



# CITY OF CAMBRIDGE

BOARD OF ZONING APPEAL

831 Massachusetts Avenue, Cambridge MA 02139

617-349-6100

2023 MAY 22 AM 11:58

OFFICE OF THE CITY CLERK  
CAMBRIDGE, MASSACHUSETTS

## BZA Application Form

**BZA Number: 222599**

### General Information

The undersigned hereby petitions the Board of Zoning Appeal for the following:

Special Permit:   X                        Variance:                             Appeal:       

**PETITIONER:** New Cingular Wireless PCS, LLC ("AT&T") C/O Michael R. Dolan, Esq. with Brown Rudnick LLP

**PETITIONER'S ADDRESS:** 110 Memorial Boulevard, Providence, RI 02903

**LOCATION OF PROPERTY:** 402 Rindge Ave., Cambridge, MA

**TYPE OF OCCUPANCY:** Telecommunication Facility                      **ZONING DISTRICT:** Residence C-2 Zone

### **REASON FOR PETITION:**

/Telecommunication Facility (antenna)/

### **DESCRIPTION OF PETITIONER'S PROPOSAL:**

AT&T is proposing to add and relocate certain equipment, antennas and cabling on the roof of the Building so as to improve the RF signal transmission for AT&T customers in this area of Cambridge (the antenna facility as improved pursuant to this application, collectively hereinafter referred to as the "Facility"). In particular, AT&T is proposing to add and relocate the following:

1. Move the 2 existing gamma sector antennas from the upper rooftop penthouse to the westerly edge of the rooftop inside 2 RF-friendly faux chimneys/flues and also install a new third gamma sector antenna next to the aforementioned 2 relocated antennas and within the same style RF-friendly faux chimney/flue. The top height of the faux chimneys/flues will be 203' 2" and they will be painted to match the color of the building and penthouses. AT&T is also proposing to relocate the existing 3 gamma sector radios and add 3 radios all next to the new gamma antennas, all as more particularly shown on the plans.
2. Add 2 new antennas below the existing 2 beta sector antennas on the southerly penthouse façade and paint the antennas to match the penthouse. The centerline heights of the 2 new antennas will be 192' 5" and 188' 5", respectively.
3. Add 2 new antennas above the existing 2 alpha sector antennas on the northerly penthouse façade and paint the antennas to match the penthouse. The centerline heights of the 2 new antennas will be 200' 5" and 196' 3", respectively.

### **SECTIONS OF ZONING ORDINANCE CITED:**

- |                 |  |
|-----------------|--|
| Article: 4.000  | Section: 4.32.G.1 & Sec, 4.40 (Footnote 49)(Telecommunication Facility). |
| Article: 10.000 | Section: 10.40 (Special Permit)  |
| Article: 6409   | Section: Federal Middle Class Tax Relief Act (Spectrum Act).             |

Original  
Signature(s):

Michael R. Dolan (jed)

(Petitioner (s) / Owner)

New Cingular Wireless PCS, LLC  
c/o Michael R. Dolan, Esq.

(Print Name)

Brown Rudnick LLP  
10 Memorial Boulevard, Providence, RI 02903

Address:

Tel. No. 401-276-2610

E-Mail Address: mdolan@brownrudnick.com

Date: May 11, 2023

## BZA Application Form

### DIMENSIONAL INFORMATION

**Applicant:** New Cingular Wireless PCS, LLC ("AT&T")  
**Location:** 402 Rindge Ave., Cambridge, MA  
**Phone:** 401-276-2610

**Present Use/Occupancy:** Telecommunication Facility  
**Zone:** Residence C-2 Zone  
**Requested Use/Occupancy:** Telecommunication Facility

		<u>Existing Conditions</u>	<u>Requested Conditions</u>	<u>Ordinance Requirements</u>	
<u>TOTAL GROSS FLOOR AREA:</u>		N/A	N/A	N/A	(max.)
<u>LOT AREA:</u>		N/A	N/A	N/A	(min.)
<u>RATIO OF GROSS FLOOR AREA TO LOT AREA:</u> <sup>2</sup>		N/A	N/A	N/A	
<u>LOT AREA OF EACH DWELLING UNIT</u>		N/A	N/A	N/A	
<u>SIZE OF LOT:</u>	WIDTH	N/A	N/A	N/A	
	DEPTH	N/A	N/A	N/A	
<u>SETBACKS IN FEET:</u>	FRONT	N/A	N/A	N/A	
	REAR	N/A	N/A	N/A	
	LEFT SIDE	N/A	N/A	N/A	
	RIGHT SIDE	N/A	N/A	N/A	
<u>SIZE OF BUILDING:</u>	HEIGHT	N/A	N/A	N/A	
	WIDTH	N/A	N/A	N/A	
	LENGTH	N/A	N/A	N/A	
<u>RATIO OF USABLE OPEN SPACE TO LOT AREA:</u>		N/A	N/A	N/A	
<u>NO. OF DWELLING UNITS:</u>		N/A	N/A	N/A	
<u>NO. OF PARKING SPACES:</u>		N/A	N/A	N/A	
<u>NO. OF LOADING AREAS:</u>		N/A	N/A	N/A	
<u>DISTANCE TO NEAREST BLDG. ON SAME LOT</u>		N/A	N/A	N/A	



**BZA APPLICATION FORM - OWNERSHIP INFORMATION**

To be completed by OWNER, signed before a notary and returned to The Secretary of the Board of Zoning Appeals.

I/We Rindge Towers Apartments, LLC  
(OWNER)

Address: 1035 Cambridge Street, #12, Cambridge, MA 02141

State that I/We own the property located at 402 Rindge Street, which is the subject of this zoning application.

The record title of this property is in the name of \_\_\_\_\_  
Rindge Towers Apartments, LLC

\*Pursuant to a deed of duly recorded in the date 12/22/2015, Middlesex South County Registry of Deeds at Book 66573, Page 239; or Middlesex Registry District of Land Court, Certificate No. \_\_\_\_\_  
Book \_\_\_\_\_ Page \_\_\_\_\_.



SIGNATURE BY LAND OWNER OR AUTHORIZED TRUSTEE, OFFICER OR AGENT\*

\*Written evidence of Agent's standing to represent petitioner may be requested.

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Commonwealth of Massachusetts, County of Middlesex

The above-name CARL NAGY KOEHLIN personally appeared before me, this 19th of MAY, 2023, and made oath that the above statement is true.



**ETHAN SOLOMON**  
Notary Public  
Commonwealth of Massachusetts  
My Commission Expires  
**October 27, 2028**

  
\_\_\_\_\_  
Notary

My commission expires October 27, 2028 (Notary Seal).

- If ownership is not shown in recorded deed, e.g. if by court order, recent deed, or inheritance, please include documentation.

## **BZA Application Form**

### **SUPPORTING STATEMENT FOR A SPECIAL PERMIT**

**Please describe in complete detail how you meet each of the following criteria referring to the property and proposed changes or uses which are requested in your application. Attach sheets with additional information for special permits which have additional criteria, e.g.; fast food permits, comprehensive permits, etc., which must be met.**

**Granting the Special Permit requested for 402 Rindge Ave , Cambridge, MA (location) would not be a detriment to the public interest because:**

**A) Requirements of the Ordinance can or will be met for the following reasons:**

AT&T's Facility will comply with all applicable sections of the Ordinance as the modified Facility will not increase the height of the Building, and the antennas and camouflaging elements will be painted to match the color of the Building surface to which they are attached.

**B) Traffic generated or patterns of access or egress would not cause congestion hazard, or substantial change in established neighborhood character for the following reasons:**

AT&T's Facility will not result in any substantial change in the character of the neighborhood as there will be no significant increase in the amount of traffic to and from the Site, or any changes to existing patterns of access or egress to the Site. Trips to and from the Facility will average one or two per month by maintenance personnel who will park their SUV in the existing parking area on Site and not on the street.

**C) The continued operation of or the development of adjacent uses as permitted in the Zoning Ordinance would not be adversely affected by the nature of the proposed use for the following reasons:**

The continued operation of or the development of adjacent uses will not be adversely affected by AT&T's equipment because AT&T's Facility will be a passive use and will not produce any smoke, odors, waste, glare, dust, or unreasonable amounts of traffic.

**D) Nuisance or hazard would not be created to the detriment of the health, safety, and/or welfare of the occupant of the proposed use or the citizens of the City for the following reasons:**

AT&T's Facility will not result in any nuisance or hazard to the detriment of the health, safety, or welfare of the citizens of the City because AT&T's facility will be a passive use and will not produce any smoke, odors, waste, glare, dust, or unreasonable amounts of traffic. As evidenced by the MPE Study submitted herewith, AT&T's Facility will comply with all applicable regulations and guidelines pertaining to radio frequency emissions.

**E) For other reasons, the proposed use would not impair the integrity of the district or adjoining district or otherwise derogate from the intent or purpose of this ordinance for the following reasons:**

The proposed Facility will be in harmony with the purposes of the Ordinance because by collocating a wireless facility on an existing Building in a manner which does not increase the height of the Building or expand its footprint, potential visual impacts are minimized. Also, the proposed Facility will not produce any smoke, odors, waste, glare or significant amounts of traffic. The Facility will have no negative impact on natural or undeveloped areas, wildlife, flora or endangered species. Consistent with the Ordinance, the Facility will function as a wireless communications services

facility within a local, regional, and national communications system. This system operates under licenses from the FCC, and AT&T is mandated and authorized to provide adequate service to the general public. The proposed Facility will comply with all applicable regulations, standards and guidelines with respect to radiofrequency emissions.

The Facility will benefit those living and working in, and traveling through, the area by providing enhanced wireless telecommunication services. The Facility will not adversely impact adjacent properties and neighborhoods as the Facility will be located on an existing Building. The collocation of the facility will not be a threat to public health, safety and welfare. In fact, Applicant submits that the facility aids in public safety by providing and improving wireless communications services to the residents, businesses, commuters, and emergency personnel utilizing wireless communications in the immediate vicinity and along the nearby roads. Consistent with the Ordinance, the Facility will function as a wireless communications services facility within a local, regional, and national communications system. This system operates under license from the FCC, and AT&T is mandated and authorized to provide adequate service to the general public. The Facility will not generate any objectionable noise, odor, fumes, glare, smoke, or dust or require additional lighting or signage. The Facility will have no negative impact on property values in the area. This is an unmanned Facility and will have minimal negative effect on the adjoining lots.

**\*If you have any questions as to whether you can establish all of the applicable legal requirements, you should consult with an attorney.**

**CODE COMPLIANCE**

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING CODES.

- MASSACHUSETTS STATE BUILDING CODE 780 CMR (9TH EDITION)
- 2017 NATIONAL ELECTRICAL CODE
- 2012 NFPA 101 - LIFE SAFETY CODE
- 2012 NFPA 1 - FIRE CODE
- NFPA 76 - FIRE PROTECTION OF TELECOMMUNICATIONS FACILITIES
- AMERICAN CONCRETE INSTITUTE
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION
- MANUAL OF STEEL CONSTRUCTION 13TH EDITION
- 2012 VERMONT FIRE AND BUILDING SAFETY CODE
- TIA/EIA-222-G
- TIA 607
- INSTITUTE FOR ELECTRICAL & ELECTRONICS ENGINEER 81
- IEEE C2 NATIONAL ELECTRIC SAFETY CODE LATEST EDITION
- TELECORDIA GR-1275
- ANSIT 311

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

THE PROJECT WILL COMPLY WITH THE LOW RISK HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL BY VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION.



**SITE NUMBER: MA3001**  
**FA LOCATION CODE: 15630860**  
**SITE NAME: CAMBRIDGE**  
**402 RINDGE AVENUE**  
**CAMBRIDGE, MA 02139**  
**MIDDLESEX COUNTY**

**UNDERGROUND SERVICE ALERT**



AT LEAST 72 HOURS PRIOR TO DIGGING, THE CONTRACTOR IS REQUIRED TO CALL DIG SAFE AT 811

**APPROVALS**

THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS & AUTHORIZE THE SUBCONTRACTOR TO PROCEED WITH CONSTRUCTION DESCRIBED HEREIN. ALL DOCUMENTS ARE SUBJECT TO REVIEW & MAY IMPOSE CHANGES OR MODIFICATIONS.

DISCIPLINE	SIGNATURE	DATE
CENTERLINE SITE ACQUISITION:		
SMARTLINK CONSTRUCTION MANAGER:		
AT&T PROJECT MANAGER:		

**GENERAL CONTRACTOR NOTES**

DO NOT SCALE DRAWINGS  
 CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK OR BE RESPONSIBLE FOR SAME.

CONTRACTOR SHALL BE REQUIRED TO SCHEDULE AND COORDINATE CONSTRUCTION WITH GICVD (OWNER) AND SIMON OPERATION SERVICES (OPERATOR) TO LIMIT DISTURBANCE, MAINTAIN ACCESS AND RESTORE THE SITE TO AT LEAST ITS EXISTING CONDITION AT THE OF THE PROJECT.

**PROJECT DESCRIPTION**

THIS PROJECT WILL BE COMPRISED OF:

TOWER TOP EQUIPMENT TO INCLUDE:

- REMOVAL OF ANTENNAS: GAMMA SECTOR: (2) ANTENNAS
- REMOVAL OF RADIOS: (1) RADIO PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (3) RADIOS
- NEW ANTENNAS: ALPHA & BETA SECTORS: (2) ANTENNAS PER SECTOR, TOTAL OF (4) ANTENNAS
- GAMMA SECTOR: (3) ANTENNAS
- RELOCATION OF EXISTING GAMMA SECTOR RADIOS
- NEW RADIOS: GAMMA SECTOR: (3) RADIOS
- NEW DIPLEXERS: GAMMA SECTOR: (6) DIPLEXERS
- NEW FAUX FLUES: TOTAL OF (3)

- GROUND EQUIPMENT TO INCLUDE
- NEW EQUIPMENT CABINET
  - NEW RADIO EQUIPMENT WITHIN EXISTING EQUIPMENT CABINETS

**DRAWING INDEX**

SHEET	
T01	TITLE SHEET
T02	SPECIFICATIONS
T03	GENERAL REQUIREMENTS, LEGEND & ABBREVIATIONS
T04	GENERAL SIGNAGE DETAILS
A01	ROOF PLAN
A02	BUILDING ELEVATION
A03	ANTENNA PLANS
A04	ANTENNA DETAILS
A05	EQUIPMENT PLANS & DETAILS
S01	SITE DETAILS
S02	FAUX FLUE DETAILS
S03	FAUX FLUE PIPE MOUNT DETAILS
E01	ELECTRICAL DIAGRAMS, DETAILS & NOTES
E02	GROUNDING DIAGRAM, DETAILS & NOTES
E03	ALPHA SECTOR PLUMBING DIAGRAM
E04	BETA SECTOR PLUMBING DIAGRAM
E05	GAMMA SECTOR PLUMBING DIAGRAM

**PROJECT TEAM**

CLIENT REPRESENTATIVE:	JEFF DELICOLLI CENTERLINE COMMUNICATIONS 95 RYAN DRIVE, SUITE 1 RAYNHAM, MA 02767 (603) 560-5020 jdellicolli@clinelc.com
SITE ACQUISITION:	JENNILLE SMITH CENTERLINE COMMUNICATIONS 750 W. CENTER STREET, FLOOR 3 WEST BRIDGEWATER, MA 02379 (774) 409-5807 jsmith@clinelc.com
ZONING:	JENNILLE SMITH CENTERLINE COMMUNICATIONS 750 W. CENTER STREET, FLOOR 3 WEST BRIDGEWATER, MA 02379 (774) 409-5807 jsmith@clinelc.com
ENGINEER:	CHAPPELL ENGINEERING ASSOCIATES, LLC 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752 (508) 481-7400
RF ENGINEER:	RADU ALECSANDRU AT&T MOBILITY - NEW ENGLAND 550 COCHITUATE RD, SUITES 13 & 14 FRAMINGHAM, MA 01701
CONSTRUCTION MANAGER:	RUSSELL ARCHER EMPIRE TELECOM 1150 FIRST AVENUE, SUITE 600 KING OF PRUSSIA, PA 19406 rarcher@empiretelecomm.com

**PACE NUMBER**

MRCTB051969	MRCTB066609	MRCTB066606	MRCTB066584
MRCTB066586	MRCTB066604	MRCTB066607	

**SITE INFORMATION**

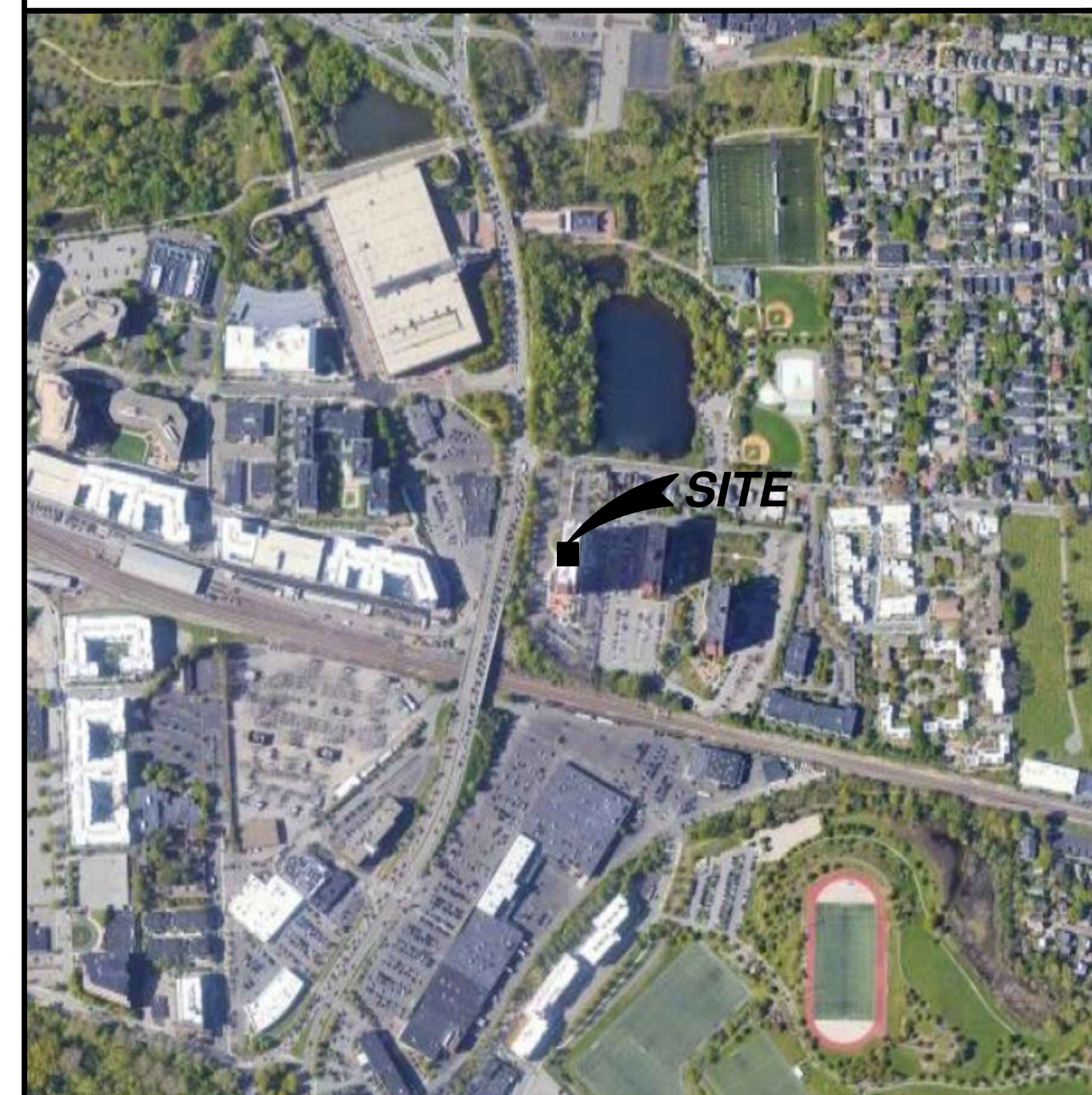
APPLICANT/LESSEE:	NEW CINGULAR WIRELESS PCS, LLC. 550 COCHITUATE ROAD, SUITES 13 & 14 FRAMINGHAM, MA 01701
PROPERTY OWNER:	RINDGE TOWERS APARTMENTS LLC 1035 CAMBRIDGE STREET #12 CAMBRIDGE, MA 02141
SITE ADDRESS:	402 RINDGE AVENUE CAMBRIDGE, MA 02139
PARCEL ID:	MAP 268B LOT 45
LATITUDE:	42.393100° (NAD 83)
LONGITUDE:	-71.139700° (NAD 83)
BUILDING HEIGHT ELEVATION:	211'-7"± AGL
ZONING JURISDICTION:	CITY OF CAMBRIDGE
ZONING DISTRICT:	RESIDENCE C-2
EXISTING/PROPOSED USE:	UNMANNED TELECOMMUNICATION

**VICINITY MAP**



NOT TO SCALE  
 IMAGE SOURCE: USGS TOPOGRAPHIC DATA

**GENERAL LOCATION MAP**



NOT TO SCALE  
 IMAGE SOURCE: GOOGLE MAPS / BING

**DRIVING DIRECTIONS**

MERGE ONTO I-90 EAST/MASS PIKE TOWARD BOSTON. USE RIGHT 2 LANES TO TAKE EXIT 123 TOWARD I-95/PORTSMOUTH/PROVIDENCE. KEEP LEFT AT FORK & FOLLOW SIGNS FOR I-95 NORTH/PORTSMOUTH. MERGE ONTO I-95 NORTH. TAKE EXIT 45A FOR MA-2 EAST TOWARD BOSTON/CAMBRIDGE EAST. KEEP LEFT TO STAY ON MA-2 EAST. USE MIDDLE LANE TO STAY ON MA-2 EAST. KEEP RIGHT TO CONTINUE ON MA-2 EAST/CONCORD TURNPIKE. TURN SLIGHTLY RIGHT ONTO ALEWIFE BROOK PARKWAY. AT TRAFFIC CIRCLE, TAKE THE 4TH EXIT TO STAY ON ALEWIFE BROOK PARKWAY. TURN RIGHT ONTO RINDGE AVENUE. SITE IS LOCATED ON THE RIGHT HAND SIDE.

**LEGAL DESCRIPTION**

ASSESSORS PARCEL NUMBER: MAP 268B LOT 45

**GENERAL NOTES**

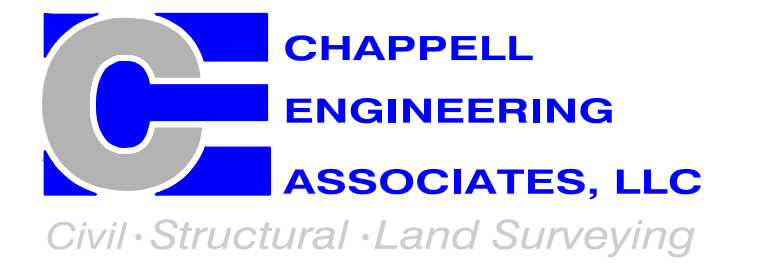
THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE; NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

**RF INFORMATION**

	GSM	LTE
Tx	869 - 874.6 MHz 890 - 891.4 MHz 1950 - 1952.8 MHz 1970 - 1980 MHz	874.6 - 879.6 MHz 1945 - 1950 MHz
Rx	824 - 829.4 MHz 845 - 846.4 MHz 1870 - 1872.8 MHz 1890 - 1900 MHz	829.6 - 834.4 MHz 1865 - 1869.8 MHz
MAX ERP:	850 MHz: 54 WATTS 1900 MHz: 54.5 WATTS	



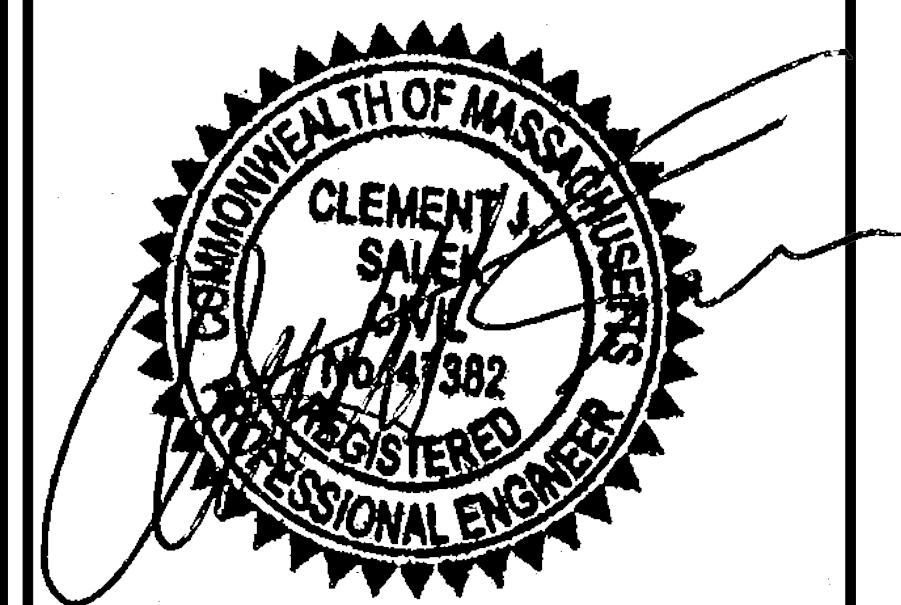
AT&T MOBILITY  
 500 ENTERPRISE DRIVE, SUITE 3A  
 ROCKY HILL, CT 06067



R.K. EXECUTIVE CENTRE  
 201 BOSTON POST ROAD WEST, SUITE 101  
 MARLBOROUGH, MA 01752  
 TEL: (508) 481-7400 FAX: (508) 481-7406

THE INFORMATION CONTAINED IN THIS SET OF DRAWINGS IS PROPRIETARY & CONFIDENTIAL TO AT&T WIRELESS  
 ANY USE OR DISCLOSURE OTHER THAN AS IT RELATES TO AT&T WIRELESS IS STRICTLY PROHIBITED

REV.	DATE	REVISION DESCRIPTION
3	05-01-23	CONSTRUCTION REVISED
2	03-24-23	CONSTRUCTION REVISED
1	12-23-22	ISSUED FOR CONSTRUCTION
0	10-11-22	ISSUED FOR REVIEW



ENGINEER/LAND SURVEYOR DATE

PROJECT INFORMATION:  
**MA3001**  
**CAMBRIDGE**  
 402 RINDGE AVENUE  
 CAMBRIDGE, MA 02139

DRAWN BY: CMC CHECKED BY: JMT

SHEET TITLE:

TITLE SHEET

SHEET NUMBER: T01 REVISION: 3





**SITE WORK & DRAINAGE:**  
**PART 1 - GENERAL**

CLEARING, GRUBBING, STRIPPING, EROSION CONTROL, SURVEY, LAYOUT, SUBGRADE PREPARATION AND FINISH GRADING AS REQUIRED TO COMPLETE THE PROPOSED WORK SHOWN IN THESE PLANS.

**1.1 REFERENCES:**

- A. DOT (STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR WAY CONSTRUCTION - CURRENT EDITION)
- B. ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS)
- C. OSHA (OCCUPATION SAFETY AND HEALTH ADMINISTRATION)

**1.2 INSPECTION AND TESTING:**

- A. FIELD TESTING OF EARTHWORK COMPACTION AND CONCRETE CYLINDERS
- B. ALL WORK SHALL BE INSPECTED AND RELEASED BY THE GENERAL CONTRACTOR WHO SHALL CARRY OUT THE GENERAL INSPECTION OF THE WORK WITH SPECIFIC CONCERN TO PROPER PERFORMANCE OF THE WORK AS SPECIFIED AND/OR CALLED FOR ON THE DRAWINGS. IT IS THE SUBCONTRACTOR'S RESPONSIBILITY TO REQUEST TIMELY INSPECTIONS PRIOR TO PROCEEDING WITH FURTHER WORK THAT WOULD MAKE PARTS OF WORK INACCESSIBLE OR DIFFICULT TO INSPECT.

**1.3 SITE MAINTENANCE AND PROTECTION:**

- A. PROVIDE ALL NECESSARY JOB SITE MAINTENANCE FROM COMMENCEMENT OF WORK UNTIL COMPLETION OF THE SUBCONTRACT.
- B. AVOID DAMAGE TO THE SITE AND TO EXISTING FACILITIES, STRUCTURES, TREES, AND SHRUBS DESIGNATED TO REMAIN. TAKE PROTECTIVE MEASURES TO PREVENT EXISTING FACILITIES THAT ARE NOT DESIGNATED FOR REMOVAL FROM BEING DAMAGED BY THE WORK.
- C. KEEP SITE FREE OF ALL PONDING WATER.
- D. PROVIDE EROSION CONTROL MEASURES IN ACCORDANCE WITH STATE DOT AND EPA REQUIREMENTS.
- E. PROVIDE AND MAINTAIN ALL TEMPORARY FENCING, BARRICADES, WARNING SIGNALS AND SIMILAR DEVICES NECESSARY TO PROTECT AGAINST THEFT FROM PROPERTY DURING THE ENTIRE PERIOD OF CONSTRUCTION. REMOVE ALL SUCH DEVICES UPON COMPLETION OF THE WORK.
- F. EXISTING UTILITIES: DO NOT INTERRUPT EXISTING UTILITIES SERVING FACILITIES OCCUPIED BY THE OWNER OR OTHERS, EXCEPT WHEN PERMITTED IN WRITING BY THE ENGINEER, AND THEN ONLY AFTER ACCEPTABLE TEMPORARY UTILITY SERVICES HAVE BEEN PROVIDED.

PROVIDE A MINIMUM 48-HOUR NOTICE TO THE ENGINEER AND RECEIVE WRITTEN NOTICE TO PROCEED BEFORE INTERRUPTING ANY UTILITY SERVICE.

**PART 2 - PRODUCTS**

- 2.1 SUITABLE BACKFILL: ASTM D2321 (CLASS I, II, III, OR IVA) FREE FROM FROZEN LUMPS, REFUSE, STONES OR ROCKS LARGER THAN 3 INCHES IN ANY DIMENSION OR OTHER MATERIAL THAT MAY MAKE THE INORGANIC MATERIAL UNSUITABLE FOR BACKFILL.
- 2.2 NON-POROUS GRANULAR EMBANKMENT AND BACKFILL: ASTM D2321 (CLASS III, IVA OR IVB) COARSE AGGREGATE. FREE FROM FROZEN LUMPS, REFUSE, STONES, OR ROCKS LARGER THAN 3 INCHES IN ANY DIMENSION OR OTHER MATERIAL THAT MAY MAKE THE INORGANIC MATERIAL UNSUITABLE FOR BACKFILL.
- 2.3 POROUS GRANULAR EMBANKMENT AND BACKFILL: ASTM D2321 (CLASS IA, IB, OR II) COARSE AGGREGATE FREE FROM FROZEN LUMPS, REFUSE, STONES, OR ROCKS LARGER THAN 3 INCHES IN ANY DIMENSION OR OTHER MATERIAL THAT MAY MAKE THE INORGANIC MATERIAL UNSUITABLE FOR BACKFILL.
- 2.4 SELECT STRUCTURAL FILL: GRANULAR FILL MATERIAL MEETING THE REQUIREMENTS OF ASTM E850-95. FOR USE AROUND AND UNDER STRUCTURES WHERE STRUCTURAL FILL MATERIAL ARE REQUIRED.
- 2.5 GRANULAR BEDDING AND TRENCH BACKFILL: WELL-GRADED SAND MEETING THE GRADATION REQUIREMENTS OF ASTM D2487 (SE OR SW-SM).
- 2.6 COARSE AGGREGATE FOR ACCESS ROAD SUB BASE COURSE SHALL CONFORM TO ASTM D2940.
- 2.7 UNSUITABLE MATERIAL: AND MODERATELY PLASTIC SILTS AND CLAYS (LL>45) MATERIAL CONTAINING REFUSE, FROZEN LUMPS, DEMOLISHED BITUMINOUS MATERIAL, VEGETATIVE MATTER, WOOD, STONES IN EXCESS OF 3 INCHES IN ANY DIMENSION, AND DEBRIS AS DETERMINED BY THE CONSTRUCTION MANAGER. TYPICAL THESE WILL BE SOILS CLASSIFIED BY ASTM AS PT, MH, CH, OH, ML, AND OL.
- 2.8 GEOTEXTILE FABRIC: MIRAFI 500X OR APPROVED EQUAL.
- 2.9 PLASTIC MARKING TAPE: SHALL BE ACID AND ALKALI RESISTANT POLYETHYLENE FILM SPECIFICALLY MANUFACTURED FOR MARKING AND LOCATING UNDERGROUND UTILITIES. 6 INCHES WIDE WITH A MINIMUM THICKNESS OF 0.004 INCH. TAPE SHALL HAVE MINIMUM STRENGTH OF 500 PSI IN BOTH DIRECTIONS AND MANUFACTURED WITH INTEGRAL CONDUCTORS. FOIL BACKING OR OTHER MEANS TO ENABLE DETECTION BY A METAL DETECTOR WHEN BURIED UP TO 3 FEET DEEP. THE METALLIC CORE OF THE TAPE SHALL BE ENCASED IN A PROTECTIVE JACKET OR PROVIDED WITH OTHER MEANS TO PROTECT IT FROM CORROSION. TAPE COLOR SHALL BE RED FOR ELECTRIC UTILITIES AND ORANGE FOR TELECOMMUNICATION UTILITIES.

**PART 3 - EXECUTION**

- 3.1 GENERAL:
  - A. BEFORE STARTING GENERAL SITE PREPARATION ACTIVITIES. INSTALL EROSION AND SEDIMENT CONTROL MEASURES. THE WORK AREA SHALL BE CONSTRUCTED AND MAINTAINED IN SUCH A CONDITION THAT IN THE EVENT OF RAIN THE SITE WILL BE DRAINED AT ANY TIME.
  - B. BEFORE ALL SURVEY, LAYOUT, STAKING, AND MARKING, ESTABLISH AND MAINTAIN ALL LINES, GRADES, ELEVATIONS AND BENCHMARKS NEEDED FOR EXECUTION OF THE WORK.
  - C. CLEAR AND GRUB THE AREA WITHIN THE LIMITS OF THE SITE. REMOVE TREES, BRUSH, STUMPS, RUBBISH AND OTHER DEBRIS AND VEGETATION RESTING ON OR PROTRUDING THROUGH THE SURFACE OF THE SITE AREA TO BE CLEARED.
    - 1. REMOVE THE FOLLOWING MATERIALS TO A DEPTH OF NO LESS THAN 12 INCHES BELOW THE ORIGINAL GROUND SURFACE: ROOTS, STUMPS, AND OTHER DEBRIS, BRUSH, AND REFUSE EMBEDDED IN OR PROTRUDING THROUGH THE GROUND SURFACE, RAKE, DISK OR PLOW THE AREA TO A DEPTH OF NO LESS THAN 6 INCHES, AND REMOVE TO A DEPTH OF 12 INCHES ALL ROOTS AND OTHER DEBRIS THEREBY EXPOSED.
    - 2. REMOVE TOPSOIL MATERIAL COMPLETELY FROM THE SURFACE UNTIL THE SOIL NO LONGER MEETS THE DEFINITION OF TOPSOIL. AVOID MIXING TOPSOIL WITH SUBSOIL OR OTHER UNSUITABLE MATERIALS.
    - 3. EXCEPT WHERE EXCAVATION TO GREATER DEPTH IS INDICATED, FILL DEPRESSIONS RESULTING FROM CLEARING, GRUBBING, AND DEMOLITION WORK COMPLETELY WITH SUITABLE FILL.
  - D. REMOVE FROM THE SITE AND DISPOSE IN AN AUTHORIZED LANDFILL ALL DEBRIS RESULTING FROM CLEARING AND GRUBBING OPERATIONS. BURNING WILL NOT BE PERMITTED.
  - E. PRIOR TO EXCAVATING, THOROUGHLY EXAMINE THE AREA TO BE EXCAVATED AND/OR TRENCHED TO VERIFY THE LOCATIONS OF FEATURES INDICATED ON THE DRAWINGS AND TO ASCERTAIN THE EXISTENCE AND LOCATION OF ANY STRUCTURE, UNDERGROUND STRUCTURE, OR OTHER ITEM NOT SHOWN THAT MIGHT INTERFERE WITH THE PROPOSED CONSTRUCTION. NOTIFY THE CONSTRUCTION MANAGER OF ANY OBSTRUCTIONS THAT WILL PREVENT ACCOMPLISHMENT OF THE WORK AS INDICATED ON THE DRAWINGS.

- F. SEPARATE AND STOCK PILE ALL EXCAVATED MATERIALS SUITABLE FOR BACKFILL. ALL EXCESS EXCAVATED AND UNSUITABLE MATERIALS SHALL BE DISPOSED OF OFF-SITE IN A LEGAL MANNER.
- 3.2 BACKFILL:
  - A. AS SOON AS PRACTICAL, AFTER COMPLETING CONSTRUCTION OF THE RELATED STRUCTURE, INCLUDING EXPIRATION OF THE SPECIFIED MINIMUM CURING PERIOD FOR CAST-IN-PLACE CONCRETE, BACKFILL THE EXCAVATION WITH APPROVED MATERIAL TO RESTORE THE REQUIRED FINISHED GRADE.
  - 4. PRIOR TO PLACING BACKFILL AROUND STRUCTURES, ALL FORMS SHALL BE REMOVED AND THE EXCAVATION CLEANED OF ALL TRASH, DEBRIS, AND UNSUITABLE MATERIALS.
  - 5. BACKFILL BY PLACING AND COMPACTING SUITABLE BACKFILL MATERIAL OR SELECT GRANULAR BACKFILL MATERIAL WHEN REQUIRED IN UNIFORM HORIZONTAL LAYERS OF NO GREATER THAN 8-INCHES LOOSE THICKNESS AND COMPACTED. WHERE HAND OPERATED COMPACTORS ARE USED, THE FILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 4 INCHES IN LOOSE DEPTH AND COMPACTED.
  - 6. WHENEVER THE DENSITY TESTING INDICATES THAT THE CONTRACTOR HAS NOT OBTAINED THE SPECIFIED DENSITY, THE SUCCEEDING LAYER SHALL NOT BE PLACED UNTIL THE SPECIFICATION REQUIREMENTS ARE MET UNLESS OTHERWISE AUTHORIZED BY THE GEOTECHNICAL ENGINEER. THE CONTRACTOR SHALL TAKE WHATEVER APPROPRIATE ACTION IS NECESSARY, SUCH AS DISKING AND DRYING, ADDING WATER, OR INCREASING THE COMPACTIVE EFFORT TO MEET THE MINIMUM COMPACTION REQUIREMENTS.
  - B. THOROUGHLY COMPACT EACH LAYER OF BACKFILL TO A MINIMUM 95% OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE STANDARD PROCTOR TEST, ASTM D 698.
- 3.3 TRENCH EXCAVATION:
  - A. UTILITY TRENCHES SHALL BE EXCAVATED TO THE LINES AND GRADES SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE GENERAL CONTRACTOR. PROVIDE SHORING, SHEETING AND BRACING AS REQUIRED TO PREVENT CAVING OR SLOUGHING OF THE TRENCH WALLS.
  - B. EXTEND THE TRENCH WIDTH A MINIMUM OF 6 INCHES BEYOND THE OUTSIDE EDGE OF THE OUTERMOST CONDUIT.
  - C. WHEN SOFT YIELDING, OR OTHERWISE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, BACKFILL AT THE REQUIRED TRENCH TO A DEPTH OF NO LESS THAN 12 INCHES BELOW THE REQUIRED ELEVATION AND BACKFILL WITH GRANULAR BEDDING MATERIAL.
- 3.4 TRENCH BACKFILL:
  - A. PROVIDE GRANULAR BEDDING MATERIAL IN ACCORDANCE WITH THE DRAWINGS AND THE UTILITY REQUIREMENTS.
  - B. NOTIFY THE GENERAL CONTRACTOR 24 HOURS IN ADVANCE OF BACKFILLING.
  - C. CONDUCT UTILITY CHECK TESTS BEFORE BACKFILLING. BACKFILL AND COMPACT TRENCH BEFORE ACCEPTANCE TESTING.
  - D. PLACE GRANULAR TRENCH BACKFILL UNIFORMLY ON BOTH SIDES OF THE CONDUITS IN 6-INCH UNCOMPACTED LIFTS UNTIL 12 INCHES OVER THE CONDUITS. SOLIDLY RAM AND TAMP BACKFILL INTO SPACE AROUND CONDUITS.
  - E. PROTECT CONDUIT FROM LATERAL MOVEMENT, IMPACT DAMAGE, OR UNBALANCED LOADING.
  - F. ABOVE THE CONDUIT EMBEDMENT ZONE, PLACE AND COMPACT SATISFACTORY BACKFILL MATERIAL IN 8-INCH MAXIMUM LOOSE THICKNESS LIFTS TO RESTORE THE REQUIRED FINISHED SURFACE GRADE.
  - G. COMPACT FINAL TRENCH BACKFILL TO A DENSITY EQUAL TO OR GREATER THAN THAT OF THE EXISTING UNDISTURBED MATERIAL IMMEDIATELY ADJACENT TO THE TRENCH BUT NO LESS THAN A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE STANDARD PROCTOR TEST, ASTM D 698.
- 3.5 AGGREGATE ACCESS ROAD:
  - A. CLEAR, GRUB, STRIP AND EXCAVATE FOR THE ACCESS ROAD TO THE LINES AND GRADES INDICATED ON THE DRAWINGS. SCARIFY TO A DEPTH OF 6 INCHES AND PROOF-ROLL. ALL HOLES, RUTS, SOFT PLACES AND OTHER DEFECTS SHALL BE CORRECTED.
  - B. THE ENTIRE SUBGRADE SHALL BE COMPACTED TO NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE STANDARD PROCTOR TEST, ASTM D 1557.
  - C. AFTER PREPARATION OF THE SUBGRADE IS COMPLETE THE GEOTEXTILE FABRIC (MIRAFI 500X) SHALL BE INSTALLED TO THE LIMITS INDICATED ON THE DRAWINGS BY ROLLING THE FABRIC OUT LONGITUDINALLY ALONG THE ROADWAY. THE FABRIC SHALL NOT BE DRAGGED ACROSS THE SUBGRADE. PLACE THE ENTIRE ROLL IN A SINGLE OPERATION, ROLLING OUT AS SMOOTHLY AS POSSIBLE.
  - 1. OVERLAPS PARALLEL TO THE ROADWAY WILL BE PERMITTED AT THE CENTERLINE AND AT LOCATIONS BEYOND THE ROADWAY SURFACE WIDTH (I.E. WITHIN THE SHOULDER WIDTH) ONLY. NO LONGITUDINAL OVERLAPS SHALL BE LOCATED BETWEEN THE CENTERLINE AND THE SHOULDER. PARALLEL OVERLAPS SHALL BE A MINIMUM OF 3 FEET WIDE.
  - 2. TRANSVERSE (PERPENDICULAR TO THE ROADWAY) OVERLAPS AT THE END OF A ROLL SHALL OVERLAP IN THE DIRECTION OF THE AGGREGATE PLACEMENT (PREVIOUS ROLL ON TOP) AND SHALL HAVE A MINIMUM LENGTH OF 3 FEET.
  - 3. ALL OVERLAPS SHALL BE PINNED WITH STAPLES OR NAILS A MINIMUM OF 10 INCHES LONG TO INSURE POSITIONING DURING PLACEMENT OF AGGREGATE. PIN LONGITUDINAL SEAMS AT 25 FOOT CENTERS AND TRANSVERSE SEAMS EVERY 5 FEET.
  - D. THE AGGREGATE BASE AND SURFACE COURSES SHALL BE CONSTRUCTED IN LAYERS NOT MORE THAN 4 INCH (COMPACTED) THICKNESS. AGGREGATE TO BE PLACED ON GEOTEXTILE FABRIC SHALL BE END-DUMPED ON THE FABRIC FROM THE FREE END OF THE FABRIC OR OVER PREVIOUSLY PLACED AGGREGATE. THE FIRST LIFT SHALL BE BLADED DOWN TO A THICKNESS OF 8 INCHES PRIOR TO COMPACTION. AT NO TIME SHALL EQUIPMENT, EITHER TRANSPORTING THE AGGREGATE OR GRADING THE AGGREGATE, BE PERMITTED ON THE ROADWAY WITH LESS THAN 4 INCHES OF MATERIAL COVERING THE FABRIC.
  - E. THE AGGREGATE SHALL BE IMMEDIATELY COMPACTED TO NOT LESS THAN 95 PERCENT OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE PROCTOR TEST, ASTM D 1557 WITH A TAMPING ROLLER, OR WITH A PNEUMATIC-TIRED ROLLER, OR WITH A VIBRATORY MACHINE OR ANY COMBINATION OF THE ABOVE. THE TOP LAYER SHALL BE GIVEN A FINAL ROLLING WITH A THREE-WHEEL OR TANDEM ROLLER.
- 3.6 FINISH GRADING:
  - A. PERFORM ALL GRADING TO PROVIDE POSITIVE DRAINAGE AWAY FROM STRUCTURES AND SMOOTH, EVEN SURFACE DRAINAGE OF THE ENTIRE AREA WITHIN THE LIMITS OF CONSTRUCTION. GRADING SHALL BE COMPATIBLE WITH ALL SURROUNDING TOPOGRAPHY AND STRUCTURES.
  - B. UTILIZE SATISFACTORY FILL MATERIAL RESULTING FROM THE EXCAVATION WORK IN THE CONSTRUCTION OF FILLS, EMBANKMENTS AND FOR REPLACEMENT OF REMOVED UNSUITABLE MATERIALS.
  - C. ACHIEVE FINISHED GRADE BY PLACING A MINIMUM OF 4 INCHES OF 1/2" - 3/4" CRUSHED STONE ON TOP SOIL STABILIZER FABRIC.
  - D. REPAIR ALL ACCESS ROADS AND SURROUNDING AREAS USED DURING THE COURSE OF THIS WORK TO THEIR ORIGINAL CONDITION.
- 3.7 ASPHALT PAVING ROAD:
  - A. DIVISION 600 - KDOT FLEXIBLE PAVEMENT. (UPDATE PER LOCAL DOT)
  - B. SECTION 403 - MODOT ASPHALT CONCRETE PAVEMENT.

	NEW ANTENNA		WOOD CONT.
	EXISTING ANTENNA		WOOD BLOCKING
	GROUND ROD		PLYWOOD
	GROUND BUS BAR		STEEL
	MECHANICAL GROUND CONNECTION		EXISTING MASONRY
	CADWELD		EXISTING BRICK
	GROUND ACCESS WELL		GROUT OR PLASTER
	XIT GROUND ROD		CONCRETE
	ELECTRIC BOX		SAND
	TELEPHONE BOX		EARTH
	UTILITY METER		GRAVEL
	GENERATOR		MATCH LINE
	LIGHT POLE		WORK POINT
	LIGHT SWITCH		SECTION REFERENCE
	DISCONNECT SWITCH		ELEVATION REFERENCE
	CIRCUIT BREAKER		DETAIL REFERENCE (DETAIL NO. 2 ON SHEET A-1)
	FND. MONUMENT		GRID REFERENCE

**LEGEND**

ABBREVIATION	DEFINITION	ABBREVIATION	DEFINITION	ABBREVIATION	DEFINITION
A.B.	ANCHOR BOLT	FAB.	FABRICATION (OR)	PVC.	POLYVINYL CHLORIDE CONDUIT
ABV.	ABOVE	F.F.	FINISH FLOOR	PWR.	POWER (CABINET)
ACCA	ANTENNA CABLE COVER ASSEMBLY	F.G.	FINISH GRADE	QTY.	QUANTITY
ADDL	ADDITIONAL	FIN.	FINISH (GRADE)	RAD.(R)	RADIUS
A.F.F.	ABOVE FINISHED FLOOR	FLR.	FLOOR	RAN.	RADIO ACCESS NODE
A.F.G.	ABOVE FINISHED GRADE	FDN.	FOUNDATION	REF.	REFERENCE
ALUM.	ALUMINUM	F.O.C.	FACE OF CONCRETE	REF.	REINFORCEMENT(ING)
ALT.	ALTERNATE	F.O.M.	FACE OF MASONRY	REQ'D.	REQUIRED
ANTENNA	ANTENNA	F.O.S.	FACE OF STUD	RCS.	RIGID GALVANIZED STEEL
APPRX.	APPROXIMATE(LY)	F.O.W.	FACE OF WALL	RWY.	RACEWAY
ARCH.	ARCHITECT(URAL)	F.S.	FINISH SURFACE	SCH.	SCHEDULE
AWG.	AMERICAN WIRE GAUGE	FT.(F)	FOOT(FEET)	SHT.	SHEET
BLDG.	BUILDING	FTG.	FOOTING	SIM.	SIMILAR
BLK.	BLOCKING	G.	GROWTH (CABINET)	S.L.D.	SINGLE LINE DIAGRAM
BLKG.	BLOCKING	GA.	GAUGE	SPEC.	SPECIFICATION(S)
BM.	BEAM	GEN.	GENERATOR	SQ.	SQUARE
B.N.	BOUNDARY NAILING	GI.	GALVANIZED	S.S.	STAINLESS STEEL
BTOW.	BARE TINNED COPPER WIRE	G.F.I.	GROUND FAULT CIRCUIT INTERRUPTER	STD.	STANDARD
B.O.F.	BOTTOM OF FOOTING	GLB.(GLU-LAM)	GLUE LAMINATED BEAM	STL.	STEEL
BU	BACK-UP CABINET	GPS	GLOBAL POSITIONING SYSTEM	STRUC.	STRUCTURAL
C.	CONDUIT	GROWTH	GROWTH	TEL.	TELEPHONE
CAB.	CABINET	GRND.	GROUND	TEMP.	TEMPORARY
CANT.	CANTILEVER(ED)	GSM.	GLOBAL SYSTEM MOBILE COMMUNICATIONS	THK.	THICK(NESS)
C.I.P.	CAST IN PLACE	HDR.	HEADER	TMLP	AT&T LIMITED PARTNERSHIP
CIGBE	COAX INSULATED GROUND BAR EXTERNAL CENTER LINE	HGR.	HANGER	T.N.	TOE NAIL
CL.	CENTER LINE	HT.	HEIGHT	T.O.A.	TOP OF ANTENNA
CLG.	CLEAR	ICGB.	ISOLATED COPPER GROUND BUS	T.O.C.	TOP OF CURB
CL.	CLEAR	IGR.	INTERIOR GROUND RING (HALO)	T.O.F.	TOP OF FOUNDATION
CO.	CONDUIT ONLY	IN.(")	INCHES	T.O.P.	TOP OF PLATE (PARAPET)
COL.	COLUMN	INT.	INTERIOR	T.O.S.	TOP OF STEEL
CONC.	CONCRETE	LB.(#)	LAG BOLTS	T.O.W.	TOP OF WALL
CONN.	CONNECTION(OR)	L.F.	LINEAR FEET (FOOT)	TYP.	TYPICAL
CONST.	CONSTRUCTION	L.(#)	LONGITUDINAL	U.G.	UNDER GROUND
CONT.	CONTINUOUS	LTE.	LONG TERM EVOLUTION	U.L.	UNDERWRITERS LABORATORY
d	PENNY (NAILS)	MAS.	MASONRY	UMTS.	UNIVERSAL MOBILE
DBL.	DOUBLE	MAX.	MAXIMUM		TELECOMMUNICATIONS SYSTEM
DEPT.	DEPARTMENT	M.B.	MACHINE BOLT		UNLESS NOTED OTHERWISE
D.F.	DOUGLAS FIR	MECH.	MECHANICAL	U.N.O.	VERIFY IN FIELD
DIA.	DIAMETER	MFR.	MANUFACTURER	W.	WITH
DIAM.	DIAGONAL DIMENSION	MIGB	MASTER ISOLATED GROUND BAR	WD.	WOOD
DWG.	DRAWING(S)	MISC.	MISCELLANEOUS	W.P.	WEATHERPROOF
DWL.	DOWEL(S)	MTL.	METAL	WT.	WEIGHT
EA.	EACH	(N)	NEW	WT.	CENTERLINE
ELEV.	ELEVATION	NO.(#)	NUMBER	¢	PLATE
ELEC.	ELECTRICAL	N.T.S.	NOT TO SCALE		
ELEV.	ELEVATOR	O.C.	ON CENTER		
EMT.	ELECTRICAL METALLIC TUBING	OPNG.	OPENING		
E.N.	EDGE NAIL	PC.	PRECAST CONCRETE		
ENG.	ENGINEER	PCS.	PERSONAL COMMUNICATION SERVICES		
EQ.	EQUAL	P.L.Y.	PLYWOOD		
EXP.	EXPANSION	PPC.	POWER PROTECTION CABINET		
EXT.	EXTERIOR	PRC.	PRIMARY RADIO CABINET		
		P.S.F.	POUNDS PER SQUARE FOOT		
		P.S.I.	POUNDS PER SQUARE INCH		
		P.T.	PRESSURE TREATED		

**ABBREVIATIONS**

2

3



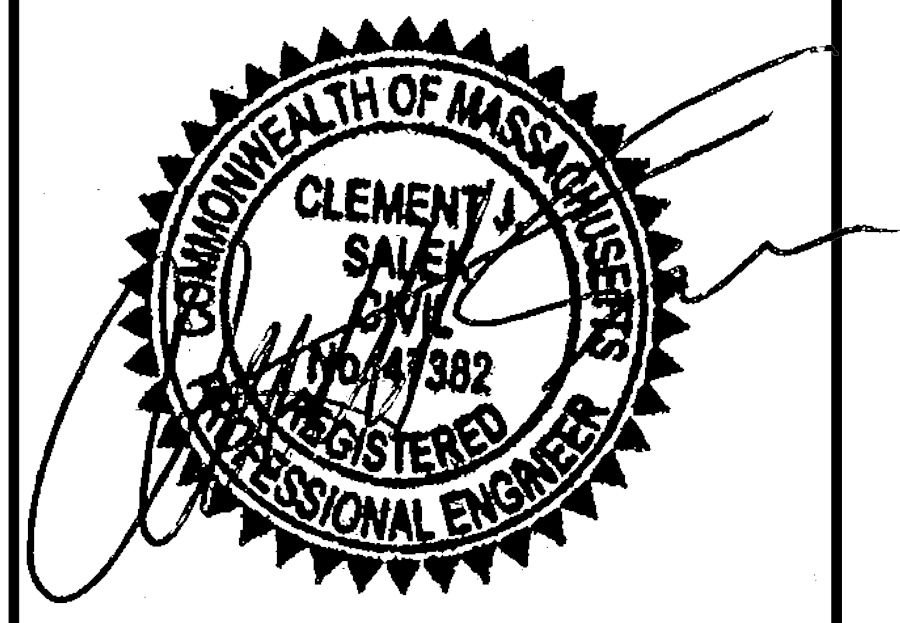
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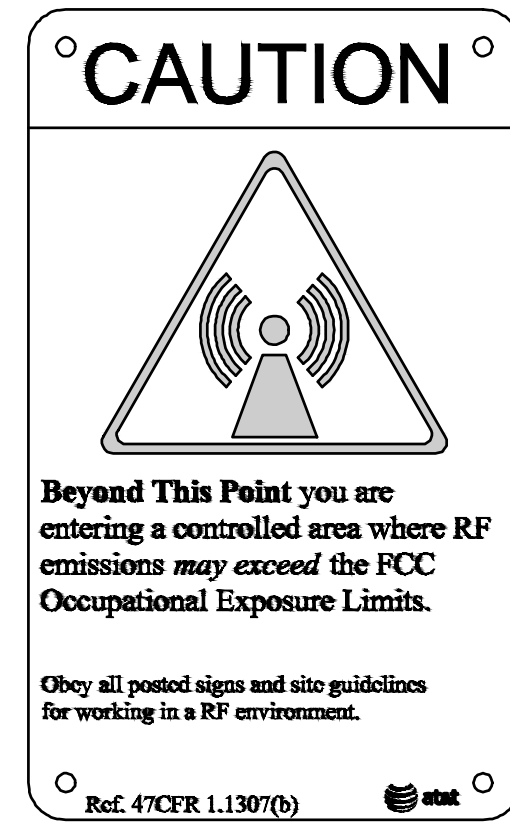
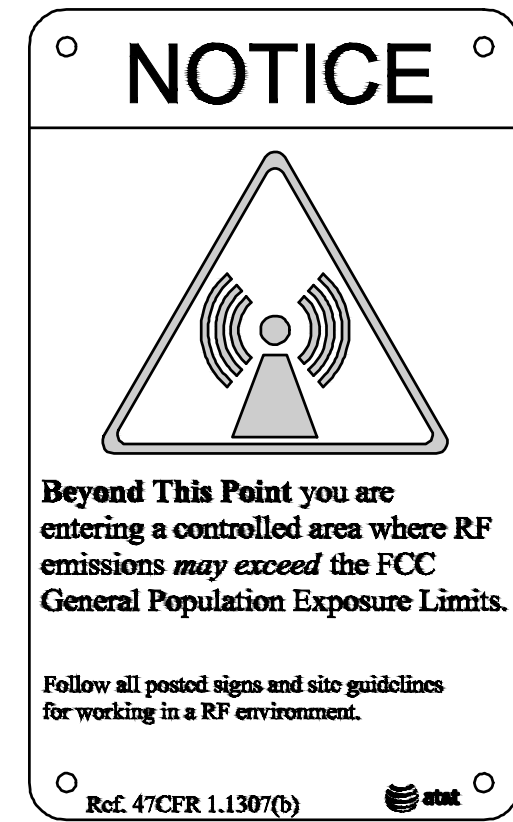
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PROJECT INFORMATION:  
**MA3001  
CAMBRIDGE**  
  
402 RINDGE AVENUE  
CAMBRIDGE, MA 02139

DRAWN BY: **CMC** CHECKED BY: **JMT**

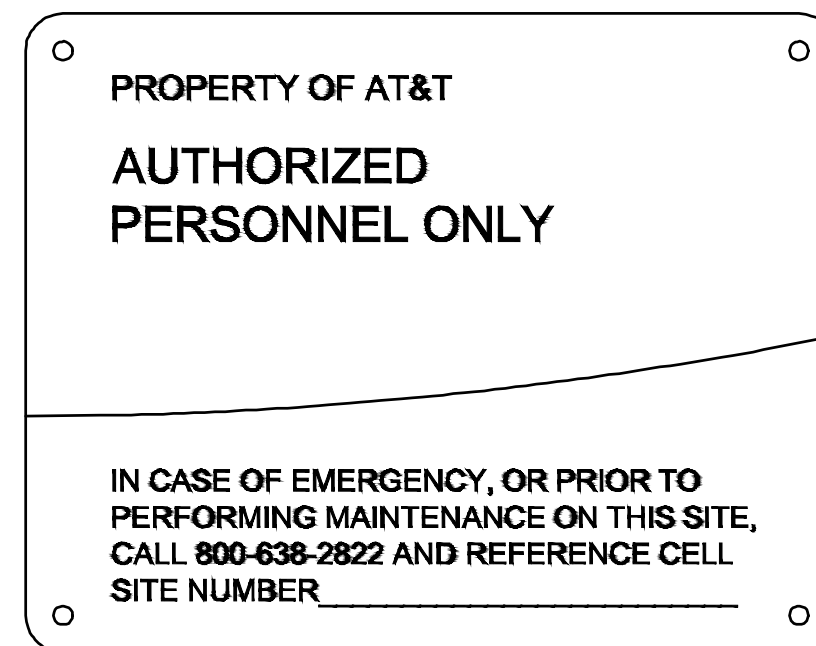
SHEET TITLE:  
**GENERAL REQUIREMENTS,  
LEGEND & ABBREVIATIONS**

SHEET NUMBER: **T03** REVISION: **3**



ALERTING SIGNS

ALERTING SIGNS

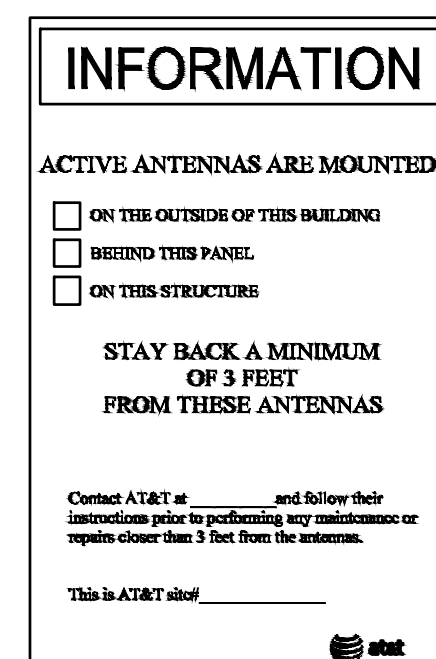
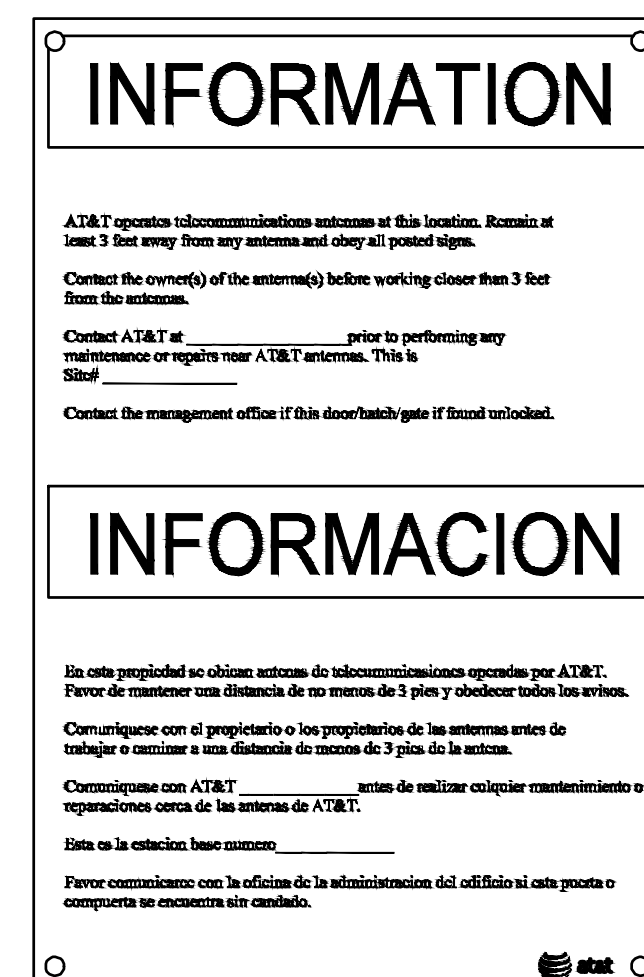


ALERTING SIGN

INFO SIGN #5



INFO SIGN #3



INFO SIGN #1

INFO SIGN #2

INFO SIGN #4

STAY BACK 3 FEET FROM ANTENNA

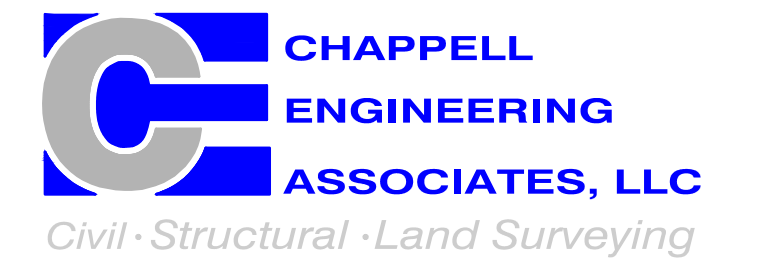
GENERAL SIGNAGE GUIDELINES

STRUCTURE TYPE	INFO SIGN #1	INFO SIGN #2	INFO SIGN #3	INFO SIGN #4	INFO SIGN #5	STRIPING	NOTICE SIGN	CAUTION SIGN
<b>TOWERS</b>								
MONOPOLE / MONOPINE / MONOPALM	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	CLIMBING SIDE OF THE TOWER	ON BACKSIDE OF ANTENNAS	ON THE SIDE OF ANTENNAS	ON THE SHELTER DOOR OR ON ONE OUTDOOR EQUIPMENT CABINET			AT THE HEIGHT OF THE FIRST CLIMBING STEP. MIN. 9FT. ABOVE GROUND
SCE TOWERS / TOWERS WITH VOLTAGE	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	CLIMBING SIDE OF THE TOWER	ON BACKSIDE OF ANTENNAS	ON THE SIDE OF ANTENNAS	ON THE SHELTER DOOR OR ON ONE OUTDOOR EQUIPMENT CABINET			AT THE HEIGHT OF THE FIRST CLIMBING STEP. MIN. 9FT. ABOVE GROUND
LIGHT POLES / FLAG POLES	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	ON THE POLE, NO LESS THAN 3FT BELOW THE ANTENNA	ON BACKSIDE OF ANTENNAS	ON THE SIDE OF ANTENNAS	ON THE SHELTER DOOR OR ON ONE OUTDOOR EQUIPMENT CABINET			
UTILITY WOOD POLES (JPA)	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	ON THE POLE, NO LESS THAN 3FT BELOW THE ANTENNA	ON BACKSIDE OF ANTENNAS	ON THE SIDE OF ANTENNAS	ON THE SHELTER DOOR OR ON ONE OUTDOOR EQUIPMENT CABINET		IF GP MAX VALUE OF MPE AT ANTENNA LEVEL IS: 0-99%: NOTICE SIGN; OVER 99%: CAUTION SIGN AT NO LESS THAN 3FT BELOW ANTENNA AND 9FT ABOVE GROUND	
MICROCELLS MOUNTED ON NON-JPA POLES	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	ON THE POLE, NO LESS THAN 3FT BELOW THE ANTENNA	ON BACKSIDE OF ANTENNAS	ON THE SIDE OF ANTENNAS	ON THE SHELTER DOOR OR ON ONE OUTDOOR EQUIPMENT CABINET		NOTICE OR CAUTION SIGN AT NO LESS THAN 9FT ABOVE GROUND; ONLY IF THE EXPOSURE EXCEEDS 90% OF THE GENERAL PUBLIC EXPOSURE AT 6FT ABOVE GROUND	
<b>ROOF TOPS</b>								
AT ALL ACCESS POINTS OF THE ROOF	X							
ON ANTENNAS	X		X	X				
CONCEALED ANTENNAS	X	X						
ANTENNAS MOUNTED FACING OUTSIDE THE BUILDING	X	X						
ANTENNAS ON SUPPORT STRUCTURE	X	X						
ROOFTOP GRAPH:								
RADIATION AREA IS WITHIN 3FT FROM ANTENNA	X	ADJACENT TO EACH ANTENNA					EITHER NOTICE OR CAUTION SIGN (BASED ON ROOFVIEW RESULTS) AT ANTENNAS / BARRIER	
RADIATION IS BEYOND 3FT FROM ANTENNA	X	ADJACENT TO EACH ANTENNA				DIAGONAL, YELLOW STRIPING AS TO ROOFVIEW GRAPH		
CHURCH STEEPLES	ACCESS TO STEEPLE	ADJACENT TO ANTENNAS IF ANTENNAS ARE CONCEALED	ON BACKSIDE OF ANTENNAS	ON THE SIDE OF ANTENNAS	ON THE SHELTER DOOR OR ON ONE OUTDOOR EQUIPMENT CABINET			CAUTION SIGN AT THE ANTENNAS
WATER TANKS	ACCESS TO WATER TANK	ADJACENT TO ANTENNAS IF ANTENNAS ARE CONCEALED	ON BACKSIDE OF ANTENNAS	ON THE SIDE OF ANTENNAS	ON THE SHELTER DOOR OR ON ONE OUTDOOR EQUIPMENT CABINET			CAUTION SIGN AT THE ANTENNAS

NOTES FOR ROOFTOP SITES:  
 1. EITHER NOTICE OR CAUTION SIGNS NEED TO BE POSTED AT EACH SECTOR AS CLOSE AS POSSIBLE TO THE OUTER EDGE OF THE STRIPED OFF AREA OR THE OUTER ANTENNAS OF THE SECTOR.  
 2. IF ROOFVIEW SHOWS: ONLY BLUE = NOTICE SIGN, BLUE AND YELLOW = CAUTION SIGN, ONLY YELLOW = CAUTION SIGN TO BE INSTALLED.  
 3. SHOULD THE REQUIRED STRIPING AREA INTERFERE WITH ANY STRUCTURES OR EQUIPMENT (A.C. VENTS, ROOF HATCH, DOORS, OTHER ANTENNAS, DISHES, ETC.), PLEASE NOTIFY AT&T TO MODIFY THE STRIPING AREA, PRIOR TO STARTING THE WORK.



