

December 29, 2017

Boston Landmarks Commission
City of Boston
The Environment Department
Boston City Hall/ Room 709
Boston, Massachusetts 02201
617-635-3850

RE: Application for Design Approval for T-Mobile's Telecommunications Facility at:
725-743 Tremont Street, Boston, MA, 02116 Permit Number: ALT755506
Crown Site Number: 818305 / Crown Site Name: SHP MANAGEMENT CORP.
Customer Site Number: 4BN0023D / Application Number: 357385

Dear Mr. Cornish:

At the January 2, 2018 hearing, I will be presenting for design approval for T-Mobile's proposed project concerning the above-referenced address. T-Mobile currently utilizes the rooftop penthouse for its telecommunications facility. The proposed project is a necessary modernization of T-Mobile's equipment to utilize the FCC Broadband Spectrum License for 1900MHz frequency.

T-Mobile's antennas are mounted to the existing building façade with flush style mounting hardware. Said antennas are hidden from view by an RF enclosures painted to match the building and secured to the face of the penthouse. The RF enclosures are in front of the antenna concealing them completely, as shown in the photo simulations attached hereto.

T-Mobile's project will include the following modifications:

Remove and replace (4) antennas with a newer model, addition of (3) new antennas and ancillary equipment to said antennas including (3) remote radio heads or "RRUs" and a 1/2" HCS cable; as well as replacement of (6) lines of coaxial cable with DC cables as per the attached plans.

The project will include installation of three new stealth enclosures painted to match the façade of the penthouse to conceal the new antennas, as shown on the proposed views on the attached photo simulations.

Itemized list of submittal documents:

- Copy of Landmarks Certificate of Appropriateness or Design Review Approval or Exemption Application Filed on December 1, 2017;

- Photo Simulations;
- Construction Drawings; and
- Structural Analysis Report

T-Mobile is committed to working cooperatively with all jurisdictions around the country to secure expeditious approval of requests to modify existing personal wireless service facilities.

If you should require more information or documentation, please do not hesitate to contact me.

Sincerely,

Sarah Snell

Sarah Snell
Temporary Project Contractor
Crown Castle
12 Gill Street, Suite 5800
Woburn, MA 01801
(781) 970-0055
Sarah.Snell.Contractor@crowncastle.com



Crown Castle
12 Gill Street, Suite 5800
Woburn, MA 01801

December 1, 2017

Boston Landmarks Commission
Boston City Hall
Room 709
Boston, MA 02201

RE: Application for Certificate of Appropriateness or Design Approval -725-743 Tremont Street
T-Mobile Equipment Upgrades to Existing Rooftop Telecommunications Facility

Dear Landmarks Commission:

T-Mobile has existing antennas and associated equipment on the rooftop at 725 Tremont Street, and they propose to upgrade their existing equipment by (4) antennas with a newer model, addition of (3) new antennas and ancillary equipment to said antennas including (3) remote radio heads or "RRUs" and a 1/2" HCS cable; as well as replacement of (6) lines of coaxial cable with DC cables. All work is to be performed within T-Mobile's existing leased area.

Enclosed please find:

- Application for Certificate of Appropriateness – Design Approval;
- Photo simulations;
- Construction Drawings;
- Application Fee Check; and
- Copy of the Building Permit Application

Please do not hesitate to contact me at the number below if you have any questions or require anything additional.

Sincerely,

Sarah Snell
Temporary Project Contractor
Crown Castle
12 Gill Street, Suite 5800
Woburn, MA 01801
(781) 970-0055
Sarah.Snell.Contractor@crowncastle.com



APPLICATION
CERTIFICATE of APPROPRIATENESS-or-
DESIGN APPROVAL-or-EXEMPTION

Deliver or mail to:
Environment Department
Boston City Hall, Rm 709
Boston, MA 02201

For Office Use Only

APPLICATION # _____
RECEIVED _____
FEE _____
HEARING DATE _____

DO NOT RETURN THIS FORM BY FAX OR EMAIL

DO NOT STAMP THIS BOX

I. PROPERTY ADDRESS 725-743 Tremont Street

NAME of BUSINESS/PROPERTY Concord House Apartments

The names, telephone numbers, postal and e-mail addresses requested below will be used for all subsequent communications relating to this application. Environment Department personnel cannot be responsible for illegible, incomplete or inaccurate contact information provided by applicants.

II. APPLICANT Crown Castle

CONTACT NAME Sarah Snell RELATIONSHIP TO PROPERTY Rooftop Manager

MAILING ADDRESS 12 Gill Street, Suite 5800, Woburn, MA ZIP 01801

PHONE 781-970-0055 EMAIL sarah.snell.contractor@crowncastle.com

PROPERTY OWNER Concord House Associates LP CONTACT NAME Charles P. Gendron

MAILING ADDRESS 7 Thomas Drive, Cumberland Foreside, Maine ZIP 04110

PHONE 207-829-9200 EMAIL _____

ARCHITECT Chappell Engineering Associates CONTACT NAME David Chappell

MAILING ADDRESS 201 Boston Bost Road West, Suite 101, Marlborough, MA ZIP 01752

PHONE 508-481-7400 EMAIL david.chappell@chappellengineering.com

CONTRACTOR Crown Castle CONTACT NAME Jeffrey Barbadora

MAILING ADDRESS 12 Gill Street, Suite 5800, Woburn MA ZIP 01801

PHONE 781-970-0055 EMAIL sarah.snell.contractor@crowncastle.com

III. DESCRIPTION OF PROPOSED WORK

A BRIEF OUTLINE OF THE PROPOSED WORK *MUST* BE GIVEN IN THE SPACE PROVIDED BELOW, OR THE APPLICATION WILL *NOT* BE ACCEPTED. This description provides the basis for the official notice and subsequent decision, and it must clearly represent the entirety of the project. Additional pages may be attached, if necessary, to provide more detailed information.

T-Mobile proposes upgrades to its existing telecommunications facility on the rooftop including replacing (3) antennas with new models and adding (4) additional antennas. (1) antenna will be on a 4th sector making this a 4 sector site. Removing (6) coax. Adding (1) additional fiber line for new antenna sector. Also will be adding (6) DC power cables. Ground Changes include keeping (3) existing cabinets- no other changes made to leased ground space. All work to be done within T-Mobile's leased area.

REQUIRED DOCUMENTATION: Please include all required documentation with this application; review instructions carefully for details.

ESTIMATED COST OF PROPOSED WORK: 20,000

IV. DULY AUTHORIZED SIGNATURES (both required)

The facts set forth above in this application and accompanying documents are a true statement made under penalty of perjury.

APPLICANT Sarah Snell OWNER* Charles
 *(If building is a condominium or cooperative, the chairman must sign.)

PRINT Crown Castle PRINT Charles P. Gendron

Environment Department personnel cannot be responsible for verifying the authority of the above individuals to sign this application. Misrepresentation of signatory authority may result in the invalidation of the application.

UNSIGNED OR PARTIALLY SIGNED FORMS WILL BE REJECTED

THIS APPLICATION IS NOT COMPLETE WITHOUT SIGNATURES, FEES AND REQUIRED DOCUMENTATION.

The checklist below is for reference only: Please refer to the detailed application instructions for deadlines, fee schedule and required documentation specific to your proposal.

