



CITY OF CAMBRIDGE
 MASSACHUSETTS
 BOARD OF ZONING APPEAL
 831 MASSACHUSETTS AVENUE
 CAMBRIDGE, MA 02139
 617 349-6100

2017 MAR 10 AM 11:20

OFFICE OF THE CITY CLERK
 CAMBRIDGE, MASSACHUSETTS

Plan No: BZA-012698-2017

BZA APPLICATION FORM

GENERAL INFORMATION

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

Special Permit : √ Variance : Appeal :

PETITIONER : Sprint C/O Jon Ritter, Agent

PETITIONER'S ADDRESS : 16 Chestnut Street, Suite 420 Foxboro, MA 02035

LOCATION OF PROPERTY : 678 Massachusetts Ave Cambridge, MA

TYPE OF OCCUPANCY : Telecom ZONING DISTRICT : Business B Zone

REASON FOR PETITION : ADD
 Other: Swap Antennas

DESCRIPTION OF PETITIONER'S PROPOSAL :

Pursuant to Section 4.32(g) of the Ordinance, the Applicant's proposed use for a wireless communications facility in the Business B Zoning District is permitted by special permit. The Applicant's proposed facility further complies with the provisions set forth in Section 4.32(g) footnote 49 of the Ordinance. The scope of work is to add (3) antennas to Sprint's existing telecom facility.

SECTIONS OF ZONING ORDINANCE CITED :

Article 4.000 Section 4.32.G.1 (Telecommunication Facility).
 Article 4.000 Section 4.40 (Footnote 49) (Telecommunication Facility).
 Article 10.000 Section 10.40 (Special Permit).

Original Signature(s) :
 (Petitioner(s) / Owner)

Jon Ritter - petitioner - agent for Sprint
 (Print Name)

Address : 16 Chestnut St, Suite 420
Foxboro, MA 02035

Tel. No. : 774-264-0016

E-Mail Address : jr Ritter@trmcom.com

Date : 3/6/2017

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 678 Mass Ave LLC
(OWNER)

Address: 825 Beacon Street, Suite 1, Newton Center, MA 02459

State that I/We own the property located at 678 Massachusetts Ave., which is the subject of this zoning application.

The record title of this property is in the name of 678 Mass Ave LLC

*Pursuant to a deed of duly recorded in the date 11/24/1998, Middlesex South County Registry of Deeds at Book 155, Page 457; or Middlesex Registry District of Land Court, Certificate No. _____ Book _____ Page _____.


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

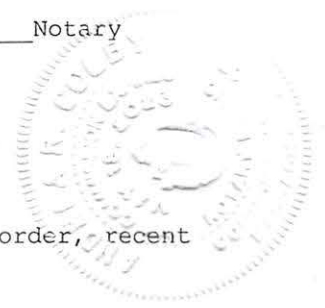
*Written evidence of Agent's standing to represent petitioner may be requested.

Commonwealth of Massachusetts, County of Middlesex

The above-name Robert Walsh personally appeared before me, this 24th of Feb, 2017, and made oath that the above statement is true.

Jandra P. Colly Notary

My commission expires 5/18/23 (Notary Seal).



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

THE UNIVERSITY OF MICHIGAN LIBRARY

TO THE HONORABLE SENATE OF THE UNIVERSITY OF MICHIGAN

1913

RESOLUTION

Resolved, That the sum of \$10,000 be appropriated for the purchase of books for the University Library.

Approved by the Senate of the University of Michigan, this 15th day of March, 1913.

Attest:

Secretary of the Senate

1913

Approved by the Senate of the University of Michigan, this 15th day of March, 1913.

Attest:

Secretary of the Senate

1913

Approved by the Senate of the University of Michigan, this 15th day of March, 1913.

Attest:

Secretary of the Senate

Handwritten signature

1913



Approved by the Senate of the University of Michigan, this 15th day of March, 1913.

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 678 Massachusetts 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:
- Pursuant to Section 4.32(g) of the Ordinance, the Applicant's proposed use for a wireless communications facility in the Business B Zoning District is permitted by special permit. The Applicant's proposed facility further complies with the provisions set forth in Section 4.32(g) footnote 49 of the Ordinance. The applicant's design minimized the visual impact of the proposed facility. The facility will be installed on the existing rooftop of the Building, and the proposed antennas will be camouflaged and painted to match the color of the existing Building.
- 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:
- The proposed installation will not obstruct existing rights-of-way or pedestrian access and will not change the daily conditions of access, egress, traffic, congestion hazard, or character of the neighborhood. The installation will not require the addition of any new parking or loading spaces. The use is passive and will not change the current conditions or appearance surrounding the Building. The facility will not produce any odors, fumes, noise or waste. There will be no need for water, sewer, or other municipal services. As mentioned above, once modified, the facility will be unmanned and will only require infrequent visits by a technician, typically two times per month for routine diagnostics and/or maintenance, except in cases of emergency. These infrequent visits will not result in any material increases in traffic or disruption to patterns of access or egress that will cause congestion hazards or cause a substantial change in the established neighborhood character. The applicant's maintenance personnel will make use of the existing access roads and parking at the Building
- 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:
- As described above and illustrated on the enclosed photograph simulations, the modification of the existing facility will produce a minimal change in the appearance of the Building. The modification of the existing facility will blend with the existing characteristics of the Building and the surrounding neighborhood. Moreover, the proposed installation will not generate any traffic, smoke, dust, heat, glare, discharge of noxious substances, nor will it pollute waterways or groundwater. Conversely, the surrounding properties and general public will benefit from the potential to enjoy improved wireless communication
- 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:

The Operations of the proposed telecommunications facility will not adversely impact the health, safety, and the welfare of the residents of the City of Cambridge. On the contrary, the proposed use will benefit the City and promote the safety and welfare of its residents, businesses and drivers by providing reliable state-of-the-art digital wireless voice and data services. Further, the site will improve the reliability of emergency communications with the police and fire departments by eliminating dropped or blocked calls due to inadequate signal strength or insufficient network capacity to handle call volume, particularly important during emergency situations.

The Proposed facility will comply with all federal, state and local safety requirements including the standards established by the FCC, Federal Aviation Administration (FAA), the American Standards Institute (ANSI), and the Massachusetts Department of Public Health (MDPH)

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:

N/A. The Applicant is not proposing to construct a new building or structure

BZA APPLICATION FORM
DIMENSIONAL INFORMATION

APPLICANT: TRM **PRESENT USE/OCCUPANCY:** Telecom
LOCATION: 678 Massachusetts Ave Cambridge, MA **ZONE:** Business B Zone
PHONE: _____ **REQUESTED USE/OCCUPANCY:** Telecom

	<u>EXISTING CONDITIONS</u>	<u>REQUESTED CONDITIONS</u>	<u>ORDINANCE REQUIREMENTS</u> ¹	
<u>TOTAL GROSS FLOOR AREA:</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	(max.)
<u>LOT AREA:</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	(min.)
<u>RATIO OF GROSS FLOOR AREA TO LOT AREA: 2</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	(max.)
<u>LOT AREA FOR EACH DWELLING UNIT:</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	(min.)
<u>SIZE OF LOT:</u>				
WIDTH	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	(min.)
DEPTH	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	
<u>SETBACKS IN FEET:</u>				
FRONT	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	(min.)
REAR	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	(min.)
LEFT SIDE	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	(min.)
RIGHT SIDE	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	(min.)
<u>SIZE OF BLDG.:</u>				
HEIGHT	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	(max.)
LENGTH	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	
WIDTH	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	
<u>RATIO OF USABLE OPEN SPACE TO LOT AREA:</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	(min.)
<u>NO. OF DWELLING UNITS:</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	(max.)
<u>NO. OF PARKING SPACES:</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	(min./max)
<u>NO. OF LOADING AREAS:</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	(min.)
<u>DISTANCE TO NEAREST BLDG. ON SAME LOT:</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	(min.)

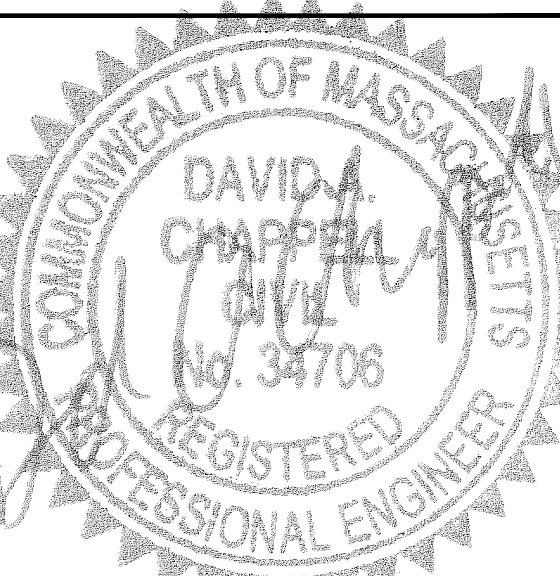
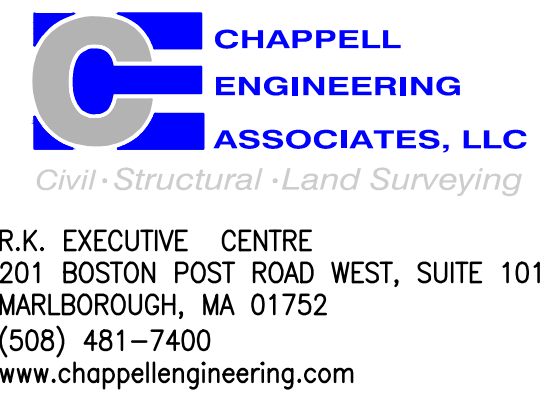
Describe where applicable, other occupancies on same lot, the size of adjacent buildings on same lot, and type of construction proposed, e.g.; wood frame, concrete, brick, steel, etc.

install (3) antennas to existing Sprint telecom facility on the rooftop

- SEE CAMBRIDGE ZONING ORDINANCE ARTICLE 5.000, SECTION 5.30 (DISTRICT OF DIMENSIONAL REGULATIONS).
- TOTAL GROSS FLOOR AREA (INCLUDING BASEMENT 7'-0" IN HEIGHT AND ATTIC AREAS GREATER THAN 5') DIVIDED BY LOT AREA.
- OPEN SPACE SHALL NOT INCLUDE PARKING AREAS, WALKWAYS OR DRIVEWAYS AND SHALL HAVE A MINIMUM DIMENSION OF 15'.



PROJECT: 2.5 EQUIPMENT DEPLOYMENT
 SITE NAME: 678 MASS AVE
 SITE CASCADE: BS03XC032
 SITE ADDRESS: 678 MASSACHUSETTS AVENUE
 CAMBRIDGE, MA 02139
 SITE TYPE: ROOFTOP



THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF SPRINT AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF SPRINT.

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	11/10/16	ISSUED FOR FINAL	BDJ
0	10/04/16	ISSUED FOR REVIEW	BDJ

SITE NUMBER:
BS03XC032
 SITE NAME:
678 MASS AVE
 SITE ADDRESS:
 678 MASSACHUSETTS AVENUE
 CAMBRIDGE, MA 02139

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

SITE INFORMATION

STRUCTURE OWNER:
 678 MASS AVE. LLC
 825 BEACON STREET, SUITE 1
 NEWTON CENTER, MA 02159

LATITUDE (NAD83):
GOOGLE EARTH 2-C CONFIRMATION
 N 42° 21' 56.00"
 N 42.365555°

LONGITUDE (NAD83):
GOOGLE EARTH 2-C CONFIRMATION
 W 71° 06' 16.10"
 W 71.104473°

COUNTY:
 MIDDLESEX

ZONING JURISDICTION:
 TOWN OF CAMBRIDGE

ZONING DISTRICT:
 BUSINESS A

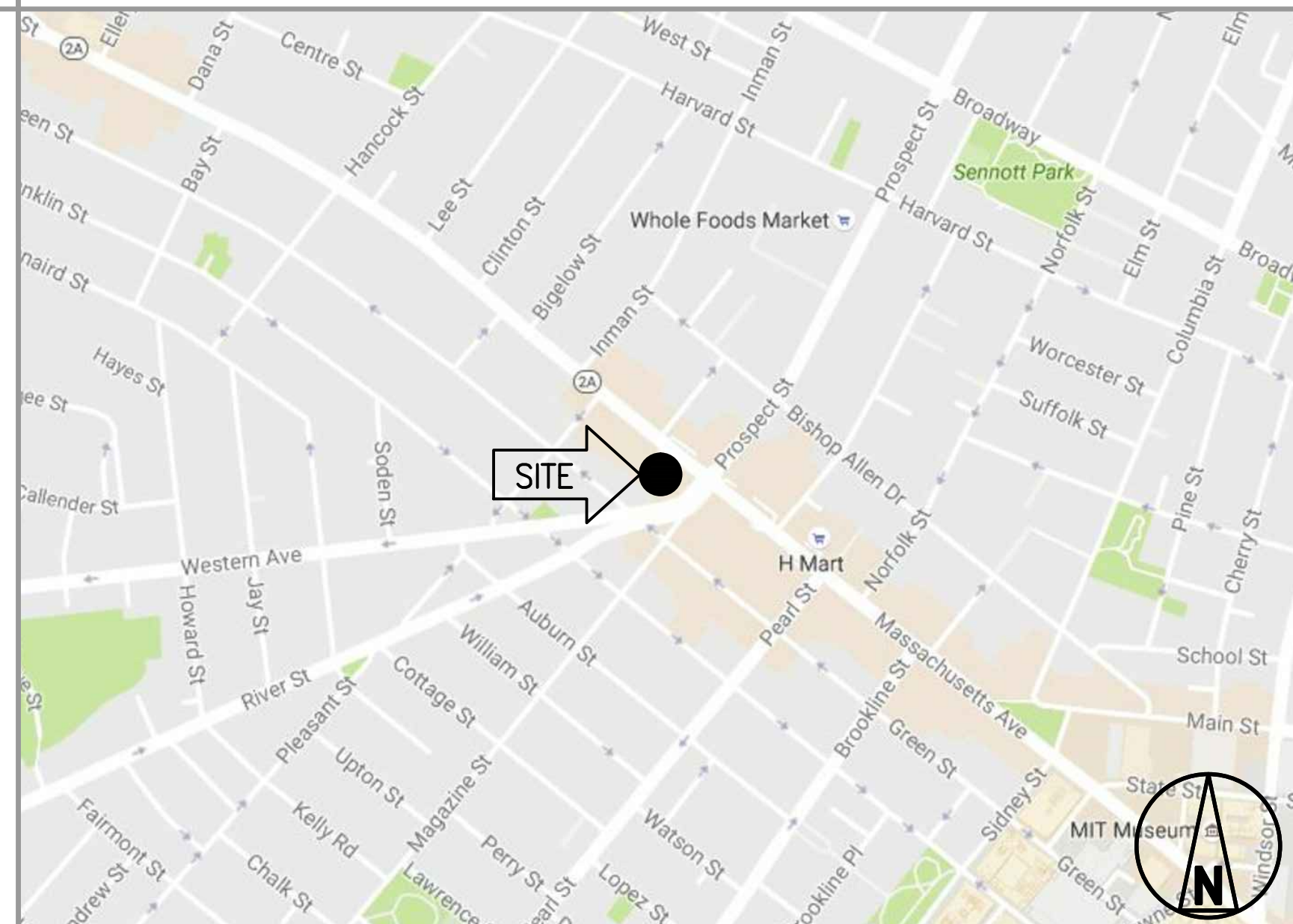
POWER COMPANY:
 NSTAR
 PHONE: 1-617-424-2000

AAV PROVIDER:
 COMCAST
 PHONE: 1-800-COMCAST

SPRINT CM:
 RONALD HIBBARD
 PHONE: 774-269-8812
 Ronald.Hibbard@sprint.com

EQUIPMENT SUPPLIER:
 ALCATEL-LUCENT
 600 MOUNTAIN AVENUE
 MURRAY HILL, NJ 07974
 (908) 508-8080

AREA MAP



LOCATION MAP - GOOGLE EARTH 2-C CONFIRMATION



PROJECT DESCRIPTION

SPRINT EQUIPMENT MODIFICATIONS REQUIRED TO SUPPORT MODERNIZATION OF AN EXISTING WIRELESS COMMUNICATIONS FACILITY AND UTILIZATION OF FCC BROADBAND SPECTRUM LICENSE FOR 2.5GHz FREQUENCY, INCLUDING INSTALLATION OF:

GROUND-LEVEL RAN EQUIPMENT, CONSISTING OF

- NO CHANGES

TOWER-TOP EQUIPMENT, INCLUDING INSTALLATION OF:

- (3) PANEL ANTENNAS
- (3) REMOTE RADIO HEADS (RRH)
- (9) CABLES (ETHERNET, FIBER, & DC)

SPECIAL ZONING NOTE:
 BASED ON INFORMATION PROVIDED BY SPRINT REGULATORY COMPLIANCE PROFESSIONALS AND LEGAL COUNSEL, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS CONSIDERED AND ELIGIBLE FACILITY UNDER THE TAX RELIEF ACT OF 2012, 47 USC 1455(A), AND IS SUBJECT TO AN EXPEDITED ELIGIBLE FACILITIES REQUEST/REVIEW AND ZONING PRE-EMPTION FOR LOCAL DISCRETIONARY PERMITS (VARIANCE, SPECIAL PERMIT, SITE PLAN REVIEW, ADMINISTRATIVE REVIEW).

GENERAL NOTES

1. THIS IS AN UNMANNED AND RESTRICTED ACCESS TELECOMMUNICATION FACILITY, AND IS NOT FOR HUMAN HABITATION. IT WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNAL FOR THE PURPOSE OF PROVIDING PUBLIC CELLULAR SERVICE.
 - ADA COMPLIANCE NOT REQUIRED.
 - POTABLE WATER OR SANITARY SERVICE IS NOT REQUIRED.
 - NO OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES REQUIRED.
2. CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON JOB SITE. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. FAILURE TO NOTIFY THE ARCHITECT/ENGINEER PLACE THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.
3. NEW CONSTRUCTION WILL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES.
 - BUILDING CODE: MASSACHUSETTS STATE BUILDING CODE 780 CMR-8TH EDITION
 - ELECTRICAL CODE: 2014 NATIONAL ELECTRICAL CODE
 - STRUCTURAL CODE: TIA/EIA-222-G STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

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



DRAWING INDEX

SHEET NO.	SHEET TITLE	REV.	CHK.	BY.
T-1	TITLE SHEET	1	JMT	BDJ
SP-1	OUTLINE SPECIFICATIONS	1	JMT	BDJ
SP-2	OUTLINE SPECIFICATIONS	1	JMT	BDJ
SP-3	OUTLINE SPECIFICATIONS	1	JMT	BDJ
A-1	ROOFTOP & EQUIPMENT PLANS AND DETAILS	1	JMT	BDJ
A-2	ELEVATION	1	JMT	BDJ
A-3	ANTENNA PLANS	1	JMT	BDJ
A-4	RF DATA SHEET	1	JMT	BDJ
A-5	RAN WIRING DIAGRAMS	1	JMT	BDJ
A-6	EQUIPMENT DETAILS & CONSTRUCTION SPECS	1	JMT	BDJ
S-1	STRUCTURAL DETAILS	1	JMT	BDJ
E-1	ONE-LINE DIAGRAM & PPC DETAILS	1	JMT	BDJ
E-2	GROUNDING DETAILS & NOTES	1	JMT	BDJ

APPROVALS

THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND MAY IMPOSE CHANGES OR MODIFICATIONS.

SPRINT: _____ DATE: _____

CONSTRUCTION MANAGER: _____ DATE: _____

LEASING/SITE ACQUISITION: _____ DATE: _____

RF ENGINEER: _____ DATE: _____

LANDLORD/TOWER OWNER: _____ DATE: _____

THESE OUTLINE SPECIFICATIONS IN CONJUNCTION WITH THE SPRINT STANDARD CONSTRUCTION SPECIFICATIONS, INCLUDING CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

SECTION 01 100 - SCOPE OF WORK

PART 1 – GENERAL

- 1.1 **THE WORK:** THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE SPRINT CONSTRUCTION STANDARDS FOR WIRELESS SITES, CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.
- 1.2 **RELATED DOCUMENTS:**
- A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.
- B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.
- 1.3 **PRECEDENCE:** SHOULD CONFLICTS OCCUR BETWEEN THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES INCLUDING THE STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES AND THE CONSTRUCTION DRAWINGS, INFORMATION ON THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE. NOTIFY SPRINT CONSTRUCTION MANAGER IF THIS OCCURS.
- 1.4 **NATIONALLY RECOGNIZED CODES AND STANDARDS:**
- A. THE WORK SHALL COMPLY WITH APPLICABLE NATIONAL AND LOCAL CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF, INCLUDED BUT NOT LIMITED TO THE FOLLOWING:
- GR-78-CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT.
 - GR-1089 CORE, ELECTROMAGNETIC COMPATIBILITY AND ELECTRICAL SAFETY -GENERIC CRITERIA FOR NETWORK TELECOMMUNICATIONS EQUIPMENT.
 - NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE – "NEC") AND NFPA 101 (LIFE SAFETY CODE).
 - AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM)
 - INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE)
 - AMERICAN CONCRETE INSTITUTE (ACI)
 - AMERICAN WIRE PRODUCERS ASSOCIATION (AWPA)
 - CONCRETE REINFORCING STEEL INSTITUTE (CRSI)
 - AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)
 - PORTLAND CEMENT ASSOCIATION (PCA)
 - NATIONAL CONCRETE MASONRY ASSOCIATION (NCMA)
 - BRICK INDUSTRY ASSOCIATION (BIA)
 - AMERICAN WELDING SOCIETY (AWS)
 - NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA)
 - SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)
 - DOOR AND HARDWARE INSTITUTE (DHI)
 - OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
 - APPLICABLE BUILDING CODES INCLUDING UNIFORM BUILDING CODE, SOUTHERN BUILDING CODE, BOCA, AND THE INTERNATIONAL BUILDING CODE.
- 1.5 **DEFINITIONS:**
- A. WORK: THE SUM OF TASKS AND RESPONSIBILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS.
- B. COMPANY: SPRINT CORPORATION
- C. ENGINEER: SYNONYMOUS WITH ARCHITECT & ENGINEER AND "A&E". THE DESIGN PROFESSIONAL HAVING PROFESSIONAL RESPONSIBILITY FOR DESIGN OF THE PROJECT.
- D. CONTRACTOR: CONSTRUCTION CONTRACTOR; CONSTRUCTION VENDOR; INDIVIDUAL OR ENTITY WHO AFTER EXECUTION OF A CONTRACT IS BOUND TO ACCOMPLISH THE WORK.
- E. THIRD PARTY VENDOR OR AGENCY: A VENDOR OR AGENCY ENGAGED SEPARATELY BY THE COMPANY, A&E, OR CONTRACTOR TO PROVIDE MATERIALS OR TO ACCOMPLISH SPECIFIC TASKS RELATED TO BUT NOT INCLUDED IN THE WORK.
- F. OFC: OWNER FURNISHED, CONTRACTOR INSTALLED EQUIPMENT.
- G. CONSTRUCTION MANAGER – ALL PROJECTS RELATED COMMUNICATION TO FLOW THROUGH SPRINT REPRESENTATIVE IN CHARGE OF PROJECT...
- 1.6 **SITE FAMILIARITY:** CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE SPRINT CONSTRUCTION MANAGER PRIOR TO THE COMMENCEMENT OF WORK. NO COMPENSATION WILL BE AWARDED BASED ON CLAIM OF LACK OF KNOWLEDGE OR FIELD CONDITIONS.
- 1.7 **POINT OF CONTACT:** COMMUNICATION BETWEEN SPRINT AND THE CONTRACTOR SHALL FLOW THROUGH THE SINGLE SPRINT CONSTRUCTION MANAGER APPOINTED TO MANAGE THE PROJECT FOR SPRINT.
- 1.8 **ON-SITE SUPERVISION:** THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL EMPLOY A COMPETENT SUPERINTENDENT WHO SHALL BE IN ATTENDANCE AT THE SITE AT ALL TIMES DURING PERFORMANCE OF THE WORK.
- 1.9 **DRAWINGS, SPECIFICATIONS AND DETAILS REQUIRED AT JOBSITE:** THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS, STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES AND THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES AT THE JOBSITE FROM MOBILIZATION THROUGH CONSTRUCTION COMPLETION.
- A. THE JOBSITE DRAWINGS, SPECIFICATIONS AND DETAILS SHALL BE CLEARLY MARKED DAILY IN RED PENCIL WITH ANY CHANGES IN CONSTRUCTION OVER WHAT IS DEPICTED IN THE DOCUMENTS. AT CONSTRUCTION COMPLETION, THIS JOBSITE MARKUP SET SHALL BE DELIVERED TO THE COMPANY OR COMPANY'S DESIGNATED REPRESENTATIVE TO BE FORWARDED TO THE COMPANY'S A&E VENDOR FOR PRODUCTION OF "AS-BUILT" DRAWINGS. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK. CONTRACTOR SHALL NOTIFY SPRINT CONSTRUCTION MANAGER OF ANY VARIATIONS PRIOR TO PROCEEDING WITH THE WORK.
- B. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS NOTED OTHERWISE. SPACING BETWEEN EQUIPMENT IS THE REQUIRED CLEARANCE. SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS AND/OR DESIGN INTENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE SPRINT CONSTRUCTION MANAGER PRIOR TO PROCEEDING WITH THE WORK.
- 1.10 **USE OF JOB SITE:** THE CONTRACTOR SHALL CONFINE ALL CONSTRUCTION AND RELATED OPERATIONS INCLUDING STAGING AND STORAGE OF MATERIALS AND EQUIPMENT, PARKING, TEMPORARY FACILITIES, AND WASTE STORAGE TO THE LEASE PARCEL UNLESS OTHERWISE PERMITTED BY THE CONTRACT DOCUMENTS.