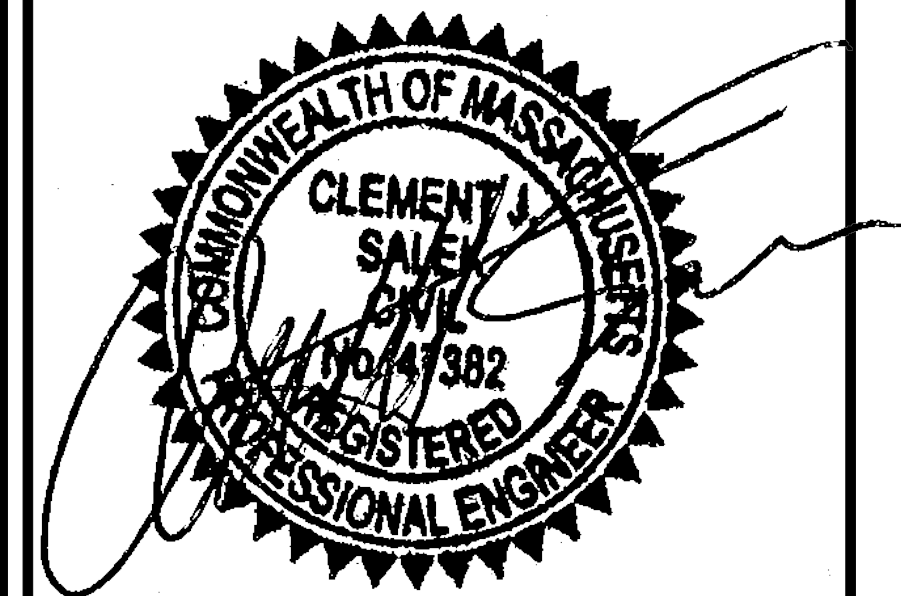
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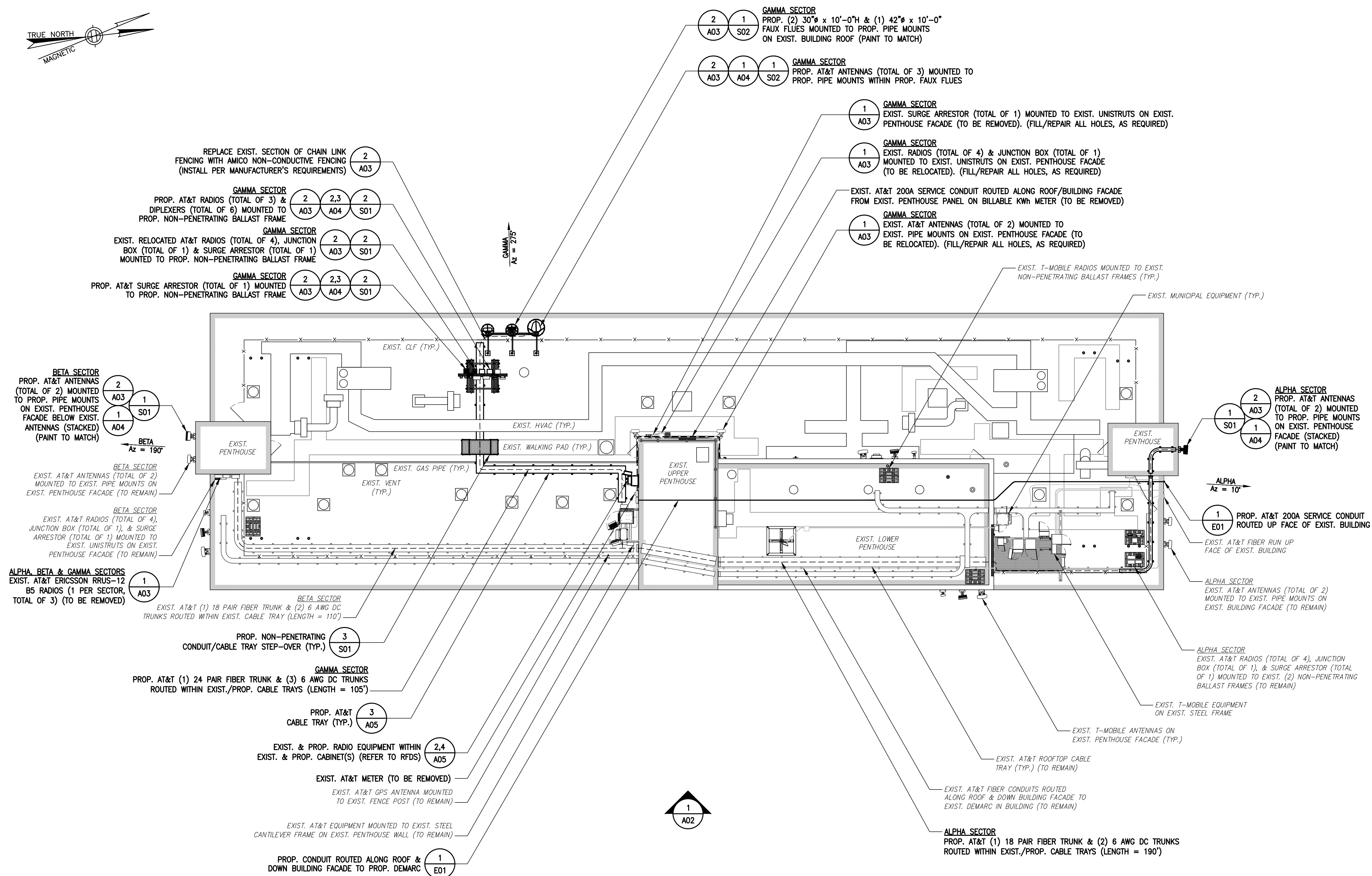
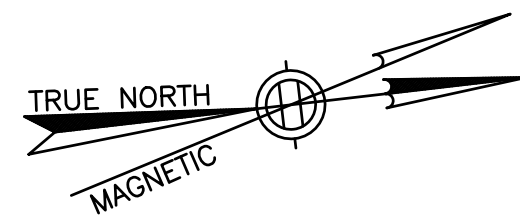
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PROJECT INFORMATION:  
**MA3001  
 CAMBRIDGE**  
 402 RINDGE AVENUE  
 CAMBRIDGE, MA 02139

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SHEET TITLE:  
**GENERAL SIGNAGE DETAILS**

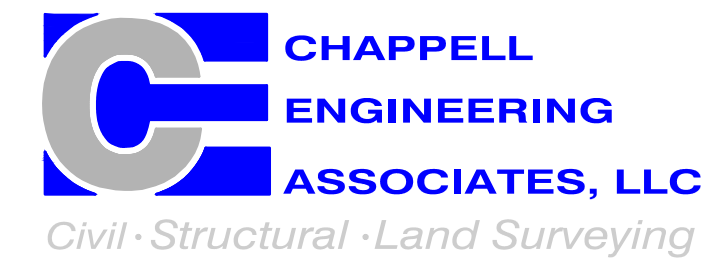
SHEET NUMBER: T04 REVISION: 3



**ROOF PLAN**  
SCALE: 1" = 10'-0"  
0 10' 20' 30'



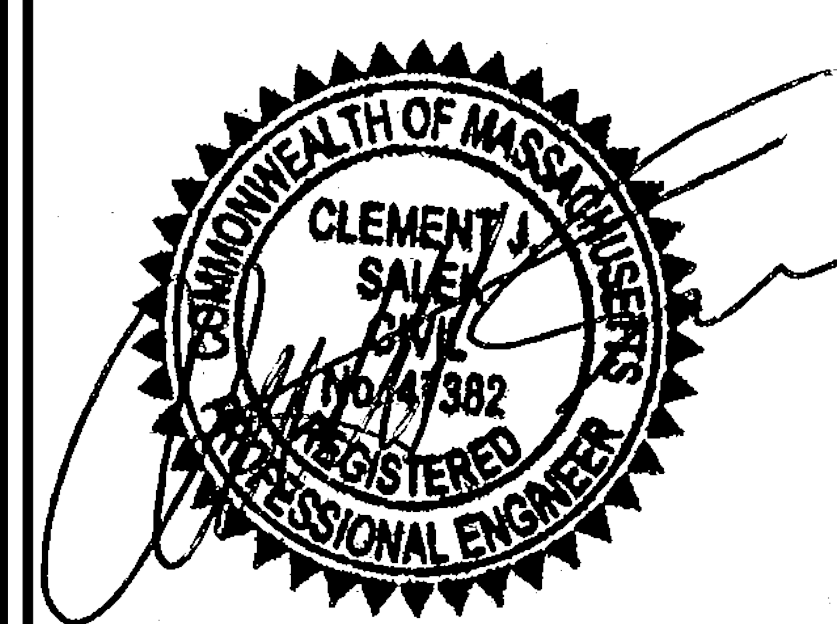
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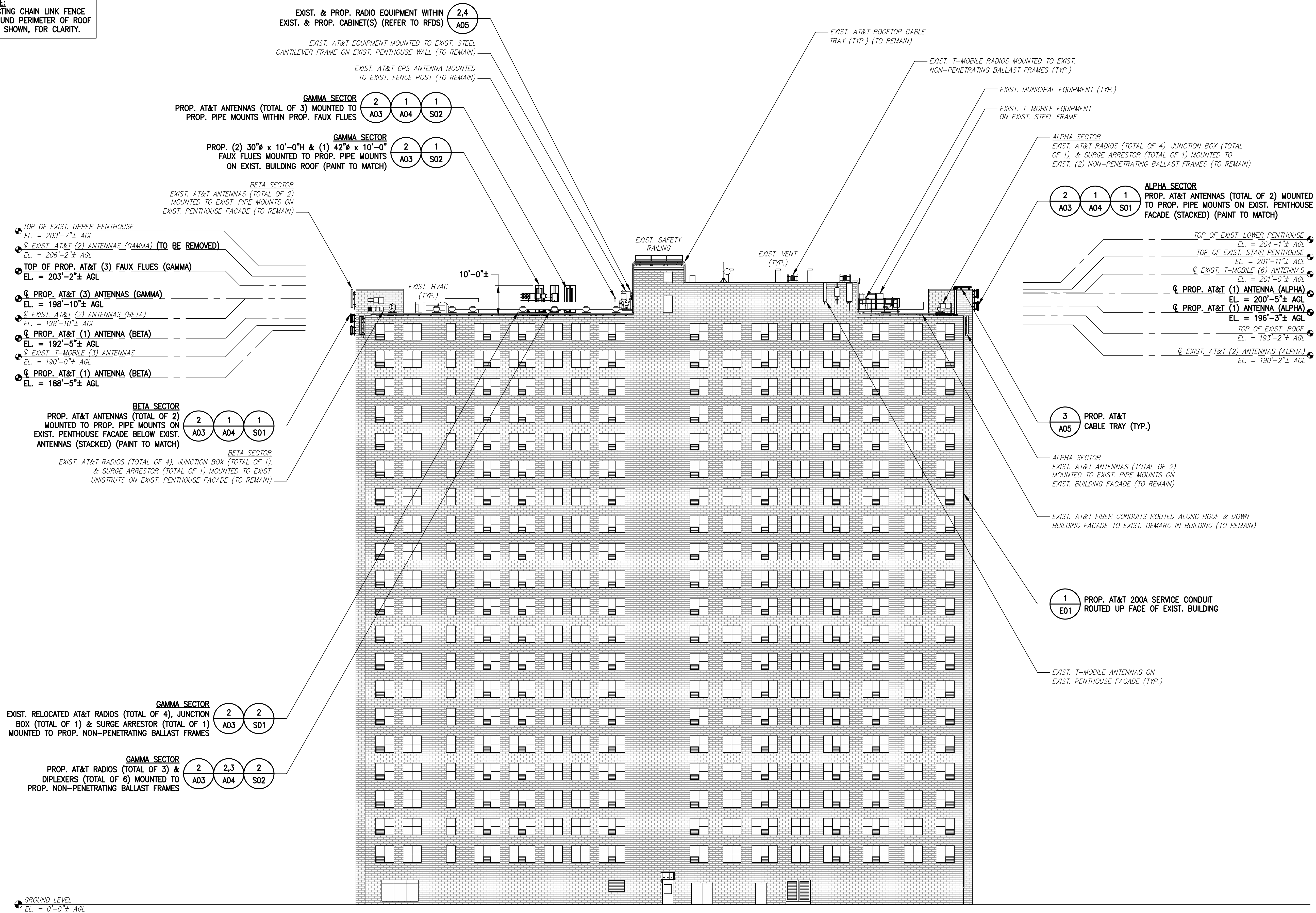
PROJECT INFORMATION:  
**MA3001  
CAMBRIDGE**  
  
402 RINDGE AVENUE  
CAMBRIDGE, MA 02139

DRAWN BY: CMC CHECKED BY: JMT

SHEET TITLE:  
**ROOF PLAN**

SHEET NUMBER: **A01** REVISION: **3**

**NOTE:**  
EXISTING CHAIN LINK FENCE  
AROUND PERIMETER OF ROOF  
NOT SHOWN, FOR CLARITY.



EXIST. & PROP. RADIO EQUIPMENT WITHIN  
EXIST. & PROP. CABINET(S) (REFER TO RFDS) **2,4**  
A05

EXIST. AT&T EQUIPMENT MOUNTED TO EXIST. STEEL  
CANTILEVER FRAME ON EXIST. PENTHOUSE WALL (TO REMAIN)

EXIST. AT&T GPS ANTENNA MOUNTED  
TO EXIST. FENCE POST (TO REMAIN)

**GAMMA SECTOR**  
PROP. AT&T ANTENNAS (TOTAL OF 3) MOUNTED TO  
PROP. PIPE MOUNTS WITHIN PROP. FAUX FLUES **2 1 1**  
A03 A04 S02

**GAMMA SECTOR**  
PROP. (2) 30"Ø x 10'-0"H & (1) 42"Ø x 10'-0"  
FAUX FLUES MOUNTED TO PROP. PIPE MOUNTS  
ON EXIST. BUILDING ROOF (PAINT TO MATCH) **2 1**  
A03 S02

**BETA SECTOR**  
EXIST. AT&T ANTENNAS (TOTAL OF 2)  
MOUNTED TO EXIST. PIPE MOUNTS ON  
EXIST. PENTHOUSE FACADE (TO REMAIN)

TOP OF EXIST. UPPER PENTHOUSE  
EL. = 209'-7"± AGL  
EXIST. AT&T (2) ANTENNAS (GAMMA) (TO BE REMOVED)  
EL. = 206'-2"± AGL  
TOP OF PROP. AT&T (3) FAUX FLUES (GAMMA)  
EL. = 203'-2"± AGL

PROP. AT&T (3) ANTENNAS (GAMMA)  
EL. = 198'-10"± AGL  
EXIST. AT&T (2) ANTENNAS (BETA)  
EL. = 198'-10"± AGL  
PROP. AT&T (1) ANTENNA (BETA)  
EL. = 192'-5"± AGL  
EXIST. T-MOBILE (3) ANTENNAS  
EL. = 190'-0"± AGL  
PROP. AT&T (1) ANTENNA (BETA)  
EL. = 188'-5"± AGL

**BETA SECTOR**  
PROP. AT&T ANTENNAS (TOTAL OF 2)  
MOUNTED TO PROP. PIPE MOUNTS ON  
EXIST. PENTHOUSE FACADE BELOW EXIST.  
ANTENNAS (STACKED) (PAINT TO MATCH) **2 1 1**  
A03 A04 S01

**BETA SECTOR**  
EXIST. AT&T RADIOS (TOTAL OF 4), JUNCTION BOX (TOTAL OF 1),  
& SURGE ARRESTOR (TOTAL OF 1) MOUNTED TO EXIST.  
UNISTRUTS ON EXIST. PENTHOUSE FACADE (TO REMAIN)

**GAMMA SECTOR**  
EXIST. RELOCATED AT&T RADIOS (TOTAL OF 4), JUNCTION  
BOX (TOTAL OF 1) & SURGE ARRESTOR (TOTAL OF 1)  
MOUNTED TO PROP. NON-PENETRATING BALLAST FRAMES **2 2**  
A03 S01

**GAMMA SECTOR**  
PROP. AT&T RADIOS (TOTAL OF 3) &  
DIPLEXERS (TOTAL OF 6) MOUNTED TO  
PROP. NON-PENETRATING BALLAST FRAMES **2 2,3 2**  
A03 A04 S02

GROUND LEVEL  
EL. = 0'-0"± AGL

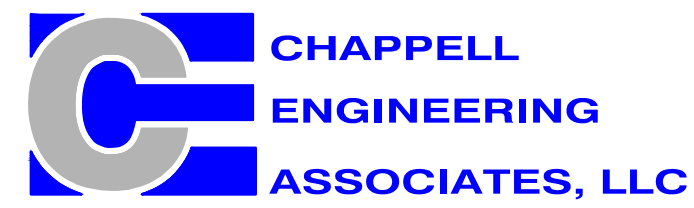
**EAST ELEVATION**  
SCALE: 1/16" = 1'-0"



**1**  
A02



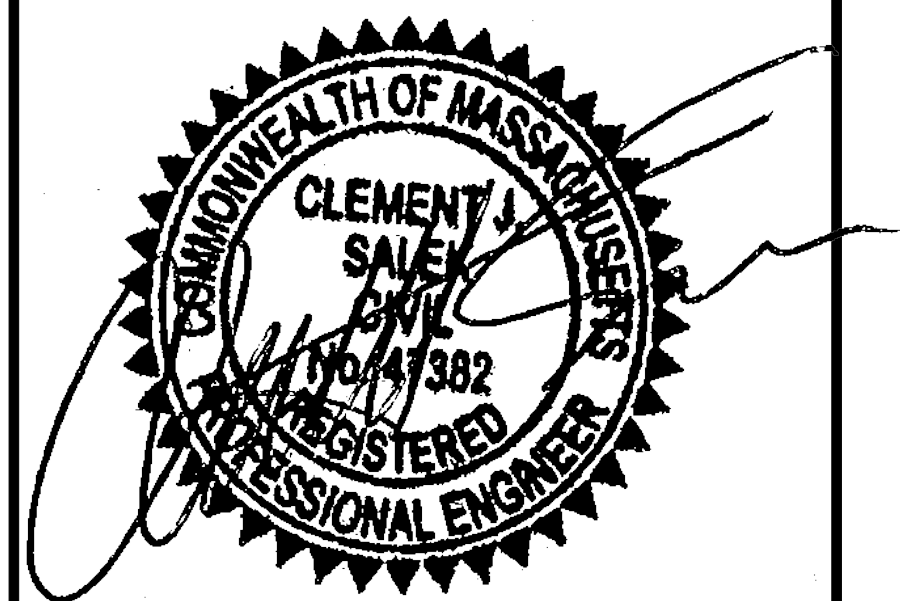
AT&T MOBILITY  
500 ENTERPRISE DRIVE, SUITE 3A  
ROCKY HILL, CT 06067



R.K. EXECUTIVE CENTRE  
201 BOSTON POST ROAD WEST, SUITE 101  
MARLBOROUGH, MA 01752  
TEL: (508) 481-7400 FAX: (508) 481-7406

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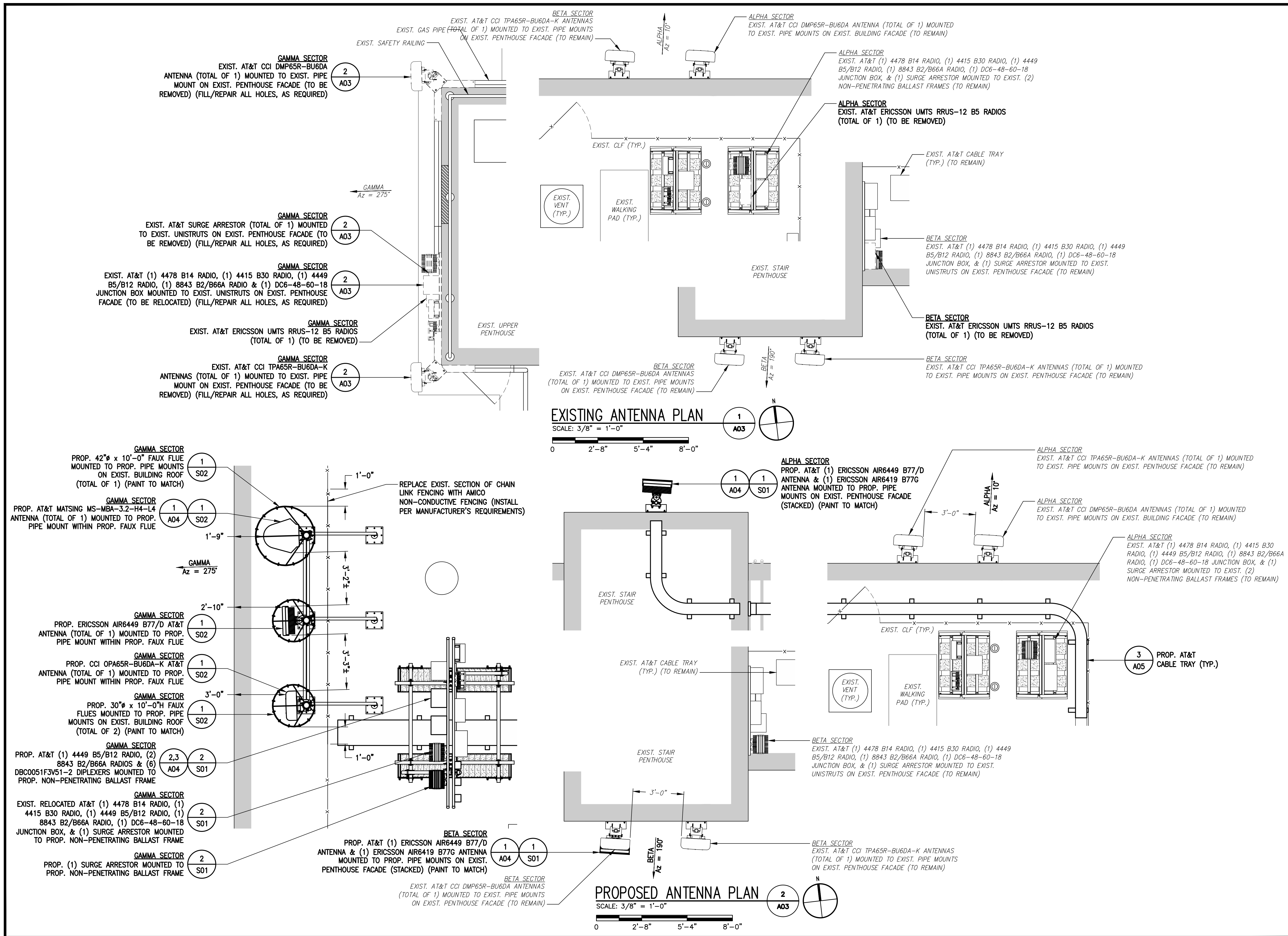
ENGINEER/LAND SURVEYOR DATE

PROJECT INFORMATION:  
**MA3001  
CAMBRIDGE**  
  
402 RINDGE AVENUE  
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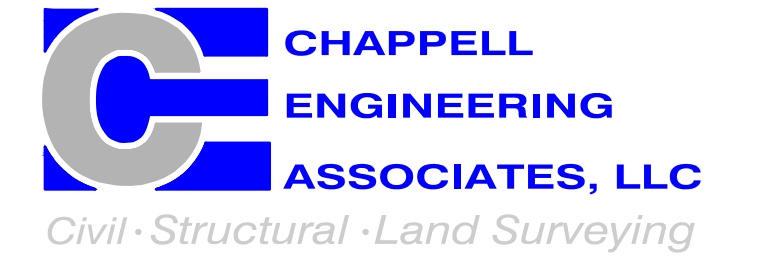
DRAWN BY: CMC CHECKED BY: JMT

SHEET TITLE:  
**BUILDING  
ELEVATION**

SHEET NUMBER: **A02** REVISION: **3**



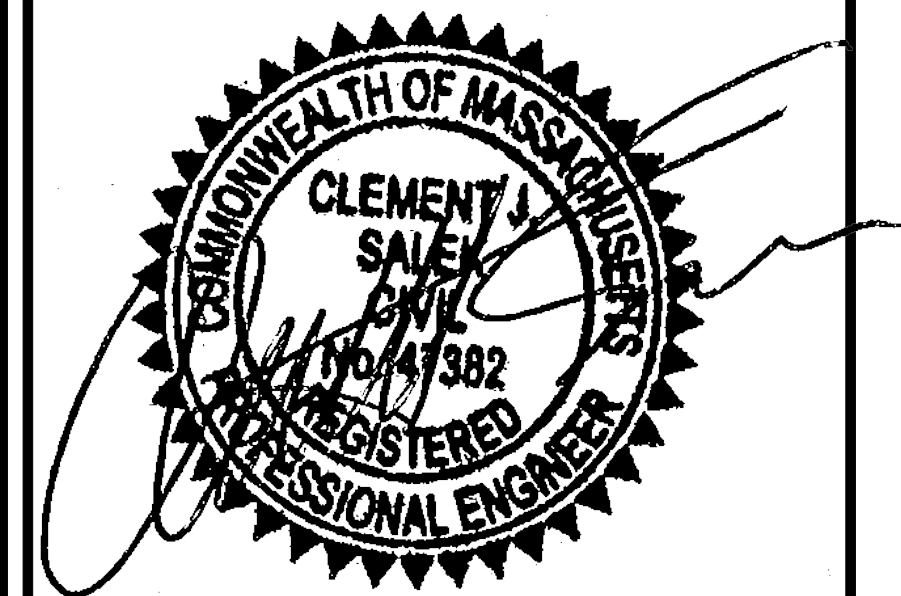
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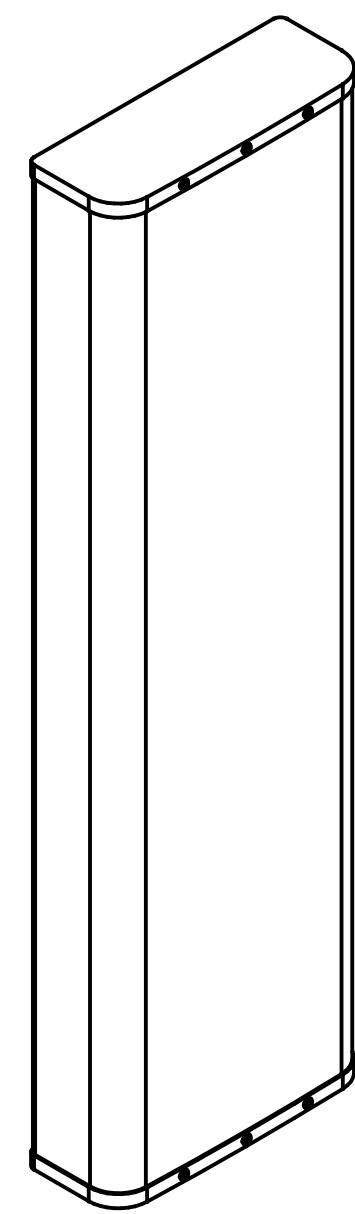
ENGINEER/LAND SURVEYOR DATE

PROJECT INFORMATION:  
**MA3001**  
**CAMBRIDGE**  
 402 RINDGE AVENUE  
 CAMBRIDGE, MA 02139

DRAWN BY: CMC CHECKED BY: JMT

SHEET TITLE:  
**ANTENNA PLANS**

SHEET NUMBER: **A03** REVISION: **3**



**CCI OPA65R-BU6D ANTENNA**  
 DIMENSIONS: 71.2"H x 20.7"W x 7.7"D  
 WEIGHT: 63.3 lbs  
 QUANTITY: TOTAL OF 1  
 SECTOR: GAMMA



**ERICSSON M-MIMO AIR6419 B77G ANTENNA**  
 DIMENSIONS: 36.3"H x 20.9"W x 9.0"D  
 WEIGHT: 83.3 lbs  
 QUANTITY: 1 PER SECTOR, TOTAL OF 2  
 SECTORS: ALPHA, BETA



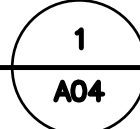
**ERICSSON M-MIMO AIR6449 B77D ANTENNA**  
 DIMENSIONS: 33.1"H x 20.5"W x 8.3"D  
 WEIGHT: 103.0 lbs  
 QUANTITY: 1 PER SECTOR, TOTAL OF 3  
 SECTORS: ALPHA, BETA, GAMMA



**MATSING MS-MBA-3.2-H4-L4 ANTENNA**  
 DIMENSIONS: 72.0"H x 24.0"W x 25.0"D  
 WEIGHT: 130.0 lbs  
 QUANTITY: TOTAL OF 1  
 SECTOR: GAMMA

**ANTENNA DETAIL**

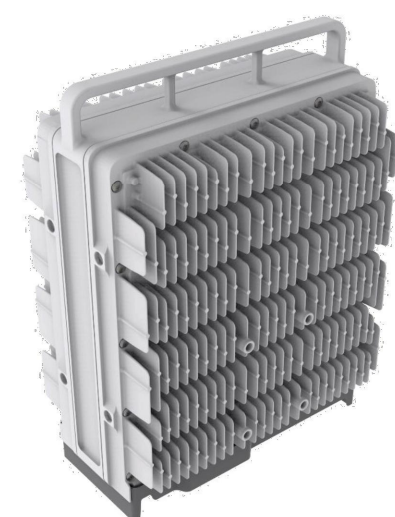
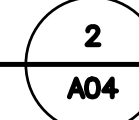
SCALE: N.T.S.



**ERICSSON RADIO 4449 B5+B12**  
 DIMENSIONS: 14.96"H x 13.19"W x 10.43"D  
 WEIGHT: 73.0 lbs  
 QUANTITY: TOTAL OF 1  
 SECTOR: GAMMA

**RADIO DETAIL**

SCALE: N.T.S.



**ERICSSON RADIO 8843 B2+B66A**  
 DIMENSIONS: 14.96"H x 13.2"W x 11.1"D  
 WEIGHT: 75.0 lbs  
 QUANTITY: TOTAL OF 2  
 SECTOR: GAMMA



**KAELUS DBC0051F3V51-2  
 TWIN 1900/AWS DIPLEXER**  
 DIMENSIONS: 8.54"H x 2.17"W x 5.0"D  
 WEIGHT: 7.5 lbs  
 QUANTITY: TOTAL OF 6  
 SECTOR: GAMMA

**DIPLEXER DETAIL**

SCALE: N.T.S.



**ANTENNA SCHEDULE**

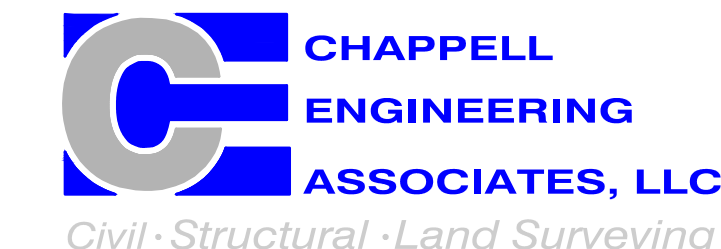
SECTOR	EXISTING / PROPOSED	BAND	ANTENNA	ANTENNA # & HEIGHT	AZIMUT H	TMA / DIPLEXER	RRU	FEEDER	SURGE PROTECTION
A1	PROPOSED	5G CBAND	AIR6449 B77D	±201'	10°	--	--	(E) (1) 18 PAIR FIBER TRUNK (E) (2) 6 AWG DC TRUNKS	--
A1	PROPOSED	5G DoD	AIR6419 B77G	±196'	10°	--	--	(E) (1) 18 PAIR FIBER TRUNK (E) (2) 6 AWG DC TRUNKS	--
A2	EXISTING	LTE 700/LTE 850/5G 850/LTE AWS	TPA65R-BU6DA-K	±190'	10°	--	(E) (1) 4478 B14 (E) (1) 4415 B30	(E) (1) 18 PAIR FIBER TRUNK	(E) (1) DC6-48-60-18
A3	EXISTING	LTE 700/5G 850/LTE 1900/5G 1900	DMP65R-BU6DA	±190'	10°	--	(E) (1) 4449 B5/B12 (E) (1) 8843 B2/B66A (SHARED)	(E) (1) 18 PAIR FIBER TRUNK	--
B1	EXISTING	LTE 700/LTE 850/5G 850/LTE AWS	TPA65R-BU6DA-K	±199'	190°	--	(E) (1) 4478 B14 (E) (1) 4415 B30	(E) (1) 18 PAIR FIBER TRUNK	(E) (1) DC6-48-60-18
B2	EXISTING	LTE 700/5G 850/LTE 1900/5G 1900	DMP65R-BU6DA	±199'	190°	--	(E) (1) 4449 B5/B12 (E) (1) 8843 B2/B66A (SHARED)	(E) (1) 18 PAIR FIBER TRUNK	--
B3	PROPOSED	5G CBAND	AIR6449 B77D	±193'	190°	--	--	(E) (1) 18 PAIR FIBER TRUNK (E) (2) 6 AWG DC TRUNKS	--
B3	PROPOSED	5G DoD	AIR6419 B77G	±189'	190°	--	--	(E) (1) 18 PAIR FIBER TRUNK (E) (2) 6 AWG DC TRUNKS	--
C1	PROPOSED	LTE 700(BC)/5G 850/AWS	OPA65R-BU6DA-K	±203'	275°	(P) (2) DBC0051F3V51-2	(E) (1) 4478 B14 (E) (1) 4415 B30	(P) (1) 24 PAIR FIBER TRUNK	(P) (1) DC9-48-60-RM
C2	PROPOSED	5G CBAND	AIR6449 B77D	±203'	275°	--	--	(P) (1) 24 PAIR FIBER TRUNK (P) (3) 6 AWG DC TRUNKS	--
C3	PROPOSED	LTE 700/5G 850/LTE 1900/5G 1900	MS-MBA-3.2-H4-L4	±203'	275°	(P) (6) DC6-48-60-18	(E) (1) 4449 B5/B12 (E) (1) 8843 B2/B66A (SHARED) (P) (1) 4449 B5/B12 (P) (2) 8843 B2/B66A (SHARED)	(P) (1) 24 PAIR FIBER TRUNK	--

**ANTENNA SCHEDULE**

SCALE: N.T.S.



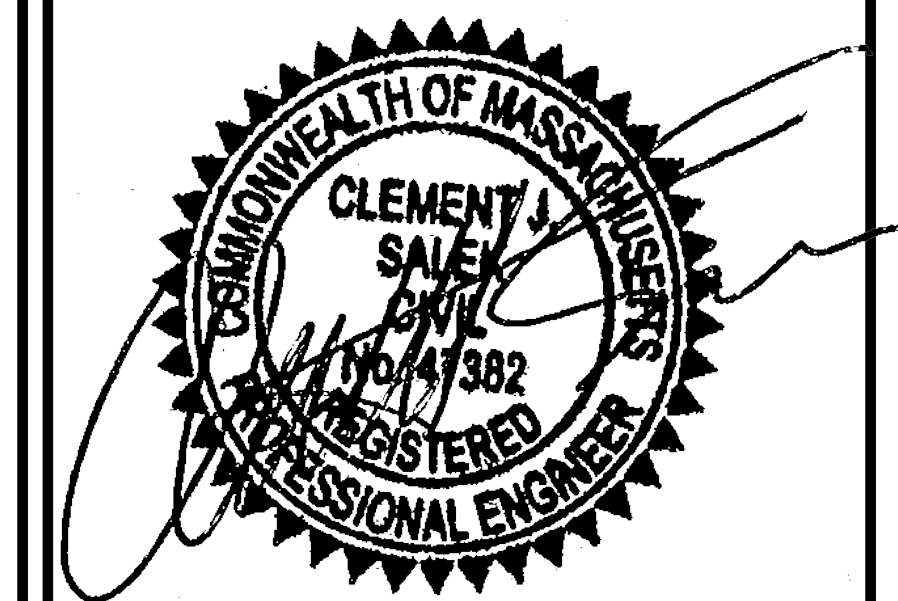
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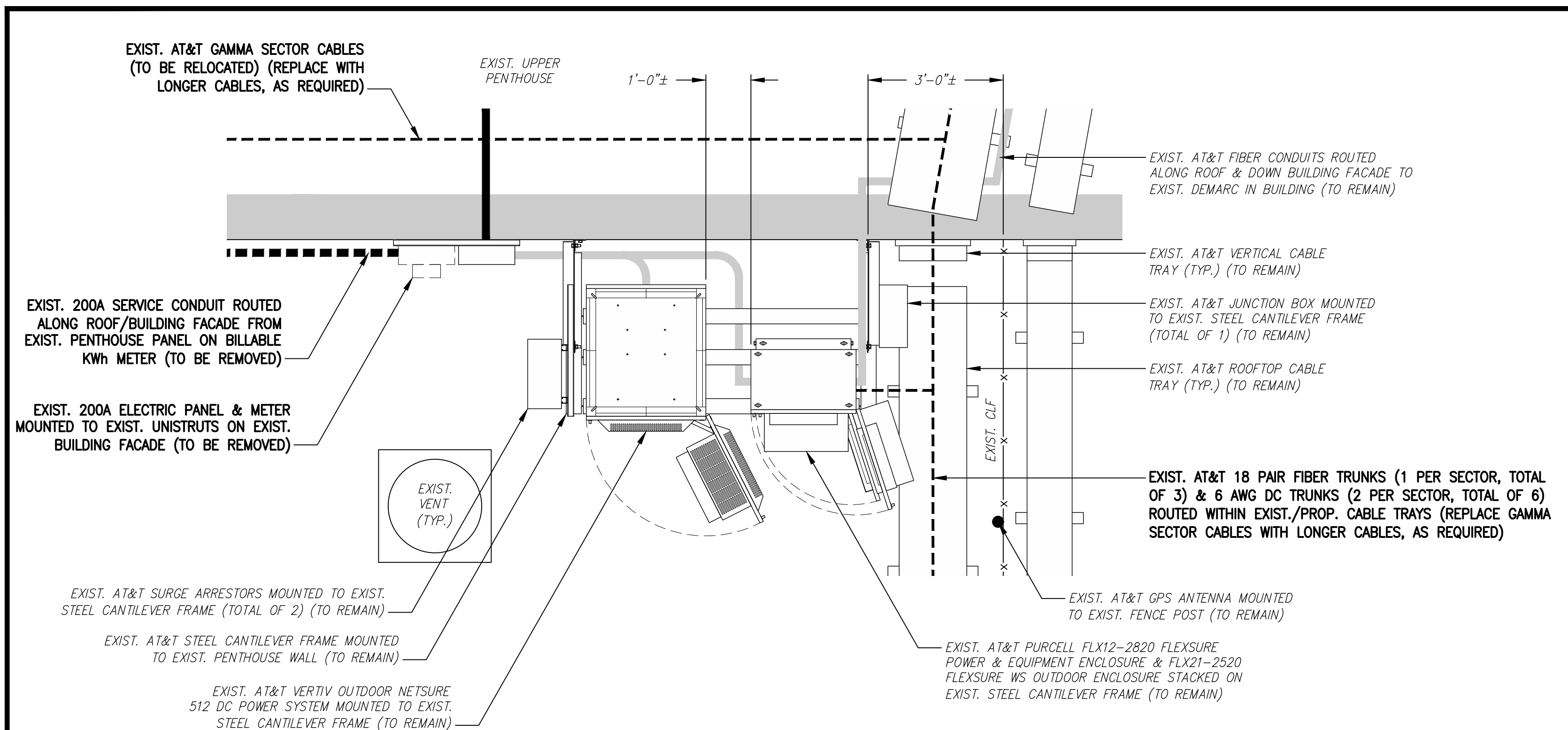
ENGINEER/LAND SURVEYOR DATE

PROJECT INFORMATION:  
**MA3001  
 CAMBRIDGE**  
 402 RINDGE AVENUE  
 CAMBRIDGE, MA 02139

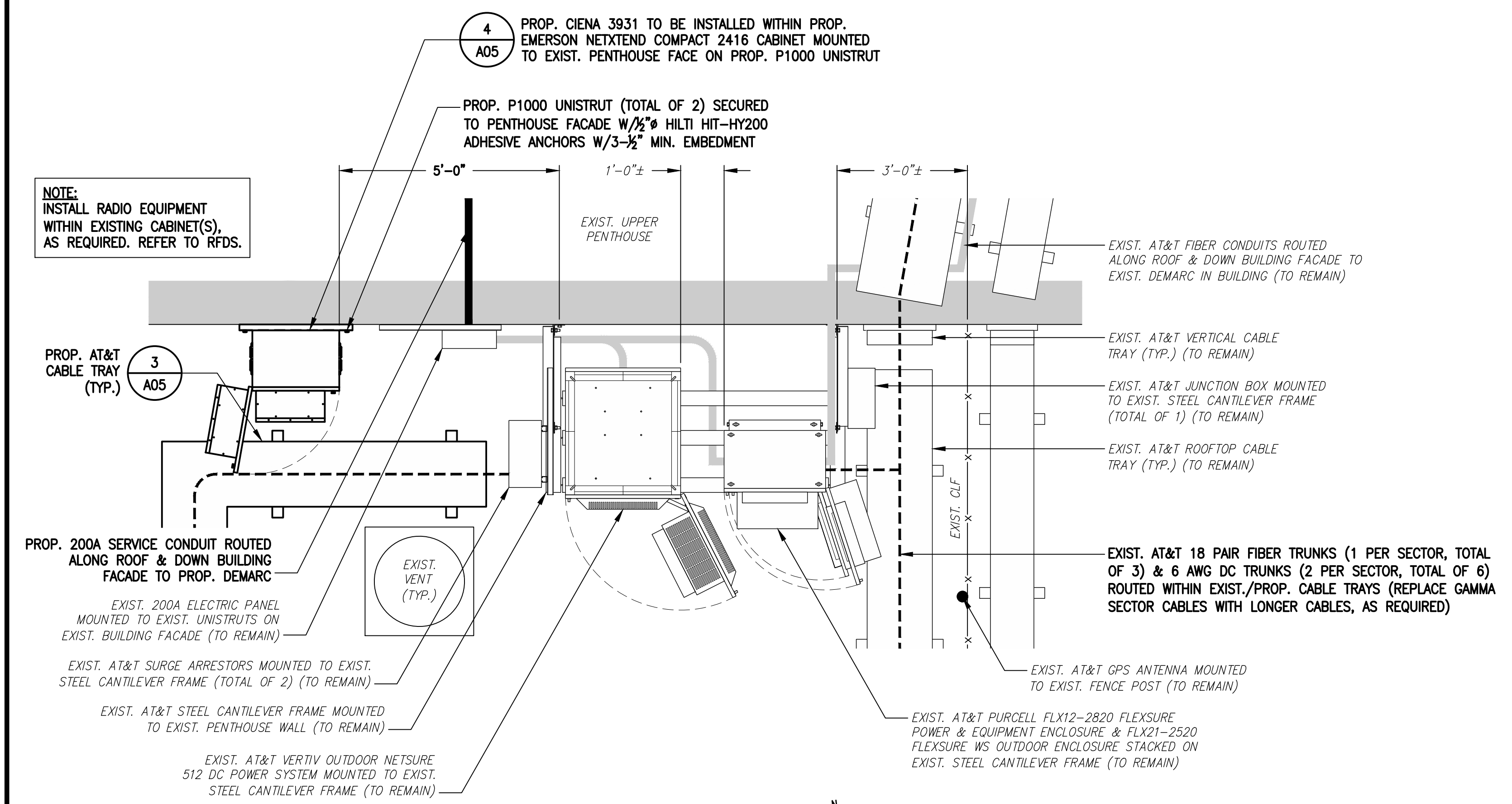
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SHEET TITLE:  
**ANTENNA DETAILS**

SHEET NUMBER: **A04** REVISION: **3**



**EXISTING EQUIPMENT PLAN**  
SCALE: 1/2" = 1'-0"  
1 A05

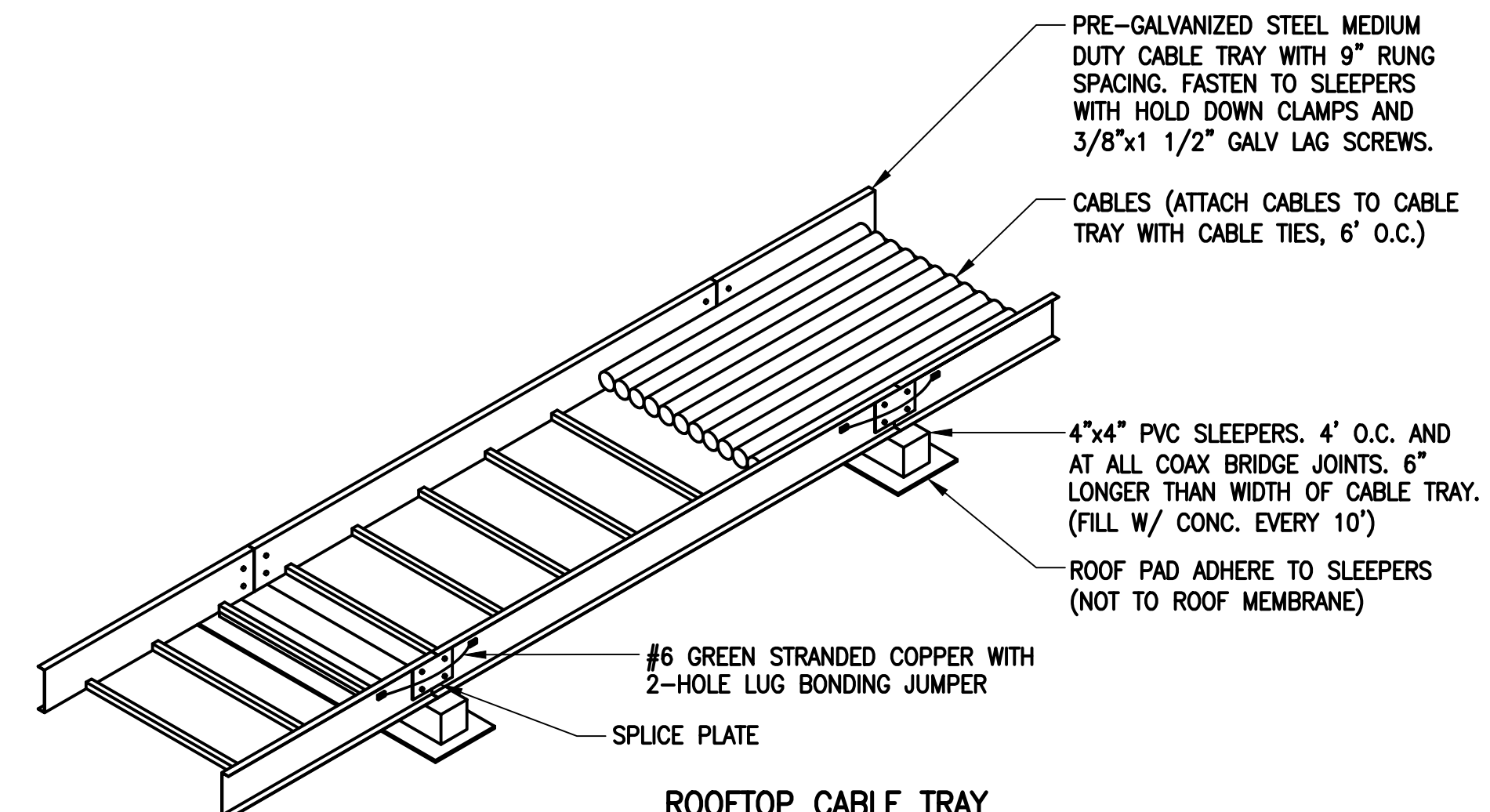


**PROPOSED EQUIPMENT PLAN**  
SCALE: 1/2" = 1'-0"  
2 A05

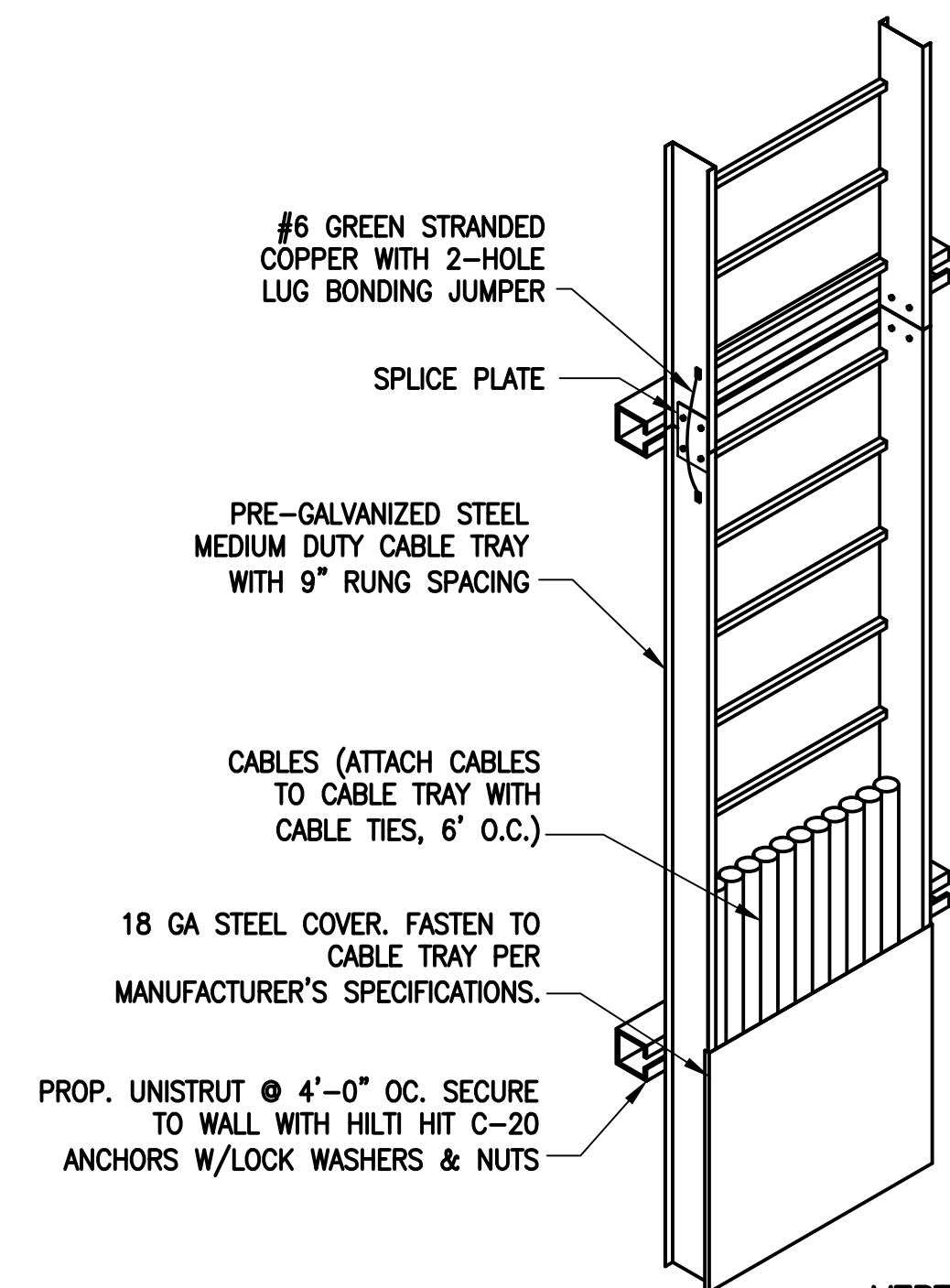


**EMERSON NETXTEND COMPACT 2416 FIBER CABINET**  
DIMENSIONS: 24.0"H x 24.0"W x 25.2"D  
WEIGHT: 64 lbs  
QUANTITY: TOTAL OF 1

**SSC DETAILS**  
SCALE: N.T.S.  
4 A05



**ROOFTOP CABLE TRAY**



**VERTICAL CABLE TRAY**

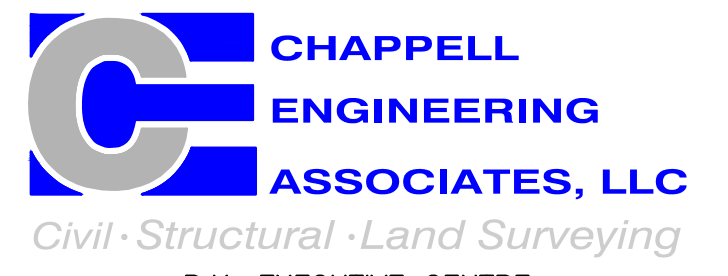
**CABLE TRAY DETAILS**  
SCALE: NOT TO SCALE  
3 A05

NOTE: VERTICAL CABLE TRAY TO BE PAINTED TO MATCH EXISTING BUILDING FACADE.

NUMBER OF COAXIAL CABLES	WIDTH OF CABLE TRAY	LOADING DEPTH OF CABLE TRAY
12	24"	4"
8	18"	4"
4	12"	4"
1-3	6" OR 8"	4"



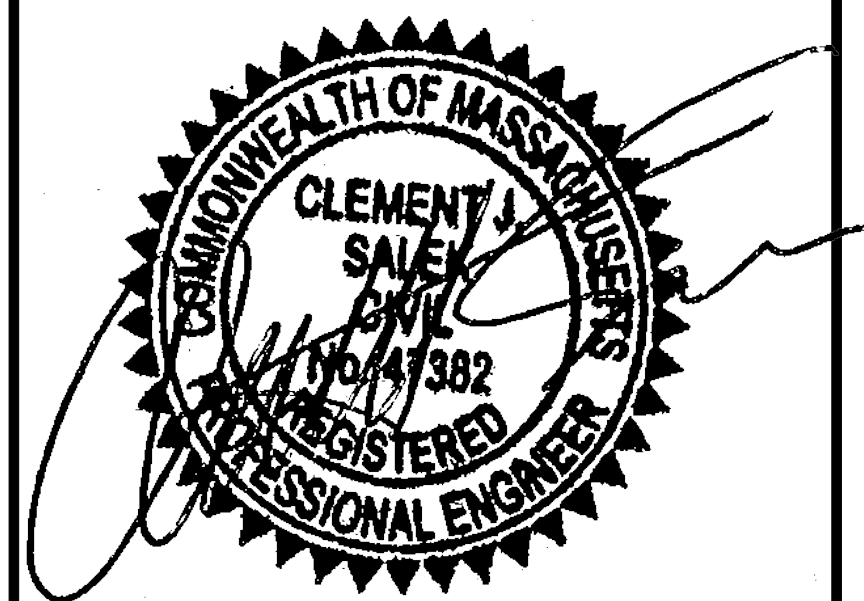
AT&T MOBILITY  
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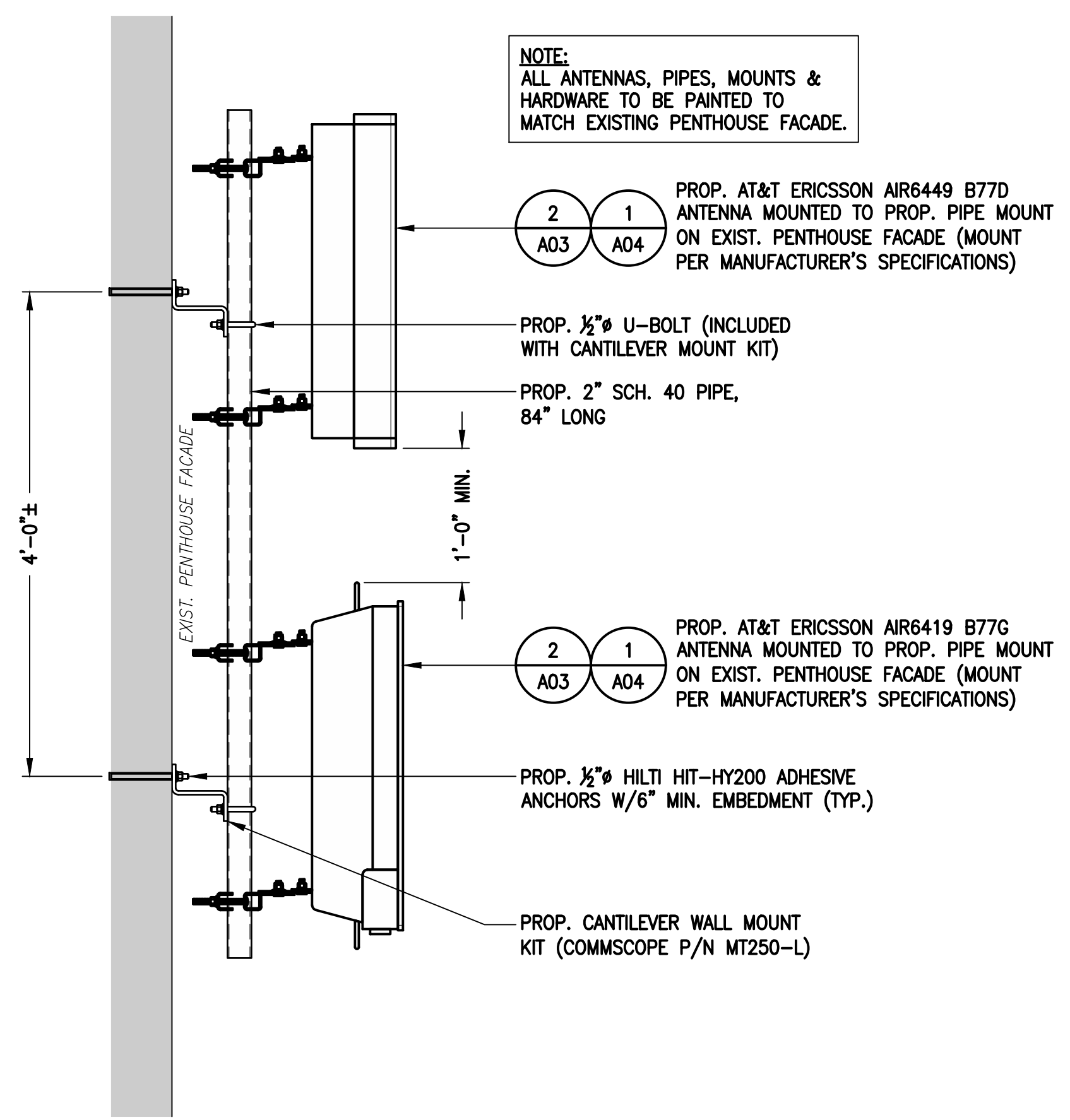
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CAMBRIDGE, MA 02139

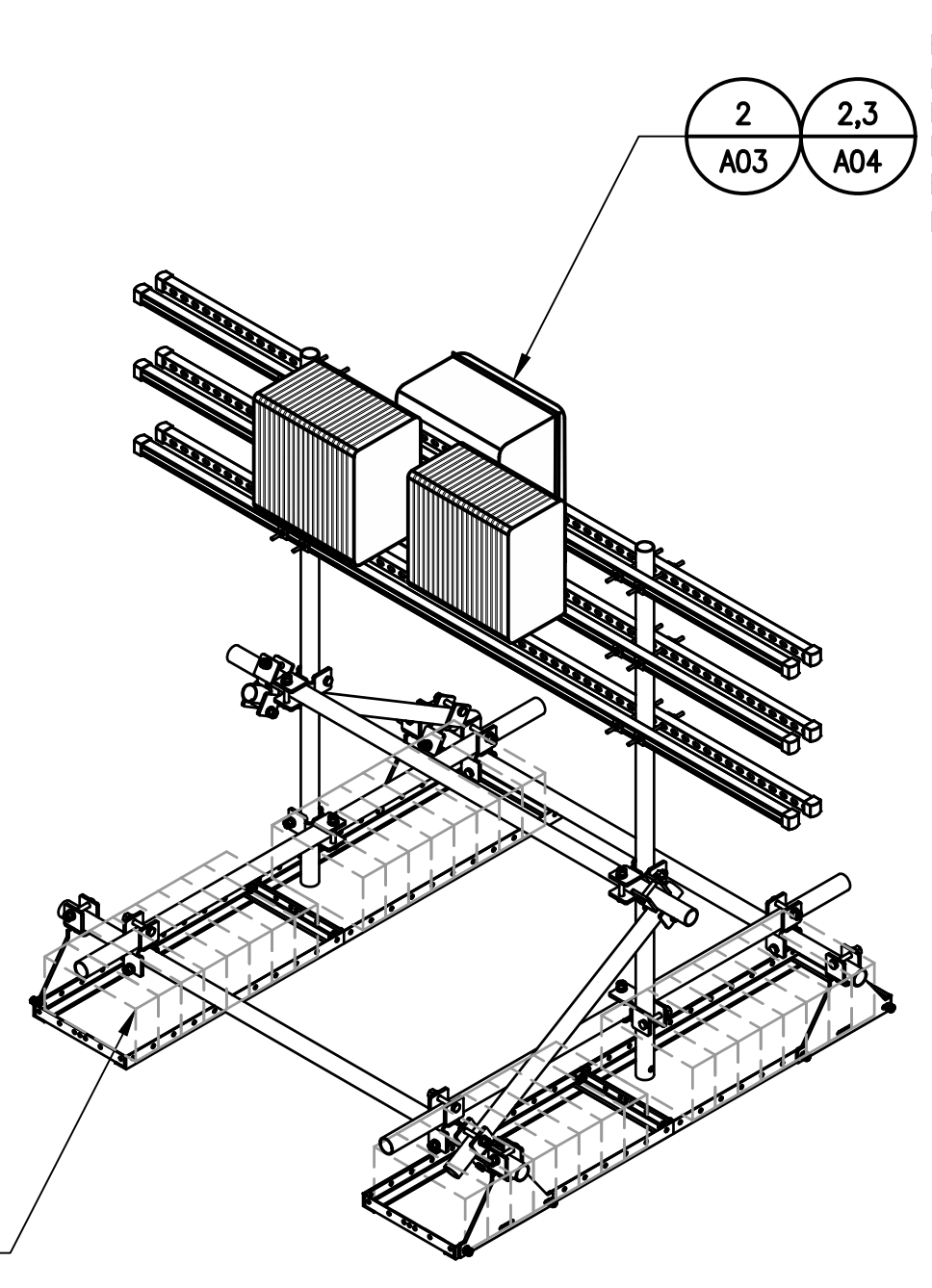
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SHEET TITLE:  
**EQUIPMENT PLAN & DETAILS**

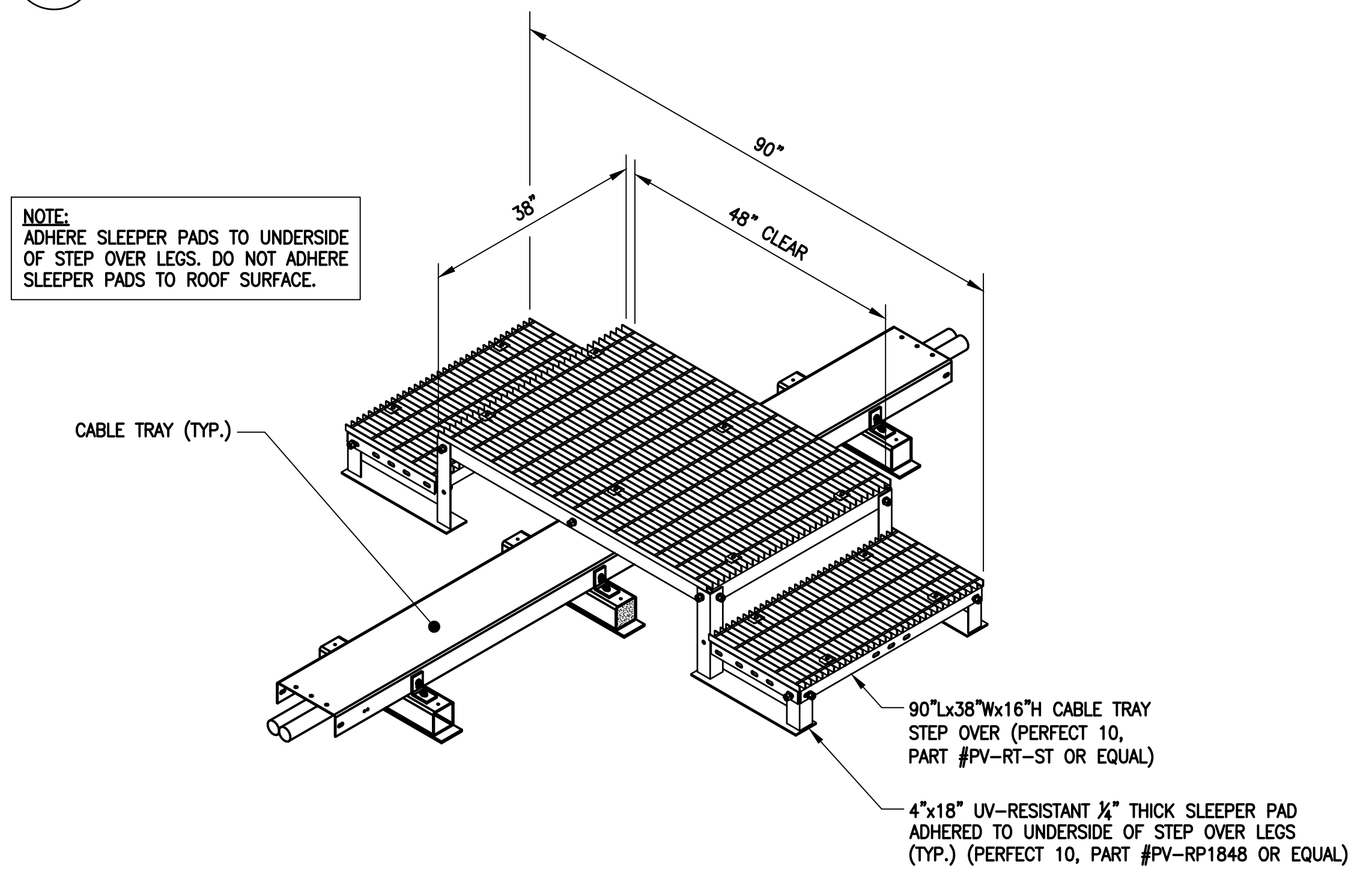
SHEET NUMBER: **A05** REVISION: **3**



ALPHA & BETA SECTORS  
**ANTENNA MOUNTING DETAIL** 1  
 SCALE: 1" = 1'-0"  
 0 1' 2' 3'



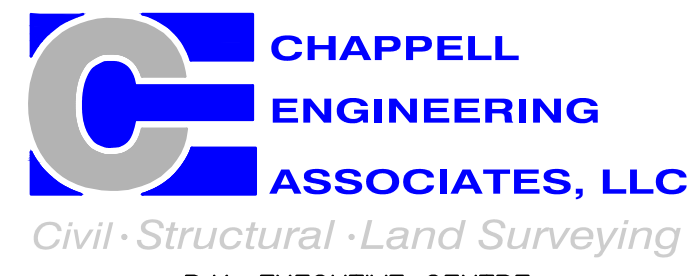
**PERFECT VISION PV-RC-RRH2  
 NON-PENETRATING BALLAST FRAME**  
 DIMENSIONS: 88.0"H x 78.0"W x 80.0"D  
 WEIGHT (WITHOUT BALLAST): 555 lbs  
 QUANTITY: TOTAL OF 1  
**RADIO BALLAST MOUNT DETAIL** 2  
 SCALE: N.T.S.