- COMPLETED APPLICATION FORM
- APPLICATION FEE (Check or money order made payable to City of Boston; see fee schedule in Instructions)
- DESCRIPTION OF WORK (A brief description must be included on the front page; additional pages of detailed information may be attached. **Applications that only note "see attached" will not be accepted.**)
- PHOTOS OF EXISTING CONDITIONS
- DRAWINGS AND SPECIFICATIONS AS REQUIRED (See "documentation requirements" in instructions)



PHOTO SIMULATION

**BN0023/CONCORD HOUSES – SITE: 818305
REV0**

Address:
**725 Tremont Street
Boston, MA 02116**

Date:
DECEMBER 16, 2016

Prepared by:



NARRATIVE:

Crown Castle is proposing to install three (3) new stealth enclosures on an existing roof top wireless communications facility located at 725 Tremont Street, Boston, Massachusetts. The installation will consist of proposed antennas mounted within proposed stealth enclosures on existing penthouse facades.

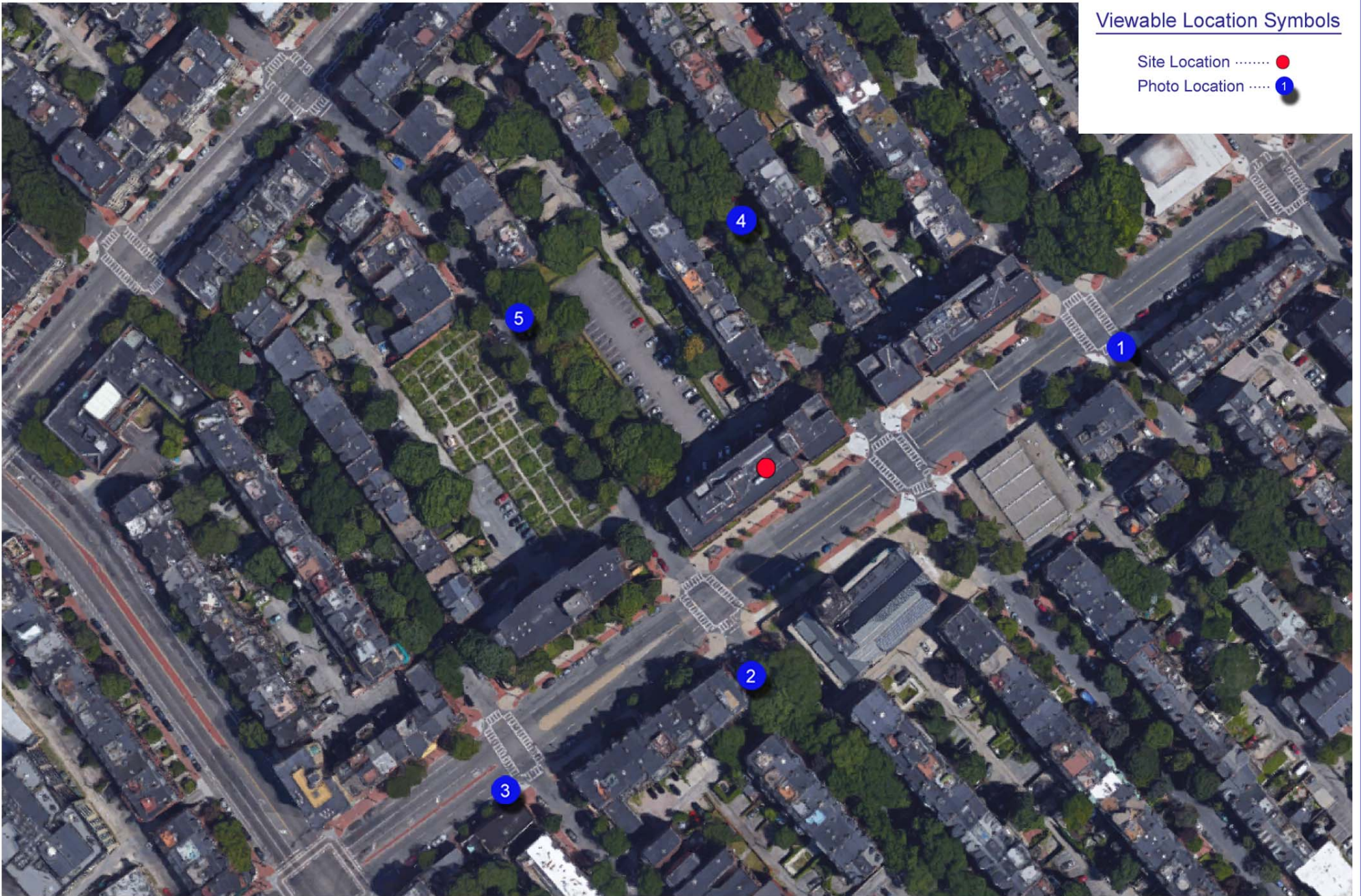
To accurately depict the proposed installation, Chappell Engineering Associates performed photo simulations of the site from several different locations. An existing condition and a proposed condition photo are included for each location. The proposed condition photo shows the approximate location of the proposed stealth enclosures as seen from street.

A photo locations map is also included as part of this package. The locations of the photos are depicted on this map.

Viewable Location Symbols

Site Location ●

Photo Location ①



4BN0023D
BN0023/Concord House - Site 818305
725 Tremont Street
Boston, MA 02116



PHOTOGRAPH 1:

Photo location number one (PHOTO 1), was taken from the corner of Tremont Street & Rutland Street, 200 feet East-northeast of the building. The first photo shows the existing stealth enclosure. The second photo shows the approximate location of the proposed replacement stealth enclosure.

Photo taken from Tremont Street, 200 feet East-northeast of the proposed site



Photo taken from Tremont Street, 200 feet East-northeast of the proposed site



PHOTOGRAPH 2:

Photo location number two (PHOTO 2), was taken from the intersection of Tremont Street and Worcester Street, 100 feet South of the existing building. The first photo shows the existing stealth enclosure. The second photo shows the approximate location of the proposed replacement stealth enclosure.

Photo taken from Worcester Street, 100 feet South of the existing building



Photo taken from Worcester Street, 100 feet South of the existing building



PHOTOGRAPH 3:

Photo location number three (PHOTO 3), was taken from Tremont Street, 300 feet Southwest of the existing building. The photo shows the existing building.

Both the existing or proposed stealth enclosures are not visible.

Photo taken from Tremont Street, 300 feet Southwest of the existing building



PHOTOGRAPH 4:

Photo location number four (PHOTO 4), was taken from Concord Square, 150 feet North of the existing building. The first photo shows the existing stealth enclosure. The second photo shows the approximate location of the proposed replacement stealth enclosure.

Photo taken from Concord Square, 150 feet North of the existing building



Photo taken from Concord Square, 150 feet North of the existing building



PHOTOGRAPH 5:

Photo location number five (PHOTO 5), was taken from Worcester Street, 150 feet Northwest of the existing building. The first photo shows the existing stealth enclosure. The second photo shows the approximate location of the proposed stealth enclosure.

