave spectrum are overcome thanks to Samsung's hybrid beamforming technology which focuses radio output at each individual device.

By integrating radio and baseband functionality into a single unit, the AU can be deployed as part of a streamlined RAN architecture, more flexibly matching performance, load management and optimization requirements with available backhaul capacity and target use case requirements.

Features and Benefits

- Single-box architecture streamlines, simplifies and compacts deployment
- Beamforming capability overcomes challenges of high-frequency coverage
- Minimal footprint reduces site acquisition and deployment costs
- Rapid, easy installation onto pole-mount
- Sleek design blends into streetscape environments
- Convection cooled, silent operation
- Supports option 2 functional split

Key Technical Specifications

Duplex Type: TDD
Operating Frequency: n257 (26.5~29.5Hz)
Occupied B/W: 800MHz
Antenna Elements: 1024 (256 per path)
Antenna Configuration: 4T4R
EIRP: 60dBm (54dBm x 4 paths)
Backhaul Interface: 2x SFP+ or 2x SFP28
Dimensions: 9.57 x 16.81 x 6.89 inches (18.2L)
Weight: 33 lbs
Input Power: -48V DC or 100~240V AC
Operating Temp.: -40°C ~ +55°C
Cooling: Natural convection

※ Specification is subject to change

Chapter 1 Before Installation

This chapter introduces the AU system and describes the items that you should know before installation.