**CABLE TRAY/CONDUIT STEP OVER DETAIL** 3  
 SCALE: NOT TO SCALE



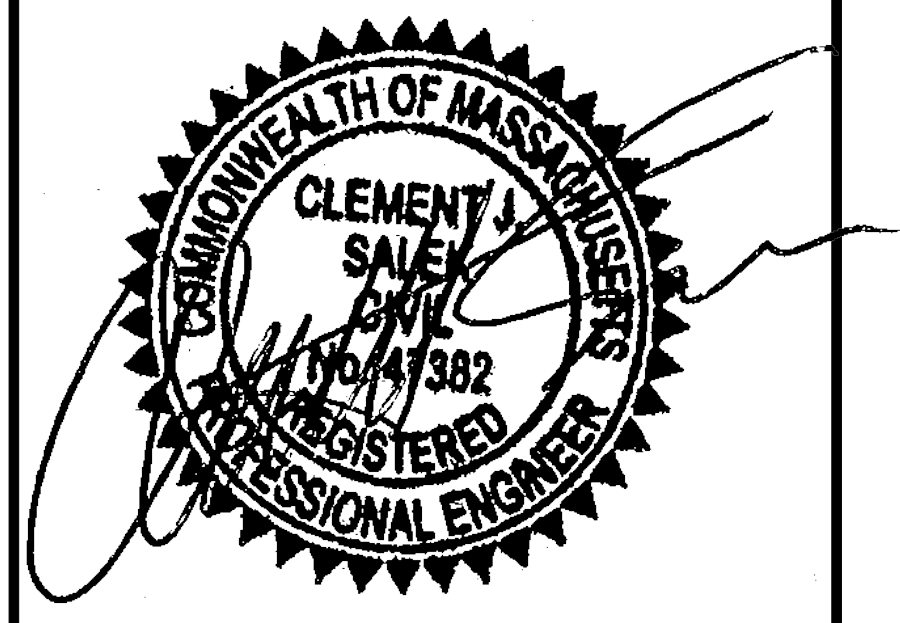
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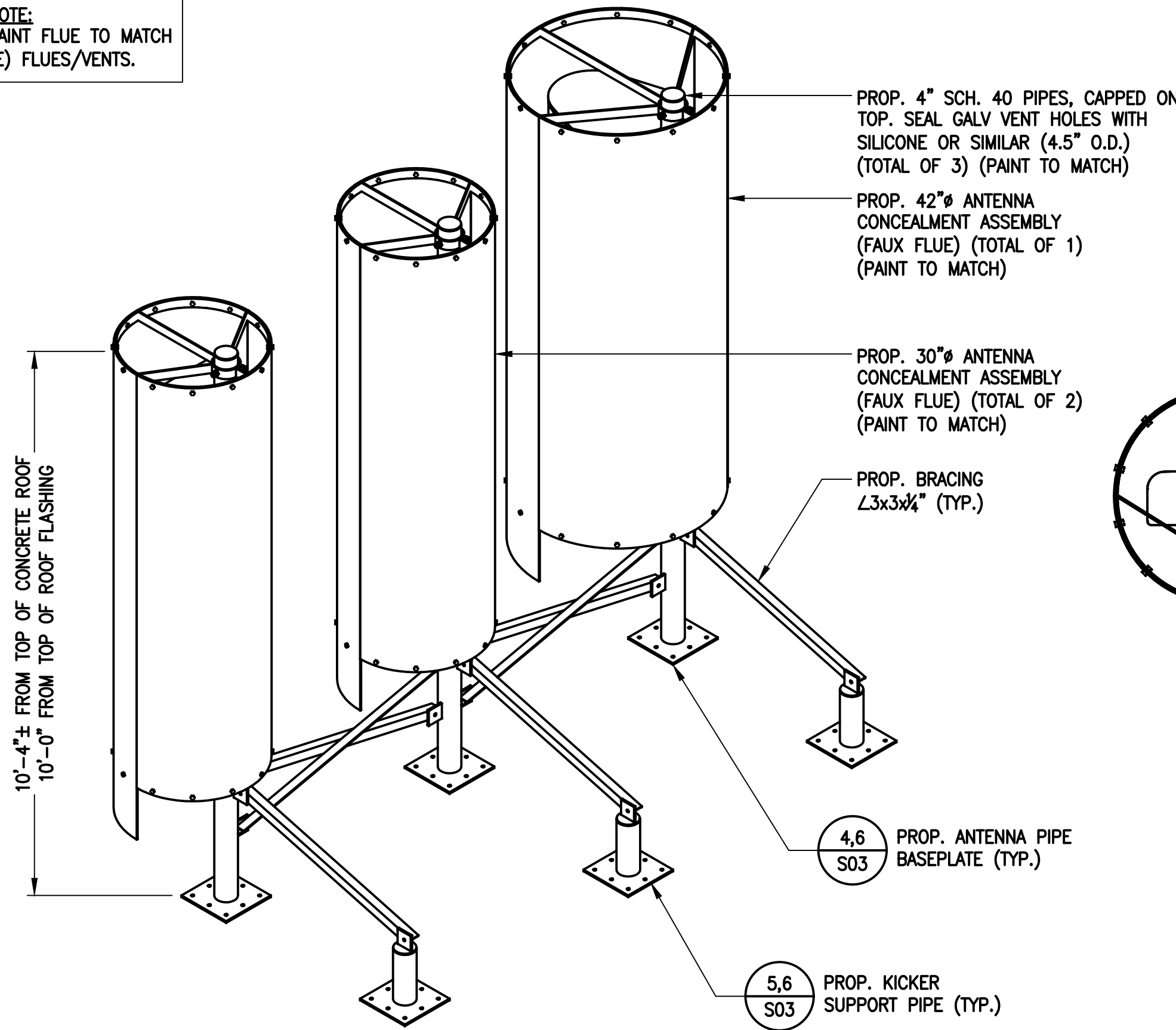
DRAWN BY: CMC CHECKED BY: JMT

SHEET TITLE:  
**SITE DETAILS**

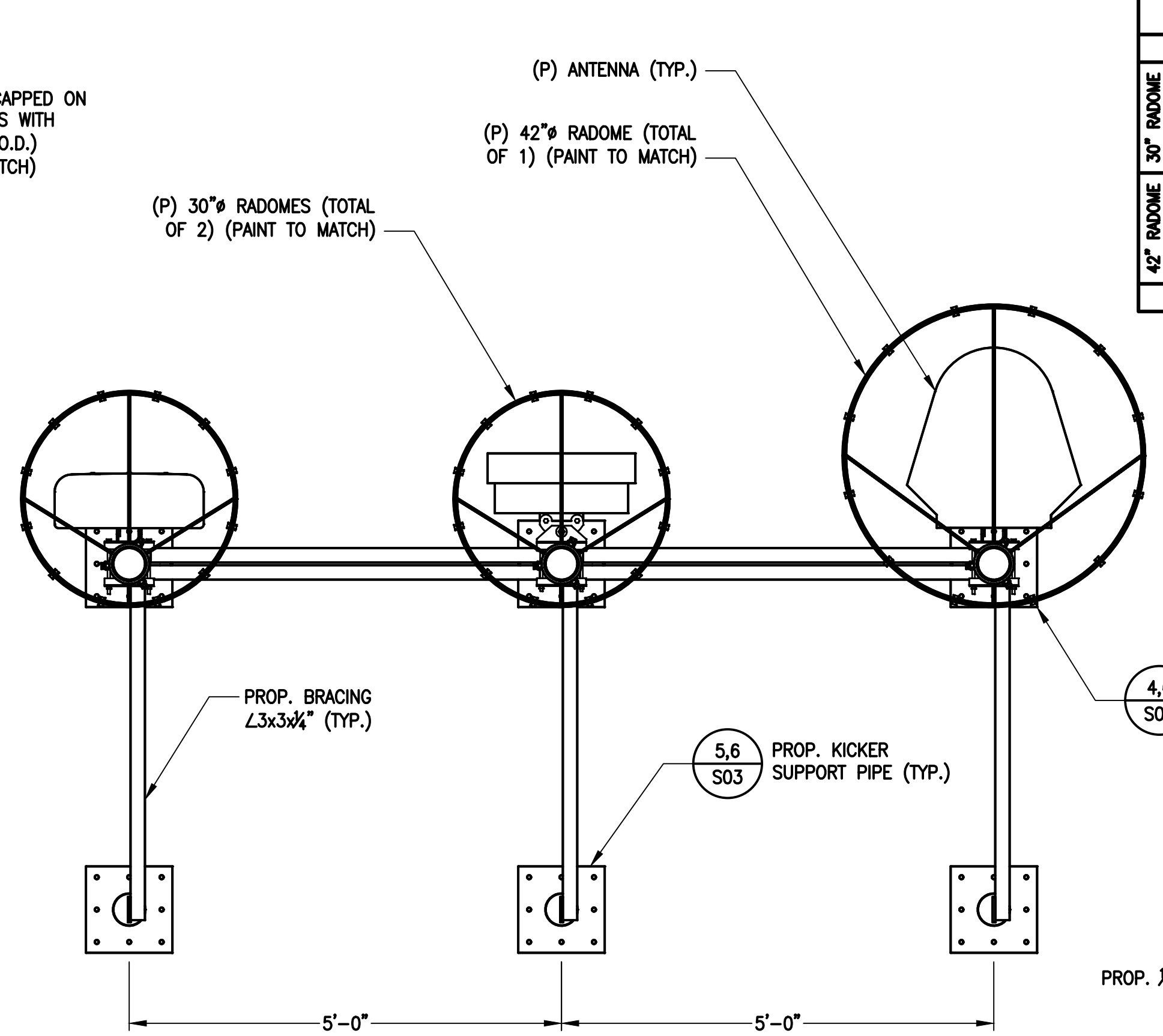
SHEET NUMBER: **S01** REVISION: **3**



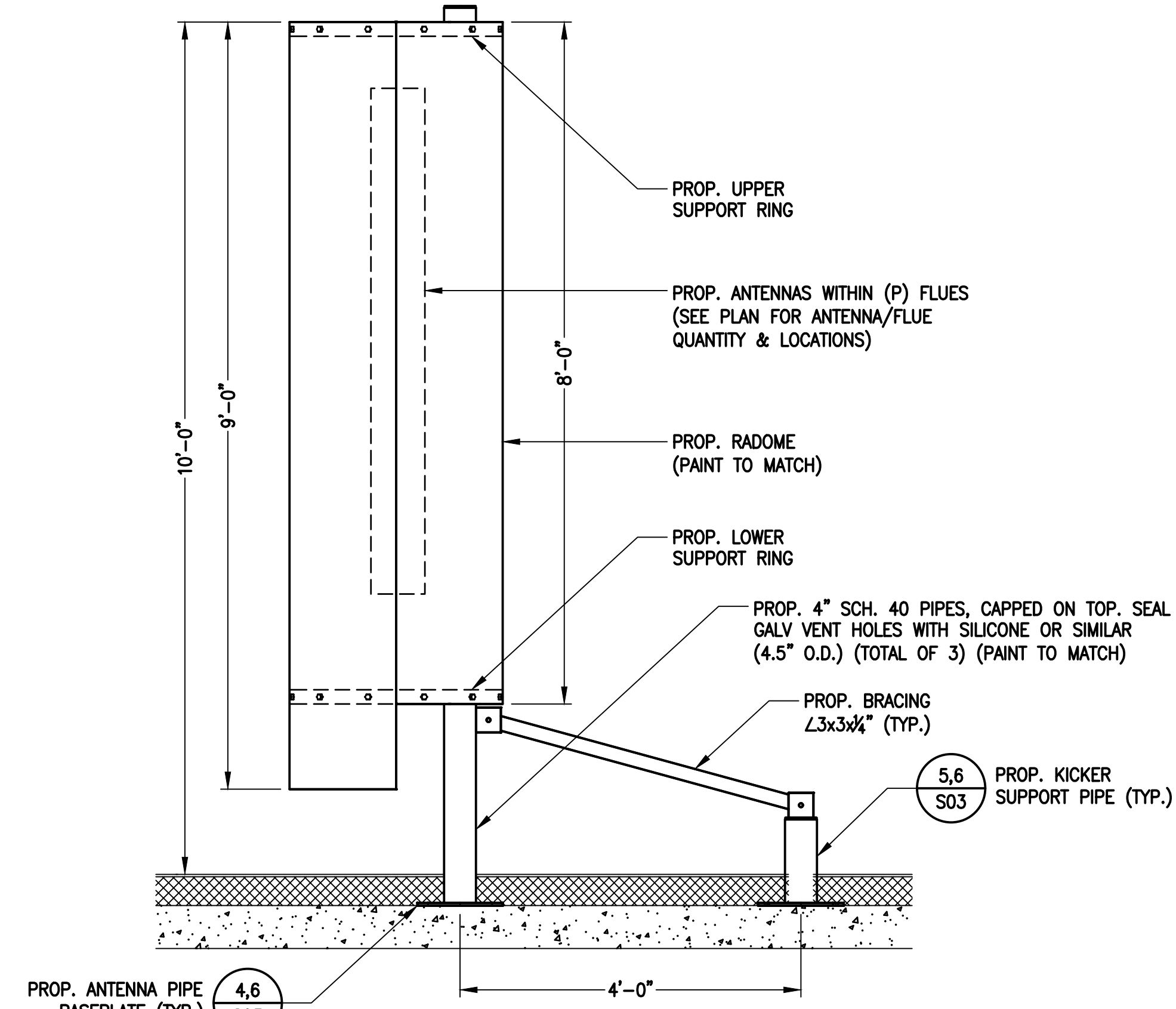
NOTE:  
PAINT FLUE TO MATCH  
(E) FLUES/VENTS.



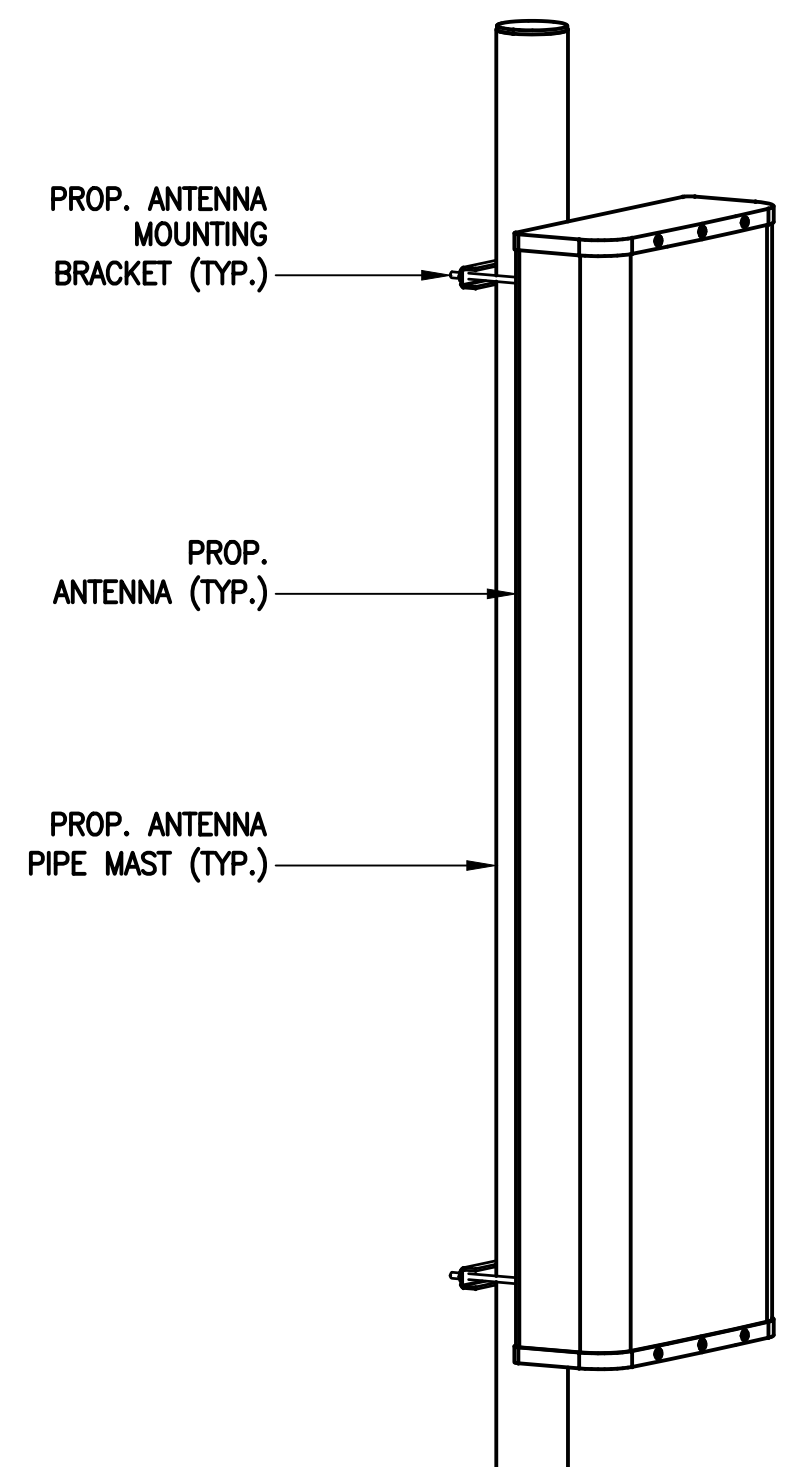
**ISOMETRIC VIEW**  
SCALE: N.T.S. **1**  
S02



**PLAN VIEW**  
SCALE: 3/4" = 1'-0"  
0 1'-4" 2'-8" 4'-0"  
**2**  
S02

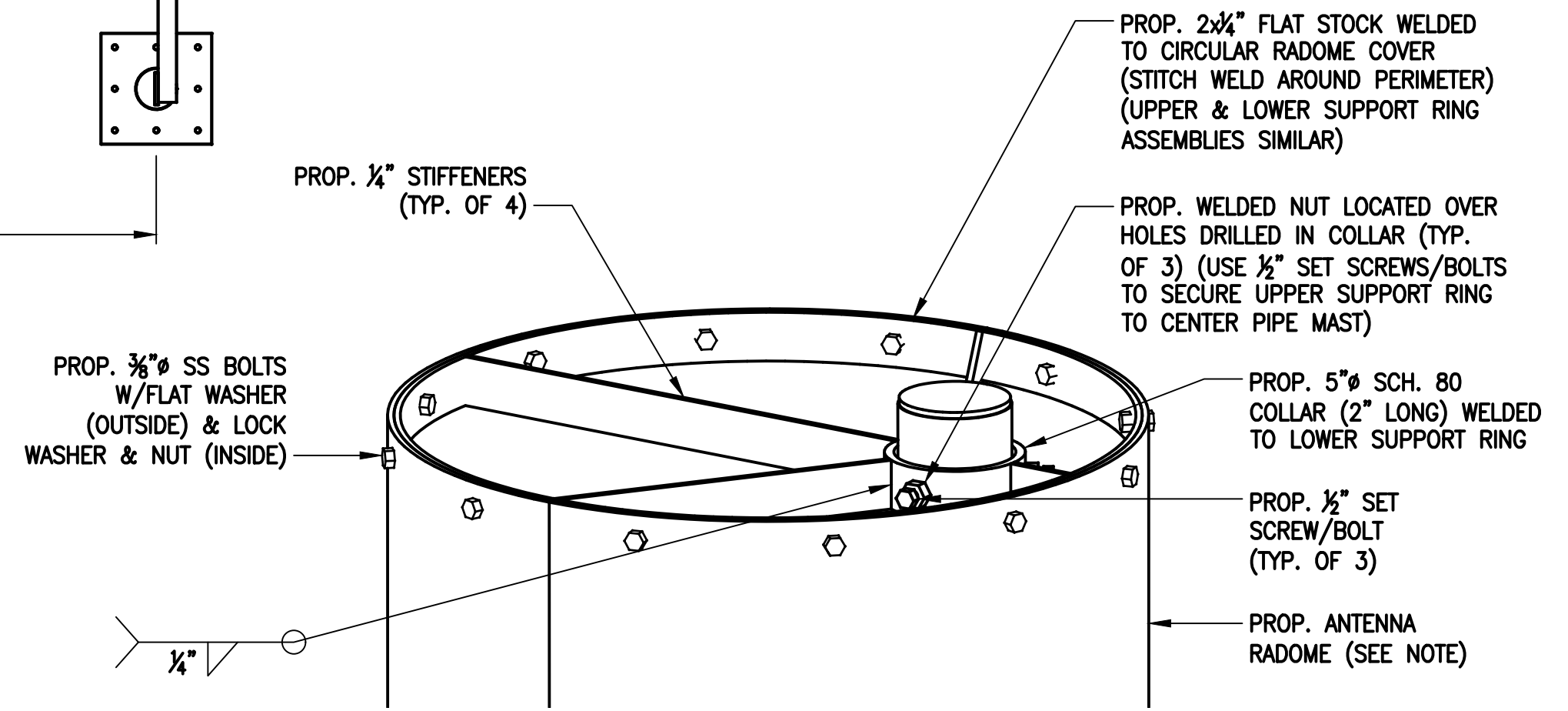


**ELEVATION**  
SCALE: N.T.S. **3**  
S02

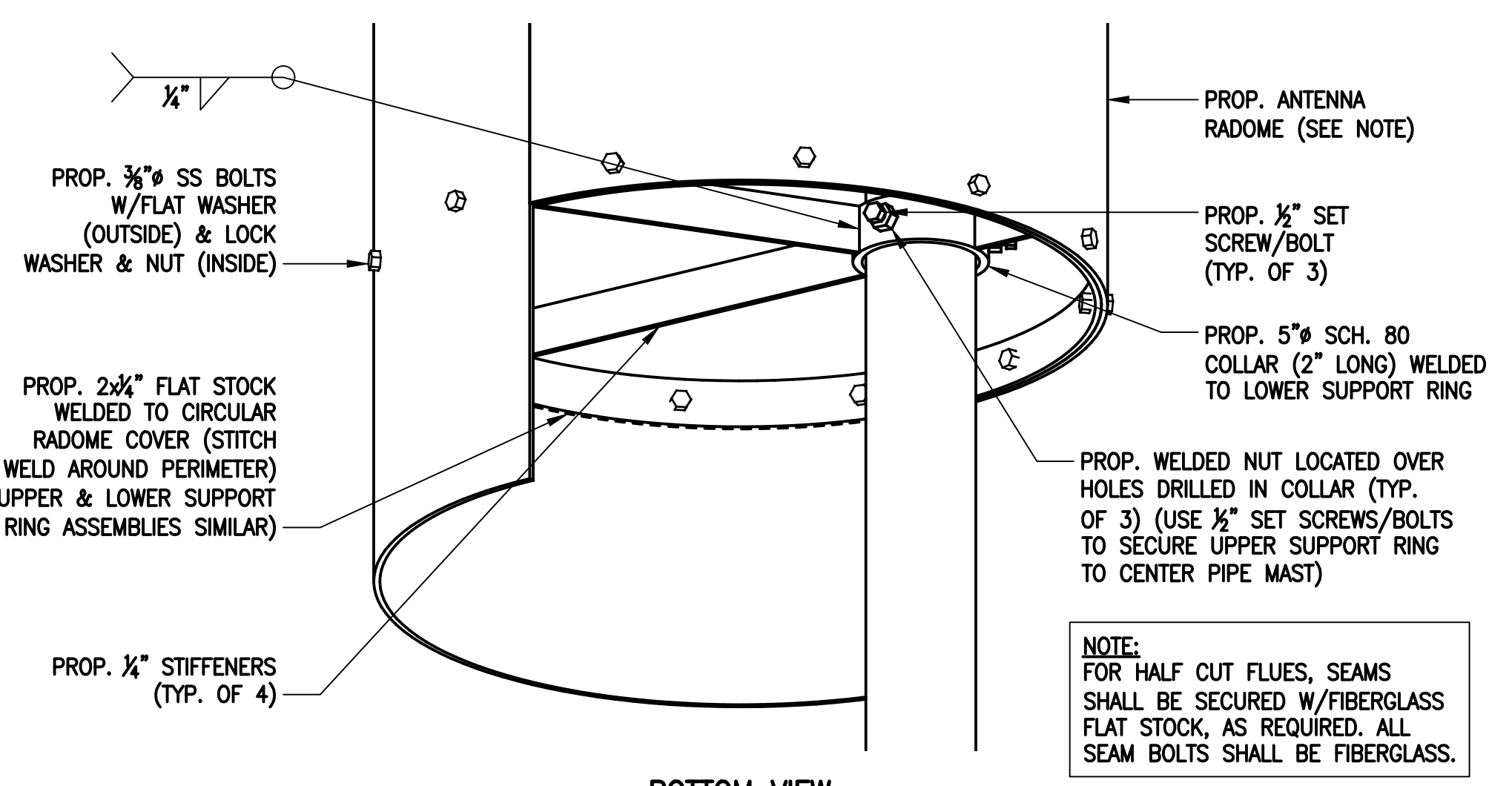


**ANTENNA MOUNTING ISOMETRIC**  
SCALE: N.T.S. **4**  
S02

BILL OF MATERIALS					
ITEM	DESCRIPTION	SIZE	QTY	NOTES	
30" RADOME	1	UPPER SUPPORT RING	29-1/2"	1	SEE DETAIL ON THIS SHEET FOR FABRICATION
	2	LOWER SUPPORT RING	29-1/2"	1	SEE DETAIL ON THIS SHEET FOR FABRICATION
	3	FIBERGLASS HALF-RADOME	30" O.D. x 8'-0"H	1	PAINT TO MATCH (E) FLUES/VENTS
	4	FIBERGLASS HALF RADOME	30" O.D. x 9'-0"H	1	PAINT TO MATCH (E) FLUES/VENTS
42" RADOME	5	UPPER SUPPORT RING	41-1/2"	1	SEE DETAIL ON THIS SHEET FOR FABRICATION
	6	LOWER SUPPORT RING	41-1/2"	1	SEE DETAIL ON THIS SHEET FOR FABRICATION
	7	FIBERGLASS HALF-RADOME	42" O.D. x 8'-0"H	1	PAINT TO MATCH (E) FLUES/VENTS
	8	FIBERGLASS HALF-RADOME	42" O.D. x 9'-0"H	1	PAINT TO MATCH (E) FLUES/VENTS
	9	PIPE MOUNT ASSEMBLY	N/A	1	SEE DETAILS ON SHEET S03



**TOP VIEW**  
**UPPER SUPPORT RING ASSEMBLY**  
SCALE: N.T.S. **5**  
S02

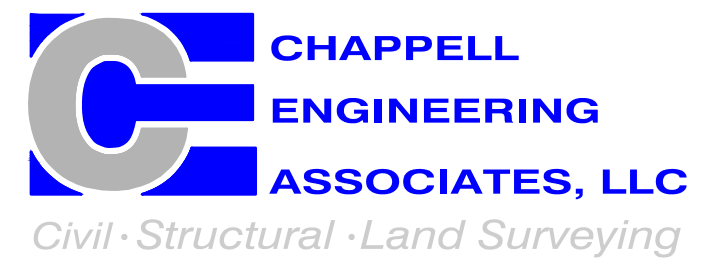


**BOTTOM VIEW**  
**LOWER SUPPORT RING ASSEMBLY**  
SCALE: N.T.S. **6**  
S02

NOTE:  
FOR HALF CUT FLUES, SEAMS  
SHALL BE SECURED W/FIBERGLASS  
FLAT STOCK, AS REQUIRED. ALL  
SEAM BOLTS SHALL BE FIBERGLASS.



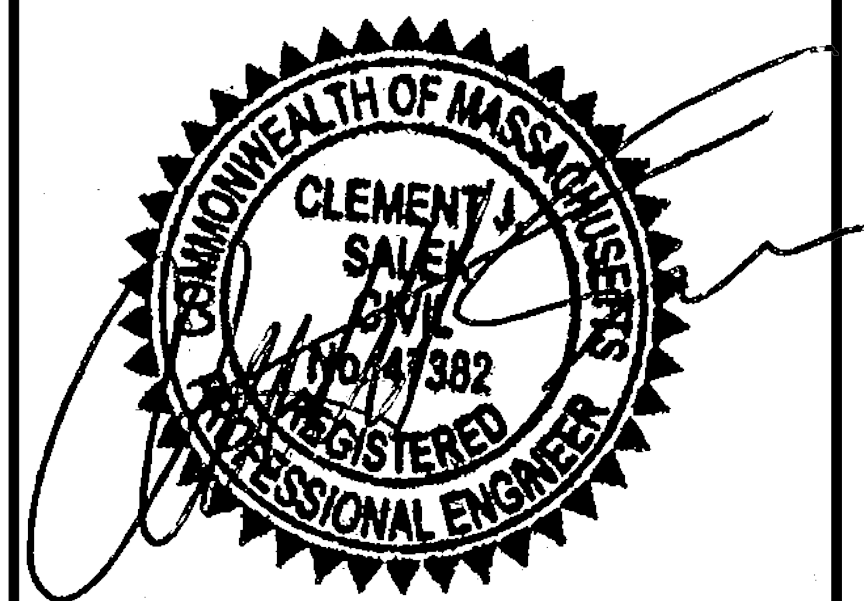
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0	10-11-22	ISSUED FOR REVIEW



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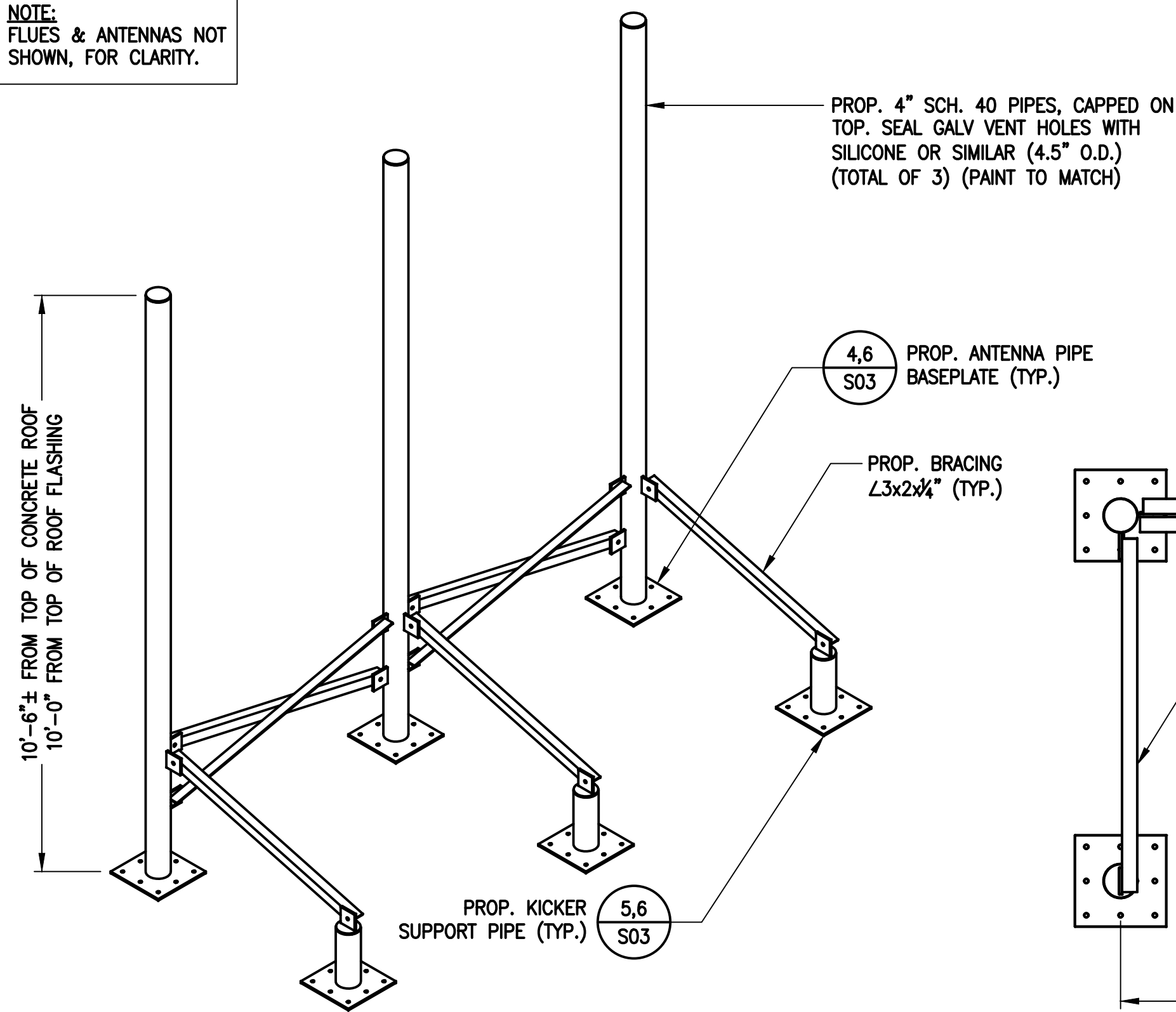
PROJECT INFORMATION:  
**MA3001**  
**CAMBRIDGE**  
  
402 RINDGE AVENUE  
CAMBRIDGE, MA 02139

DRAWN BY: **CMC** CHECKED BY: **JMT**

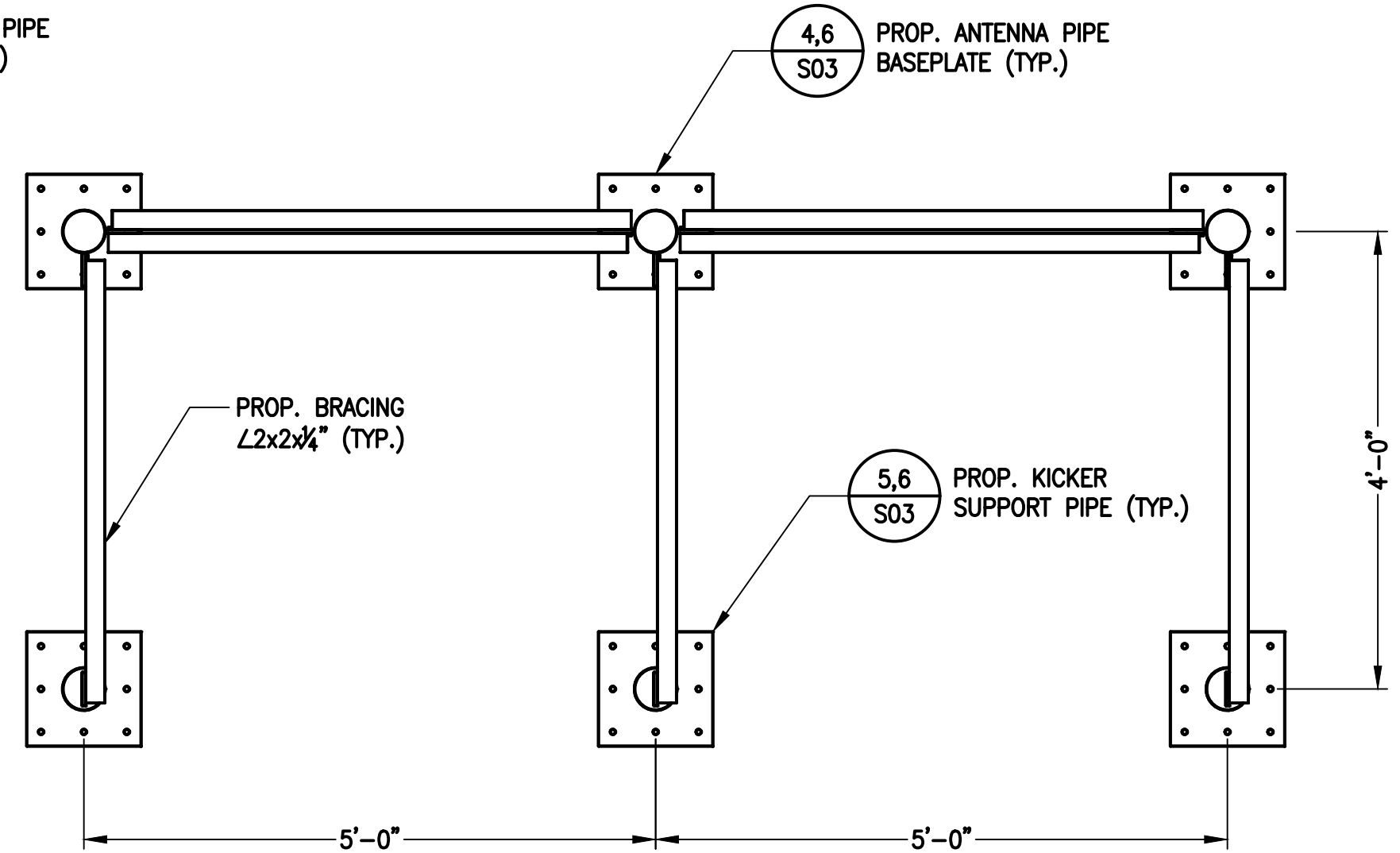
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**FAUX FLUE**  
**DETAILS**

SHEET NUMBER: **S02** REVISION: **3**

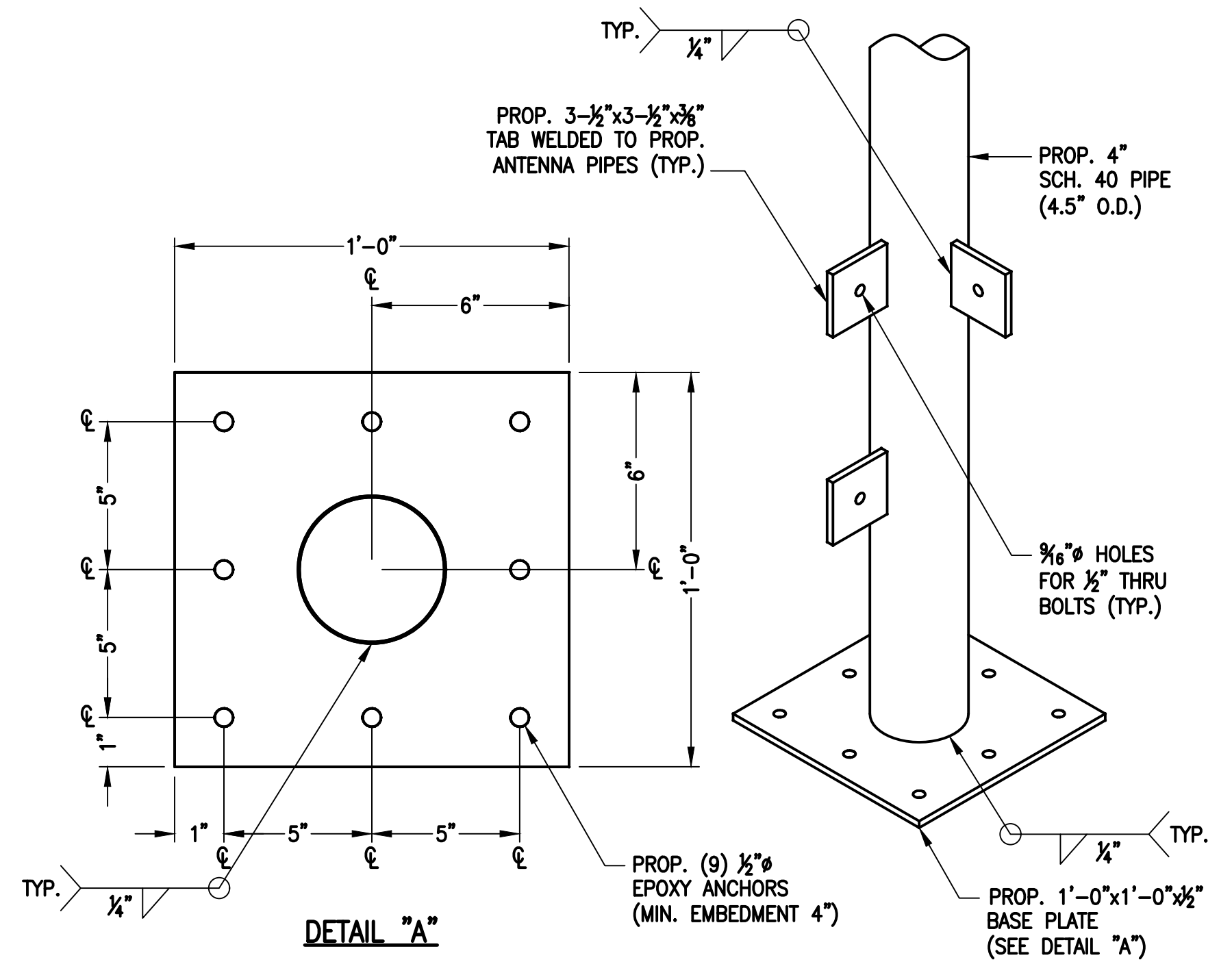
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FLUES & ANTENNAS NOT  
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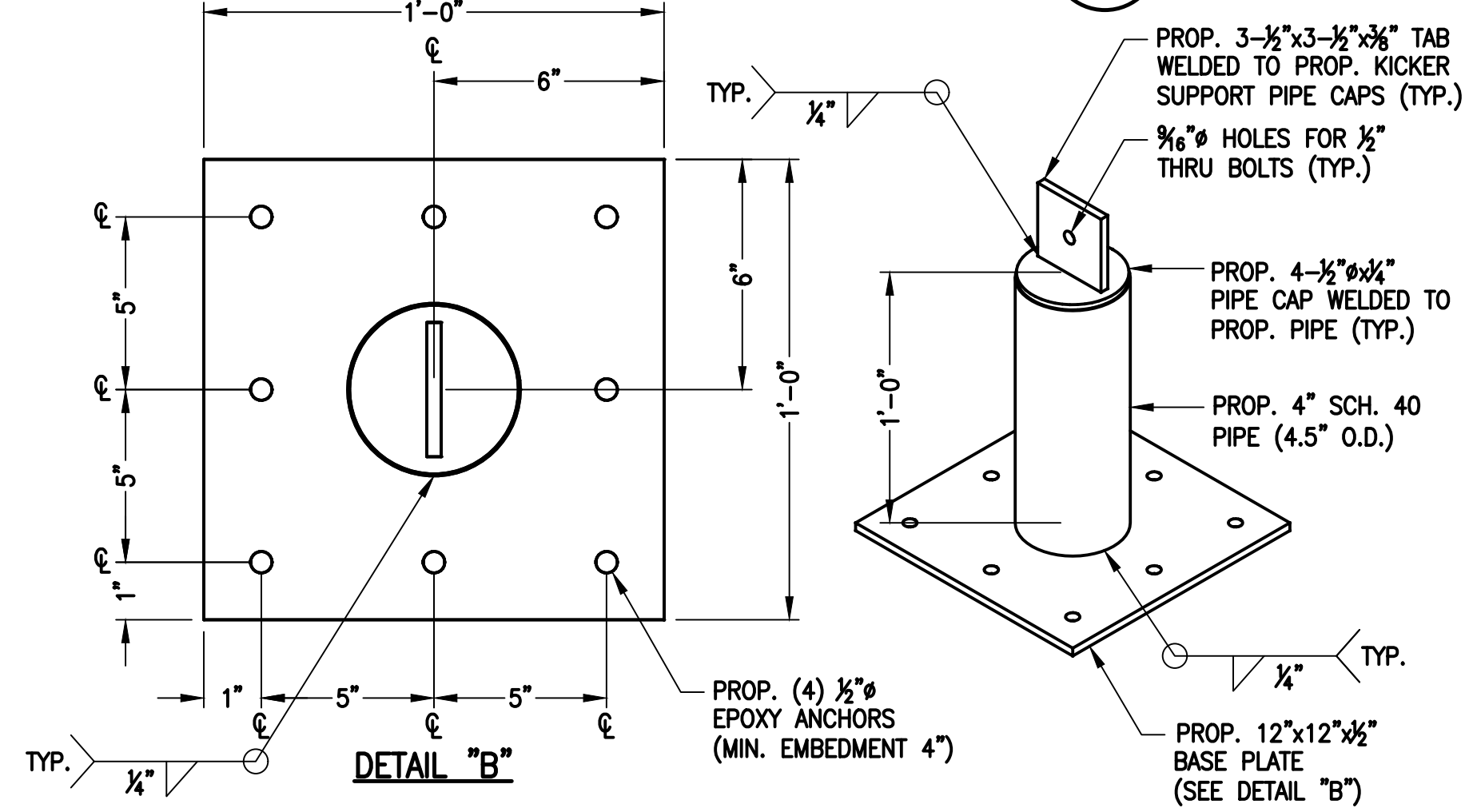
**ISOMETRIC VIEW**  
SCALE: N.T.S. 1  
S03



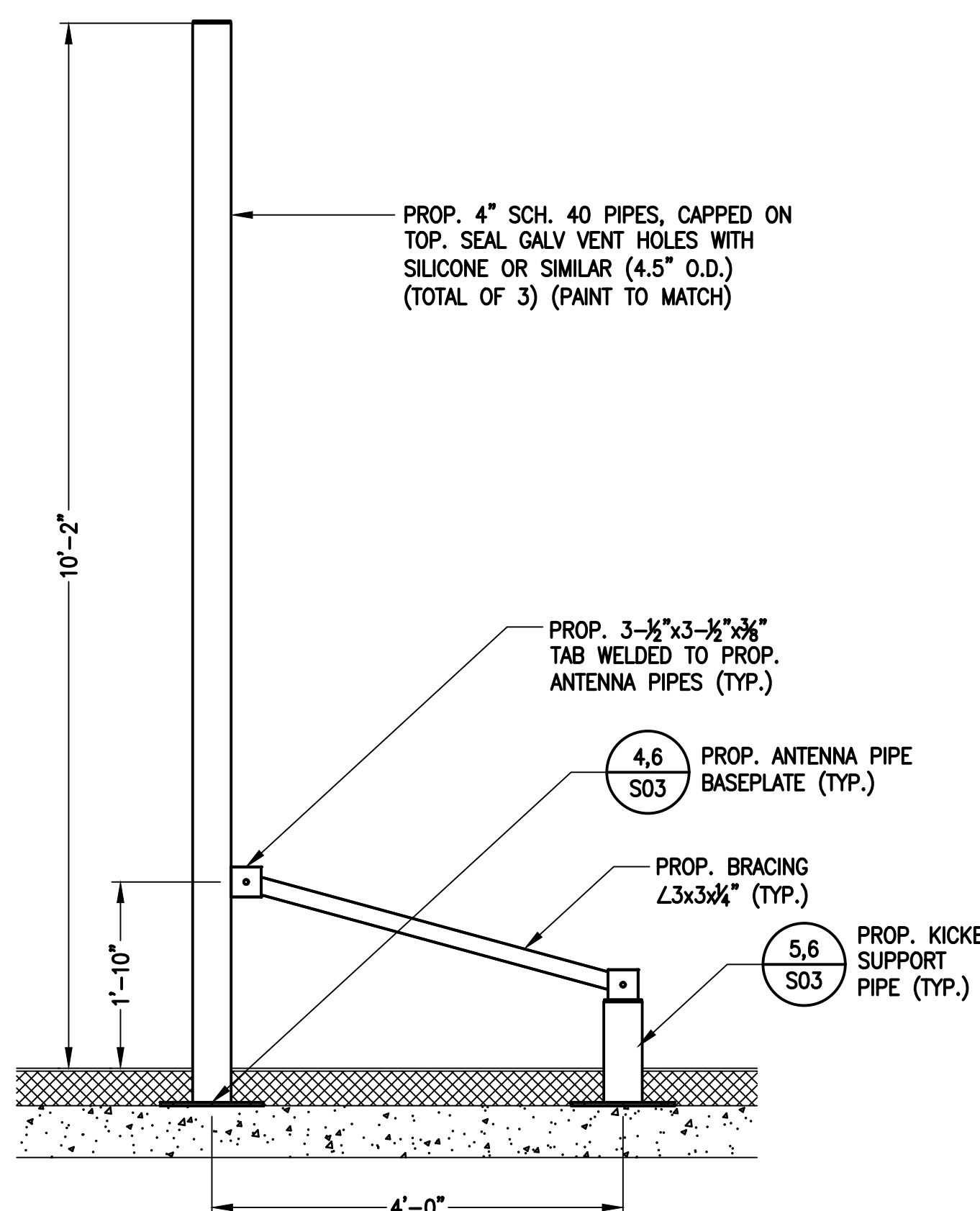
**PLAN VIEW**  
SCALE: 3/4" = 1'-0"  
0 1'-4" 2'-8" 4'-0"  
2  
S03



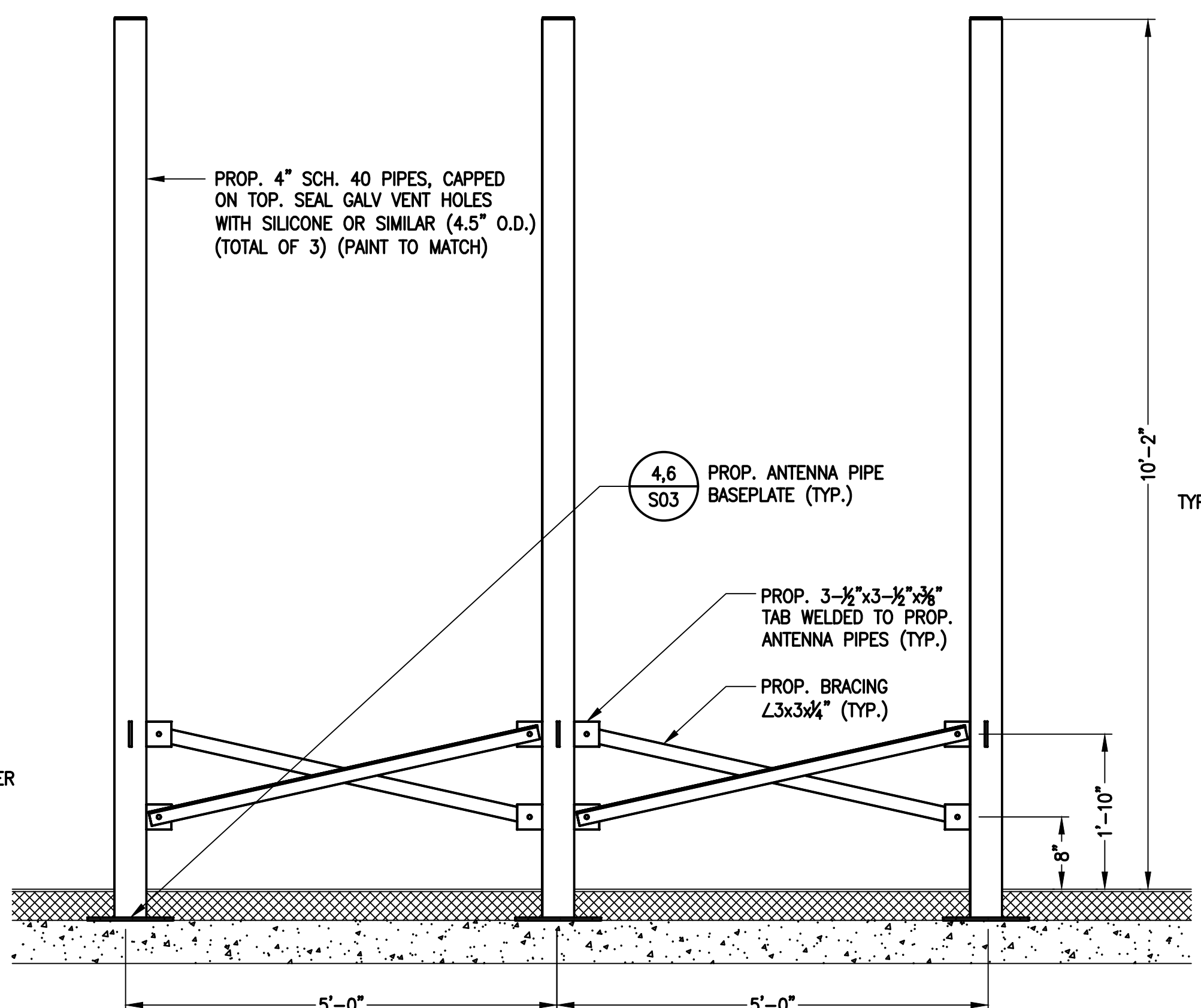
**ANTENNA PIPE MAST DETAIL**  
SCALE: N.T.S. 4  
S03



**KICKER SUPPORT PIPE DETAIL**  
SCALE: N.T.S. 5  
S03

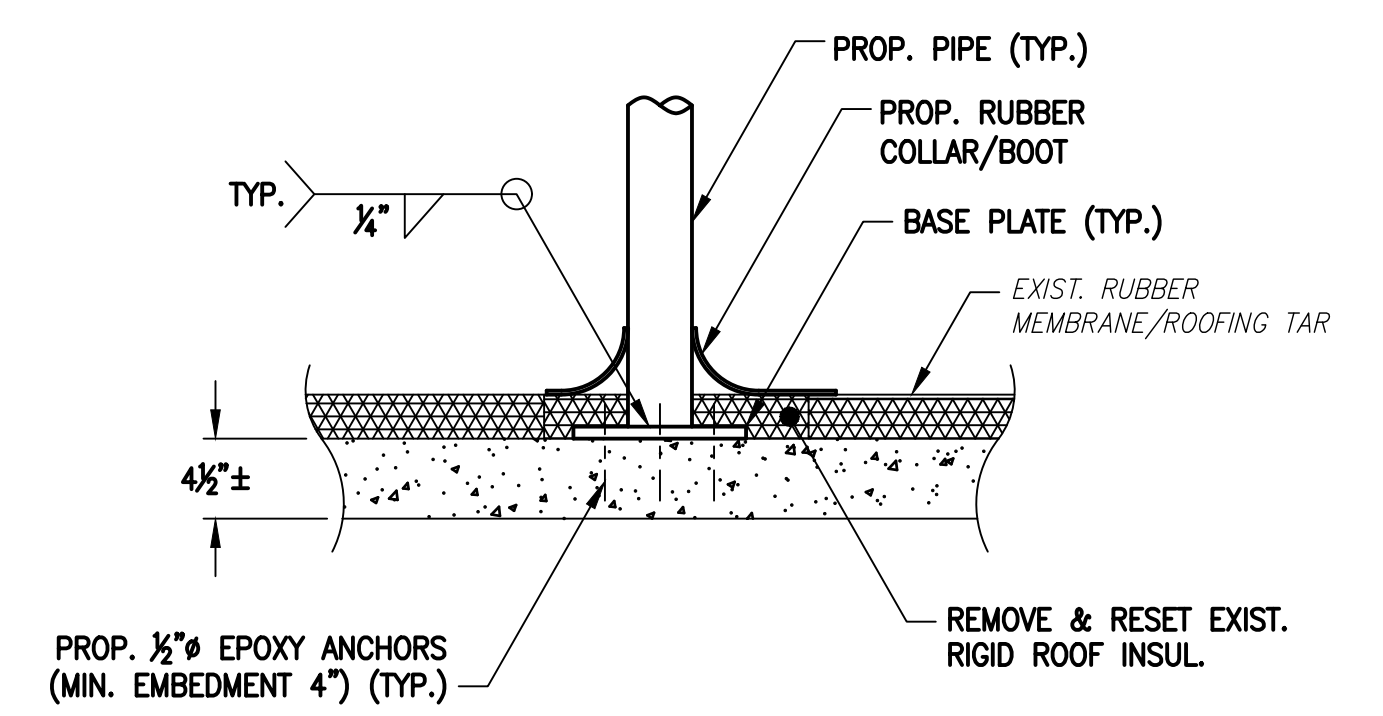


**SIDE VIEW**



**REAR VIEW**

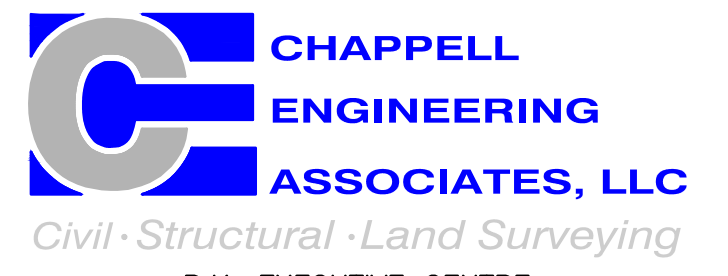
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SCALE: N.T.S. 3  
S03



**PENETRATION DETAIL**  
SCALE: NOT TO SCALE 6  
S03



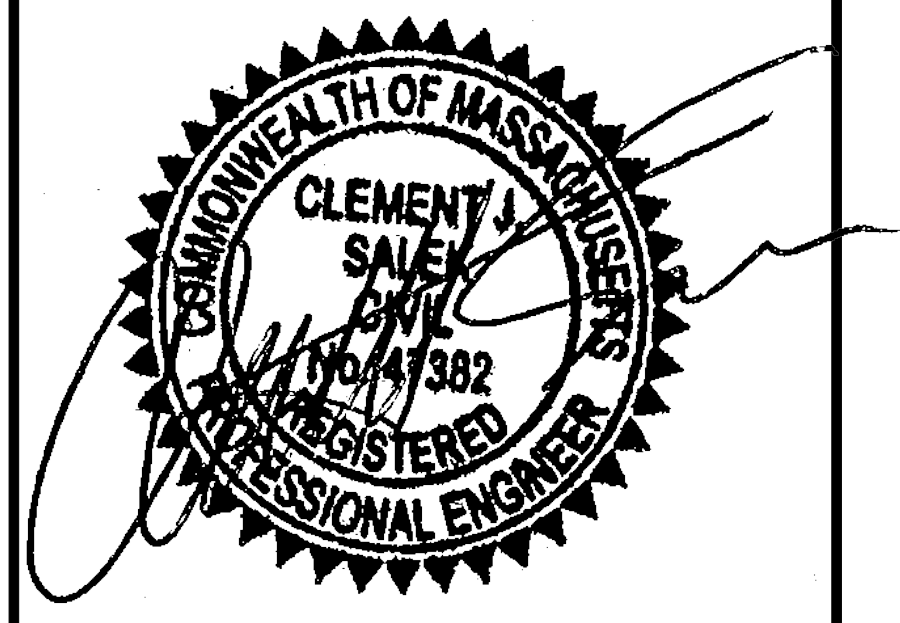
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PROJECT INFORMATION:

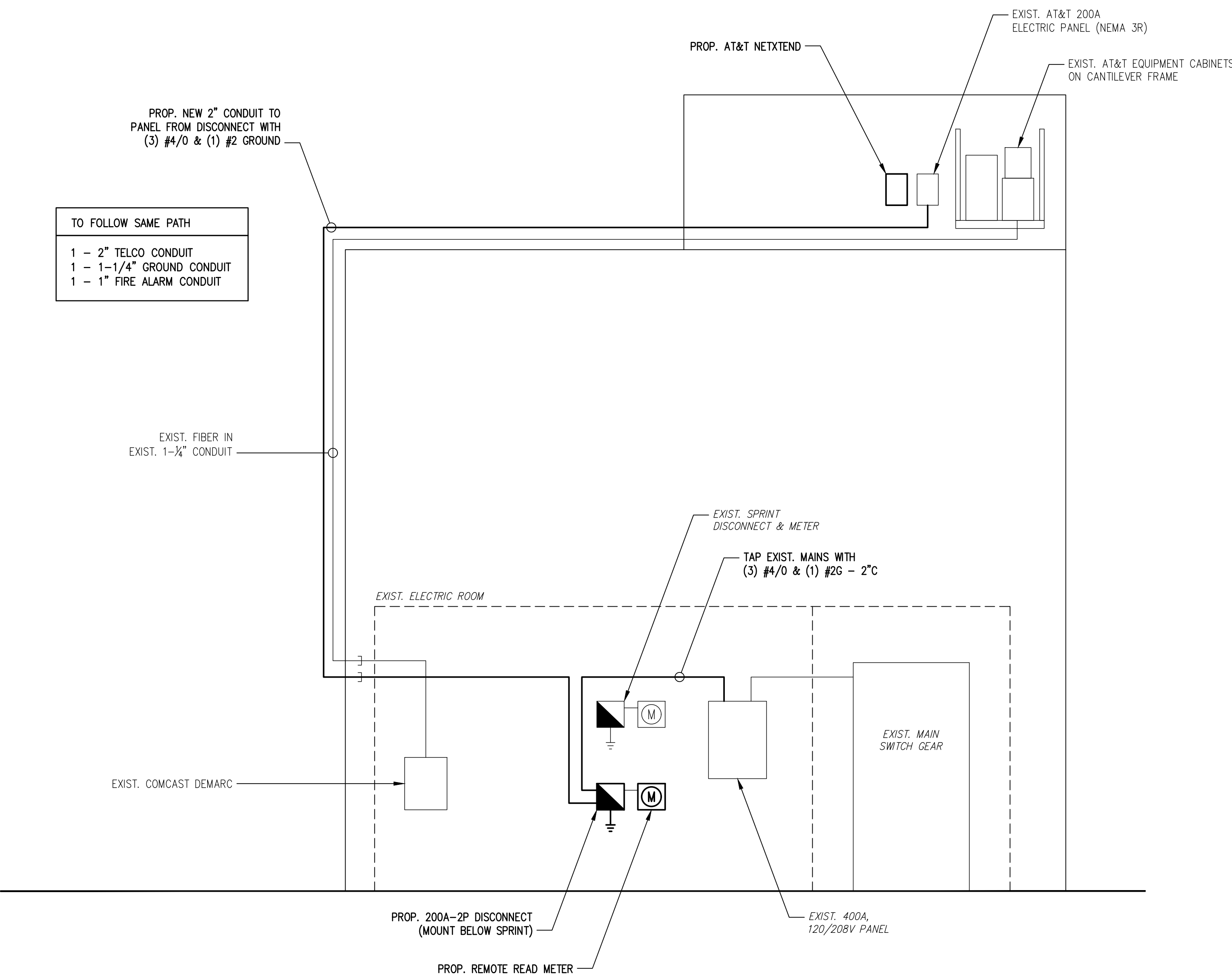
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CAMBRIDGE

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DRAWN BY: CMC CHECKED BY: JMT

SHEET TITLE:  
FAUX FLUE PIPE MOUNT DETAILS

SHEET NUMBER: S03 REVISION: 3



**POWER AND TELCO SINGLE LINE DIAGRAM**  
SCALE: N.T.S. 1  
E01

**ELECTRICAL NOTES:**

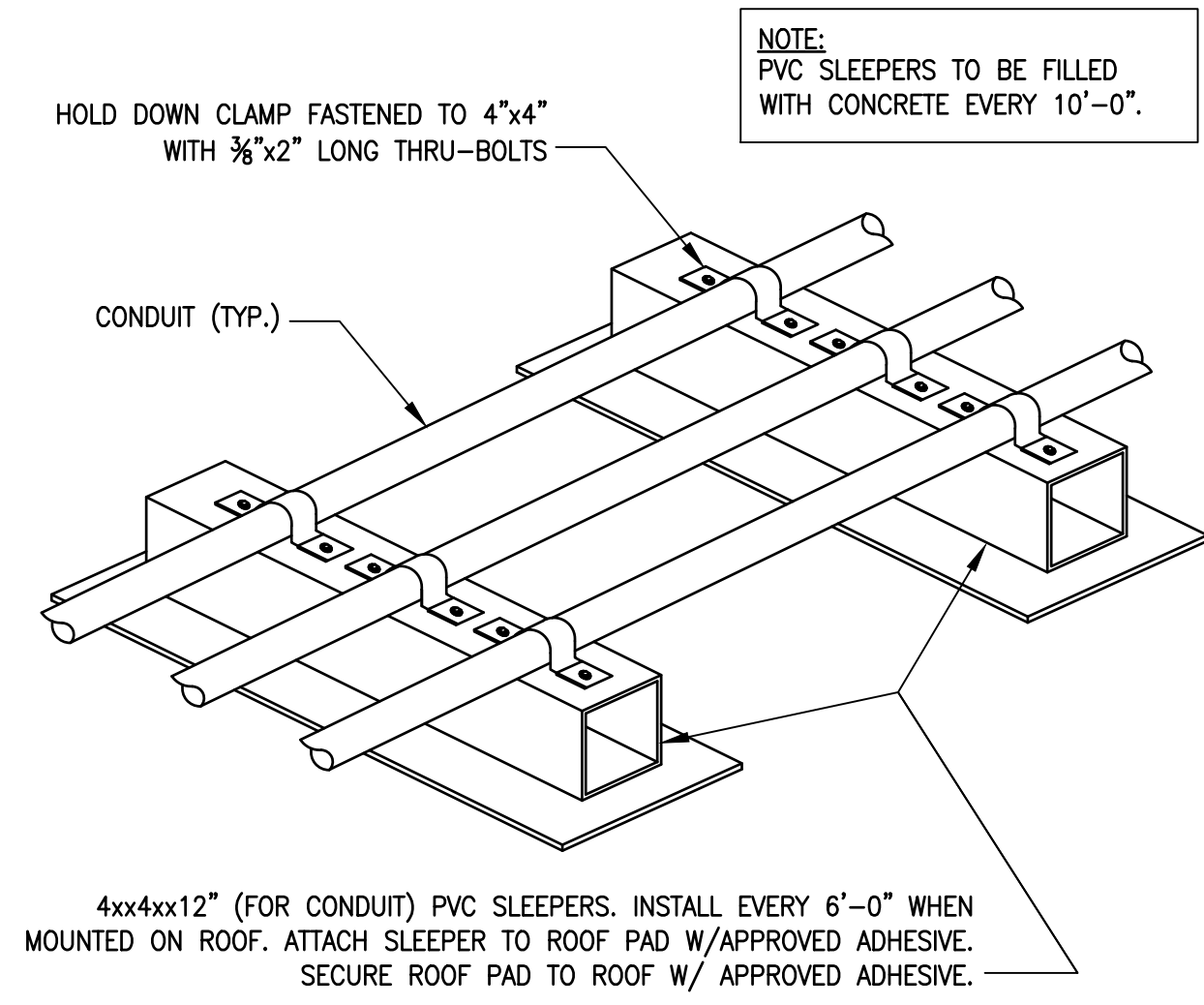
1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATIONS INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
5. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC ( AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
6. BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THIN INSULATION.
8. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
10. WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND, USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
11. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
12. PPC SUPPLIED BY PROJECT OWNER.