Photo taken from Worcester Street, 150 feet Northwest of the proposed site



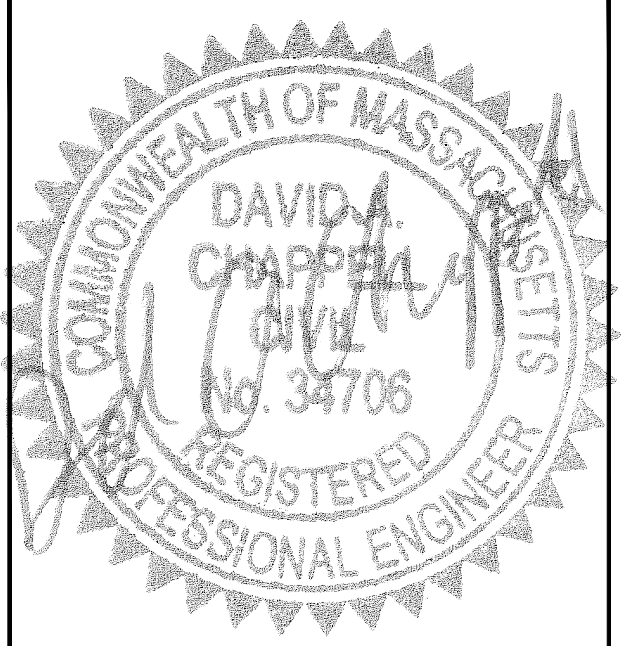
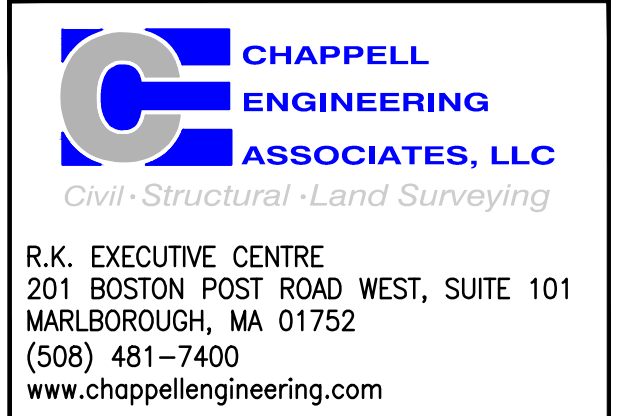
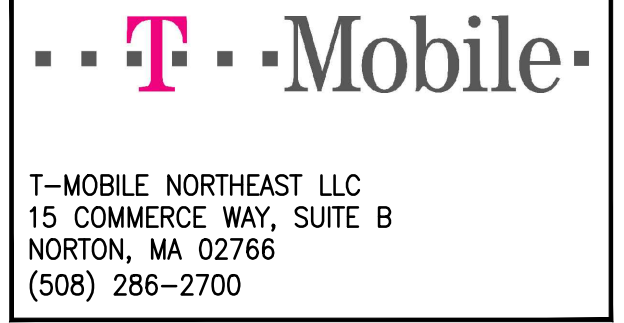
Photo taken from Worcester Street, 150 feet Northwest of the proposed site



SPECIAL CONSTRUCTION NOTE:
 T-MOBILE ROOF TOP WORK IS CONTINGENT ON THE FOLLOWING:
 * COMPLETION OF A GLOBAL STRUCTURAL STABILITY ANALYSIS (PROVIDED BY SITE OWNER).
 * GC SHALL FURNISH, INSTALL & COMPLETE ALL STRUCTURAL MODIFICATIONS AS INDICATED IN BEFORE-MENTIONED ANALYSIS & ASSESSMENT, IF REQUIRED.

L700 RF CONFIGURATION
4SEC-792DBS
 ("STREAMLINED")

PROJECT: MODERNIZATION UPGRADE L1900
SITE NAME: BN023/CONCORD HOUSES
T-MOBILE SITE #: 4BN0023D
CROWN SITE #: 818305
SITE ADDRESS: 725 TREMONT STREET
 BOSTON, MA 02116
SITE TYPE: ROOF TOP



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

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
3	05/09/17	CONSTRUCTION REVISED	CMC
2	04/10/17	CONSTRUCTION REVISED	CMC
1	09/27/16	ISSUED FOR CONSTRUCTION	CMC
0	09/12/16	ISSUED FOR REVIEW	CMC