- 1.11 **UTILITIES SERVICES:** WHERE NECESSARY TO CUT EXISTING PIPES, ELECTRICAL WIRES, CONDUITS, CABLES, ETC., OF UTILITY SERVICES, OR OF FIRE PROTECTION OR COMMUNICATIONS SYSTEMS, THEY SHALL BE CUT AND CAPPED AT SUITABLE PLACES OR WHERE SHOWN. ALL SUCH ACTIONS SHALL BE COORDINATED WITH THE UTILITY COMPANY INVOLVED:
- 1.12 **PERMITS / FEES:** WHEN REQUIRED THAT A PERMIT OR CONNECTION FEE BE PAID TO A PUBLIC UTILITY PROVIDER FOR NEW SERVICE TO THE CONSTRUCTION PROJECT, PAYMENT OF SUCH FEE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- 1.13 CONTRACTOR SHALL TAKE ALL MEASURES AND PROVIDE ALL MATERIAL NECESSARY FOR PROTECTING EXISTING EQUIPMENT AND PROPERTY.
- 1.14 **METHODS OF PROCEDURE (MOPS) FOR CONSTRUCTION:** CONTRACTOR SHALL PERFORM WORK AS DESCRIBED IN THE FOLLOWING INSTALLATION AND COMMISSIONING MOPS.
- TOP HAT
 - HOW TO INSTALL A NEW CABINET
 - BASE BAND UNIT IN EXISTING UNIT
 - INSTALLATION OF BATTERIES
 - INSTALLATION OF HYBRID CABLE
 - INSTALLATION OF RRRH'S
 - CABLING
 - TS-0200 REV 4 – ANTENNA LINE ACCEPTANCE STANDARDS
 - SPRINT CELL SITE ENGINEERING NOTICE – EN 2012-001, REV 1.
 - COMMISSIONING MOPS
 - SPRINT CELL SITE ENGINEERING NOTICE – EN-2013-002
 - SPRINT ENGINEERING LETTER – EL-0504
 - SPRINT ENGINEERING LETTER – EL-0568
 - SPRINT TECHNICAL SPECIFICATION – TS-0193
- 1.15 **USE OF ELECTRONIC PROJECT MANAGEMENT SYSTEMS:**
- A. CONTRACTOR WILL UTILIZE ITS BEST EFFORTS TO WORK WITH SPRINT ELECTRONIC PROJECT MANAGEMENT SYSTEMS. CONTRACTOR UNDERSTANDS THAT SUFFICIENT INTERNET ACCESS, EQUIVALENT TO "BROADBAND" OR BETTER, IS REQUIRED TO TIMELY AND EFFECTIVELY UTILIZE SPRINT DATA AND DOCUMENT MANAGEMENT SYSTEMS AND AGREES TO MAINTAIN APPROPRIATE CONNECTIONS FOR CONTRACTOR'S STAFF AND OFFICES THAT ARE COMPATIBLE WITH SPRINT DATA AND DOCUMENT MANAGEMENT SYSTEMS

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

- 3.1 **TEMPORARY UTILITIES AND FACILITIES:** THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY UTILITIES AND FACILITIES NECESSARY EXCEPT AS OTHERWISE INDICATED IN THE CONSTRUCTION DOCUMENTS. TEMPORARY UTILITIES AND FACILITIES INCLUDE POTABLE WATER, HEAT, HVAC, ELECTRICITY, SANITARY FACILITIES, WASTE DISPOSAL FACILITIES, AND TELEPHONE/COMMUNICATION SERVICES. PROVIDE TEMPORARY UTILITIES AND FACILITIES IN ACCORDANCE WITH OSHA AND THE AUTHORITY HAVING JURISDICTION. CONTRACTOR MAY UTILIZE THE COMPANY ELECTRICAL SERVICE IN THE COMPLETION OF THE WORK WHEN IT BECOMES AVAILABLE. USE OF THE LESSORS OR SITE OWNER'S UTILITIES OR FACILITIES IS EXPRESSLY FORBIDDEN EXCEPT AS OTHERWISE ALLOWED IN THE CONTRACT DOCUMENTS.
- 3.2 **ACCESS TO WORK:** THE CONTRACTOR SHALL PROVIDE ACCESS TO THE JOB SITE FOR AUTHORIZED COMPANY PERSONNEL AND AUTHORIZED REPRESENTATIVES OF THE ARCHITECT/ENGINEER DURING ALL PHASES OF THE WORK.
- 3.3 **TESTING; REQUIREMENTS FOR TESTING BY THIS CONTRACTOR SHALL BE AS INDICATED HEREWITH, ON THE CONSTRUCTION DRAWINGS, AND IN THE INDIVIDUAL SECTIONS OF THESE SPECIFICATIONS.** SHOULD COMPANY CHOOSE TO ENGAGE ANY THIRD-PARTY TO CONDUCT ADDITIONAL TESTING, THE CONTRACTOR SHALL COOPERATE WITH AND PROVIDE A WORK AREA FOR COMPANY'S TEST AGENCY.
- 3.4 **DIMENSIONS:** VERIFY DIMENSIONS INDICATED ON DRAWINGS WITH FIELD DIMENSIONS BEFORE FABRICATION OR ORDERING OF MATERIALS. DO NOT SCALE DRAWINGS.
- 3.5 **EXISTING CONDITIONS:** NOTIFY THE SPRINT CONSTRUCTION MANAGER OF EXISTING CONDITIONS DIFFERING FROM THOSE INDICATED ON THE DRAWINGS. DO NOT REMOVE OR ALTER STRUCTURAL COMPONENTS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT AND ENGINEER.

SECTION 01 200 - COMPANY FURNISHED MATERIAL AND EQUIPMENT

PART 1 – GENERAL

- 1.1 **THE WORK:** THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.
- 1.2 **RELATED DOCUMENTS:**
- A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.
- B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

- 3.1 **RECEIPT OF MATERIAL AND EQUIPMENT:**
- COMPANY FURNISHED MATERIAL AND EQUIPMENT IS IDENTIFIED ON THE RF DATA SHEET IN THE CONSTRUCTION DOCUMENTS.
 - THE CONTRACTOR IS RESPONSIBLE FOR SPRINT PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL:
 - ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.
 - VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.
 - TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.
 - RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY-FOUR HOURS AFTER RECEIPT, REPORT TO SPRINT OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.
 - PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.
 - COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF-LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.
- 3.2 **DELIVERABLES:**
- COMPLETE SHIPPING AND RECEIPT DOCUMENTATION IN ACCORDANCE WITH COMPANY PRACTICE.
 - IF APPLICABLE, COMPLETE LOST/STOLEN/DAMAGED DOCUMENTATION REPORT AS NECESSARY IN ACCORDANCE WITH COMPANY PRACTICE, AND AS DIRECTED BY COMPANY.
 - UPLOAD DOCUMENTATION INTO SPRINT SITE MANAGEMENT SYSTEM (SMS) AND/OR PROVIDE HARD COPY DOCUMENTATION AS REQUESTED.

SECTION 01 300 - CELL SITE CONSTRUCTION

PART 1 – GENERAL

- 1.1 **THE WORK:** THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.
- 1.2 **RELATED DOCUMENTS:**
- THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.
 - SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.
- 1.3 **NOTICE TO PROCEED:**
- NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED AND THE ISSUANCE OF THE WORK ORDER.
 - UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE SPRINT WITH AN OPERATIONAL WIRELESS FACILITY.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

- 3.1 **FUNCTIONAL REQUIREMENTS:**
- THE ACTIVITIES DESCRIBED IN THIS PARAGRAPH REPRESENT MINIMUM ACTIONS AND PROCESSES REQUIRED TO SUCCESSFULLY COMPLETE THE WORK. THE ACTIVITIES DESCRIBED ARE NOT EXHAUSTIVE, AND CONTRACTOR SHALL TAKE ANY AND ALL ACTIONS AS NECESSARY TO SUCCESSFULLY COMPLETE THE CONSTRUCTION OF A FULLY FUNCTIONING WIRELESS FACILITY AT THE SITE IN ACCORDANCE WITH COMPANY PROCESSES.
 - SUBMIT SPECIFIC DOCUMENTATION AS INDICATED HEREIN, AND OBTAIN REQUIRED APPROVALS WHILE THE WORK IS BEING PERFORMED.
 - MANAGE AND CONDUCT ALL FIELD CONSTRUCTION SERVICE RELATED ACTIVITIES
 - PROVIDE CONSTRUCTION ACTIVITIES TO THE EXTENT REQUIRED BY THE CONTRACT DOCUMENTS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
 - PERFORM ANY REQUIRED SITE ENVIRONMENTAL MITIGATION.
 - PREPARE GROUND SITES; PROVIDE DE-GRUBBING; AND ROUGH AND FINAL GRADING, AND COMPOUND SURFACE TREATMENTS.
 - MANAGE AND CONDUCT ALL ACTIVITIES FOR INSTALLATION OF UTILITIES INCLUDING ELECTRICAL AND TELCO BACKHAUL.
 - INSTALL UNDERGROUND FACILITIES INCLUDING UNDERGROUND POWER AND COMMUNICATIONS CONDUITS, AND UNDERGROUND GROUNDING SYSTEM.
 - INSTALL ABOVE GROUND GROUNDING SYSTEMS.
 - PROVIDE NEW HVAC INSTALLATIONS AND MODIFICATIONS.
 - INSTALL "H-FRAMES", CABINETS AND SHELTERS AS INDICATED.
 - INSTALL ROADS, ACCESS WAYS, CURBS AND DRAINS AS INDICATED.
 - ACCOMPLISH REQUIRED MODIFICATION OF EXISTING FACILITIES.
 - PROVIDE ANTENNA SUPPORT STRUCTURE FOUNDATIONS.
 - PROVIDE SLABS AND EQUIPMENT PLATFORMS.
 - INSTALL COMPOUND FENCING, SIGHT SHIELDING, LANDSCAPING AND ACCESS BARRIERS.
 - PERFORM INSPECTION AND MATERIAL TESTING AS REQUIRED HEREINAFTER.
 - CONDUCT SITE RESISTANCE TO EARTH TESTING AS REQUIRED HEREINAFTER
 - INSTALL FIXED GENERATOR SETS AND OTHER STANDBY POWER SOLUTIONS.
 - INSTALL TOWERS, ANTENNA SUPPORT STRUCTURES AND PLATFORMS ON EXISTING TOWERS AS REQUIRED.
 - INSTALL CELL SITE RADIOS, MICROWAVE, GPS, COAXIAL MAINLINE, ANTENNAS, CROSS BAND COUPLERS, TOWER TOP AMPLIFIERS, LOW NOISE AMPLIFIERS AND RELATED EQUIPMENT.
 - PERFORM, DOCUMENT, AND CLOSE OUT ANY CONSTRUCTION CONTROL DOCUMENTS THAT MAY BE REQUIRED BY GOVERNMENT AGENCIES AND LANDLORDS.
 - PERFORM ANTENNAL AND COAX SWEEP TESTING AND MAKE ANY AND ALL NECESSARY CORRECTIONS.
 - REMAIN ON SITE MOBILIZED THROUGHOUT HAND-OFF AND INTEGRATION TO ASSIST AS NEEDED UNTIL SITE IS DEEMED SUBSTANTIALLY COMPLETE AND PLACED "ON AIR."
- 3.2 **GENERAL REQUIREMENTS FOR CIVIL CONSTRUCTION:**
- CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE SITE ALL REMAINING RUBBISH, IMPLEMENTS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.
 - EQUIPMENT ROOMS SHALL AT ALL TIMES BE MAINTAINED "BROOM CLEAN" AND CLEAR OF DEBRIS.
 - CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO DISCOVER AND LOCATE ANY HAZARDOUS CONDITION.
 - IN THE EVENT CONTRACTOR ENCOUNTERS ANY HAZARDOUS CONDITION WHICH HAS NOT BEEN ABATED OR OTHERWISE MITIGATED, CONTRACTOR AND ALL OTHER PERSONS SHALL IMMEDIATELY STOP WORK IN THE AFFECTED AREA AND NOTIFY COMPANY IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED EXCEPT BY WRITTEN NOTIFICATION BY COMPANY.
 - CONTRACTOR AGREES TO USE CARE WHILE ON THE SITE AND SHALL NOT TAKE ANY ACTION THAT WILL OR MAY RESULT IN OR CAUSE THE HAZARDOUS CONDITION TO BE FURTHER RELEASED IN THE ENVIRONMENT, OR TO FURTHER EXPOSE INDIVIDUALS TO THE HAZARD.
 - CONTRACTOR'S ACTIVITIES SHALL BE RESTRICTED TO THE PROJECT LIMITS. SHOULD AREAS OUTSIDE THE PROJECT LIMITS BE AFFECTED BY CONTRACTOR'S ACTIVITIES, CONTRACTOR SHALL IMMEDIATELY RETURN THEM TO ORIGINAL CONDITION
 - CONDUCT TESTING AS REQUIRED HEREIN.
- 3.3 **DELIVERABLES:**
- CONTRACTOR SHALL REVIEW, APPROVE, AND SUBMIT TO SPRINT SHOP DRAWINGS, PRODUCT DATA, SAMPLES, AND SIMILAR SUBMITTALS AS REQUIRED HEREINAFTER
 - PROVIDE DOCUMENTATION INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING. DOCUMENTATION SHALL BE FORWARDED IN ORIGINAL FORMAT AND/OR UPLOADED INTO SMS.
 - ALL CORRESPONDENCE AND PRELIMINARY CONSTRUCTION REPORTS.
 - PROJECT PROGRESS REPORTS.
 - CIVIL CONSTRUCTION START DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
 - ELECTRICAL SERVICE COMPLETION DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
 - LINES AND ANTENNA INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
 - POWER INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
 - TELCO READY DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
 - PPC (OR SHELTER) INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
 - TOWER CONSTRUCTION START DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
 - TOWER CONSTRUCTION COMPLETE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
 - BTS AND RADIO EQUIPMENT DELIVERED AT SITE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
 - NETWORK OPERATIONS HANDOFF CHECKLIST (HOC WALK) COMPLETE (UPLOAD FORM IN SMS)
 - CIVIL CONSTRUCTION COMPLETE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
 - SITE CONSTRUCTION PROGRESS PHOTOS UNLOADED INTO SMS.

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APPROVED BY: JMT

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	11/10/16	ISSUED FOR FINAL	BDJ
0	10/04/16	ISSUED FOR REVIEW	BDJ

SITE NUMBER:
BS03XC032

SITE NAME:
678 MASS AVE

SITE ADDRESS:
678 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02139

SHEET TITLE
OUTLINE SPECIFICATIONS

SHEET NUMBER
SP-1

CONTINUED FROM SP-1:

SECTION 01 400 - SUBMITTALS, TESTS, AND INSPECTIONS

PART 1 – GENERAL

1.1 **THE WORK:** THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 **RELATED DOCUMENTS:**

- A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.
- B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

1.3 **SUBMITTALS:**

- A. THE WORK IN ALL ASPECTS SHALL COMPLY WITH THE CONSTRUCTION DRAWINGS AND THESE SPECIFICATIONS.
- B. SUBMIT THE FOLLOWING TO COMPANY REPRESENTATIVE FOR APPROVAL.
 1. CONCRETE MIX-DESIGNS FOR TOWER FOUNDATIONS, ANCHORS PIERS, AND CONCRETE PAVING.
 2. CONCRETE BREAK TESTS AS SPECIFIED HEREIN.
 3. SPECIAL FINISHES FOR INTERIOR SPACES, IF ANY.
 4. ALL EQUIPMENT AND MATERIALS SO IDENTIFIED ON THE CONSTRUCTION DRAWINGS.
 5. CHEMICAL GROUNDING DESIGN.
- C. ALTERNATES: AT THE COMPANY'S REQUEST, ANY ALTERNATIVES TO THE MATERIALS OR METHODS SPECIFIED SHALL BE SUBMITTED TO SPRINT'S CONSTRUCTION MANAGER FOR APPROVAL PRIOR TO BEING SHIPPED TO SITE. SPRINT WILL REVIEW AND APPROVE ONLY THOSE REQUESTS MADE IN WRITING. NO VERBAL APPROVALS WILL BE CONSIDERED. SUBMITTAL FOR APPROVAL SHALL INCLUDE A STATEMENT OF COST REDUCTION PROPOSED FOR USE OF ALTERNATE PRODUCT.

1.4 **TESTS AND INSPECTIONS:**

- A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.
- B. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
 1. COAX SWEEPS AND FIBER TESTS PER SPRINT TS-0200 CURRENT VERSION ANTENNA LINE ACCEPTANCE STANDARDS.
 2. AGL, AZIMUTH AND DOWNTILT USING ELECTRONIC COMMERCIAL MADE-FOR-THE-PURPOSE ANTENNA ALIGNMENT TOOL.
 3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.
- C. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING:
 1. AZIMUTH, DOWNTILT, AGL – UPLOAD REPORT FROM ANTENNA ALIGNMENT TOOL TO SITERRA TASK 465. INSTALLED AZIMUTH, DOWNTILT, AND AGL MUST CONFORM TO THE RF DATA SHEETS. SWEEP AND FIBER TESTS
 2. SCANABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT
 3. ALL AVAILABLE JURISDICTIONAL INFORMATION
 4. PDF SCAN OF REDLINES PRODUCED IN FIELD
 5. ELECTRONIC AS-BUILT DRAWINGS IN AUTOCAD AND PDF FORMATS. ANY FIELD CHANGE MUST BE REFLECTED BY MODIFYING THE PLANS, ELEVATIONS, AND DETAILS IN THE DRAWING SETS. GENERAL NOTES INDICATING MODIFICATIONS WILL NOT BE ACCEPTED. CHANGES SHALL BE HIGHLIGHTED AS "CLOUDS" IDENTIFIED AS THE "AS-BUILT" CONDITION.
 6. LIEN WAIVERS
 7. FINAL PAYMENT APPLICATION
 8. REQUIRED FINAL CONSTRUCTION PHOTOS
 9. CONSTRUCTION AND COMMISSIONING CHECKLIST COMPLETE WITH NO DEFICIENT ITEMS
 10. ALL POST NTP TASKS INCLUDING DOCUMENT UPLOADS COMPLETED IN SITERRA (SPRINTS DOCUMENT REPOSITORY OF RECORD).

1.5 **COMMISSIONING:** PERFORM ALL COMMISSIONING AS REQUIRED BY APPLICABLE MOPS

1.6 **INTEGRATION:** PERFORM ALL INTEGRATION ACTIVITIES AS REQUIRED BY APPLICABLE MOPS

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 **REQUIREMENTS FOR TESTING:**

- A. THIRD PARTY TESTING AGENCY: WHEN THE USE OF A THIRD PARTY INDEPENDENT TESTING AGENCY IS REQUIRED, THE AGENCY THAT IS SELECTED MUST PERFORM SUCH WORK ON A REGULAR BASIS IN THE STATE WHERE THE PROJECT IS LOCATED AND HAVE A THOROUGH UNDERSTANDING OF LOCAL AVAILABLE MATERIALS, INCLUDING THE SOIL, ROCK, AND GROUNDWATER CONDITIONS.
 1. THE THIRD PARTY TESTING AGENCY IS TO BE FAMILIAR WITH THE APPLICABLE REQUIREMENTS FOR THE TESTS TO BE DONE, EQUIPMENT TO BE USED, AND ASSOCIATED HEALTH AND SAFETY ISSUES.
 2. EXPERIENCE IN SOILS, CONCRETE, MASONRY, AGGREGATE, AND ASPHALT TESTING USING ASTM, AASJTO, AND OTHER METHODS IS NEEDED.
 3. EXPERIENCE IN SOILS, CONCRETE, MASONRY, AGGREGATE, AND ASPHALT TESTING USING ASTM, AASJTO, AND OTHER METHODS IS NEEDED.

3.2 **REQUIRED TESTS:**

- A. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
 1. CONCRETE CYLINDER BREAK TESTS FOR THE TOWER AND ANCHOR FOUNDATIONS AS SPECIFIED IN SECTION: PORTLAND CEMENT CONCRETE PAVING.
 2. ASPHALT ROADWAY COMPACTED THICKNESS, SURFACE SMOOTHNESS, AND COMPACTED DENSITY TESTING AS SPECIFIED IN SECTION: HOT MIX ASPHALT PAVING.
 3. FIELD QUALITY CONTROL TESTING AS SPECIFIED IN SECTION: PORTLAND CEMENT CONCRETE PAVING.
 4. TESTING REQUIRED UNDER SECTION: AGGREGATE BASE FOR ACCESS ROADS, PADS AND ANCHOR LOCATIONS
 5. STRUCTURAL BACKFILL COMPACTION TESTS FOR THE TOWER FOUNDATION.
 6. SITE RESISTANCE TO EARTH TESTING PER EXHIBIT: CELL SITE GROUNDING SYSTEM DESIGN.
 7. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS.
 8. GROUNDING AT ANTENNA MASTS FOR GPS AND ANTENNAS
 9. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.

3.3 **REQUIRED INSPECTIONS:**

- A. SCHEDULE INSPECTIONS WITH COMPANY REPRESENTATIVE.
- B. CONDUCT INSPECTIONS INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
 1. GROUNDING SYSTEM INSTALLATION PRIOR TO EARTH CONCEALMENT DOCUMENTED WITH DIGITAL PHOTOGRAPHS BY CONTRACTOR, APPROVED BY A&E OR SPRINT REPRESENTATIVE.
 2. FORMING FOR CONCRETE AND REBAR PLACEMENT PRIOR TO POUR DOCUMENTED WITH DIGITAL PHOTOGRAPHS BY CONTRACTOR, APPROVED BY A&E OR SPRINT REPRESENTATIVE.
 3. COMPACTION OF BACKFILL MATERIALS; AGGREGATE BASE FOR ROADS, PADS, AND ANCHORS; ASPHALT PAVING; AND SHAFT BACKFILL FOR CONCRETE AND WOOD POLES, BY INDEPENDENT THIRD PARTY AGENCY.
 4. PRE- AND POST-CONSTRUCTION ROOFTOP AND STRUCTURAL INSPECTIONS ON EXISTING FACILITIES.
 5. TOWER ERECTION SECTION STACKING AND PLATFORM ATTACHMENT DOCUMENTED BY DIGITAL PHOTOGRAPHS BY THIRD PARTY AGENCY.
 6. ANTENNA AZIMUTH , DOWN TILT AND PER SUNLIGHT TOOL SUNSIGHT INSTRUMENTS – ANTENNALIGN ALIGNMENT TOOL (AAT)
 7. VERIFICATION DOCUMENTED WITH THE ANTENNA CHECKLIST REPORT, BY A&E, SITE DEVELOPMENT REP, OR RF REP.
 8. FINAL INSPECTION CHECKLIST AND HANDOFF WALK (HOC.). SIGNED FORM SHOWING ACCEPTANCE BY FIELD OPS IS TO BE UPLOADED INTO SMS.
 9. COAX SWEEP AND FIBER TESTING DOCUMENTS SUBMITTED VIA SMS FOR RF APPROVAL.
 10. SCAN-ABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT
 11. ALL AVAILABLE JURISDICTIONAL INFORMATION
 12. PDF SCAN OF REDLINES PRODUCED IN FIELD
- E. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.
- F. CONSTRUCTION INSPECTIONS AND CORRECTIVE MEASURES SHALL BE DOCUMENTED BY THE CONTRACTOR WITH WRITTEN REPORTS AND PHOTOGRAPHS. PHOTOGRAPHS MUST BE DIGITAL AND OF SUFFICIENT QUALITY TO CLEARLY SHOW THE SITE CONSTRUCTION. PHOTOGRAPHS MUST CLEARLY IDENTIFY THE PHOTOGRAPHED ITEM AND BE LABELED WITH THE SITE CASCADE NUMBER, SITE NAME, DESCRIPTION, AND DATE.

3.4 **DELIVERABLES:** TEST AND INSPECTION REPORTS AND CLOSEOUT DOCUMENTATION SHALL BE UPLOADED TO THE SMS AND/OR FORWARDED TO SPRINT FOR INCLUSION INTO THE PERMANENT SITE FILES.

- A. THE FOLLOWING TEST AND INSPECTION REPORTS SHALL BE PROVIDED AS APPLICABLE.
 1. CONCRETE MIX AND CYLINDER BREAK REPORTS.
 2. STRUCTURAL BACKFILL COMPACTION REPORTS.
 3. SITE RESISTANCE TO EARTH TEST.
 4. ANTENNA AZIMUTH AND DOWN TILT VERIFICATION
 5. TOWER ERECTION INSPECTIONS AND MEASUREMENTS DOCUMENTING TOWER INSTALLED PER SUPPLIER'S REQUIREMENTS AND THE APPLICABLE SECTIONS HEREIN.
 6. COAX CABLE SWEEP TESTS PER COMPANY'S "ANTENNA LINE ACCEPTANCE STANDARDS".
- B. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES THE FOLLOWING:
 1. TEST WELLS AND TRENCHES: PHOTOGRAPHS OF ALL TEST WELLS; PHOTOGRAPHS SHOWING ALL OPEN EXCAVATIONS AND TRENCHING PRIOR TO BACKFILLING SHOWING A TAPE MEASURE VISIBLE IN THE EXCAVATIONS INDICATING DEPTH.
 2. CONDUITS, CONDUCTORS AND GROUNDING: PHOTOGRAPHS SHOWING TYPICAL INSTALLATION OF CONDUCTORS AND CONNECTORS; PHOTOGRAPHS SHOWING TYPICAL BEND RADIUS OF INSTALLED GROUND WIRES AND GROUND ROD SPACING;
 3. CONCRETE FORMS AND REINFORCING: CONCRETE FORMING AT TOWER AND EQUIPMENT/SHELTER PAD/FOUNDATIONS – PHOTOGRAPHS SHOWING ALL REINFORCING STEEL, UTILITY AND CONDUIT STUB OUTS; PHOTOGRAPHS SHOWING CONCRETE POUR OF SHELTER SLAB/FOUNDATION, TOWER FOUNDATION AND GUY ANCHORS WITH VIBRATOR IN USE; PHOTOGRAPHS SHOWING EACH ANCHOR ON GUYED TOWERS, BEFORE CONCRETE POUR.
 4. TOWER, ANTENNAS AND MAINLINE: INSPECTION AND PHOTOGRAPHS OF SECTION STACKING; INSPECTION AND PHOTOGRAPHS OF PLATFORM COMPONENT ATTACHMENT POINTS; PHOTOGRAPHS OF TOWER TOP GROUNDING; PHOTOS OF TOWER COAX LINE COLOR CODING AT THE TOP AND AT GROUND LEVEL; INSPECTION AND PHOTOGRAPHS OF OPERATIONAL OF TOWER LIGHTING, AND PLACEMENT OF FAA REGISTRATION SIGN; PHOTOGRAPHS SHOWING ADDITIONAL GROUNDING POINTS FOR TOWERS GREATER THAN 200 FEET.; PHOTOS OF ANTENNA GROUND BAR, EQUIPMENT GROUND BAR, AND MASTER GROUND BAR; PHOTOS OF GPS ANTENNA(S); PHOTOS OF EACH SECTOR OF ANTENNAS; ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA; PHOTOS OF COAX WEATHERPROOFING – TOP AND BOTTOM; PHOTOS OF COAX GROUNDING--TOP AND BOTTOM; PHOTOS OF ANTENNA AND MAST GROUNDING; PHOTOS OF COAX CABLE ENTRY INTO SHELTER; PHOTOS OF PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.
 5. ROOF TOPS: PRE-CONSTRUCTION AND POST-CONSTRUCTION VISUAL INSPECTION AND PHOTOGRAPHS OF THE ROOF AND INTERIOR TO DETERMINE AND DOCUMENT CONDITIONS; ROOF TOP CONSTRUCTION INSPECTIONS AS REQUIRED BY THE JURISDICTION; PHOTOGRAPHS OF CABLE TRAY AND/OR ICE BRIDGE; PHOTOGRAPHS OF DOGHOUSE/CABLE EXIT FROM ROOF;
 6. SITE LAYOUT – PHOTOGRAPHS OF THE OVERALL COMPOUND, INCLUDING EQUIPMENT PLATFORM FROM ALL FOUR CORNERS.
 7. FINISHED UTILITIES: CLOSE-UP PHOTOGRAPHS OF THE PPC BREAKER PANEL; CLOSE-UP PHOTOGRAPH OF THE INSIDE OF THE TELCO PANEL AND NIU; CLOSE-UP PHOTOGRAPH OF THE POWER METER AND DISCONNECT; PHOTOS OF POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE; PHOTOGRAPHS AT METER BOX AND/OR FACILITY DISTRIBUTION PANEL.
 8. REQUIRED MATERIALS CERTIFICATIONS: CONCRETE MIX DESIGNS; MILL CERTIFICATION FOR ALL REINFORCING AND STRUCTURAL STEEL; AND ASPHALT PAVING MIX DESIGN.
 9. ANY AND ALL SUBMITTALS BY THE JURISDICTION OR COMPANY.