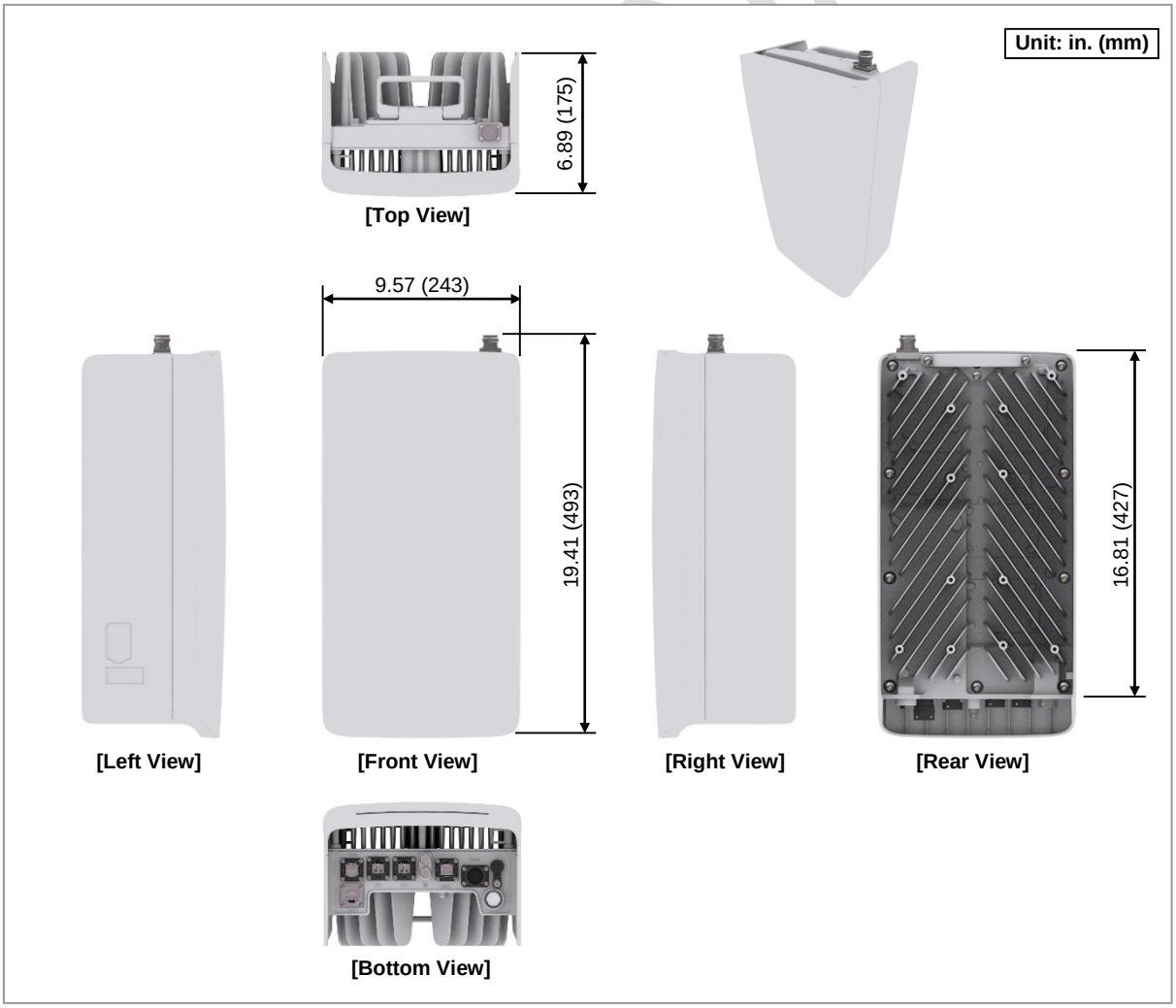
AU View and External Interface

This section provides the physical structure of the AU and its interfaces.

AU View

The figure below depicts the physical structure of the AU:

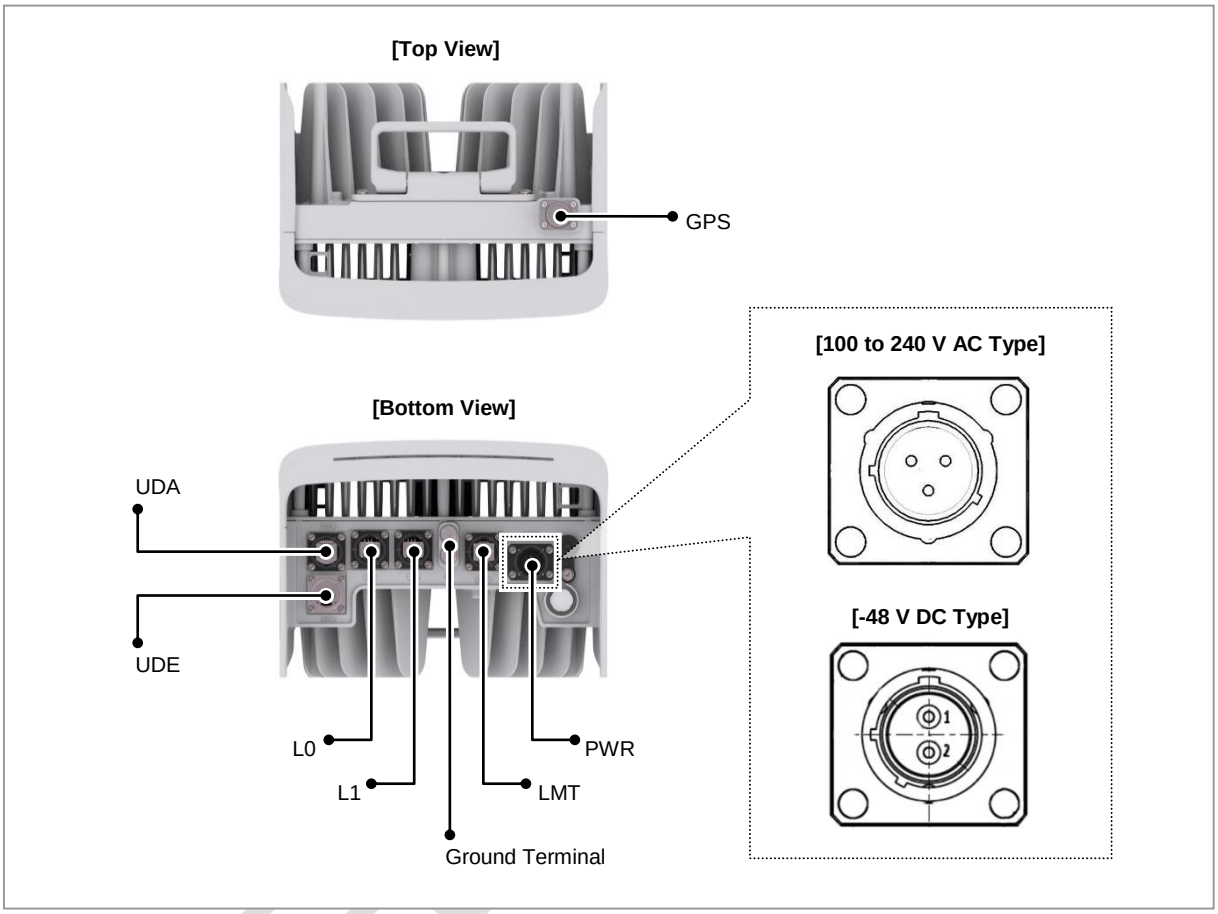
Figure 1. AU View



AU External Interface

The figure below depicts the external interface structure of the AU:

Figure 2. AU External Interface



Specifications

The table below outlines the main specifications of the AU:

Table 1. Specifications

Item		AT1K01
Technology		5G NR
Operating Frequency		27.5 to 28.35 GHz
RF Chain		1024 TR/unit
Antenna Array	Configuration	1024 AE (4T4R)
	Element	256 AE (16H16V)/path, 1024 AE/unit
	Gain	28 dBi/path
IBW/OBW		850/800 MHz
Channel Bandwidth/Capacity		100 MHz Max 8CC (50/200/400 MHz will be supported in ES2, SVR19A: 100 MHz)
RF Output Power		26 dBm/path, 32 dBm/unit
Input Voltage		-48 V DC (-36 to -58 V DC) or 100 to 240 V AC
Input Current		10.9 A @ -48 V DC 4.3 A @ 100 to 240 V AC
LED		Total: 1 EA Powered, Operational, Fail (3 Status w/different colors)
Operational Temperature		-40~55°C (with solar load)
Humidity		TBD
IP rating		IP65
EMC		FCC Title 47 CFR Part 15 Subpart B
Safety		UL 60950 or 62368
Installation		Pole/Wall/Tower mounting
Dimension (W × D × H)		• 9.57 in. (243 mm) × 6.89 in. (175 mm) × 16.81 in. (427 mm) •(@without cover) • 9.57 in. (243 mm) × 6.89 in. (175 mm) × 19.4 in. (493 mm) (@with cover & GPS Port)
Volume		< 18.16 L
Weight		< 33.07 lb (15.8 kg)

Chapter 1 Before Installation

This chapter introduces the RRH, its view and external interface that should be known before installation.