SITE NUMBER:
4BN0023D
 SITE NAME:
BN023/CONCORD HOUSES
 SITE ADDRESS:
 725 TREMONT STREET
 BOSTON, MA 02116

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

APPROVED
 By Craig Gallagher at 1:54 pm, May 12, 2017



SITE INFORMATION

STRUCTURE OWNER:
 CROWN CASTLE INTERNATIONAL
 12 GILL STREET, SUITE 5800
 WOBURN, MA 01801
 PHONE: 781-970-0052

LATITUDE (NAD83):
GOOGLE EARTH 2-C CONFIRMATION
 N 42° 20' 25.8"
 N 42.340498°

LONGITUDE (NAD83):
GOOGLE EARTH 2-C CONFIRMATION
 W 71° 04' 43.0"
 W 71.078617°

COUNTY:
 SUFFOLK

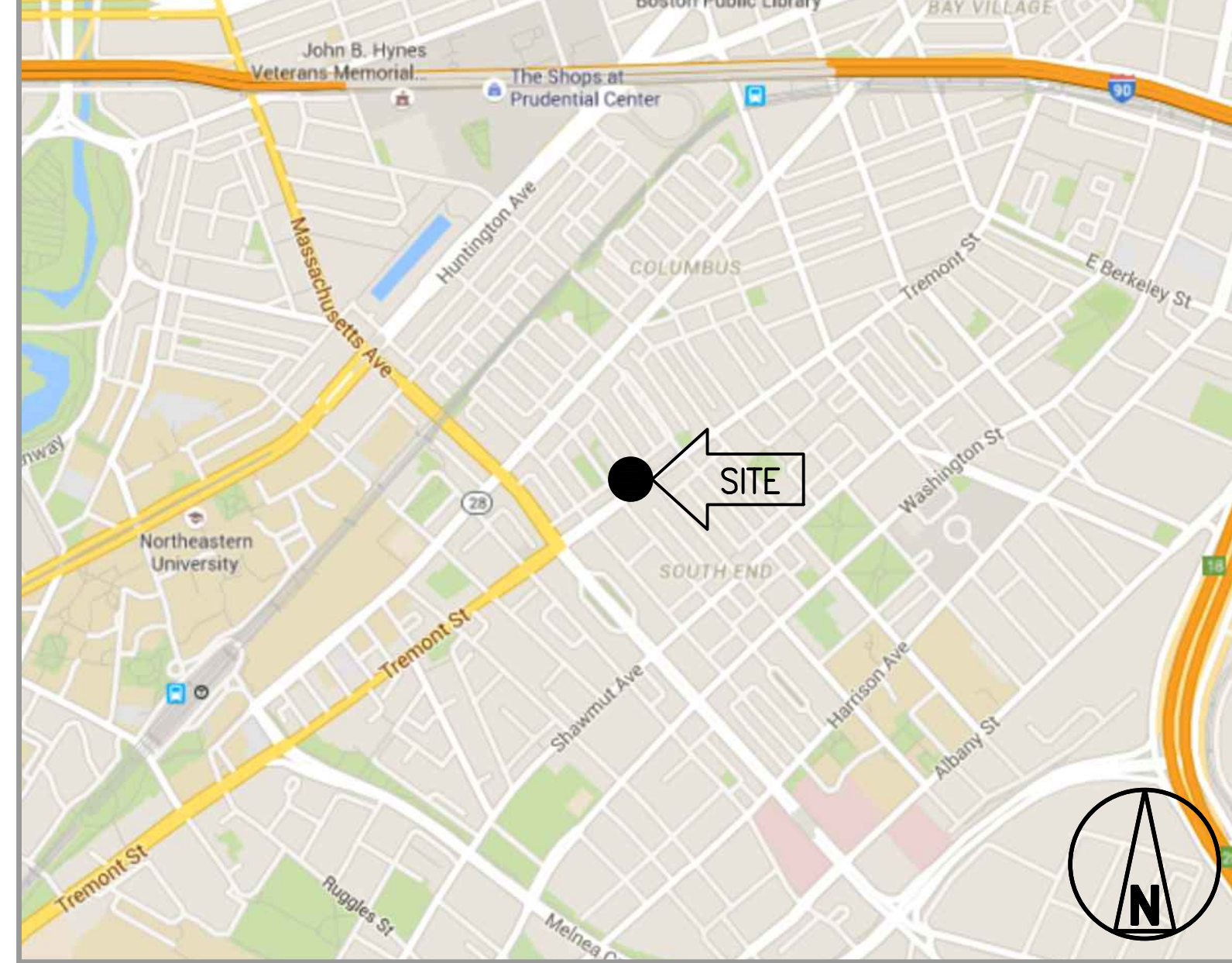
ZONING JURISDICTION:
 CITY OF WORCESTER

ZONING DISTRICT:
 MFR/LS - MULTIFAMILY RESIDENTIAL/LOCAL SERVICES
 OS-RC - RECREATION OPEN SPACE

POWER COMPANY:
 NSTAR ELECTRIC
 PHONE: 1-888-633-3797

FIBER COMPANY:
 COMCAST
 PHONE: 1-800-COMCAST

AREA MAP



GENERAL NOTES

- 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.
- 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.
- NEW CONSTRUCTION WILL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES.
 - BUILDING CODE: MASSACHUSETTS STATE BUILDING CODE 780 CMR - 8TH EDITION
 - ELECTRICAL CODE: NEC 2014 EDITION
 - 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



LOCATION MAP - GOOGLE EARTH 2-C CONFIRMATION



PROJECT DESCRIPTION

T-MOBILE EQUIPMENT MODIFICATIONS REQUIRED TO SUPPORT MODERNIZATION OF AN EXISTING WIRELESS COMMUNICATIONS FACILITY AND UTILIZATION OF FCC BROADBAND SPECTRUM LICENSE FOR 1900MHZ FREQUENCY, INCLUDING INSTALLATION OF:

ROOF-TOP EQUIPMENT, INCLUDING INSTALLATION OF:

- (3) ERICSSON AIR32 B66Aq/B2g ANTENNAS TO REPLACE (3) AIR21 B4q/B12p ANTENNAS
- (1) ERICSSON AIR32 B66Aq/B2g ANTENNA TO REPLACE (1) AIR21 B2q/B4p ANTENNA
- (2) COMMSCOPE LNX-6513DS-A1M L700 PANEL ANTENNAS
- (1) COMMSCOPE DBXNH-6565A-A2M L700 PANEL ANTENNA
- (3) REMOTE RADIO UNITS (RRU)
- (6) 6-AWG DC CABLES TO REPLACE (6) CAPPED COAX
- (1) 6x12 HCS CABLE

SPECIAL ZONING NOTE:
 BASED ON INFORMATION PROVIDED BY T-MOBILE 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).

DRAWING INDEX

SHEET NO.	SHEET TITLE	REV.	CHK.	BY.
T-1	TITLE SHEET	3	JMT	CMC
GN-1	GENERAL NOTES	3	JMT	CMC
A-1	ROOF PLAN	3	JMT	CMC
A-2	EQUIPMENT PLANS	3	JMT	CMC
A-3	ELEVATIONS	3	JMT	CMC
A-4	ANTENNA PLANS	3	JMT	CMC
A-5	SITE DETAILS	3	JMT	CMC
S-1	STRUCTURAL DETAILS - ALPHA SECTOR	3	JMT	CMC
S-2	STRUCTURAL DETAILS - BETA SECTOR	3	JMT	CMC
S-3	STRUCTURAL DETAILS - GAMMA SECTOR	3	JMT	CMC
E-1	ELECTRIC & GROUNDING DETAILS	3	JMT	CMC

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.

T-MOBILE: _____ DATE: _____
 CONSTRUCTION MANAGER: _____ DATE: _____
 LEASING/SITE ACQUISITION: _____ DATE: _____
 RF ENGINEER: _____ DATE: _____
 LANDLORD/TOWER OWNER: _____ DATE: _____

GENERAL NOTES:

- FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR – T–MOBILE
SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
OWNER – T–MOBILE
OEM – ORIGINAL EQUIPMENT MANUFACTURER
- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
- ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL, STATE AND FEDERAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.
- SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER, T1 CABLES AND GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR AND/OR LANDLORD PRIOR TO CONSTRUCTION.
- THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
- SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY.
- SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION AND RETURN DISTURBED AREAS TO ORIGINAL CONDITIONS.
- THE SUBCONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
- SUBCONTRACTOR SHALL NOTIFY CHAPPELL ENGINEERING ASSOCIATES, LLC 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS AND POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEERING REVIEW.
- CONSTRUCTION SHALL COMPLY WITH ALL T–MOBILE STANDARDS AND SPECIFICATIONS.

- SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
- THE EXISTING CELL SITES ARE IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
- IF THE EXISTING CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

SITE WORK GENERAL NOTES:

- THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION.
- ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
- IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
- THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
- NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
- THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
- ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING, OWNER AND/OR LOCAL UTILITIES.
- THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
- SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
- THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE T–MOBILE SPECIFICATION FOR SITE SIGNAGE.

CONCRETE AND REINFORCING STEEL NOTES:

- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (400PSI) MAY BE USED. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 381 CODE REQUIREMENTS
- REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
- THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
CONCRETE CAST AGAINST EARTH.....3 IN.
CONCRETE EXPOSED TO EARTH OR WEATHER:
#6 AND LARGER2 IN.
#5 AND SMALLER & WWF1½ IN.
CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
SLAB AND WALL¾ IN.
BEAMS AND COLUMNS1½ IN.
- A CHAMFER ¾" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
- INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHORS SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO THE MANUFACTURERS RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY SIMPSON OR APPROVED EQUAL.
- CONCRETE CYLINDER TIES ARE NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;
(A) RESULTS OF CONCRETE CYLINDER TEST PERFORMED AT THE SUPPLIERS PLANT.
(B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.
FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.
- AS AN ALTERNATIVE TO ITEM 7. TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.
- EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

STRUCTURAL STEEL NOTES:

- ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS AND T–MOBILE SPECIFICATIONS UNLESS OTHERWISE NOTED. STRUCTURAL STEEL SHALL BE ASTM–A–36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".
- ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION. PAINTED SURFACES SHALL BE TOUCHED UP.
- BOLTED CONNECTIONS SHALL USE BEARING TYPE ASTM A325 BOLTS (¾") AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE. ALL BOLTS SHALL BE GALVANIZED OR STAINLESS STEEL.
- NON–STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE ¾" DIA. ASTM A 307 BOLTS (GALV) UNLESS NOTED OTHERWISE.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL.
- ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

- EXCAVATE AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL TO EXPOSE NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.
- COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.
- AS AN ALTERNATE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.
- COMPACTED SUBBASE SHALL BE UNIFORM AND LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING #1 SIEVE.
- AS AN ALTERNATE TO ITEMS 2 AND 3, THE SUBGRADE SOILS WITH 5 PASSES OR A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND–OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E) AND SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL–GRADED GRANULAR FILL AND COMPACTED AS STATED ABOVE.