**LEGEND:**

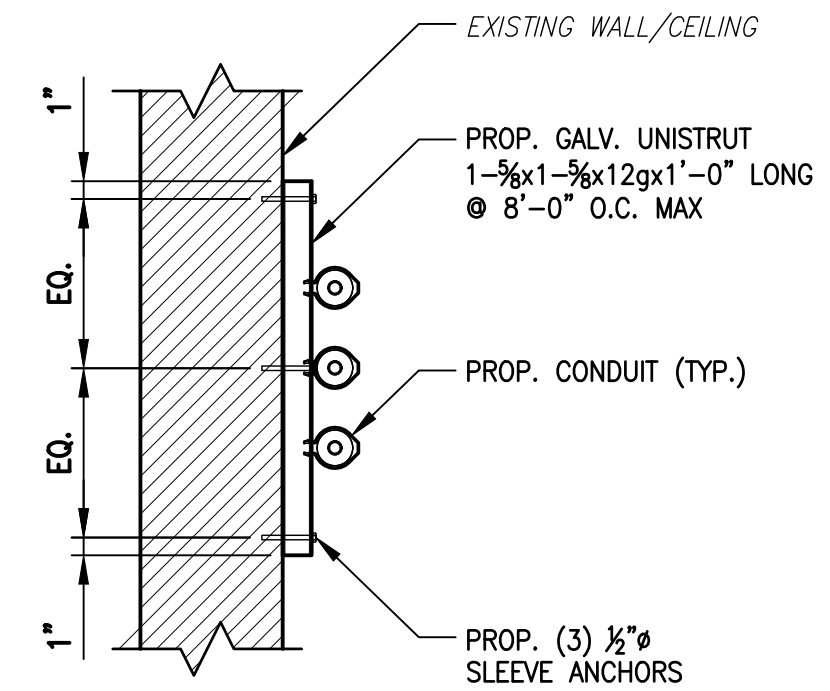
- GROUND TEST WELL
- GROUND ROD
- DISCONNECT SWITCH
- METER
- CADWELD TYPE CONNECTION
- COMPRESSION TYPE CONNECTION
- GROUNDING WIRE
- XXX REPRESENTS DETAIL NUMBER
- XXX REF. DRAWING NUMBER

**ABBREVIATIONS:**

- AWG AMERICAN WIRE GAUGE
- BCW BARE COPPER WIRE
- CGBE COAX GROUND BAR EXTERNAL
- CIGBE COAX ISOLATED GROUND BAR EXTERNAL
- DWG DRAWING
- EMT ELECTRICAL METALLIC TUBING
- MGB MASTER GROUND BAR
- PCS PERSONAL COMMUNICATION SYSTEM
- PVC RIGID (SCH. 40) POLYVINYL CHLORIDE CONDUIT
- RGS RIGID GALVANIZED STEEL
- RWY RACEWAY
- TYP TYPICAL



**CONDUITS ON ROOFTOP**



**CONDUITS ON WALL OR CEILING**

**CONDUIT MOUNTING DETAIL**  
SCALE: N.T.S. 2  
E01



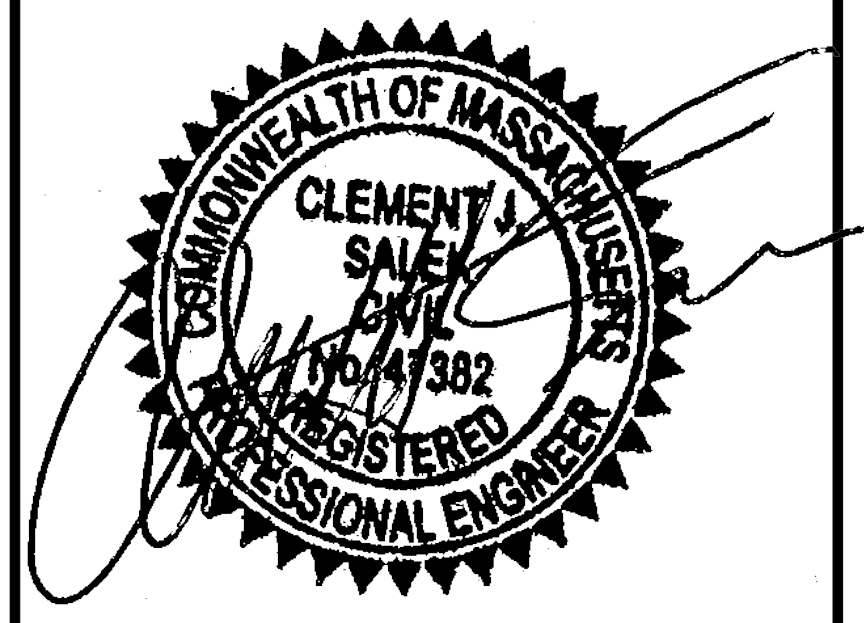
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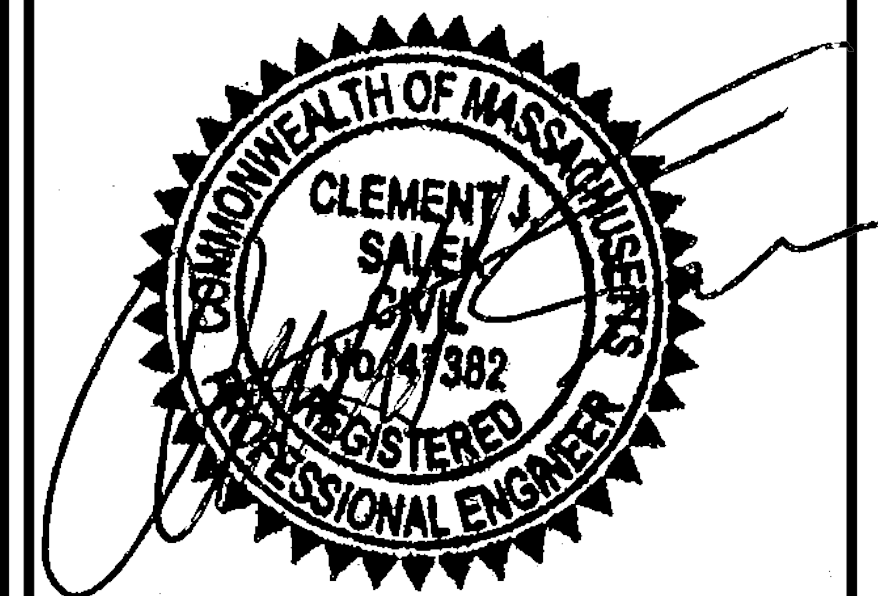
DRAWN BY: **CMC** CHECKED BY: **JMT**

SHEET TITLE:  
**ELECTRICAL DIAGRAMS,  
DETAILS & NOTES**

SHEET NUMBER: **E01** REVISION: **3**

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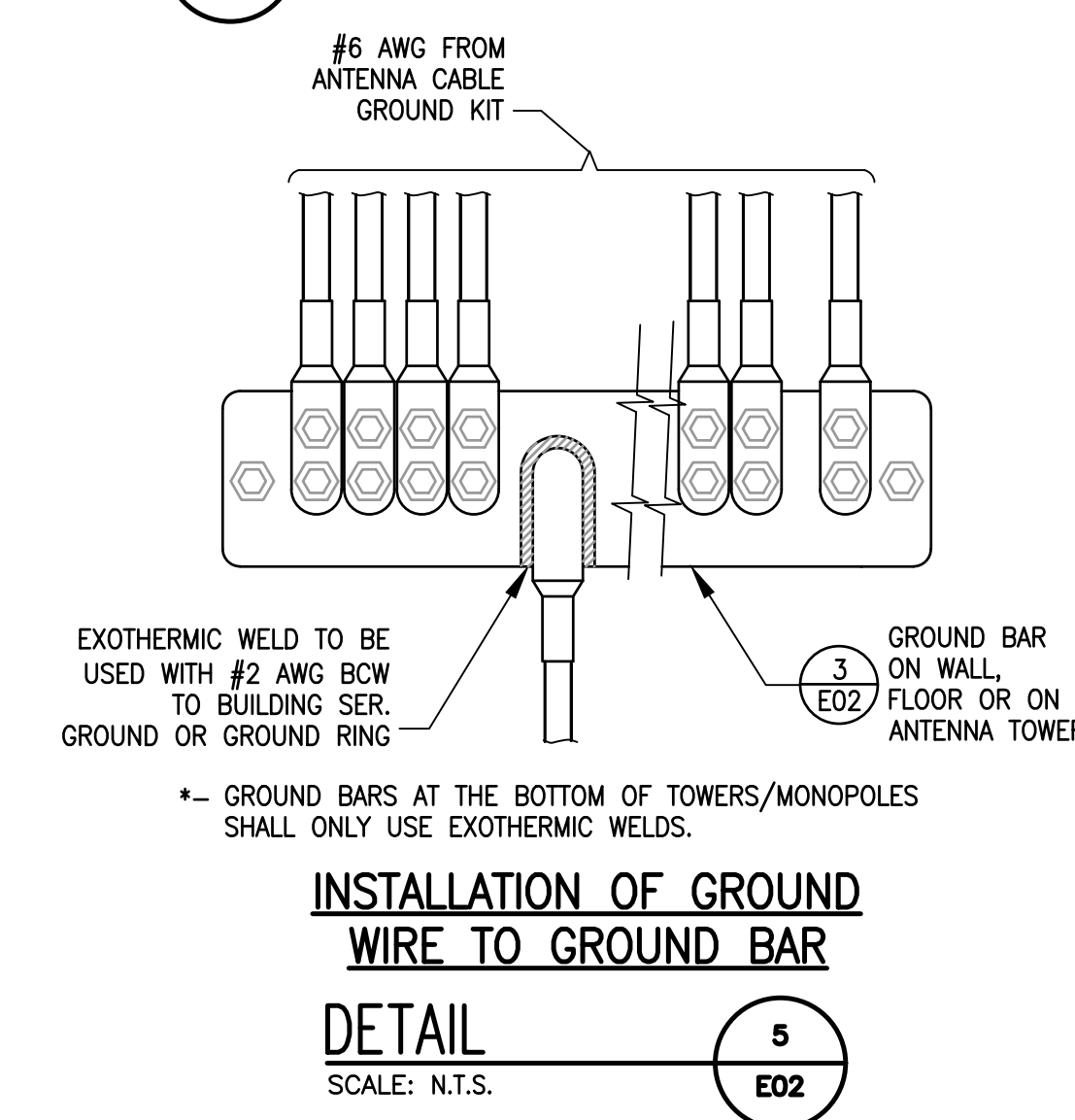
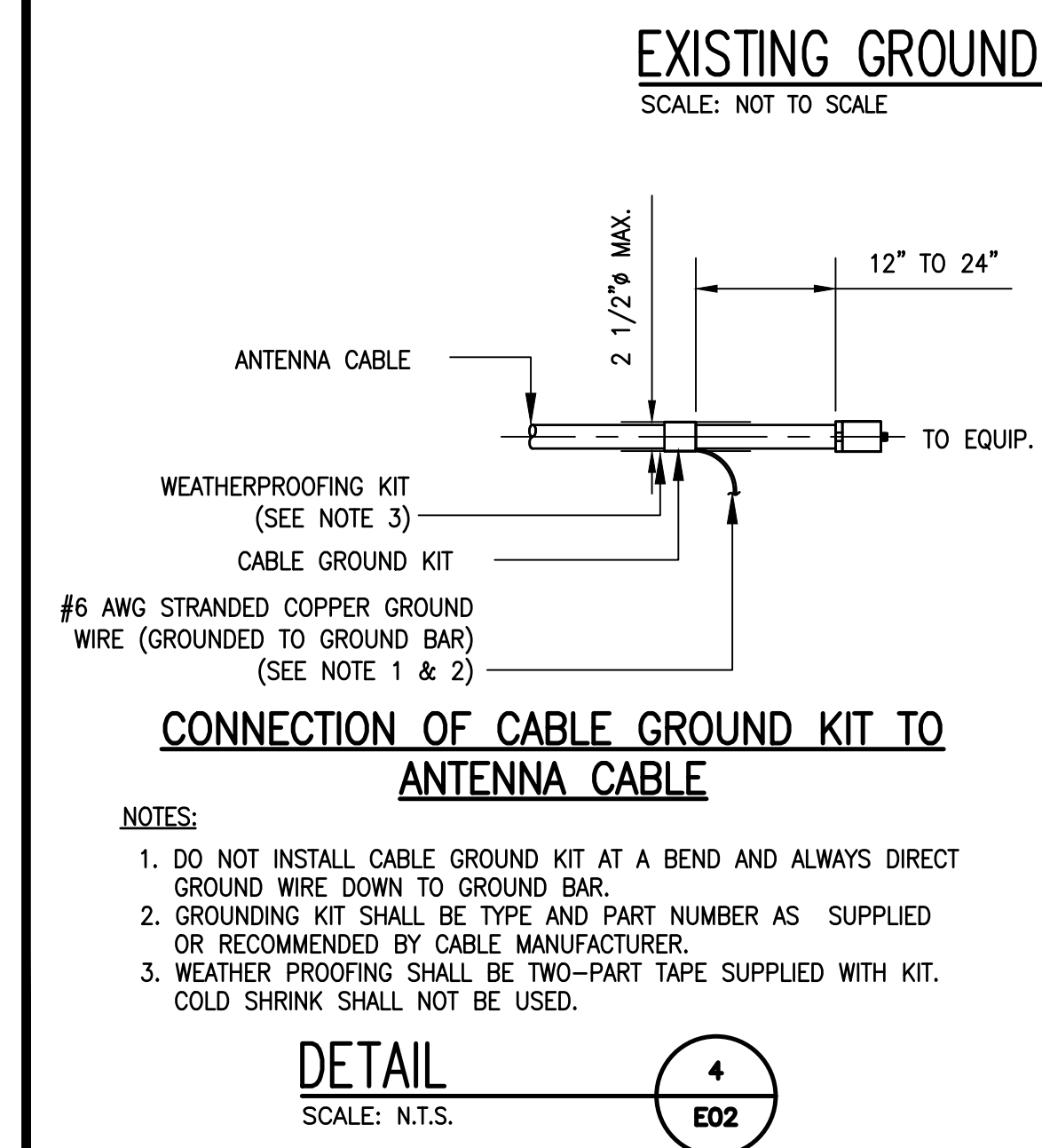
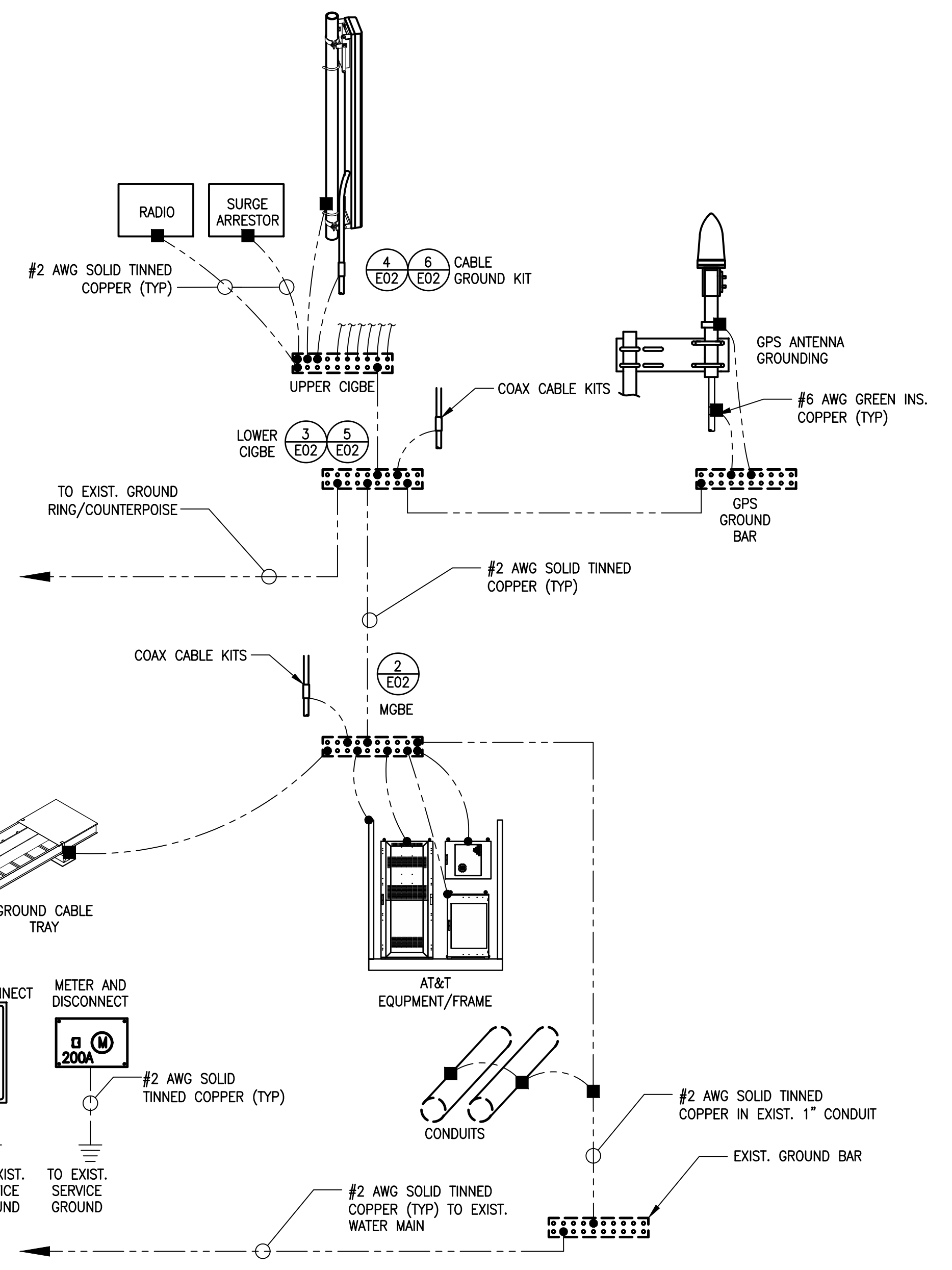
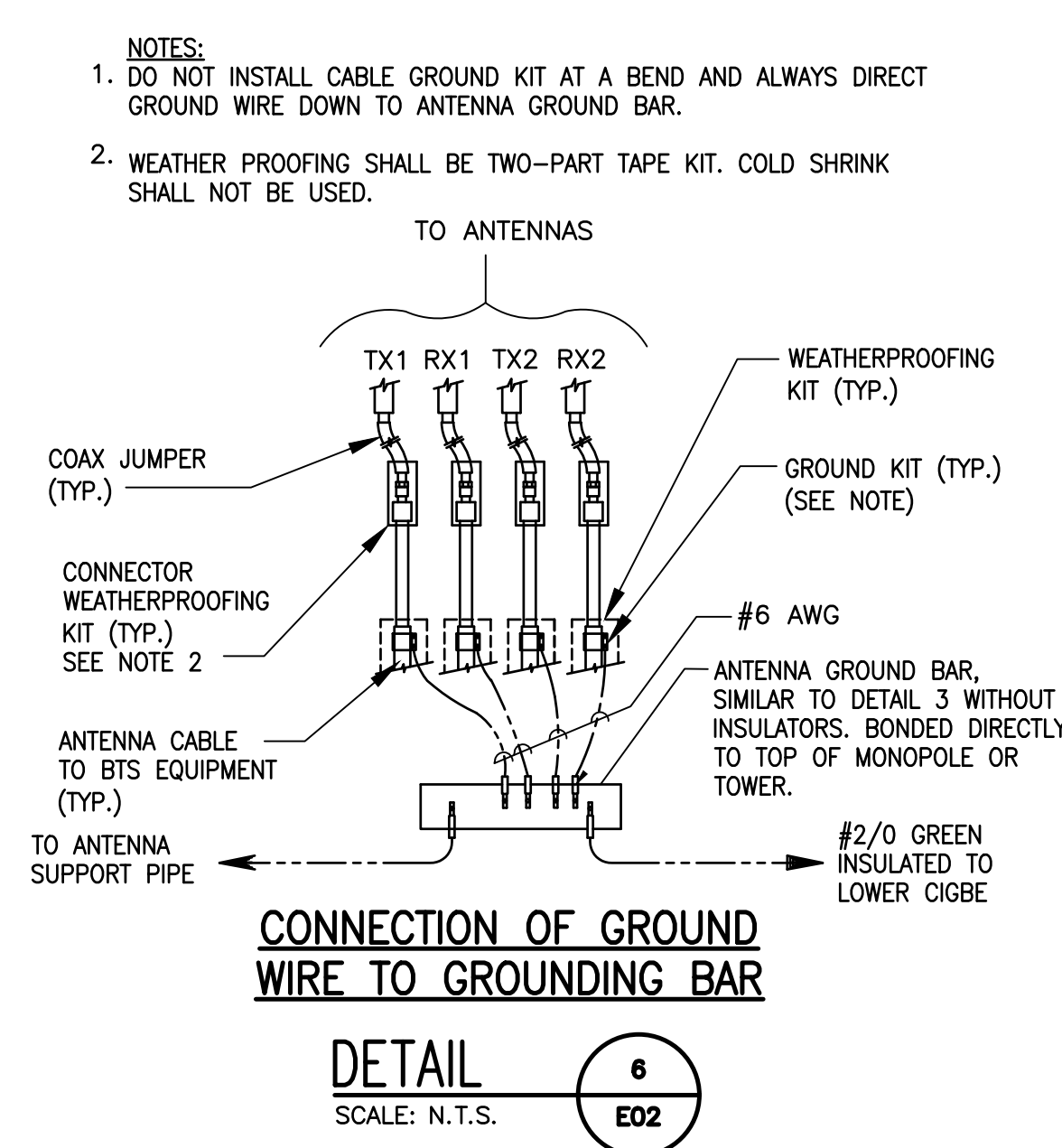
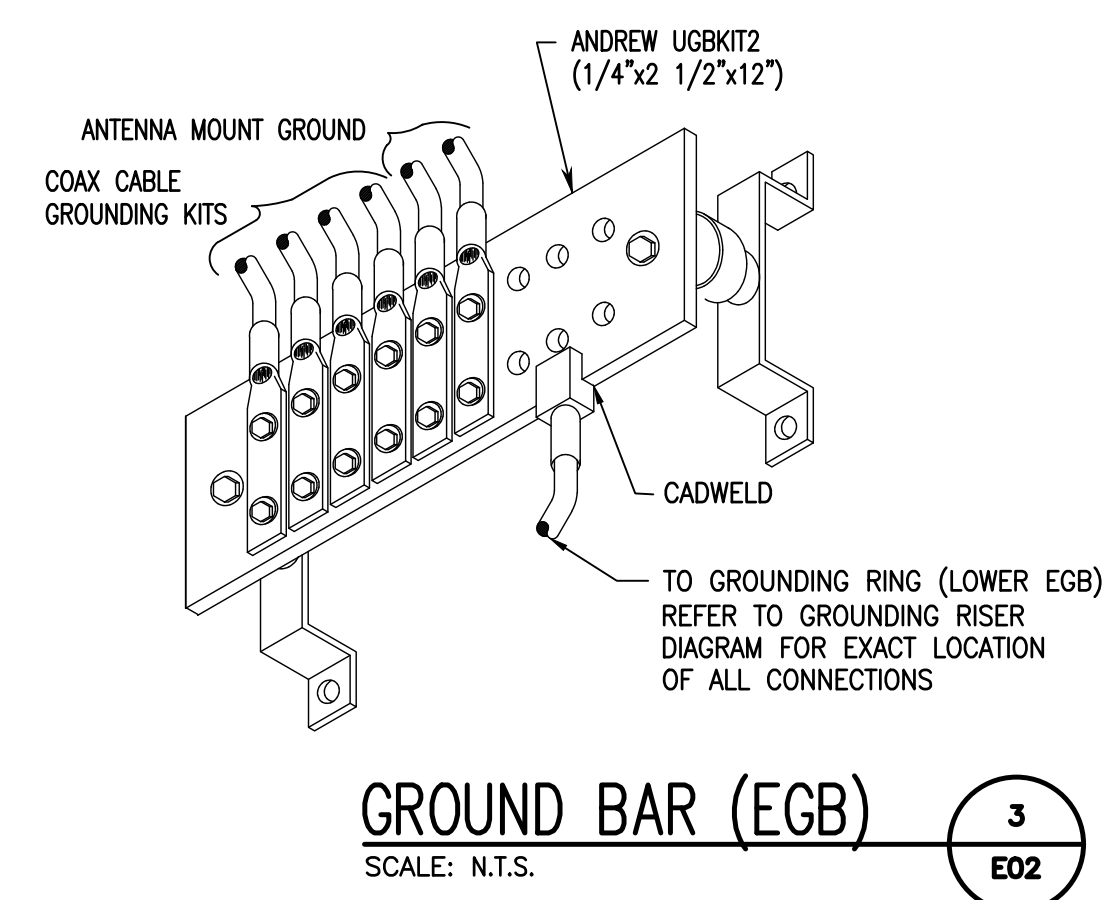
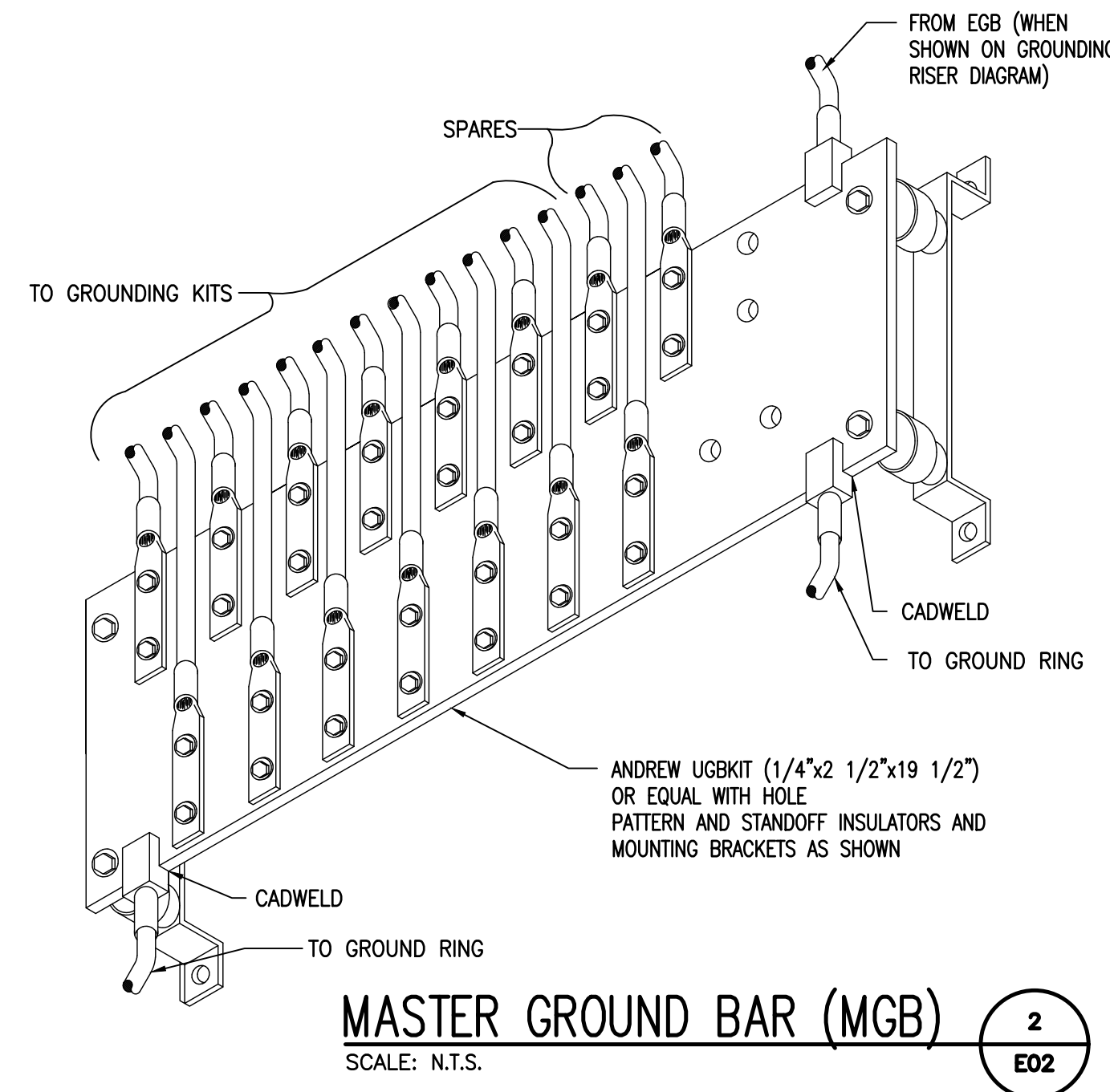
SHEET TITLE:  
**GROUNDING DIAGRAM,  
DETAILS & NOTES**

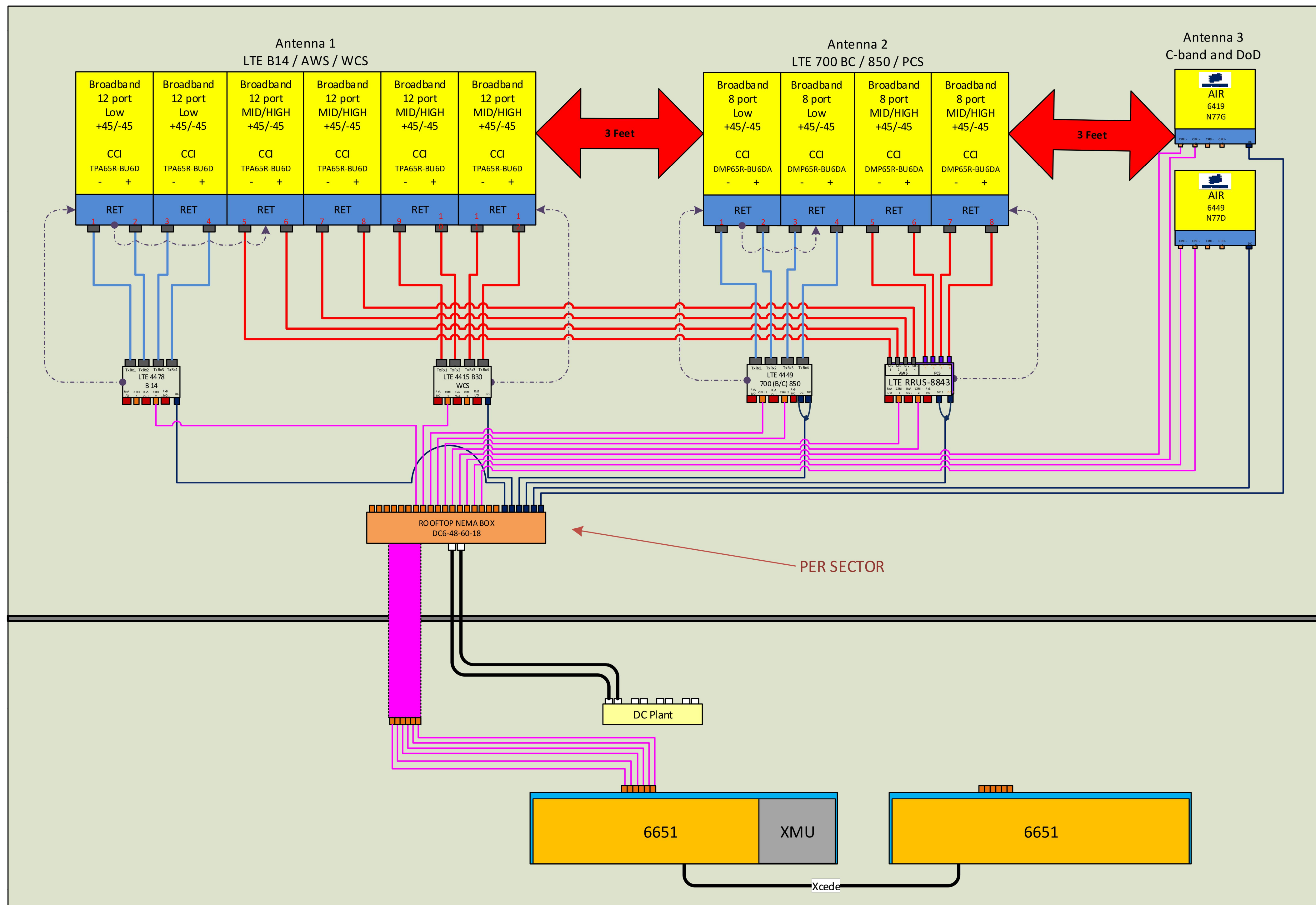
SHEET NUMBER: REVISION:

**E02** **3**

**GROUNDING NOTES:**

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTNING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
5. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS ON TOWER SITES AND 10 OHMS OR LESS ON ROOFTOP SITES. WHEN ADDING ELECTRODES, CONTRACTOR SHALL MAINTAIN A MINIMUM DISTANCE BETWEEN THE ADDED ELECTRODE AND ANY OTHER EXISTING ELECTRODES EQUAL TO THE BURIED LENGTH OF THE ROD. IDEALLY, CONTRACTOR SHALL STRIVE TO KEEP THE SEPARATION DISTANCE EQUAL TO TWICE THE BURIED LENGTH OF THE RODS.
6. EXOTHERMIC WELDS SHALL BE PERMITTED ON TOWERS ONLY WITH THE EXPRESS APPROVAL OF THE TOWER MANUFACTURER OR THE CONTRACTOR'S STRUCTURAL ENGINEER.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. COAX BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED WITH STAINLESS STEEL HARDWARE TO THE BRIDGE AND THE TOWER GROUND BAR USING TWO-HOLE MECHANICAL TYPE BRASS CONNECTORS.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT AND TRAY SHALL BE GROUNDING AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
13. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK-TO-BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND ARE PERMITTED.
14. THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
15. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED. IN ALL CASES, BENDS SHALL BE MADE WITH A MINIMUM BEND RADIUS OF 8 INCHES.
16. EACH INTERIOR TRANSMISSION CABINET FRAME/ PLINTH SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH 8 AWG STRANDED, GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRE UNLESS NOTED OTHERWISE IN THE DETAILS. EACH OUTDOOR CABINET FRAME/ PLINTH SHALL BE DIRECTLY CONNECTED TO THE BURIED GROUND RING WITH 2 AWG SOLID TIN-PLATED COPPER WIRE UNLESS NOTED OTHERWISE IN THE DETAILS.
17. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE. CONNECTIONS TO ABOVE GRADE UNITS SHALL BE MADE WITH EXOTHERMIC WELDS WHERE PRACTICAL OR WITH 2 HOLE MECHANICAL TYPE BRASS CONNECTORS WITH STAINLESS STEEL HARDWARE INCLUDING SET SCREWS. HIGH PRESSURE CRIMP CONNECTORS MAY ONLY BE USED WITH WRITTEN PERMISSION FROM BECHTEL TELECOMMUNICATIONS MARKET REPRESENTATIVE.
18. ALL EXTERIOR GROUND CONNECTIONS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE 2 AWG SOLID TIN-PLATED COPPER UNLESS OTHERWISE INDICATED.
19. ALL WIRE TO WIRE GROUND CONNECTIONS TO THE ANTENNA GROUND RING SHALL BE FORMED USING HIGH PRESSURE CRIMPS OR SPLIT BOLT CONNECTORS WHERE INDICATED IN THE DETAILS.
20. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
21. ON ROOFTOP SITES WHERE EXOTHERMIC WELDS ARE A FIRE HAZARD COPPER COMPRESSION CAP CONNECTORS MAY BE USED FOR WIRE TO WIRE CONNECTIONS. 2 HOLE MECHANICAL TYPE BRASS CONNECTORS WITH STAINLESS STEEL HARDWARE, INCLUDING SET SCREWS SHALL BE USED FOR CONNECTION TO ALL ROOFTOP TRANSMISSION EQUIPMENT AND STRUCTURAL STEEL.
22. BOND ALL METALLIC OBJECTS WITHIN 6 FT. OF THE BURIED GROUND RING WITH 2 AWG SOLID TIN-PLATED COPPER GROUND CONDUCTOR. DURING EXCAVATION FOR NEW GROUND CONDUCTORS, IF EXISTING GROUND CONDUCTORS ARE ENCOUNTERED, BOND EXISTING GROUND CONDUCTORS TO NEW CONDUCTORS.

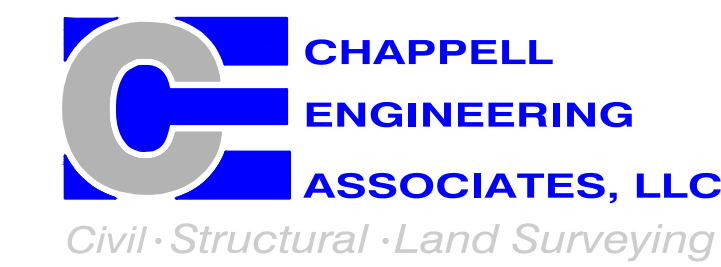




ALPHA SECTOR PLUMBING DIAGRAM 1  
SCALE: N/A E03



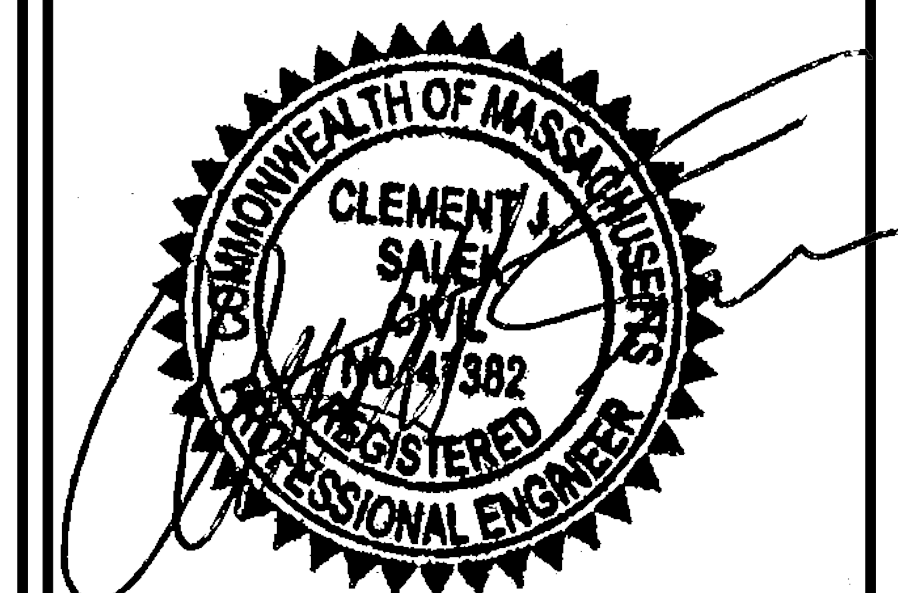
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CAMBRIDGE, MA 02139

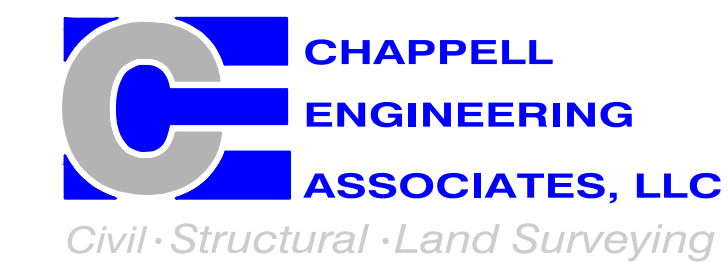
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SHEET TITLE:  
ALPHA SECTOR  
PLUMBING DIAGRAM

SHEET NUMBER: E03 REVISION: 3



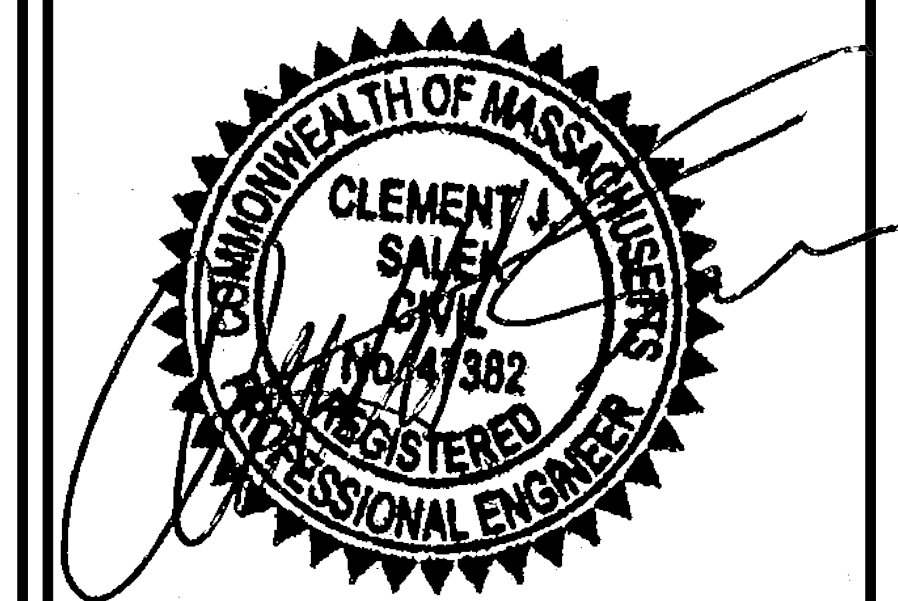
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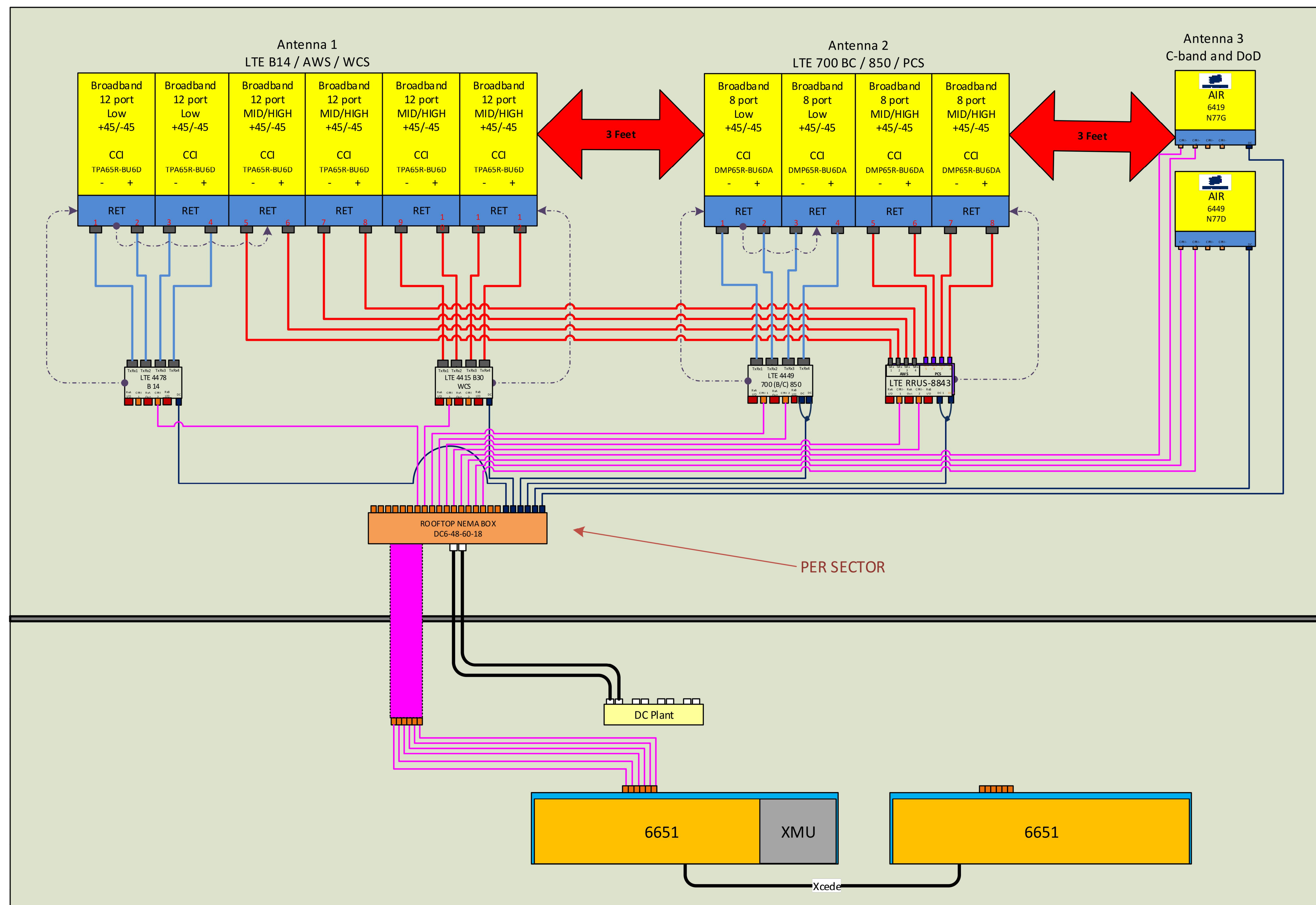
DRAWN BY: **CMC** CHECKED BY: **JMT**

SHEET TITLE:  
**BETA SECTOR  
PLUMBING DIAGRAM**

SHEET NUMBER: \_\_\_\_\_ REVISION: \_\_\_\_\_

**E04**

**3**



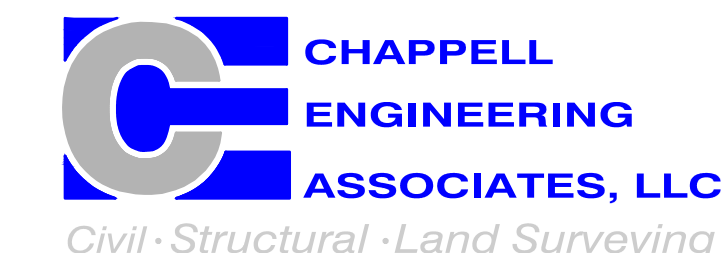
**BETA SECTOR PLUMBING DIAGRAM**

SCALE: N/A

1  
E04



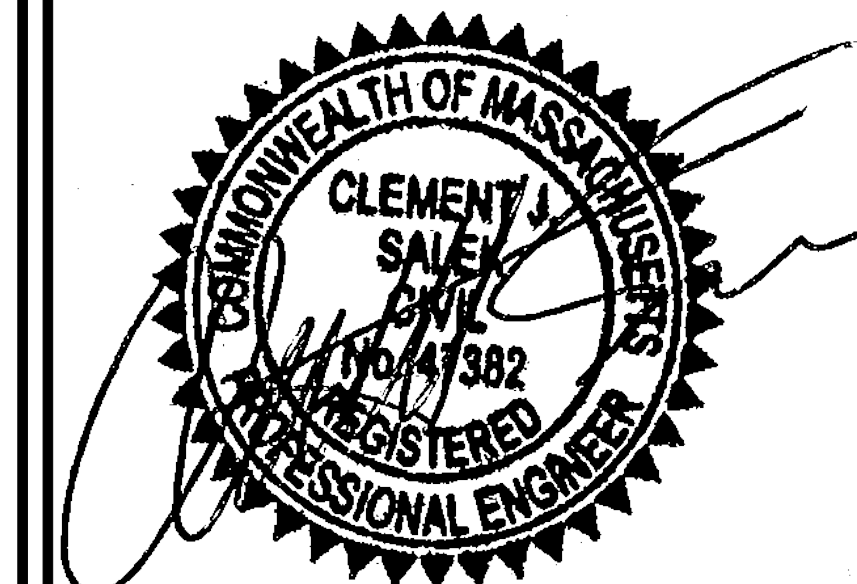
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1	12-23-22	ISSUED FOR CONSTRUCTION
0	10-11-22	ISSUED FOR REVIEW



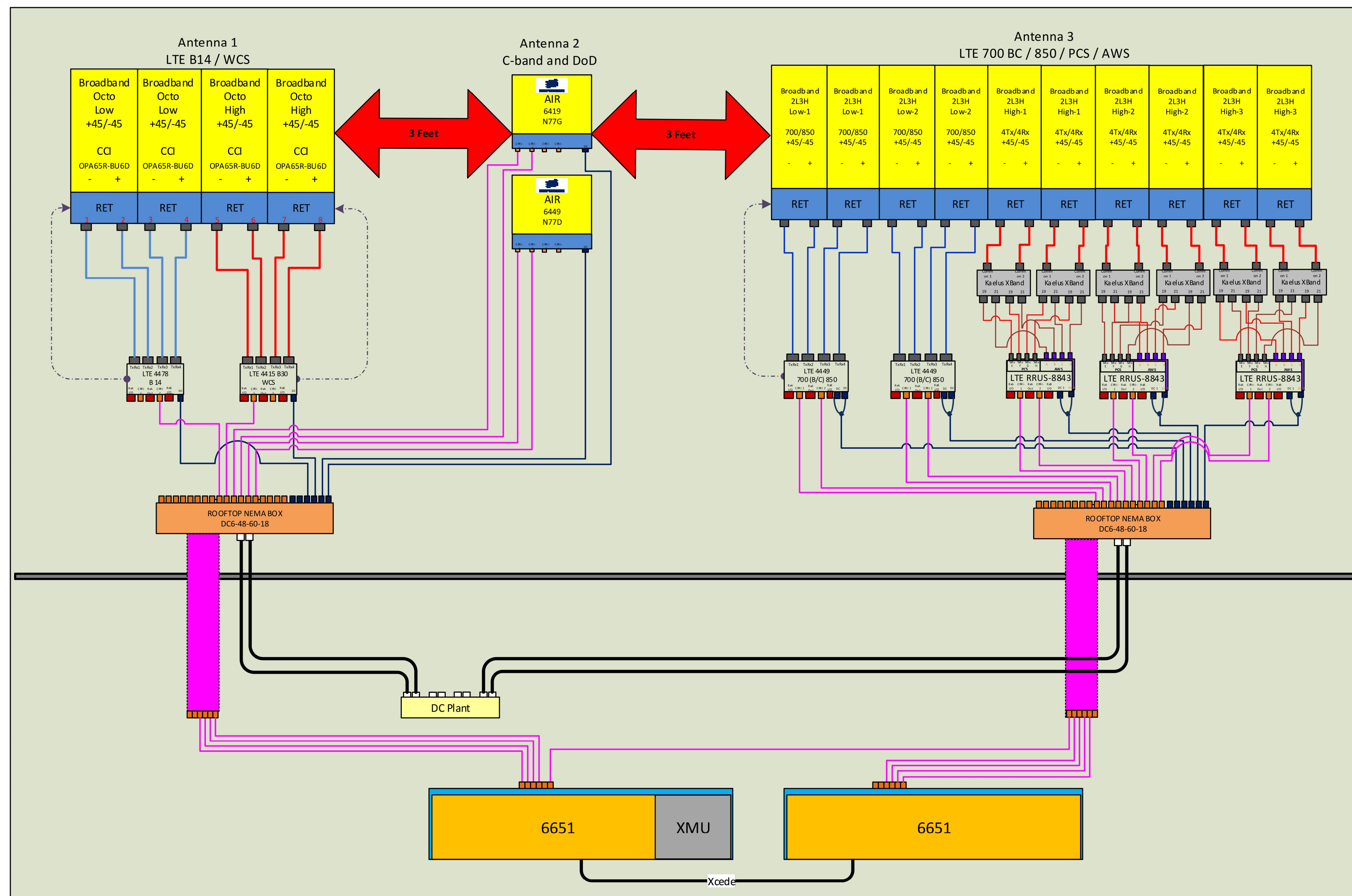
ENGINEER/LAND SURVEYOR \_\_\_\_\_ DATE \_\_\_\_\_

PROJECT INFORMATION:  
**MA3001  
CAMBRIDGE**  
  
402 RINDGE AVENUE  
CAMBRIDGE, MA 02139

DRAWN BY: **CMC** CHECKED BY: **JMT**

SHEET TITLE:  
**GAMMA SECTOR  
PLUMBING DIAGRAM**

SHEET NUMBER: **E05** REVISION: **3**



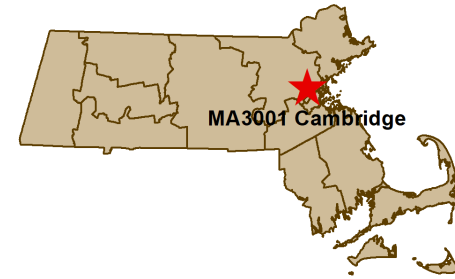
**GAMMA SECTOR PLUMBING DIAGRAM** 1  
SCALE: N/A E05

# Photographic Simulation Package

## Proposed Wireless Telecommunications Facility:

MA3001 Cambridge  
402 Rindge Avenue  
Cambridge, MA 02139

- Site photographs taken 2/9/23



Package prepared by:

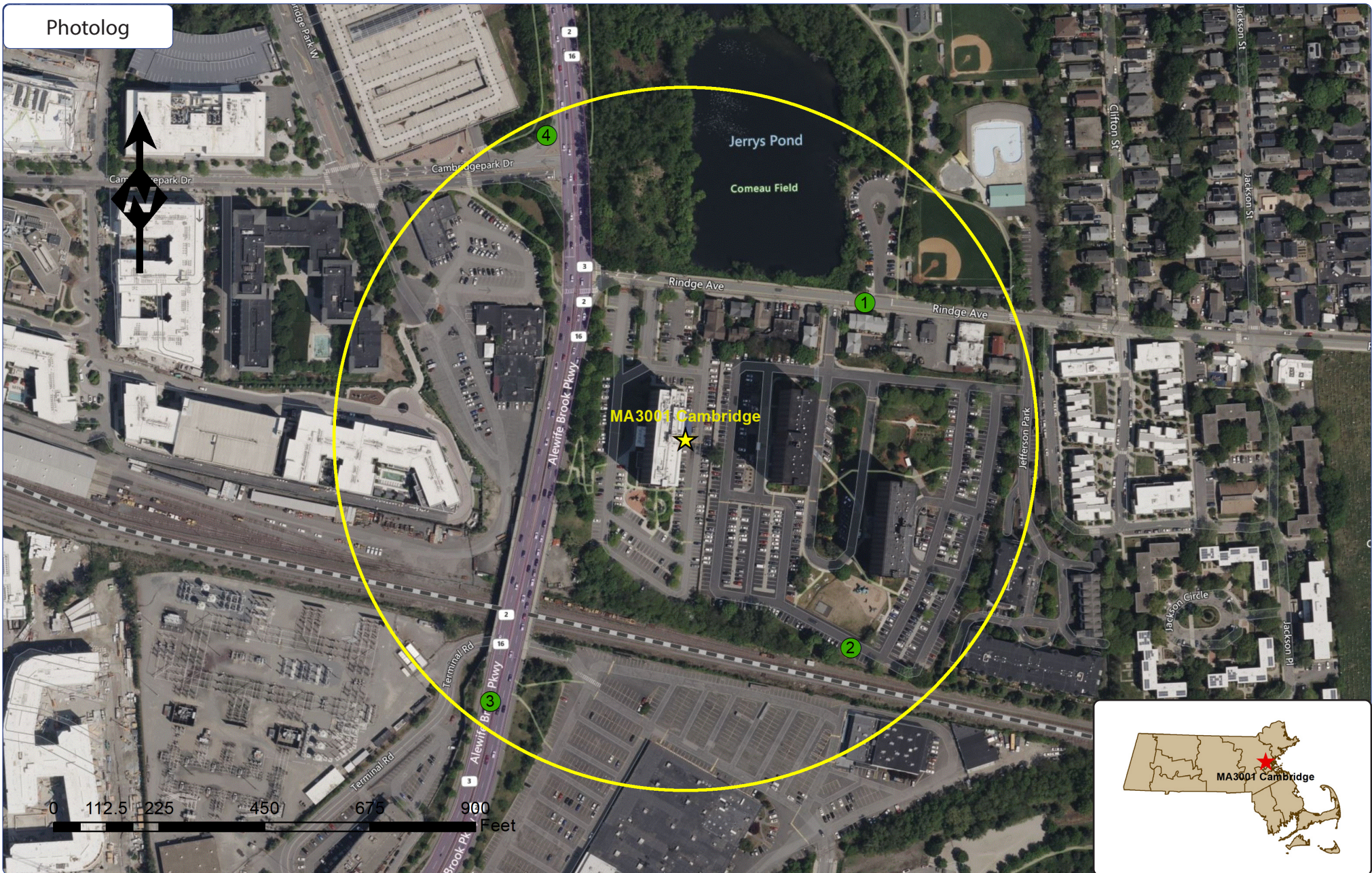
Virtual Site Simulations, LLC  
24 Salt Pond Road  
Suite C3  
South Kingstown, Rhode Island 02879

[www.VirtualSiteSimulations.com](http://www.VirtualSiteSimulations.com)  
[www.ThinkVSSFirst.com](http://www.ThinkVSSFirst.com)

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution







**Wireless Telecommunications Facility:**

MA3001 Cambridge  
 402 Rindge Avenue  
 Cambridge, MA 02139

**Legend:**

- ★ Facility Location    ○ 750 Ft Radius
- ⊗ Photo location - Year Round Visibility
- ⊗ Photo location - Obscured Visibility
- ⊗ Photo location - NOT visible

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution



Existing



Photo #	Approximate Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
1	Rindge Ave	42.39389 -71.13827	480.42 Feet	North-East	233	Year Round

Site: MA3001 Cambridge

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution



Simulation



Photo #	Approximate Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
1	Rindge Ave	42.39389 -71.13827	480.42 Feet	North-East	233	Year Round

Site: MA3001 Cambridge

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Existing



Photo #	Approximate Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
2	Rindge Ave	42.39187 -71.13843	0.11 Miles	South-East	323	Year Round

Site: MA3001 Cambridge

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Simulation



Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
2	Rindge Ave	42.39187	-71.13843	0.11 Miles	South-East	323	Year Round

Site: MA3001 Cambridge

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Existing



Photo #	Approximate Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
3		42.39159 -71.14128	0.13 Miles	South-West	38	Year Round

Site: MA3001 Cambridge

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Photo #	Approximate Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
3		42.39159 -71.14128	0.13 Miles	South-West	38	Year Round

Site: MA3001 Cambridge

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution



Existing



Photo #	Approximate Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
4	Cambridgepark Dr	42.3949 -71.14075	0.14 Miles	North-West	157	Year Round

Site: MA3001 Cambridge

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution





Simulation



Photo #	Approximate Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
4	Cambridgepark Dr	42.3949 -71.14075	0.14 Miles	North-West	157	Year Round

Site: MA3001 Cambridge

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution



May 2, 2023

**VIA FEDERAL EXPRESS**

City of Cambridge  
Board of Zoning Appeal  
831 Massachusetts Avenue  
Cambridge, MA 02139

**RE: Request of New Cingular Wireless PCS, LLC ("AT&T") for Administrative Review of an Eligible Facilities Request to Install Transmission Equipment on the existing 196' 2" above ground level ("AGL") building (the "Building") located at 402 Rindge Avenue, Cambridge MA 02139 (Assessor's Parcel Identification Map 268B, Lot 45), pursuant to Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012 (the "Spectrum Act") and Special Permit pursuant to: Article 4, Section 4.32.g.1; Article 4, Section 4.40 (Footnote 49); and Article 10, Section 10.40 of the City of Cambridge Zoning Ordinance; Massachusetts General Laws, Ch 40A, Section 9; the Telecommunications Act of 1996 (the "TCA"), and the Spectrum Act, all rights reserved.**

Dear Honorable Members of the Cambridge Board of Zoning Appeal:

On behalf of AT&T, while reserving all rights, we are pleased to submit this Eligible Facilities Request and Special Permit Application (the "Application") to the City of Cambridge Board of Zoning Appeals (the "Board") in support of AT&T's request to add and modify Transmission Equipment on the existing Building located at 402 Rindge Avenue, Cambridge, MA 02139 (Assessor's Parcel Identification Map 268B, Lot 45) (the "Site"). Capitalized terms not defined herein shall have the same meaning as provided in the Spectrum Act and Regulations (defined below).

As noted on the attached plans (the "Plans"), the Building is owned by Rindge Tower Apartments, LLC. AT&T currently has an existing wireless antenna facility on the roof of the Building. On the rooftop there is also currently mounted the Transmission Equipment of another wireless communications services provider (Sprint/T-Mobile). As shown in the plans, AT&T is proposing to add and relocate certain equipment, antennas and cabling on the roof of the Building so as to improve the RF signal transmission for AT&T customers in this area of Cambridge (the antenna facility as improved pursuant to this application, collectively hereinafter referred to as the "Facility").

In particular, AT&T is proposing to add and relocate the following:

1. Move the 2 existing gamma sector antennas from the upper rooftop penthouse to the westerly edge of the rooftop inside 2 RF-friendly faux chimneys/flues and also install



a new third gamma sector antenna next to the aforementioned 2 relocated antennas and within the same style RF-friendly faux chimney/flue. The top height of the faux chimneys/flues will be 203' 2" and they will be painted to match the color of the building and penthouses. AT&T is also proposing to relocate the existing 3 gamma sector radios and add 3 radios all next to the new gamma antennas, all as more particularly shown on the plans.

2. Add 2 new antennas below the existing 2 beta sector antennas on the southerly penthouse façade and paint the antennas to match the penthouse. The centerline heights of the 2 new antennas will be 192' 5" and 188' 5", respectively.
3. Add 2 new antennas above the existing 2 alpha sector antennas on the northerly penthouse façade and paint the antennas to match the penthouse. The centerline heights of the 2 new antennas will be 200' 5" and 196' 3", respectively.

AT&T's Facility will comply with all applicable terms and conditions of the Cambridge Zoning Ordinance (the "Ordinance"). As the proposed antennas of the Facility and related stealth chimneys/flues will be painted to match the portion of the Building to which they are mounted, there will be no undue adverse impacts upon historic resources, scenic views, residential property values or man-made resources and the aesthetic qualities of the City of Cambridge are preserved. The Facility will be passive in nature and will not generate unreasonable noise, odors, smoke, waste, or significant amounts of traffic. This is an unmanned facility and will not have negative effects upon adjoining lots. The Facility will comply with all applicable federal, state and local laws, regulations and guidelines, including applicable radio frequency emissions standards.

AT&T, while reserving all rights, respectfully requests, to the extent necessary, that a special permit be granted so that the antennas may be installed consistent with the Plans submitted herewith.

### **ELIGIBLE FACILITIES REQUEST**

On behalf of AT&T, while reserving all rights, we seek approval of the modified facility as depicted on the Plans as an Eligible Facilities Request. As you may know, Section 6409(a) of the "Spectrum Act" (copy attached) mandates that state and local governments "*may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.*" [emphasis added]. Under Section 6409(a)(2)(A)-(C), an Eligible Facilities Request is any request to modify a Tower or Base Station that involves "collocations of new Transmission Equipment," "removal," or "replacement" of Transmission Equipment.

Federal law now preempts many of the permit application requirements that the City of Cambridge may previously have required from an applicant and provides for a limited, administrative review of AT&T's Eligible Facilities Request application. This Eligible Facilities



Request involves an effort to collocate, remove, modify, or replace Transmission Equipment (as referenced previously) on an existing Building used by an FCC licensed wireless carrier. The existing Building is a Structure that is 196' 2" AGL supporting wireless Transmission Equipment. AT&T seeks administrative approval for the proposed equipment which is clearly an Eligible Facilities Request which does not substantially change the physical dimensions of the Building pursuant to Section 6409 of the Spectrum Act.

The equipment identified on the Plans submitted as part of this Eligible Facilities Request application that will be collocated is Transmission Equipment pursuant to the FCC definition. The FCC has defined Transmission Equipment as "any equipment that facilitates transmission for any Commission-licensed or authorized wireless communication service, including, but not limited to, radio transceivers, antennas and other relevant equipment associated with and necessary to their operation, including coaxial or fiber-optic cable, and regular and back-up power supply. This definition includes equipment used in any technological configuration associated with any Commission-authorized wireless transmission, licensed or unlicensed, terrestrial or satellite, including commercial mobile, private mobile, broadcast and public safety services, as well as fixed wireless services such as microwave backhaul or fixed broadband."

As you may also know, the FCC adopted a Report and Order, In re: Acceleration of Broadband Deployment by Improving Wireless Facilities Siting Policies, FCC Docket No.13-238, Report and Order No. 14-153 (October 17, 2014) Final Rule codified at 47 CFR Parts 1 and 17 promulgating regulations (the "Regulations") interpreting and implementing the provisions of the Spectrum Act, which Regulations became effective on April 8, 2015 (with certain provisions effective on May 18, 2015). The Regulations determined that any modification to a Base Station, that meets the following six criteria does not substantially change the physical dimensions of the existing Building and, therefore, is an Eligible Facilities Request which must be granted:

1. The modifications do not increase the height of the Building by more than ten feet (10') from an existing antenna array or ten percent (10%), whichever is greater.
2. The modifications do not protrude from the edge of the Building by more than six feet (6').
3. The modifications do not involve the installation of more than the standard number of equipment cabinets for the technology involved, not to exceed four.
4. The modifications do not entail any excavation or deployment outside of the Site.
5. The modifications do not defeat any existing concealment elements of the Base Station.
6. The modifications comply with prior conditions of approval of the Base Station, unless the non-compliance is due to an increase in height, increase in width, addition



of equipment cabinets, or new excavation that does not exceed the corresponding “substantial change” thresholds in numbers 1-4 above.

As evidenced on the Plans, this Eligible Facilities Request satisfies each of the six review criteria enumerated by the FCC in the Regulations. In accordance with the Spectrum Act and the Regulations, AT&T's proposed equipment will not increase the height of the Building nor protrude from the edge of the Building by more than six feet (6'). AT&T does not propose excavating outside of the Site and is not adding more than the standard number of equipment cabinets. Lastly, AT&T's proposed equipment will not defeat any concealment elements because the antennas will be either mounted in a similar fashion as the existing antennas or will be located in faux chimneys/flues and painted to match the Building and mostly invisible from the ground. AT&T's proposed Transmission Equipment at the Building contained in this Eligible Facilities Request fully conforms to Section 6409(a) of the Spectrum Act.