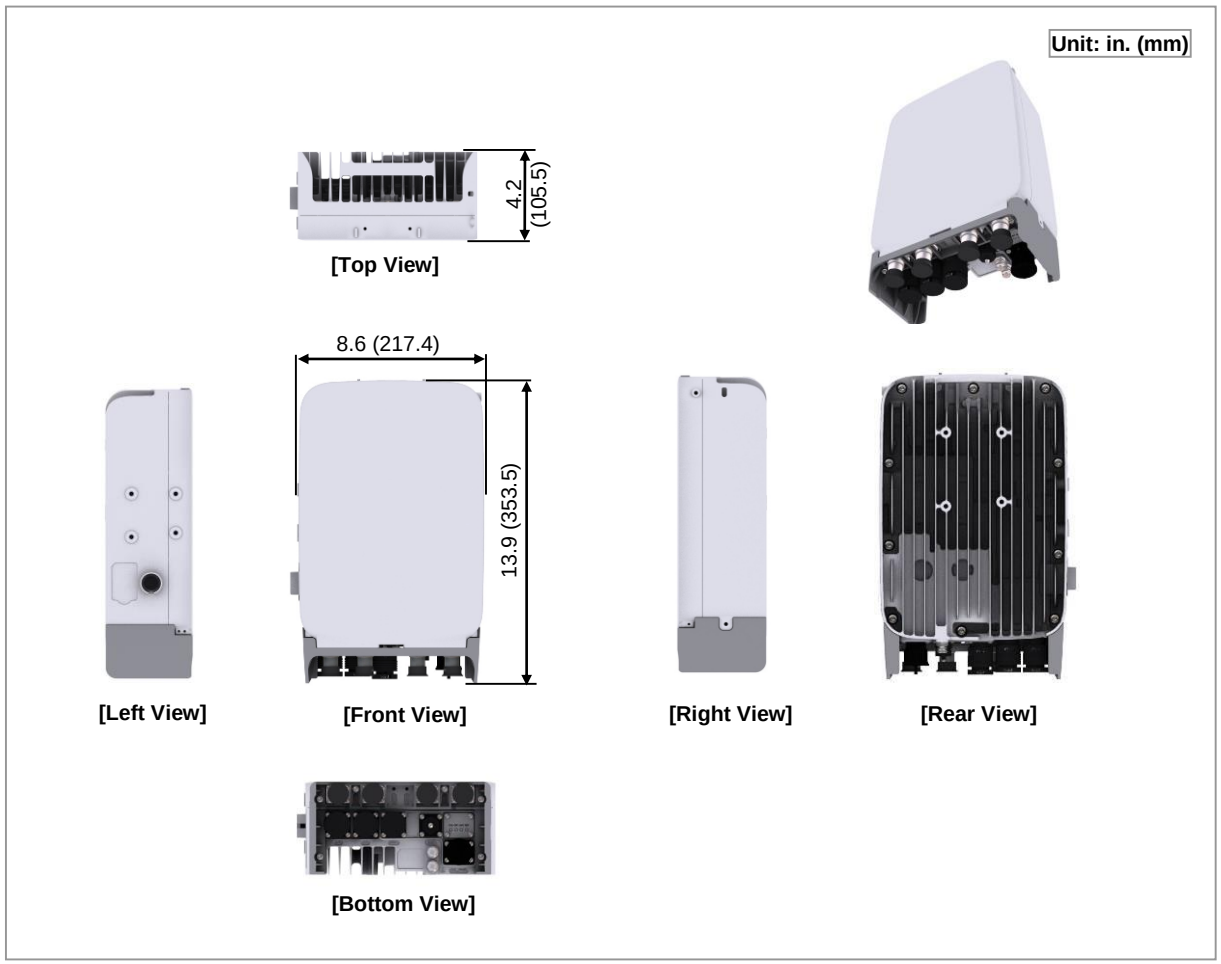
RRH View and External Interface

This section provides the physical structure of the RRH and its interfaces.

RRH View

The following figures depict the physical structure of the RRH.

Figure 1. RRH View



RRH External Interface

The following figures depict the external interface structure of the RRH.