COMPACTION EQUIPMENT:

- HAND OPERATED DOUBLE DRUM, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

CONSTRUCTION NOTES:

- FIELD VERIFICATION:
SUBCONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, T–MOBILE ANTENNA PLATFORM LOCATION AND UTILITY TRENCHWORK.
- COORDINATION OF WORK:
SUBCONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH CONTRACTOR.
- CABLE LADDER RACK:
SUBCONTRACTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY AND/OR ICE BRIDGE, AND CONDUIT AS REQUIRED TO SUPPORT CABLES TO THE NEW BTS LOCATION.

ELECTRICAL INSTALLATION NOTES:

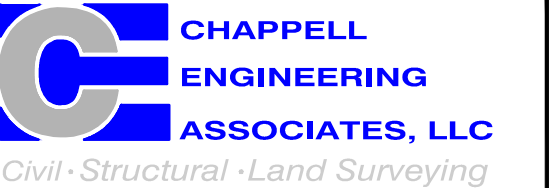
- WIRING, RACEWAY, AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.
- SUBCONTRACTOR SHALL MODIFY OR INSTALL CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLEING TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL.
- ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.
- CABLES SHALL NOT BE ROUTED THROUGH LADDER–STYLE CABLE TRAY RUNGS.
- EACH END OF EVERY POWER, GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA, AND MATCH INSTALLATION REQUIREMENTS.
- POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, ½ INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC AND OSHA.
- ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).
- PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
- ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
- POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.
- POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI–CONDUCTOR, TYPE TC CABLE (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
- ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP–STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY HARGER (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEC AND NEC.
- NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
- ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
- ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
- RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
- LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID–TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION–TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEC AND NEC.
- CABINETS, BOXES AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
- WIREWAYS SHALL BE EPOXY–COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
- EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY–COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
- METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY–COATED, OR NON–CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
- THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.
- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
- CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.



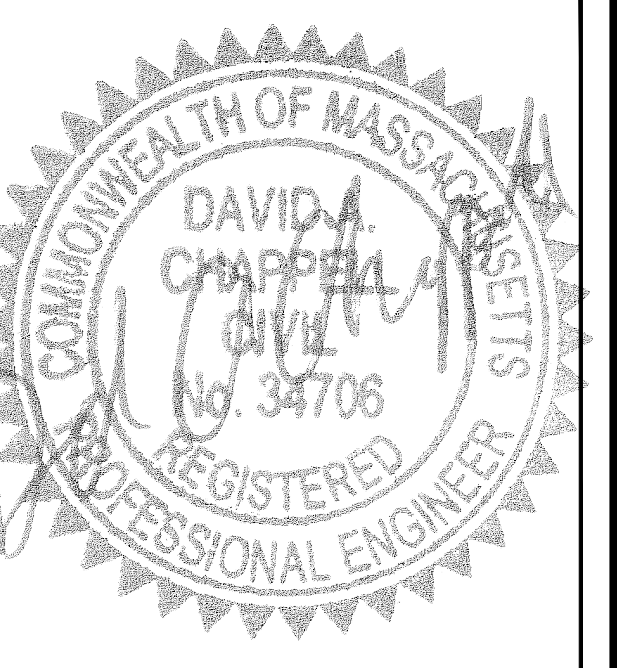
T–MOBILE NORTHEAST LLC
15 COMMERCE WAY, SUITE B
NORTON, MA 02766
(508) 286–2700



CROWN CASTLE INTERNATIONAL
12 GILL STREET, SUITE 5800
WOBBURN, MA 01801
(781) 970–0052



R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481–7400
www.chappellengineering.com



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APPROVED BY: JMT

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
3	05/09/17	CONSTRUCTION REVISED	CMC
2	04/10/17	CONSTRUCTION REVISED	CMC
1	09/27/16	ISSUED FOR CONSTRUCTION	CMC
0	09/12/16	ISSUED FOR REVIEW	CMC

SITE NUMBER:
4BN0023D

SITE NAME:
BN023/CONCORD HOUSES

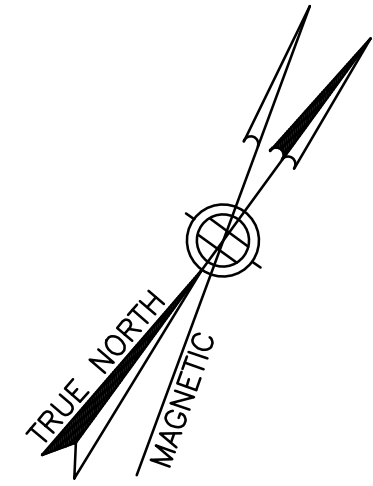
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BOSTON, MA 02116

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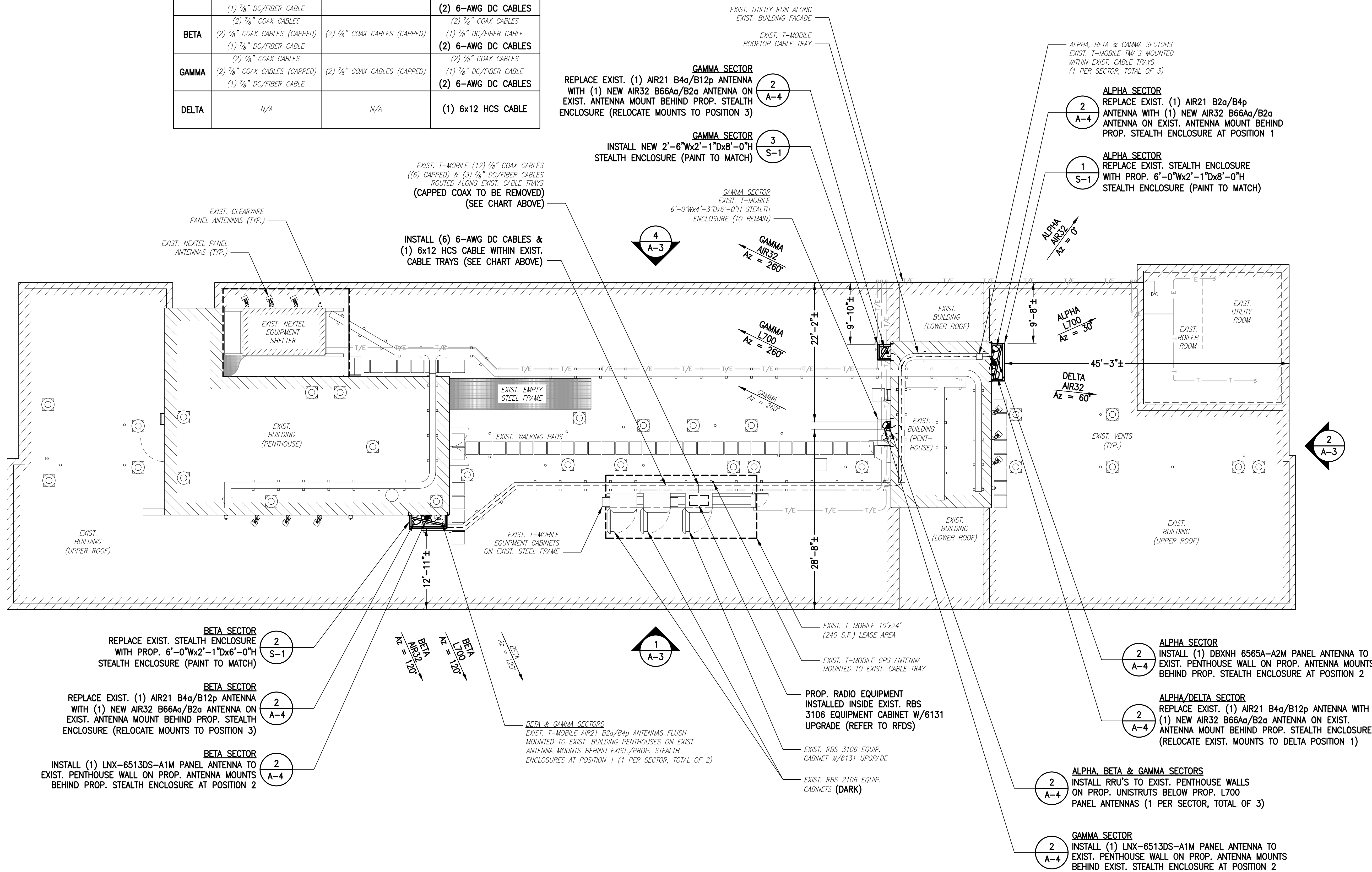
GENERAL NOTES