While the Ordinance may provide that a special permit or other zoning relief is required for modifications and colocations, such a discretionary process is contrary to the guidance issued by the FCC in its Public Notice (the "Public Notice") dated January 25, 2013 and the Massachusetts Office of the Attorney General (the “Attorney General”) in response letters to municipalities granting approvals of bylaw amendments.

In its Public Notice, the FCC determined that the relevant government entity may require the filing of an application for “administrative approval” only. Additionally, pursuant to Section 1.40001(c)(1) of the Regulations, "when an applicant asserts in writing that a request for a modification is covered by this section, a State or local government may require the applicant to provide documentation or information only to the extent reasonably related to determining whether the request meets the requirements of this section." The Regulations provide that applicants are not required to justify a need for the facility. Further, the Regulations also require that local governmental approvals must be granted for eligible facilities requests within 60 days of the date that the application is submitted. Clearly, this review may not be subject to a discretionary special permit process with the associated public hearing and appeal period provisions. Likewise, the Attorney General has issued a number of letters to municipalities reflecting that same opinion and warning municipalities that such qualifying requests under Section 6409 cannot be subject to a discretionary special permit process. We are confident that you will agree that AT&T's proposed equipment does not substantially change the physical dimensions of the Eligible Support Structure or Base Station at the Site, as enumerated in the Regulations.

## **SPECIAL PERMIT**

### **10.43 Criteria.**

**Special permits will normally be granted where specific provisions of this Ordinance are met, except when particulars of the location or use, not generally true of the district or of**



**the uses permitted in it, would cause granting of such permit to be to the detriment of the public interest because:**

- (a) It appears that requirements of this Ordinance cannot or will not be met, or**

AT&T's Facility will comply with all applicable sections of the Ordinance as the modified Facility will not increase the height of the Building, and the antennas and camouflaging elements will be painted to match the color of the Building surface to which they are attached.

- (b) traffic generated or patterns of access or egress would cause congestion, hazard, or substantial change in established neighborhood character, or**

AT&T's Facility will not result in any substantial change in the character of the neighborhood as there will be no significant increase in the amount of traffic to and from the Site, or any changes to existing patterns of access or egress to the Site. Trips to and from the Facility will average one or two per month by maintenance personnel who will park their SUV in the existing parking area on Site and not on the street.

- (c) the continued operation of or the development of adjacent uses as permitted in the Zoning Ordinance would be adversely affected by the nature of the proposed use, or**

The continued operation of or the development of adjacent uses will not be adversely affected by AT&T's equipment because AT&T's Facility will be a passive use and will not produce any smoke, odors, waste, glare, dust, or unreasonable amounts of traffic.

- (d) nuisance or hazard would be created to the detriment of the health, safety and/or welfare of the occupant of the proposed use or the citizens of the City, or**

AT&T's Facility will not result in any nuisance or hazard to the detriment of the health, safety, or welfare of the citizens of the City because AT&T's facility will be a passive use and will not produce any smoke, odors, waste, glare, dust, or unreasonable amounts of traffic. As evidenced by the MPE Study submitted herewith, AT&T's Facility will comply with all applicable regulations and guidelines pertaining to radio frequency emissions.

- (e) for other reasons, the proposed use would impair the integrity of the district or adjoining district, or otherwise derogate from the intent and purpose of this Ordinance, and**



The proposed Facility will be in harmony with the purposes of the Ordinance because by collocating a wireless facility on an existing Building in a manner which does not increase the height of the Building or expand its footprint, potential visual impacts are minimized. Also, the proposed Facility will not produce any smoke, odors, waste, glare or significant amounts of traffic. The Facility will have no negative impact on natural or undeveloped areas, wildlife, flora or endangered species. Consistent with the Ordinance, the Facility will function as a wireless communications services facility within a local, regional, and national communications system. This system operates under licenses from the FCC, and AT&T is mandated and authorized to provide adequate service to the general public. The proposed Facility will comply with all applicable regulations, standards and guidelines with respect to radiofrequency emissions.

The Facility will benefit those living and working in, and traveling through, the area by providing enhanced wireless telecommunication services. The Facility will not adversely impact adjacent properties and neighborhoods as the Facility will be located on an existing Building. The collocation of the facility will not be a threat to public health, safety and welfare. In fact, Applicant submits that the facility aids in public safety by providing and improving wireless communications services to the residents, businesses, commuters, and emergency personnel utilizing wireless communications in the immediate vicinity and along the nearby roads. Consistent with the Ordinance, the Facility will function as a wireless communications services facility within a local, regional, and national communications system. This system operates under license from the FCC, and AT&T is mandated and authorized to provide adequate service to the general public. The Facility will not generate any objectionable noise, odor, fumes, glare, smoke, or dust or require additional lighting or signage. The Facility will have no negative impact on property values in the area. This is an unmanned Facility and will have minimal negative effect on the adjoining lots.

**(f) the new use or building construction is inconsistent with the Urban Design Objectives set forth in Section 19.30.**

AT&T's Facility will not be inconsistent with the Citywide Urban Design Objectives of Section 19.30 of the Ordinance because AT&T's Facility will not result in an increase in the height of the Building or any alteration of existing setbacks on the Site. AT&T's equipment will not result in any significant increase in traffic to or from the Site and will not adversely impact upon pedestrians or bicyclists and, as AT&T's Facility will continue to be unmanned, it will have no impact on parking on Site or the surrounding area. AT&T's antennas and related improvements will be camouflaged and painted to match. AT&T's Facility will not produce any waste and noise levels on Site will not increase as a result of AT&T's Facility, nor will there be any additional exterior lighting as a result of AT&T's Facility.



AT&T's Facility will operate using standard electric and telephone services. As the Facility will be unmanned, it will require no water or sewer services, and City infrastructure will not be overburdened.

#### **4.40 (49)(3)**

**Where it is proposed to erect such a facility in any residential zoning district, the extent to which there is a demonstrated public need for the facility at the proposed locations, the existence of alternative, functionally suitable sites in nonresidential locations, the existence of alternative, functionally suitable sites in nonresidential locations, the character of the prevailing uses in the area, and the prevalence of other, existing mechanical systems and equipment carried on or above the roof of nearby structures. The Board of Zoning Appeal shall grant a special permit to erect such a facility in a residential zoning district only upon a finding that nonresidential uses predominate in the vicinity of the proposed facility's location and that the telecommunication facility is not inconsistent with the character that does prevail in the surrounding neighborhood.**

AT&T proposes improvements and modifications to its existing antenna facility at the Site. AT&T proposes the Facility so that it will continue to fill a significant gap in coverage and provide adequate wireless communications services coverage to this part of the City of Cambridge. The use will be passive in nature, producing no unreasonable noise, smoke odor, waste, or glare. There will be no significant increase in the amount of traffic to and from the Site as maintenance visits will average one or two per month.

#### **THE TELECOMMUNICATIONS ACT OF 1996 - THE TCA**

The Federal TCA provides that: no laws or actions by any local government or planning or zoning board may prohibit, or have the effect of prohibiting, the placement, construction, or modification of communications towers, antennas, or other wireless facilities in any particular geographic area, see 47 U.S.C. §332(c)(7)(B)(i); local government or planning or zoning boards may not unreasonably discriminate among providers of functionally equivalent services, see 47 U.S.C. §332(c)(7)(B)(i); health concerns may not be considered so long as the emissions comply with the applicable standards of the FCC, see 47 U.S.C. §332(c)(7)(B)(iv); and, decisions must be rendered within a reasonable period of time, see 47 U.S.C. §332(c)(7)(B)(ii) and the FCC's Declaratory Ruling commonly referred to as the "Shot Clock".

#### **CONCLUSION**

AT&T is committed to working cooperatively with the City of Cambridge, and all jurisdictions around the country, to secure expeditious approval of requests to install personal wireless service facilities. We respectfully request that the Board review AT&T's proposed Facility and determine that the installation does not "substantially change the physical dimensions of the Base Station" pursuant to Section 6409 of the Spectrum Act, or in the





Cambridge Board of Zoning Appeal  
May 2, 2023  
Page 8

alternative, to the extent necessary, grant a special permit pursuant to: Article 4, Section 4.32.g.1; Article 4, Section 4.40 (Footnote 49); and Article 10, Section 10.40 of the City of Cambridge Zoning Ordinance; Massachusetts General Laws, Ch 40A, Section 9; the TCA, all rights reserved.

AT&T respectfully requests that the Board approve this Eligible Facilities Request, or in the alternative, all rights reserved, a Special Permit. Please do not hesitate to contact me should there be any questions.

Respectfully,

**BROWN RUDNICK LLP**

Michael R. Dolan (jd)  
Michael R. Dolan, Esq.



## ATTACHMENTS

1. Application Form
2. Letter of Authorization – Notarized Owner Information Form
3. FCC Licenses
4. Block Map
5. Photographs
6. Plans
7. Structural Report
8. MPE Study
9. FCC Regulations
10. FCC Public Notice
11. Representative Letter from the Attorney General



47 USC 1455

**Middle Class Tax Relief and Job Creation Act of 2012**

SEC. 6409. WIRELESS FACILITIES DEPLOYMENT

(a) FACILITY MODIFICATION.—

(1) IN GENERAL.—Notwithstanding section 704 of the Telecommunications Act of 1996 (Public Law 104–104) or any other provision of law, a State or local government may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.

(2) ELIGIBLE FACILITIES REQUEST.—For purposes this subsection, the term “eligible facilities request” means any request for modification of an existing wireless tower or base station that involves –

- (A) collocation of new transmission equipment;
- (B) removal of transmission equipment; or
- (C) replacement of transmission equipment.

(3) APPLICABILITY OF ENVIRONMENTAL LAWS. Nothing in paragraph (1) shall be construed to relieve the Commission from the requirements of the National Historic Preservation Act or the National Environmental Policy Act of 1969.



## ADDENDUM "A"

The Regulations provide that “substantial change” means a modification that changes the physical dimensions of an eligible support structure that meets any of the following criteria. Included below are comments in bold to demonstrate that the proposed facility is NOT a substantial change.

For Base Stations, the modification increases the height of the structure by more than 10% or more than ten (10) feet, whichever is greater;

**As depicted on the Plans, AT&T’s proposed equipment will not increase the height of the Building.**

For Base Stations, the modification involves adding an appurtenance to the body of the structure that would protrude from the edge of the structure by more than six (6) feet;

**As depicted on the Plans, AT&T’s Transmission Equipment will not protrude from the edge of the Building more six (6) feet.**

For any eligible support structure, the modification involves installation of more than the standard number of new equipment cabinets for the technology involved, but not to exceed four cabinets;

**As depicted on the Plans, AT&T does not propose to add four cabinets as a part of this project.**

The modification entails any excavation or deployment outside the current site;

**AT&T does not propose any excavation or deployment outside the current site.**

The modification would defeat the concealment elements of the tower; or

**As depicted on the Plans, AT&T’s modification will be substantially similar to the existing transmission equipment on the Building and will be painted to match.**

The modification does not comply with conditions associated with the siting approval of the construction or modification of the eligible support structure or base station equipment, provided however that this limitation does not apply to any modification that is non-compliant only in a manner that would not exceed the thresholds identified in § 1.40001(b)(7)(i) through (iv).

**AT&T is not aware of any noncompliance and respectfully asserts that the proposed modifications are consistent with all applicable terms of prior approvals for the wireless facility.**

BLOCK 268B

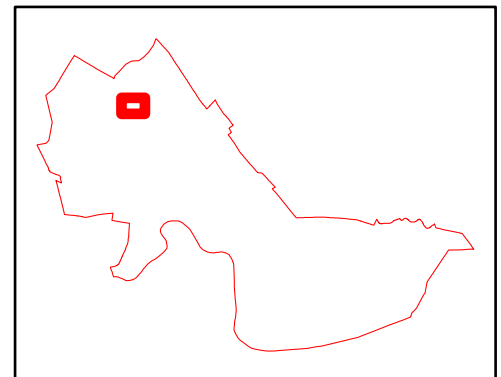
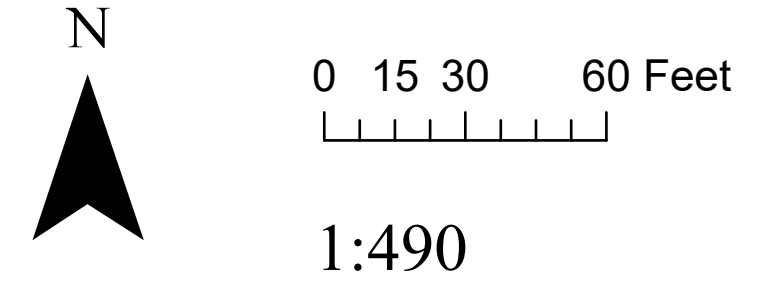


**City of Cambridge  
Assessing Department**  
795 Massachusetts Ave.  
Cambridge, MA 02139

- Buildings
- Lot Line
- Block Line
- City Boundary
- Water
- Sub-Parcel Line
- Easement
- Railway

10 Lot Number      100 Parcel size in Sq. Ft.  
 268B Block Number      44.0LC Land Court Dimension  
 10 Cam Street Number      65.0 Survey Dimensions  
 (125.0) Deed Dimension

DISCLAIMER:  
All Real Property shown on this map was compiled from existing Assessor's Tax Maps dated 1920 to 2022 and maintained by the City Assessor's Office and the Department of Public Works. Subsequent maintenance has been completed using the City of Cambridge Geographic Information System (GIS). Parcels have not been created from survey, and map is suitable for assessing purposes only.  
The City of Cambridge assumes no legal responsibility for information shown on this map.



Parcel Block Map  
**268B**



550 Cochituate Road  
Suite 13  
Framingham, MA 01701

**STRUCTURAL ANALYSIS**  
**RINDGE AVE - SITE No. MA3001**



Address:  
402 RINDGE AVENUE  
**CAMBRIDGE, MA 02139**



Date:  
**March 21, 2023**



March 21, 2023

Centerline Communications  
750 West Center Street, Suite 301  
West Bridgewater, MA 02379

Reference: AT&T Site: MA3001  
Rindge Avenue  
402 Rindge Avenue  
Cambridge, MA 02139

Dear Sirs:

Chappell Engineering Associates, LLC has performed a structural analysis of the proposed relocation of the existing *gamma* sector antennas currently mounted to the upper penthouse face. In order to increase the signal performance of the *gamma* sector, AT&T proposes to relocate the existing antenna sector to anchored antenna flues to support the proposed antennas and the existing in-service re-located antennas.

**Existing Conditions:**

The existing building is a 22-story residential structure with poured concrete 2-way slab/column structural system. The proposed AT&T gamma sector flue assemblies (three total), existing equipment cabinets, panel antennas and remote radio units are part of an integrated telecommunications facility servicing RF transmission and receptor antennas located on the roof of the existing building.

**Proposed Work:**

AT&T proposes to install a total of six (6) panel antennas (2 antennas per sector, total of 3 sectors) to the existing in-service *alpha*, *beta* and *gamma* sector antennas. The existing *alpha* and *beta* sector antennas are located on the northerly and southerly (respectively) faces of the existing building. The proposed antennas for *alpha* and *beta* sectors will be located adjacent to the existing in-service antennas. For enhanced performance, the existing *gamma* sector antennas will be re-located to a series of three flue assemblies secured to the roof of the existing building. The 2 proposed *gamma* sectors antennas will be located within the antenna flue structures. Our construction drawings are included in this analysis for reference and contain all necessary information to install the proposed antennas and re-locate the existing in-service antennas to the proposed anchored flue assemblies.

Based upon our analysis of the proposed AT&T installation, the information obtained in the existing building drawings, and the magnitude of the anticipated loads, **we consider the existing structure adequate to support the proposed AT&T installation as shown on our construction drawings.**

If you have any questions regarding this matter, please do not hesitate to call.

Very truly yours,  
CHAPPELL ENGINEERING ASSOCIATES, LLC


Clement J Salek, P.E.  
CJS/cjs



Existing Alpha Sector Antennas



Existing Beta Sector Antennas





Existing Gamma Sector Antennas



Existing Gamma Sector Antennas

**CODE COMPLIANCE**

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING CODES.

- MASSACHUSETTS STATE BUILDING CODE 780 CMR (9TH EDITION)
- 2017 NATIONAL ELECTRICAL CODE
- 2012 NFPA 101 - LIFE SAFETY CODE
- 2012 NFPA 1 - FIRE CODE
- NFPA 76 - FIRE PROTECTION OF TELECOMMUNICATIONS FACILITIES
- AMERICAN CONCRETE INSTITUTE
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION
- MANUAL OF STEEL CONSTRUCTION 13TH EDITION
- 2012 VERMONT FIRE AND BUILDING SAFETY CODE
- TIA/EIA-222-G
- TIA 607
- INSTITUTE FOR ELECTRICAL & ELECTRONICS ENGINEER #1
- IEEE C2 NATIONAL ELECTRIC SAFETY CODE LATEST EDITION
- TELECORDIA GR-1275
- ANS/IT 311

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

THE PROJECT WILL COMPLY WITH THE LOW RISK HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL BY VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION



**SITE NUMBER: MA3001**  
**FA LOCATION CODE: 15630860**  
**SITE NAME: CAMBRIDGE**  
**402 RINDGE AVENUE**  
**CAMBRIDGE, MA 02139**  
**MIDDLESEX COUNTY**

**PROJECT TEAM**

**CLIENT REPRESENTATIVE:** JEFF DELLICOLI  
 CENTERLINE COMMUNICATIONS  
 95 RYAN DRIVE, SUITE 1  
 RAYNHAM, MA 02767  
 (603) 860-5000  
 jdellicoli@clinet.com

**SITE ACQUISITION:** JENNILLE SMITH  
 CENTERLINE COMMUNICATIONS  
 750 W. CENTER STREET, FLOOR 3  
 WEST BRIDGEWATER, MA 02379  
 (774) 409-5807  
 jsmith@clinet.com

**ZONING:** JENNILLE SMITH  
 CENTERLINE COMMUNICATIONS  
 750 W. CENTER STREET, FLOOR 3  
 WEST BRIDGEWATER, MA 02379  
 (774) 409-5807  
 jsmith@clinet.com

**ENGINEER:** CHAPPELL ENGINEERING ASSOCIATES, LLC  
 201 BOSTON POST ROAD WEST, SUITE 101  
 MARLBOROUGH, MA 01752  
 (508) 481-7400

**RF ENGINEER:** RADU ALECSANDRU  
 AT&T MOBILITY - NEW ENGLAND  
 590 COCHITUATE RD., SUITES 13 & 14  
 FRAMINGHAM, MA 01701

**CONSTRUCTION MANAGER:** RUSSELL ARCHER  
 EMPIRE TELECOM  
 1150 FIRST AVENUE, SUITE #00  
 KING OF PRUSSIA, PA 19406  
 rarcher@empiretelecom.com

**PACE NUMBER**

MRCTB051969 MRCTB066609 MRCTB066606 MRCTB066584  
 MRCTB066586 MRCTB066604 MRCTB066607

**SITE INFORMATION**

**APPLICANT/LESSEE:** NEW CINGULAR WIRELESS PCS, LLC,  
 550 COCHITUATE ROAD, SUITES 13 & 14  
 FRAMINGHAM, MA 01701

**PROPERTY OWNER:** RINDGE TOWERS APARTMENTS LLC  
 1035 CAMBRIDGE STREET #12  
 CAMBRIDGE, MA 02141

**SITE ADDRESS:** 402 RINDGE AVENUE  
 CAMBRIDGE, MA 02139

**PARCEL ID:** MAP 2888 LOT 45

**LATITUDE:** 42.393100° (NAD 83)

**LONGITUDE:** -71.139700° (NAD 83)

**BUILDING HEIGHT ELEVATION:** 211'-7" AGL

**ZONING JURISDICTION:** CITY OF CAMBRIDGE

**ZONING DISTRICT:** RESIDENCE C-2

**EXISTING/PROPOSED USE:** UNMANNED TELECOMMUNICATION

**DRIVING DIRECTIONS**

MERGE ONTO I-90 EAST MASS PIKE TOWARD BOSTON. USE RIGHT 2 LANES TO TAKE EXIT 123 TOWARD I-95/PORTSMOUTH/PROVIDENCE. KEEP LEFT AT FORK & FOLLOW SIGNS FOR I-95 NORTH/PORTSMOUTH. MERGE ONTO I-95 NORTH. TAKE EXIT 45A FOR MA-2 EAST TOWARD BOSTON/CAMBRIDGE EAST. KEEP LEFT TO STAY ON MA-2 EAST. USE MIDDLE LANE TO STAY ON MA-2 EAST. KEEP RIGHT TO CONTINUE ON MA-2 EAST/CONCORD TURNPIKE. TURN SLIGHTLY RIGHT ONTO ALEWIFE BROOK PARKWAY. AT TRAFFIC CIRCLE, TAKE THE 4TH EXIT TO STAY ON ALEWIFE BROOK PARKWAY. TURN RIGHT ONTO RINDGE AVENUE. SITE IS LOCATED ON THE RIGHT HAND SIDE.

**LEGAL DESCRIPTION**

ASSESSORS PARCEL NUMBER: MAP 2888 LOT 45

**RF INFORMATION**

		GSM	LTE
Tx	869 - 874.6 MHz		874.6 - 879.6 MHz
	890 - 891.4 MHz		1945 - 1950 MHz
	1950 - 1952.8 MHz		
Rx	1970 - 1980 MHz		
	824 - 829.4 MHz		829.6 - 834.4 MHz
	845 - 846.4 MHz		1865 - 1869.8 MHz
	1870 - 1872.8 MHz		
1890 - 1900 MHz			
<b>MAX ERP:</b>		850 MHz: 54 WATTS	1900 MHz: 54.5 WATTS

**GENERAL NOTES**

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE; NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

**UNDERGROUND SERVICE ALERT**



AT LEAST 72 HOURS PRIOR TO DIGGING, THE CONTRACTOR IS REQUIRED TO CALL DIG SAFE AT 811

**APPROVALS**

THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS & AUTHORIZE THE SUBCONTRACTOR TO PROCEED WITH CONSTRUCTION DESCRIBED HEREIN. ALL DOCUMENTS ARE SUBJECT TO REVIEW & MAY IMPOSE CHANGES OR MODIFICATIONS:

DISCIPLINE	SIGNATURE	DATE
CENTERLINE SITE ACQUISITION		
SMARTLINK CONSTRUCTION MANAGER:		
AT&T PROJECT MANAGER:		

**GENERAL CONTRACTOR NOTES**

**DO NOT SCALE DRAWINGS**  
 CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK OR BE RESPONSIBLE FOR SAME.

CONTRACTOR SHALL BE REQUIRED TO SCHEDULE AND COORDINATE CONSTRUCTION WITH GICWD (OWNER) AND SIMON OPERATION SERVICES (OPERATOR) TO LIMIT DISTURBANCE, MAINTAIN ACCESS AND RESTORE THE SITE TO AT LEAST ITS EXISTING CONDITION AT THE OF THE PROJECT.

**PROJECT DESCRIPTION**

THIS PROJECT WILL BE COMPRISED OF:

TOWER TOP EQUIPMENT TO INCLUDE:

- NEW FAUX FLUES: TOTAL OF (3)
- NEW ANTENNAS:  
 ALPHA & BETA SECTORS: (2) ANTENNAS PER SECTOR, TOTAL OF (4) ANTENNAS  
 GAMMA SECTOR: (3) ANTENNAS TO REPLACE (2) ANTENNAS
- REMOVAL OF RADIOS: (1) RADIO PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (3) RADIOS
- RELOCATION OF EXISTING GAMMA SECTOR RADIOS
- NEW RADIOS:  
 GAMMA SECTOR: (3) RADIOS

GROUND EQUIPMENT TO INCLUDE:  
 • NEW RADIO EQUIPMENT WITHIN EXISTING EQUIPMENT CABINETS

**DRAWING INDEX**

SHEET	TITLE SHEET
T01	TITLE SHEET
T02	SPECIFICATIONS
T03	GENERAL REQUIREMENTS, LEGEND & ABBREVIATIONS
T04	GENERAL SIGNAGE DETAILS
A01	ROOF PLAN
A02	BUILDING ELEVATION
A03	ANTENNA PLANS
A04	ANTENNA DETAILS
A05	EQUIPMENT PLANS & DETAILS
S01	ANTENNA & RADIO MOUNTING DETAILS
S02	FAUX FLUE DETAILS
S03	FAUX FLUE PIPE MOUNT DETAILS
E01	ELECTRICAL DIAGRAMS, DETAILS & NOTES
E02	GROUNDING DIAGRAM, DETAILS & NOTES



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REV	DATE	REVISION DESCRIPTION
2	03-19-23	CONSTRUCTION REVISED
1	12-23-22	ISSUED FOR CONSTRUCTION
0	10-11-22	ISSUED FOR REVIEW



ENGINEER/LAND SURVEYOR DATE

PROJECT INFORMATION:

MA3001  
 CAMBRIDGE

402 RINDGE AVENUE  
 CAMBRIDGE, MA 02139

DRAWN BY: CMC CHECKED BY: JMT

SHEET TITLE:

TITLE SHEET

SHEET NUMBER: T01 REVISION: 2





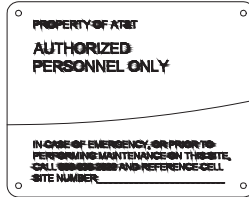


ALERTING SIGNS

ALERTING SIGNS



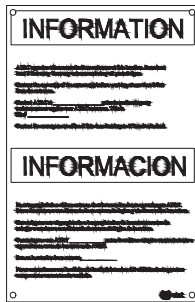
ALERTING SIGN



INFO SIGN #5



INFO SIGN #3



INFO SIGN #1



INFO SIGN #2

STAY BACK 3 FEET FROM ANTENNA

GENERAL SIGNAGE GUIDELINES								
STRUCTURE TYPE	INFO SIGN #1	INFO SIGN #2	INFO SIGN #3	INFO SIGN #4	INFO SIGN #5	STRIPING	NOTICE SIGN	CAUTION SIGN
<b>TOWERS</b>								
MONOPOLE / MONOPINE / MONOPALM	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	CLIMBING SIDE OF THE TOWER	ON BACKSIDE OF ANTENNAS	ON THE SIDE OF ANTENNAS	ON THE SHELTER DOOR OR ON ONE OUTDOOR EQUIPMENT CABINET			AT THE HEIGHT OF THE FIRST CLIMBING STEP. MIN. 3FT ABOVE GROUND
SCE TOWERS / TOWERS WITH VOLTAGE	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	CLIMBING SIDE OF THE TOWER	ON BACKSIDE OF ANTENNAS	ON THE SIDE OF ANTENNAS	ON THE SHELTER DOOR OR ON ONE OUTDOOR EQUIPMENT CABINET			AT THE HEIGHT OF THE FIRST CLIMBING STEP. MIN. 3FT ABOVE GROUND
LIGHT POLES / FLAG POLES	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	ON THE POLE, NO LESS THAN 3FT BELOW THE ANTENNA	ON BACKSIDE OF ANTENNAS	ON THE SIDE OF ANTENNAS	ON THE SHELTER DOOR OR ON ONE OUTDOOR EQUIPMENT CABINET			
UTILITY WOOD POLES (JPA)	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	ON THE POLE, NO LESS THAN 3FT BELOW THE ANTENNA	ON BACKSIDE OF ANTENNAS	ON THE SIDE OF ANTENNAS	ON THE SHELTER DOOR OR ON ONE OUTDOOR EQUIPMENT CABINET		IF GP MAX VALUE OF MPE AT ANTENNA LEVEL IS: 0-99% NOTICE SIGN; OVER 99% CAUTION SIGN AT NO LESS THAN 3FT BELOW ANTENNA AND 3FT ABOVE GROUND	
MICROCELLS MOUNTED ON NON-JPA POLES	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	ON THE POLE, NO LESS THAN 3FT BELOW THE ANTENNA	ON BACKSIDE OF ANTENNAS	ON THE SIDE OF ANTENNAS	ON THE SHELTER DOOR OR ON ONE OUTDOOR EQUIPMENT CABINET		NOTICE OR CAUTION SIGN AT NO LESS THAN 3FT ABOVE GROUND. ONLY IF THE EXPOSURE EXCEEDS 99% OF THE GENERAL PUBLIC EXPOSURE AT 6FT ABOVE GROUND	
<b>ROOF TOPS</b>								
AT ALL ACCESS POINTS OF THE ROOF	X							
ON ANTENNAS	X		X	X				
CONCEALED ANTENNAS	X	X						
ANTENNAS MOUNTED FACING OUTSIDE THE BUILDING	X	X						
ANTENNAS ON SUPPORT STRUCTURE	X	X						
ROOFTOP GRAPH:								
RADIATION AREA IS WITHIN 3FT FROM ANTENNA	X	ADJACENT TO EACH ANTENNA						
RADIATION IS BEYOND 3FT FROM ANTENNA	X	ADJACENT TO EACH ANTENNA				DIAGONAL, YELLOW STRIPING AS TO ROOFTOP GRAPH		EITHER NOTICE OR CAUTION SIGN (BASED ON ROOFTOP RESULTS) AT ANTENNAS / BARRIER
<b>CHURCH STEEPLES</b>								
ACCESS TO STEEPLE		ADJACENT TO ANTENNAS IF ANTENNAS ARE CONCEALED	ON BACKSIDE OF ANTENNAS	ON THE SIDE OF ANTENNAS	ON THE SHELTER DOOR OR ON ONE OUTDOOR EQUIPMENT CABINET			CAUTION SIGN AT THE ANTENNAS
<b>WATER TANKS</b>								
ACCESS TO WATER TANK		ADJACENT TO ANTENNAS IF ANTENNAS ARE CONCEALED	ON BACKSIDE OF ANTENNAS	ON THE SIDE OF ANTENNAS	ON THE SHELTER DOOR OR ON ONE OUTDOOR EQUIPMENT CABINET			CAUTION SIGN AT THE ANTENNAS
NOTES FOR ROOFTOP SITES:								
1. EITHER NOTICE OR CAUTION SIGNS NEED TO BE POSTED AT EACH SECTOR AS CLOSE AS POSSIBLE TO THE OUTER EDGE OF THE STRIPED OFF AREA OR ON THE OUTER ANTENNAS OF THE SECTOR.								
2. IF ROOFTOP SHOWS ONLY BLUE - NOTICE SIGN, BLUE AND YELLOW - CAUTION SIGN, ONLY YELLOW - CAUTION SIGN TO BE INSTALLED.								
3. SHOULD THE REQUIRED STRIPING AREA INTERFERE WITH ANY STRUCTURES OR EQUIPMENT (A.C. VENTS, ROOF HATCH, DOORS, OTHER ANTENNAS, DISHES, ETC.), PLEASE NOTIFY AT&T TO MODIFY THE STRIPING AREA, PRIOR TO STARTING THE WORK.								



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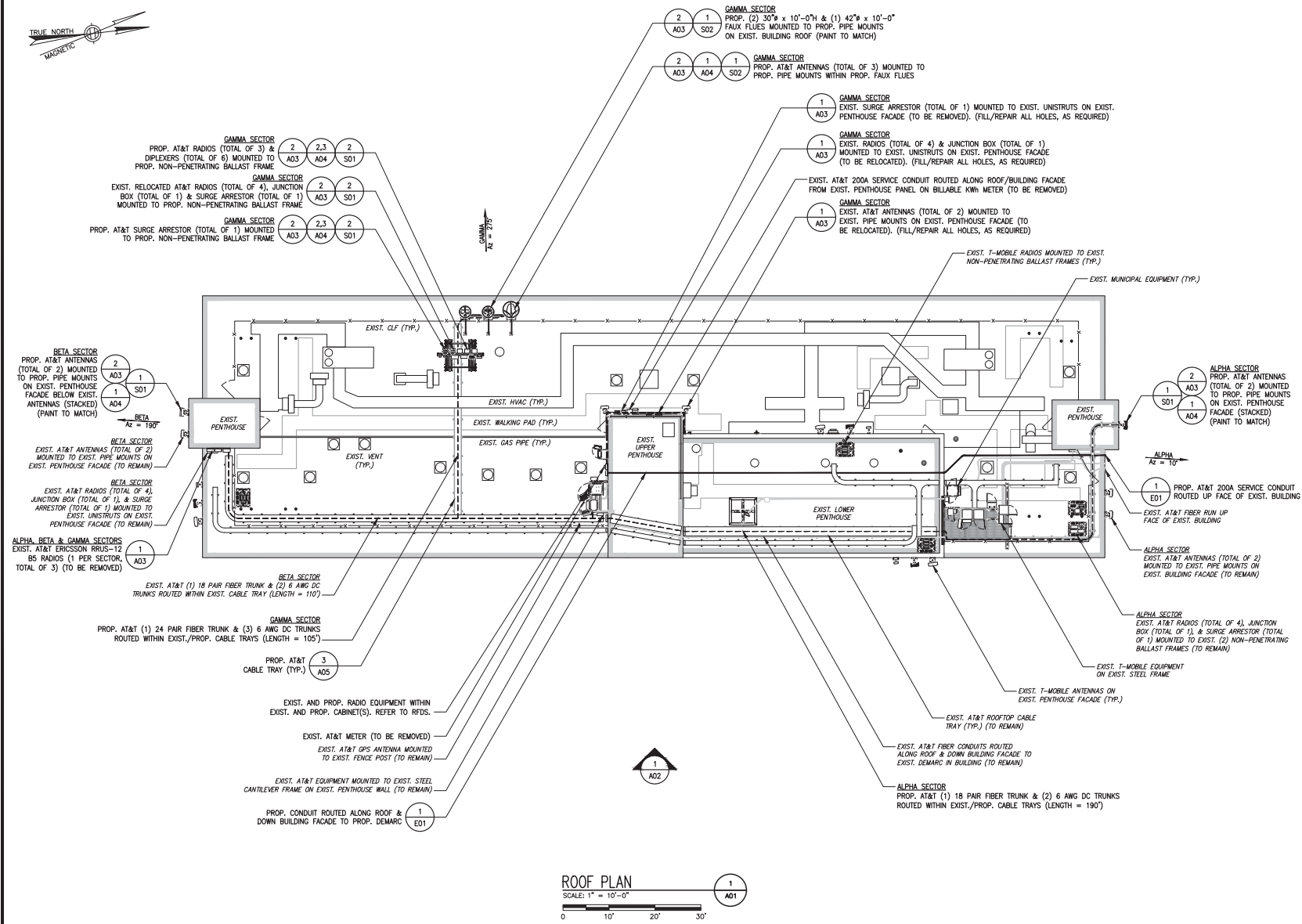
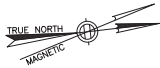
ENGINEER/LAND SURVEYOR DATE

PROJECT INFORMATION:  
**MA3001  
CAMBRIDGE**  
402 RINDGE AVENUE  
CAMBRIDGE, MA 02139

DRAWN BY: CMC CHECKED BY: JMT

SHEET TITLE:  
**GENERAL SIGNAGE DETAILS**

SHEET NUMBER: **T04** REVISION: **2**



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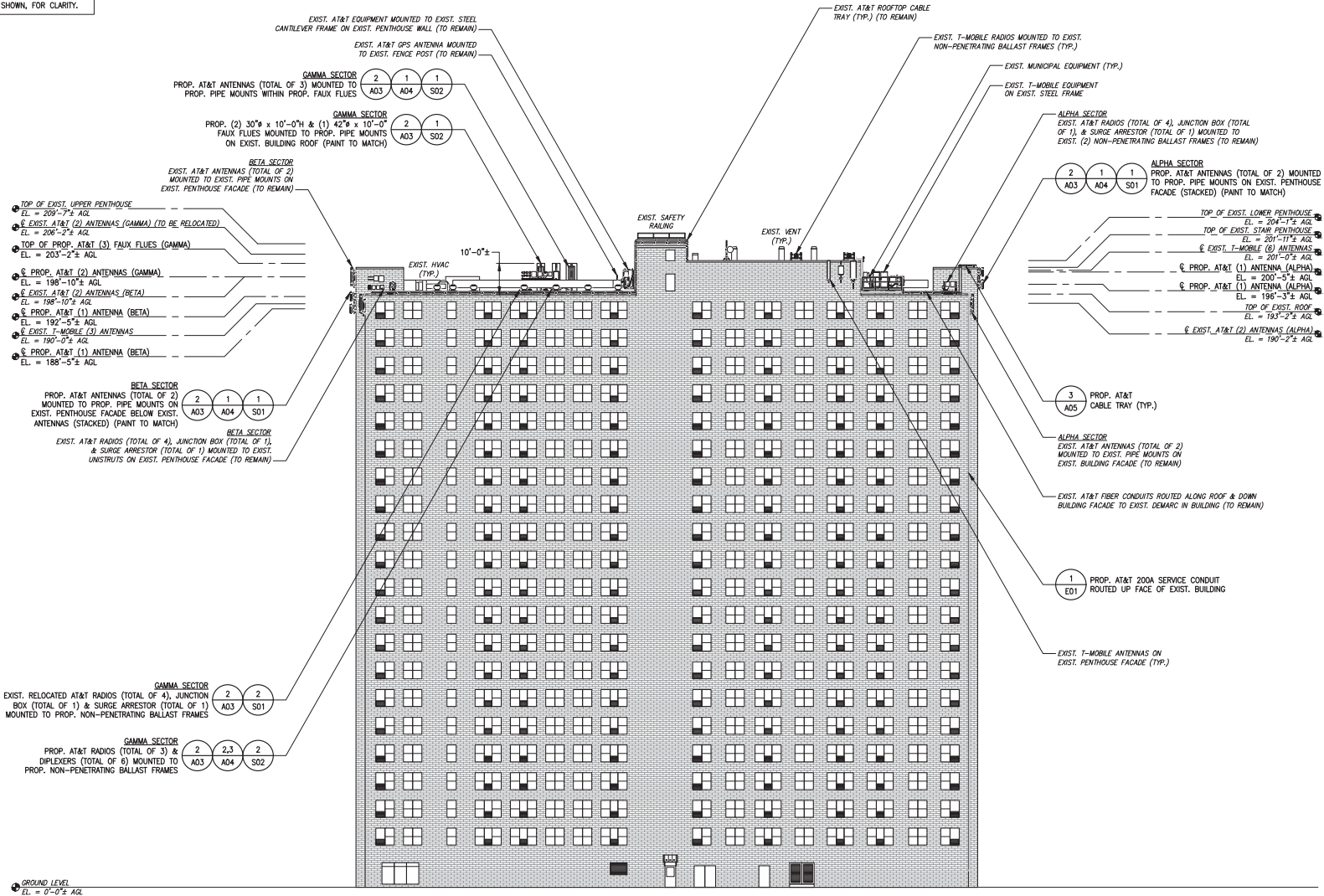
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**MA3001**  
**CAMBRIDGE**  
402 RINDGE AVENUE  
CAMBRIDGE, MA 02139

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SHEET TITLE:  
**ROOF PLAN**

SHEET NUMBER: **A01** REVISION: **2**

NOTE:  
EXISTING CHAIN LINK FENCE  
AROUND PERIMETER OF ROOF  
NOT SHOWN, FOR CLARITY.



EAST ELEVATION  
SCALE: 1/16" = 1'-0"  
0 16' 32' 48'



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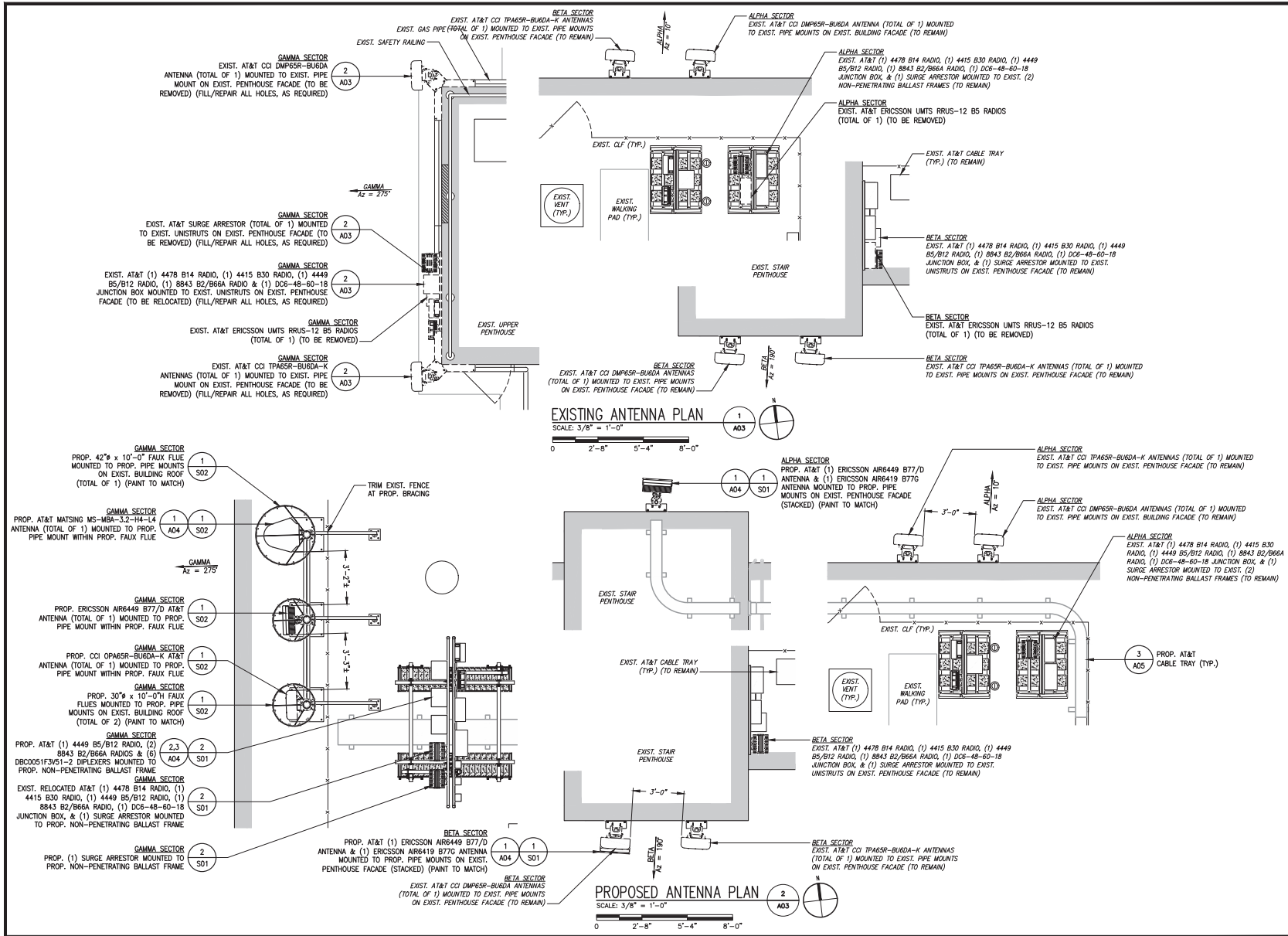
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PROJECT INFORMATION:  
MA3001  
CAMBRIDGE  
402 RINDGE AVENUE  
CAMBRIDGE, MA 02139

DRAWN BY: CMC CHECKED BY: JMT

SHEET TITLE:  
BUILDING ELEVATION

SHEET NUMBER: A02 REVISION: 2



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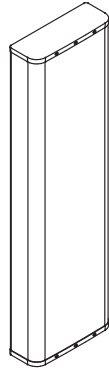
PROJECT INFORMATION:  
MA3001  
CAMBRIDGE  
402 RINDGE AVENUE  
CAMBRIDGE, MA 02139

DRAWN BY: CMC CHECKED BY: JMT

SHEET TITLE:  
ANTENNA PLANS

SHEET NUMBER: A03 REVISION: 2





**CCI OPA65R-BU6D ANTENNA**  
 DIMENSIONS: 71.2"H x 20.7"W x 7.7"D  
 WEIGHT: 63.3 lbs  
 QUANTITY: TOTAL OF 1  
 SECTOR: GAMMA



**ERICSSON M-MIMO AIR6419\_B77G ANTENNA**  
 DIMENSIONS: 36.3"H x 20.9"W x 9.0"D  
 WEIGHT: 83.3 lbs  
 QUANTITY: 1 PER SECTOR, TOTAL OF 2  
 SECTORS: ALPHA, BETA



**ERICSSON M-MIMO AIR6449\_B77D ANTENNA**  
 DIMENSIONS: 33.1"H x 20.5"W x 8.3"D  
 WEIGHT: 103.0 lbs  
 QUANTITY: 1 PER SECTOR, TOTAL OF 3  
 SECTORS: ALPHA, BETA, GAMMA



**MATSING MS-MBA-3.2-H4-L4 ANTENNA**  
 DIMENSIONS: 72.0"H x 24.0"W x 25.0"D  
 WEIGHT: 130.0 lbs  
 QUANTITY: TOTAL OF 1  
 SECTOR: GAMMA

**ANTENNA DETAIL**

SCALE: N.T.S.



**ERICSSON RADIO 4449\_B5+B12**  
 DIMENSIONS: 14.96"H x 13.19"W x 10.43"D  
 WEIGHT: 73.0 lbs  
 QUANTITY: TOTAL OF 1  
 SECTOR: GAMMA



**ERICSSON RADIO 8843\_B2+B66A**  
 DIMENSIONS: 14.96"H x 13.2"W x 11.1"D  
 WEIGHT: 75.0 lbs  
 QUANTITY: TOTAL OF 2  
 SECTOR: GAMMA



**KAELUS DBC0051F3V51-2 TWIN\_1900/AWS DIPLEXER**  
 DIMENSIONS: 8.54"H x 2.17"W x 5.0"D  
 WEIGHT: 7.5 lbs  
 QUANTITY: TOTAL OF 6  
 SECTOR: GAMMA

**RADIO DETAIL**

SCALE: N.T.S.



**DIPLEXER DETAIL**

SCALE: N.T.S.



SECTOR	EXISTING / PROPOSED	BAND	ANTENNA	ANTENNA SCHEDULE				RRU	FEEDER	SURGE PROTECTION
				ANTENNA HEIGHT	AZMUT H	TMA / DIPLEXER				
A1	PROPOSED	5G CBAND	AIR6449 B77D	±201'	10°	-	-	(E) (1) 18 PAIR FIBER TRUNK (E) (2) 6 AWG DC TRUNKS	-	
A1	PROPOSED	5G DcD	AIR6419 B77G	±196'	10°	-	-	(E) (1) 18 PAIR FIBER TRUNK (E) (2) 6 AWG DC TRUNKS	-	
A2	EXISTING	LTE 700/LTE 850/5G 850/LTE AWS	TPA65R-BURDA-K	±190'	10°	-	(E) (1) 4478 B14 (E) (1) 4415 B30	(E) (1) 18 PAIR FIBER TRUNK	(E) (1) DC9-48-60-18	
A3	EXISTING	LTE 700/5G 850/LTE 1900/5G 1900	DMP65R-BURDA	±190'	10°	-	(E) (1) 4449 B5/B12 (E) (1) 8843 B2/B66A (SHARED)	(E) (1) 18 PAIR FIBER TRUNK	-	
B1	EXISTING	LTE 700/LTE 850/5G 850/LTE AWS	TPA65R-BURDA-K	±199'	190°	-	(E) (1) 4478 B14 (E) (1) 4415 B30	(E) (1) 18 PAIR FIBER TRUNK	(E) (1) DC9-48-60-18	
B2	EXISTING	LTE 700/5G 850/LTE 1900/5G 1900	DMP65R-BURDA	±199'	190°	-	(E) (1) 4449 B5/B12 (E) (1) 8843 B2/B66A (SHARED)	(E) (1) 18 PAIR FIBER TRUNK	-	
B3	PROPOSED	5G CBAND	AIR6449 B77D	±193'	190°	-	-	(E) (1) 18 PAIR FIBER TRUNK (E) (2) 6 AWG DC TRUNKS	-	
B3	PROPOSED	5G DcD	AIR6419 B77G	±189'	190°	-	-	(E) (1) 18 PAIR FIBER TRUNK (E) (2) 6 AWG DC TRUNKS	-	
C1	PROPOSED	LTE 700(B)/5G 850/AWS	OPA65R-BURDA-K	±203'	275°	(P) (2) DBC0051F3V51-2	(E) (1) 4478 B14 (E) (1) 4415 B30	(P) (1) 24 PAIR FIBER TRUNK	(P) (1) DC9-48-60-RM	
C2	PROPOSED	5G CBAND	AIR6449 B77D	±203'	275°	-	-	(P) (1) 24 PAIR FIBER TRUNK (P) (2) 6 AWG DC TRUNKS	-	
C3	PROPOSED	LTE 700/5G 850/LTE 1900/5G 1900	MS-MBA-3.2-H4-L4	±203'	275°	(P) (8) DC9-48-60-18	(E) (1) 4449 B5/B12 (E) (1) 8843 B2/B66A (SHARED) (P) (1) 4449 B5/B12 (P) (2) 8843 B2/B66A (SHARED)	(P) (1) 24 PAIR FIBER TRUNK	-	

**ANTENNA SCHEDULE**

SCALE: N.T.S.



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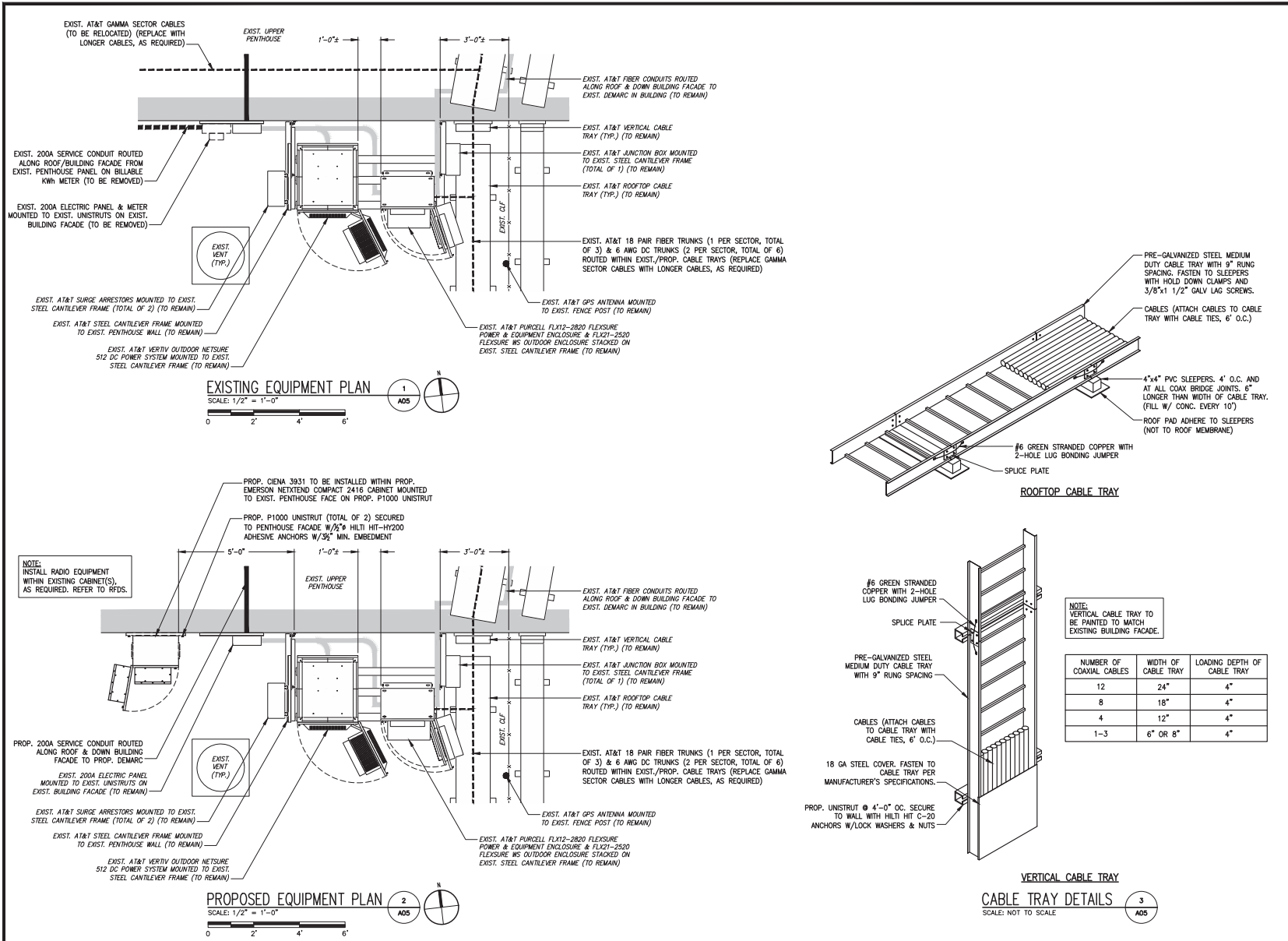
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PROJECT INFORMATION:  
**MA3001  
 CAMBRIDGE**  
 402 RINDGE AVENUE  
 CAMBRIDGE, MA 02139

DRAWN BY: CMC CHECKED BY: JMT

SHEET TITLE:  
**ANTENNA DETAILS**

SHEET NUMBER: **A04** REVISION: **2**



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1	12-29-22	ISSUED FOR CONSTRUCTION
0	10-11-22	ISSUED FOR REVIEW



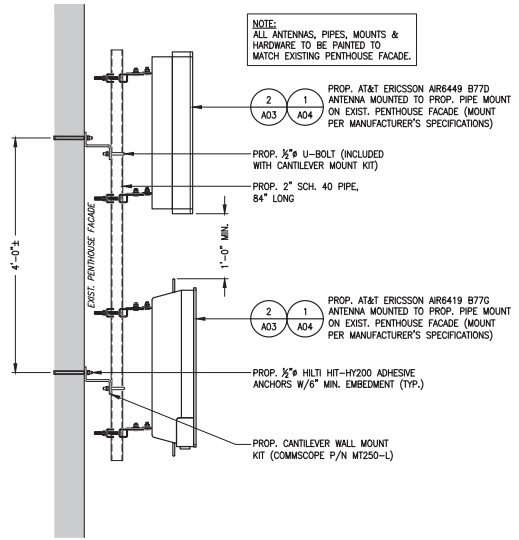
ENGINEER/LAND SURVEYOR DATE

PROJECT INFORMATION:  
MA3001  
CAMBRIDGE  
402 RINDGE AVENUE  
CAMBRIDGE, MA 02139

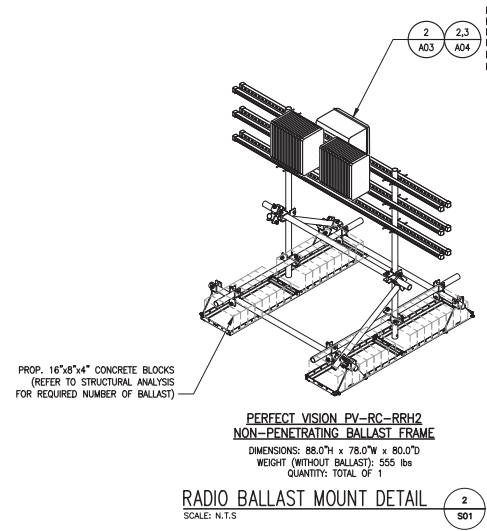
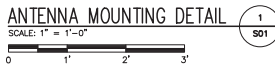
DRAWN BY: CMC CHECKED BY: JMT

SHEET TITLE:  
EQUIPMENT PLAN & DETAILS

SHEET NUMBER: A05 REVISION: 2



ALPHA & BETA SECTORS



**RADIO BALLAST MOUNT DETAIL**  
SCALE: N.T.S.



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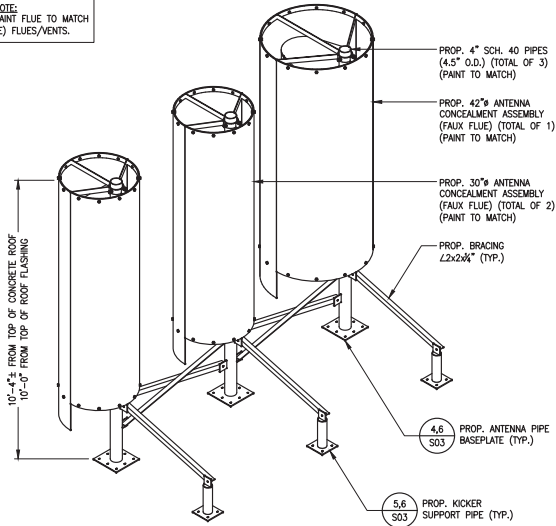
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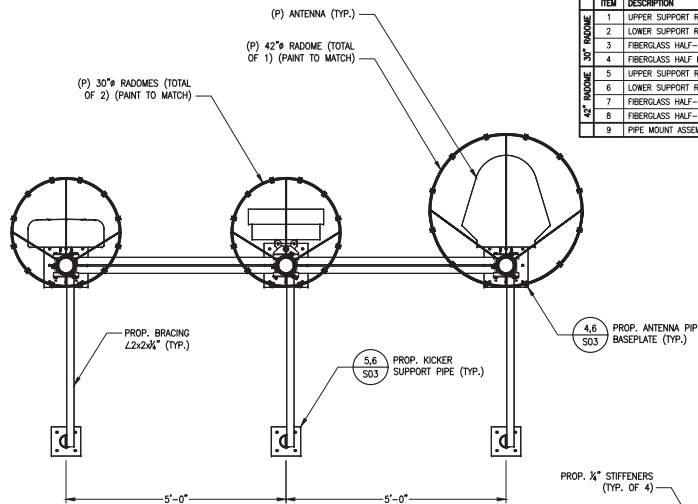


ENGINEER/LAND SURVEYOR	DATE
PROJECT INFORMATION:	
MA3001 CAMBRIDGE	
402 RINDGE AVENUE CAMBRIDGE, MA 02139	
DRAWN BY: CMC	CHECKED BY: JMT
SHEET TITLE: ANTENNA & RADIO MOUNTING DETAILS	
SHEET NUMBER: S01	REVISION: 2

NOTE:  
PAINT FLUE TO MATCH  
(E) FLUES/VENTS.

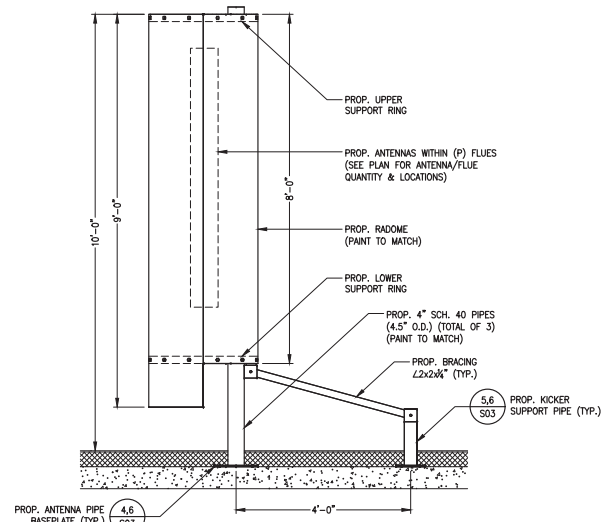


ISOMETRIC VIEW  
SCALE: N.T.S. 1 S02

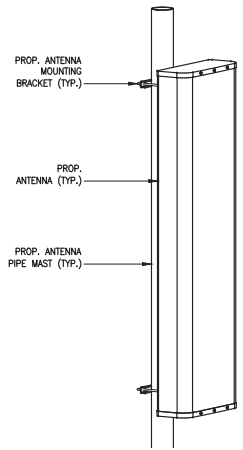


PLAN VIEW  
SCALE: 3/4" = 1'-0"  
0 1'-4" 2'-8" 4'-0" 2 S02

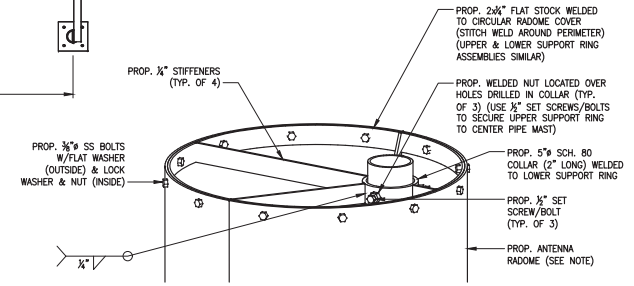
BILL OF MATERIALS				
ITEM	DESCRIPTION	SIZE	QTY	NOTES
1	UPPER SUPPORT RING	29-1/2"φ	1	SEE DETAIL ON THIS SHEET FOR FABRICATION
2	LOWER SUPPORT RING	29-1/2"φ	1	SEE DETAIL ON THIS SHEET FOR FABRICATION
3	FIBERGLASS HALF-RADOME	30" O.D. x 8'-0" H	1	PAINT TO MATCH (E) FLUES/VENTS
4	FIBERGLASS HALF-RADOME	30" O.D. x 9'-0" H	1	PAINT TO MATCH (E) FLUES/VENTS
5	UPPER SUPPORT RING	41-1/2"φ	1	SEE DETAIL ON THIS SHEET FOR FABRICATION
6	LOWER SUPPORT RING	41-1/2"φ	1	SEE DETAIL ON THIS SHEET FOR FABRICATION
7	FIBERGLASS HALF-RADOME	42" O.D. x 8'-0" H	1	PAINT TO MATCH (E) FLUES/VENTS
8	FIBERGLASS HALF-RADOME	42" O.D. x 9'-0" H	1	PAINT TO MATCH (E) FLUES/VENTS
9	PIPE MOUNT ASSEMBLY	N/A	1	SEE DETAILS ON SHEET S03



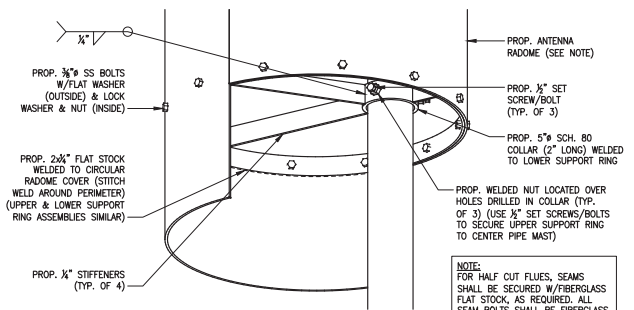
ELEVATION  
SCALE: N.T.S. 3 S02



ANTENNA MOUNTING ISOMETRIC  
SCALE: N.T.S. 4 S02



TOP VIEW  
UPPER SUPPORT RING ASSEMBLY  
SCALE: N.T.S. 5 S02



BOTTOM VIEW  
LOWER SUPPORT RING ASSEMBLY  
SCALE: N.T.S. 6 S02

NOTE:  
FOR HALF CUT FLUES, SEAMS SHALL BE SECURED W/FIBERGLASS FLAT STOCK, AS REQUIRED. ALL SEAM BOLTS SHALL BE FIBERGLASS.



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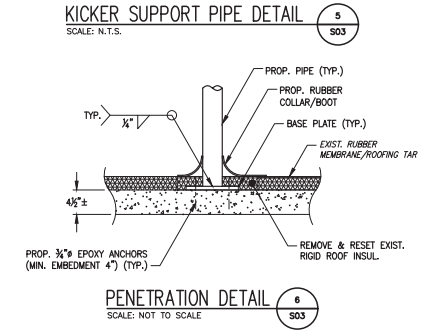
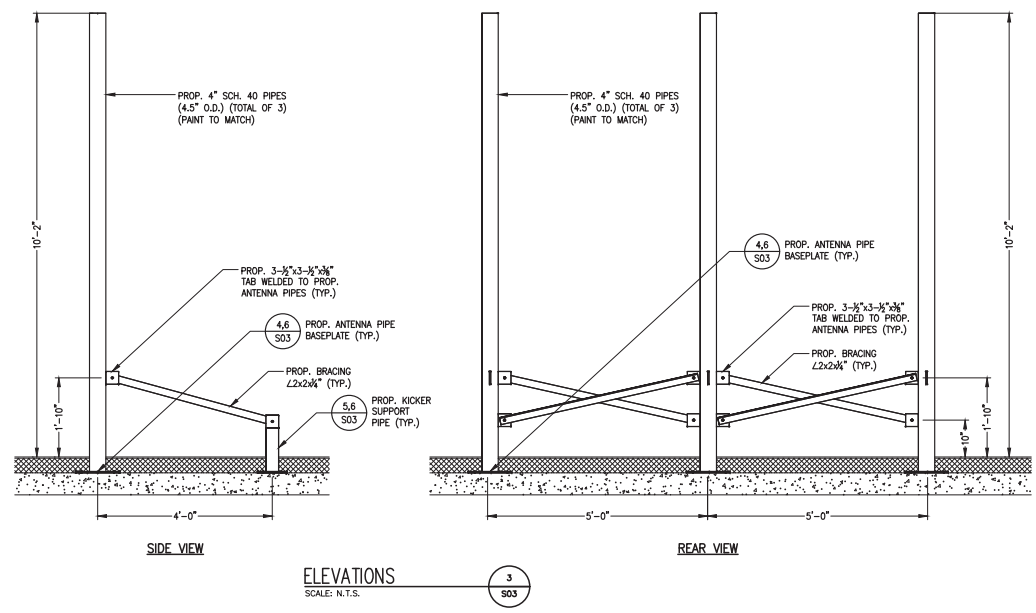
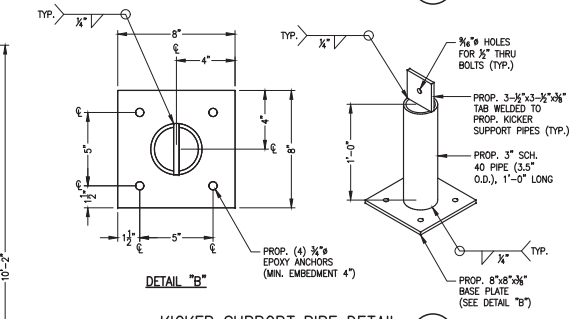
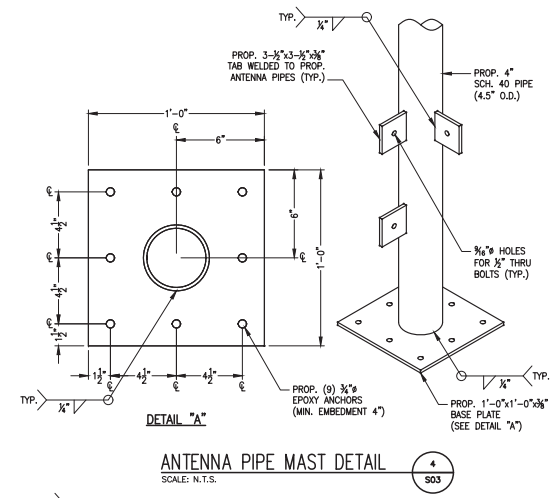
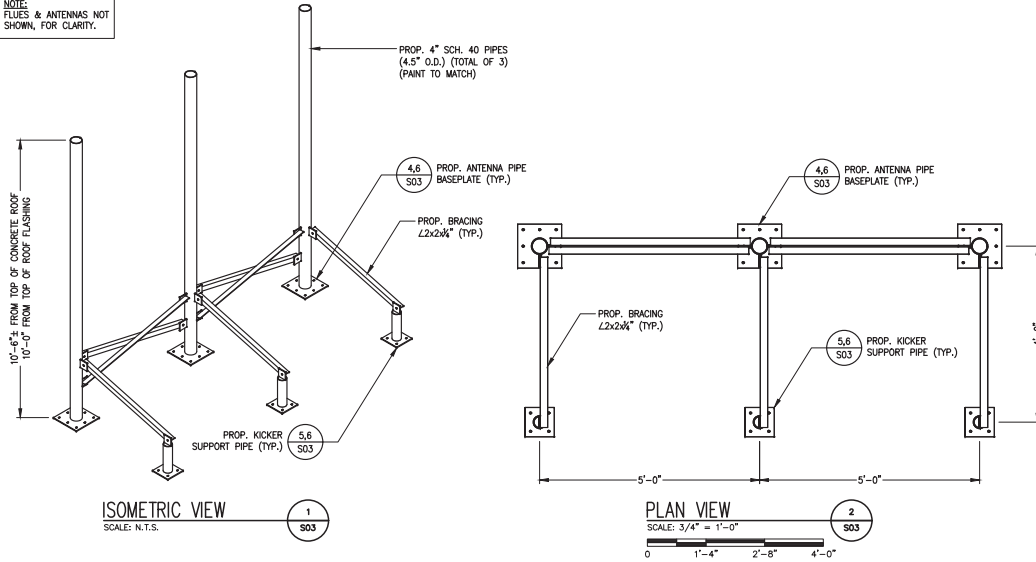
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CAMBRIDGE, MA 02139

DRAWN BY: CMC CHECKED BY: JMT

SHEET TITLE:  
FAUX FLUE DETAILS

SHEET NUMBER: S02 REVISION: 2

NOTE:  
FLUES & ANTENNAS NOT  
SHOWN, FOR CLARITY.