Figure 2. RRH External Interface

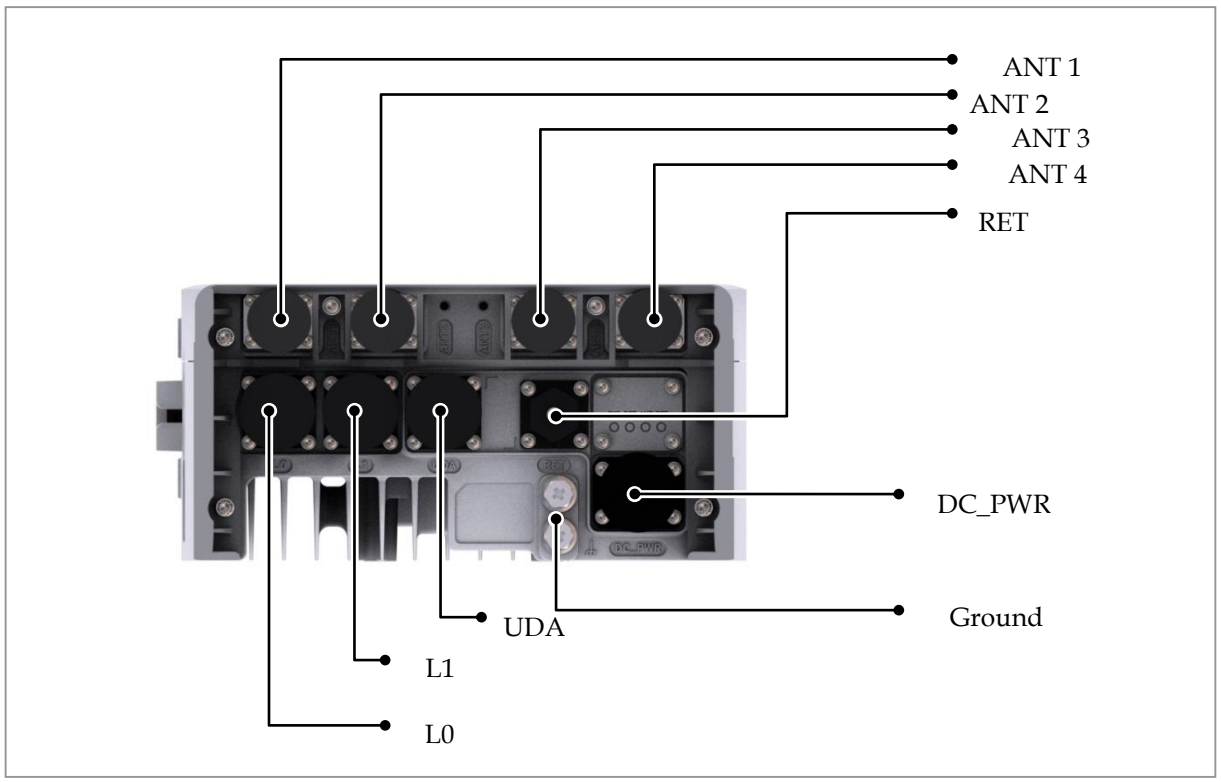


Table 1. RRH External Interface Specifications

Interface	Description
ANT1 , ANT2, ANT3 ,ANT4	External Antenna ports
AISG	AISG interface for RET connection
L0,L1	L0(CPRI_0) , L1(CPRI_1) CPRI ports
DC_PWR	DC power supply connection
Ground Terminal	surge protection
UDA	External UDA alarms

Figure 3. System View (with Clip-on: Antenna + AC-DC Power Unit)