SHEET NUMBER

GN-1



COAX CHART			
	EXISTING	TO BE REMOVED	PROPOSED
ALPHA	(2) 7/8" COAX CABLES (2) 7/8" COAX CABLES (CAPPED) (1) 7/8" DC/FIBER CABLE	(2) 7/8" COAX CABLES (CAPPED)	(2) 7/8" COAX CABLES (1) 7/8" DC/FIBER CABLE (2) 6-AWG DC CABLES
BETA	(2) 7/8" COAX CABLES (2) 7/8" COAX CABLES (CAPPED) (1) 7/8" DC/FIBER CABLE	(2) 7/8" COAX CABLES (CAPPED)	(2) 7/8" COAX CABLES (1) 7/8" DC/FIBER CABLE (2) 6-AWG DC CABLES
GAMMA	(2) 7/8" COAX CABLES (2) 7/8" COAX CABLES (CAPPED) (1) 7/8" DC/FIBER CABLE	(2) 7/8" COAX CABLES (CAPPED)	(2) 7/8" COAX CABLES (1) 7/8" DC/FIBER CABLE (2) 6-AWG DC CABLES
DELTA	N/A	N/A	(1) 6x12 HCS CABLE



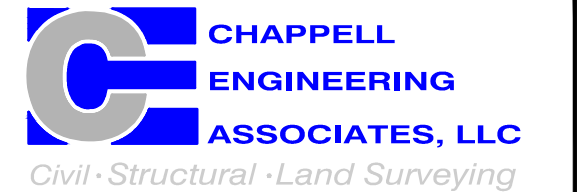
ROOF PLAN
SCALE: 1/8" = 1'-0"
1
A-1



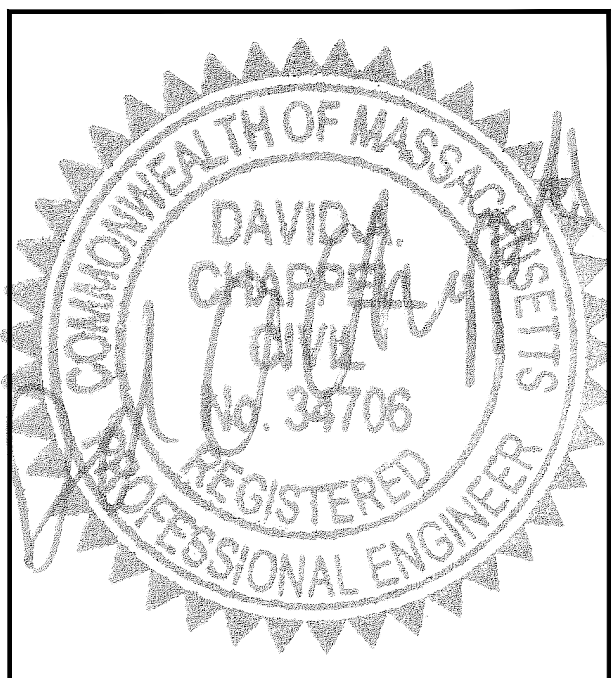
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15 COMMERCE WAY, SUITE B
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(508) 286-2700



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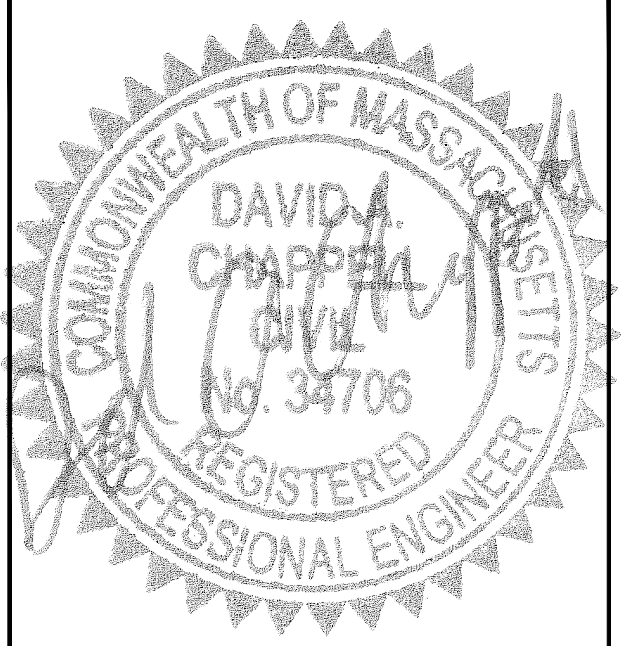
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4BN0023D
SITE NAME:
BN023/CONCORD HOUSES
SITE ADDRESS:
725 TREMONT STREET
BOSTON, MA 02116