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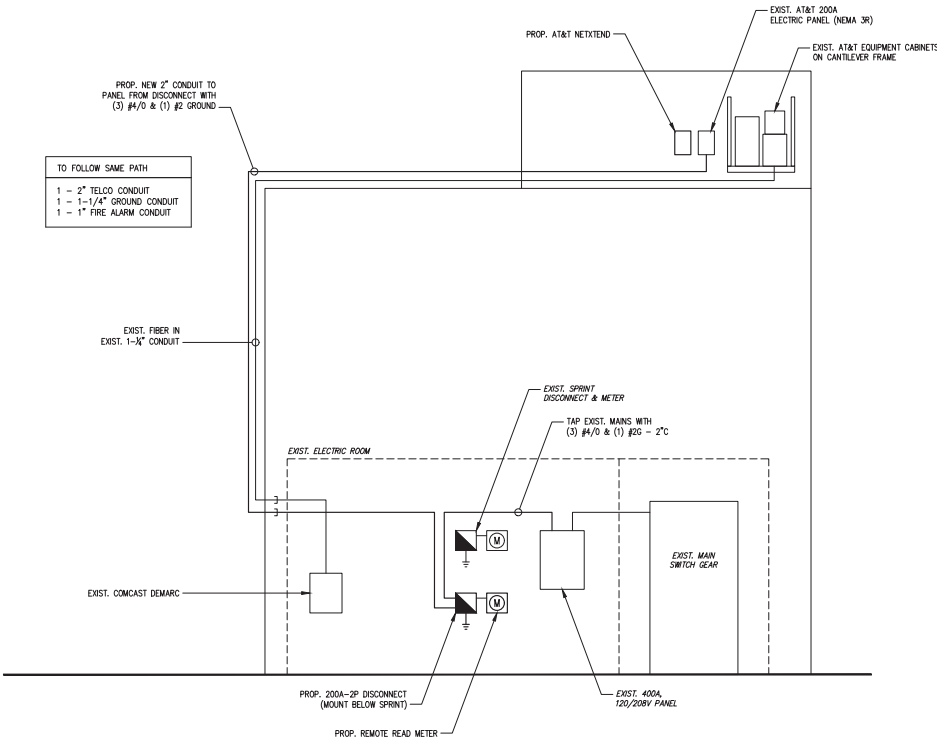
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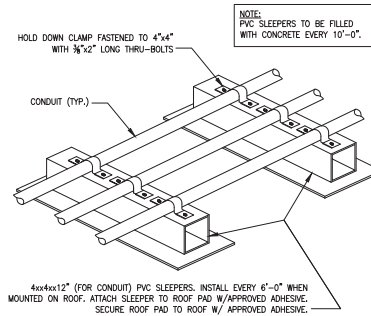
SHEET TITLE:  
**FAUX FLUE PIPE  
 MOUNT DETAILS**

SHEET NUMBER: **S03** REVISION: **2**



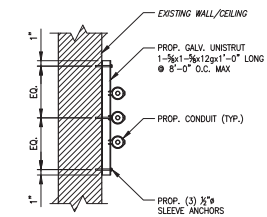
**POWER AND TELCO SINGLE LINE DIAGRAM**  
SCALE: N.T.S.

1  
E01



**CONDUITS ON ROOFTOP**

**CONDUIT MOUNTING DETAIL**  
SCALE: N.T.S.



**CONDUITS ON WALL OR CEILING**

**ELECTRICAL NOTES:**

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATIONS INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
5. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
6. BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THHN, THWN, OR THIN INSULATION.
8. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
10. WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND, USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
11. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
12. PPC SUPPLIED BY PROJECT OWNER.

**LEGEND:**

- ⊗ GROUND TEST WELL
- ⊕ GROUND ROD
- DISCONNECT SWITCH
- Ⓜ METER
- ▲ CADWELD TYPE CONNECTION
- COMPRESSION TYPE CONNECTION
- GROUNDING WIRE
- XXX REPRESENTS DETAIL NUMBER
- XXX REF. DRAWING NUMBER

**ABBREVIATIONS:**

- AWG AMERICAN WIRE GAUGE
- BOW BARE COPPER WIRE
- COBE COAX GROUND BAR EXTERNAL
- COBE COAX ISOLATED GROUND BAR EXTERNAL
- DWG DRAWING
- EMT ELECTRICAL METALLIC TUBING
- MOB MASTER GROUND BAR
- PCS PERSONAL COMMUNICATION SYSTEM
- PVC RIGID (SCH. 40) POLYVINYL CHLORIDE CONDUIT
- ROS RIGID GALVANIZED STEEL
- RWY RACEWAY
- TYP TYPICAL



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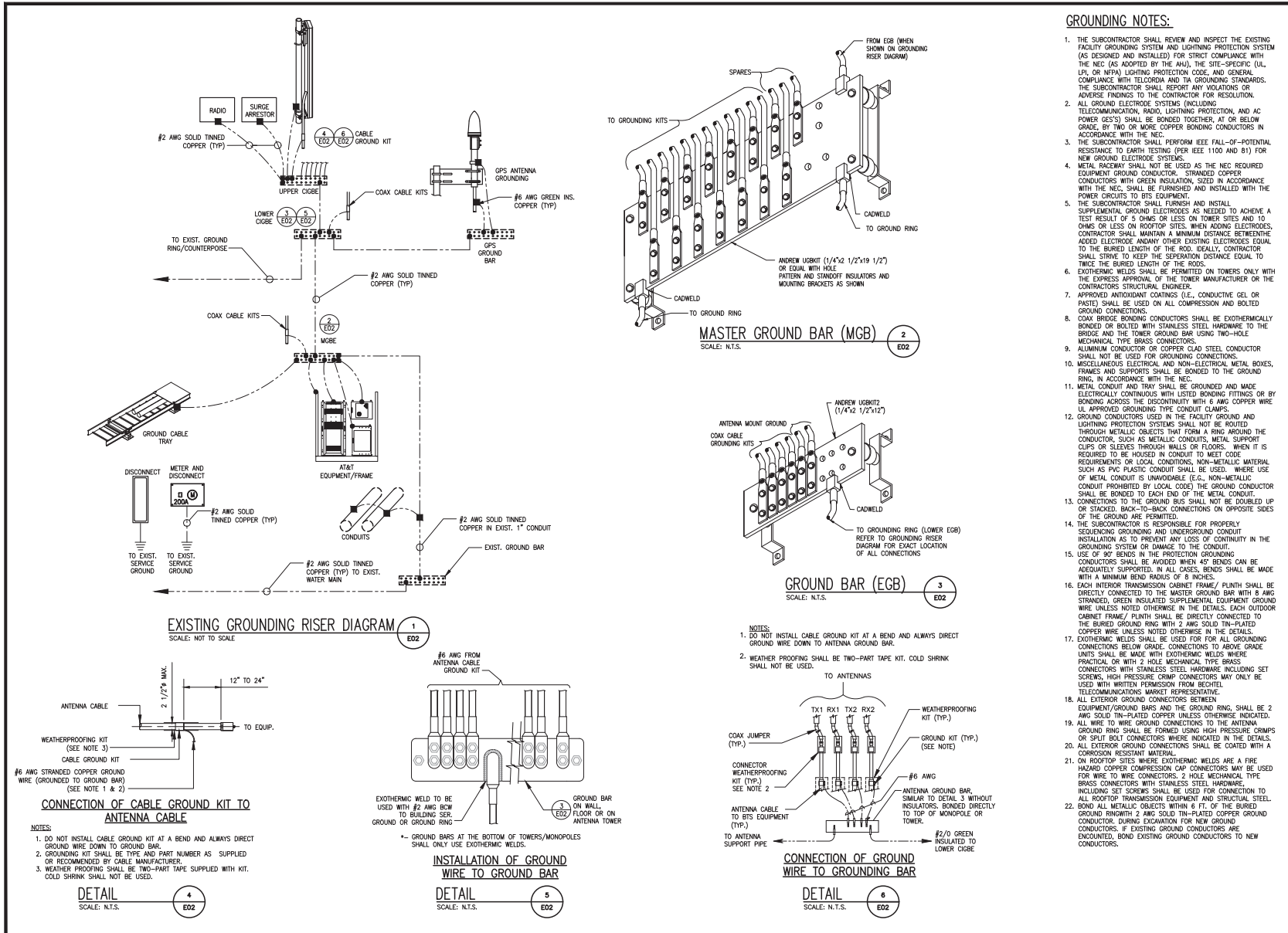
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PROJECT INFORMATION:  
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DRAWN BY: CMC CHECKED BY: JMT

SHEET TITLE:  
**ELECTRICAL DIAGRAMS,  
DETAILS & NOTES**

SHEET NUMBER: **E01** REVISION: **2**



**GROUNDING NOTES:**

- THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, IFC, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
- ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER (E/S)) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
- THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS.
- METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO ITS EQUIPMENT.
- THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS ON TOWER SITES AND 10 OHMS OR LESS ON ROOFTOP SITES. WHEN ADDING ELECTRODES, CONTRACTOR SHALL MAINTAIN A MINIMUM DISTANCE BETWEEN THE ADDED ELECTRODE AND ANY OTHER EXISTING ELECTRODES EQUAL TO THE BURIED LENGTH OF THE ROD. IDEALLY, CONTRACTOR SHALL STRIVE TO KEEP THE SEPARATION DISTANCE EQUAL TO TWICE THE BURIED LENGTH OF THE RODS.
- EXOTHERMIC WELDS SHALL BE PERMITTED ON TOWERS ONLY WITH THE EXPRESS APPROVAL OF THE TOWER MANUFACTURER OR THE CONTRACTOR'S STRUCTURAL ENGINEER.
- APPROVED ANTI-OXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
- COAX BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED WITH STAINLESS STEEL HARDWARE TO THE BRIDGE AND THE TOWER GROUND BAR USING TWO-HOLE MECHANICAL TYPE BRASS CONNECTORS.
- ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
- MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
- METAL CONDUIT AND TRAY SHALL BE GROUNDING AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE OR UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
- GROUND CONDUCTORS USED IN THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE ROUTED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
- CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK-TO-BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND ARE PERMITTED.
- THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SCOURING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
- USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED. IN ALL CASES, BENDS SHALL BE MADE WITH A MINIMUM BEND RADIUS OF 8 INCHES.
- EACH INTERIOR TRANSMISSION CABINET FRAME/ PLINTH SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH #6 AWG STRANDED, GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRE UNLESS NOTED OTHERWISE IN THE DETAILS. EACH OUTDOOR CABINET FRAME/ PLINTH SHALL BE DIRECTLY CONNECTED TO THE BURIED GROUND RING WITH 2 AWG SOLID TIN-PLATED COPPER WIRE UNLESS NOTED OTHERWISE IN THE DETAILS.
- EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE. CONNECTIONS TO ABOVE GRADE UNITS SHALL BE MADE WITH EXOTHERMIC WELDS WHERE PRACTICAL OR WITH 2 HOLE MECHANICAL TYPE BRASS CONNECTORS WITH STAINLESS STEEL HARDWARE INCLUDING SET SCREWS. HIGH PRESSURE CRIMP CONNECTORS MAY ONLY BE USED WITH WRITTEN PERMISSION FROM BECHTEL TELECOMMUNICATIONS MARKET REPRESENTATIVE.
- ALL EXTERIOR GROUND CONNECTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING, SHALL BE 2 AWG SOLID TIN-PLATED COPPER UNLESS OTHERWISE INDICATED.
- ALL WIRE TO WIRE GROUND CONNECTIONS TO THE ANTENNA GROUND RING SHALL BE FORMED USING HIGH PRESSURE CRIMPS OR SPLIT BOLT CONNECTORS WHERE INDICATED IN THE DETAILS.
- ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
- ON ROOFTOP SITES WHERE EXOTHERMIC WELDS ARE A FIRE HAZARD COPPER COMPRESSION CAP CONNECTORS MAY BE USED FOR WIRE TO WIRE CONNECTIONS. 2 HOLE MECHANICAL TYPE BRASS CONNECTORS WITH STAINLESS STEEL HARDWARE, INCLUDING SET SCREWS SHALL BE USED FOR CONNECTION TO ALL ROOFTOP TRANSMISSION EQUIPMENT AND STRUCTURAL STEEL.
- BOND ALL METALLIC OBJECTS WITHIN 6 FT. OF THE BURIED GROUND RING WITH 2 AWG SOLID TIN-PLATED COPPER CONDUCTOR. DURING EXCAVATION FOR NEW GROUND CONDUCTORS, IF EXISTING GROUND CONDUCTORS ARE ENCOUNTERED, BOND EXISTING GROUND CONDUCTORS TO NEW CONDUCTORS.



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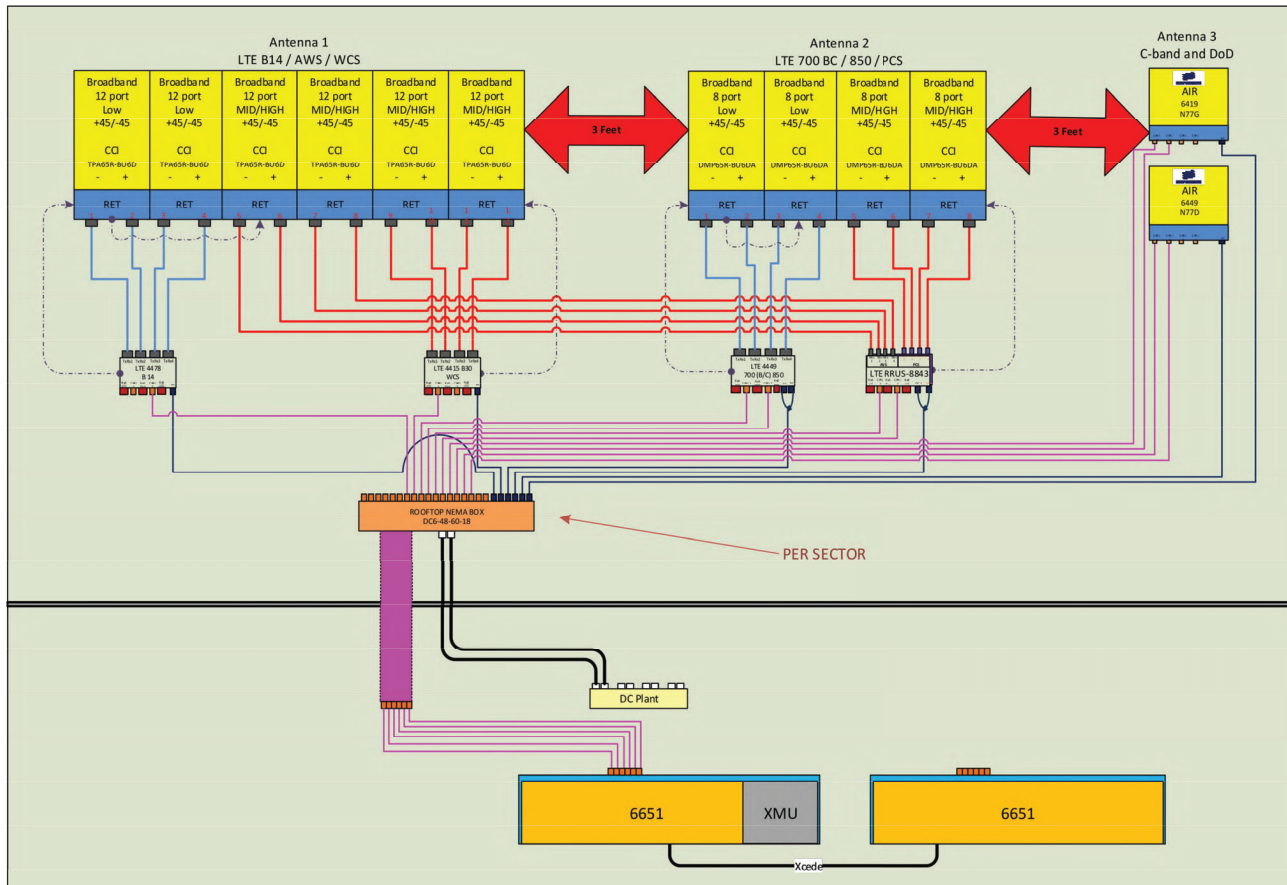
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SHEET TITLE:  
**GROUNDING DIAGRAM,  
DETAILS & NOTES**

SHEET NUMBER: E02 REVISION: 2



ALPHA SECTOR PLUMBING DIAGRAM  
SCALE: N/A

1  
E03



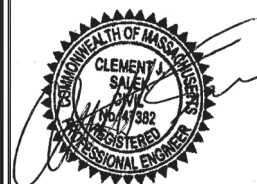
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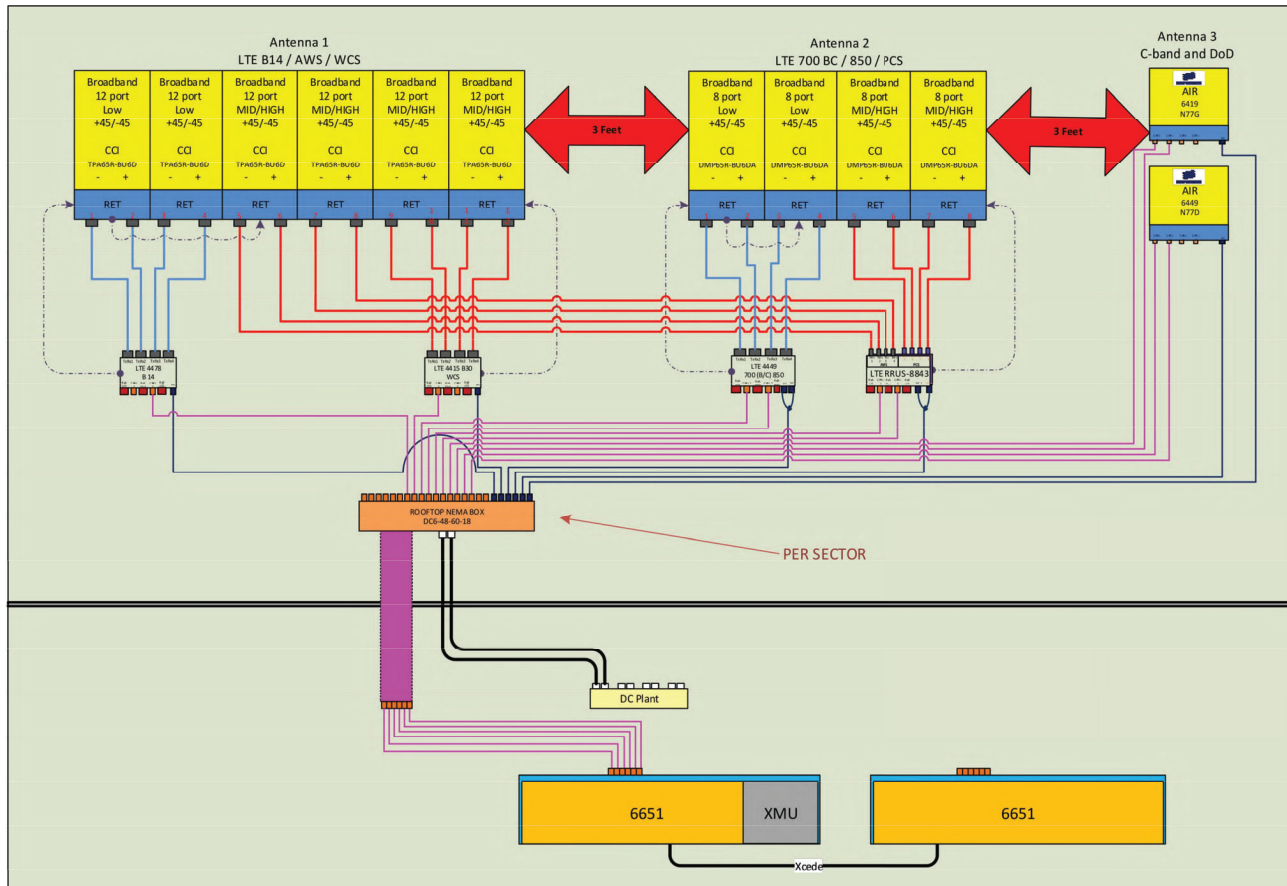
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ALPHA SECTOR  
PLUMBING DIAGRAM

SHEET NUMBER: E03 REVISION: 2





BETA SECTOR PLUMBING DIAGRAM 1  
SCALE: N/A E04



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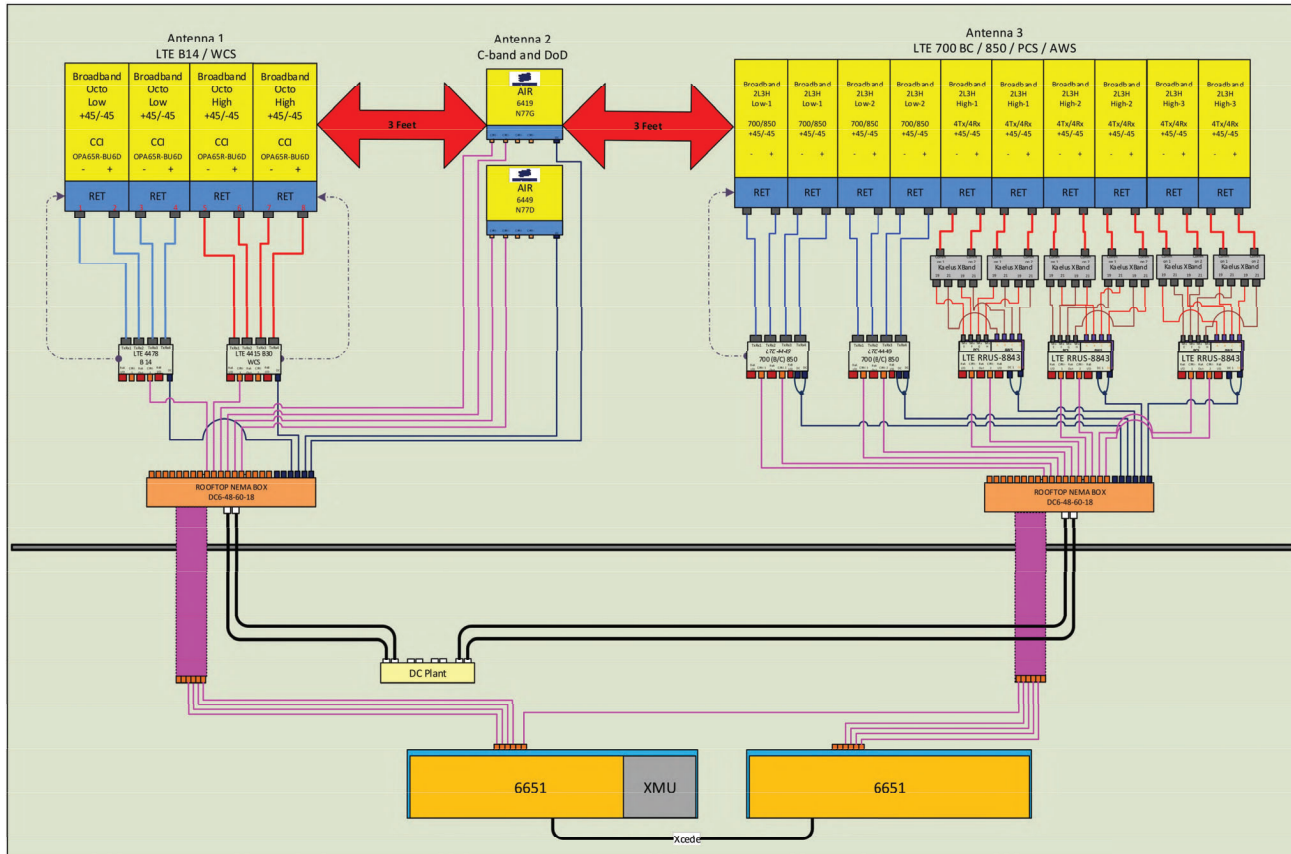
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SHEET TITLE:  
BETA SECTOR  
PLUMBING DIAGRAM

SHEET NUMBER: E04 REVISION: 2



GAMMA SECTOR PLUMBING DIAGRAM 1  
SCALE: N/A E05



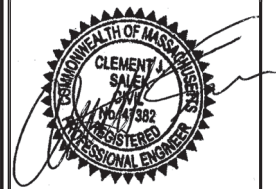
AT&T MOBILITY  
500 ENTERPRISE DRIVE, SUITE 3A  
ROCKY HILL, CT 06067



Civil-Structural-Land Surveying  
R.K. EXECUTIVE CENTRE  
201 BOSTON POST ROAD WEST, SUITE 101  
MARLBOROUGH, MA 01752  
TEL: (508) 481-7400 FAX: (508) 481-7406

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REV	DATE	REVISION DESCRIPTION
2	03-10-23	CONSTRUCTION REVISED
1	12-23-22	ISSUED FOR CONSTRUCTION
0	10-11-22	ISSUED FOR REVIEW



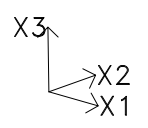
ENGINEER/LAND SURVEYOR DATE

PROJECT INFORMATION:  
MA3001  
CAMBRIDGE  
  
402 RINDGE AVENUE  
CAMBRIDGE, MA 02139

DRAWN BY: CMC CHECKED BY: JMT

SHEET TITLE:  
GAMMA SECTOR  
PLUMBING DIAGRAM

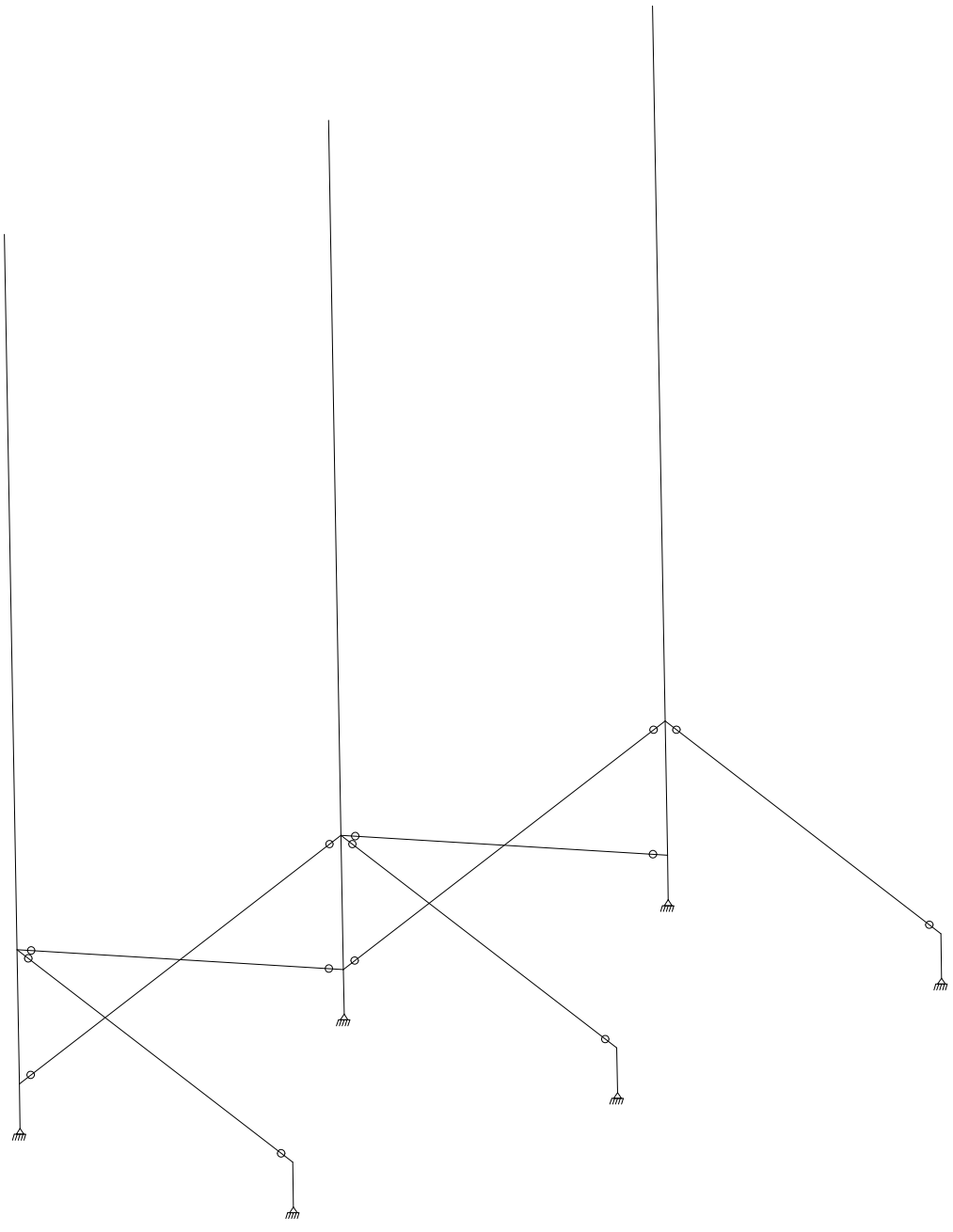
SHEET NUMBER: E05 REVISION: 2

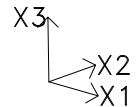


SCALE = 1:23

UNITS: kip ft

DATE: 3/21/23

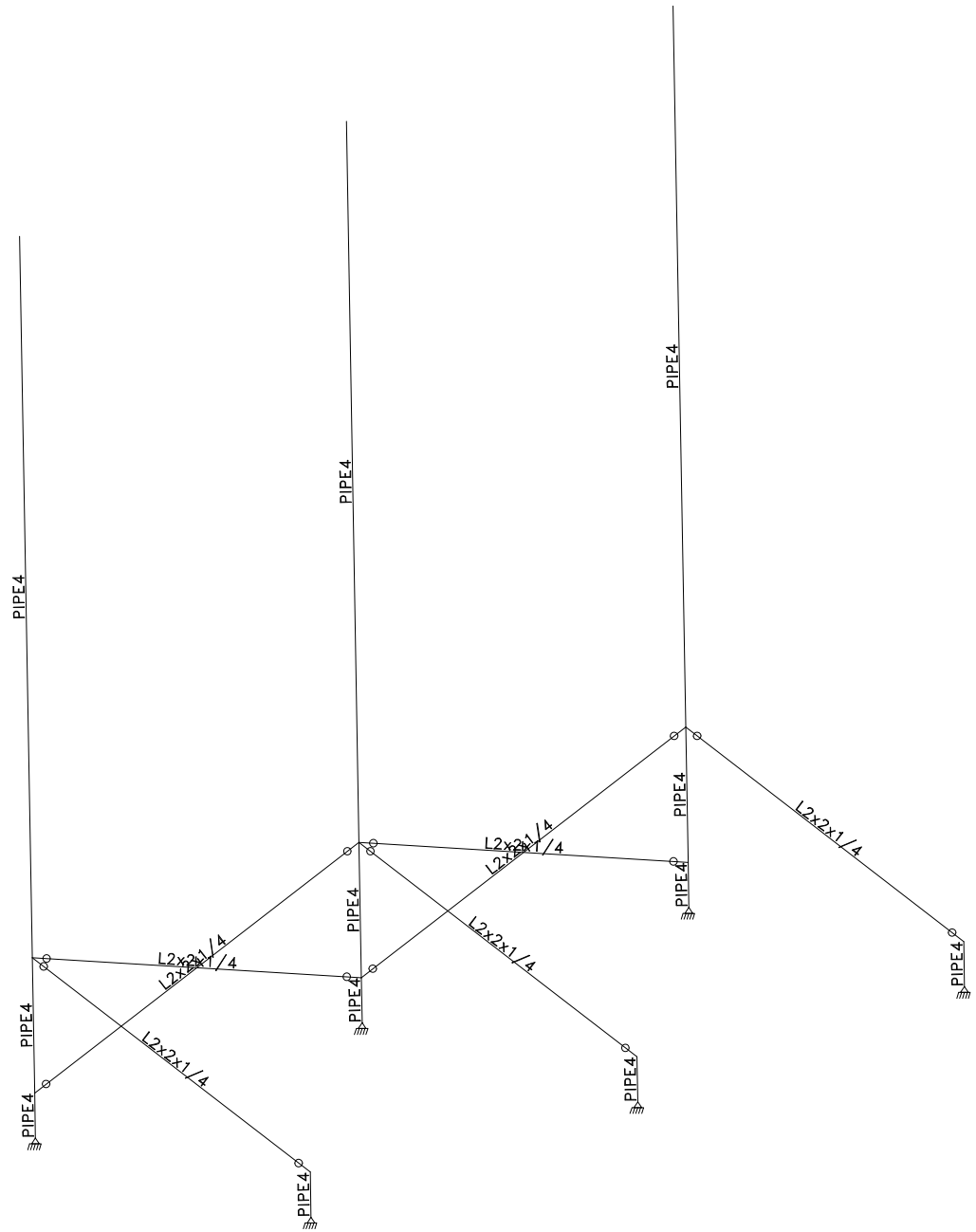


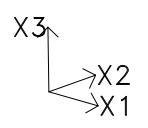


SCALE = 1:23

UNITS: kip ft

DATE: 3/21/23

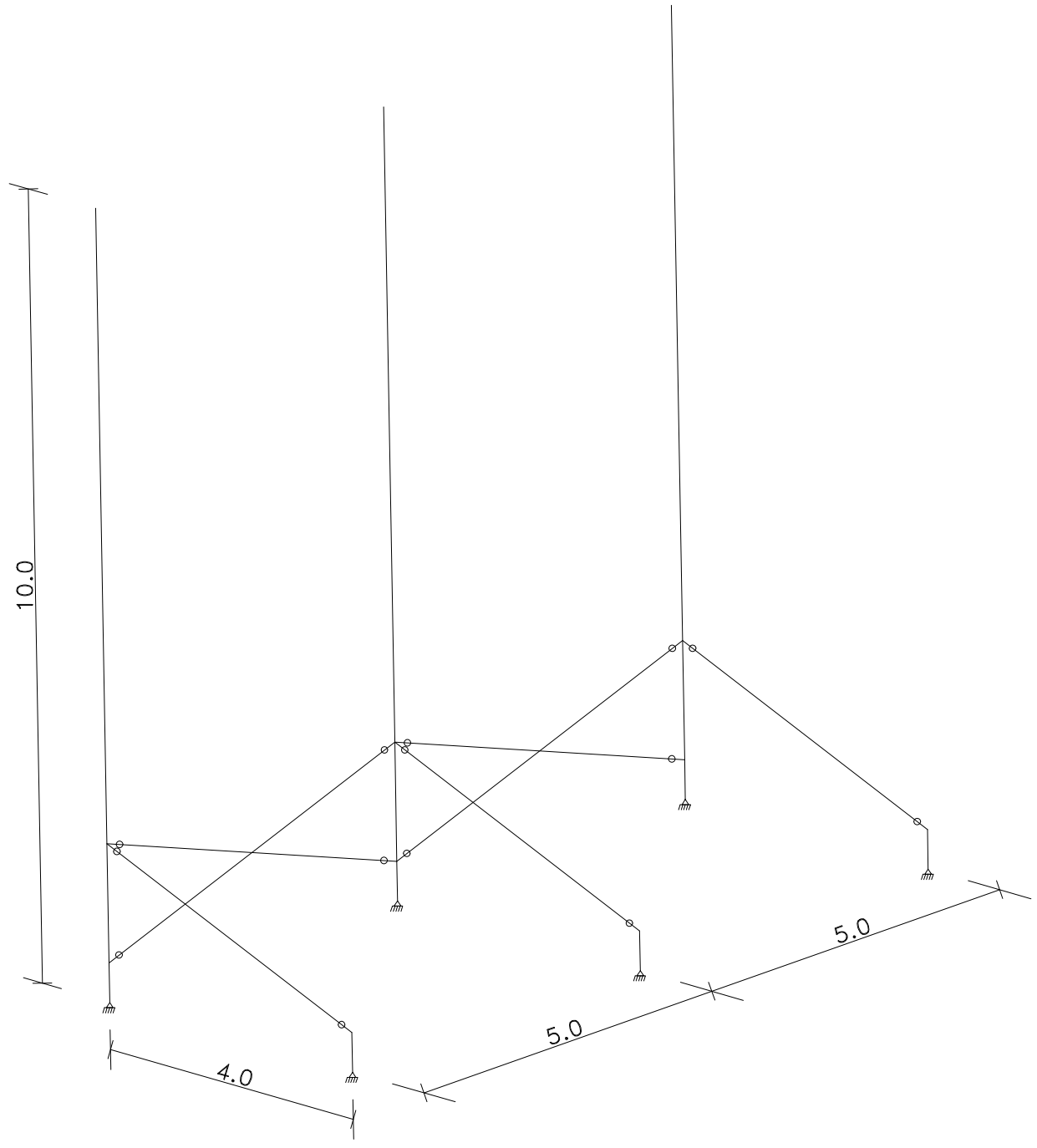




SCALE = 1:23

UNITS: kip ft

DATE: 3/21/23



Cambridge Rindge Ave Rev1 MA3001

**Page:** 1  
**Date:** 3/21/23**Prepared by:****Load no. 1: Front Wind (units - kips ft.)**

/ JOINT LOADS  
/ JOINT LOADS  
FX1 0.22 N 2 3 8 7  
FX1 0.31 N 11 12  
/ END

**FORCE SUMMATION**

FX1=1.5 kip  
FX2=0. kip  
FX3=0. kip

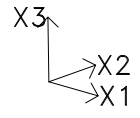
**Load no. 2: Side Wind (units - kips ft.)**

/ JOINT LOADS  
/ JOINT LOADS  
FX2 0.22 N 2 3 8 7  
FX2 0.31 N 11 12  
/ END STATIC

**FORCE SUMMATION**

FX1=0. kip  
FX2=1.5 kip  
FX3=0. kip

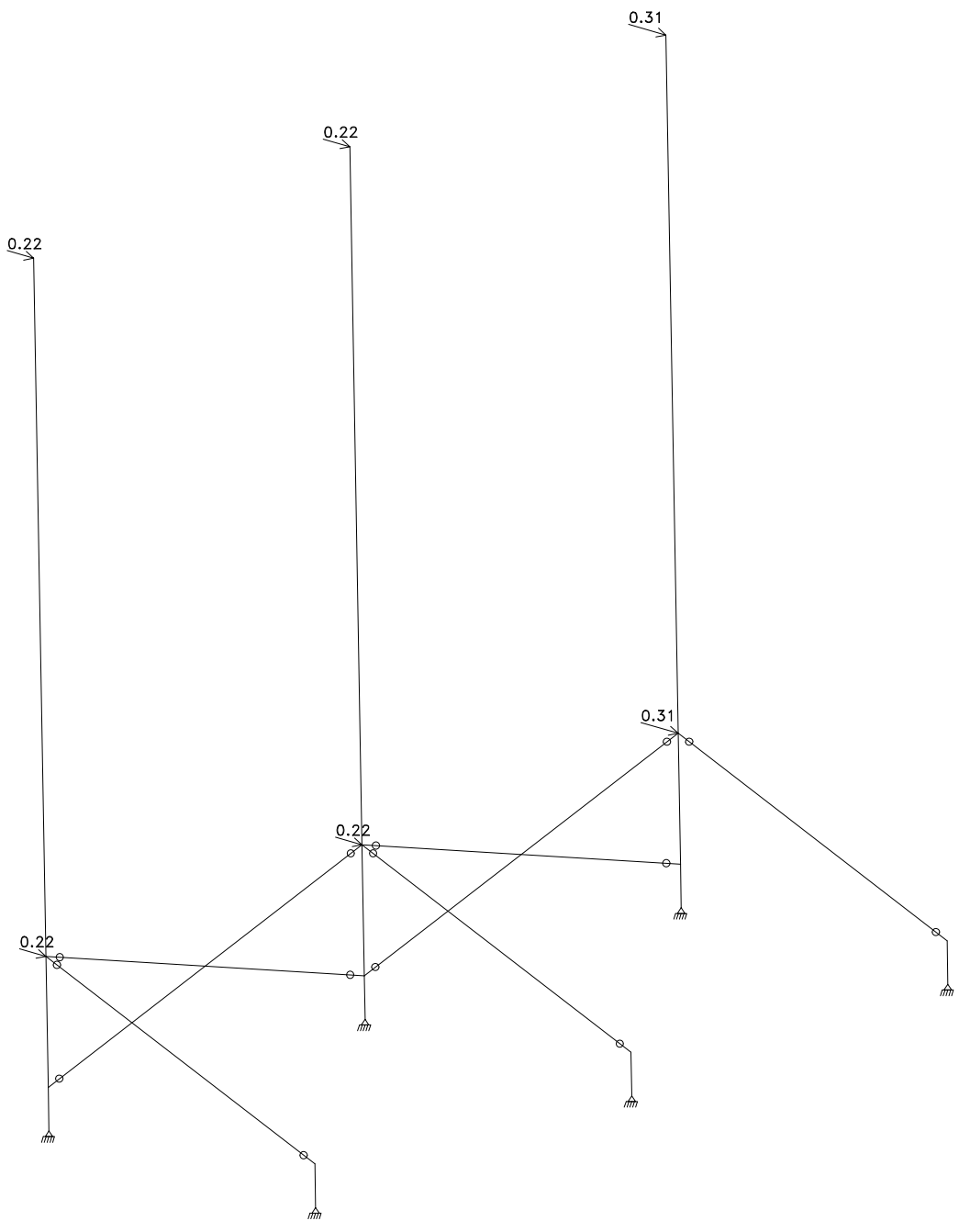
Load 1: Front Wind



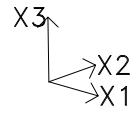
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UNITS: kip ft

DATE: 3/21/23



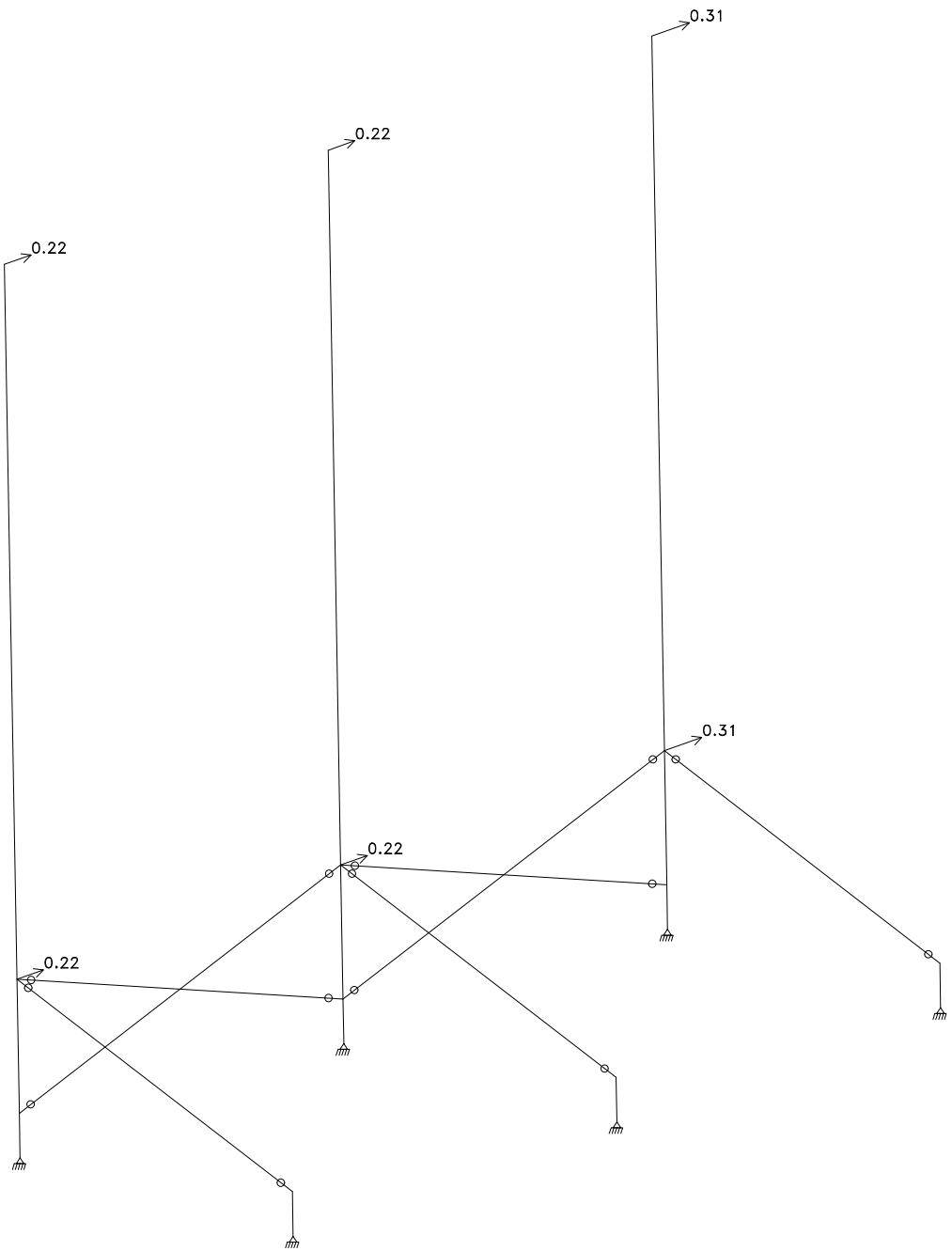
Load 2: Side Wind



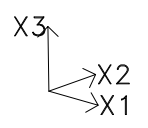
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UNITS: kip ft

DATE: 3/21/23



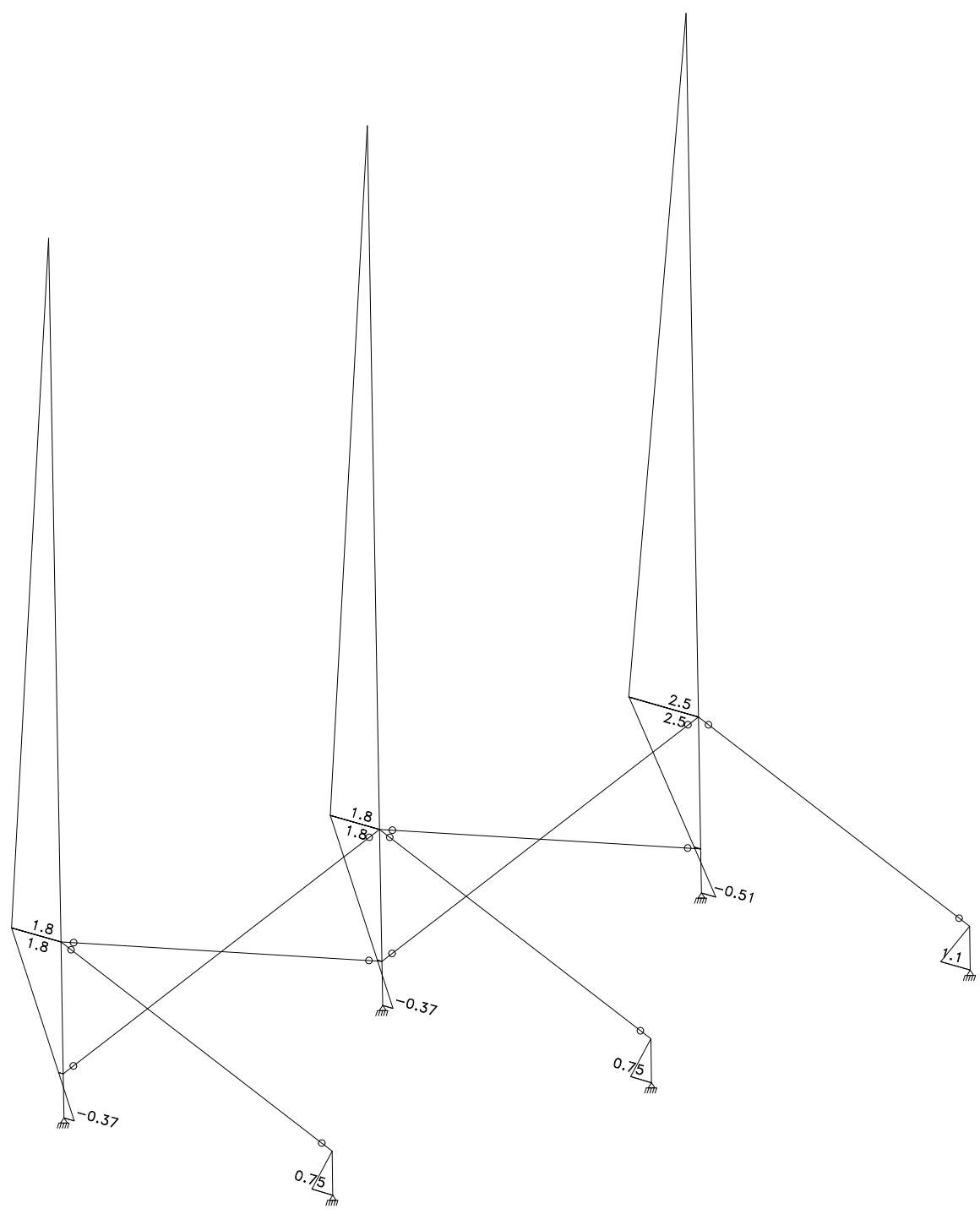




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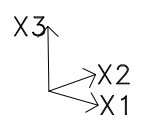
UNITS: kip\*ft

DATE: 3/21/23



M2 MOMENT

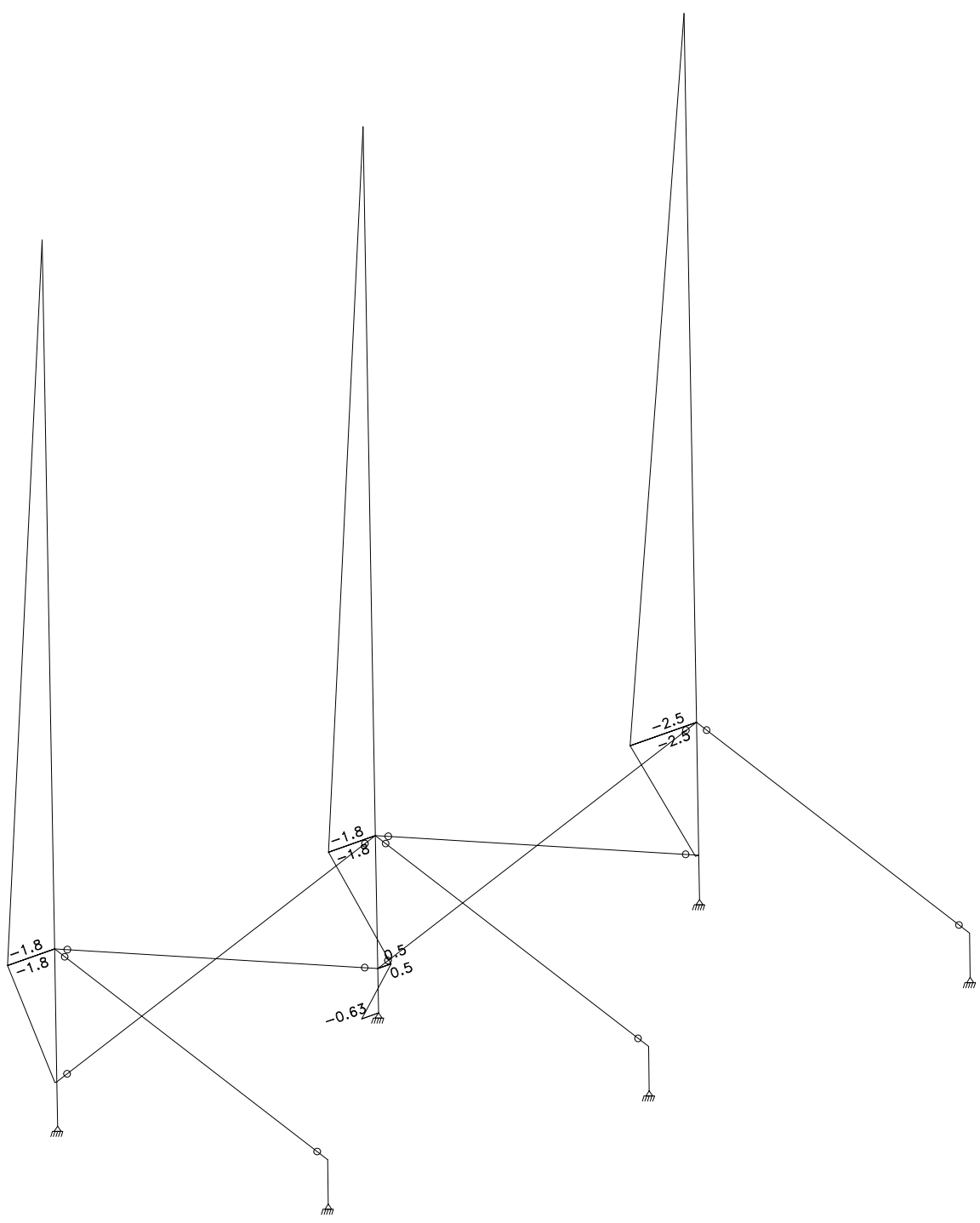
LOAD NO. 1 Front Wind



SCALE = 1:21

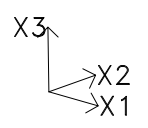
UNITS: kip\*ft

DATE: 3/21/23



M3 MOMENT

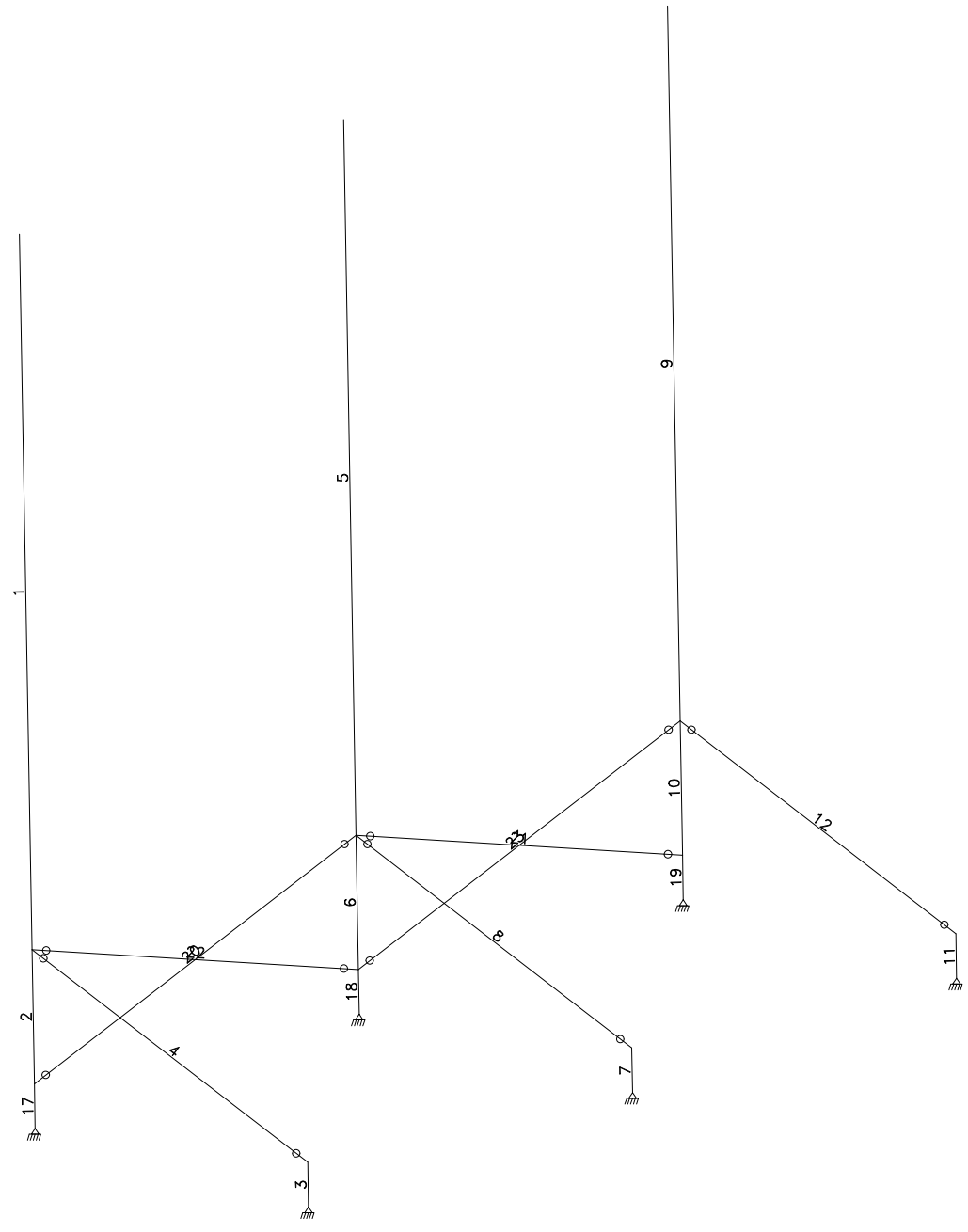
LOAD NO. 2 Side Wind



SCALE = 1:23

UNITS: kip ft

DATE: 3/21/23



Prepared by:

**Results Summary Table**

Beam	Section	Com	Defl L/	Slen	CAPACITY					Combined Axial+Mom
					Axial	Dir Shear	Mom	LTB		
1	PIPE 4	2	1100	79	0.01	MJ	0.04	0.28	0.28	0.30
						MI	0.04	0.28	0.00	
3	PIPE 4	1	9999	4	-0.01	MJ	0.06	0.12	0.12	0.12
4	L 2x2x1/4	1	9999	131	-0.20	MI	0.00	0.00	0.00	0.20
5	PIPE 4	1	1100	79	0.01	MJ	0.04	0.28	0.28	0.29
						MI	0.08	0.28	0.00	
7	PIPE 4	1	9999	4	-0.01	MJ	0.06	0.12	0.12	0.12
8	L 2x2x1/4	1	9999	131	-0.20	MI	0.00	0.00	0.00	0.20
9	PIPE 4	2	780	79	-0.02	MJ	0.06	0.40	0.40	0.41
						MI	0.06	0.40	0.00	
11	PIPE 4	1	9999	4	-0.01	MJ	0.08	0.17	0.17	0.17
12	L 2x2x1/4	1	9999	131	-0.28	MI	0.00	0.00	0.00	0.28
20	L 2x2x1/4	2	9999	160	0.05	MI	0.00	0.00	0.00	0.05
21	L 2x2x1/4	2	9999	160	-0.19	MI	0.00	0.00	0.00	0.19
22	L 2x2x1/4	2	9999	160	-0.30	MI	0.00	0.00	0.00	0.30
23	L 2x2x1/4	2	9999	160	0.11	MI	0.00	0.00	0.00	0.11

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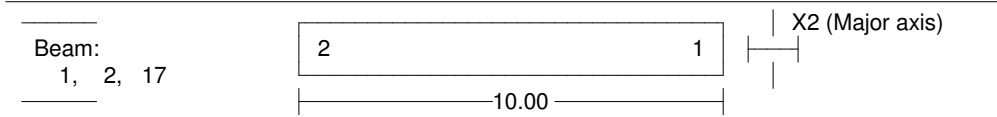
Page: 1

Date: 3/21/23

Prepared by:

**Detailed Results Table for Beam 1 - 17**

Moments: kips\*foot , Forces: kips , Stresses: ksi , Section prop.: inch



**CONSTRAINTS**

- Sections : Check  
 - Steel Grade: A53

**DESIGN DATA**

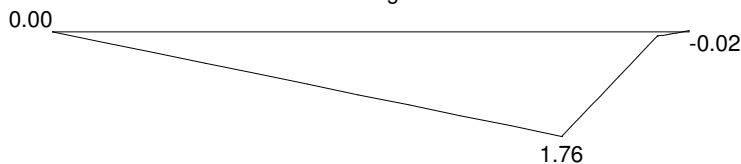
- Kx = 1.00 - Ky = 1.00  
 - Allow. Slend. : 200 (compr.) 300 (tens.)  
 - Allowable Deflection : 1/240  
 - Tension Area Reduction Factor : 1.00  
 - Building type : Unbraced

Section: PIPE 4

Ix = 7.23 Iy = 7.23in4 Sx = 3.21 Sy = 3.21in3 Area = 3.17  
 D = 4.50 t = 0.24in  
 J = 14.47 Cw = 0.00in6

DESIGN COMBINATION = 2

M3 Moment Diagram



Max. AXIAL Force = 0.75 (tens.) Max. SHEAR Force = 1.12

DESIGN	EQUATION	FACTORS	VALUES	RESULT
V2 Shear (F4-1)	$V/(A_v * F_v) < 1.00$ $F_v = 0.4 * F_y$	$A_v = 1.90$	$V = 1.12$ $F_v = 14.00$	0.04
M3 Moment (F3-1)	$M / (S * F_b) < 1.00$	$S = 3.21$ $F_b = 0.660 * F_y$	$M = 1.76$ $S * F_b = 6.20$	0.28
Deflection	$defl. / (L / 240) < 1.00$		$defl = 0.10873$	0.22
Combined Stresses (Local) (H1-2) (H2-1)	$f_a / (0.6 F_y) + f_{bx} / F_{bx} + f_{by} / F_{by} < 1.00$	$f_{bx} = 0.02$ $F_{bx} = 23.10$ $f_{by} = 6.56$ $F_{by} = 23.10$	$P = 0.75$ $A = 3.17$ $F_u = 60.00$ $f_b = M/S$	0.29
Axial Force (D1)	$F / (0.60 A_g F_y) < 1.00$	$(kL/r)_x = 79$ $(kL/r)_y = 79$	$P = 0.75$ $A_g = 3.17$ $F_y = 35.00$	0.01
Combined Stresses (tension) (H2-1)	$f_a / F_t + f_{bx} / F_{bx} + f_{by} / F_{by} < 1.00$	$F_{bx} = 23.10$ $F_{by} = 23.10$	$f_{bx} = 0.02$ $f_{by} = 6.56$	0.30

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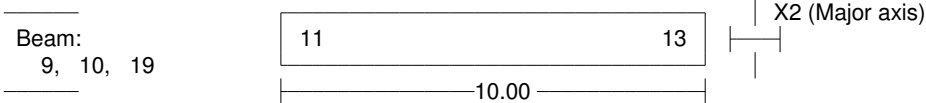
Page: 2

Date: 3/21/23

Prepared by:

**Detailed Results Table for Beam 9 - 19**

Moments: kips\*foot , Forces: kips , Stresses: ksi , Section prop.: inch



**CONSTRAINTS**

- Sections : Check  
 - Steel Grade: A53

**DESIGN DATA**

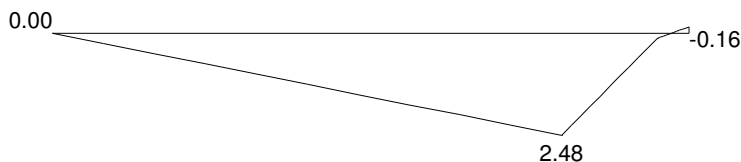
- Kx = 1.00 - Ky = 1.00  
 - Allow. Slend. : 200 (compr.) 300 (tens.)  
 - Allowable Deflection : 1/240  
 - Tension Area Reduction Factor : 1.00  
 - Building type : Unbraced

Section: PIPE 4

Ix = 7.23 Iy = 7.23in4 Sx = 3.21 Sy = 3.21in3 Area = 3.17  
 D = 4.50 t = 0.24in  
 J = 14.47 Cw = 0.00in6

DESIGN COMBINATION = 2

M3 Moment Diagram



Max. AXIAL Force = -0.96 (compr.) Max. SHEAR Force = 1.57

DESIGN	EQUATION	FACTORS	VALUES	RESULT
V2 Shear (F4-1)	$V/(A_v \cdot F_v) < 1.00$ $F_v = 0.4 \cdot F_y$	$A_v = 1.90$	$V = 1.57$ $F_v = 14.00$	0.06
M3 Moment (F3-1)	$\frac{M}{S \cdot F_b} < 1.00$	$S = 3.21$ $F_b = 0.660 \cdot F_y$	$M = 2.48$ $S \cdot F_b = 6.20$	0.40
Deflection	$\frac{\text{defl.}}{L / 240} < 1.00$		$\text{defl} = 0.15329$	0.31
Combined Stresses (Local) (H1-2) (H2-1)	$\frac{f_a}{0.6 F_y} + \frac{f_{bx}}{F_{bx}} + \frac{f_{by}}{F_{by}} < 1.00$	$f_{bx} = 0.02$ $F_{bx} = 23.10$ $f_{by} = 9.25$ $F_{by} = 23.10$	$P = 0.96$ $A = 3.17$ $F_u = 60.00$ $f_b = M/S$	0.42
Axial Force (E2-1/2)	$\frac{f_a}{F_a} < 1.00$	$(kL/r)_x = 24$ $(kL/r)_y = 24$ $C_c = 128.10$	$P = 0.96$ $A_g = 3.17$ $F_a = 19.81$	0.02
Combined Stresses (tension) (H2-1)	$\frac{f_t}{F_t} + \frac{f_{bx}}{F_{bx}} + \frac{f_{by}}{F_{by}} < 1.00$	$F_{bx} = 23.10$ $F_{by} = 23.10$	$f_{bx} = 0.02$ $f_{by} = 9.25$	0.40