SECTION 01 500 - PROJECT REPORTING

PART 1 – GENERAL

1.1 **THE WORK:** THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 **RELATED DOCUMENTS:**

- A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.
- B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 **WEEKLY REPORTS:**

- A. CONTRACTOR SHALL PROVIDE SPRINT WITH WEEKLY REPORTS SHOWING PROJECT STATUS. THIS STATUS REPORT FORMAT WILL BE PROVIDED TO THE CONTRACTOR BY SPRINT. THE REPORT WILL CONTAIN SITE ID NUMBER, THE MILESTONES FOR EACH SITE, INCLUDING THE BASELINE DATE, ESTIMATED COMPLETION DATE AND ACTUAL COMPLETION DATE.

B. REPORT INFORMATION WILL BE TRANSMITTED TO SPRINT VIA ELECTRONIC MEANS AS REQUIRED. THIS INFORMATION WILL PROVIDE A BASIS FOR PROGRESS MONITORING AND PAYMENT.

3.2 **PROJECT CONFERENCE CALLS:**

- A. SPRINT MAY HOLD WEEKLY PROJECT CONFERENCE CALLS. CONTRACTOR WILL BE REQUIRED TO COMMUNICATE SITE STATUS, MILESTONE COMPLETIONS AND UPCOMING MILESTONE PROJECTIONS, AND ANSWER ANY OTHER SITE STATUS QUESTIONS AS NECESSARY.

3.3 **PROJECT TRACKING IN SMS:**

- A. CONTRACTOR SHALL PROVIDE SCHEDULE UPDATES AND PROJECTIONS IN THE SMS SYSTEM ON A WEEKLY BASIS.

3.4 **ADDITIONAL REPORTING:**

- A. ADDITIONAL OR ALTERNATE REPORTING REQUIREMENTS MAY BE ADDED TO THE REPORT AS DETERMINED TO BE REASONABLY NECESSARY BY COMPANY.

3.5 **PROJECT PHOTOGRAPHS:**

- A. FILE DIGITAL PHOTOGRAPHS OF COMPLETED SITE IN JPEG FORMAT IN THE SMS PHOTO LIBRARY FOR THE RESPECTIVE SITE. PHOTOGRAPHS SHALL BE CLEARLY LABELED WITH SITE NUMBER, NAME AND DESCRIPTION, AND SHALL INCLUDE AT A MINIMUM THE FOLLOWING AS APPLICABLE:
 1. SHELTER AND TOWER OVERVIEW.
 2. TOWER FOUNDATION(S) – FORMS AND STEEL BEFORE POUR (EACH ANCHOR ON GUYED TOWERS).
 3. TOWER FOUNDATION(S) POUR WITH VIBRATOR IN USE (EACH ANCHOR ON GUYED TOWERS).
 4. TOWER STEEL AS BEING INSTALLED INTO HOLE (SHOW ANCHOR STEEL ON GUYED TOWERS).
 5. PHOTOS OF TOWER SECTION STACKING.
 6. CONCRETE TESTING / SAMPLES.
 7. PLACING OF ANCHOR BOLTS IN TOWER FOUNDATION.
 8. BUILDING/WATER TANK FROM ROAD FOR TENANT IMPROVEMENTS OR COMMENTS.
 9. SHELTER FOUNDATION--FORMS AND STEEL BEFORE POURING.
 10. SHELTER FOUNDATION POUR WITH VIBRATOR IN USE.
 11. COAX CABLE ENTRY INTO SHELTER.
 12. PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.
 13. ROOFTOP PRE AND POST CONSTRUCTION PHOTOS TO INCLUDE PENETRATIONS AND INTERIOR CEILING.
 14. PHOTOS OF TOWER TOP COAX LINE COLOR CODING AND COLOR CODING AT GROUND LEVEL.
 15. PHOTOS OF ALL APPROPRIATE COMPANY OR REGULATORY SIGNAGE.
 16. PHOTOS OF EQUIPMENT BOLT DOWN INSIDE SHELTER.
 17. POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE AND POWER AND TELCO SUPPLY LOCATIONS INCLUDING METER/DISCONNECT.
 18. ELECTRICAL TRENCH(S) WITH ELECTRICAL / CONDUIT BEFORE BACKFILL.
 19. ELECTRICAL TRENCH(S) WITH FOIL-BACKED TAPE BEFORE FURTHER BACKFILL.
 20. TELCO TRENCH WITH TELEPHONE / CONDUIT BEFORE BACKFILL.
 21. TELCO TRENCH WITH FOIL-BACKED TAPE BEFORE FURTHER BACKFILL.
 22. SHELTER GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADI).
 23. TOWER GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADI).
 24. FENCE GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADI).
 25. ALL BTS GROUND CONNECTIONS.
 26. ALL GROUND TEST WELLS.
 27. ANTENNA GROUND BAR AND EQUIPMENT GROUND BAR.
 28. ADDITIONAL GROUNDING POINTS ON TOWERS ABOVE 200'.
 29. HVAC UNITS INCLUDING CONDENSERS ON SPLIT SYSTEMS.
 30. GPS ANTENNAS.
 31. CABLE TRAY AND/OR WAVEGUIDE BRIDGE.
 32. DOGHOUSE/CABLE EXIT FROM ROOF.
 33. EACH SECTOR OF ANTENNAS; ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA.
 34. MASTER BUS BAR.
 35. TELCO BOARD AND NIU.
 36. ELECTRICAL DISTRIBUTION WALL.
 37. CABLE ENTRY WITH SURGE SUPPRESSION.
 38. ENTRANCE TO EQUIPMENT ROOM.
 39. COAX WEATHERPROOFING--TOP AND BOTTOM OF TOWER.
 40. COAX GROUNDING --TOP AND BOTTOM OF TOWER.
 41. ANTENNA AND MAST GROUNDING.
 42. LANDSCAPING – WHERE APPLICABLE.

3.6 **FINAL PROJECT ACCEPTANCE:** COMPLETE ALL REQUIRED REPORTING TASKS PER CONTRACT, CONTRACT DOCUMENTS OR THE SPRINT INTEGRATED CONSTRUCTION STANDARDS FOR WIRELESS SITES AND UPLOAD INTO SITERRA.

SECTION 07 500 - ROOF CUTTING, PATCHING AND REPAIR

SUMMARY: THIS SECTION SPECIFIES CUTTING AND PATCHING EXISTING ROOFING SYSTEMS WHERE CONDUIT OR CABLES EXIT THE BUILDING ONTO THE ROOF OR BUILDING-MOUNTED ANTENNAS, AND AS REQUIRED FOR WATERTIGHT PERFORMANCE. ROOFTOP ENTRY OPENINGS IN MEMBRANE ROOFTOPS SHALL BE CONSTRUCTED TO COMPLY WITH LANDLORD, ANY EXISTING WARRANTY, AND LOCAL JURISDICTIONAL STANDARDS.

1.4 **SUBMITTALS:**

- A. PRE-CONSTRUCTION ROOF PHOTOS: COMPLETE A ROOF INSPECTION PRIOR TO THE INSTALLATION OF SPRINT EQUIPMENT ON ANY ROOFTOP BUILD. AT A MINIMUM INSPECT AND PHOTOGRAPH (MINIMUM 3 EA.) ALL AREAS IMPACTED BY THE ADDITION OF THE SPRINT EQUIPMENT.
- B. PROVIDE SIMILAR PHOTOGRAPHS SHOWING ROOF CONDITIONS AFTER CONSTRUCTION (MINIMUM 3 EA.)
- C. ROOF INSPECTION PHOTOGRAPHS SHOULD BE UPLOADED WITH CLOSEOUT PHOTOGRAPHS.

SECTION 09 900 - PAINTING

QUALITY ASSURANCE:

- A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- B. COMPLY WITH ALL ENVIRONMENTAL REGULATIONS FOR VOLATILE ORGANIC COMPOUNDS.

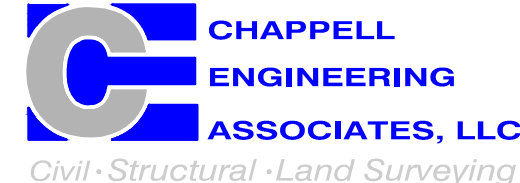
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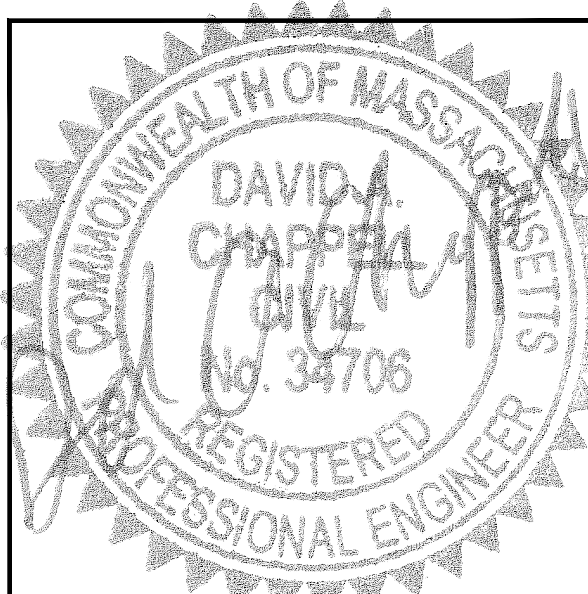
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SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	11/10/16	ISSUED FOR FINAL	BDJ
0	10/04/16	ISSUED FOR REVIEW	BDJ

SITE NUMBER:
BS03XC032

SITE NAME:
678 MASS AVE

SITE ADDRESS:
678 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02139

SHEET TITLE
OUTLINE SPECIFICATIONS

SHEET NUMBER
SP-2

CONTINUED FROM SP-2:

MATERIALS:

- A. MANUFACTURERS: BENJAMIN MOORE, ICI DEVOE COATINGS, PPG, SHERWIN WILLIAMS OR APPROVED EQUAL. PROVIDE PREMIUM GRADE, PROFESSIONAL-QUALITY PRODUCTS FOR COATING SYSTEMS.

PAINT SCHEDULE:

- A. EXTERIOR ANTENNAE AND ANTENNA MOUNTING HARDWARE: ONE COAT OF PRIMER AND TWO FINISH COATS. PAINT FOR ANTENNAE SHALL BE NON-METALLIC BASED AND CONTAIN NO METALLIC PARTICLES. PROVIDE COLORS AND PATTERNS AS REQUIRED TO MASK APPEARANCE OF ANTENNAE ON ADJACENT BUILDING SURFACES AND AS ACCEPTABLE TO THE OWNER. REFER TO ANTENNA MANUFACTURER'S INSTRUCTIONS WHENEVER POSSIBLE.

- B. ROOF TOP CONSTRUCTION: TOUCH UP – PREPARE SURFACES TO BE REPAIRED. FOLLOW INDUSTRY STANDARDS AND REQUIREMENTS OF OWNER TO MATCH EXISTING COATING AND FINISH.

PAINTING APPLICATION:

1. INSPECT SURFACES, REPORT UNSATISFACTORY CONDITIONS IN WRITING; BEGINNING WORK MEANS ACCEPTANCE OF SUBSTRATE.
2. COMPLY WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS FOR PREPARATION, PRIMING AND COATING WORK. COORDINATE WITH WORK OF OTHER SECTIONS.
3. MATCH APPROVED MOCK-UPS FOR COLOR, TEXTURE, AND PATTERN. RE-COAT OR REMOVE AND REPLACE WORK WHICH DOES NOT MATCH OR SHOWS LOSS OF ADHESION.
4. CLEAN UP, TOUCH UP AND PROTECT WORK.

TOUCHUP PAINTING:

1. GALVANIZING DAMAGE AND ALL BOLTS AND NUTS SHALL BE TOUCHED UP AFTER TOWER ERECTION WITH "GALVANOX," "DRY GALV," OR "ZINC-IT."
2. FIELD TOUCHUP PAINT SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
3. ALL METAL COMPONENTS SHALL BE HANDLED WITH CARE TO PREVENT DAMAGE TO THE COMPONENTS, THEIR PRESERVATIVE TREATMENT, OR THEIR PROTECTIVE COATINGS.

SECTION 11 700 - ANTENNA ASSEMBLY, REMOTE RADIO HEADS AND CABLE INSTALLATION

SUMMARY:

THIS SECTION SPECIFIES INSTALLATION OF ANTENNAS, RRR'S, AND CABLE EQUIPMENT, INSTALLATION, AND TESTING OF COAXIAL FIBER CABLE.

ANTENNAS AND RRR'S:

THE NUMBER AND TYPE OF ANTENNAS AND RRR'S TO BE INSTALLED IS DETAILED ON THE CONSTRUCTION DRAWINGS.

HYBRID CABLE:

HYBRID CABLE WILL BE DC/FIBER AND FURNISHED FOR INSTALLATION AT EACH SITE. CABLE SHALL BE INSTALLED PER THE CONSTRUCTION DRAWINGS AND THE APPLICABLE MANUFACTURER'S REQUIREMENTS.

JUMPERS AND CONNECTORS:

FURNISH AND INSTALL 1/2" COAX JUMPER CABLES BETWEEN THE RRR'S AND ANTENNAS. JUMPERS SHALL BE TYPE LDF 4, FLC 12-50, CR 540, OR FXL 540. SUPER-FLEX CABLES ARE NOT ACCEPTABLE. JUMPERS BETWEEN THE RRR'S AND ANTENNAS OR TOWER TOP AMPLIFIERS SHALL CONSIST OF 1/2 INCH FOAM DIELECTRIC, OUTDOOR RATED COAXIAL CABLE. DO NOT USE SUPERFLEX OUTDOORS. JUMPERS SHALL BE FACTORY FABRICATED IN APPROPRIATE LENGTHS WITH A MAXIMUM OF 4 FEET EXCESS PER JUMPER AND HAVE CONNECTORS AT EACH END, MANUFACTURED BY SUPPLIER. IF JUMPERS ARE FIELD FABRICATED, FOLLOW MANUFACTURER'S REQUIREMENTS FOR INSTALLATION OF CONNECTORS

REMOTE ELECTRICAL TILT (RET) CABLES:

MISCELLANEOUS:

INSTALL SPLITTERS, COMBINERS, FILTERS PER RF DATA SHEET, FURNISHED BY SPRINT.

ANTENNA INSTALLATION:

THE CONTRACTOR SHALL ASSEMBLE ALL ANTENNAS ONSITE IN ACCORDANCE WITH THE INSTRUCTIONS SUPPLIED BY THE MANUFACTURER. ANTENNA HEIGHT, AZIMUTH, AND FEED ORIENTATION INFORMATION SHALL BE A DESIGNATED ON THE CONSTRUCTION DRAWINGS.

- A. THE CONTRACTOR SHALL POSITION THE ANTENNA ON TOWER PIPE MOUNTS SO THAT THE BOTTOM STRUT IS LEVEL. THE PIPE MOUNTS SHALL BE PLUMB TO WITHIN 1 DEGREE.
- B. ANTENNA MOUNTING REQUIREMENTS: PROVIDE ANTENNA MOUNTING HARDWARE AS INDICATED ON THE DRAWINGS.

HYBRID CABLES INSTALLATION:

- A. THE CONTRACTOR SHALL ROUTE, TEST, AND INSTALL ALL CABLES AS INDICATED ON THE CONSTRUCTION DRAWINGS AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- B. THE INSTALLED RADIUS OF THE CABLES SHALL NOT BE LESS THAN THE MANUFACTURER'S SPECIFICATIONS FOR BENDING RADI.
- C. EXTREME CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE CABLES DURING HANDLING AND INSTALLATION.
 1. FASTENING MAIN HYBRID CABLES: ALL CABLES SHALL BE PERMANENTLY FASTENED TO THE COAX LADDER AT 4"-0" OC USING NON-MAGNETIC STAINLESS STEEL CLIPS.
 2. FASTENING INDIVIDUAL FIBER AND DC CABLES ABOVE BREAKOUT ENCLOSURE (MEDUSA), WITHIN THE MMBTS CABINET AND ANY INTERMEDIATE DISTRIBUTION BOXES:
 - a. FIBER: SUPPORT FIBER BUNDLES USING 1/2" VELCRO STRAPS OF THE REQUIRED LENGTH @ 18" OC. STRAPS SHALL BE UV, OIL AND WATER RESISTANT AND SUITABLE FOR INDUSTRIAL INSTALLATIONS AS MANUFACTURED BY TEXTOL OR APPROVED EQUAL.
 - b. DC: SUPPORT DC BUNDLES WITH ZIP TIES OF THE ADEQUATE LENGTH. ZIP TIES TO BE UV STABILIZED, BLACK NYLON, WITH TENSILE STRENGTH AT 12,000 PSI AS MANUFACTURED BY NELCO PRODUCTS OR EQUAL.
 3. FASTENING JUMPERS: SECURE JUMPERS TO THE SIDE ARMS OR HEAD FRAMES USING STAINLESS STEEL TIE WRAPS OR STAINLESS STEEL BUTTERFLY CLIPS.
 4. CABLE INSTALLATION:
 - a. INSPECT CABLE PRIOR TO USE FOR SHIPPING DAMAGE, NOTIFY THE CONSTRUCTION MANAGER.
 - b. CABLE ROUTING: CABLE INSTALLATION SHALL BE PLANNED TO ENSURE THAT THE LINES WILL BE PROPERLY ROUTED IN THE CABLE ENVELOP AS INDICATED ON THE DRAWINGS. AVOID TWISTING AND CROSSOVERS.
 - c. HOIST CABLE USING PROPER HOISTING GRIPS. DO NOT EXCEED MANUFACTURES RECOMMENDED MAXIMUM BEND RADIUS.

5. GROUNDING OF TRANSMISSION LINES: ALL TRANSMISSION LINES SHALL BE GROUNDED AS INDICATED ON DRAWINGS.
6. HYBRID CABLE COLOR CODING: ALL COLOR CODING SHALL BE AS REQUIRED PER SPRINT TS-0200 CURRENT VERSION.
7. HYBRID CABLE LABELING: INDIVIDUAL HYBRID AND DC BUNDLES SHALL BE LABELED ALPHA-NUMERICALLY ACCORDING TO SPRINT CELL SITE ENGINEERING NOTICE – EN 2012-001, REV 1

WEATHERPROOFING EXTERIOR CONNECTORS AND HYBRID CABLE GROUND KITS:

- A. ALL FIBER & COAX CONNECTORS AND GROUND KITS SHALL BE WEATHERPROOFED.

- B. WEATHERPROOFED USING ONE OF THE FOLLOWING METHODS. ALL INSTALLATIONS MUST BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND INDUSTRY BEST PRACTICES.

1. COLD SHRINK: ENCOMPASS CONNECTOR IN COLD SHRINK TUBING AND PROVIDE A DOUBLE WRAP OF 2" ELECTRICAL TAPE EXTENDING 2" BEYOND TUBING. PROVIDE 3M COLD SHRINK CXS SERIES OR EQUAL.
2. SELF-AMALGAMATING TAPE: CLEAN SURFACES. APPLY A DOUBLE WRAP OF SELF-AMALGAMATING TAPE 2" BEYOND CONNECTOR. APPLY A SECOND WRAP OF SELF-AMALGAMATING TAPE IN OPPOSITE DIRECTION. APPLY DOUBLE WRAP OF 2" WIDE ELECTRICAL TAPE EXTENDING 2" BEYOND THE SELF-AMALGAMATING TAPE.
3. 3M SLIM LOCK CLOSURE 716: SUBSTITUTIONS WILL NOT BE ALLOWED.
4. OPEN FLAME ON JOB SITE IS NOT ACCEPTABLE

SECTION 11 800 - INSTALLATION OF MULTIMODAL BASE STATIONS (MMBTS) AND RELATED EQUIPMENT

SUMMARY:

- A. THIS SECTION SPECIFIES MMBTS CABINETS, POWER CABINETS, AND INTERNAL EQUIPMENT INCLUDING BY NOT LIMITED TO RECTIFIERS, POWER DISTRIBUTION UNITS, BASE BAND UNITS, SURGE ARRESTORS, BATTERIES, AND SIMILAR EQUIPMENT FURNISHED BY THE COMPANY FOR INSTALLATION BY THE CONTRACTOR (OFCI).

- B. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MISCELLANEOUS MATERIALS AND PROVIDE ALL LABOR REQUIRED FOR INSTALLATION EQUIPMENT IN EXISTING CABINET OR NEW CABINET AS SHOWN ON DRAWINGS AND AS REQUIRE BY THE APPLICABLE INSTALLATION MOPS.

- C. COMPLY WITH MANUFACTURERS INSTALLATION AND START-UP REQUIREMENTS

DC CIRCUIT BREAKER LABELING

- A. LABEL CIRCUIT BREAKERS ACCORDING TO SPRINT CELL SITE ENGINEERING NOTICE – EN 2012-001, REV 1.

SECTION 11 800 - INSTALLATION OF MULTIMODAL BASE TRANSCIEVER STATIONS (MMBTS) AND RELATED EQUIPMENT

SUMMARY:

- A. THIS SECTION SPECIFIES MMBTS CABINETS, POWER CABINETS, AND INTERNAL EQUIPMENT INCLUDING BY NOT LIMITED TO RECTIFIERS, POWER DISTRIBUTION UNITS, BASE BAND UNITS, SURGE ARRESTORS, BATTERIES, AND SIMILAR EQUIPMENT FURNISHED BY THE COMPANY FOR INSTALLATION BY THE CONTRACTOR (OFCI).

- B. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MISCELLANEOUS MATERIALS AND PROVIDE ALL LABOR REQUIRED FOR INSTALLATION EQUIPMENT IN EXISTING CABINET OR NEW CABINET AS SHOWN ON DRAWINGS AND AS REQUIRE BY THE APPLICABLE INSTALLATION MOPS.

- C. COMPLY WITH MANUFACTURERS INSTALLATION AND START-UP REQUIREMENTS

SUPPORTING DEVICES:

- A. MANUFACTURED STRUCTURAL SUPPORT MATERIALS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY THE FOLLOWING:
 1. ALLIED TUBE AND CONDUIT
 2. B-LINE SYSTEM
 3. UNISTRUT DIVERSIFIED PRODUCTS
 4. THOMAS & BETTS

- B. FASTENERS: TYPES, MATERIALS, AND CONSTRUCTION FEATURES AS FOLLOWS:
 1. EXPANSION ANCHORS: CARBON STEEL WEDGE OR SLEEVE TYPE.
 2. POWER-DRIVEN THREADED STUDS: HEAT-TREATED STEEL, DESIGNED SPECIFICALLY FOR THE INTENDED SERVICE.
 3. FASTEN BY MEANS OF WOOD SCREWS ON WOOD.
 4. TOGGLE BOLTS ON HOLLOW MASONRY UNITS.
 5. CONCRETE INSERTS OR EXPANSION BOLTS ON CONCRETE OR SOLID MASONRY.
 6. MACHINE SCREWS, WELDED THREADED STUDS, OR SPRING-TENSION CLAMPS ON STEEL.
 7. EXPLOSIVE DEVICES FOR ATTACHING HANGERS TO STRUCTURE SHALL NOT BE PERMITTED.
 8. DO NOT WELD CONDUIT, PIPE STRAPS, OR ITEMS OTHER THAN THREADED STUDS TO STEEL STRUCTURES.
 9. IN PARTITIONS OF LIGHT STEEL CONSTRUCTION, USE SHEET METAL SCREWS.

SUPPORTING DEVICES:

- A. INSTALL SUPPORTING DEVICES TO FASTEN ELECTRICAL COMPONENTS SECURELY AND PERMANENTLY IN ACCORDANCE WITH NEC.
- B. COORDINATE WITH THE BUILDING STRUCTURAL SYSTEM AND WITH OTHER TRADES.
- C. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, FASTEN ELECTRICAL ITEMS AND THEIR SUPPORTING HARDWARE SECURELY TO THE STRUCTURE IN ACCORDANCE WITH THE FOLLOWING:
- D. ENSURE THAT THE LOAD APPLIED BY ANY FASTENER DOES NOT EXCEED 25 PERCENT OF THE PROOF TEST LOAD.
- E. USE VIBRATION AND SHOCK-RESISTANT FASTENERS FOR ATTACHMENTS TO CONCRETE SLABS.

ELECTRICAL IDENTIFICATION:

- A. UPDATE AND PROVIDE TYPED CIRCUIT BREAKER SCHEDULES IN THE MOUNTING BRACKET, INSIDE DOORS OF AC PANEL BOARDS WITH ANY CHANGES MADE TO THE AC SYSTEM.
- B. BRANCH CIRCUITS FEEDING AVIATION OBSTRUCTION LIGHTING EQUIPMENT SHALL BE CLEARLY IDENTIFIED AS SUCH AT THE BRANCH CIRCUIT PANELBOARD.

SECTION 26 200 - ELECTRICAL MATERIALS AND EQUIPMENT

CONDUIT:

- A. RIGID GALVANIZED STEEL (RGS) CONDUIT SHALL BE USED FOR EXTERIOR LOCATIONS ABOVE GROUND AND IN UNFINISHED INTERIOR LOCATIONS AND FOR ENCASED RUNS IN CONCRETE. RIGID CONDUIT AND FITTINGS SHALL BE STEEL, COATED WITH ZINC EXTERIOR AND INTERIOR BY THE HOT DIP GALVANIZING PROCESS. CONDUIT SHALL BE PRODUCED TO ANSI SPECIFICATIONS C80.1, FEDERAL SPECIFICATION WW-C-581 AND SHALL BE LISTED WITH THE UNDERWRITERS' LABORATORIES. FITTINGS SHALL BE THREADED – SET SCREW OR COMPRESSION FITTINGS WILL NOT BE ACCEPTABLE. RGS CONDUITS SHALL BE MANUFACTURED BY ALLIED, REPUBLIC OR WHEATLAND.

- B. UNDERGROUND CONDUIT IN CONCRETE SHALL BE POLYVINYLCHLORIDE (PVC) SUITABLE FOR DIRECT BURIAL AS APPLICABLE. JOINTS SHALL BE BELLED, AND FLUSH SOLVENT WELDED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. CONDUIT SHALL BE CARLON ELECTRICAL PRODUCTS OR APPROVED EQUAL.

- C. TRANSITIONS BETWEEN PVC AND RIGID (RGS) SHALL BE MADE WITH PVC COATED METALLIC LONG SWEEP RADIUS ELBOWS.