SHEET TITLE
ROOF PLAN

SHEET NUMBER
A-1



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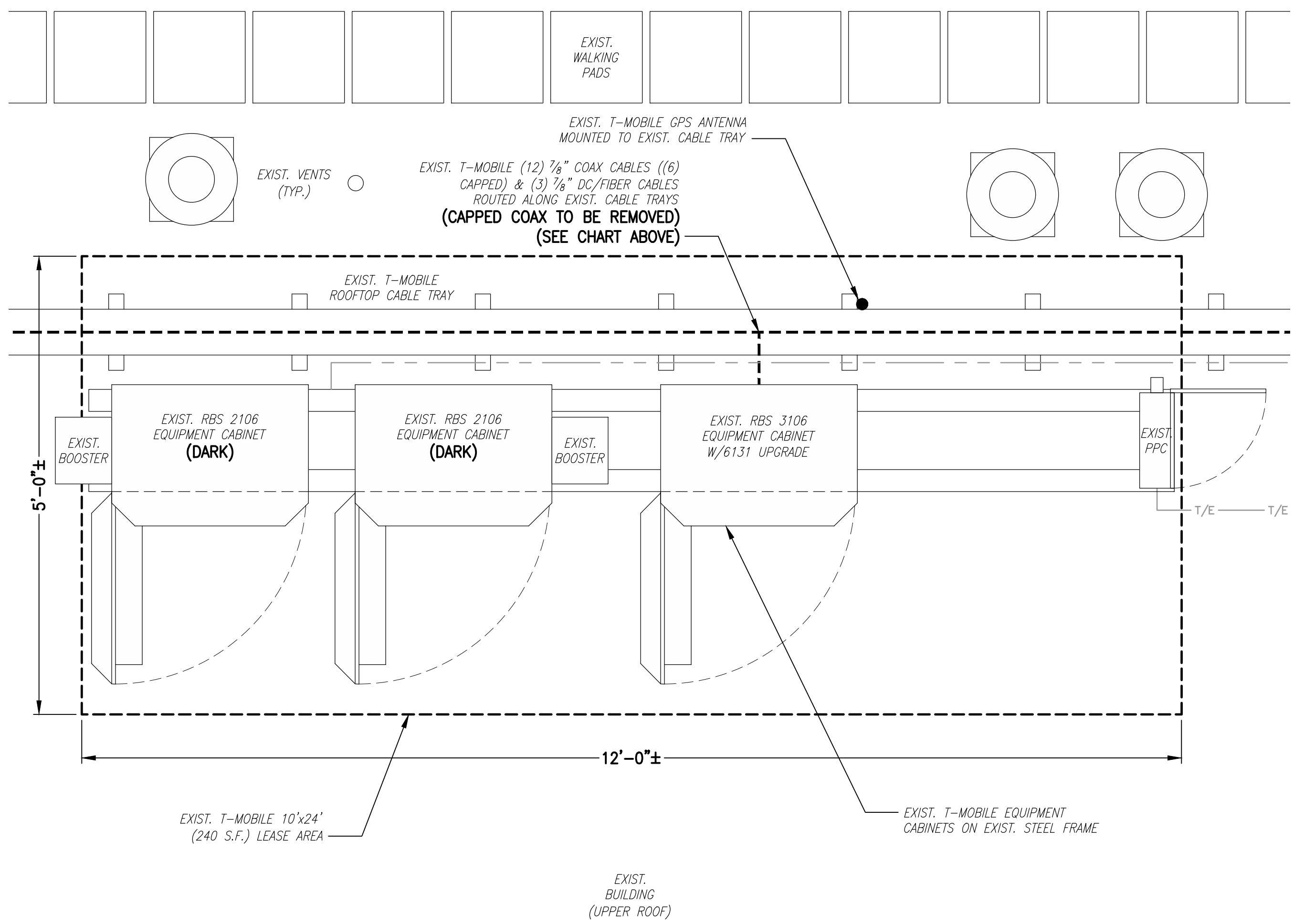
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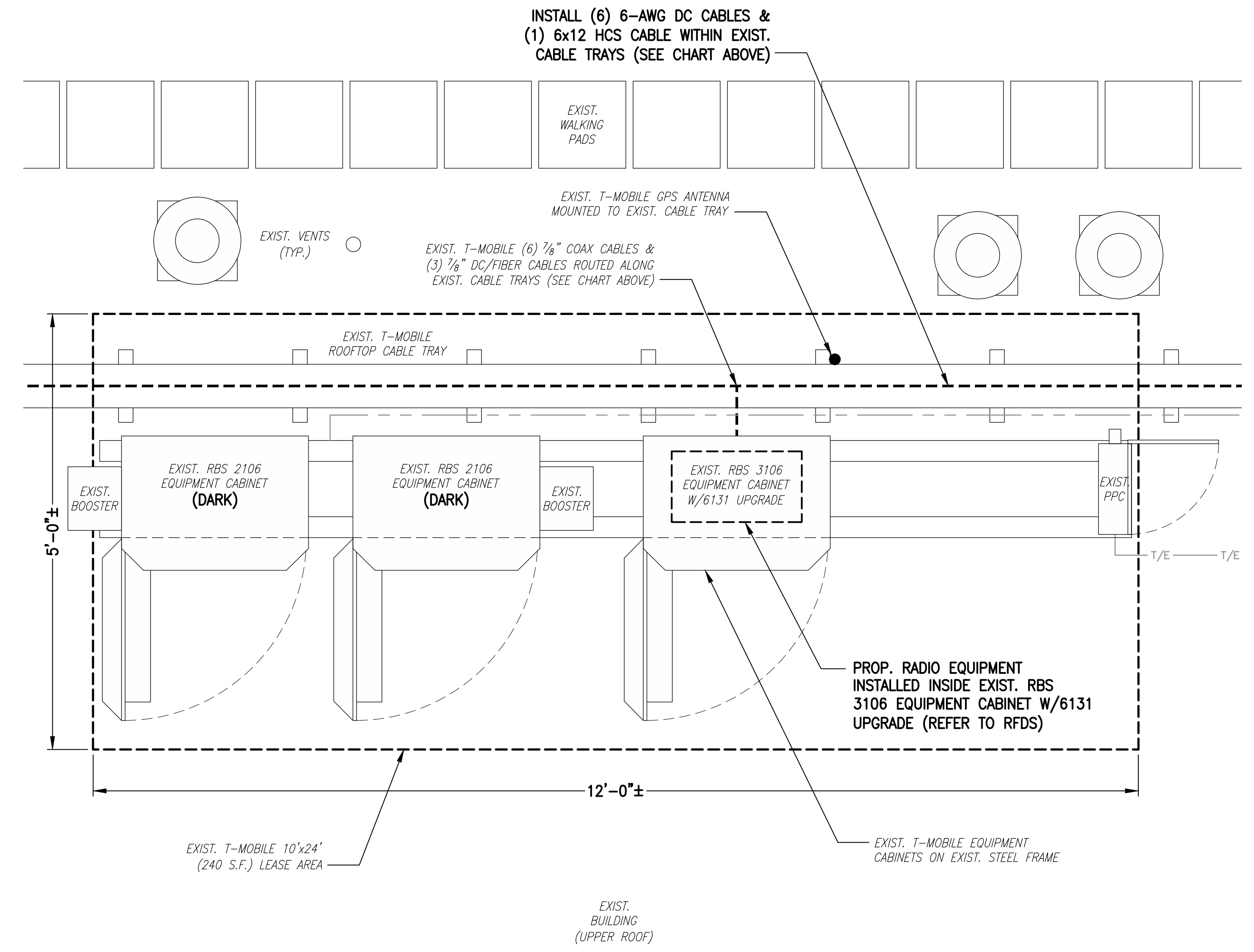
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BOSTON, MA 02116