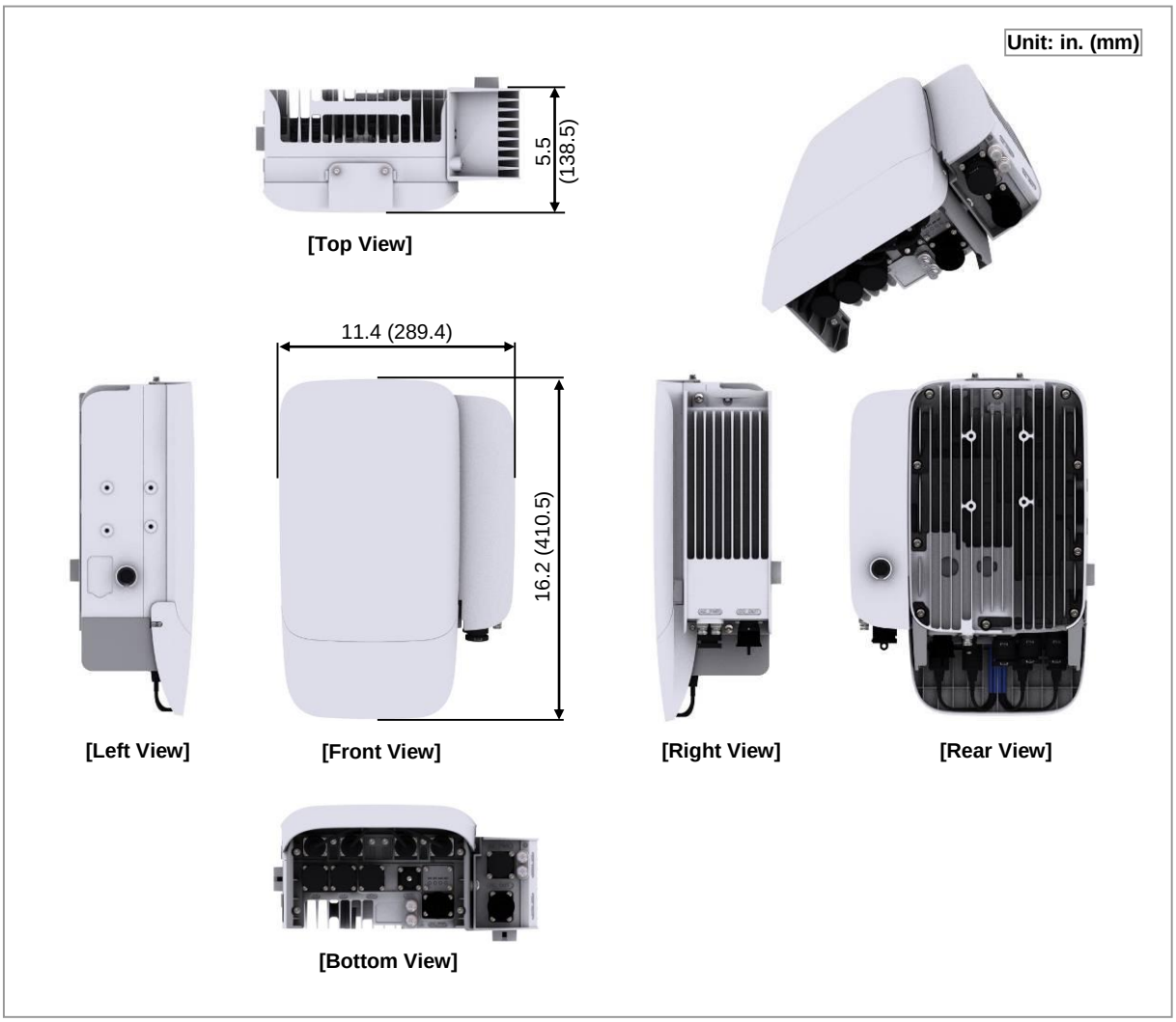


Figure 4. System External Interface (with Clip-on: Antenna + AC-DC Power Unit)

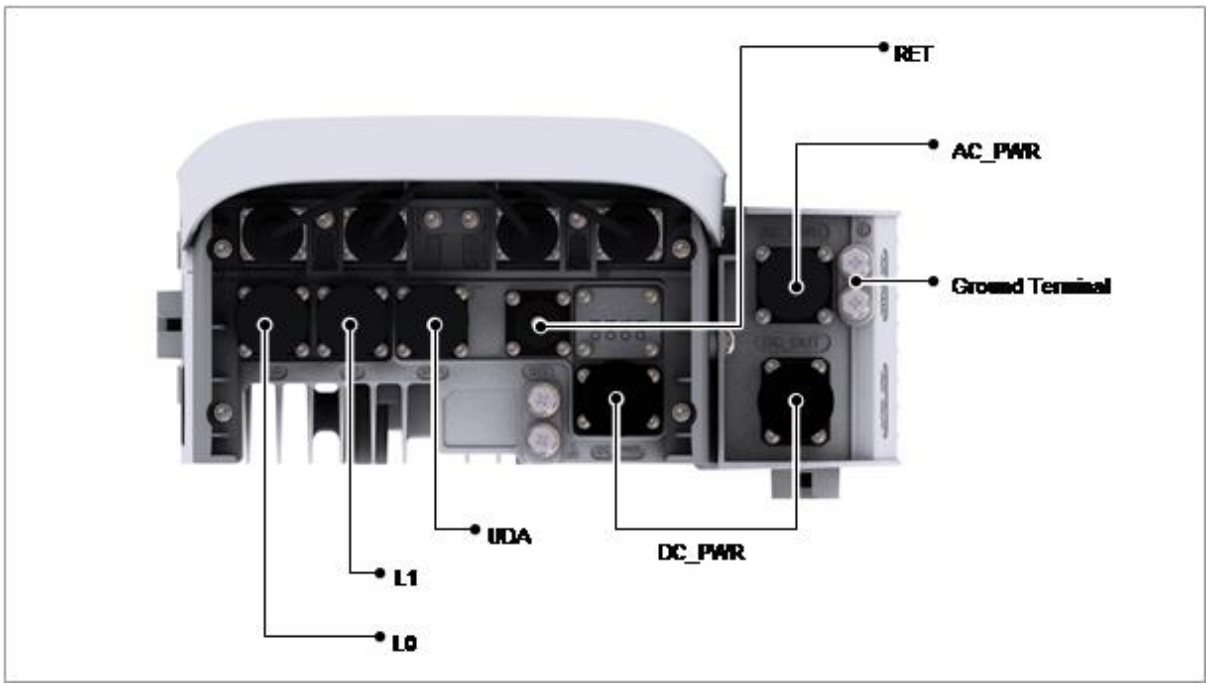
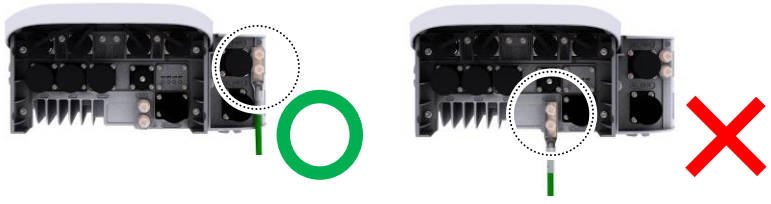