- D. EMT OR RIGID GALVANIZED STEEL CONDUIT MAY BE USED IN FINISHED SPACES CONCEALED IN WALLS AND CEILINGS. EMT SHALL BE MILD STEEL, ELECTRICALLY WELDED, ELECTRO-GALVANIZED OR HOT-DIPPED GALVANIZED AND PRODUCED TO ANSI SPECIFICATION C80.3, FEDERAL SPECIFICATION WW-C-563, AND SHALL BE UL LISTED. EMT SHALL BE MANUFACTURED BY ALLIED, REPUBLIC OR WHEATLAND, OR APPROVED EQUAL. FITTINGS SHALL BE METALLIC COMPRESSION. SET SCREW CONNECTIONS SHALL NOT BE ACCEPTABLE.

- E. LIQUID TIGHT FLEXIBLE METALLIC CONDUIT SHALL BE USED FOR FINAL CONNECTION TO EQUIPMENT. FITTINGS SHALL BE METALLIC GLAND TYPE COMPRESSION FITTINGS, MAINTAINING THE INTEGRITY OF CONDUIT SYSTEM. SET SCREW CONNECTIONS SHALL NOT BE ACCEPTABLE. MAXIMUM LENGTH OF FLEXIBLE CONDUIT SHALL NOT EXCEED 6- FEET. LFMC SHALL BE PROTECTED AND SUPPORTED AS REQUIRE BY NEC. MANUFACTURERS OF FLEXIBLE CONDUITS SHALL BE CAROL, ANACONDA METAL HOSE OR UNIVERSAL METAL HOSE, OR APPROVED EQUAL.

- F. MINIMUM SIZE CONDUIT SHALL BE 3/4 INCH (21MM).

HUBS AND BOXES:

- A. AT ENTRANCES TO CABINETS OR OTHER EQUIPMENT NOT HAVING INTEGRAL THREADED HUBS PROVIDE METALLIC THREADED HUBS OF THE SIZE AND CONFIGURATION REQUIRED. HUB SHALL INCLUDE LOCKNUT AND NEOPRENE O-RING SEAL. PROVIDE IMPACT RESISTANT 105 DEGREE C PLASTIC BUSHINGS TO PROTECT CABLE INSULATION.

- B. CABLE TERMINATION FITTINGS FOR CONDUIT
 1. CABLE TERMINATORS FOR RGS CONDUITS SHALL BE TYPE CRC BY O-Z/GEDNEY OR EQUAL.
 2. CABLE TERMINATORS FOR LFMC SHALL BE ETCO – CL2075; OR MADE FOR THE PURPOSE PRODUCTS BY ROXTEC.

- C. EXTERIOR PULL BOXES AND PULL BOXES IN INTERIOR INDUSTRIAL AREAS SHALL BE PLATED CAST ALLOY, HEAVY DUTY, WEATHERPROOF, DUST PROOF, WITH GASKET, PLATED IRON ALLOY COVER AND STAINLESS STEEL COVER SCREWS, CROUSE-HINDS WAB SERIES OR EQUAL.

- D. CONDUIT OUTLET BODIES SHALL BE PLATED CAST ALLOY WITH SIMILAR GASKETED COVERS. OUTLET BODIES SHALL BE OF THE CONFIGURATION AND SIZE SUITABLE FOR THE APPLICATION. PROVIDE CROUSE-HINDS FORM 8 OR EQUAL.

- E. MANUFACTURER FOR BOXES AND COVERS SHALL BE HOFFMAN, SQUARE "D", CROUSE-HINDS, COOPER, ADALET, APPLETON, O-Z GEDNEY, RACO, OR APPROVED EQUAL.

SUPPLEMENTAL GROUNDING SYSTEM

- A. FURNISH AND INSTALL A SUPPLEMENTAL GROUNDING SYSTEM AS INDICATED ON THE DRAWINGS. SUPPORT SYSTEM WITH NON-MAGNETIC STAINLESS STEEL CLIPS WITH RUBBER GROMMETS. GROUNDING CONNECTORS SHALL BE TINNED COPPER WIRE, SIZES AS INDICATED ON THE DRAWINGS. PROVIDE STRANDED OR SOLID BARE OR INSULATED CONDUCTORS AS INDICATED.

- B. SUPPLEMENTAL GROUNDING SYSTEM: ALL CONNECTIONS TO BE MADE WITH CAD WELDS, EXCEPT AT EQUIPMENT USE LUGS OR OTHER AVAILABLE GROUNDING MEANS AS REQUIRED BY MANUFACTURER; AT GROUND BARS USE TWO HOLE SPADES WITH NO OX.
- C. STOLEN GROUND-BARS: IN THE EVENT OF STOLEN GROUND BARS, CONTACT SPRINT CM FOR REPLACEMENT INSTRUCTION USING THREADED ROD KITS.

EXISTING STRUCTURE:

- A. EXISTING EXPOSED WIRING AND ALL EXPOSED OUTLETS, RECEPTACLES, SWITCHES, DEVICES, BOXES, AND OTHER EQUIPMENT THAT ARE NOT TO BE UTILIZED IN THE COMPLETED PROJECT SHALL BE REMOVED OR DE-ENERGIZED AND CAPPED IN THE WALL, CEILING, OR FLOOR SO THAT THEY ARE CONCEALED AND SAFE. WALL, CEILING, OR FLOOR SHALL BE PATCHED TO MATCH THE ADJACENT CONSTRUCTION.

CONDUIT AND CONDUCTOR INSTALLATION:

- A. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.

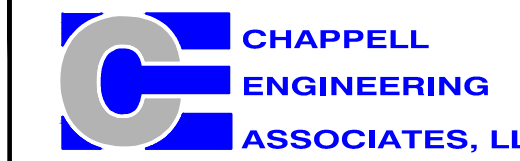
- B. CONDUCTORS SHALL BE PULLED IN ACCORDANCE WITH ACCEPTED GOOD PRACTICE.



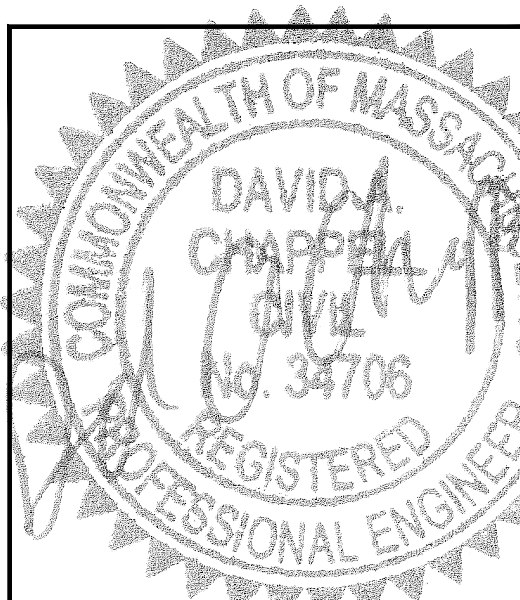
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SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	11/10/16	ISSUED FOR FINAL	BDJ
0	10/04/16	ISSUED FOR REVIEW	BDJ

SITE NUMBER:
BS03XC032

SITE NAME:
678 MASS AVE

SITE ADDRESS:
678 MASSACHUSETTS AVENUE
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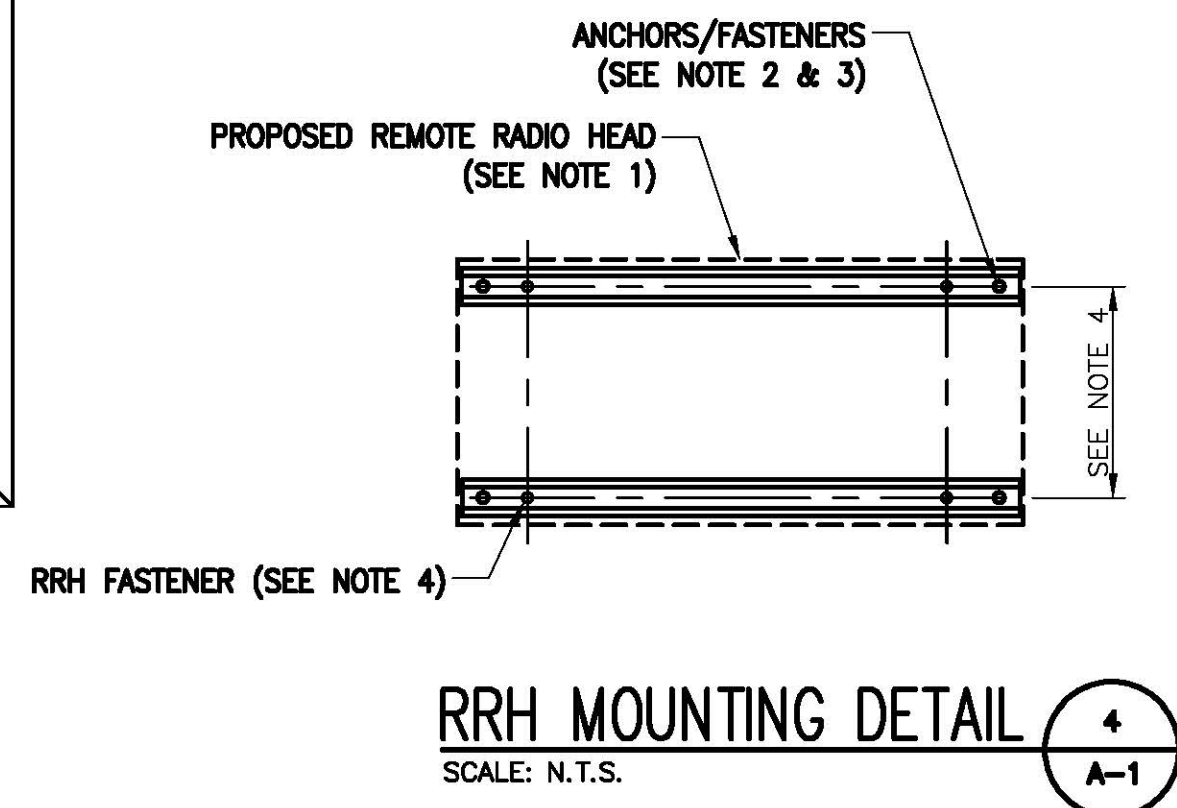
SHEET TITLE

OUTLINE SPECIFICATIONS

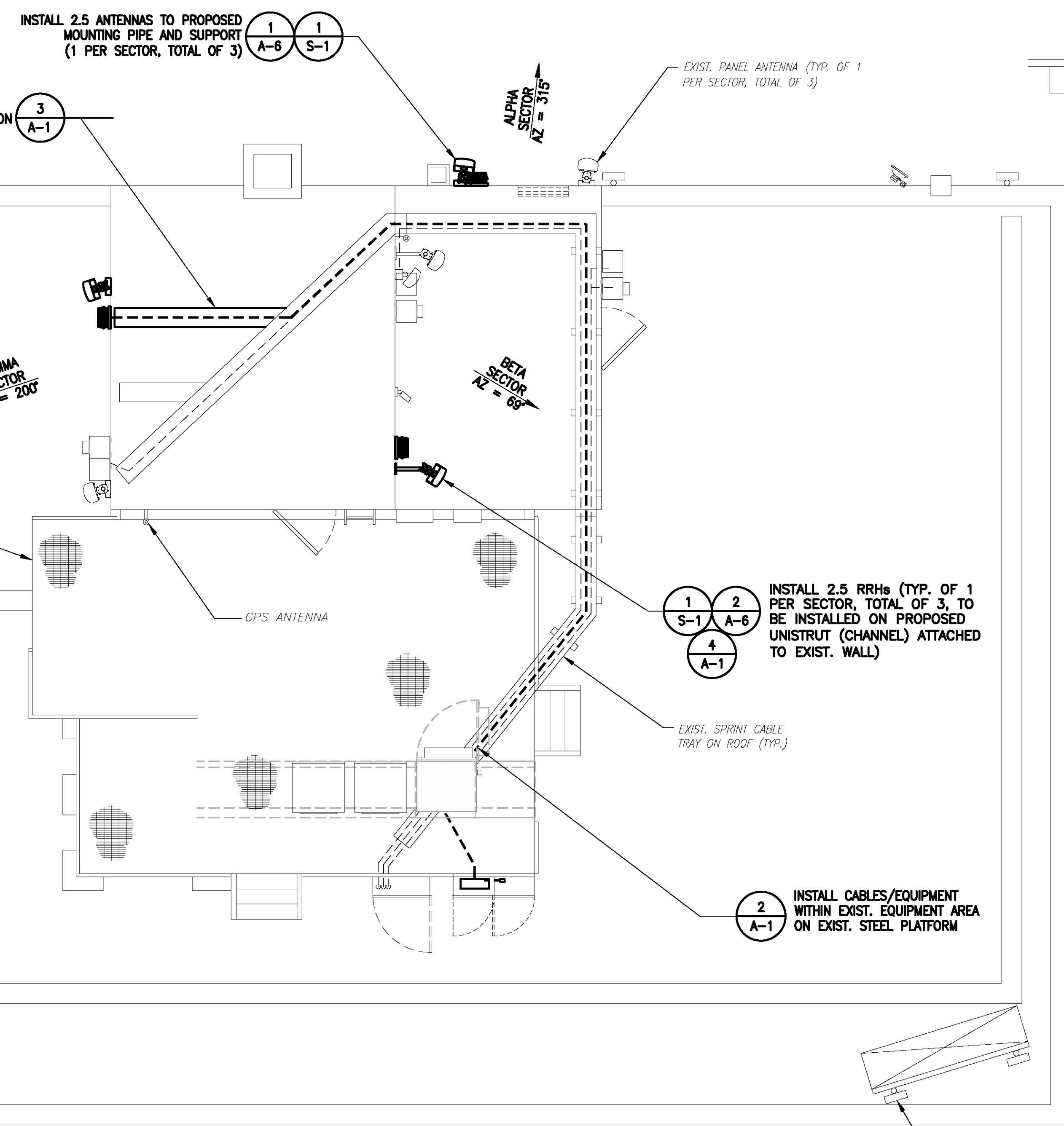
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SP-3

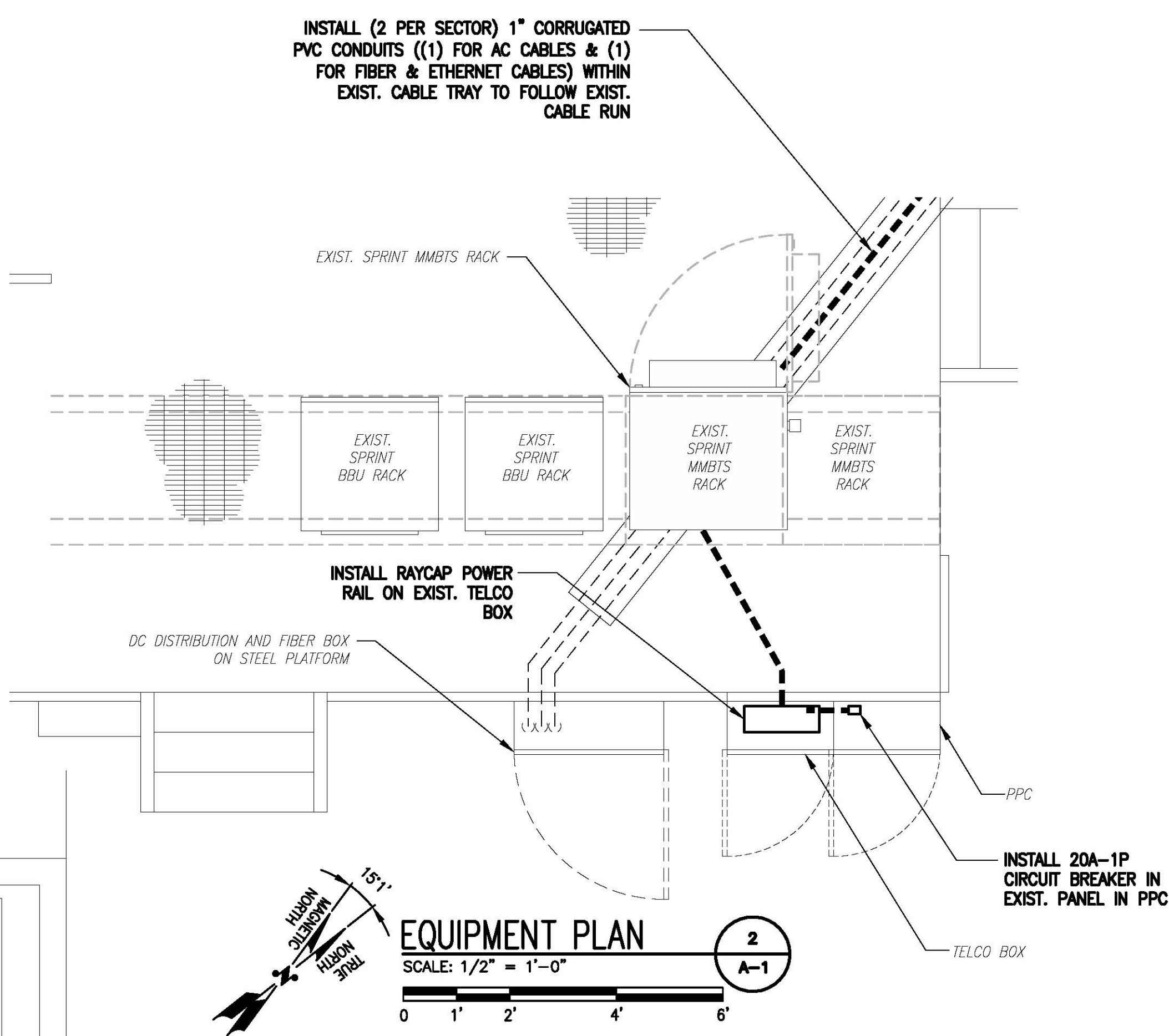
- SEE PLANS FOR REMOTE RADIO HEAD LOCATION & QUANTITY
- A SUPPORT FOR A SINGLE RRH SHALL HAVE A MINIMUM OF (2) ANCHORS/FASTENERS FOR EACH UNISTRUT CHANNEL.
- INSTALL ANCHORS/FASTENERS A MAXIMUM OF 1'-0" O.C.
 - WOOD STUDS - 3/8" LAG BOLT WITH 1" EMBEDMENT IN WOOD
 - CONCRETE - 3/8" HILTI KWIK BOLT III WITH 1-1/2" EMBEDMENT
 - THROUGH BOLT - 3/8" A36 THREADED ROF WITH NUTS & WASHERS
 - ANCHORS, CONNECTORS & UNISTRUT CHANNEL SHALL BE HOT-DIPPED GALV. MASONRY - 3/8" HILTI HIT-HY 20 ANCHORING SYSTEM WITH 3-3/8" EMBEDMENT
- MOUNT RRH TO UNISTRUT WITH 3/8" UNISTRUT BOLTING HARDWARE & SPRING NUTS. TYPICAL OF (4) PER BRACKET. REFER TO EQUIPMENT CUT SHEET FOR BOLT HOLE SPACING.
- REFER TO EQUIPMENT CUT SHEET FOR RRH SIDE & FRONT CLEARANCES.



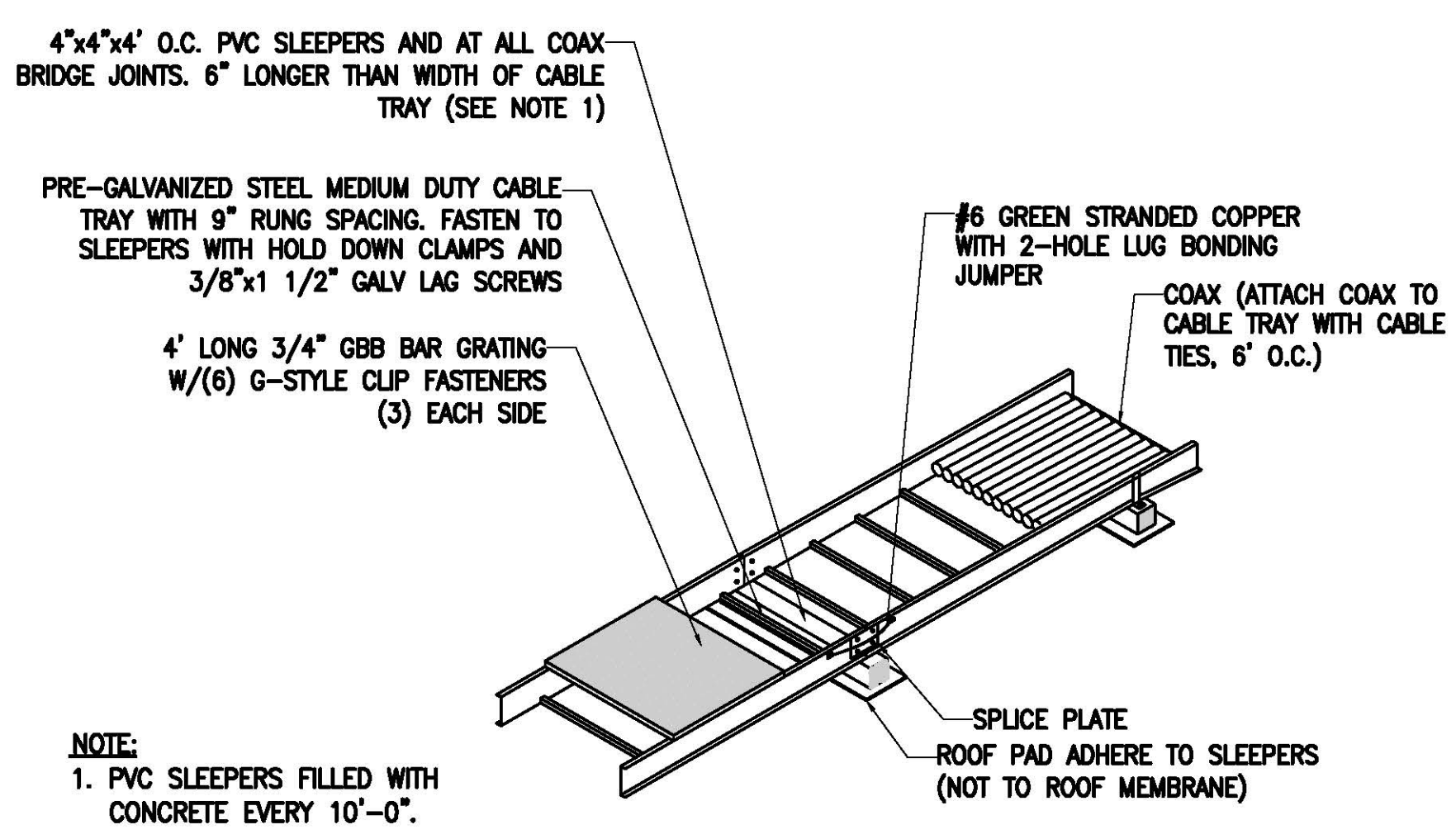
CONTRACTOR NOTE:
 PAINT PROPOSED ANTENNAS, RRH'S, ALL NEW MOUNTING HARDWARE, & ANTENNA CABLE JUMPERS TO MATCH EXISTING BRICK FACADE.



ROOF PLAN
 SCALE: 1/4" = 1'-0"



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



NUMBER OF COAXIAL CABLES	WIDTH OF CABLE TRAY	NOMINAL DEPTH OF CABLE TRAY
18	24"	4"
12	18"	4"
8	12"	4"

CABLE TRAY DETAIL
 SCALE: N.T.S.

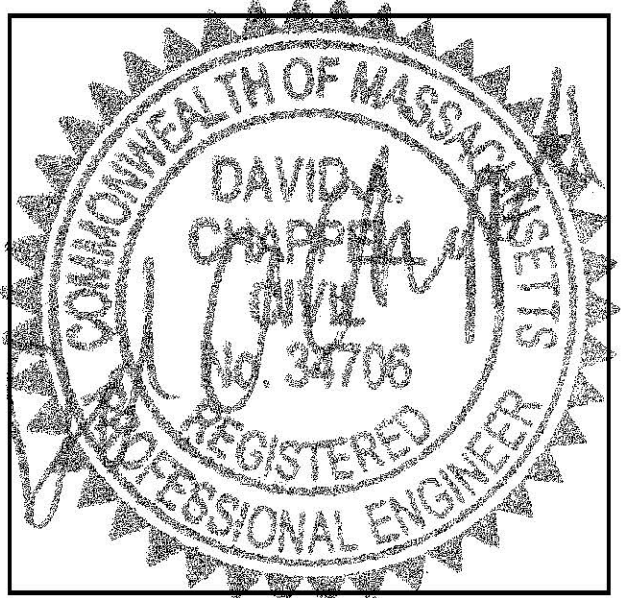
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SITE NUMBER:
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SITE NAME:
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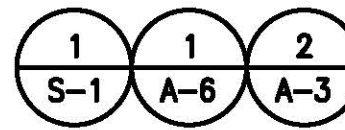
SITE ADDRESS:
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 CAMBRIDGE, MA 02139

SHEET TITLE
ROOFTOP & EQUIPMENT PLANS AND DETAILS

SHEET NUMBER
A-1

CONTRACTOR NOTE:
 PAINT PROPOSED ANTENNAS,
 RRH'S, ALL NEW MOUNTING
 HARDWARE, & ANTENNA CABLE
 JUMPERS TO MATCH EXISTING
 BRICK FACADE.