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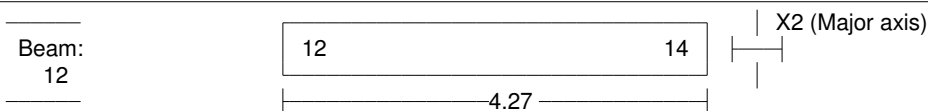
Page: 3

Date: 3/21/23

Prepared by:

**Detailed Results Table for Beam 12**

Moments: kips\*foot , Forces: kips , Stresses: ksi , Section prop.: inch

**CONSTRAINTS**

- Sections : Check  
 - Steel Grade: A36

**DESIGN DATA**

- Kx = 1.00 - Ky = 1.00  
 - Allow. Slend. : 200 (compr.) 300 (tens.)  
 - Allowable Deflection : 1/240  
 - Tension Area Reduction Factor : 1.00  
 - Building type : Unbraced

Section: L 2x2x1/4

$I_x = 0.35$   $I_y = 0.35$   $I_x^4$   $S_x = 0.25$   $S_y = 0.25$   $I_x^3$  Area = 0.94  
 $h = 2.00$   $b = 2.00$   $t = 0.25$   $e_y = 1.42$   $e_x = 1.42$   
 $J = 0.02$   $C_w = 0.00$   $I_x^6$   $I_y = 0.14$   $I_x^4$

DESIGN COMBINATION = 1

Max. AXIAL Force = -2.26 (compr.) Max. SHEAR Force = 0.00

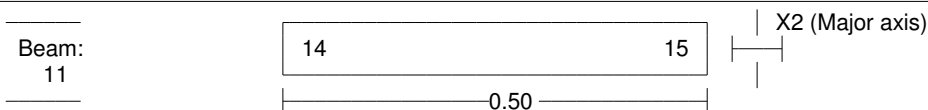
SECTION CLASSIFICATION: \*\*\* COMPACT \*\*\*

Limiting Ratios: Compact Non-Compact  
 $d/t = 8.06 < 12.7$   $12.7$  (Fy = 36.0)  
 $b/t = 8.06 < 12.7$

DESIGN	EQUATION	FACTORS	VALUES	RESULT
Axial Force (E2-1/2)	$\frac{fa}{Fa} < 1.00$	$(kL/r)_x = 84$ $(kL/r)_y = 131$ $C_c = 126.31$	$P = 2.26$ $A_g = 0.94$ $F_a = 8.73$	0.28

**Detailed Results Table for Beam 11**

Moments: kips\*foot , Forces: kips , Stresses: ksi , Section prop.: inch

**CONSTRAINTS**

- Sections : Check  
 - Steel Grade: A53

**DESIGN DATA**

- Kx = 1.00 - Ky = 1.00  
 - Allow. Slend. : 200 (compr.) 300 (tens.)  
 - Allowable Deflection : 1/240  
 - Tension Area Reduction Factor : 1.00  
 - Building type : Unbraced

Section: PIPE 4

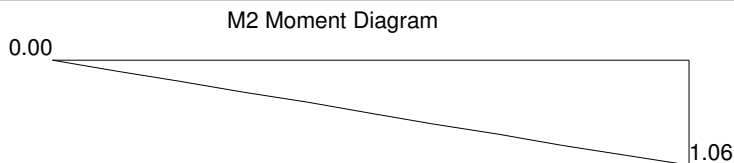
$I_x = 7.23$   $I_y = 7.23$   $I_x^4$   $S_x = 3.21$   $S_y = 3.21$   $I_x^3$  Area = 3.17  
 $D = 4.50$   $t = 0.24$   
 $J = 14.47$   $C_w = 0.00$   $I_x^6$

DESIGN COMBINATION = 1

Prepared by:

**Detailed Results Table for Beam 11**

Moments: kips\*foot , Forces: kips , Stresses: ksi , Section prop.: inch

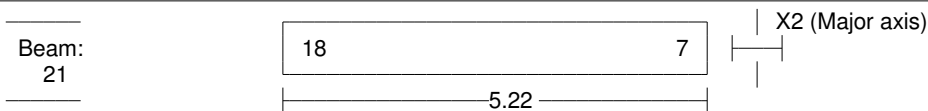


Max. AXIAL Force = -0.79 (compr.) Max. SHEAR Force = 2.12

DESIGN	EQUATION	FACTORS	VALUES	RESULT
V3 Shear (F4-1)	$V/(A_v * F_v) < 1.00$ $F_v = 0.4 * F_y$	$A_v = 1.90$	$V = 2.12$ $F_v = 14.00$	0.08
M2 Moment (F3-1)	$\frac{M}{S * F_b} < 1.00$	$S = 3.21$ $F_b = 0.660 * F_y$	$M = 1.06$ $S * F_b = 6.20$	0.17
Combined Stresses (Local) (H1-2) (H2-1)	$\frac{f_a}{0.6 F_y} + \frac{f_{bx}}{F_{bx}} + \frac{f_{by}}{F_{by}} < 1.00$	$f_{bx} = 3.95$ $F_{bx} = 23.10$ $f_{by} = 0.00$ $F_{by} = 0.00$	$P = 0.79$ $A = 3.17$ $F_u = 60.00$ $f_b = M/S$	0.18
Axial Force (E2-1/2)	$\frac{f_a}{F_a} < 1.00$	$(kL/r)_x = 4$ $(kL/r)_y = 4$ $C_c = 128.10$	$P = 0.79$ $A_g = 3.17$ $F_a = 20.84$	0.01
Combined Stresses (tension) (H2-1)	$\frac{f_a}{F_t} + \frac{f_{bx}}{F_{bx}} + \frac{f_{by}}{F_{by}} < 1.00$	$F_{bx} = 23.10$ $F_{by} = 23.10$	$f_{bx} = 3.95$ $f_{by} = 0.00$	0.17

**Detailed Results Table for Beam 21**

Moments: kips\*foot , Forces: kips , Stresses: ksi , Section prop.: inch



CONSTRAINTS

- Sections : Check
- Steel Grade: A36

DESIGN DATA

- $K_x = 1.00$  -  $K_y = 1.00$
- Allow. Slend. : 200 (compr.) 300 (tens.)
- Allowable Deflection : 1/240
- Tension Area Reduction Factor : 1.00
- Building type : Unbraced

Section: L 2x2x1/4

$I_x = 0.35$   $I_y = 0.35$   $I_n^4$   $S_x = 0.25$   $S_y = 0.25$   $I_n^3$  Area = 0.94  
 $h = 2.00$   $b = 2.00$   $t = 0.25$   $e_y = 1.42$   $e_x = 1.42$   $J = 0.02$   $C_w = 0.00$   $I_n^6$   $I_v = 0.14$   $I_n^4$

DESIGN COMBINATION = 2



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Prepared by:

**Detailed Results Table for Beam 21**

Moments: kips\*foot , Forces: kips , Stresses: ksi , Section prop.: inch

Max. AXIAL Force = -1.05 (compr.) Max. SHEAR Force = 0.00

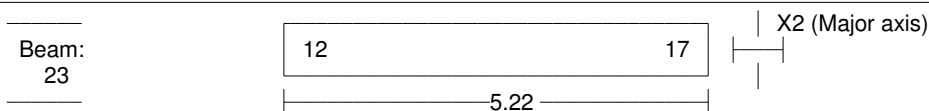
SECTION CLASSIFICATION: \*\*\* COMPACT \*\*\*

Limiting Ratios: Compact Non-Compact  
 d/t= 8.06 < 12.7 12.7 (Fy= 36.0)  
 b/t= 8.06 < 12.7

DESIGN	EQUATION	FACTORS	VALUES	RESULT
Axial Force (E2-1/2)	$\frac{fa}{Fa} < 1.00$	(kL/r) <sub>x</sub> = 103 (kL/r) <sub>y</sub> = 160 Cc = 126.31	P = 1.05 Ag = 0.94 Fa = 5.85	0.19

**Detailed Results Table for Beam 23**

Moments: kips\*foot , Forces: kips , Stresses: ksi , Section prop.: inch



## CONSTRAINTS

- Sections : Check  
 - Steel Grade: A36

## DESIGN DATA

- K<sub>x</sub> = 1.00 - K<sub>y</sub> = 1.00  
 - Allow. Slend. : 200 (compr.) 300 (tens.)  
 - Allowable Deflection : 1/240  
 - Tension Area Reduction Factor : 1.00  
 - Building type : Unbraced

Section: L 2x2x1/4

l<sub>x</sub> = 0.35 l<sub>y</sub> = 0.35in<sup>4</sup> S<sub>x</sub> = 0.25 S<sub>y</sub> = 0.25in<sup>3</sup> Area = 0.94  
 h = 2.00 b = 2.00in t = 0.25 e<sub>y</sub> = 1.42in e<sub>x</sub> = 1.42in  
 J = 0.02 C<sub>w</sub> = 0.00in<sup>6</sup> I<sub>v</sub> = 0.14 in<sup>4</sup>

DESIGN COMBINATION = 2

Max. AXIAL Force = 2.29 (tens.) Max. SHEAR Force = 0.00

SECTION CLASSIFICATION: \*\*\* COMPACT \*\*\*

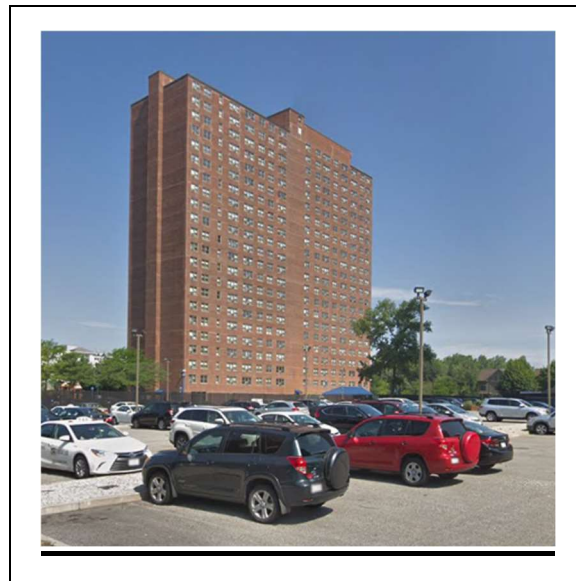
Limiting Ratios: Compact Non-Compact  
 d/t= 8.06 < 12.7 12.7 (Fy= 36.0)  
 b/t= 8.06 < 12.7

DESIGN	EQUATION	FACTORS	VALUES	RESULT
Axial Force (D1)	$\frac{F}{0.60AgF_y} < 1.00$	(kL/r) <sub>x</sub> = 103 (kL/r) <sub>y</sub> = 160	P = 2.29 Ag = 0.94 F <sub>y</sub> = 36.00	0.11

# Radio Frequency Safety Survey Report Prediction (RFSSRP)

## AT&T Rooftop Facility

<b>Site Name</b>	402 RINDGE AVE DUP	
<b>Site ID</b>	MA3001	
<b>Site Address</b>	402 RINDGE AVE DUP, CAMBRIDGE, MA 02140	
<b>Latitude:</b> 42.3930640 <b>Longitude:</b> -71.1398080 <b>USID:</b> 320585 <b>FA:</b> 15630860 <b>Centerline PN:</b> N/A <b>Pace ID:</b> MRCTB051969; MRCTB066609; MRCTB066606; MRCTB066584; MRCTB066586; MRCTB066604; MRCTB066607	<b>Prepared for:</b> Centerline on behalf of AT&T  <b>Report Date:</b> February 9, 2023  <b>Report Writer:</b> Benjamin Black <b>Report Reviewer:</b> Yasir Alqadhili	



### Statement of Compliance

AT&T will be compliant with FCC Regulations upon installation of recommended mitigation measures.

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## 1.0 GENERAL SUMMARY

Centerline Communications, LLC (“Centerline”) has been contracted to provide a Radio Frequency (RF) Analysis for the following AT&T rooftop facility to determine whether the facility is in compliance with federal standards and regulations regarding RF emissions. This analysis includes theoretical emissions calculations for all equipment for AT&T.

### 1.1 SITE SUMMARY

<b>Analysis Site Data</b>	
Site USID:	320585
Site FA#:	15630860
Site Name:	402 RINDGE AVE DUP
Site Address:	402 RINDGE AVE DUP, CAMBRIDGE MA 02140
Site Latitude:	42.3930640
Site Longitude:	-71.1398080
Facility Type:	Rooftop
<b>Compliance Summary</b>	
Compliance Status:	Compliant Upon Mitigation
Maximum AT&T Predicted MPE Level on Site (General Public Limit):	14,220.00%
Maximum Composite Predicted MPE Level on Site (General Public Limit):	14,220.00%
Maximum AT&T Predicted Ground Level MPE (General Public Limit):	0.13%
Maximum Composite Predicted Ground Level (General Public Limit):	0.13%
<b>Site Data Information</b>	
CD:	MA3001 Construction (Cambridge MA) 20221223 r1
RFDS:	NEW-ENGLAND_BOSTON_MA3001_2022-New- Site_New_ra9161_2101A0ZN6N_15630860_320585_05-12- 2022_Preliminary-In-Progress_v4.00

## 1.2 SITE MITIGATION

Signage and barriers are the primary means of mitigating accessible areas of exposure. Below is a summary of existing and recommended signage at this AT&T facility.

Existing Signage and Barriers (AT&T Sectors)										
Location	Information	Notice	Notice 2	Caution	Caution 2	Caution 2B	Caution 2C	Warning	Warning 2	Barriers
Alpha	0	0	0	0	0	0	0	0	0	0
Beta	0	0	0	0	0	0	0	0	0	0
Gamma	0	0	0	0	0	0	0	0	0	0
Access 1	0	0	0	0	0	0	0	0	0	0
Access 2	0	0	0	0	0	0	0	0	0	0

Recommended Signage and Barriers (AT&T Sectors) – Actions that MUST be Taken						
Location	Notice 2	Caution 2	Caution 2B	Caution 2C	Warning 2	Barriers
Alpha	0	0	0	2	0	0
Beta	0	0	0	2	0	0
Gamma	0	2	0	0	0	0
Access 1	0	0	0	0	0	0
Access 2	0	0	0	0	0	0

Final Compliant Configuration (AT&T Sectors) – All Mitigation Items that MUST be in Place										
Location	Information	Notice	Notice 2	Caution	Caution 2	Caution 2B	Caution 2C	Warning	Warning 2	Barriers
Alpha	0	0	0	0	0	0	2	0	0	0
Beta	0	0	0	0	0	0	2	0	0	0
Gamma	0	0	0	0	2	0	0	0	0	0
Access 1	0	0	0	0	0	0	0	0	0	0
Access 2	0	0	0	0	0	0	0	0	0	0

### Alpha:

- Install (2) Caution 2c signs on the safety fence behind the antennas as depicted in the site scale map (see p. 5).

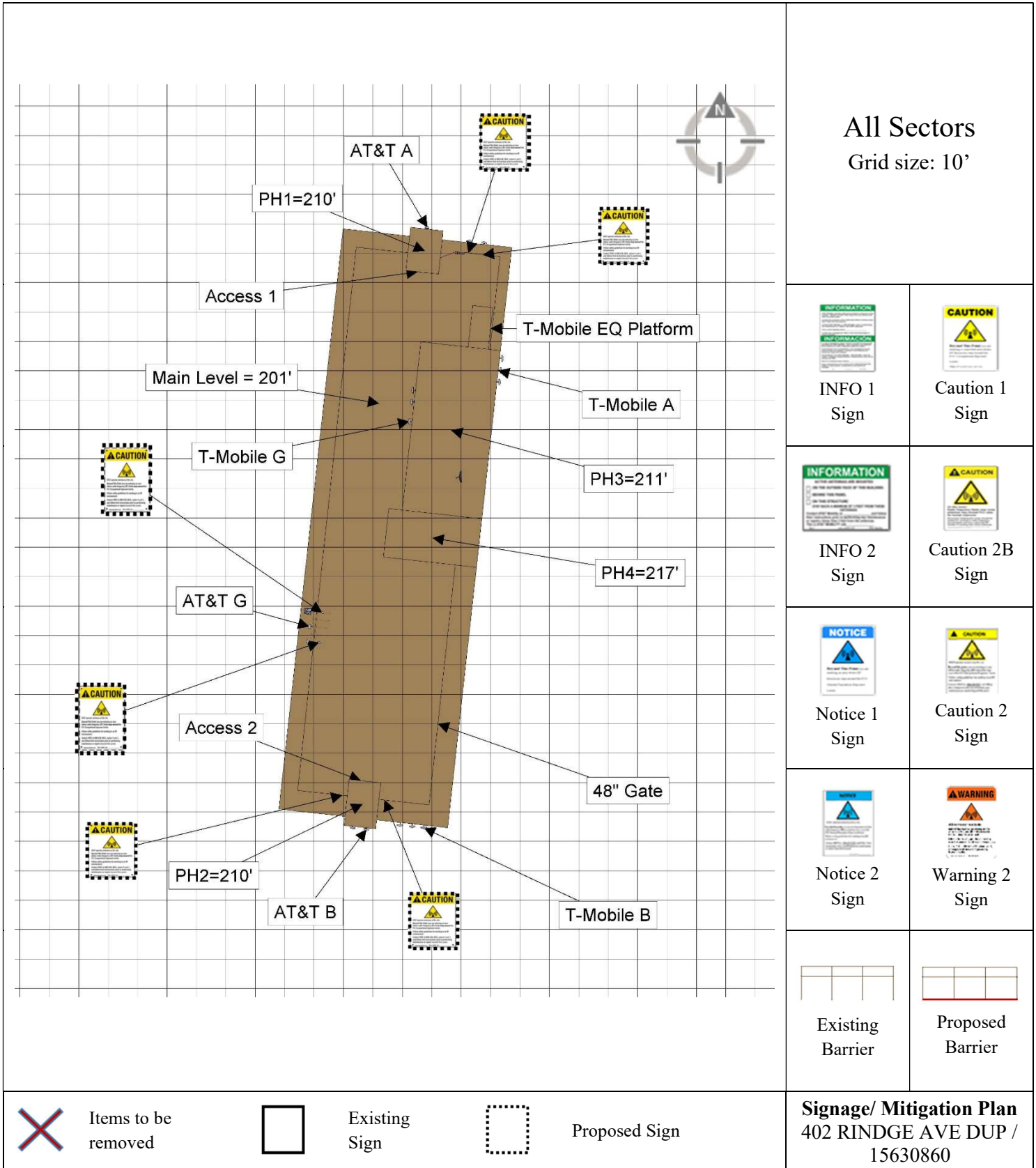
### Beta:

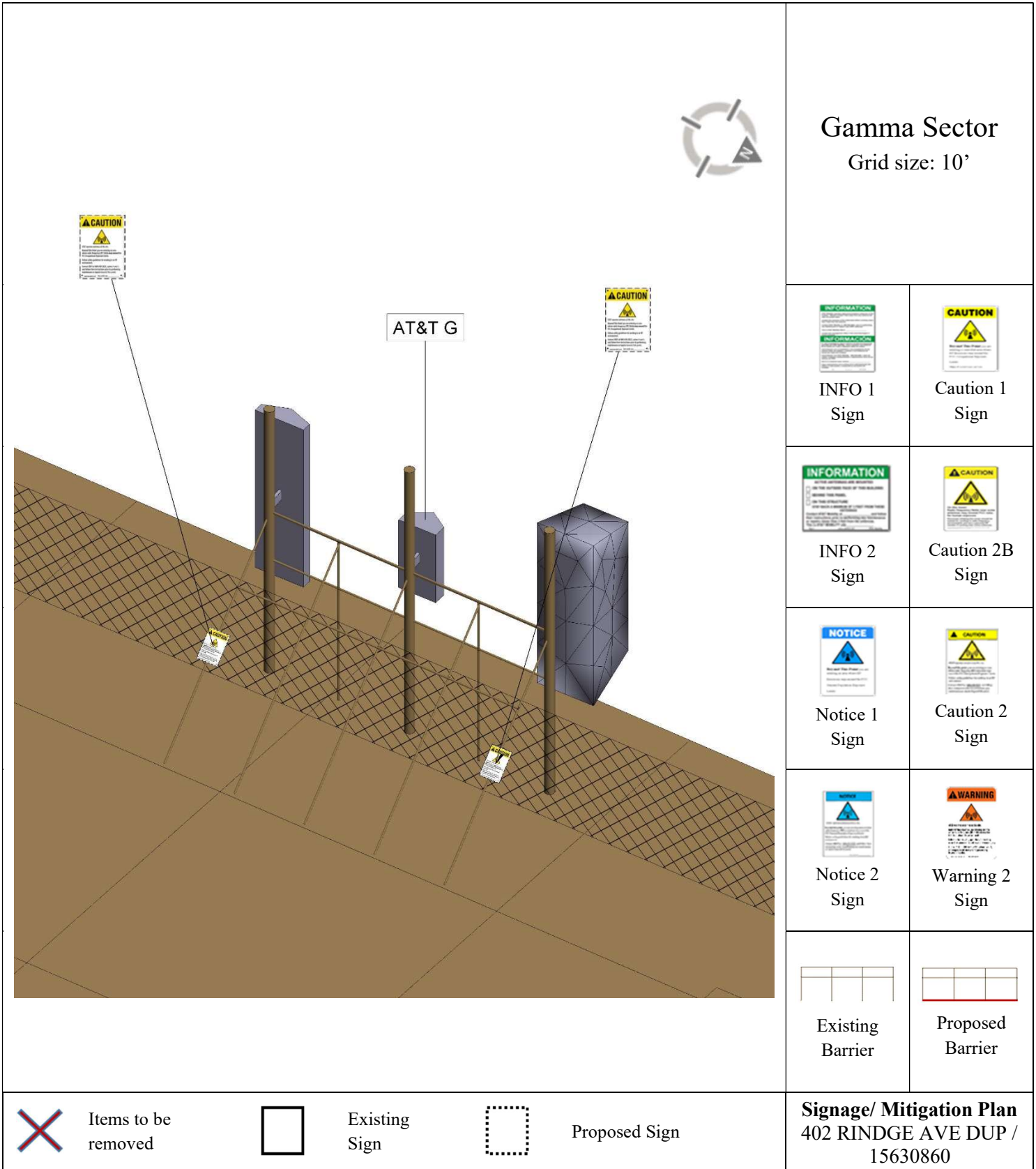
- Install (2) Caution 2c signs on the safety fence flanking the antennas as depicted in the site scale map (see p. 5).

### Gamma:

- Install (2) Caution 2 sign on the antenna mount behind the antennas as depicted in the site scale map (see p. 6).

2.0 SITE SCALE MAP





**Gamma Sector**  
Grid size: 10'

 INFO 1 Sign	 Caution 1 Sign
-----------------	--------------------

 INFO 2 Sign	 Caution 2B Sign
-----------------	---------------------

 Notice 1 Sign	 Caution 2 Sign
-------------------	--------------------

 Notice 2 Sign	 Warning 2 Sign
-------------------	--------------------

 Existing Barrier	 Proposed Barrier
----------------------	----------------------

Items to be removed	Existing Sign	Proposed Sign
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**Signage/ Mitigation Plan**  
402 RINDGE AVE DUP / 15630860

### 2.1 ADJACENT BUILDING ANALYSIS

- The AIR6449/6419 antennas do not exceed limits on any adjacent building. All adjacent buildings are >70' away laterally and/or >16' below the AIR6449/6419 antennas.







**3.0 ANTENNA INVENTORY**

ANT ID	Operator	Type/Make/Model	Freq (MHz)	TPO (watts)	Azimuth (°)	Mech. Tilt (°)	Elec. Tilt (°)	Gain (dBd)	ERP (watts)	Antenna Length (ft.)	Antenna Z Value (ft.) AGL*
1	AT&T	Panel/Ericsson/AIR 6419	3450	54.22	10	0	6	23.05	10943.58	2.35	207.41
2	AT&T	Panel/Ericsson/AIR 6449	3700	86.75	10	0	6	23.55	19645.79	2.55	203.31
3	AT&T	Panel/CCI/TPA65R-BU6D	700	120.00	10	0	2 to 12	12.35	2061.49	5.93	195.04
3	AT&T	Panel/CCI/TPA65R-BU6D	2300	75.00	10	0	0 to 8	15.85	2884.44	5.93	195.04
4	AT&T	Panel/CCI/DMP65R-BU6D	700	120.00	10	0	2 to 12	11.85	1837.3	5.93	195.04
4	AT&T	Panel/CCI/DMP65R-BU6D	850	120.00	10	0	2 to 12	12.45	2109.51	5.93	195.04
4	AT&T	Panel/CCI/DMP65R-BU6D	1900	120.00	10	0	0 to 8	15.95	4722.6	5.93	195.04
4	AT&T	Panel/CCI/DMP65R-BU6D	2100	120.00	10	0	0 to 8	15.95	4722.6	5.93	195.04
5	AT&T	Panel/CCI/TPA65R-BU6D	700	120.00	190	0	2 to 12	12.35	2061.49	5.93	204.04
5	AT&T	Panel/CCI/TPA65R-BU6D	2300	75.00	190	0	0 to 8	15.85	2884.44	5.93	204.04
6	AT&T	Panel/CCI/DMP65R-BU6D	700	120.00	190	0	2 to 12	11.85	1837.3	5.93	204.04
6	AT&T	Panel/CCI/DMP65R-BU6D	850	120.00	190	0	2 to 12	12.45	2109.51	5.93	204.04
6	AT&T	Panel/CCI/DMP65R-BU6D	1900	120.00	190	0	0 to 8	15.95	4722.6	5.93	204.04
6	AT&T	Panel/CCI/DMP65R-BU6D	2100	120.00	190	0	0 to 8	15.95	4722.6	5.93	204.04
7	AT&T	Panel/Ericsson/AIR 6419	3450	54.22	190	0	6	23.05	10943.58	2.35	199.41
8	AT&T	Panel/Ericsson/AIR 6449	3700	86.75	190	0	6	23.55	19645.79	2.55	195.31
9	AT&T	Panel/CCI/OPA65R-BU6D	700	120.00	275	0	2 to 12	12.15	1968.71	5.93	204.04
9	AT&T	Panel/CCI/OPA65R-BU6D	2300	75.00	275	0	0 to 8	16.05	3020.38	5.93	204.04
10	AT&T	Panel/Ericsson/AIR 6449	3700	86.75	275	0	6	23.55	19645.79	2.55	205.73



ANT ID	Operator	Type/Make/Model	Freq (MHz)	TPO (watts)	Azimuth (°)	Mech. Tilt (°)	Elec. Tilt (°)	Gain (dBd)	ERP (watts)	Antenna Length (ft.)	Antenna Z Value (ft.) AGL*
11	AT&T	MATSING/MS-MBA-3.2-H4-L4	700	240.00	275	0		11.35	3275	6	204.00
11	AT&T	MATSING/MS-MBA-3.2-H4-L4	850	240.00	275	0		11.35	3275	6	204.00
11	AT&T	MATSING/MS-MBA-3.2-H4-L4	1900	360.00	275	0		15.65	13222.16	6	204.00
11	AT&T	MATSING/MS-MBA-3.2-H4-L4	2100	360.00	275	0		15.65	13222.16	6	204.00
12	T-Mobile	Panel/Generic 6ft.	650	120.00	90	0	0	11.95	1880.1	6	205.00
12	T-Mobile	Panel/Generic 6ft.	700	120.00	90	0	0	12.35	2061.49	6	205.00
13	T-Mobile	Panel/Generic 6ft.	1900	120.00	90	0	2	15.55	4307.06	6	205.00
14	T-Mobile	Panel/Generic 6ft.	2100	120.00	90	0	2	15.55	4307.06	6	205.00
15	T-Mobile	Panel/Generic 6ft.	650	120.00	180	0	0	11.95	1880.1	6	192.00
15	T-Mobile	Panel/Generic 6ft.	700	120.00	180	0	0	12.35	2061.49	6	192.00
16	T-Mobile	Panel/Generic 6ft.	1900	120.00	180	0	2	15.55	4307.06	6	192.00
17	T-Mobile	Panel/Generic 6ft.	2100	120.00	180	0	2	15.55	4307.06	6	192.00
18	T-Mobile	Panel/Generic 6ft.	650	120.00	270	0	0	11.95	1880.1	6	205.00
18	T-Mobile	Panel/Generic 6ft.	700	120.00	270	0	0	12.35	2061.49	6	205.00
19	T-Mobile	Panel/Generic 6ft.	1900	120.00	270	0	2	15.55	4307.06	6	205.00
20	T-Mobile	Panel/Generic 6ft.	2100	120.00	270	0	2	15.55	4307.06	6	205.00
21	Other	Parabolic reflector/ Generic/120cm Dish	18000	0.01	90	0		44.1	257.04	3.94	212.03

\*AGL = Above Ground Level

Note: Z Value represents the bottom tip height of the antenna  
75% duty cycle is assumed for all AT&T antennas

AT&T AIR6449/6419 antennas were calculated using AT&T's preferred conservative power reduction factor of 0.32

**4.0 PREDICTED RF EXPOSURE LEVELS**

Calculations performed based upon the data listed for this facility have produced results that are above allowable MPE limits for General Population and Occupational limits for exposure to RF emissions as specified by federal standards.

<b>Maximum AT&amp;T Predicted MPE Level on Site:</b>	<b>% of MPE Limit:</b>
Accessible <b>General Population</b> MPE Limits:	<b>14,220.00%</b>
Accessible <b>Occupational</b> MPE Limits:	<b>2,844.00%</b>

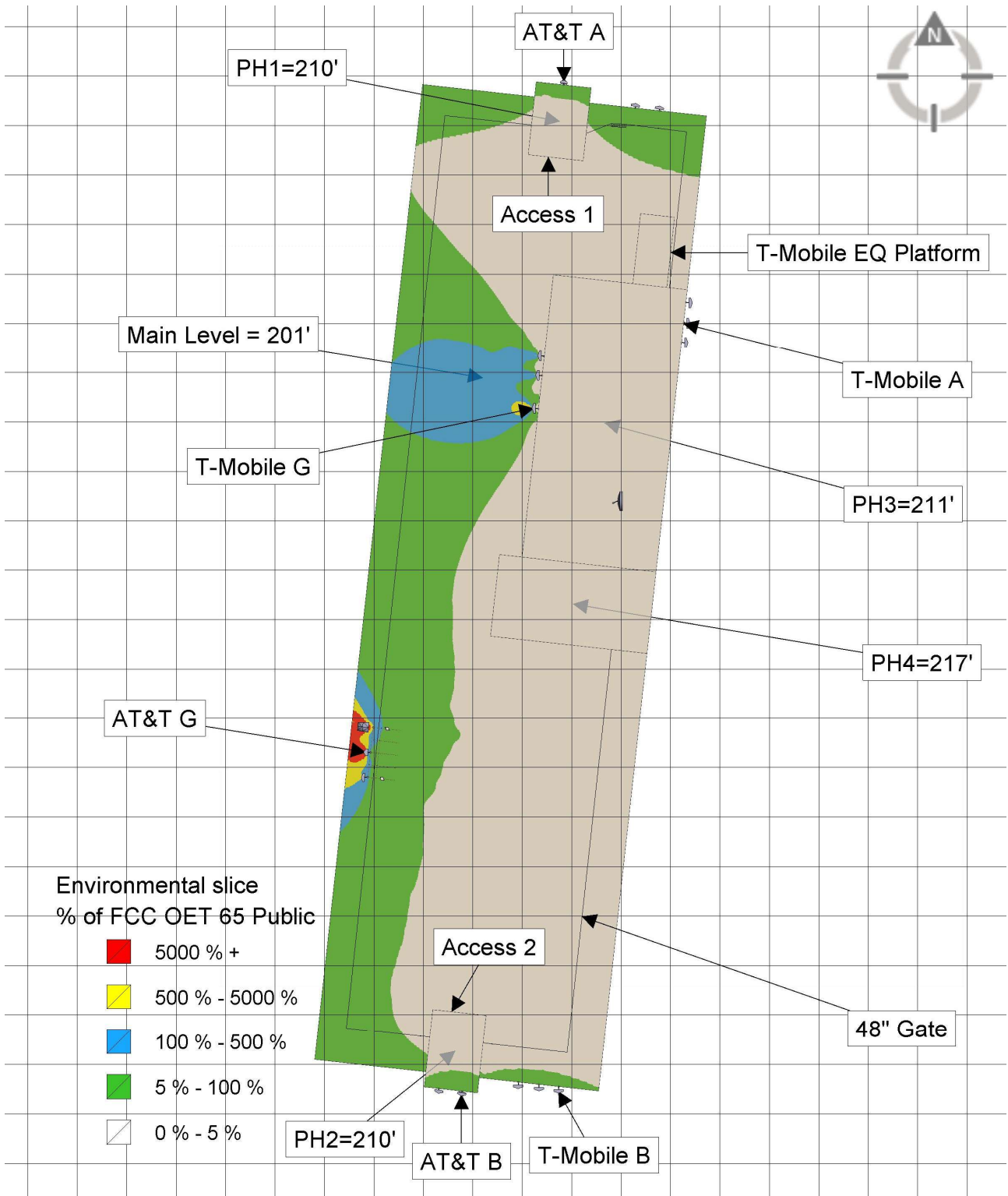
<b>Maximum Composite Predicted MPE Level on Site:</b>	<b>% of MPE Limit:</b>
Accessible <b>General Population</b> MPE Limits:	<b>14,220.00%</b>
Accessible <b>Occupational</b> MPE Limits:	<b>2,844.00%</b>

<b>Maximum AT&amp;T Predicted Ground Level MPE:</b>	<b>% of MPE Limit:</b>
Accessible <b>General Population</b> MPE Limits:	<b>0.13%</b>
Accessible <b>Occupational</b> MPE Limits:	<b>0.03%</b>

<b>Maximum Composite Predicted Ground Level MPE:</b>	<b>% of MPE Limit:</b>
Accessible <b>General Population</b> MPE Limits:	<b>0.13%</b>
Accessible <b>Occupational</b> MPE Limits:	<b>0.03%</b>

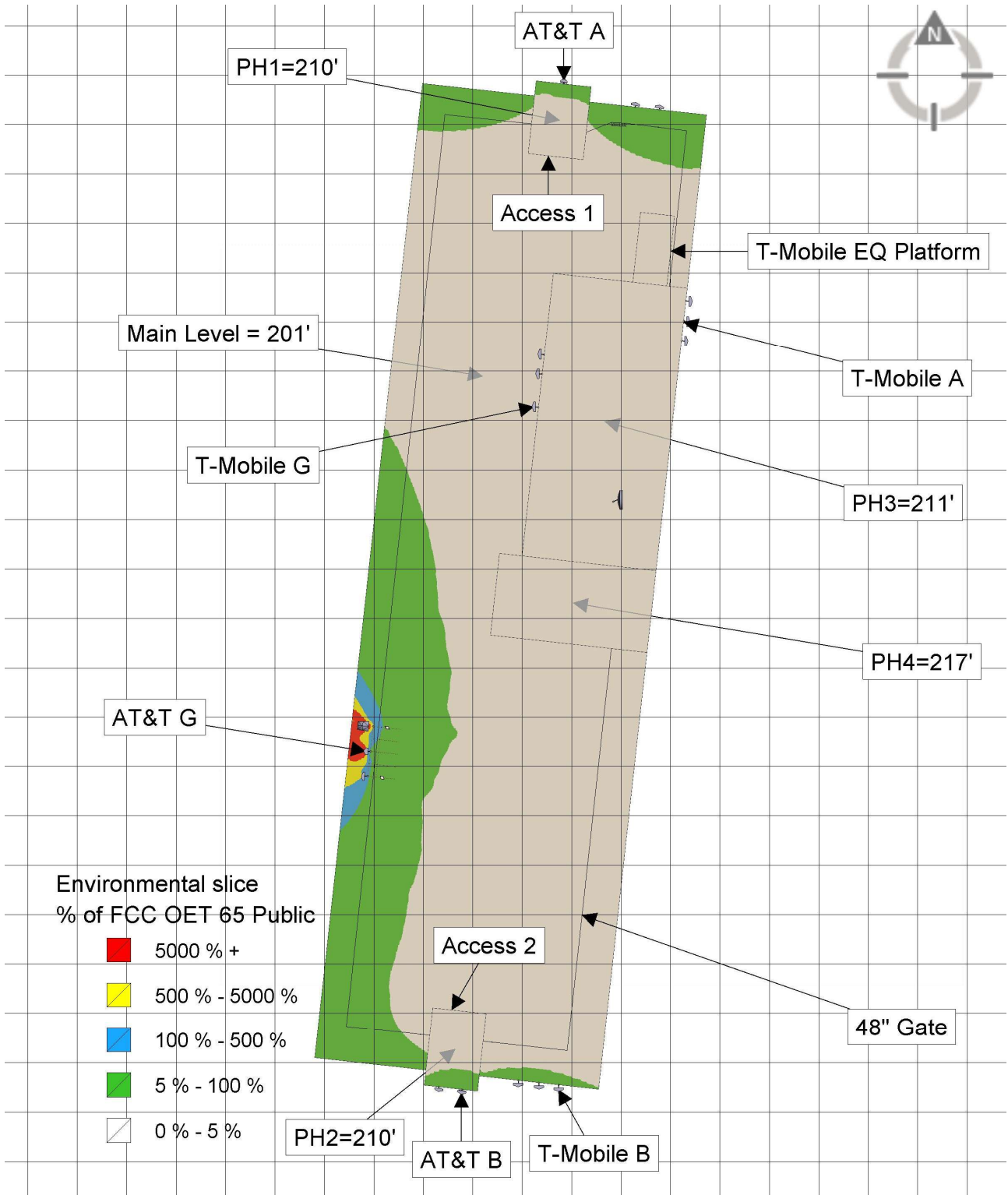
5.0 RF EXPOSURE DIAGRAMS

Overview All Carriers



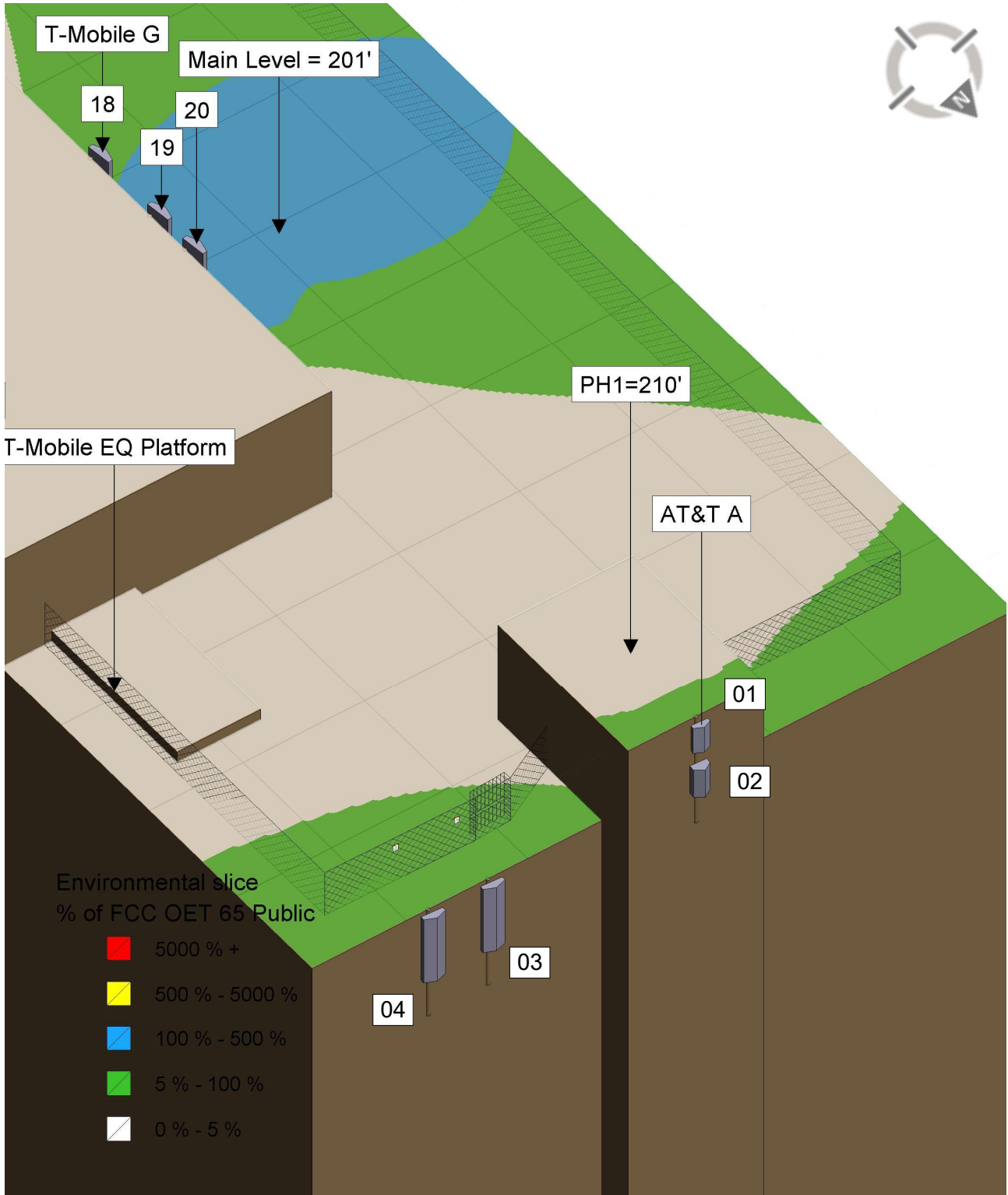
Grid Size: 10'

Overview AT&T Only



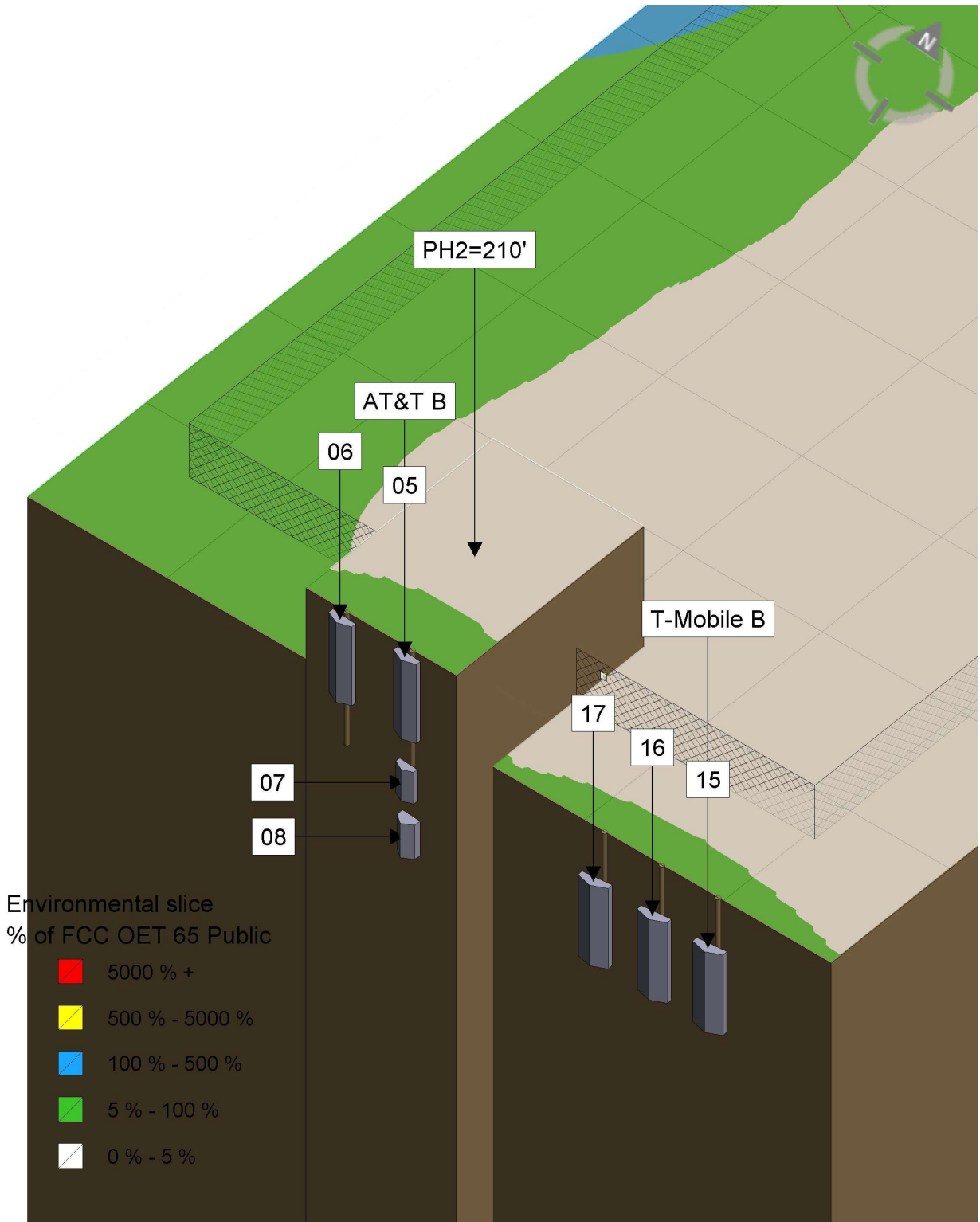
Grid Size: 10'

### Alpha Sector Overview



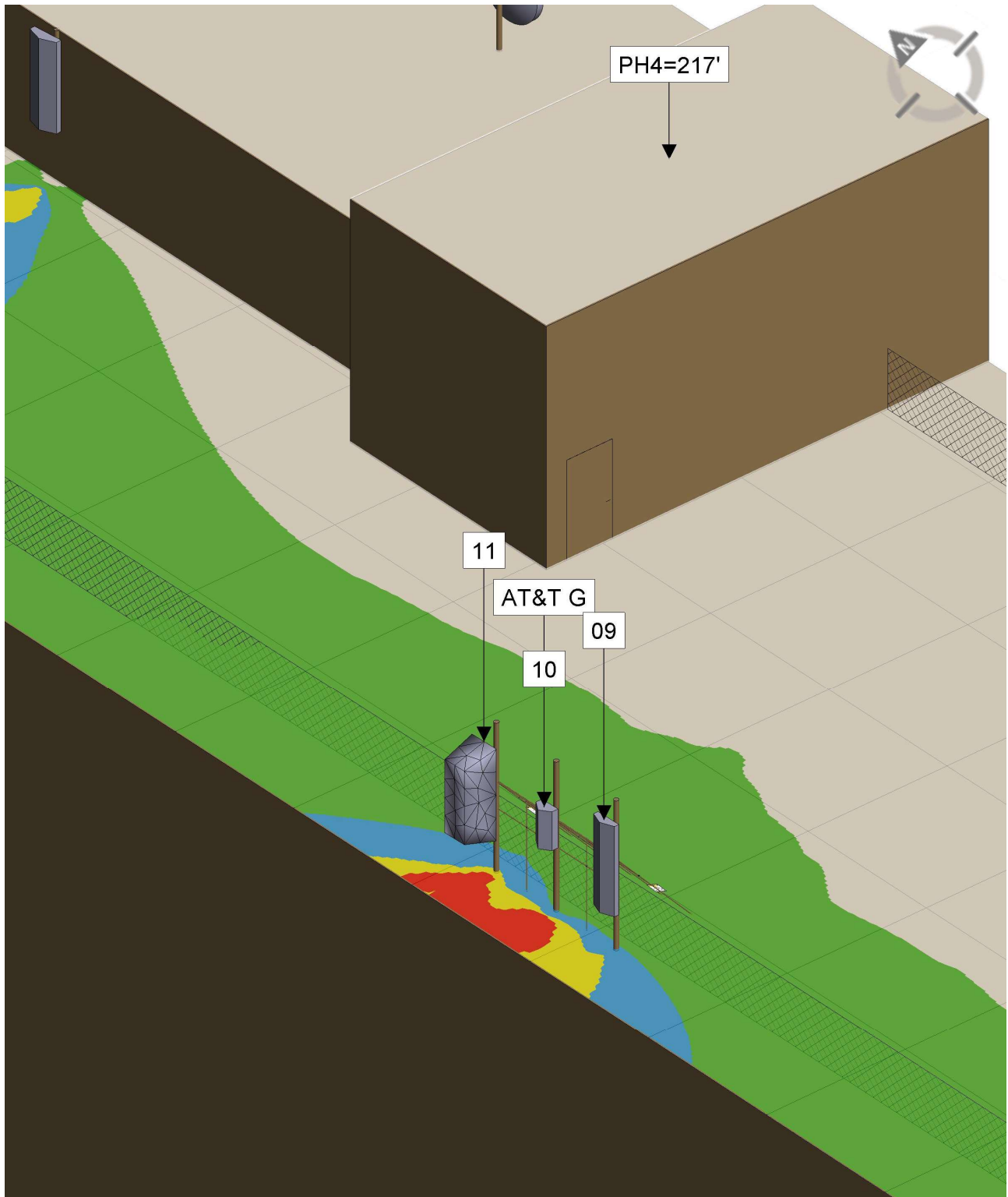
Grid Size: 10'

### Beta Sector Overview



Grid Size: 10'

### Gamma Sector Overview



Grid Size: 10'



## 6.0 STATEMENT OF COMPLIANCE

Centerline conducted worst case modeling to determine whether the rooftop facility located at 402 RINDGE AVE DUP CAMBRIDGE, Massachusetts is in compliance with FCC Regulations.

Based on the information analyzed, AT&T will be compliant with FCC Regulations once the mitigation measures recommended in this report are implemented.

## 6.1 RECOMMENDATIONS

Existing Signage and Barriers (AT&T Sectors)										
Location	Information	Notice	Notice 2	Caution	Caution 2	Caution 2B	Caution 2C	Warning	Warning 2	Barriers
Alpha	0	0	0	0	0	0	0	0	0	0
Beta	0	0	0	0	0	0	0	0	0	0
Gamma	0	0	0	0	0	0	0	0	0	0
Access 1	0	0	0	0	0	0	0	0	0	0
Access 2	0	0	0	0	0	0	0	0	0	0

Recommended Signage and Barriers (AT&T Sectors) – Actions that MUST be Taken						
Location	Notice 2	Caution 2	Caution 2B	Caution 2C	Warning 2	Barriers
Alpha	0	0	0	2	0	0
Beta	0	0	0	2	0	0
Gamma	0	2	0	0	0	0
Access 1	0	0	0	0	0	0
Access 2	0	0	0	0	0	0

Final Compliant Configuration (AT&T Sectors) – All Mitigation Items that MUST be in Place										
Location	Information	Notice	Notice 2	Caution	Caution 2	Caution 2B	Caution 2C	Warning	Warning 2	Barriers
Alpha	0	0	0	0	0	0	2	0	0	0
Beta	0	0	0	0	0	0	2	0	0	0
Gamma	0	0	0	0	2	0	0	0	0	0
Access 1	0	0	0	0	0	0	0	0	0	0
Access 2	0	0	0	0	0	0	0	0	0	0

### Alpha:

- Install (2) Caution 2c signs on the safety fence behind the antennas as depicted in the site scale map (see p. 5).

### Beta:

- Install (2) Caution 2c signs on the safety fence flanking the antennas as depicted in the site scale map (see p. 5).

### Gamma:

- Install (2) Caution 2 sign on the antenna mount behind the antennas as depicted in the site scale map (see p. 6).

APPENDIX A: AT&T RF SIGNAGE

Sign	Description	Sign	Description
	<p><b>Information 1 Sign</b> Gives guidelines on how to proceed and who to contact regarding areas that may exceed either the FCC’s General Population or Occupational emissions limits.</p>		<p><b>Caution 2C Sign</b> Gives specific information on how to proceed and who to contact regarding antennas that are façade mounted, concealed or on stand-alone structures.</p>
	<p><b>Blue Notice 1 Sign</b> Used to alert individuals that they are entering an area that may exceed the FCC’s General Population emissions limit. Must be positioned such that persons approaching from any angle have ample warning to avoid the marked areas.</p>		<p><b>Blue Notice 2 Sign</b> Used to alert individuals that they are entering an area that may exceed the FCC’s General Population emissions limits. To be used on barriers or antenna sectors as a hybrid of the Information 1 and Blue Notice 1 signs.</p>
	<p><b>Yellow Caution 1 Sign-Rooftop</b> Used to inform individuals that they are entering an area that may exceed the FCC’s Occupational emissions limit. Must be positioned such that persons approaching from any angle have ample warning to avoid the marked areas.</p>		<p><b>Yellow Caution 2 Sign-Rooftop</b> Used to alert individuals that they are entering an area that may exceed the FCC’s Occupational emissions limit. To be used on barriers or antenna sectors as a hybrid of the Information 1 and Yellow Caution 1 signs.</p>
	<p><b>Yellow Caution 2B Sign- Tower</b> Used to inform individuals that they are entering an area that may exceed the FCC’s Occupational emissions limits. Must be placed at the base of the tower to warn tower climbers of potential for exposure.</p>		<p><b>Warning 2 Sign</b> Used to inform individuals that they are entering an area that may exceed the FCC’s Occupational emissions limit by a factor of 10 or greater. Must be positioned such that persons approaching from any angle have ample warning to avoid the marked areas.</p>

## APPENDIX B: FCC GUIDELINES AND EMISSIONS THRESHOLD LIMITS

All information used in this report was analyzed as a percentage of the Maximum Permissible Exposure (% MPE) limits as detailed in 47 CFR § 1.1310 as well as Federal Communications Commission (FCC) OET Bulletin 65 Edition 97-01. The FCC MPE limits are typically expressed in units of milliwatts per square centimeter ( $\text{mW}/\text{cm}^2$ ) or microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The exposure limits vary depending upon the frequencies being utilized. The General Population/Uncontrolled MPE limit (in  $\text{mW}/\text{cm}^2$ ) for frequencies between 300 and 1500 is defined as frequency (in MHz) divided by 1500 ( $f_{\text{MHz}}/1500$ ). Frequencies between 1500 and 100,000 MHz have a General Population/Uncontrolled MPE limit of  $1 \text{ mW}/\text{cm}^2$  ( $1000 \mu\text{W}/\text{cm}^2$ ). The calculated power density at each sample point divided by the limit at each calculated frequency provides a result in % MPE. Summing the calculated % MPE from all contributors provides a cumulative % MPE at a particular sample point. Because exposure limits may vary for each frequency band, it is necessary to report % MPE rather than power density.

All results were compared to the FCC radio frequency exposure rules as detailed in 47 CFR § 1.1307(b) to determine compliance with the MPE limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits, as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means. Additional details can be found in FCC OET 65.

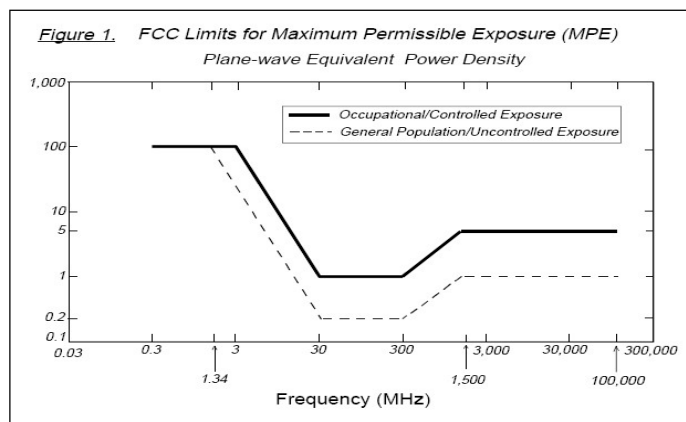
The FCC Mandates that if a site is found to be out of compliance with regard to exposure that any system operator contributing 5% or more to areas exceeding the FCC's allowable limits will be responsible for bringing the site into compliance.

Additional details can be found in FCC OET 65.

Table 1: Limits for Maximum Permissible Exposure (MPE)				
(A) Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (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
300-1,500	--	--	f/300	6
1,500-100,000	--	--	5	6
(B) Limits for General Public/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (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
300-1,500	--	--	f/1,500	30
1,500-100,000	--	--	1.0	30

f = Frequency in (MHz)

\* Plane-wave equivalent power density



## APPENDIX C: CALCULATION METHODOLOGY

IXUS electromagnetic energy (EME) calculation software was used to assess all RF field levels presented in this study. IXUS software uses a fast and accurate EME calculation tool that allows for the determination of RF field strength in the vicinity of radio communication base stations and transmitters. At its core, the IXUS EME calculation module implements evaluation techniques detailed in the ITU-T K.61, CENELEC EN 50383, and IEC 62232 specifications and referenced in *C95.3 IEEE Recommended Practice for Measurements and Computations of Electric, Magnetic, and Electromagnetic Fields with Respect to Human Exposure to Such Fields, 0 Hz to 300 GHz*. The EME calculation result at any point in 3D space is achieved via a synthetic ray tracing technique, a conservative cylindrical envelope method, or through full-wave electromagnetic simulation. The ray tracing method is an advanced computation method described in IEC 622322 where the power is summed from elemental sources representing the individual components of the antenna which are selected by an analysis of published manufacturer datasheets and antenna pattern information. The selection of the solution method is determined by the particular antenna being considered.

## **APPENDIX D: CERTIFICATIONS**

I, Benjamin Black, preparer of this report certify that I am fully trained and aware of the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation. I have been trained in the procedures and requirements outlined in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document.

Benjamin Black

2/9/2023

I, Yasir Alqadhili, reviewer and approver of this report certify that I am fully trained and aware of the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation. I have been trained in the procedures and requirements outlined in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document.

Yasir Alqadhili

2/9/2023

## **APPENDIX E: PROPRIETARY STATEMENT**

This report was prepared for the use of AT&T to meet all applicable FCC requirements. It was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same locale under like circumstances. The conclusions provided by Centerline Communications, LLC are based solely on the information provided by AT&T and all observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided to Centerline Communications, LLC so that our conclusions may be revised and modified, if necessary. This report has been prepared in accordance with Standard Conditions for Engagement and authorized proposal, both of which are integral parts of this report. No other warranty, expressed or implied, is made.

## Subpart CC—State and Local Review of Applications for Wireless Service Facility Modification

### §1.40001 Wireless Facility Modifications.

**(a) Purpose.** These rules implement section 6409 of the Spectrum Act (codified at 47 U.S.C. 1455), which requires a State or local government to approve any eligible facilities request for a modification of an existing tower or base station that does not substantially change the physical dimensions of such tower or base station.

**(b) Definitions.** Terms used in this section have the following meanings.

**(1) Base station.** A structure or equipment at a fixed location that enables Commission-licensed or authorized wireless communications between user equipment and a communications network. The term does not encompass a tower as defined in this subpart or any equipment associated with a tower.

(i) The term includes, but is not limited to, equipment associated with wireless communications services such as private, broadcast, and public safety services, as well as unlicensed wireless services and fixed wireless services such as microwave backhaul.

(ii) The term includes, but is not limited to, radio transceivers, antennas, coaxial or fiber-optic cable, regular and backup power supplies, and comparable equipment, regardless of technological configuration (including Distributed Antenna Systems and small-cell networks).

(iii) The term includes any structure other than a tower that, at the time the relevant application is filed with the State or local government under this section, supports or houses equipment described in paragraphs (b)(1)(i) through (ii) of this section that has been reviewed and approved under the applicable zoning or siting process, or under another State or local regulatory review process, even if the structure was not built for the sole or primary purpose of providing such support.

(iv) The term does not include any structure that, at the time the relevant application is filed with the State or local government under this section, does not support or house equipment described in paragraphs (b)(1)(i)-(ii) of this section.

**(2) Collocation.** The mounting or installation of transmission equipment on an eligible support structure for the purpose of transmitting and/or receiving radio frequency signals for communications purposes.

**(3) Eligible facilities request.** Any request for modification of an existing tower or base station that does not substantially change the physical dimensions of such tower or base station, involving:

- (i) Collocation of new transmission equipment;
- (ii) Removal of transmission equipment; or



(iii) Replacement of transmission equipment.

**(4) Eligible support structure.** Any tower or base station as defined in this section, provided that it is existing at the time the relevant application is filed with the State or local government under this section.

**(5) Existing.** A constructed tower or base station is existing for purposes of this section if it has been reviewed and approved under the applicable zoning or siting process, or under another State or local regulatory review process, provided that a tower that has not been reviewed and approved because it was not in a zoned area when it was built, but was lawfully constructed, is existing for purposes of this definition.

**(6) Site.** For towers other than towers in the public rights-of-way, the current boundaries of the leased or owned property surrounding the tower and any access or utility easements currently related to the site, and, for other eligible support structures, further restricted to that area in proximity to the structure and to other transmission equipment already deployed on the ground.

**(7) Substantial change.** A modification substantially changes the physical dimensions of an eligible support structure if it meets any of the following criteria:

(i) For towers other than towers in the public rights-of-way, it increases the height of the tower by more than 10% or by the height of one additional antenna array with separation from the nearest existing antenna not to exceed twenty feet, whichever is greater; for other eligible support structures, it increases the height of the structure by more than 10% or more than ten feet, whichever is greater;

(A) Changes in height should be measured from the original support structure in cases where deployments are or will be separated horizontally, such as on buildings' rooftops; in other circumstances, changes in height should be measured from the dimensions of the tower or base station, inclusive of originally approved appurtenances and any modifications that were approved prior to the passage of the Spectrum Act.

(ii) For towers other than towers in the public rights-of-way, it involves adding an appurtenance to the body of the tower that would protrude from the edge of the tower more than twenty feet, or more than the width of the tower structure at the level of the appurtenance, whichever is greater; for other eligible support structures, it involves adding an appurtenance to the body of the structure that would protrude from the edge of the structure by more than six feet;

(iii) For any eligible support structure, it involves installation of more than the standard number of new equipment cabinets for the technology involved, but not to exceed four cabinets; or, for towers in the public rights-of-way and base stations, it involves installation of any new equipment cabinets on the ground if there are no pre-existing ground cabinets associated with the structure, or else involves installation of ground cabinets that are more than 10% larger in height or overall volume than any other ground cabinets associated with the structure;

(iv) It entails any excavation or deployment outside the current site;

(v) It would defeat the concealment elements of the eligible support structure; or

(vi) It does not comply with conditions associated with the siting approval of the construction or modification of the eligible support structure or base station equipment, provided however that this limitation does not apply to any modification that is non-compliant only in a manner that would not exceed the thresholds identified in §1.40001(b)(7)(i) through (iv).

**(8) Transmission equipment.** Equipment that facilitates transmission for any Commission-licensed or authorized wireless communication service, including, but not limited to, radio transceivers, antennas, coaxial or fiber-optic cable, and regular and backup power supply. The term includes equipment associated with wireless communications services including, but not limited to, private, broadcast, and public safety services, as well as unlicensed wireless services and fixed wireless services such as microwave backhaul.

**(9) Tower.** Any structure built for the sole or primary purpose of supporting any Commission-licensed or authorized antennas and their associated facilities, including structures that are constructed for wireless communications services including, but not limited to, private, broadcast, and public safety services, as well as unlicensed wireless services and fixed wireless services such as microwave backhaul, and the associated site.

**(c) Review of applications.** A State or local government may not deny and shall approve any eligible facilities request for modification of an eligible support structure that does not substantially change the physical dimensions of such structure.

**(1) Documentation requirement for review.** When an applicant asserts in writing that a request for modification is covered by this section, a State or local government may require the applicant to provide documentation or information only to the extent reasonably related to determining whether the request meets the requirements of this section. A State or local government may not require an applicant to submit any other documentation, including but not limited to documentation intended to illustrate the need for such wireless facilities or to justify the business decision to modify such wireless facilities.

**(2) Timeframe for review.** Within 60 days of the date on which an applicant submits a request seeking approval under this section, the State or local government shall approve the application unless it determines that the application is not covered by this section.

**(3) Tolling of the timeframe for review.** The 60-day period begins to run when the application is filed, and may be tolled only by mutual agreement or in cases where the reviewing State or local government determines that the application is incomplete. The timeframe for review is not tolled by a moratorium on the review of applications.

(i) To toll the timeframe for incompleteness, the reviewing State or local government must provide written notice to the applicant within 30 days of receipt of the application, clearly and

specifically delineating all missing documents or information. Such delineated information is limited to documents or information meeting the standard under paragraph (c)(1) of this section.

(ii) The timeframe for review begins running again when the applicant makes a supplemental submission in response to the State or local government's notice of incompleteness.

(iii) Following a supplemental submission, the State or local government will have 10 days to notify the applicant that the supplemental submission did not provide the information identified in the original notice delineating missing information. The timeframe is tolled in the case of second or subsequent notices pursuant to the procedures identified in this paragraph (c)(3). Second or subsequent notices of incompleteness may not specify missing documents or information that were not delineated in the original notice of incompleteness.

**(4) Failure to act.** In the event the reviewing State or local government fails to approve or deny a request seeking approval under this section within the timeframe for review (accounting for any tolling), the request shall be deemed granted. The deemed grant does not become effective until the applicant notifies the applicable reviewing authority in writing after the review period has expired (accounting for any tolling) that the application has been deemed granted.

**(5) Remedies.** Applicants and reviewing authorities may bring claims related to Section 6409(a) to any court of competent jurisdiction.

[80 FR 1269, Jan. 8, 2015]

62266034 v1-WorkSiteUS-024519/0782



# PUBLIC NOTICE

Federal Communications Commission  
445 12<sup>th</sup> St., S.W.  
Washington, D.C. 20554

News Media Information 202 / 418-0500  
Internet: <http://www.fcc.gov>  
TTY: 1-888-835-5322

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## WIRELESS TELECOMMUNICATIONS BUREAU OFFERS GUIDANCE ON INTERPRETATION OF SECTION 6409(a) OF THE MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012

DA 12-2047  
January 25, 2013

On February 22, 2012, the Middle Class Tax Relief and Job Creation Act of 2012 (Tax Act)<sup>1</sup> became law. Section 6409(a) of the Tax Act provides that a state or local government “may not deny, and shall approve” any request for collocation, removal, or replacement of transmission equipment on an existing wireless tower or base station, provided this action does not substantially change the physical dimensions of the tower or base station.<sup>2</sup> The full text of Section 6409(a) is reproduced in the Appendix to this Public Notice.

To date, the Commission has not received any formal petition to interpret or apply the provisions of Section 6409(a). We also are unaware of any judicial precedent interpreting or applying its terms. The Wireless Telecommunications Bureau has, however, received informal inquiries from service providers, facilities owners, and state and local governments seeking guidance as to how Section 6409(a) should be applied. In order to assist interested parties, this Public Notice summarizes the Bureau’s understanding of Section 6409(a) in response to several of the most frequently asked questions.<sup>3</sup>

### What does it mean to “substantially change the physical dimensions” of a tower or base station?

Section 6409(a) does not define what constitutes a “substantial[] change” in the dimensions of a tower or base station. In a similar context, under the *Nationwide Collocation Agreement* with the Advisory Council on Historic Preservation and the National Conference of State Historic Preservation Officers, the Commission has applied a four-prong test to determine whether a collocation will effect a “substantial increase in the size of [a] tower.”<sup>4</sup> A proposed collocation that does not involve a substantial increase in

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<sup>1</sup> Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. 112-96, H.R. 3630, 126 Stat. 156 (enacted Feb. 22, 2012) (Tax Act).