Table 2. RRH External Interface (with Clip-on: RRH Antenna and + AC-DC Power Unit) AC-DC Power Unit External Interface Specifications

Interface	Description
AC_PWR	AC main power supply connection
DC_PWR	Converted AC-DC power interface
Ground Terminal	For earth ground surge protection

⚠ When interoperating the AC-DC power unit, the ground cable must be connected to the ground terminal of the AC-DC power unit.



Specifications

The following table outlines the main specifications of the RRH.

Table 3. RRH (RT4401-48A) Specifications

Parameter	RT4401-48A
Air Technology	LTE
Band	Band 48 (3.5 GHz)
Operating Frequency (MHz)	3550 to 3700
Instantaneous Bandwidth (IBW)/ Occupied Bandwidth (OBW)	150 MHz/80 MHz
Carriers	5/10/15/20 MHz × 4 carriers
RF Chain	4TX/4RX
RF Output Power/EIRP	4 path × 5 W (Total: 20 W = 43 dBm) (EIRP: 47 dBm/10 MHz)
RX Sensitivity	Typical: -101.5 dBm @ 1 Rx (3GPP 36.104, Wide Area)
Modulation	256-QAM support (1024-QAM with 1 to 2 dB power back-off)
Input Power	-48 VDC (-38 to -57 VDC, 1 SKU), with clip-on AC-DC converter (Option)
Power Consumption	About 160 Watt @ 100% RF load, typical conditions
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
Volume	< 7 L (without antenna), < 9.6 L (with antenna)
Weight	< 18.64 lb (8 kg), (without antenna) < 23.14 lb (10.5 kg), (with antenna)
Operating Temperature	-40°C to +55°C (without solar load)
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/m3 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

Parameter	RT4401-48A
EMC	FCC Title 47, CFR Part 96
Safety	UL 60950-1 2nd ED UL 62368-1 UL 60950-22
RF	FCC Title 47, CFR Part 96

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

Table 4. AC-DC Power Unit Specifications

Item	AC-DC Power Unit
Input Voltage	90 to 260 V AC
Output Voltage	-48 VDC ± 5%
Output Power	Maximum. 250 W
Surge	± 20 kA (Line to Line, Line to PE)
Operating Temperature	-40 to +55°C
Ingress Protection	IP65
Dimension (W × D × H)	4.13 in. (105 mm) × 3.27 in. (83 mm) × 11.5 in. (292.3 mm) : Including curve bulge
Weight	< 5.51 Ib (2.5 kg)