PROP. SPRINT 2500MHz ANTENNAS (1 PER
 SECTOR, TOTAL OF 3) MOUNTED TO
 PROPOSED MOUNTING PIPES



EXIST. SPRINT PANEL ANTENNA (TYP.
 1 PER SECTOR, TOTAL OF 3)

PROP. SPRINT (2) ANTENNAS (BETA AND GAMMA)
 EL. = 117'-2"± AGL

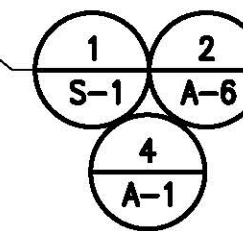
EXIST. SPRINT (2) ANTENNA (BETA AND GAMMA)
 EL. = 116'-0"± AGL

PROP. SPRINT (1) ANTENNA (ALPHA)
 EL. = 109'-2"± AGL

EXIST. SPRINT (1) ANTENNA (ALPHA)
 EL. = 108'-0"± AGL

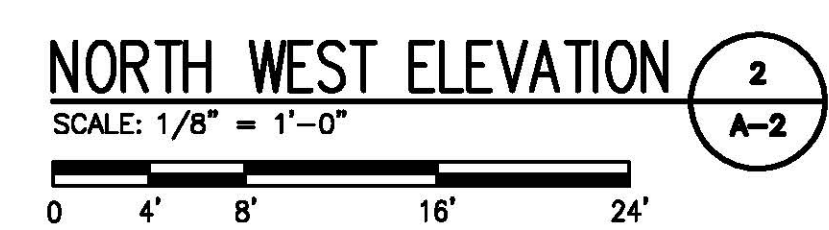
TOP OF PARAPET WALL
 ELEV. = 103'± (AGL)

TOP OF ROOF
 ELEV. = 101'± (AGL)



INSTALL 2.5 RRHs (TYP. OF 1 PER
 SECTOR, TOTAL OF 3, TO BE
 INSTALLED ON PROPOSED
 UNISTRUT (CHANNEL) ATTACHED TO
 EXIST. WALL)

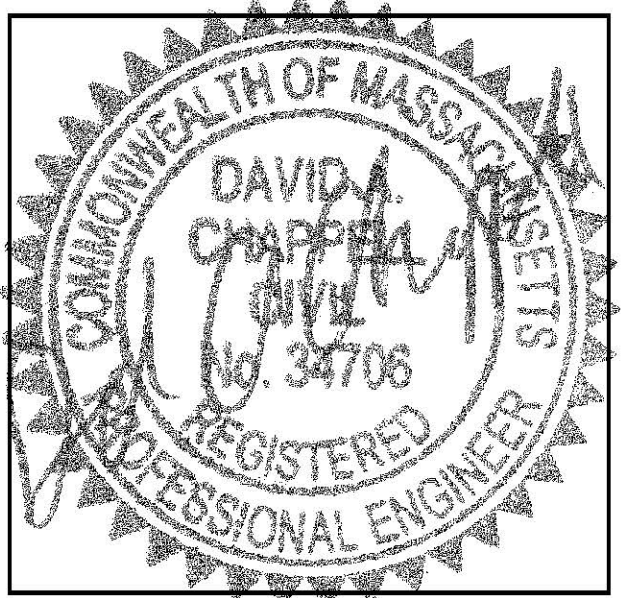
GROUND LEVEL
 ELEV. = 0'-0"± (AGL)



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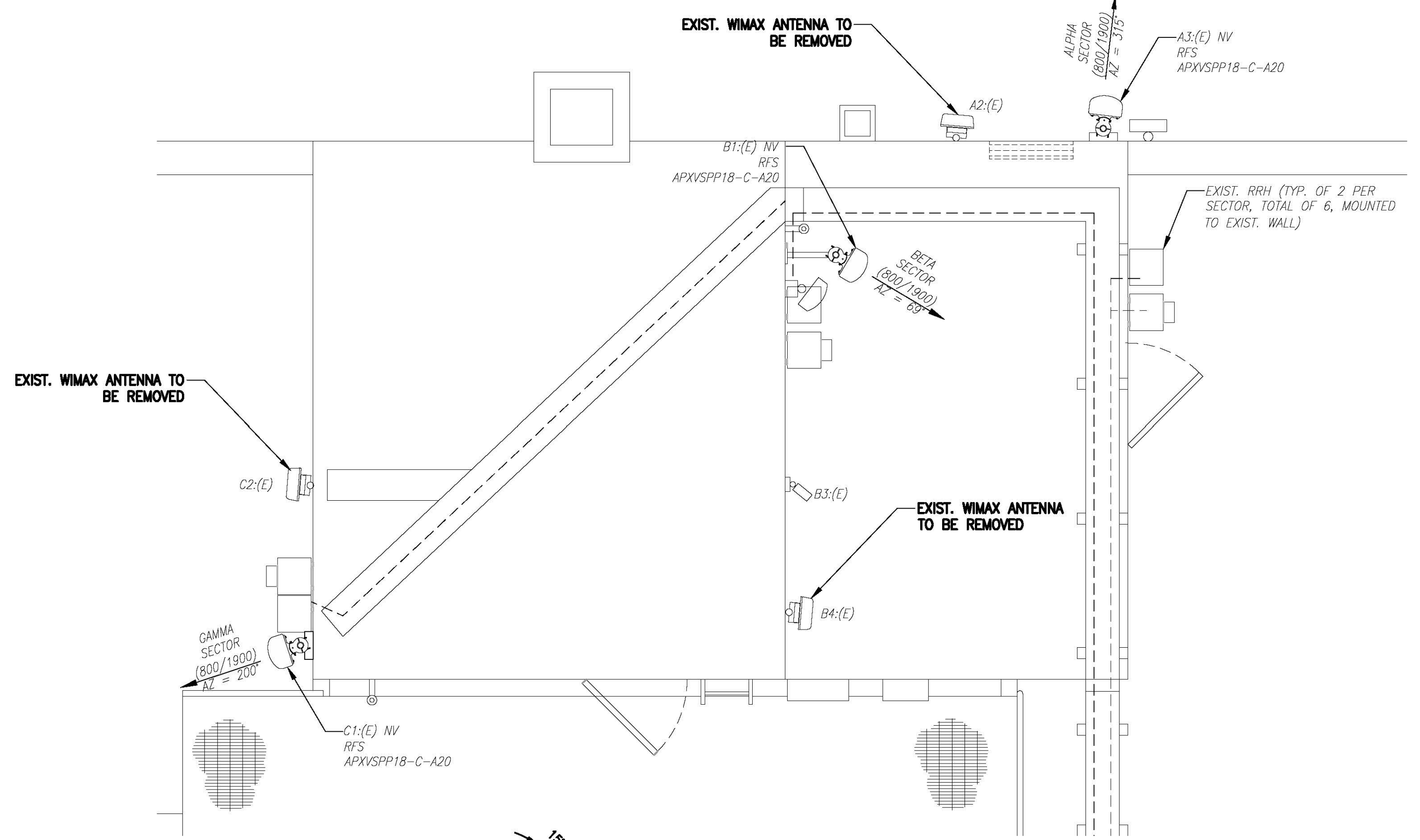
SHEET TITLE
 ELEVATION

SHEET NUMBER
 A-2

NOTE:
EXISTING AZIMUTHS FROM
SPRINT SITE AUDIT

ANTENNA STATUS LEGEND:

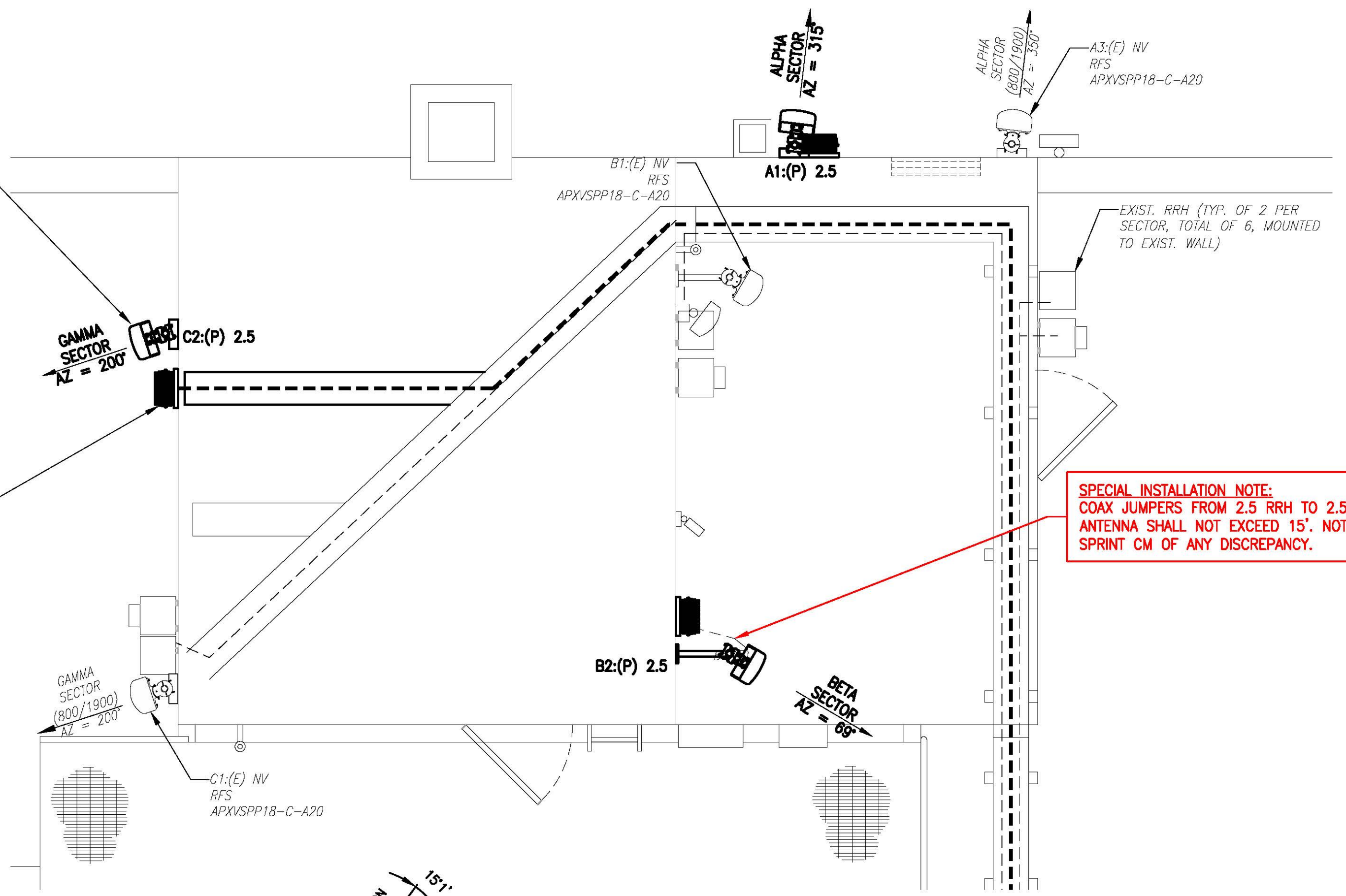
EMPTY	-	EMPTY PIPE
(E)	-	EXISTING
(P)	-	INSTALL
NV	-	SPRINT ANTENNA
2.5	-	SPRINT ANTENNA



EXISTING ANTENNA PLAN 1
SCALE: N.T.S. A-3

INSTALL 2.5 ANTENNAS TO PROPOSED MOUNTING PIPE AND SUPPORT (1 PER SECTOR, TOTAL OF 3)

INSTALL 2.5 RRHs (TYP. OF 1 PER SECTOR, TOTAL OF 3, TO BE INSTALLED ON PROPOSED UNISTRUT (CHANNEL) ATTACHED TO EXIST. WALL)



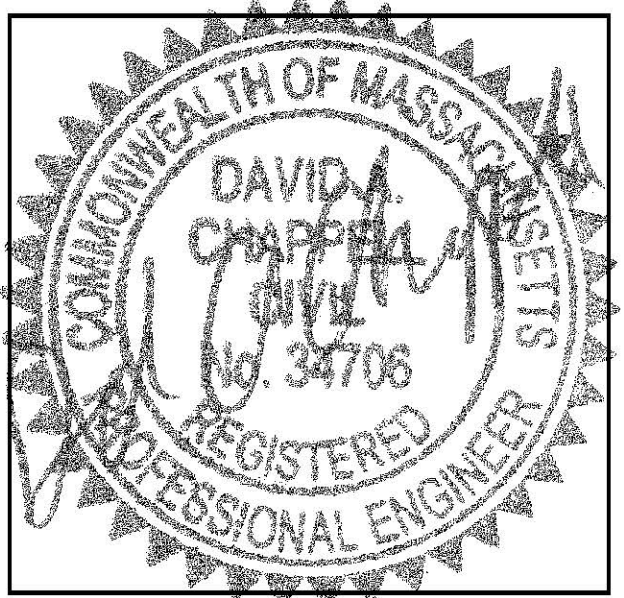
PROPOSED ANTENNA PLAN 2
SCALE: N.T.S. A-3

SPECIAL INSTALLATION NOTE:
COAX JUMPERS FROM 2.5 RRH TO 2.5 ANTENNA SHALL NOT EXCEED 15'. NOTIFY SPRINT CM OF ANY DISCREPANCY.

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SHEET TITLE
ANTENNA PLANS

SHEET NUMBER
A-3



RFDS Sheet

General Site Information

Site ID	BS03XC032	Equipment Vendor	ALU
Market	Boston	Latitude	42.3655
Region	New England	Longitude	-71.1045
MLA	N/A	LL SITE ID	N/A
Structure Type	Rooftop		
BTS Type	Outdoor Macro		
Solution ID	N/A	Siterra SR Equipment type	N/A
		Equipment Vendor	ALU
		Incremental Power Draw needed by added Equipment	0

Base Equipment

BBU Kit	None	Top Hat	None
BBU Kit Qty	N/A	Top Hat Qty	N/A
Growth Cabinet	None	Top Hat Dimensions	N/A
Growth Cabinet Qty	N/A	Top Hat Weight (lbs)	N/A
Growth Cabinet Dimensions	N/A		
Growth Cabinet Weight	N/A		

RF Path Information

RRH	NOKIA Mini Macro	
RRH Qty	3	
RRH Dimensions	9.68 x 12.83 x 6.3	
RRH Weight. lbs.	26.45	
RRH Mount Weight. Lbs.	TBD	
Power and Fiber Cable	Ethernet, AC SOOW, Fiber	
Cable Qty	9	
Weight per foot. Lbs.	TBD	
Diameter. Inches.	TBD	
Length Ft.	70.8	(calculated as antenna height plus 20%)
Coax Jumper	Coax Jumper. Mfg TBD.	ALPHA = 55'
Coax Jumper Qty	6	BETA = 65'
Coax Jumper Length. Feet.	8	GAMMA = 95'
Coax Jumper Weight	1.7	
Coax Jumper Diameter. Inches	0.5	
AISG Cable	Commscope ATCB-B01-006	
AISG Cable Qty	3	
AISG Diameter. Inches.	0.315	
AISG Cable length.	8	
Weight of entire AISG cable. Lbs.	1.3	

Antenna Sector Information

	Sector 1	Sector 2	Sector 3
Antenna make/model	COMMSCOPE LLPX310R-V1	COMMSCOPE LLPX310R-V1	COMMSCOPE LLPX310R-V1
Antenna qty	1	1	1
Antenna Dimensions. Inches	42.4 x 11.8 x 4.5	42.4 x 11.8 x 4.5	42.4 x 11.8 x 4.5
Antenna Weight. Lbs	27.6	27.6	27.6
Antenna Mounting Kit Weight. Lbs.	11.5	11.5	11.5
CL Height	109'-2"	117'-2"	117'-2"
Antenna Azimuth	315°	69°	200°
Antenna Mechanical Downtilt	0	0	0
Antenna etilt	-2	-2	-2

Sprint RFDS Sheet 10/3/2016 Confidential

SPRINT CONSTRUCTION STANDARDS:

GENERAL CONTRACTOR SHALL ADHERE TO THE FOLLOWING SPRINT CONSTRUCTION STANDARDS.

- CONSTRUCTION STANDARDS: INTEGRATED CONSTRUCTION STANDARDS FOR WIRELESS SITES - (CURRENT VERSION), INCLUDING EXHIBITS A-M.
- CONSTRUCTION SPECIFICATIONS: CONSTRUCTION STANDARDS EXHIBIT A - STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES (CURRENT VERSION).
- GROUNDING STANDARDS: EXTERIOR GROUNDING SYSTEM DESIGN. GROUNDING STANDARDS (SUPPLEMENT): ANTI-THEFT UPDATE TO SPRINT GROUNDING 082412 AND SPRINT ENGINEERING LETTER EL-0504 DATED 04.20.12.
- WEATHER PROOFING STANDARDS: EXCERPT FROM CONSTRUCTION STANDARDS EXHIBIT A, SECTION 3.6 WEATHERPROOFING CONNECTORS AND GROUND KITS.
- COLOR CODING: SPRINT NEXTEL ANT AND LINE COLOR CODING PER SPRINT TS-0200 CURRENT VERSION.
- GENERAL CONTRACTOR TO FIELD VERIFY AZIMUTH AND CL HEIGHT AND MECHANICAL DOWNTILT. IF DIFFERENT THAN CALLED OUT IN RFDS, HALT ANTENNA WORK FOR WORK FOR ONE HOUR, CALL SPRINT RF ENGINEER (OR MANAGER IF RF ENGINEER DOES NOT ANSWER, BUT STILL LEAVE A MESSAGE TO RF ENGINEER) USING SPRINT-PROVIDED CONTACT INFORMATION FOR FURTHER INSTRUCTIONS. IF SPRINT DOES NOT RESPOND WITHIN ONE HOUR, PLACE 2.5GHz ANTENNA AT SAME CL AS 1.9GHz ANTENNA AND EMAIL CORRECT CL HEIGHT AND AZIMUTH TO SPRINT RF ENGINEER. UPDATE AS-BUILD DRAWING WITH CORRECT CL HEIGHT. ALSO EMAIL CORRECT 1900MHz AND 800MHz ANTENNA CL HEIGHT, AZIMUTH AND MECHANICAL DOWNTILT TO RF ENGINEER.
- AISG TESTS TO VERIFY OPERATION IS TO BE PERFORMED AFTER FINAL INSTALLATION OF ANTENNAS AND AISG CABLES HAVE BEEN CONNECTED. VERIFY OPERATION OF ALL EXISTING SPRINT AISG EQUIPMENT INCLUDING 800MHz, 1.9GHz, AND 2.5GHz. TEST INCLUDE COMPLETE DOWNTILT, AZIMUTH (IF APPLICABLE) AND BEAMWIDTH SWINGS (IF APPLICABLE). DOCUMENT AISG TEST RESULTS IN COAX SWEEP TEST SPREADSHEET.
- GENERAL CONTRACTOR MUST INSURE THAT NO OBJECT IS LOCATED IN FRONT OF ANTENNA. THIS MEANS NO OBJECT IS TO BE LOCATED 45 DEGREES LEFT AND RIGHT OF FRONT OF ANTENNA OR 7 DEGREES UP AND DOWN FROM CENTER OF ANTENNA. IF THIS IS NOT POSSIBLE, CONTACT RF ENGINEER FOR FURTHER INSTRUCTION. IN ADDITION, 2.5GHz ANTENNA IS NOT TO BE PLACED IN FRONT OF ANY OTHER ANTENNA USING THE SAME 45 DEGREE RULE. THIS INCLUDES SPRINT AND NON-SPRINT ANTENNAS.
- GENERAL CONTRACT IS REQUIRED TO USE A DIGITAL ALIGNMENT TOOL TO SET AZIMUTH, ROLL AND DOWNTILT. AZIMUTH ACCURACY IS TO BE WITHIN 1 DEGREES. DOWNTILT AND ROLL(LEFT TO RIGHT TILT) IS TO BE WITHIN 0.1 DEGREES. IF FOR SOME REASON THIS ACCURACY CANNOT BE ACHIEVED, UPDATE AS-BUILT DRAWINGS AND EMAIL SPRINT RF ENGINEER WITH AS-BUILTS SETTINGS. USE 3Z RF ALIGNMENT TOOL OR EQUIVALENT TOOL. [HTTP://WWW.3ZTELECOM.COM/ANTENNA-ALIGNMENT-TOOL/](http://www.3ztelecom.com/antenna-alignment-tool/).

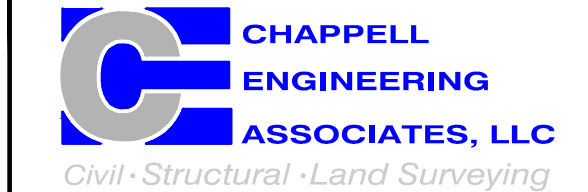
NOTES:
 1. COMMENTS IN RED TEXT PROVIDED BY A&E VENDOR.
 2. ANTENNA RAD CENTER BASED ON COLLOCATION APPLICATION, EQUIPMENT DATABASE, AND STRUCTURAL ANALYSIS.
 3. SPRINT CM SHALL CONFIRM CABLE LENGTH, COAX JUMPER LENGTH AND AISG CABLE LENGTH BEFORE PREPARING BOM. A&E RECOMMENDED CABLE LENGTH BASED ON NV 2.5 EQUIPMENT AUDIT PLUS 20 FEET FOR (2) 10-FOOT COILS AT EACH END OF THE FIBER TRUNK.



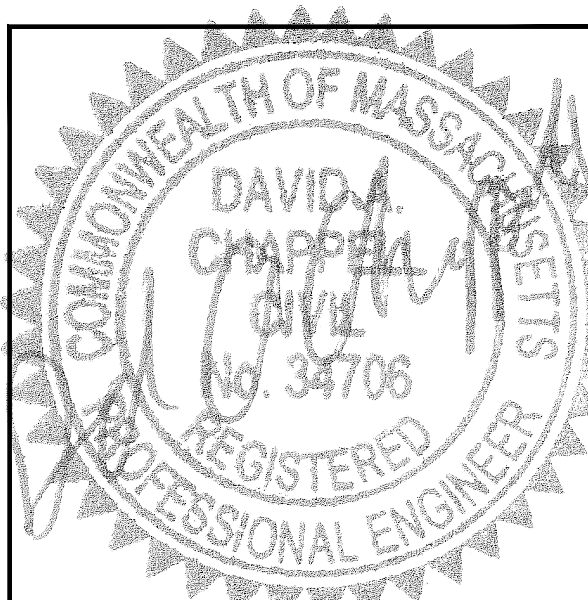
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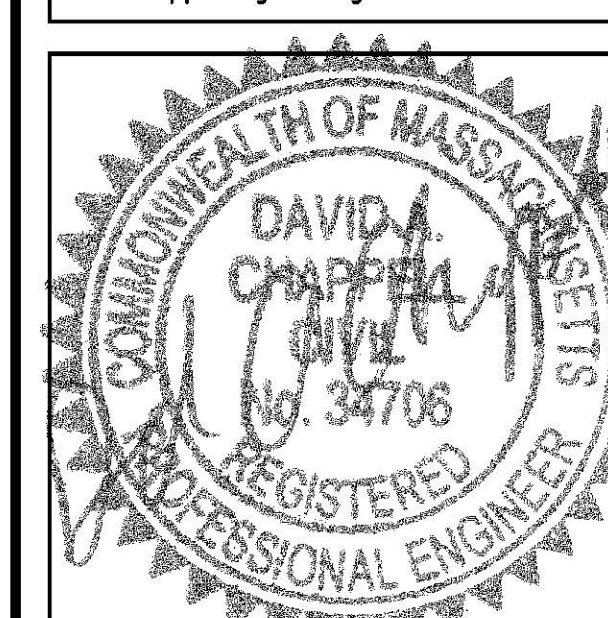
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 SITE NAME:
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SHEET TITLE
RF DATA SHEET