<sup>2</sup> *Id.*, § 6409(a).

<sup>3</sup> Although we offer this interpretive guidance to assist parties in understanding their obligations under Section 6409(a), *see, e.g., Truckers United for Safety v. Federal Highway Administration*, 139 F.3d 934 (D.C.Cir. 1998), the Commission remains free to exercise its discretion to interpret Section 6409(a) either by exercising its rulemaking authority or through adjudication. With two exceptions not relevant here, the Tax Act expressly grants the Commission authority to “implement and enforce” this and other provisions of Title VI of that Act “as if this title is a part of the Communications Act of 1934 (47 U.S.C. 151 et seq.)” Tax Act § 6003.

<sup>4</sup> 47 C.F.R. Part 1, App. B, Nationwide Programmatic Agreement for the Collocation of Wireless Antennas, § I.C (*Nationwide Collocation Agreement*).

size is ordinarily excluded from the Commission's required historic preservation review under Section 106 of the National Historic Preservation Act (NHPA).<sup>5</sup> The Commission later adopted the same definition in the *2009 Declaratory Ruling* to determine whether an application will be treated as a collocation when applying Section 332(c)(7) of the Communications Act of 1934.<sup>6</sup> The Commission has also applied a similar definition to determine whether a modification of an existing registered tower requires public notice for purposes of environmental review.<sup>7</sup>

Under Section I.C of the *Nationwide Collocation Agreement*, a "substantial increase in the size of the tower" occurs if:

- 1) [t]he mounting of the proposed antenna on the tower would increase the existing height of the tower by more than 10%, or by the height of one additional antenna array with separation from the nearest existing antenna not to exceed twenty feet, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this paragraph if necessary to avoid interference with existing antennas; or
- 2) [t]he mounting of the proposed antenna would involve the installation of more than the standard number of new equipment cabinets for the technology involved, not to exceed four, or more than one new equipment shelter; or
- 3) [t]he mounting of the proposed antenna would involve adding an appurtenance to the body of the tower that would protrude from the edge of the tower more than twenty feet, or more than the width of the tower structure at the level of the appurtenance, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this paragraph if necessary to shelter the antenna from inclement weather or to connect the antenna to the tower via cable; or
- 4) [t]he mounting of the proposed antenna would involve excavation outside the current tower site, defined as the current boundaries of the leased or owned property surrounding the tower and any access or utility easements currently related to the site.

Although Congress did not adopt the Commission's terminology of "substantial increase in size" in Section 6409(a), we believe that the policy reasons for excluding from Section 6409(a) collocations that substantially change the physical dimensions of a structure are closely analogous to those that animated the Commission in the *Nationwide Collocation Agreement* and subsequent proceedings. In light of the Commission's prior findings, the Bureau believes it is appropriate to look to the existing definition of "substantial increase in size" to determine whether the collocation, removal, or replacement of equipment

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<sup>5</sup> See 16 U.S.C. § 470f, *see also* 47 C.F.R. § 1.1307(a)(4) (requiring applicants to determine whether proposed facilities may affect properties that are listed, or are eligible for listing, in the National Register of Historic Places).

<sup>6</sup> See Petition for Declaratory Ruling to Clarify Provisions of Section 332(c)(7)(B) to Ensure Timely Siting Review and to Preempt Under Section 253 State and Local Ordinances that Classify All Wireless Siting Proposals as Requiring a Variance. WT Docket No. 08-165, *Declaratory Ruling*, 24 FCC Rcd. 13994, 14012, para. 46 & n.146 (2009) (*2009 Declaratory Ruling*), *recon. denied*, 25 FCC Rcd. 11157 (2010), *pet. for review denied sub nom. City of Arlington, Texas v. FCC*, 668 F.3d 229 (5<sup>th</sup> Cir.), *cert. granted*, 113 S.Ct. 524 (2012); 47 U.S.C. § 332(c)(7).

<sup>7</sup> See 47 C.F.R. § 17.4(c)(1)(B); National Environmental Policy Act Compliance for Proposed Tower Registrations. WT Docket No. 08-61, *Order on Remand*, 26 FCC Rcd. 16700, 16720-21, para. 53 (2011).

on a wireless tower or base station substantially changes the physical dimensions of the underlying structure within the meaning of Section 6409(a).

### **What is a “wireless tower or base station”?**

A “tower” is defined in the *Nationwide Collocation Agreement* as “any structure built for the sole or primary purpose of supporting FCC-licensed antennas and their associated facilities.”<sup>8</sup> The Commission has described a “base station” as consisting of “radio transceivers, antennas, coaxial cable, a regular and backup power supply, and other associated electronics.”<sup>9</sup> Section 6409(a) applies to the collocation, removal, or replacement of equipment on a wireless tower or base station. In this context, we believe it is reasonable to interpret a “base station” to include a structure that currently supports or houses an antenna, transceiver, or other associated equipment that constitutes part of a base station.<sup>10</sup> Moreover, given the absence of any limiting statutory language, we believe a “base station” encompasses such equipment in any technological configuration, including distributed antenna systems and small cells.

Section 6409(a) by its terms applies to any “wireless” tower or base station. By contrast, the scope of Section 332(c)(7) extends only to facilities used for “personal wireless services” as defined in that section.<sup>11</sup> Given Congress’s decision not to use the pre-existing definition from another statutory provision relating to wireless siting, we believe the scope of a “wireless” tower or base station under Section 6409(a) is not intended to be limited to facilities that support “personal wireless services” under Section 332(c)(7).

### **May a state or local government require an application for an action covered under Section 6409(a)?**

Section 6409(a) states that a state or local government “may not deny, and shall approve, any eligible facilities request....” It does not say that a state or local government may not require an application to be filed. The provision that a state or local government must approve and may not deny a request to take a covered action, in the Bureau’s view, implies that the relevant government entity may require the filing of an application for administrative approval.

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<sup>8</sup> See *Nationwide Collocation Agreement*, § I.B.

<sup>9</sup> See Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, WT Docket No. 10-133, *Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services, Fifteenth Report*, 26 FCC Rcd. 9664, 9481, para. 308 (2011).

<sup>10</sup> See also 47 C.F.R. Part 1, App. C, *Nationwide Programmatic Agreement Regarding the Section 106 National Historic Preservation Act Review Process*, § II.A.14 (defining “tower” to include “the on-site fencing, equipment, switches, wiring, cabling, power sources, shelters, or cabinets associated with that Tower but not installed as part of an Antenna as defined herein”).

<sup>11</sup> 47 U.S.C. § 332(c)(7)(A). “Personal wireless services” is in turn defined to mean “commercial mobile services, unlicensed wireless services, and common carrier wireless exchange access services.” *Id.* § 332(c)(7)(C)(1).

**Is there a time limit within which an application must be approved?**

Section 6409(a) does not specify any period of time for approving an application. However, the statute clearly contemplates an administrative process that invariably ends in approval of a covered application. We believe the time period for processing these applications should be commensurate with the nature of the review.

In the *2009 Declaratory Ruling*, the Commission found that 90 days is a presumptively reasonable period of time to process collocation applications.<sup>12</sup> In light of the requirement of Section 6409(a) that the reviewing authority “may not deny, and shall approve” a covered request, we believe that 90 days should be the maximum presumptively reasonable period of time for reviewing such applications, whether for “personal wireless services” or other wireless facilities.

Wireless Telecommunications Bureau contact: Maria Kirby at (202) 418-1476 or by email: [Maria.Kirby@fcc.gov](mailto:Maria.Kirby@fcc.gov).

-FCC-

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<sup>12</sup> See *2009 Declaratory Ruling*, 24 FCC Rcd. at 14012-13, paras. 46-47.

## **APPENDIX**

### **SEC. 6409. WIRELESS FACILITIES DEPLOYMENT.**

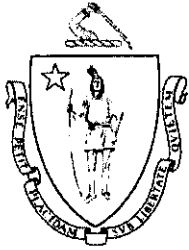
#### **(a) FACILITY MODIFICATIONS.**

(1) **IN GENERAL.** Notwithstanding section 704 of the Telecommunications Act of 1996 (Public Law 104–104) or any other provision of law, a State or local government may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.

(2) **ELIGIBLE FACILITIES REQUEST.** For purposes of this subsection, the term “eligible facilities request” means any request for modification of an existing wireless tower or base station that involves —  
(A) collocation of new transmission equipment;  
(B) removal of transmission equipment; or  
(C) replacement of transmission equipment.

(3) **APPLICABILITY OF ENVIRONMENTAL LAWS.** Nothing in paragraph (1) shall be construed to relieve the Commission from the requirements of the National Historic Preservation Act or the National Environmental Policy Act of 1969.





THE COMMONWEALTH OF MASSACHUSETTS  
OFFICE OF THE ATTORNEY GENERAL

CENTRAL MASSACHUSETTS DIVISION  
10 MECHANIC STREET, SUITE 301  
WORCESTER, MA 01608

MAURA HEALEY  
ATTORNEY GENERAL

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February 17, 2015

Dorothy A. Powers, Town Clerk  
Town of Westwood  
580 High Street  
Westwood, MA 02090

**RE: Westwood Special Town Meeting of November 17, 2014 - Case # 7455**  
**Warrant Articles # 11, 12, 13, 14, 15 and 16 (Zoning)**  
**Warrant Article # 7, 17 and 18 (General)**

Dear Ms. Powers:

**Articles 7 and 18** – We take no action on Articles 7 and 18 because they are votes to accept the provisions of local option statutes. Such votes do not require review and approval by the Attorney General.

**Article 14** – We retain Article 14 (Street Access Special Permit) for further review and will issue our decision by our deadline of March 9, 2015.

**Articles 11, 12, 13, 15, 16, and 17** – We approve these Articles from the November 17, 2014 Westwood Special Town Meeting. Our comments on Article 13 are detailed below.

**Article 13** – Article 13 amends Section 7.3 of the Town’s Zoning Bylaw, “Environmental Impact and Design Review.” In part the amendments make the EIDR by-law applicable to the “construction, installation or alteration of a Minor Wireless Communication Facility pursuant Section 9.4 of [the zoning] bylaw.”

Section 6409 of the Middle Class Tax Relief and Job Creation Act of 2012 requires that “[A] state or local government *may not deny, and shall approve*, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.” (emphasis added). The Act defines “eligible facilities request” as any request for modification of an existing wireless tower or base station that involves: 1) collocation of new transmission equipment; 2) removal of transmission equipment; or 3) replacement of transmission equipment. The Act applies “[n]otwithstanding section 704 of the Telecommunications Act of 1996.” The Act’s requirement that a local government “may not deny, and shall approve, any eligible facilities request” means that a request for modification to an existing facility that does not substantially change the physical dimensions of the tower or base station must be approved. Such qualifying requests also cannot

be subject to a discretionary special permit. The Town must apply the EIDR by-law consistent with these requirements.

Article 13 also amends Section 7.3.3, “Exempt Uses” to clarify the application of the EIDR by-law to protected uses under G.L. c. 40A, Section 3, as follows (emphasis supplied):

In cases where M.G.L. Chapter 40A, Section 3 provides certain exemptions from zoning restrictions for uses protected thereunder, review and approval pursuant to this Section shall be limited consistent with those statutory provisions and on other matters shall be advisory only. For all uses exempt under M.G.L. Chapter 40A, Section 3, the Planning Board shall make determinations of compliance with dimensional and parking requirements of this Bylaw, including requirements related to setbacks, building height, building coverage, **impervious surface, parking and circulation, buffers, screening, landscaping, lighting, and stormwater management.**

This text must be applied consistent with the protections given to agricultural, religious, educational, child care, and solar energy systems under G.L. c. 40A, § 3.

First, G.L. c. 40A, § 3 requires that, to the extent the use of land or structures constitutes commercial agriculture, the Town cannot require a special permit for, unreasonably regulate, or prohibit such activities: (1) on land zoned for agriculture; (2) on land that is greater than five acres in size; and (3) on land of 2 acres or more if the sale of products from the agricultural use generates \$1,000 per acre or more of gross sales. We urge the Town to consult closely with Town Counsel when applying the new text in the EIDR by-law to agricultural uses to ensure that the Town complies with G.L. c. 40A, § 3.

Second, for religious, educational, and child care uses, G.L. c. 40A, § 3 allows the Town to impose only reasonable regulations in eight areas: the bulk and height of structures, yard size, lot area, setbacks, open space, parking and building coverage requirements. Nothing in G.L. c. 40A, § 3 allows the Town to impose requirements regarding impervious surface, screening, landscaping, lighting, and stormwater management on religious, educational, and child care uses. Because the text in underline and bold above conflicts with the G.L. c. 40A, § 3 protections for religious, educational, and child care uses, the Town cannot apply this text to such uses. We urge the Town to consult closely with Town Counsel when applying the new text in the EIDR by-law to religious, educational, and child care uses to ensure that the Town complies with G.L. c. 40A, § 3.<sup>1</sup>

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<sup>1</sup> During the course of our review we received correspondence from a Town resident urging us to disapprove the amendment to Section 7.3.3 on the basis that the EIDR is in reality special permit review process, and thus violates G.L. c. 40A, § 3. We appreciate this correspondence and it has aided us in our review. However, we are unable to conclude that the EIDR is in reality a special permit requirement, and cannot disapprove the text under the Attorney General’s standard of review of by-laws under G.L. c. 40, § 32.

**Note:** Pursuant to G.L. c. 40, § 32, neither general nor zoning by-laws take effect unless the Town has first satisfied the posting/publishing requirements of that statute. Once this statutory duty is fulfilled, (1) general by-laws and amendments take effect on the date these posting and publishing requirements are satisfied unless a later effective date is prescribed in the by-law, and (2) zoning by-laws and amendments are deemed to have taken effect from the date they were approved by the Town Meeting, unless a later effective date is prescribed in the by-law.

MAURA HEALEY  
ATTORNEY GENERAL

*Margaret J. Hurley*

by: Margaret J. Hurley, Assistant Attorney General  
Chief, Central Massachusetts Division  
Director, Municipal Law Unit  
Ten Mechanic Street, Suite 301  
Worcester, MA 01608  
(508) 792-7600 x 4402

cc: Town Counsel Thomas P. McCusker

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**Federal Communications Commission  
Wireless Telecommunications Bureau**

**RADIO STATION AUTHORIZATION**

LICENSEE: AT&T MOBILITY SPECTRUM LLC

ATTN: CECIL J MATHEW  
AT&T MOBILITY SPECTRUM LLC  
208 S. AKARD ST., RM 1015  
DALLAS, TX 75202

<b>Call Sign</b> KNKA226	<b>File Number</b>
<b>Radio Service</b> CL - Cellular	
<b>Market Numer</b> CMA006	<b>Channel Block</b> A
<b>Sub-Market Designator</b> 0	

**FCC Registration Number (FRN):** 0014980726

<b>Market Name</b> Boston-Lowell-Brockton-Lawrenc
--

<b>Grant Date</b> 09-09-2014	<b>Effective Date</b> 08-29-2018	<b>Expiration Date</b> 10-01-2024	<b>Five Yr Build-Out Date</b>	<b>Print Date</b>
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**Site Information:**

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
15	42-37-42.3 N	070-39-16.8 W	45.7	58.8	

**Address:** 40 DORY ROAD

**City:** GLOUCESTER **County:** ESSEX **State:** MA **Construction Deadline:**

**Antenna: 1**

<b>Maximum Transmitting ERP in Watts:</b> 140.820								
Azimuth(from true north)	0	45	90	135	180	225	270	315
<b>Antenna Height AAT (meters)</b>	93.100	97.500	101.800	101.800	100.800	88.700	85.700	101.800
<b>Transmitting ERP (watts)</b>	158.853	205.617	68.628	9.427	0.642	0.431	2.268	29.488

**Antenna: 2**

<b>Maximum Transmitting ERP in Watts:</b> 140.820								
Azimuth(from true north)	0	45	90	135	180	225	270	315
<b>Antenna Height AAT (meters)</b>	93.100	97.500	101.800	101.800	100.800	88.700	85.700	101.800
<b>Transmitting ERP (watts)</b>	0.459	5.462	56.429	198.529	168.403	38.276	3.953	0.786

**Antenna: 3**

<b>Maximum Transmitting ERP in Watts:</b> 140.820								
Azimuth(from true north)	0	45	90	135	180	225	270	315
<b>Antenna Height AAT (meters)</b>	93.100	97.500	101.800	101.800	100.800	88.700	85.700	101.800
<b>Transmitting ERP (watts)</b>	12.078	0.668	0.599	1.024	10.050	68.014	123.413	62.132

**Conditions:**

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

Licensee Name: AT&T MOBILITY SPECTRUM LLC

Call Sign: KNKA226

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
20	43-03-11.8 N	071-16-02.1 W	179.2	59.4	

Address: 80 Diamond Hill Road

City: Candia County: ROCKINGHAM State: NH Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	73.200	111.000	159.400	159.000	98.400	148.300	88.600	75.600
Transmitting ERP (watts)	52.325	70.778	16.988	1.425	0.187	0.144	0.491	7.084

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	73.200	111.000	159.400	159.000	98.400	148.300	88.600	75.600
Transmitting ERP (watts)	0.343	3.851	33.085	100.313	84.855	19.494	2.061	0.299

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	73.200	111.000	159.400	159.000	98.400	148.300	88.600	75.600
Transmitting ERP (watts)	6.845	0.890	0.107	1.038	6.652	7.633	3.304	6.905

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
24	42-54-55.1 N	071-21-37.4 W	100.9	46.3	1011624

Address: 15 INDEPENDENCE DRIVE

City: LONDONDERRY County: ROCKINGHAM State: NH Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	35.900	30.000	44.800	52.100	54.500	72.000	68.000	66.500
Transmitting ERP (watts)	161.221	224.756	47.602	3.692	0.510	0.437	1.233	19.454

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	35.900	30.000	44.800	52.100	54.500	72.000	68.000	66.500
Transmitting ERP (watts)	0.510	3.172	43.604	213.248	156.639	22.374	1.350	0.496

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	35.900	30.000	44.800	52.100	54.500	72.000	68.000	66.500
Transmitting ERP (watts)	11.168	0.691	0.533	0.586	7.854	87.092	266.329	94.294

Licensee Name: AT&T MOBILITY SPECTRUM LLC

Call Sign: KNKA226

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
25	42-00-32.6 N	071-19-15.2 W	90.5	51.8	

Address: 75 WASHINGTON SST

City: PLAINVILLE County: NORFOLK State: MA Construction Deadline: 03-29-2013

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	64.500	61.200	95.600	96.100	94.300	64.100	46.000	48.800
Transmitting ERP (watts)	84.752	97.052	31.772	5.158	0.550	0.224	2.803	20.645

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	64.500	61.200	95.600	96.100	94.300	64.100	46.000	48.800
Transmitting ERP (watts)	0.380	5.181	37.013	100.829	79.042	20.699	2.118	0.824

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	64.500	61.200	95.600	96.100	94.300	64.100	46.000	48.800
Transmitting ERP (watts)	24.577	1.736	0.715	2.292	18.444	139.378	281.180	142.336

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
26	41-46-57.1 N	070-44-06.5 W	12.5	58.8	

Address: KENDRICK ROAD

City: WAREHAM County: PLYMOUTH State: MA Construction Deadline: 03-29-2013

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.000	30.000	46.500	56.700	59.800	50.600	39.100	32.800
Transmitting ERP (watts)	186.898	242.551	75.777	10.617	0.738	0.508	2.730	35.860

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.000	30.000	46.500	56.700	59.800	50.600	39.100	32.800
Transmitting ERP (watts)	0.361	5.818	47.861	150.309	121.062	28.493	2.933	0.991

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.000	30.000	46.500	56.700	59.800	50.600	39.100	32.800
Transmitting ERP (watts)	18.390	1.111	0.538	1.628	13.482	98.897	203.625	103.938

Licensee Name: AT&T MOBILITY SPECTRUM LLC

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Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
27	41-53-35.2 N	070-56-35.0 W	17.7	106.1	1210211

Address: 326 W GROVE ST

City: Middleboro County: PLYMOUTH State: MA Construction Deadline: 03-29-2013

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	47.500	46.300	30.000	37.000	40.900	39.500	51.600	42.300
Transmitting ERP (watts)	125.283	153.432	54.208	6.550	0.674	0.363	2.675	27.340

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	47.500	46.300	30.000	37.000	40.900	39.500	51.600	42.300
Transmitting ERP (watts)	0.351	5.901	52.455	151.828	120.612	27.887	2.679	0.991

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	47.500	46.300	30.000	37.000	40.900	39.500	51.600	42.300
Transmitting ERP (watts)	14.428	1.006	0.875	1.215	13.317	87.541	159.641	85.795

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
28	42-14-21.9 N	070-51-09.3 W	54.9	55.8	

Address: 168 Turkey Hill Lane

City: Cohasset County: NORFOLK State: MA Construction Deadline: 03-29-2013

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	99.800	98.300	97.600	71.700	64.800	62.900	86.700	99.100
Transmitting ERP (watts)	185.522	243.217	80.727	11.598	0.756	0.499	2.589	34.953

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	99.800	98.300	97.600	71.700	64.800	62.900	86.700	99.100
Transmitting ERP (watts)	0.521	6.371	65.693	238.024	196.107	43.191	4.256	0.906

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	99.800	98.300	97.600	71.700	64.800	62.900	86.700	99.100
Transmitting ERP (watts)	9.488	0.543	0.538	1.234	8.977	53.553	85.290	45.661

Licensee Name: AT&T MOBILITY SPECTRUM LLC

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Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
29	41-56-02.0 N	070-35-08.0 W	82.9	128.0	1007828

Address: 265 STATE ROAD

City: PLYMOUTH County: PLYMOUTH State: MA Construction Deadline: 03-29-2013

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	128.000	128.000	128.000	123.500	92.200	86.600	84.900	120.500
Transmitting ERP (watts)	23.222	24.154	10.475	1.931	0.466	0.109	1.398	6.965

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	128.000	128.000	128.000	123.500	92.200	86.600	84.900	120.500
Transmitting ERP (watts)	0.346	4.427	33.055	88.168	72.485	17.790	1.831	0.701

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	128.000	128.000	128.000	123.500	92.200	86.600	84.900	120.500
Transmitting ERP (watts)	9.680	0.561	0.550	1.216	9.292	54.685	90.439	45.409

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
30	42-12-47.6 N	071-32-33.4 W	128.0	58.5	

Address: 26 LUMBER STREET

City: HOPKINTON County: MIDDLESEX State: MA Construction Deadline: 03-29-2013

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	68.900	93.200	99.800	91.500	55.300	59.600	35.700	76.400
Transmitting ERP (watts)	158.662	188.312	64.228	8.830	0.704	0.395	4.080	30.535

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	68.900	93.200	99.800	91.500	55.300	59.600	35.700	76.400
Transmitting ERP (watts)	0.432	6.612	61.028	195.296	166.263	35.500	3.748	0.703

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	68.900	93.200	99.800	91.500	55.300	59.600	35.700	76.400
Transmitting ERP (watts)	18.831	1.074	0.590	1.783	15.144	103.799	219.501	97.060



Licensee Name: AT&T MOBILITY SPECTRUM LLC

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Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
31	42-38-27.0 N	070-36-24.8 W	36.6	38.7	

Address: 38 Thatcher Rd  
City: ROCKLAND County: ESSEX State: MA Construction Deadline: 03-29-2013

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	69.500	69.500	69.500	69.500	69.500	66.700	58.400	60.100
Transmitting ERP (watts)	170.519	227.554	76.127	10.393	0.706	0.470	2.520	32.796

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	69.500	69.500	69.500	69.500	69.500	66.700	58.400	60.100
Transmitting ERP (watts)	0.462	5.689	58.840	206.264	174.760	39.385	4.197	0.837

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	69.500	69.500	69.500	69.500	69.500	66.700	58.400	60.100
Transmitting ERP (watts)	20.761	1.510	0.812	1.238	15.269	110.467	237.338	124.965

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
32	42-36-37.9 N	071-33-28.9 W	148.4	46.3	

Address: 142 LOWELL RD  
City: GROTON County: MIDDLESEX State: MA Construction Deadline: 03-29-2013

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	129.600	133.000	121.700	118.300	83.000	99.300	81.700	86.000
Transmitting ERP (watts)	209.658	291.175	91.511	11.206	1.156	0.596	4.998	40.617

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	129.600	133.000	121.700	118.300	83.000	99.300	81.700	86.000
Transmitting ERP (watts)	0.597	10.042	80.421	284.569	246.599	46.898	5.186	0.906

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	129.600	133.000	121.700	118.300	83.000	99.300	81.700	86.000
Transmitting ERP (watts)	18.748	1.375	0.781	1.196	15.487	106.791	230.014	118.184

Licensee Name: AT&T MOBILITY SPECTRUM LLC

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Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
33	42-08-01.1 N	070-43-57.5 W	68.3	80.5	1017973

Address: 178 EAMES WAY

City: Marshfield County: PLYMOUTH State: MA Construction Deadline: 03-29-2013

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	125.300	128.600	128.200	125.800	107.800	113.100	97.600	105.400
Transmitting ERP (watts)	156.993	202.510	73.503	10.210	0.666	0.415	2.429	32.615

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	125.300	128.600	128.200	125.800	107.800	113.100	97.600	105.400
Transmitting ERP (watts)	0.482	5.988	62.083	217.536	187.313	40.576	4.382	0.869

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	125.300	128.600	128.200	125.800	107.800	113.100	97.600	105.400
Transmitting ERP (watts)	21.007	1.466	0.829	1.219	15.907	109.305	228.002	122.541

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
34	41-42-11.1 N	070-46-47.1 W	14.3	59.4	

Address: 55 BENSONBROOK ROAD

City: MARION County: PLYMOUTH State: MA Construction Deadline: 03-29-2013

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	51.300	62.700	66.200	68.700	66.600	60.600	47.100	51.900
Transmitting ERP (watts)	161.079	196.082	67.519	9.213	0.702	0.419	4.077	32.479

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	51.300	62.700	66.200	68.700	66.600	60.600	47.100	51.900
Transmitting ERP (watts)	0.446	6.712	62.074	197.767	163.770	38.273	3.886	0.801

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	51.300	62.700	66.200	68.700	66.600	60.600	47.100	51.900
Transmitting ERP (watts)	3.819	0.784	0.433	6.729	64.256	202.261	164.916	37.606

Licensee Name: AT&T MOBILITY SPECTRUM LLC

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Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
35	42-21-20.1 N	071-33-16.6 W	156.1	26.5	

Address: 157 UNION STREET

City: MARLBOROUGH County: MIDDLESEX State: MA Construction Deadline: 03-29-2013

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	97.800	119.900	113.500	108.400	76.200	73.000	51.900	77.300
Transmitting ERP (watts)	280.304	377.489	119.970	14.810	1.525	0.802	6.660	52.209

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	97.800	119.900	113.500	108.400	76.200	73.000	51.900	77.300
Transmitting ERP (watts)	0.801	13.105	105.660	375.949	325.389	63.339	6.978	1.142

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	97.800	119.900	113.500	108.400	76.200	73.000	51.900	77.300
Transmitting ERP (watts)	30.606	2.831	1.046	2.632	27.909	187.774	419.392	197.441

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
36	42-39-54.6 N	070-38-19.9 W	59.4	44.5	

Address: 68 JOHNSON ROAD

City: ROCKPORT County: ESSEX State: MA Construction Deadline: 03-29-2013

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	103.000	103.000	103.000	100.400	95.400	85.100	98.100	103.000
Transmitting ERP (watts)	126.741	159.124	54.189	7.443	0.564	0.334	3.098	25.685

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	103.000	103.000	103.000	100.400	95.400	85.100	98.100	103.000
Transmitting ERP (watts)	0.353	5.360	49.103	157.255	130.117	30.639	2.895	0.641

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	103.000	103.000	103.000	100.400	95.400	85.100	98.100	103.000
Transmitting ERP (watts)	15.787	0.974	0.495	1.442	11.730	84.942	168.331	87.120

Licensee Name: AT&T MOBILITY SPECTRUM LLC

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Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
37	42-41-29.8 N	071-47-30.8 W	233.8	47.9	

Address: 1140 Greenville Rd

City: ASHBY County: MIDDLESEX State: MA Construction Deadline: 03-29-2013

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.000	138.200	163.500	145.000	68.800	30.000	30.000	30.000
Transmitting ERP (watts)	301.383	343.844	123.915	17.212	1.267	0.862	4.339	57.968

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.000	138.200	163.500	145.000	68.800	30.000	30.000	30.000
Transmitting ERP (watts)	0.559	6.546	72.077	254.800	226.824	50.359	4.678	0.979

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.000	138.200	163.500	145.000	68.800	30.000	30.000	30.000
Transmitting ERP (watts)	35.557	2.084	1.375	2.194	29.159	209.483	410.600	215.057

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
38	42-38-54.9 N	071-47-40.6 W	240.8	47.2	

Address: 601-603 FITCHBURG STATE ROAD

City: ASHBY County: MIDDLESEX State: MA Construction Deadline: 03-29-2013

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	31.100	159.800	170.800	147.700	56.300	30.000	30.000	30.000
Transmitting ERP (watts)	204.865	233.420	85.530	11.768	0.897	0.575	2.961	39.554

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	31.100	159.800	170.800	147.700	56.300	30.000	30.000	30.000
Transmitting ERP (watts)	0.570	6.676	74.271	261.076	238.587	50.169	4.787	1.001

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	31.100	159.800	170.800	147.700	56.300	30.000	30.000	30.000
Transmitting ERP (watts)	24.123	1.410	0.948	1.499	20.272	140.599	280.157	146.756

Licensee Name: AT&T MOBILITY SPECTRUM LLC

Call Sign: KNKA226

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Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
40	43-05-58.2 N	070-47-28.6 W	7.6	67.4	

Address: 165 GOSLING RD

City: NEWINGTON County: ROCKINGHAM State: NH Construction Deadline: 03-29-2013

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	34.000	45.500	68.500	72.400	58.800	51.900	57.200	52.000
Transmitting ERP (watts)	205.727	278.300	62.928	5.059	0.711	0.597	1.577	25.136

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	34.000	45.500	68.500	72.400	58.800	51.900	57.200	52.000
Transmitting ERP (watts)	0.559	3.335	47.419	236.351	181.187	26.867	1.510	0.563

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	34.000	45.500	68.500	72.400	58.800	51.900	57.200	52.000
Transmitting ERP (watts)	10.525	0.618	0.497	0.555	7.391	82.592	243.998	90.540

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
41	43-04-39.1 N	071-07-30.3 W	107.0	60.7	1231475

Address: 150 Raymond Road

City: Nottingham County: ROCKINGHAM State: NH Construction Deadline: 03-29-2013

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	54.900	95.800	122.100	119.300	102.200	66.300	44.100	30.000
Transmitting ERP (watts)	160.334	230.049	54.265	4.271	0.586	0.522	1.415	21.993

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	54.900	95.800	122.100	119.300	102.200	66.300	44.100	30.000
Transmitting ERP (watts)	0.493	3.289	48.427	238.724	177.920	27.618	1.619	0.581

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	54.900	95.800	122.100	119.300	102.200	66.300	44.100	30.000
Transmitting ERP (watts)	10.353	0.693	0.601	0.662	8.753	100.864	305.315	110.743

Licensee Name: AT&T MOBILITY SPECTRUM LLC

Call Sign: KNKA226

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
42	43-13-24.3 N	071-14-23.2 W	189.0	38.7	

Address: 50 OLD CANTERBURY RD

City: NORTHWOOD County: ROCKINGHAM State: NH Construction Deadline: 03-29-2013

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.000	30.000	43.800	80.800	68.900	30.000	53.500	30.000
Transmitting ERP (watts)	114.248	162.456	37.049	2.808	0.392	0.366	0.961	16.015

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.000	30.000	43.800	80.800	68.900	30.000	53.500	30.000
Transmitting ERP (watts)	0.544	3.573	49.915	233.638	184.420	30.453	1.413	0.618

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.000	30.000	43.800	80.800	68.900	30.000	53.500	30.000
Transmitting ERP (watts)	8.132	0.494	0.387	0.467	6.390	72.302	182.164	77.916

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
43	42-59-40.7 N	070-46-58.5 W	12.5	59.4	

Address: 96 GROVE RD

City: RYE County: ROCKINGHAM State: NH Construction Deadline: 03-29-2013

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	49.700	62.100	64.000	64.300	63.700	45.100	38.900	54.200
Transmitting ERP (watts)	146.515	206.846	49.164	3.766	0.505	0.452	1.193	17.877

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	49.700	62.100	64.000	64.300	63.700	45.100	38.900	54.200
Transmitting ERP (watts)	0.464	2.913	42.460	206.462	152.606	24.148	1.373	0.460

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	49.700	62.100	64.000	64.300	63.700	45.100	38.900	54.200
Transmitting ERP (watts)	10.168	0.644	0.536	0.576	7.457	86.483	257.603	87.494

Control Points:

Control Pt. No. 2

Address: 100 LOWDER BROOK DR

City: WESTWOOD County: NORFOLK State: MA Telephone Number: (617)462-7094

**Licensee Name:** AT&T MOBILITY SPECTRUM LLC

**Call Sign:** KNKA226

**File Number:**

**Print Date:**

**Waivers/Conditions:**

License renewal granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

Commission approval of this application and the licenses contained therein are subject to the conditions set forth in the Memorandum Opinion and Order, adopted on December 29, 2006 and released on March 26, 2007, and revised in the Order on Reconsideration, adopted and released on March 26, 2007. See AT&T Inc. and BellSouth Corporation Application for Transfer of Control, WC Docket No. 06-74, Memorandum Opinion and Order, FCC 06-189 (rel. Mar. 26, 2007); AT&T Inc. and BellSouth Corporation, WC Docket No. 06-74, Order on Reconsideration, FCC 07-44 (rel. Mar. 26, 2007).

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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: NEW CINGULAR WIRELESS PCS, LLC

ATTN: LESLIE A. WILSON
NEW CINGULAR WIRELESS PCS, LLC
208 S. AKARD ST., RM 1016
DALLAS, TX 75202

Table with Call Sign (KNLB200), File Number, and Radio Service (WS - Wireless Communications Service).

FCC Registration Number (FRN): 0003291192

Table with columns: Grant Date, Effective Date, Expiration Date, Print Date, Market Number, Channel Block, Sub-Market Designator, Market Name, 1st Build-out Date, 2nd Build-out Date, 3rd Build-out Date, 4th Build-out Date.

Waivers/Conditions:

This authorization is subject to the condition that, in the event that systems using the same frequencies as granted herein are authorized in an adjacent foreign territory (Canada/Mexico), future coordination of any base station transmitters shall be required to eliminate any harmful interference to operations in the adjacent foreign territory and to ensure continuance of equal access to the frequencies by both countries.

This authorization is subject to the condition that the remaining balance of the winning bid amount will be paid in accordance with Part 1 of the Commission's rules, 47 C.F.R. Part 1.

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS).



**Licensee Name:** NEW CINGULAR WIRELESS PCS, LLC

**Call Sign:** KNLB200

**File Number:**

**Print Date:**

Spectrum Lease associated with this license. See Spectrum Leasing Arrangement Letter dated 04/01/2005 and File No. 0001999501.

License renewal is granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

Pursuant to WCS Order on Reconsideration, FCC 12-130, in order to obtain a renewal expectancy at the 7/21/17 renewal deadline, a licensee must, for each license area, certify that it has maintained, or exceeded, the level of coverage demonstrated for that license area at the 3/13/2017 construction deadline.

**Licensee Name:** NEW CINGULAR WIRELESS PCS, LLC

**Call Sign:** KNLB200

**File Number:**

**Print Date:**

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: NEW CINGULAR WIRELESS PCS, LLC

ATTN: LESLIE A. WILSON
NEW CINGULAR WIRELESS PCS, LLC
208 S. AKARD ST., RM 1016
DALLAS, TX 75202

Table with Call Sign (KNLB210), File Number, and Radio Service (WS - Wireless Communications Service).

FCC Registration Number (FRN): 0003291192

Table with columns: Grant Date, Effective Date, Expiration Date, Print Date, Market Number, Channel Block, Sub-Market Designator, Market Name, 1st Build-out Date, 2nd Build-out Date, 3rd Build-out Date, 4th Build-out Date.

Waivers/Conditions:

This authorization is subject to the condition that, in the event that systems using the same frequencies as granted herein are authorized in an adjacent foreign territory (Canada/Mexico), future coordination of any base station transmitters shall be required to eliminate any harmful interference to operations in the adjacent foreign territory and to ensure continuance of equal access to the frequencies by both countries.

This authorization is subject to the condition that the remaining balance of the winning bid amount will be paid in accordance with Part 1 of the Commission's rules, 47 C.F.R. Part 1.

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS).

**Licensee Name:** NEW CINGULAR WIRELESS PCS, LLC

**Call Sign:** KNLB210

**File Number:**

**Print Date:**

License renewal is granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

Pursuant to WCS Order on Reconsideration, FCC 12-130, in order to obtain a renewal expectancy at the 7/21/17 renewal deadline, a licensee must, for each license area, certify that it has maintained, or exceeded, the level of coverage demonstrated for that license area at the 3/13/2017 construction deadline.

Reference Copy

**Licensee Name:** NEW CINGULAR WIRELESS PCS, LLC

**Call Sign:** KNLB210

**File Number:**

**Print Date:**

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: NEW CINGULAR WIRELESS PCS, LLC

ATTN: LESLIE WILSON
NEW CINGULAR WIRELESS PCS, LLC
208 S AKARD ST., RM 1016
DALLAS, TX 75202

Table with Call Sign (KNLF216), File Number, and Radio Service (CW - PCS Broadband).

FCC Registration Number (FRN): 0003291192

Table with columns: Grant Date, Effective Date, Expiration Date, Print Date, Market Number, Channel Block, Sub-Market Designator, Market Name, 1st Build-out Date, 2nd Build-out Date, 3rd Build-out Date, 4th Build-out Date.

Waivers/Conditions:

License renewal granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

This license is conditioned upon compliance with the provisions of Applications of AT&T Wireless Services, Inc. and Cingular Wireless Corporation For Consent to Transfer Control of Licenses and Authorizations, Memorandum Opinion and Order, FCC 04-255 (rel. Oct. 26, 2004).

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS).

**Licensee Name:** NEW CINGULAR WIRELESS PCS, LLC

**Call Sign:** KNLF216

**File Number:**

**Print Date:**

Commission approval of this application and the licenses contained therein are subject to the conditions set forth in the Memorandum Opinion and Order, adopted on December 29, 2006 and released on March 26, 2007, and revised in the Order on Reconsideration, adopted and released on March 26, 2007. See AT&T Inc. and BellSouth Corporation Application for Transfer of Control, WC Docket No. 06-74, Memorandum Opinion and Order, FCC 06-189 (rel. Mar. 26, 2007); AT&T Inc. and BellSouth Corporation, WC Docket No. 06-74, Order on Reconsideration, FCC 07-44 (rel. Mar. 26, 2007).

Preferred Copy

**Licensee Name:** NEW CINGULAR WIRELESS PCS, LLC

**Call Sign:** KNLF216

**File Number:**

**Print Date:**

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AT&T MOBILITY SPECTRUM LLC

ATTN: CECIL J MATHEW
AT&T MOBILITY SPECTRUM LLC
208 S. AKARD ST., RM 1015
DALLAS, TX 75202

Table with Call Sign (KNLF954), File Number, and Radio Service (CW - PCS Broadband).

FCC Registration Number (FRN): 0014980726

Table with columns: Grant Date, Effective Date, Expiration Date, Print Date, Market Number, Channel Block, Sub-Market Designator, Market Name, 1st Build-out Date, 2nd Build-out Date, 3rd Build-out Date, 4th Build-out Date.

Waivers/Conditions:

This authorization is subject to the condition that, in the event that systems using the same frequencies as granted herein are authorized in an adjacent foreign territory (Canada/United States), future coordination of any base station transmitters within 72 km (45 miles) of the United States/Canada border shall be required to eliminate any harmful interference to operations in the adjacent foreign territory and to ensure continuance of equal access to the frequencies by both countries.

License renewal granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS).

**Licensee Name:** AT&T MOBILITY SPECTRUM LLC

**Call Sign:** KNLF954

**File Number:**

**Print Date:**

This authorization is subject to the condition that the remaining balance of the winning bid amount will be paid in accordance with Part 1 of the Commission's rules, 47 C.F.R. Part 1.

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**Licensee Name:** AT&T MOBILITY SPECTRUM LLC

**Call Sign:** KNLF954

**File Number:**

**Print Date:**

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission  
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AT&T MOBILITY SPECTRUM LLC

ATTN: CECIL J MATHEW  
AT&T MOBILITY SPECTRUM LLC  
208 S. AKARD ST., RM 1015  
DALLAS, TX 75202

<b>Call Sign</b> WPOI214	<b>File Number</b>
<b>Radio Service</b> CW - PCS Broadband	

FCC Registration Number (FRN): 0014980726

<b>Grant Date</b> 06-10-2015	<b>Effective Date</b> 08-29-2018	<b>Expiration Date</b> 06-23-2025	<b>Print Date</b>
<b>Market Number</b> MTA008	<b>Channel Block</b> A	<b>Sub-Market Designator</b> 7	
<b>Market Name</b> Boston-Providence			
<b>1st Build-out Date</b> 06-23-2000	<b>2nd Build-out Date</b> 06-23-2005	<b>3rd Build-out Date</b>	<b>4th Build-out Date</b>

Waivers/Conditions:

This authorization is subject to the condition that, in the event that systems using the same frequencies as granted herein are authorized in an adjacent foreign territory (Canada/United States), future coordination of any base station transmitters within 72 km (45 miles) of the United States/Canada border shall be required to eliminate any harmful interference to operations in the adjacent foreign territory and to ensure continuance of equal access to the frequencies by both countries.

License renewal granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at <http://wireless.fcc.gov/uls/index.htm?job=home> and select "License Search". Follow the instructions on how to search for license information.

**Licensee Name:** AT&T MOBILITY SPECTRUM LLC

**Call Sign:** WPOI214

**File Number:**

**Print Date:**

This authorization is subject to the condition that the remaining balance of the winning bid amount will be paid in accordance with Part 1 of the Commission's rules, 47 C.F.R. Part 1.

This license is conditioned upon compliance with the provisions of Applications of AT&T Wireless Services, Inc. and Cingular Wireless Corporation For Consent to Transfer Control of Licenses and Authorizations, Memorandum Opinion and Order, FCC 04-255 (rel. Oct. 26, 2004).

Commission approval of this application and the licenses contained therein are subject to the conditions set forth in the Memorandum Opinion and Order, adopted on December 29, 2006 and released on March 26, 2007, and revised in the Order on Reconsideration, adopted and released on March 26, 2007. See AT&T Inc. and BellSouth Corporation Application for Transfer of Control, WC Docket No. 06-74, Memorandum Opinion and Order, FCC 06-189 (rel. Mar. 26, 2007); AT&T Inc. and BellSouth Corporation, WC Docket No. 06-74, Order on Reconsideration, FCC 07-44 (rel. Mar. 26, 2007).

**Licensee Name:** AT&T MOBILITY SPECTRUM LLC

**Call Sign:** WPOI214

**File Number:**

**Print Date:**

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: NEW CINGULAR WIRELESS PCS, LLC

ATTN: LESLIE WILSON
NEW CINGULAR WIRELESS PCS, LLC
208 S AKARD ST., RM 1016
DALLAS, TX 75202

Table with Call Sign (KNLF216), File Number, and Radio Service (CW - PCS Broadband).

FCC Registration Number (FRN): 0003291192

Table with columns: Grant Date, Effective Date, Expiration Date, Print Date, Market Number, Channel Block, Sub-Market Designator, Market Name, 1st Build-out Date, 2nd Build-out Date, 3rd Build-out Date, 4th Build-out Date.

Waivers/Conditions:

This license is conditioned upon compliance with the provisions of Applications of AT&T Wireless Services, Inc. and Cingular Wireless Corporation For Consent to Transfer Control of Licenses and Authorizations, Memorandum Opinion and Order, FCC 04-255 (rel. Oct. 26, 2004).

Commission approval of this application and the licenses contained therein are subject to the conditions set forth in the Memorandum Opinion and Order, adopted on December 29, 2006 and released on March 26, 2007, and revised in the Order on Reconsideration, adopted and released on March 26, 2007. See AT&T Inc. and BellSouth Corporation Application for Transfer of Control, WC Docket No. 06-74, Memorandum Opinion and Order, FCC 06-189 (rel. Mar. 26, 2007); AT&T Inc. and BellSouth Corporation, WC Docket No. 06-74, Order on Reconsideration, FCC 07-44 (rel. Mar. 26, 2007).

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

**Licensee Name:** NEW CINGULAR WIRELESS PCS, LLC

**Call Sign:** KNLF216

**File Number:**

**Print Date:**

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AT&T MOBILITY SPECTRUM LLC

ATTN: CECIL J MATHEW
AT&T MOBILITY SPECTRUM LLC
208 S. AKARD ST.
DALLAS, TX 75202

Table with Call Sign (WPWU950), File Number (0008666854), and Radio Service (WZ - 700 MHz Lower Band (Blocks C, D))

FCC Registration Number (FRN): 0014980726

Table with columns: Grant Date, Effective Date, Expiration Date, Print Date, Market Number, Channel Block, Sub-Market Designator, Market Name, 1st Build-out Date, 2nd Build-out Date, 3rd Build-out Date, 4th Build-out Date

Waivers/Conditions:

If the facilities authorized herein are used to provide broadcast operations, whether exclusively or in combination with other services, the licensee must seek renewal of the license either within eight years from the commencement of the broadcast service or within the term of the license had the broadcast service not been provided, whichever period is shorter in length. See 47 CFR §27.13(b).

Operation of the facilities authorized herein, are subject to the condition that harmful interference may not be caused to, but must be accepted from UHF TV transmitters in Canada and Mexico as identified in existing and any future agreements with those countries.

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

**Licensee Name:** AT&T MOBILITY SPECTRUM LLC

**Call Sign:** WPWU950

**File Number:** 0008666854

**Print Date:** 07-24-2019

This license is subject to compliance with the conditions set forth in the Commission's Order of Modification, WT Docket No. 12-69, DA 14-43, released January 16, 2014.

Reference Copy

**Licensee Name:** AT&T MOBILITY SPECTRUM LLC

**Call Sign:** WPWU950

**File Number:** 0008666854

**Print Date:** 07-24-2019

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AT&T Corp

ATTN: CECIL MATHEW
AT&T CORP
208 S. AKARD ST, ROOM 1015
DALLAS, TX 75202

Table with 2 columns: Call Sign (WQKN779), File Number, Radio Service (MM - Millimeter Wave 70/80/90 GHz Service), Regulatory Status (Common Carrier, Non Common Carrier, Private)

FCC Registration Number (FRN): 0005937974

Table with 4 columns: Grant Date (07-30-2019), Effective Date (10-12-2022), Expiration Date (07-28-2029), Print Date

Location: Nationwide

Table with 3 columns: Frequency Bands, Lower Frequency (MHz), Upper Frequency (MHz)

Waivers/Conditions:

This nationwide, non-exclusive license qualifies the licensee to register point-to-point links. This license does not authorize any operation of a link that is not both (1) coordinated with the National Telecommunications and Information Administration with respect to Federal Government operations in the 71-95 GHz bands and (2) posted as a registered link with the FCC (interim process) or third-party Database Manager (permanent process).

Special Condition for AU/name change (6/4/2016): Grant of the request to update licensee name is conditioned on it not reflecting an assignment or transfer of control (see Rule 1.948); if an assignment or transfer occurred without proper notification or FCC approval, the grant is void and the station is licensed under the prior name.

Conditions: Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein.

**REFERENCE COPY**

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**Federal Communications Commission  
Public Safety and Homeland Security Bureau**

**RADIO STATION AUTHORIZATION**

LICENSEE: FIRST RESPONDER NETWORK AUTHORITY

ATTN: UZOMA ONYEJE  
FIRST RESPONDER NETWORK AUTHORITY  
12201 SUNRISE VALLEY DRIVE  
RESTON, VA 20192

<b>Call Sign</b> WQQE234	<b>File Number</b>
<b>Radio Service</b> SP - 700 MHz Public Safety Broadband Nationwide License	
<b>Regulatory Status</b> PMRS	

FCC Registration Number (FRN): 0025487950

<b>Grant Date</b> 11-15-2012	<b>Effective Date</b> 12-29-2017	<b>Expiration Date</b> 11-15-2022	<b>Print Date</b>
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**Location:** Nationwide

**Frequency Bands:** 000758.00000000-000769.00000000 MHz  
000788.00000000-000799.00000000 MHz

**Waivers/Conditions:**

This authorization is subject to any rules the Commission may adopt pursuant to its authority under the Middle Class Tax Relief and Job Creation Act of 2012 or the Communications Act of 1934, as amended.

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Federal Communications Commission  
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AT&T WIRELESS SERVICES 3 LLC

ATTN: CECIL J MATHEW  
AT&T WIRELESS SERVICES 3 LLC  
208 S. AKARD ST., RM 1015  
DALLAS, TX 75202

<b>Call Sign</b> WQVN675	<b>File Number</b>
<b>Radio Service</b> AT - AWS-3 (1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz)	

FCC Registration Number (FRN): 0023910920

<b>Grant Date</b> 04-08-2015	<b>Effective Date</b> 08-29-2018	<b>Expiration Date</b> 04-08-2027	<b>Print Date</b>
<b>Market Number</b> BEA003	<b>Channel Block</b> J	<b>Sub-Market Designator</b> 0	
<b>Market Name</b> Boston-Worcester-Lawrence-Lowe			
<b>1st Build-out Date</b> 04-08-2021	<b>2nd Build-out Date</b> 04-08-2027	<b>3rd Build-out Date</b>	<b>4th Build-out Date</b>

Waivers/Conditions:

NONE

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at <http://wireless.fcc.gov/uls/index.htm?job=home> and select "License Search". Follow the instructions on how to search for license information.

**Licensee Name:** AT&T WIRELESS SERVICES 3 LLC

**Call Sign:** WQVN675

**File Number:**

**Print Date:**

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AT&T SPECTRUM FRONTIERS LLC

ATTN: CECIL J. MATHEW
AT&T SPECTRUM FRONTIERS LLC
208 S. AKARD ST., RM 1015
DALLAS, TX 75202

Table with Call Sign (WRNI961), File Number, and Radio Service (PM - 3.7 GHz Service).

FCC Registration Number (FRN): 0027840180

Table with columns: Grant Date, Effective Date, Expiration Date, Print Date, Market Number, Channel Block, Sub-Market Designator, Market Name, 1st Build-out Date, 2nd Build-out Date, 3rd Build-out Date, 4th Build-out Date.

Waivers/Conditions:

This final license provides authorization during the full 15-year license term. Operation under this final license may begin on the earlier of (1) 12/5/2025 or (2) the date that the certification for accelerated relocation for this PEA is validated by the FCC pursuant to 47 CFR § 27.1412(g).

License is conditioned on compliance with all applicable FCC rules and regulations, including licensee making payments required by 47 C.F.R. §§ 27.1401- 27.1424 as described in FCC 20-22. See FCC 20-22, paras. 178-331.

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS).



**Licensee Name:** AT&T SPECTRUM FRONTIERS LLC

**Call Sign:** WRNI961

**File Number:**

**Print Date:**

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AT&T SPECTRUM FRONTIERS LLC

ATTN: CECIL J. MATHEW
AT&T SPECTRUM FRONTIERS LLC
208 S. AKARD ST., RM 1015
DALLAS, TX 75202

Table with 2 columns: Call Sign (WRNI962), File Number, and Radio Service (PM - 3.7 GHz Service)

FCC Registration Number (FRN): 0027840180

Table with 4 columns: Grant Date (07-23-2021), Effective Date (07-23-2021), Expiration Date (12-05-2025), Print Date, Market Number (PEA007), Channel Block (A4), Sub-Market Designator (0), Market Name (Boston, MA), 1st Build-out Date, 2nd Build-out Date, 3rd Build-out Date, 4th Build-out Date

Waivers/Conditions:

This interim license, in conjunction with one or more final licenses, collectively provides authorization during the full 15-year license term. This interim license expires on the earlier of (1) 12/5/2025 or (2) the date that the certification for accelerated relocation for this PEA is validated by the FCC pursuant to 47 CFR ? 27.1412(g). Renewals of this interim license will not be accepted; only final license(s) can be renewed. Assignment application(s) and transfers of control filed for this interim license must be done in conjunction with any linked final license.

License is conditioned on compliance with all applicable FCC rules and regulations, including licensee making payments required by 47 C.F.R. §§ 27.1401- 27.1424 as described in FCC 20-22. See FCC 20-22, paras. 178-331.

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

**Licensee Name:** AT&T SPECTRUM FRONTIERS LLC

**Call Sign:** WRNI962

**File Number:**

**Print Date:**

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AT&T SPECTRUM FRONTIERS LLC

ATTN: CECIL J. MATHEW
AT&T SPECTRUM FRONTIERS LLC
208 S. AKARD ST., RM 1015
DALLAS, TX 75202

Table with Call Sign (WRNI963), File Number, and Radio Service (PM - 3.7 GHz Service).

FCC Registration Number (FRN): 0027840180

Table with columns: Grant Date, Effective Date, Expiration Date, Print Date, Market Number, Channel Block, Sub-Market Designator, Market Name, 1st Build-out Date, 2nd Build-out Date, 3rd Build-out Date, 4th Build-out Date.

Waivers/Conditions:

This final license provides authorization during the full 15-year license term. Operation under this final license may begin on the earlier of (1) 12/5/2025 or (2) the date that the certification for accelerated relocation for this PEA is validated by the FCC pursuant to 47 CFR § 27.1412(g).

License is conditioned on compliance with all applicable FCC rules and regulations, including licensee making payments required by 47 C.F.R. §§ 27.1401- 27.1424 as described in FCC 20-22. See FCC 20-22, paras. 178-331.

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein.

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**Licensee Name:** AT&T SPECTRUM FRONTIERS LLC

**Call Sign:** WRNI963

**File Number:**

**Print Date:**

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AT&T SPECTRUM FRONTIERS LLC

ATTN: CECIL J. MATHEW
AT&T SPECTRUM FRONTIERS LLC
208 S. AKARD ST., RM 1015
DALLAS, TX 75202

Table with Call Sign (WRNI964), File Number, and Radio Service (PM - 3.7 GHz Service).

FCC Registration Number (FRN): 0027840180

Table with columns: Grant Date, Effective Date, Expiration Date, Print Date, Market Number, Channel Block, Sub-Market Designator, Market Name, 1st Build-out Date, 2nd Build-out Date, 3rd Build-out Date, 4th Build-out Date.

Waivers/Conditions:

This interim license, in conjunction with one or more final licenses, collectively provides authorization during the full 15-year license term. This interim license expires on the earlier of (1) 12/5/2025 or (2) the date that the certification for accelerated relocation for this PEA is validated by the FCC pursuant to 47 CFR ? 27.1412(g). Renewals of this interim license will not be accepted; only final license(s) can be renewed. Assignment application(s) and transfers of control filed for this interim license must be done in conjunction with any linked final license.

License is conditioned on compliance with all applicable FCC rules and regulations, including licensee making payments required by 47 C.F.R. §§ 27.1401- 27.1424 as described in FCC 20-22. See FCC 20-22, paras. 178-331.

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

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**Licensee Name:** AT&T SPECTRUM FRONTIERS LLC

**Call Sign:** WRNI964

**File Number:**

**Print Date:**

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AT&T SPECTRUM FRONTIERS LLC

ATTN: CECIL J. MATHEW
AT&T SPECTRUM FRONTIERS LLC
208 S. AKARD ST., RM 1015
DALLAS, TX 75202

Table with Call Sign (WRNI965), File Number, and Radio Service (PM - 3.7 GHz Service).

FCC Registration Number (FRN): 0027840180

Table with columns: Grant Date, Effective Date, Expiration Date, Print Date, Market Number, Channel Block, Sub-Market Designator, Market Name, 1st Build-out Date, 2nd Build-out Date, 3rd Build-out Date, 4th Build-out Date.

Waivers/Conditions:

This final license provides authorization during the full 15-year license term. Operation under this final license may begin on the earlier of (1) 12/5/2025 or (2) the date that the certification for accelerated relocation for this PEA is validated by the FCC pursuant to 47 CFR § 27.1412(g).

License is conditioned on compliance with all applicable FCC rules and regulations, including licensee making payments required by 47 C.F.R. §§ 27.1401- 27.1424 as described in FCC 20-22. See FCC 20-22, paras. 178-331.

Conditions:

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**Licensee Name:** AT&T SPECTRUM FRONTIERS LLC

**Call Sign:** WRNI965

**File Number:**

**Print Date:**

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AT&T SPECTRUM FRONTIERS LLC

ATTN: CECIL J. MATHEW
AT&T SPECTRUM FRONTIERS LLC
208 S. AKARD ST., RM 1015
DALLAS, TX 75202

Table with Call Sign (WRNI966), File Number, and Radio Service (PM - 3.7 GHz Service).

FCC Registration Number (FRN): 0027840180

Table with columns: Grant Date, Effective Date, Expiration Date, Print Date, Market Number, Channel Block, Sub-Market Designator, Market Name, 1st Build-out Date, 2nd Build-out Date, 3rd Build-out Date, 4th Build-out Date.

Waivers/Conditions:

This final license provides authorization during the full 15-year license term. Operation under this final license may begin on the earlier of (1) 12/5/2025 or (2) the date that the certification for accelerated relocation for this PEA is validated by the FCC pursuant to 47 CFR § 27.1412(g).

License is conditioned on compliance with all applicable FCC rules and regulations, including licensee making payments required by 47 C.F.R. §§ 27.1401- 27.1424 as described in FCC 20-22. See FCC 20-22, paras. 178-331.

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS).

**Licensee Name:** AT&T SPECTRUM FRONTIERS LLC

**Call Sign:** WRNI966

**File Number:**

**Print Date:**

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission  
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AT&T AUCTION HOLDINGS, LLC

ATTN: CECIL J. MATHEW  
AT&T AUCTION HOLDINGS, LLC  
208 S. AKARD ST., RM 1015  
DALLAS, TX 75202

<b>Call Sign</b> WRQM357	<b>File Number</b>
<b>Radio Service</b> PK - 3.45 GHz Service	

FCC Registration Number (FRN): 0031141229

<b>Grant Date</b> 05-04-2022	<b>Effective Date</b> 05-04-2022	<b>Expiration Date</b> 05-04-2037	<b>Print Date</b>
<b>Market Number</b> PEA007	<b>Channel Block</b> A	<b>Sub-Market Designator</b> 0	
<b>Market Name</b> Boston, MA			
<b>1st Build-out Date</b> 05-04-2026	<b>2nd Build-out Date</b> 05-04-2030	<b>3rd Build-out Date</b>	<b>4th Build-out Date</b>

Waivers/Conditions:

NONE

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

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**Licensee Name:** AT&T AUCTION HOLDINGS, LLC

**Call Sign:** WRQM357

**File Number:**

**Print Date:**

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission  
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AT&T AUCTION HOLDINGS, LLC

ATTN: CECIL J. MATHEW  
AT&T AUCTION HOLDINGS, LLC  
208 S. AKARD ST., RM 1015  
DALLAS, TX 75202

<b>Call Sign</b> WRQM358	<b>File Number</b>
<b>Radio Service</b> PK - 3.45 GHz Service	

FCC Registration Number (FRN): 0031141229

<b>Grant Date</b> 05-04-2022	<b>Effective Date</b> 05-04-2022	<b>Expiration Date</b> 05-04-2037	<b>Print Date</b>
<b>Market Number</b> PEA007	<b>Channel Block</b> B	<b>Sub-Market Designator</b> 0	
<b>Market Name</b> Boston, MA			
<b>1st Build-out Date</b> 05-04-2026	<b>2nd Build-out Date</b> 05-04-2030	<b>3rd Build-out Date</b>	<b>4th Build-out Date</b>

Waivers/Conditions:

NONE

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

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**Licensee Name:** AT&T AUCTION HOLDINGS, LLC

**Call Sign:** WRQM358

**File Number:**

**Print Date:**

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission  
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AT&T AUCTION HOLDINGS, LLC

ATTN: CECIL J. MATHEW  
AT&T AUCTION HOLDINGS, LLC  
208 S. AKARD ST., RM 1015  
DALLAS, TX 75202

<b>Call Sign</b> WRQM359	<b>File Number</b>
<b>Radio Service</b> PK - 3.45 GHz Service	

FCC Registration Number (FRN): 0031141229

<b>Grant Date</b> 05-04-2022	<b>Effective Date</b> 05-04-2022	<b>Expiration Date</b> 05-04-2037	<b>Print Date</b>
<b>Market Number</b> PEA007	<b>Channel Block</b> C	<b>Sub-Market Designator</b> 0	
<b>Market Name</b> Boston, MA			
<b>1st Build-out Date</b> 05-04-2026	<b>2nd Build-out Date</b> 05-04-2030	<b>3rd Build-out Date</b>	<b>4th Build-out Date</b>

Waivers/Conditions:

NONE

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at <http://wireless.fcc.gov/uls/index.htm?job=home> and select "License Search". Follow the instructions on how to search for license information.



**Licensee Name:** AT&T AUCTION HOLDINGS, LLC

**Call Sign:** WRQM359

**File Number:**

**Print Date:**

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Reference Copy

REFERENCE COPY

This is not an official FCC license. It is a record of public information contained in the FCC's licensing database on the date that this reference copy was generated. In cases where FCC rules require the presentation, posting, or display of an FCC license, this document may not be used in place of an official FCC license.



Federal Communications Commission  
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AT&T AUCTION HOLDINGS, LLC

ATTN: CECIL J. MATHEW  
AT&T AUCTION HOLDINGS, LLC  
208 S. AKARD ST., RM 1015  
DALLAS, TX 75202

<b>Call Sign</b> WRQM360	<b>File Number</b>
<b>Radio Service</b> PK - 3.45 GHz Service	

FCC Registration Number (FRN): 0031141229

<b>Grant Date</b> 05-04-2022	<b>Effective Date</b> 05-04-2022	<b>Expiration Date</b> 05-04-2037	<b>Print Date</b>
<b>Market Number</b> PEA007	<b>Channel Block</b> D	<b>Sub-Market Designator</b> 0	
<b>Market Name</b> Boston, MA			
<b>1st Build-out Date</b> 05-04-2026	<b>2nd Build-out Date</b> 05-04-2030	<b>3rd Build-out Date</b>	<b>4th Build-out Date</b>

Waivers/Conditions:

NONE

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

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**Licensee Name:** AT&T AUCTION HOLDINGS, LLC

**Call Sign:** WRQM360

**File Number:**

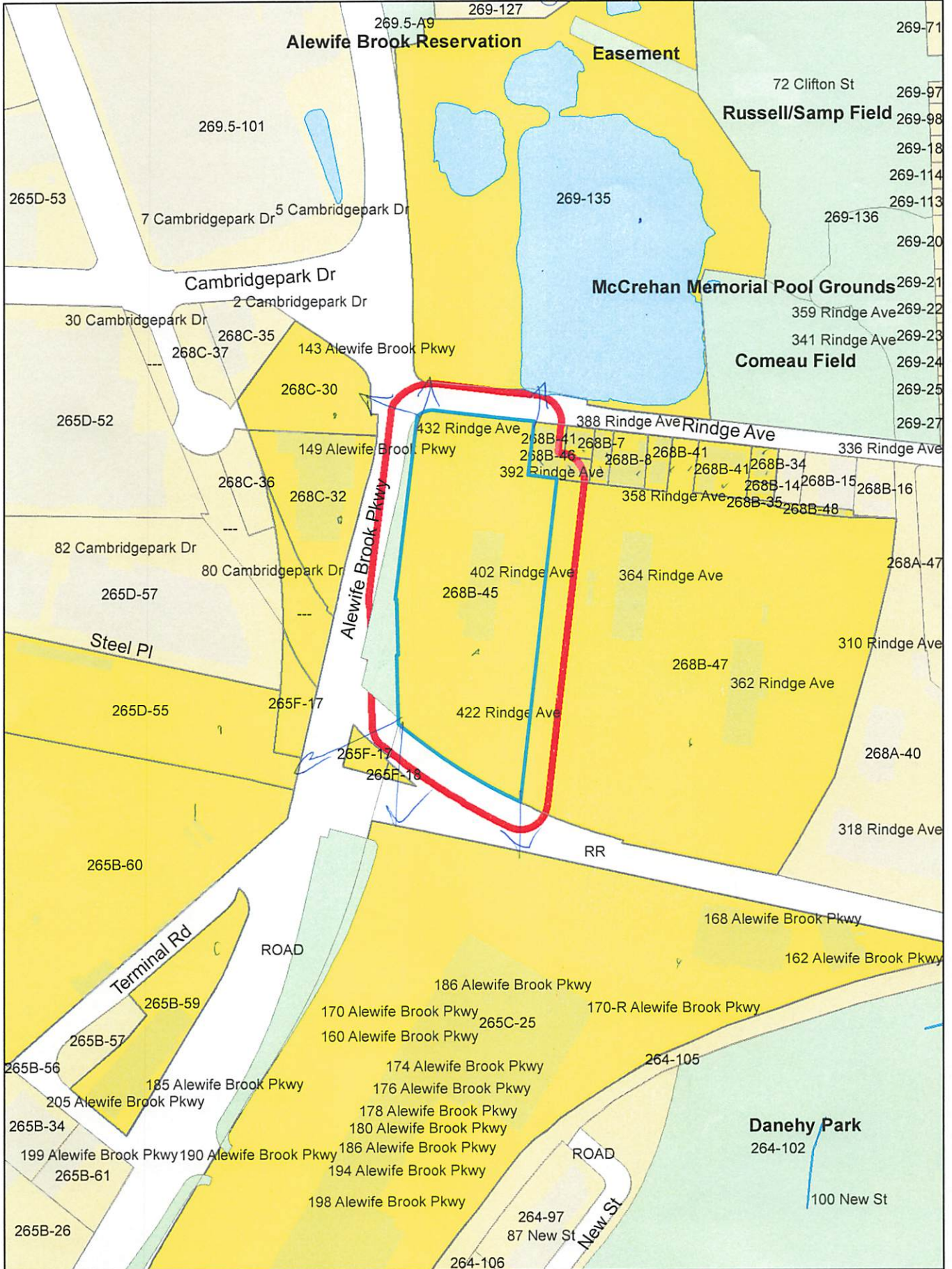
**Print Date:**

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Reference Copy

402 Rindge Ave



402 Rindge Ave

265F-17  
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STATE HOUSE  
BOSTON, MA 02133

265B-60  
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C/O NSTAR ELECTRIC COMPANY  
P.O. BOX 270, PROPERTY TAX DEPT  
HARTFORD, CT 06141-0270

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268B-45  
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268B-46  
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YOHANNES, EFREM T. &  
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390 RINDGE AVE.  
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268B-46  
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268B-46  
ARADOM, HAILE G. & GENET W. ARADOM  
394 RINDGE AVENUE.  
CAMBRIDGE, MA 02140

268B-46  
BROWN, MELISSA  
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