SHEET NUMBER
A-4



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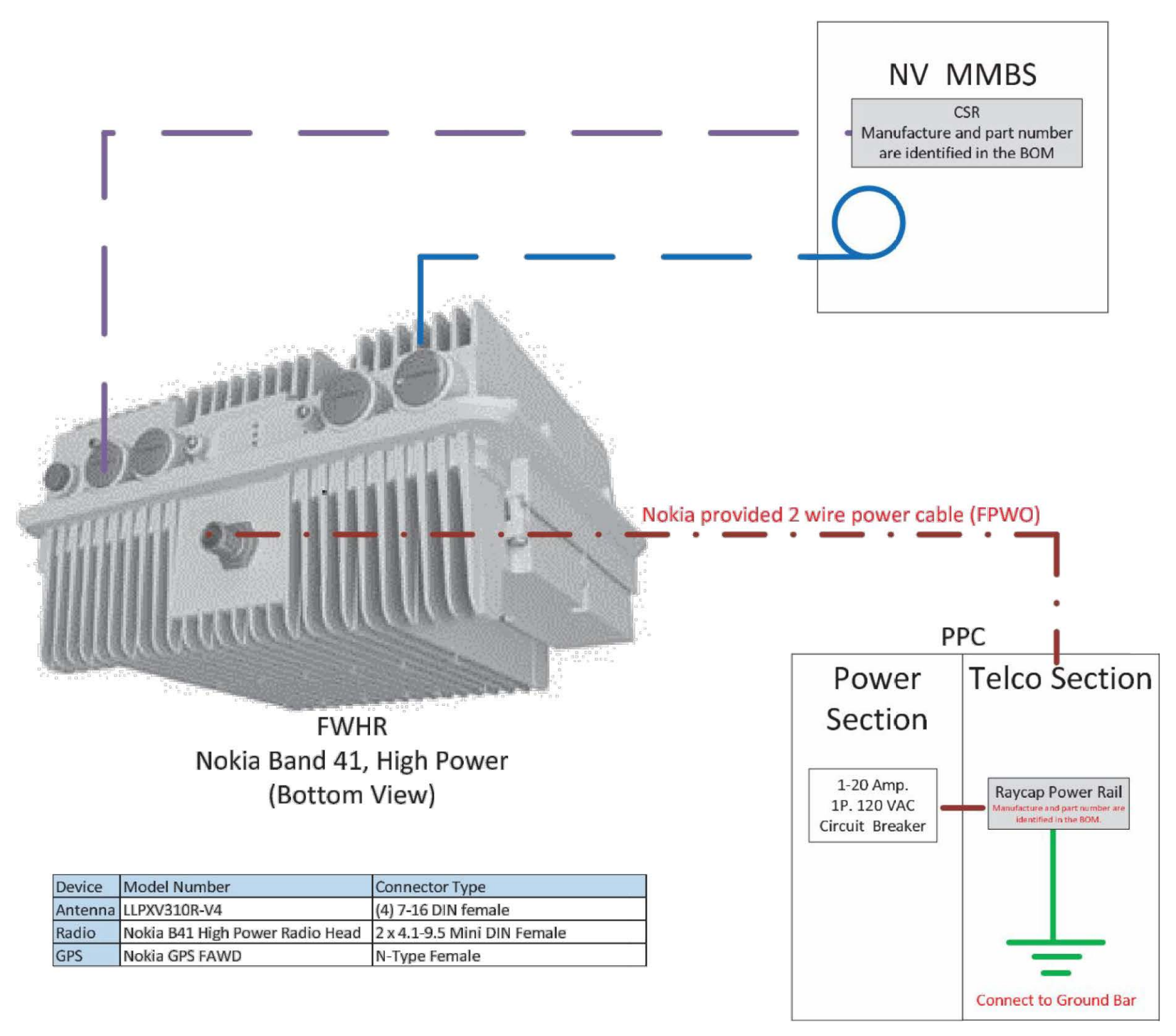
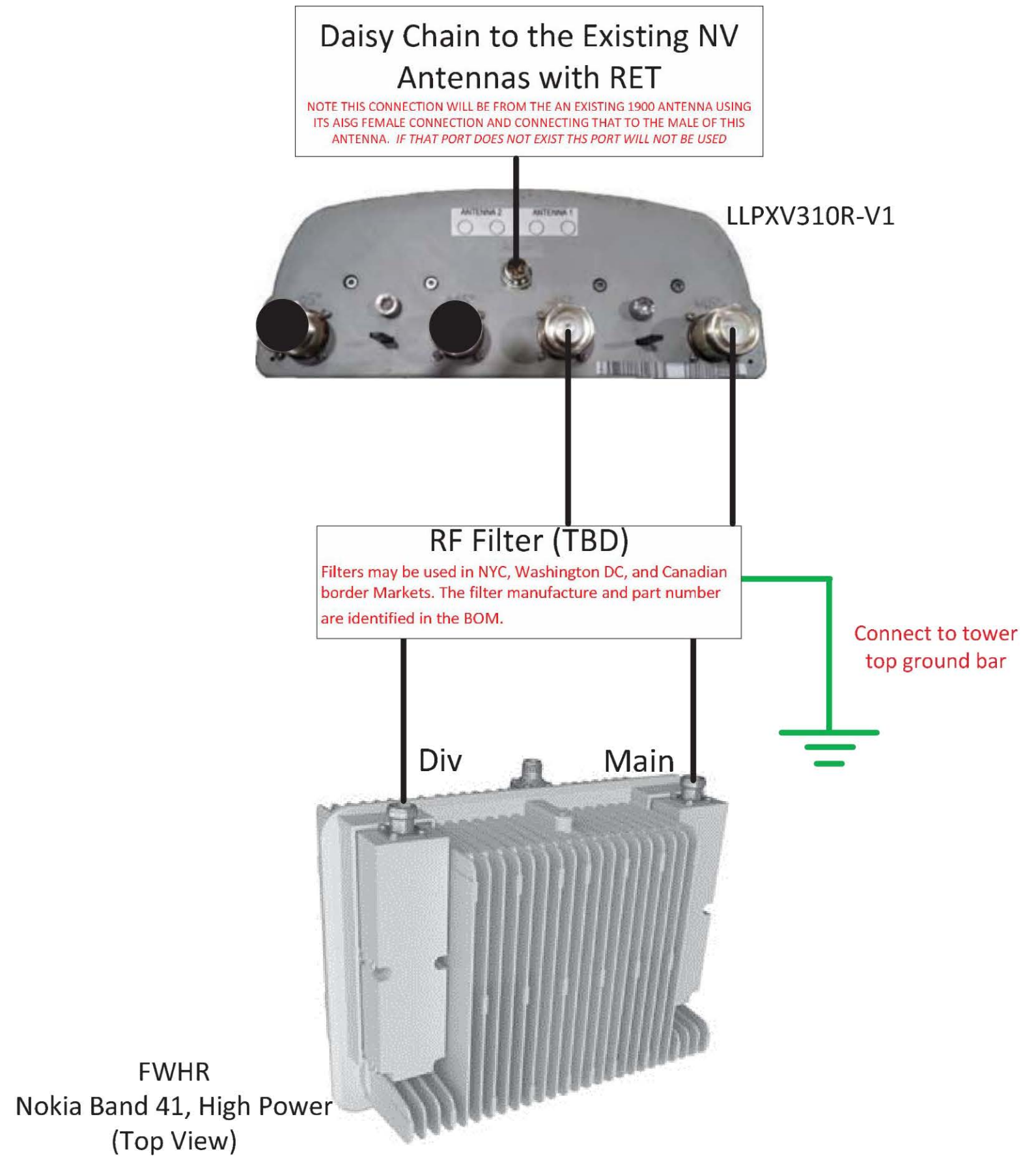
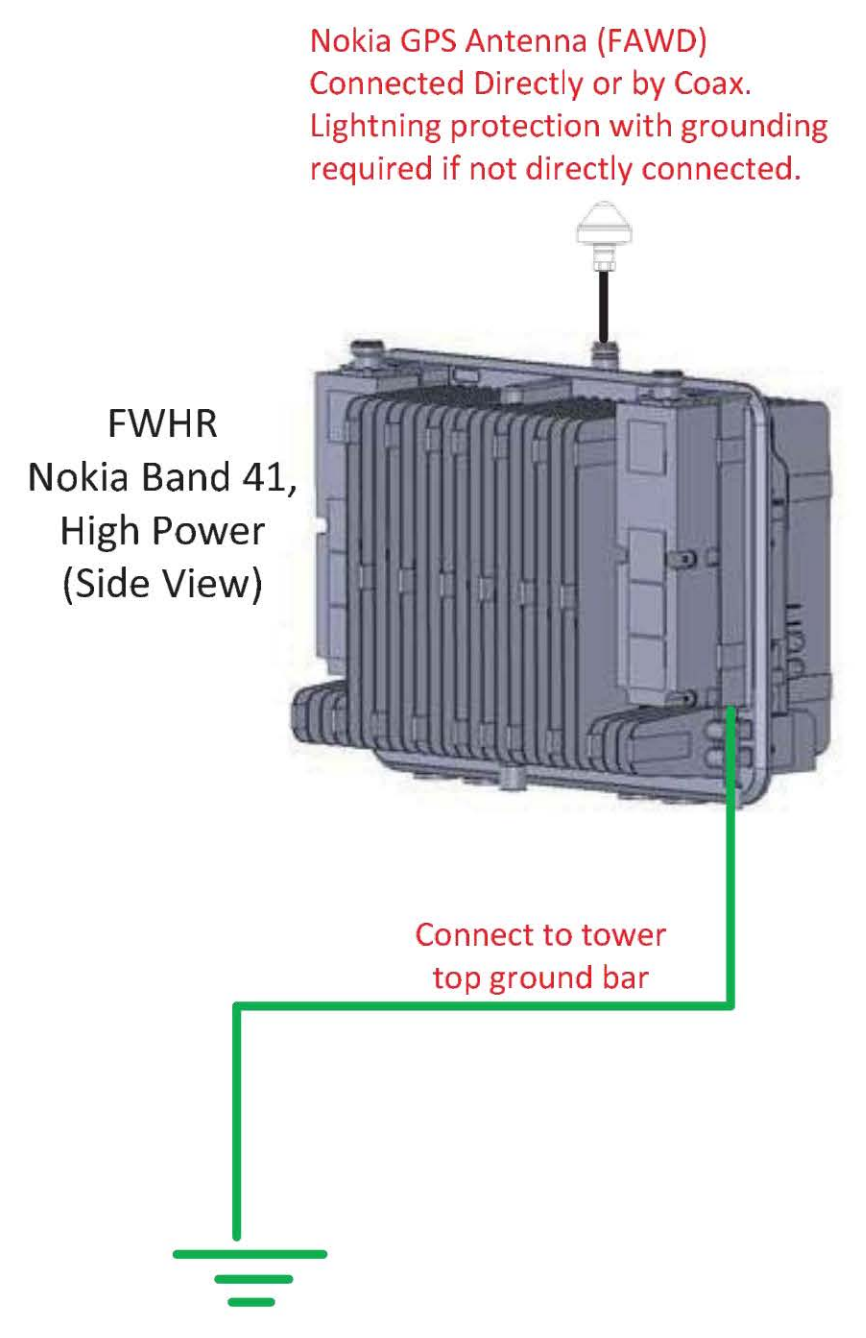
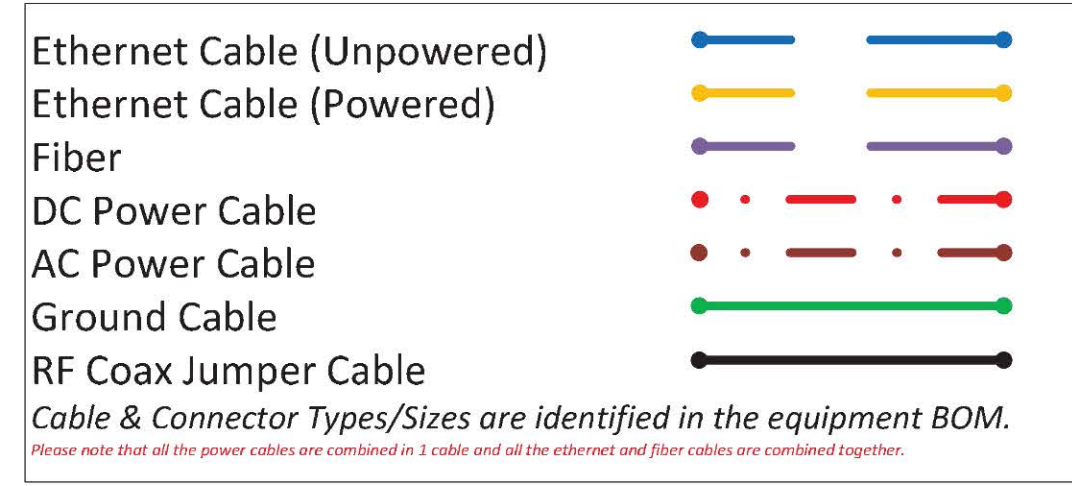
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RAN WIRING
DIAGRAMS

SHEET NUMBER

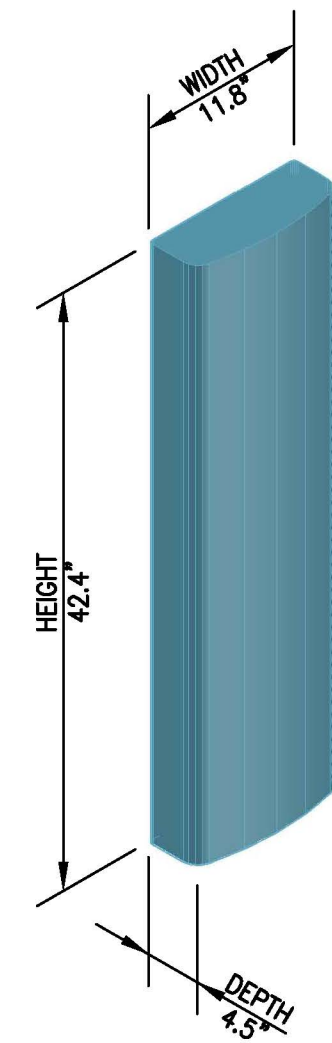
A-5



2.5 RRH GROUNDING
SCALE: N.T.S. 1
A-5

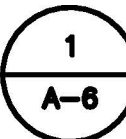
2.5 RRH TO ANTENNA WIRING
SCALE: N.T.S. 2
A-5

2.5 RRH TO EQUIPMENT WIRING
SCALE: N.T.S. 3
A-5



COMMSCOPE LLPX310R-V1 PANEL ANTENNA
 DIMENSIONS: 42.4"H x 11.8"W x 4.5"D
 WEIGHT: 27.6 LBS
 1 PER SECTOR, TOTAL OF 3

ANTENNA DETAIL
 SCALE: N.T.S.



1) BASIC REQUIREMENTS

- a) MEET ALL REQUIREMENTS OF JURISDICTIONS.
- b) INSTALLATIONS MUST COMPLY WITH THE NATIONAL ELECTRICAL CODE (LATEST VERSION) AND EIA/TIA 222 REV G.
- c) INSTALLERS ARE TO UTILIZE THIS DOCUMENT IN CONJUNCTION WITH SPRINT'S PLUMBING DIAGRAM, THE SITE-SPECIFIC RF DATA INFORMATION (RDFS), AND THE CONSTRUCTION DRAWINGS AND INSTALLATION INSTRUCTIONS TO CONSTRUCT EACH SITE.
- d) IF EQUIPMENT FURNISHED BY COMPANY DOES NOT MATCH THE EQUIPMENT LISTED ON THE RDFS AND SHOWN ON THE PERMITTING DRAWINGS, RESOLVE DISCREPANCY THROUGH INSTALLER'S CONSTRUCTION MANAGER AND COMPANY'S POINT OF CONTACT.
- e) CABLE INSTALLATIONS
 - i) ALL CABLES MUST BE OUTDOOR RATED AND HAVE UV RESISTANT OUTER JACKETS.
 - ii) CABLE BENDS MUST NOT EXCEED MANUFACTURER'S ALLOWABLE CABLE BEND RADII.
 - iii) AT RADIOS INSTALL SERVICE LOOPS FOR POWER, FIBER AND ETHERNET SECURED AT LEAST TWICE AT 180 TO THE STRUCTURE.
 - iv) SPARE FIBERS MUST BE ENCASED IN A LOW PROFILE WEATHERTIGHT ASSEMBLY.
 - f) FIBERS MUST BE FIELD-TERMINATED WITH LC-TYPE CONNECTORS.
 - g) ON TOWER AND ANTENNA SUPPORT STRUCTURES, SECURE INDIVIDUAL CABLES AND JUMPERS TO STRUCTURE USING UV RESISTANT VELCO STRAPPING ON 18" INTERVALS.
 - h) FOR BURIED CONDUITS, HAND DIG TRENCHES INSIDE COMPOUNDS.
 - i) AT MMBS CABINETS, AND PPC TELCO SECTION (OR HOFFMAN BOX FOR DIN-RAIL CIRCUIT BREAKER ASSEMBLY) THE LAST 3' OF CONDUIT RUN CAN BE MADE WITH LIQUID TIGHT FLEXIBLE METALLIC CONDUIT.
 - j) SECURE AND SUPPORT CONDUITS AND CABLES ON TOWERS AT NO MORE THAN 48" INTERVALS EXCEPT INSIDE MONOPOLES PROVIDE HANGING GRIPS AT EACH HANDHOLE ABOVE GROUND LEVEL.
 - k) WEATHER PROOF RF CONNECTIONS WITH 1 LAYER OF SELF-AMALGAMATING TAPE AND 1 LAYER OF PVC TAPE OVERWRAP.
 - l) ON TOWER SITES RGS CONDUITS MAY BE SURFACE MOUNTED AWAY FROM WALKWAYS AND ACCESS/EGRESS PATHS. IF INSTALLATIONS IN WALKWAYS AND ACCESS/EGRESS PATHS CANNOT BE AVOIDED, IDENTIFY THE CONDUIT ENVELOPE / TRIP HAZARD BY ALTERNATING YELLOW AND BLACK STRIPES PAINTED ON CONCRETE AND CONDUIT.

2) SPRINT-FURNISHED EQUIPMENT

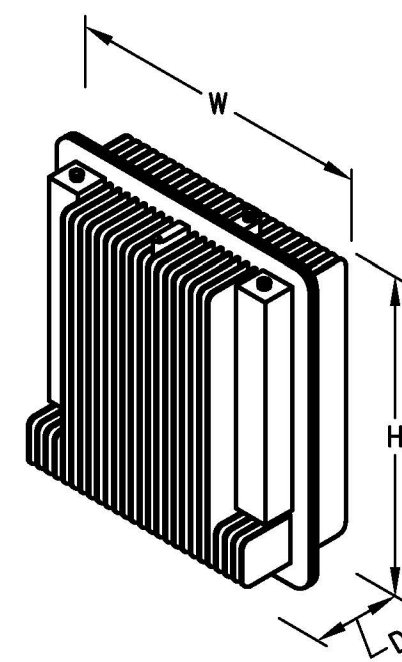
- a) INSTALL THE FOLLOWING EQUIPMENT AT LOCATIONS AND AZIMUTHS SHOWN ON THE CONSTRUCTION DRAWINGS.
- i) PANEL ANTENNAS: UTILIZE MANUFACTURER'S MOUNTING BRACKET. SET MECHANICAL DOWN-TILT AS INDICATED IN THE RDFS. WEATHER PROOF RF CONNECTIONS WITH 1 LAYER OF SELF-AMALGAMATING TAPE AND 1 LAYER OF PVC TAPE OVERWRAP. FACTORY-MADE WEATHER-PROOFING BOOTS MAY BE ACCEPTABLE BUT MUST BE APPROVED BY SPRINT.
- ii) RADIOS - UTILIZE MANUFACTURER'S MOUNTING BRACKET. INSTALL RADIO BEHIND THE ANTENNA OR COLLAR MOUNT (MONOPOLES).
- iii) GPS ANTENNAS: MOUNT DIRECTLY TO RADIO. GPS ANTENNAS MUST SEE THE SOUTHERN SKY AT THE APPROPRIATE ANGLE AND NOT BE OBSCURED BY ANTENNAS OR TOWER MEMBERS. BEHIND ANTENNAS, INSTALL RADIOS SUCH THAT GPS IS LEVEL WITH ANTENNA AND PIPE MUST TIP. FOR COLLAR MOUNTS ROTATE RADIOS TO A SOUTHERN EXPOSURE SUCH THAT THE POLE, ANTENNA OR ANTENNA MAST DOES NOT OBSCURE THE ANTENNA.
- iv) FILTERS - RADIOS MAY SHIP WITH FILTERS PRE-INSTALLED (PIGGY-BACK) ON THE RADIO. IN SOME CASES AN EXTERNAL FILTER MUST BE INSTALLED.
- v) SPRINT'S 120 VOLT DIN-RAIL CIRCUIT BREAKER ASSEMBLY
- vi) CELL SITE ROUTERS (CSRS) AND SFPS (SMALL FORM PLUGGABLE); VARIOUS MODELS; REFER TO EQUIPMENT LIST AND WIRING DIAGRAMS

3) TOWER INSTALLATIONS

- a) MEET ALL REQUIREMENTS OF THE TOWER OWNER.
- b) ROUTE CONDUITS AND CABLES INSIDE OR OUTSIDE TOWER AS INDICATED ON THE CONSTRUCTION DRAWINGS.
- c) ETHERNET AND FIBER CABLES IN CONDUIT: RUN CABLES IN A SINGLE CORRUGATED FLEXIBLE CONDUIT ON THE TOWER, AND RIGID GALVANIZED STEEL CONDUIT WITH THREADED FITTINGS ON THE ICE BRIDGE AND WHERE EXPOSED ON EXISTING SLABS. AT CONDUIT EXIT FROM LOWER TOWER HAND HOLES, PROVIDE DRIP LOOPS AND WEEP HOLES. INSTALL OUTDOOR WEATHER TIGHT METALLIC PULL BOXES TO CONNECT CORRUGATED PVC CONDUIT TO RIGID METALLIC CONDUIT AT ICE BRIDGE.
- d) POWER CABLES - ROUTE MULTI-CONDUCTOR SOOW CABLE FROM POWER PROTECTION CABINET DIN-RAIL CIRCUIT BREAKER ASSEMBLY TO TOWER TOP PLATFORM. ROUTE CABLE IN RGS FROM PPC, ALONG ICE BRIDGE AND TO WITHIN 12" OF THE TOWER. INSTALL METALLIC THREADED CABLE TERMINATION FITTING ON RGS. SOOW CABLE CONTINUES ROUTING EXPOSED UP TOWER. AT TOWER TOP (SPRINT RAD CENTER) TURN CABLE HORIZONTAL ONTO STRUCTURE, INSTALL CABLE CLAMP AND TERMINATE CONDUCTORS IN THE POWER TERMINAL BOX. SPICE PROPRIETARY POWER CABLE AND EXTEND POWER TO RADIOS.

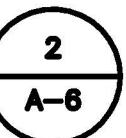
4) ROOFTOP AND FACILITY INSTALLATIONS

- a) MEET ALL LANDLORD REQUIREMENTS
- b) ON ROOFTOPS
 - i) BEFORE WORKING ON A ROOF, CONDUCT A CONDITION ASSESSMENT, MAKE NOTES, AND PHOTOGRAPH THE AREA INSIDE THE CONSTRUCTION LIMITS. REPORT ANY UNDESIRABLE ROOF CONDITIONS TO THE INSTALLER'S CONSTRUCTION MANAGER AND COMPANY POINT OF CONTACT.
 - ii) MOUNT EQUIPMENT VERTICALLY ON PARAPETS OR PENTHOUSE WALLS. IF EQUIPMENT IS TO BE MOUNTED ON A ROOF SKID OR TRIPOD, INSTALLATION MUST BE NON-PENETRATING.
 - iii) BUILDING PENETRATIONS: SIDE WALL PENETRATIONS ARE PREFERRED. FOR PENETRATING BRICK, CONCRETE, CMU AND SIMILAR WALLS USE SUITABLE METALLIC CONDUIT ENTRANCE FITTINGS. THRU-ROOF PENETRATIONS AND TREATMENT MUST BE EXPLICITLY APPROVED BY THE FACILITY OWNER AND MUST NOT VOID EXISTING ROOF WARRANTIES.
 - iv) ON ROOFTOPS INSTALL 3/C SOOW POWER CABLES, AND ETHERNET/FIBER CABLES EACH IN A DEDICATED 1" CORRUGATED FLEXIBLE CONDUIT. ROUTE FLEXIBLE CONDUITS IN EXISTING CABLE TRAY. AT SECTORS, TERMINATE CONDUITS USING ROXTEC CABLE TERMINATION FITTINGS WITHIN 3' OF RADIOS. AT CABINETS INSTALL UV RESISTANT PVC GASKETED HUBS.
- c) IN FACILITIES:
 - i) ROUTE 3/C SOOW POWER CABLES AND FIBER/ETHERNET CABLES IN SEPARATE RGS CONDUITS FOLLOWING THE LINES OF THE STRUCTURE.
 - ii) REPAIR ANY DISTURBED EXISTING CONSTRUCTION IN-KIND.
 - iii) MAINTAIN INTEGRITY OF FACILITY FIRE WALLS USING FIRE STOP PRODUCTS BY 3M, AND SIMILAR MANUFACTURERS.
 - iv) IN FACILITY ENVIRONMENTAL AIR PLENUMS INSTALL CABLES IN RGS CONDUIT.
 - v) FOR INDOOR MMBS (TENANT IMPROVEMENT) MAKE FINAL 3' CONNECTION TO MMBS AND DIN-RAIL CIRCUIT BREAKER ASSEMBLY ENCLOSURE WITH LIQUID-TIGHT FLEXIBLE METALLIC TUBING.



NOKIA MINI-MACRO BAND 41 RADIO
 DIMENSIONS: 9.68"H x 12.83"W x 6.3"D
 WEIGHT: 26.45 LBS
 1 PER SECTOR, TOTAL OF 3

RRH DETAIL
 SCALE: N.T.S.



5) CONCEALMENTS

- a) MEET JURISDICTION REQUIREMENTS FOR APPEARANCE AND NOISE.
- b) CONCEALMENTS MUST BE DESIGNED SUCH THAT THE THERMAL OPERATING LIMITS OF THE RADIOS AND ANCILLARY EQUIPMENT INSTALLED IN THE CONCEALMENT ARE NOT EXCEEDED.
- i) CONCEALMENT DESIGNS MUST BE APPROVED BY SPRINT.
- c) PAINTING MUST NOT COVER LABELS ON ANY EQUIPMENT INCLUDING RADIOS, ANTENNAS, FILTERS AND SIMILAR
- d) PAINTING AND CONCEALMENT OF ANTENNAS: PROVIDE MATERIALS THAT ARE RF TRANSPARENT.
- e) PAINTING AND CONCEALMENT OF RADIOS: PROVIDE HIGH TEMPERATURE PAINTING SYSTEMS WITH RATING SUITABLE FOR TYPICAL CASE TEMPERATURE OF THE RADIO HEAD.

6) AC POWER TIE-IN

- a) INSTALL SPRINT'S 120 VOLT DIN-RAIL CIRCUIT BREAKER ASSEMBLY IN THE EXISTING POWER PROTECTION CABINET TELCO SECTION.
- b) CONNECT SOOW CABLE POWER CONDUCTORS TO DIN RAIL
- c) CONNECT DIN-RAIL CIRCUIT BREAKERS WITH INTEGRAL CORD WHIP TO NEW 20-1P CIRCUIT BREAKER IN POWER PANEL.
- i) IF NO TELCO SECTION EXISTS, INSTALL THE DIN-RAIL ASSEMBLY IN A METALLIC NEMA 4 LOCKABLE HOFFMAN BOX, 12" X 12" X 6" MINIMUM.

7) GROUNDING

- a) 120 VOLT CIRCUITS: POWER CIRCUITS/CABLES MUST BE 3-WIRE WITH EQUIPMENT GROUNDING CONDUCTOR.
- i) SUPPLEMENTAL GROUNDING: ALL GROUNDING HARDWARE MUST BE UL STAMPED AS SUITABLE FOR GROUNDING HARDWARE.
- b) RADIOS: BOND RADIO TO THE TOWER TOP OR SECTOR GROUND BAR WITH #2 BARE TINNED COPPER WIRE (GREEN INSULATED ON ROOFTOPS).
- c) DIN-RAIL CIRCUIT BREAKER ASSEMBLY: BOND SURGE ARRESTOR TO PPC TELCO BOARD GROUND BAR.
- i) ASSEMBLY INSTALLED IN HOFFMAN BOX: BOND ENCLOSURE AND SURGE ARRESTOR GROUND CONNECTION TO EFFECTIVELY GROUNDED H-FRAME OR BUILDING STEEL, MAIN GROUND BAR AT EQUIPMENT LINEUP, BURIED GROUND RING, GROUNDED STEEL WATER PIPE, OR LIGHTNING DOWN CONDUCTOR.

8) MINOR MATERIALS

- a) CONDUIT
 - i) RIGID GALVANIZED STEEL CONDUIT (RGS): UL LISTED, COMPLIANT WITH ANSI STANDARD C80, HOT-DIP GALVANIZED, WITH THREADED FITTINGS. SET SCREW OR COMPRESSION FITTINGS WILL NOT BE ACCEPTABLE. MANUFACTURERS: ALLIED, REPUBLIC, WHEATLAND, OR EQUAL.
 - ii) CORRUGATED FLEXIBLE CONDUIT: DURALINE OR EQUAL
 - iii) LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LFMC): UL LABELED, UV RESISTANT, FLAME RETARDANT PVC JACKET, HOT-DIP GALVANIZED, GREY. MANUFACTURERS: AFC, ANACONDA, SOUTHWIRE OR EQUAL.
 - iv) PVC CONDUIT: SCHEDULE 40, CARLON OR EQUAL.
 - v) CABINET HUBS AND CABLE TERMINATION FITTINGS- PROVIDE OZ GEDNEY OR ROXTEC TERMINATION FITTINGS AND HUBS. AT CABINETS PROVIDE METALLIC HUBS AND FITTINGS FOR METAL CONDUITS. TO TERMINATE CORRUGATED FLEXIBLE CONDUIT, INSTALL ROXTEC CES TERMINATORS.
 - b) COAXIAL CABLE JUMPERS: 1/2" LDF-4. MANUFACTURERS: COMMSCOPE, RFS OR FCT. CONNECTORS MUST BE OF THE SAME MANUFACTURER AS THE CABLE.
 - c) WALL PENETRATIONS IN FACILITIES: SUITABLE METALLIC, GASKETED CONDUIT OR CABLE FITTINGS AS MANUFACTURED BY OZ GEDNEY, ROXTEC OR SIMILAR.
 - d) FASTENERS AND HARDWARE
 - i) TO SECURE RACEWAYS, UTILIZE NON CORRODING METALLIC FASTENERS AND HARDWARE SUITABLE FOR THE PURPOSE. GALVANIZED HARDWARE MUST BE HOT-DIPPED. ELECTRO-GALVANIZED HARDWARE WILL NOT BE ACCEPTABLE.
 - ii) BUTTERFLY CLIPS, BANDING, COAX BLOCKS AND SIMILAR: STAINLESS STEEL.
 - iii) CROSSOVER PLATES, U-BOLTS, AND SIMILAR TOWER MOUNTING HARDWARE: HOT-DIP GALVANIZED.
 - iv) UNISTRUT, B-LINE AND SIMILAR METAL FRAMING SHAPES: HOT-DIP GALVANIZED.
 - e) POWER CABLES:
 - i) PROVIDE MULTI-CONDUCTOR SOOW CABLES, SOUTHWIRE, CAROL, OKONITE OR EQUAL.
 - (a) #12 AWG CONDUCTORS FOR CIRCUITS <200 FEET.
 - (b) #10 AWG CONDUCTORS FOR CIRCUITS >200 FEET.
 - ii) ON ROOFTOPS RUN 3/C SOOW TO EACH SECTOR.
 - iii) ON TOWERS RUN A SINGLE 9 CONDUCTOR (OR 10 CONDUCTOR IF COMMONLY AVAILABLE) SOOW CABLE TO THE TOWER TOP.
 - f) ETHERNET CABLES AND CONNECTORS: OUTDOOR RATED, CAT 5E, BELDEN OR EQUAL.
 - g) CONNECTORS: RJ45 CONNECTORS: AIM CAMBRIDGE CAT5E CINCH CONNECTORS, 32-2298UL RJ45UL (8P8C), FOR SHIELDED, STRAIGHT, ROUND CABLE, OR EQUIVALENT.
 - h) FIBER CABLES: CORNING FREEDM FAN-OUT TIGHT-BUFFERED CABLE RISER, OUTDOOR, 4F, SINGLE MODE.
 - i) CONNECTORS: TYPE LC. INSTALL EXTENDER BOOT.
 - h) RF TRANSPARENT PAINT FOR ANTENNA CONCEALMENT: SELECT NO/LOW CARBON PAINTS, WITH NO/LOW TITANIUM DIOXIDE, AND WITHOUT SUSPENDED METAL PARTICLES (ALUMINUM, ZINC, COPPER, ETC.)

9) COLOR CODING

- a) COLOR CODE CABLES AND CONDUITS AS REQUIRED BY SPRINT STANDARD TS-0200.

10) TESTING AND CONSTRUCTION COMPLETE

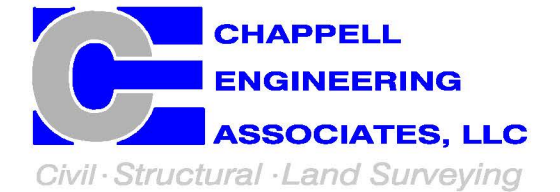
- a) SWEEP ALL COAXIAL CABLES ACCORDING TO SPRINT STANDARD TS-0200.
- b) PANEL ANTENNA ALIGNMENT - USING ELECTRONIC ALIGNMENT TOOL, SUNSHIG OR EQUAL. AZIMUTH/DOWNTILT +/- 1 DEGREE.
- c) LEAVE ALL EQUIPMENT TURNED OFF UNTIL INSTRUCTED BY THE COMMISSIONING AND INTEGRATION TO TURN EQUIPMENT ON.
- d) OTHER REQUIREMENTS AND DELIVERABLES MAY BE REQUIRED BEFORE THE CONSTRUCTION COMPLETE MILESTONE CAN BE ACTUALIZED IN SITERA (SPRINT'S DATABASE-OF-RECORD).



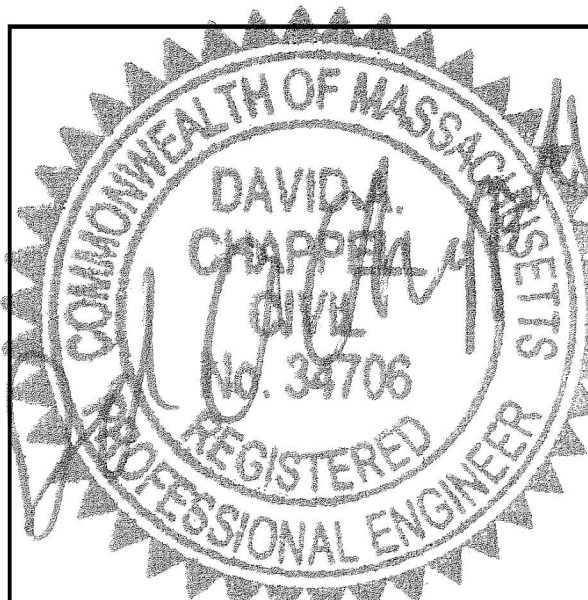
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0	10/04/16	ISSUED FOR REVIEW	BDJ

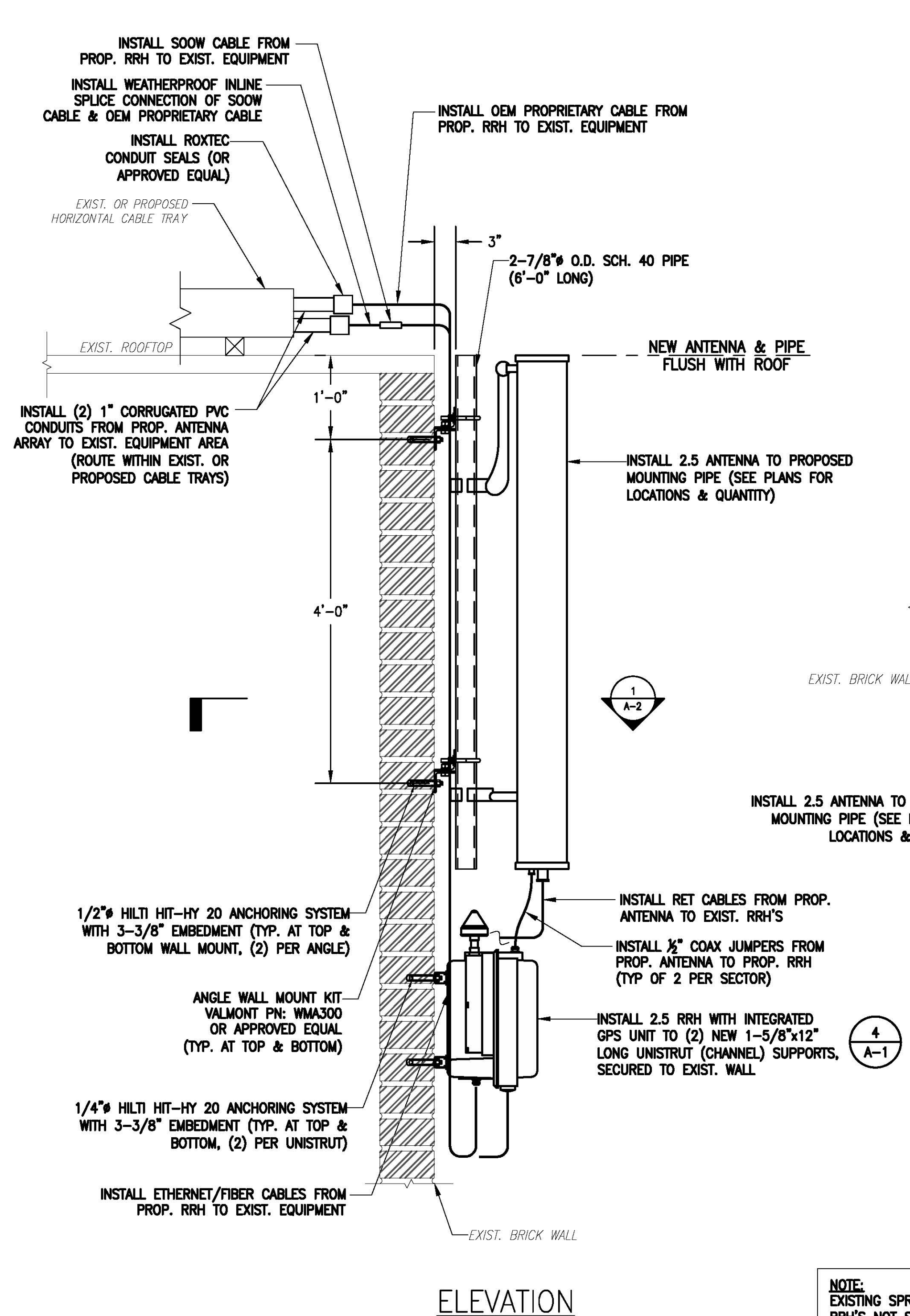
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BS03XC032
 SITE NAME:
678 MASS AVE
 SITE ADDRESS:
 678 MASSACHUSETTS AVENUE
 CAMBRIDGE, MA 02139

SHEET TITLE
**EQUIPMENT
 DETAILS &
 CONSTRUCTION
 SPECIFICATIONS**

SHEET NUMBER
A-6

SPECIAL INSTALLATION NOTE:
COAX JUMPERS FROM 2.5 RRH TO 2.5 ANTENNA SHALL NOT EXCEED 15'. NOTIFY SPRINT CM OF ANY DISCREPANCY.

- INSTALLATION NOTES:**
1. CONTRACTOR TO VERIFY DIAMETER OF EXISTING MONOPOLE BEFORE ORDERING PARTS (IF REQUIRED).
 2. CONTRACTOR TO VERIFY IN FIELD SIZE OF EXISTING MOUNTING PIPE TO BE 2 1/2" STD (2.88 O.D.) PIPE MAST (6'-0" LONG).
 3. VERIFY EXACT RRH AND ANTENNA MODEL & AZIMUTHS WITH RF ENGINEER PRIOR TO INSTALLATION.
 4. ROTATE EXISTING ANTENNA FRAME AS NEEDED TO ACCOMMODATE INSTALL ANTENNAS.
 5. RRH PLACEMENT FOR REFERENCE ONLY. CONTRACTOR SHALL PLACE RRH IN CORRECT ORDER MATCHING INSTALL ANTENNA PLACEMENT AND ENSURE THAT THERE IS ENOUGH CLEARANCE FOR RRHS TO BE PLACED ON THE INSIDE ON THE ANTENNA FRAME.
 6. INSTALL EQUIPMENT TO BE MOUNTED PER MANUFACTURERS SPECIFICATIONS.

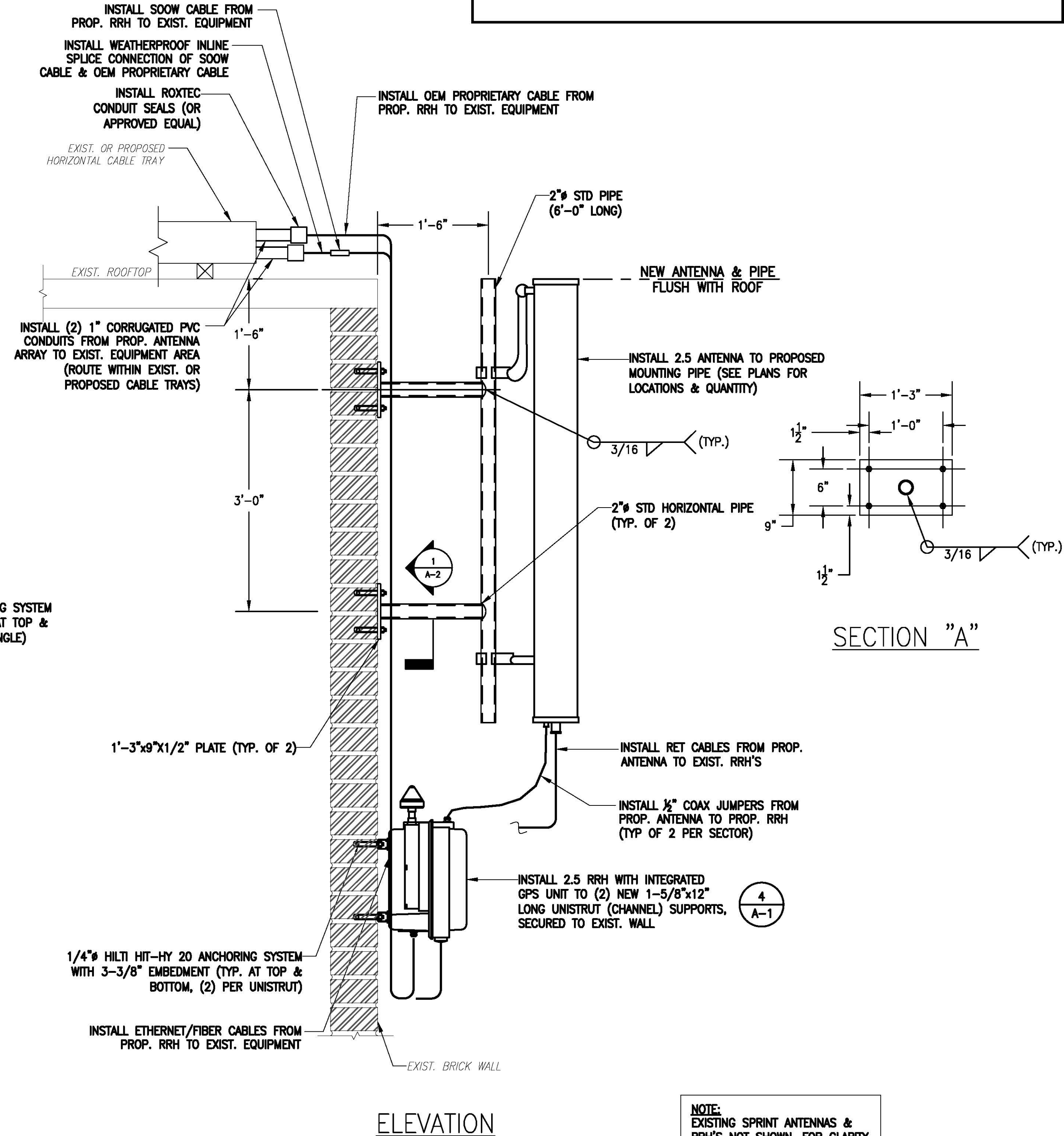


SECTION "A"

CONTRACTOR NOTE:
PAINT PROPOSED ANTENNAS, RRH'S, ALL NEW MOUNTING HARDWARE, & ANTENNA CABLE JUMPERS TO MATCH EXISTING BRICK FACADE.

NOTE:
EXISTING SPRINT ANTENNAS & RRH'S NOT SHOWN, FOR CLARITY.

NOTE: ALPHA AND GAMMA SECTORS ONLY
2.5 ANTENNA MOUNTING DETAIL (1) S-1
N.T.S.



SECTION "A"

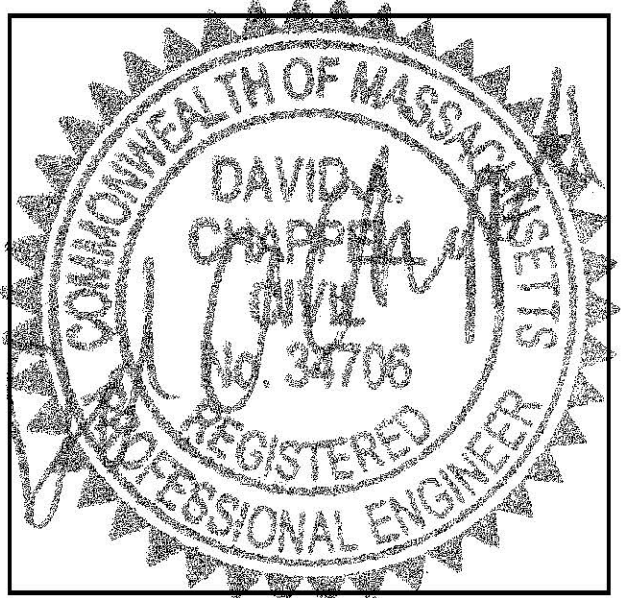
NOTE:
EXISTING SPRINT ANTENNAS & RRH'S NOT SHOWN, FOR CLARITY.

NOTE: BETA SECTOR ONLY
2.5 ANTENNA MOUNTING DETAIL (2) S-1
N.T.S.

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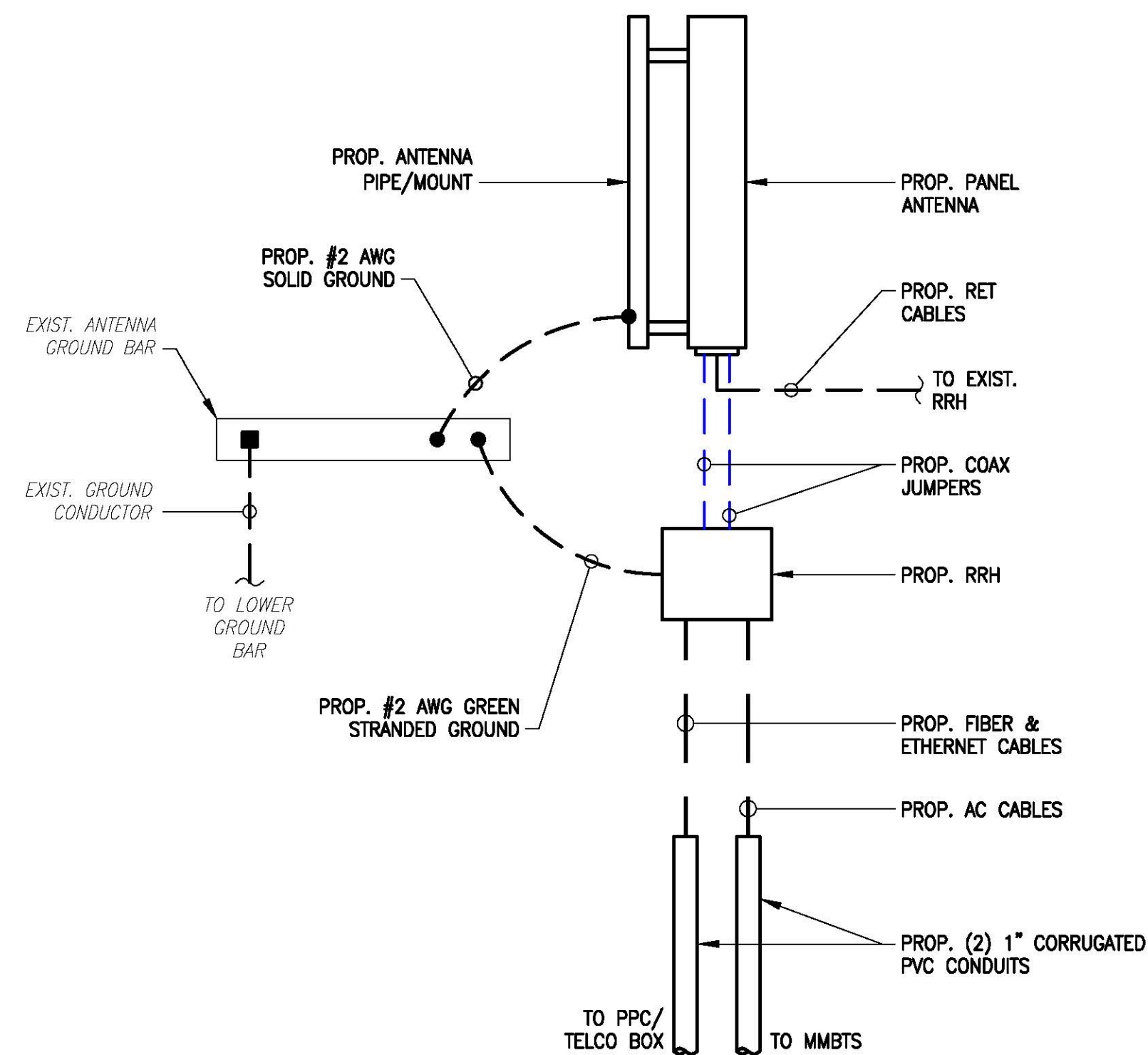
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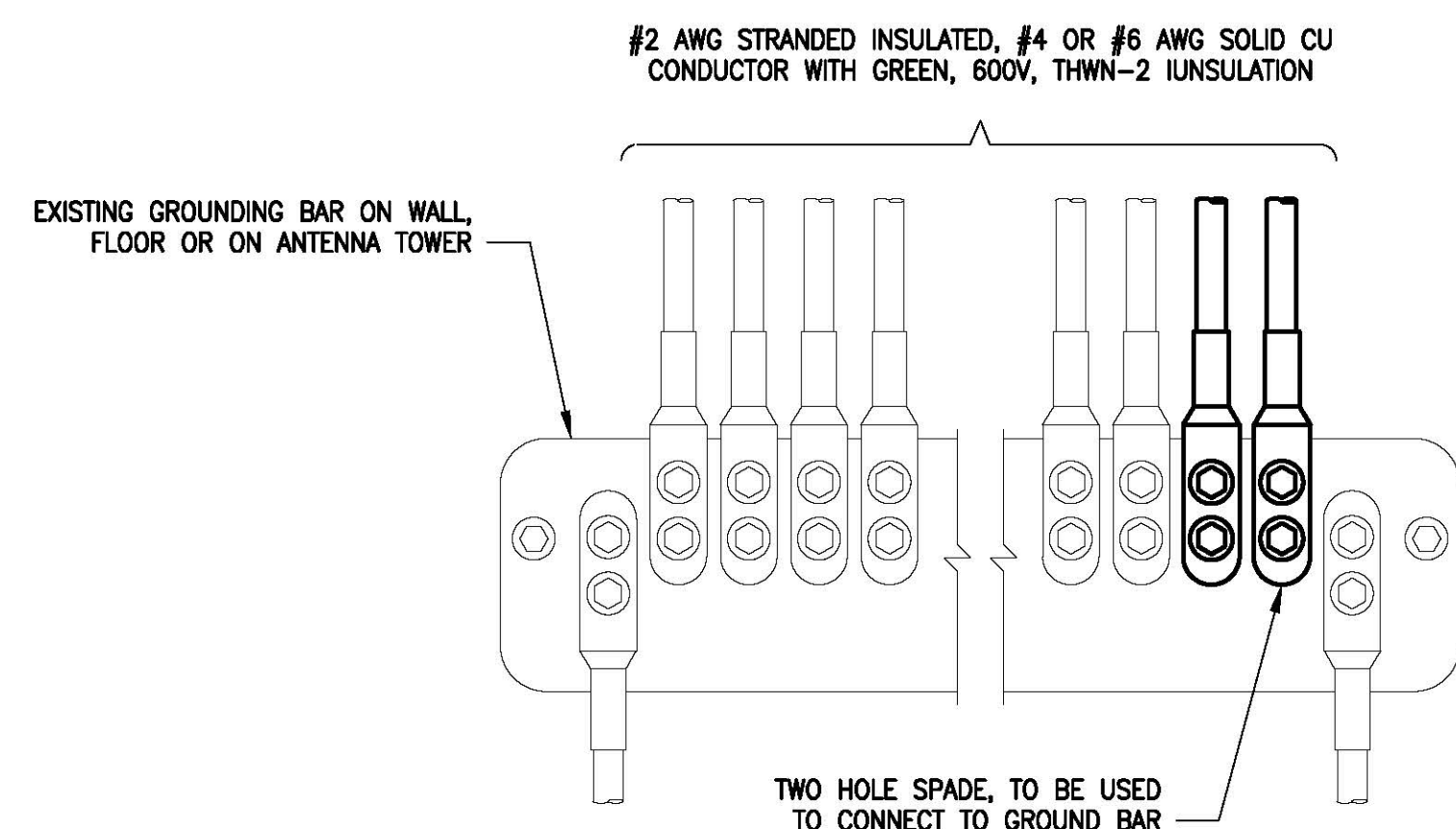
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SHEET TITLE
STRUCTURAL DETAILS

SHEET NUMBER
S-1



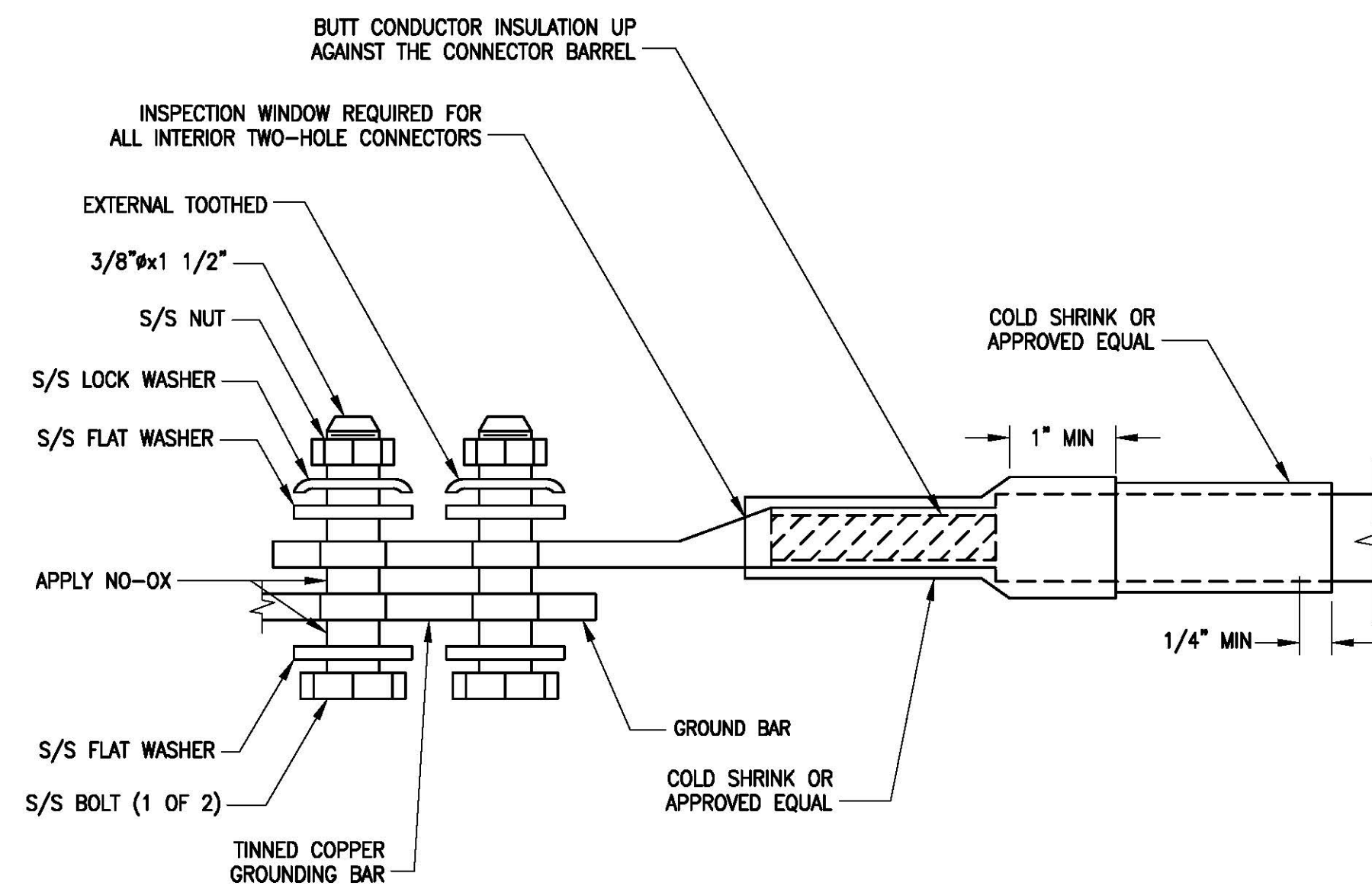
TOWER TOP GROUNDING SCHEMATIC 1
SCALE: N.T.S. E-2



NOTES

1. APPLY NO-OX TO LUG AND BAR CONTACT SURFACE. DO NOT COAT INLINE LUG.
2. IF STOLEN GROUND BARS ARE ENCOUNTERED, CONTACT SPRINT CM FOR REPLACEMENT THREADED ROD KIT.

INSTALLATION OF GROUNDING CONDUCTOR TO GROUNDING BAR 2
SCALE: N.T.S. E-2



TWO HOLE LUG 3
SCALE: N.T.S. E-2

SYMBOL LEGEND

- EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION
- CABLE GROUNDING KIT
- GROUNDING/BONDING
- CONDUIT

UNLESS NOTED OTHERWISE, ALL BONDING CONDUCTORS ARE 2# SOLID TINNED BCW.

NOTE: EXISTING NV EQUIPMENT CONDUITS NOT SHOWN FOR CLARITY. REFER TO RECORD AS-BUILT NV PHOTOS AND NV AS-BUILT DRAWINGS.

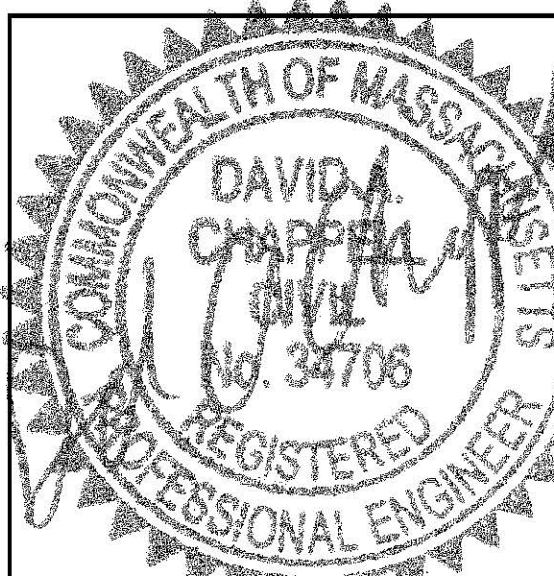
PROTECTIVE GROUNDING SYSTEMS GENERAL NOTES:

1. GROUNDING SHALL BE IN ACCORDANCE WITH NEC ARTICLE 250-GROUNDING AND BONDING.
2. GROUNDING SHALL BE IN ACCORDANCE WITH SPRINT SSEO DOCUMENTS 3.018.02.004 "BONDING, GROUNDING AND TRANSIENT PROTECTION FOR CELL SITES" AND 3.018.10.002 "SITE RESISTANCE TO EARTH TESTING".
3. PROVIDE GROUND CONNECTIONS FOR ALL METALLIC STRUCTURES, ENCLOSURES, RACEWAYS AND OTHER CONDUCTIVE ITEMS ASSOCIATED WITH THE INSTALLATION OF CARRIER'S EQUIPMENT.
4. GROUND CONNECTIONS: CLEAN SURFACES THOROUGHLY BEFORE APPLYING GROUND LUGS OR CLAMPS. IF SURFACE IS COATED, REMOVE THE COATING, APPLY A NON-CORROSIVE APPROVED COMPOUND TO CLEAN SURFACE AND INSTALL LUGS OR CLAMPS. WHERE GALVANIZING IS REMOVED FROM METAL, IT SHALL BE PAINTED OR TOUCHED UP WITH "GALVAMOX" OR EQUAL.
5. ALL GROUNDING WIRES SHALL PROVIDE A STRAIGHT, DOWNWARD PATH TO GROUND WITH GRADUAL BENDS AS REQUIRED. GROUND WIRES SHALL NOT BE LOOPED OR SHARPLY BENT.
6. ALL CLAMPS AND SUPPORTS USED TO SUPPORT THE GROUNDING SYSTEM CONDUCTORS AND PVC CONDUITS SHALL BE PVC TYPE (NON CONDUCTIVE). DO NOT USE METAL BRACKETS OR SUPPORTS WHICH WOULD FORM A COMPLETE RING AROUND ANY GROUNDING CONDUCTOR.
7. ALL GROUND WIRES SHALL BE #2 SOLID TINNED BCW UNLESS NOTED OTHERWISE.
8. PROVIDE DEDICATED #2 AWG COPPER GROUND WIRE FROM EACH ANTENNA MOUNTING PIPE TO ASSOCIATED CIGBE.
9. GROUND ANTENNA BASES, FRAMES, CABLE RACKS, AND OTHER METALLIC COMPONENTS WITH #2 INSULATED TINNED STRANDED COPPER GROUNDING CONDUCTORS AND CONNECT TO INSULATED SURFACE MOUNTED GROUND BARS. CONNECTION DETAILS SHALL FOLLOW MANUFACTURER'S SPECIFICATIONS FOR GROUNDING.
10. EACH EQUIPMENT CABINET SHALL BE CONNECTED TO THE MASTER ISOLATION GROUND BAR (MGB) WITH #2 SOLID TINNED BCW EQUIPMENT CABINETS WILL HAVE (2) CONNECTIONS.
11. GROUND HYBRIFLEX SHIELD AT TOP, BOTTOM AND AT TRANSITION TO HYBRIFLEX JUMPER CABLES AT EQUIPMENT CABINET ENTRANCE USING MANUFACTURER'S GUIDELINES. WHEN HYBRIFLEX CABLE EXCEEDS 200', GROUND AT INTERVALS NOT EXCEEDING 100'.
12. THE CONTRACTOR SHALL VERIFY THAT THE EXISTING GROUND BARS HAVE ENOUGH SPACE/HOLES FOR ADDITIONAL TWO HOLE LUGS.
13. EXOTHERMIC WELDING IS RECOMMENDED FOR GROUNDING CONNECTION WHERE PRACTICAL OTHERWISE. THE CONNECTION SHALL BE MADE USING COMPRESSION TYPE-2 HOLES, LONG BARREL LUGS OR DOUBLE CRIMP "C" CLAMP. THE COPPER CABLES SHALL BE COATED WITH AN ANTI-OXIDANT (THOMAS BETTS KOPR-SHILD) BEFORE MAKING THE CRIMP CONNECTIONS THE CONTRACTOR SHALL FOLLOW MANUFACTURER'S RECOMMENDED TORQUES ON THE BOLT ASSEMBLY TO SECURE CONNECTIONS.
14. AT ALL TERMINATIONS AT EQUIPMENT ENCLOSURES, PANEL, AND FRAMES OF EQUIPMENT AND WHERE EXPOSED FOR GROUNDING, CONDUCTOR TERMINATION SHALL BE PERFORMED UTILIZING TWO HOLE BOLTED TONGUE COMPRESSION TYPE LUGS WITH STAINLESS STEEL SELF-TAPPING SCREWS.
15. THE MASTER GROUND BAR (MGB) SHALL BE MADE OF BARE 1/4"x2" COPPER (FOR OUTDOOR APPLICATIONS IT SHALL BE TINNED COPPER) AND LARGE ENOUGH TO ACCOMMODATE THE REQUIRED NUMBER OF GROUND CONNECTIONS. THE HARDWARE SECURING THE MGB SHALL ELECTRICAL INSULATE THE MGB FROM ANY STRUCTURE TO WHICH IT IS FASTENED.
16. ALL BOLTS, WASHERS, AND NUTS USED ON GROUNDING CONNECTIONS SHALL BE STAINLESS STEEL.
17. ALL GROUNDING CONNECTIONS SHALL BE COATED WITH A COPPER SHIELD ANTI-CORROSIVE AGENT SUCH AS T&B KOPR SHIELD. VERIFY PRODUCT WITH SPRINT CONSTRUCTION MANAGER.
18. FOR NEW OR REPAIRED GROUNDING EQUIPMENT. REFER TO SPRINT GROUNDING STANDARDS AND FOLLOWING (SUPPLEMENTS):
-ANTI-THEFT UPDATE TO SPRINT GROUNDING DATED 08-24-12 (OR CURRENT VERSION)
-SPRINT ENGINEERING LETTER EL-0504 DATED 04-20-12 (OR CURRENT VERSION)

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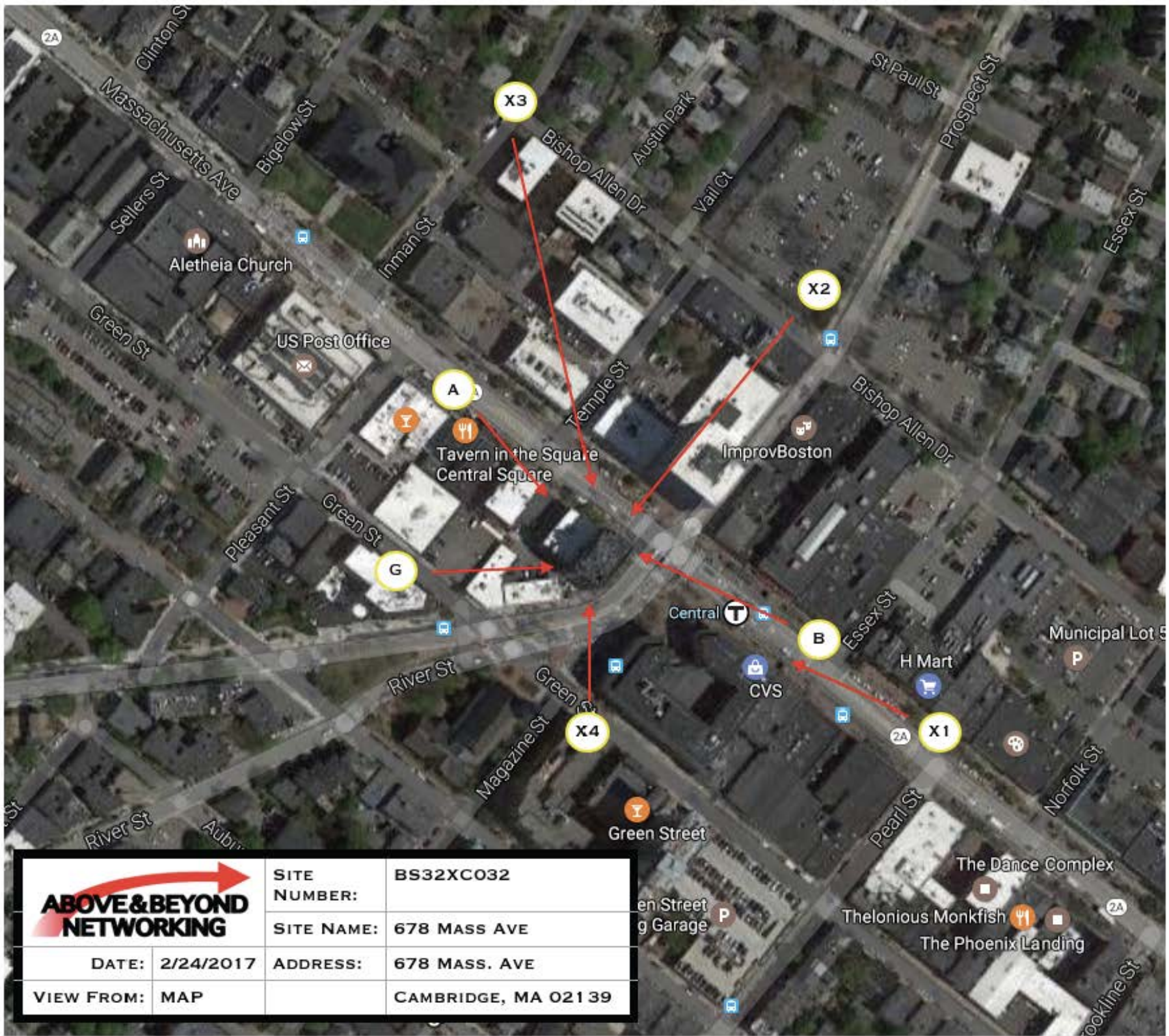
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SHEET TITLE
GROUNDING DETAILS & NOTES

SHEET NUMBER
E-2



		SITE NUMBER:	BS32XC032
		SITE NAME:	678 MASS AVE
DATE:	2/24/2017	ADDRESS:	678 MASS. AVE
VIEW FROM:	MAP		CAMBRIDGE, MA 021 39

NO VIEW



SITE NUMBER: BS32XC032

SITE NAME: 678 MASS AVE


DATE: 2/24/2017

ADDRESS: 678 MASS. AVE

VIEW FROM: X1 - SE

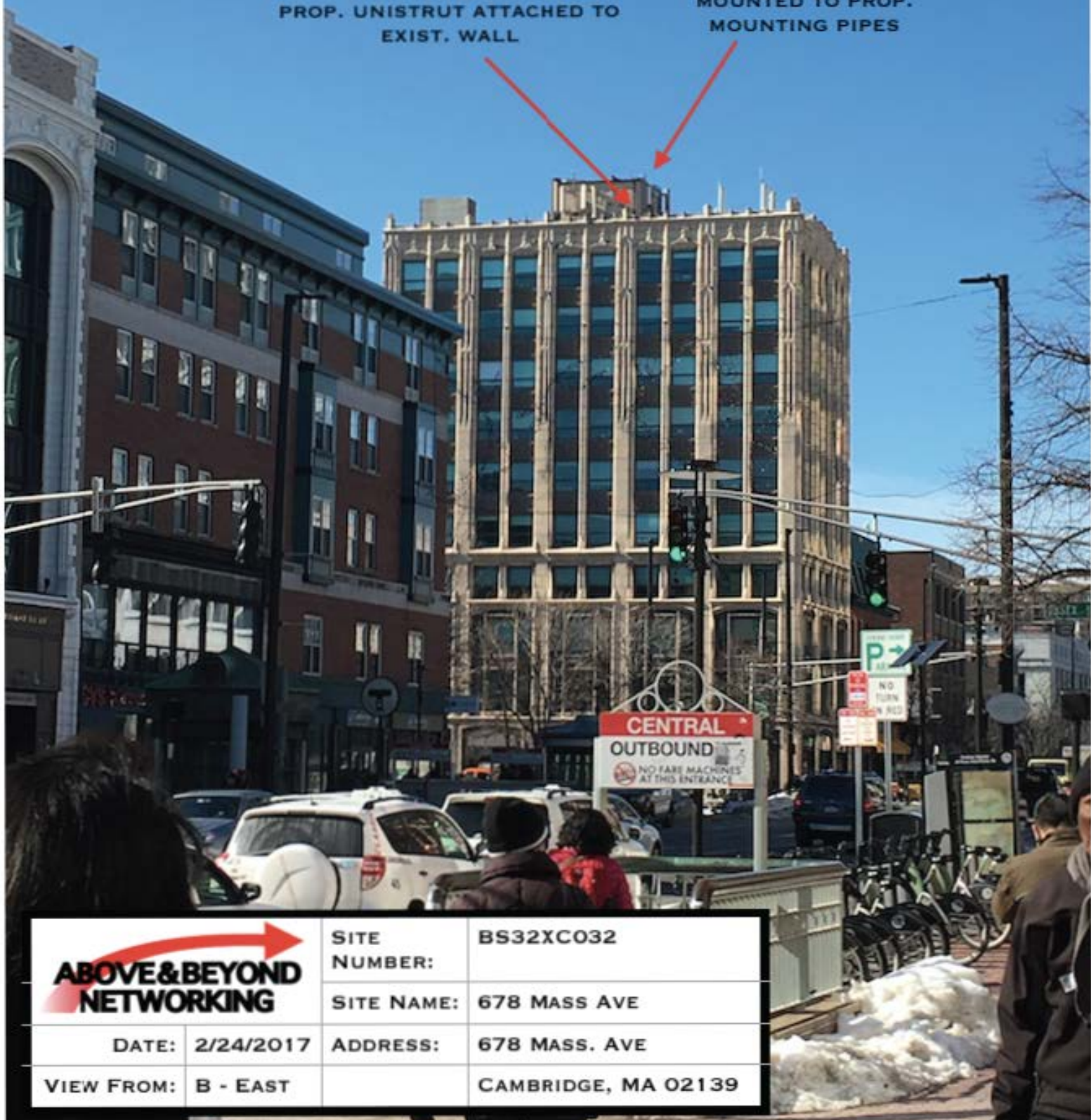
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 ABOVE & BEYOND NETWORKING	SITE NUMBER:	BS32XC032	
	SITE NAME:	678 MASS AVE	
DATE:	2/24/2017	ADDRESS:	678 MASS. AVE
VIEW FROM:	B - EAST		CAMBRIDGE, MA 02139

INSTALL SPRINT 2.5 RRH ON
PROP. UNISTRUT ATTACHED TO
EXIST. WALL

BETA, PROP. SPRINT
2500MHZ ANTENNA
MOUNTED TO PROP.
MOUNTING PIPES



 ABOVE&BEYOND NETWORKING	SITE NUMBER:	BS32XC032
	SITE NAME:	678 MASS AVE
DATE: 2/24/2017	ADDRESS:	678 MASS. AVE
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NO VIEW



SITE NUMBER:	BS32XC032
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ADDRESS:	678 MASS. AVE
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NO VIEW

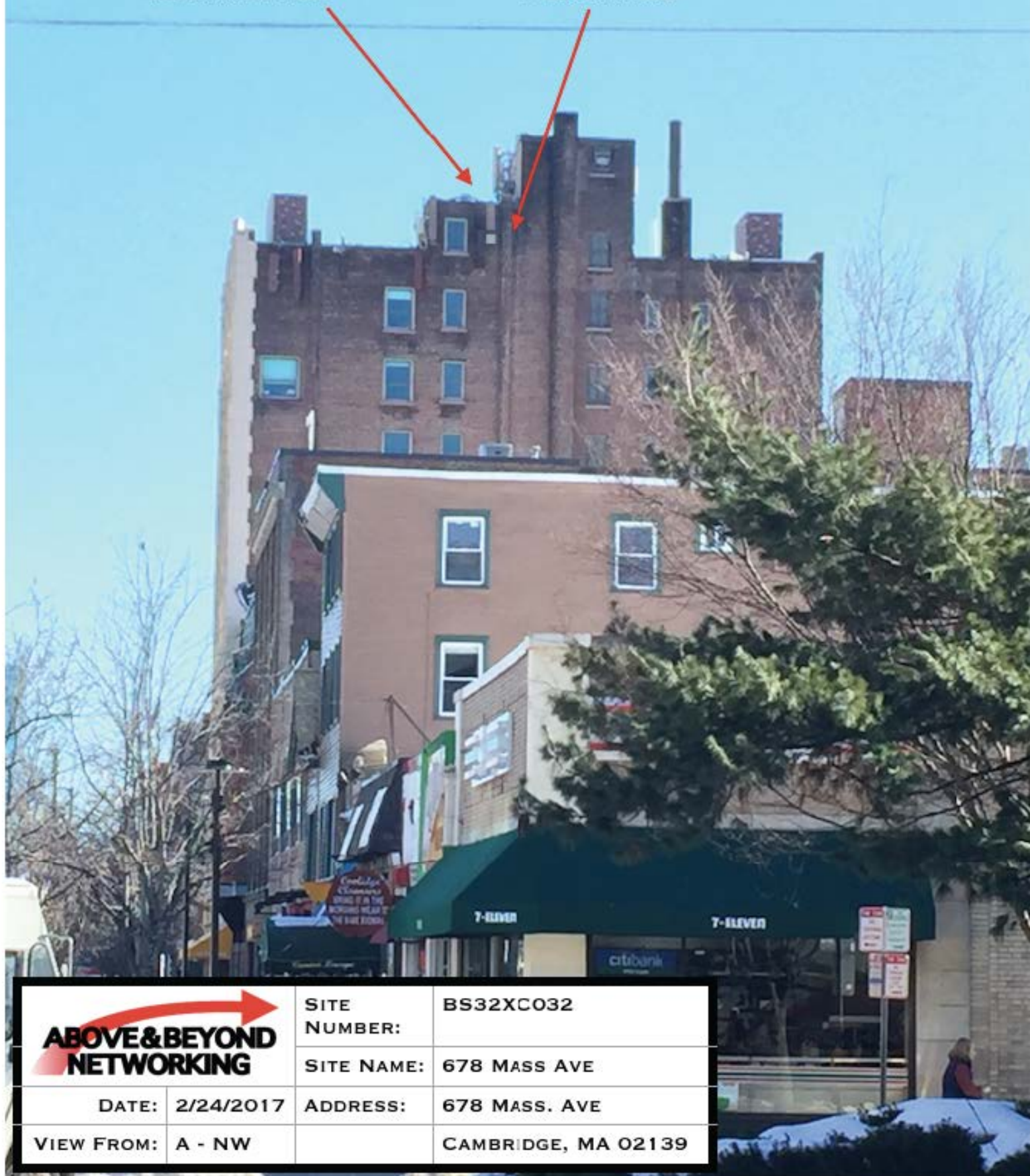
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	SITE NAME: 678 MASS AVE	
DATE: 2/24/2017	ADDRESS: 678 MASS. AVE	
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SITE NUMBER:	BS32XC032
SITE NAME:	678 MASS AVE
DATE: 2/24/2017	ADDRESS: 678 MASS. AVE
VIEW FROM: A - NW	CAMBRIDGE, MA 02139

ALPHA, PROP. SPRINT
2500MHZ ANTENNA
MOUNTED TO PROP.
MOUNTING PIPES

INSTALL SPRINT 2.5 RRH ON
PROP. UNISTRUT ATTACHED
TO EXIST. WALL



SITE NUMBER:	BS32XC032
SITE NAME:	678 MASS AVE
ADDRESS:	678 MASS. AVE
VIEW FROM:	A - NW
	CAMBRIDGE, MA 02139



SITE NUMBER:	BS32XC032
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VIEW FROM:	G - WEST
	CAMBRIDGE, MA 02139

INSTALL SPRINT 2.5 RRH ON PROP. UNISTRUT ATTACHED TO EXIST. WALL

GAMMA, PROP. SPRINT 2500MHZ ANTENNA MOUNTED TO PROP. MOUNTING PIPES



 ABOVE & BEYOND NETWORKING	SITE NUMBER:	BS32XC032
	SITE NAME:	678 MASS AVE
DATE: 2/24/2017	ADDRESS:	678 MASS. AVE
VIEW FROM: G - WEST		CAMBRIDGE, MA 02139

NO VIEW



SITE NUMBER:	BS32XC032		
SITE NAME:	678 MASS AVE		
DATE:	2/24/2017	ADDRESS:	678 MASS. AVE
VIEW FROM:	X4 - S		CAMBRIDGE, MA 02139

678 Mass Ave

Petitioner

107-135
THE UNITARIAN UNIVERSALIST SERVICE
COMMITTEE INC.
689 MASS AVE ATT:CFO
CAMBRIDGE, MA 02139

90-161
CHOICE REALTY LLC
825 BEACON ST., #1
NEWTON CENTRE, MA 02459

TRM
C/O JON RITTER, AGENT
16 CHESTNUT STREET – SUITE 420
FOXBOROUGH, MA 02035

105-74
678 MASS AVE. LLC
825 BEACON ST., SUITE 1
NEWTON CENTER, MA 02159

105-81-82
CENTRAL PROPERTY LIMITED PARTNERSHIP
C/O RIVERSIDE MANAGEMENT
P.O. BOX #440317
WEST SOMERVILLE, MA 02144

107-136
U.S. REIF CENTRAL PLAZA MASS. LLC.
C/O INTERCONTINENTAL MGMT CORP
1270 SOLDIERS FIELD RD
BOSTON, MA 02135

105-89-93
720 MASS AVE REALTY, LLC,
720 MASS AVE
CAMBRIDGE, MA 02139

105-66
THE FIRST BAPTIST CHURCH OF CAMBRIDGE
5 MAGAZINE ST
CAMBRIDGE, MA 02139

106-105
CENTRAL SQUARE LLC,
C/O HUNNEMAN REAL ESTATE CORP.
303 CONGRESS ST.
BOSTON, MA 02210

106-125
EQR-CHURCH CORNER, L.L.C.
EQR-RE TAX DEPARTMENT
P.O BX 87407
LEDGER NO.19231
CHICAGO, IL 60606



CAMBRIDGE HISTORICAL COMMISSION

831 Massachusetts Avenue, 2nd Floor, Cambridge, Massachusetts 02139

Telephone: 617 349 4683 TTY: 617 349 6112

E-mail: histcomm@cambridgema.gov URL: http://www.cambridgema.gov/Historic

William B. King, *Chair*, Bruce A. Irving, *Vice Chair*, Charles M. Sullivan, *Executive Director*

William G. Barry, Jr., Robert G. Crocker, Chandra Harrington, Jo M. Solet, *Members*;

Joseph V. Ferrara, Kyle Sheffield, Susannah Barton Tobin, *Alternates*

Jurisdiction Advice

To the Owner of Property at 678 Massachusetts Avenue

The above-referenced property is subject to the jurisdiction of the Cambridge Historical Commission (CHC) by reason of the status referenced below:

- Old Cambridge Historic District
- Fort Washington Historic District
(M.G.L. Ch. 40C, City Code §2.78.050)
- Avon Hill Neighborhood Conservation District
- Half Crown – Marsh Neighborhood Conservation District
- Harvard Square Conservation District
- Mid Cambridge Neighborhood Conservation District
- Designated Landmark
- Property is being studied for designation: _____
(City Code, Ch. 2.78., Article III, and various City Council Orders)
- Preservation Restriction or Easement (as recorded)
- Structure is fifty years or more old and therefore subject to CHC review of any application for a demolition permit, if one is required by ISD. (City Code, Ch. 2.78, Article II). **See the back of this page for definition of demolition.**
No demolition requested.
- No jurisdiction: not a designated historic property and the structure is less than fifty years old.
- No local jurisdiction, but the property is listed on the National Register of Historic Places; CHC staff is available for consultation, upon request.
Staff comments: _____

The Board of Zoning Appeal advises applicants to complete Historical Commission or Neighborhood Conservation District Commission reviews before appearing before the Board.

If a line indicating possible jurisdiction is checked, the owner needs to consult with the staff of the Historical Commission to determine whether a hearing will be required.

CHC staff initials SLB

Date March 21, 2017

Received by Uploaded to Energov

Date March 21, 2017

Relationship to project BZA 12698-2017

cc: Applicant
Inspectional Services Commissioner

Demolition Delay Ordinance and Application Information

The Demolition Delay Ordinance (Chapter 2.78, Article II of the Cambridge Municipal Code) was adopted by the City Council in 1979 to afford public review of demolition permit applications for potentially significant buildings. When the Historical Commission determines that a building is significant and should be preserved, demolition will be delayed for up to six months so that solutions can be sought to preserve the building indefinitely. The Ordinance covers all buildings over 50 years old, city-wide. The Historical Commission archives provide dates of construction for all properties in the City.

Demolition is defined in the ordinance as "the act of pulling down, destroying, removing or razing a building or commencing the work of total or substantial destruction with the intent of completing the same." The Inspectional Services Commissioner has provided further guidelines to outline what actions require a demolition permit. **In addition to complete demolition of a building, the following actions may require a demolition permit,**

- **removal of a roof,**
- **removal of one side of a building,**
- **gutting of a building's interior to the point where exterior features (windows, etc.) are impacted, and**
- **removal of more than 25% of a structure.**

Please contact the building inspector or a staff member of the Historical Commission if you have questions about whether a demolition permit is required for a particular project.

Demolition permit applications can be obtained from the Inspectional Services Department. The completed application should be submitted to the Historical Commission, where the staff will review the application. If the Executive Director of the Historical Commission makes an initial determination that the building is significant, a public hearing will be scheduled with Historical Commission. If the staff makes an initial determination that the building is not significant, the application is released for further review by the Building Commissioner.

More information about the demolition permit application procedures is available on the Historical Commission's web site or by calling or dropping by the Historical Commission office.

July 2003

Cambridge Historical Commission
831 Massachusetts Ave., 2nd Fl.
Cambridge, MA 02139
Ph: 617/349-4683 or TTY: 617/349-6112
<http://www.cambridgema.gov/Historic>