SHEET TITLE
EQUIPMENT PLANS

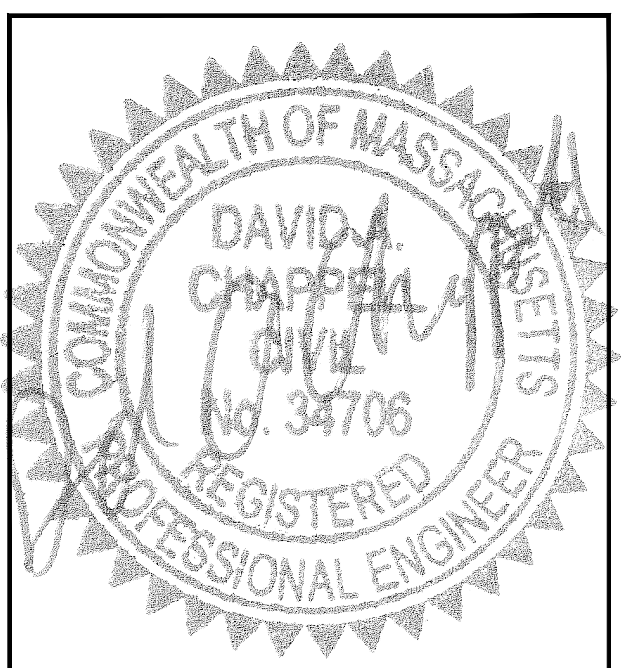
SHEET NUMBER
A-2



	COAX CHART		
	EXISTING	TO BE REMOVED	PROPOSED
ALPHA	(2) 7/8" COAX CABLES (2) 7/8" COAX CABLES (CAPPED) (1) 7/8" DC/FIBER CABLE	(2) 7/8" COAX CABLES (CAPPED)	(2) 7/8" COAX CABLES (1) 7/8" DC/FIBER CABLE (2) 6-AWG DC CABLES
BETA	(2) 7/8" COAX CABLES (2) 7/8" COAX CABLES (CAPPED) (1) 7/8" DC/FIBER CABLE	(2) 7/8" COAX CABLES (CAPPED)	(2) 7/8" COAX CABLES (1) 7/8" DC/FIBER CABLE (2) 6-AWG DC CABLES
GAMMA	(2) 7/8" COAX CABLES (2) 7/8" COAX CABLES (CAPPED) (1) 7/8" DC/FIBER CABLE	(2) 7/8" COAX CABLES (CAPPED)	(2) 7/8" COAX CABLES (1) 7/8" DC/FIBER CABLE (2) 6-AWG DC CABLES
DELTA	N/A	N/A	(1) 6x12 HCS CABLE



PROPOSED EQUIPMENT PLAN



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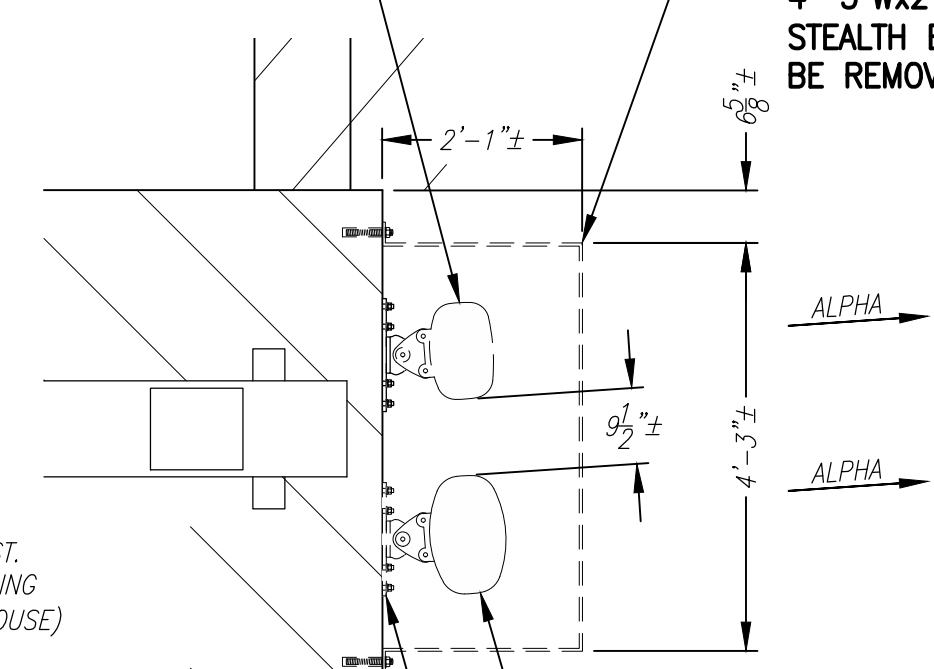
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BOSTON, MA 02116

SHEET TITLE
ANTENNA PLANS

SHEET NUMBER
A-4

ALPHA SECTOR
EXIST. T-MOBILE (1) AIR21 B2a/B4p ANTENNA IN POSITION 1 TO BE REMOVED



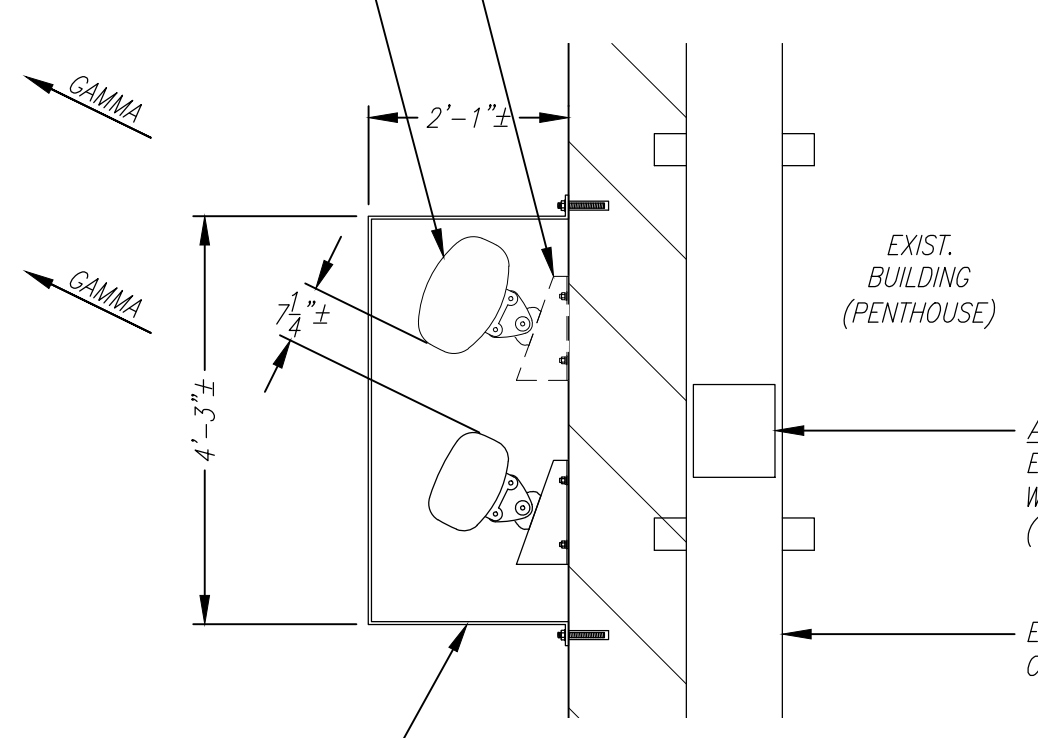
ALPHA SECTOR
EXIST. T-MOBILE 4'-3"Wx2'-1"Dx6'-0"H STEALTH ENCLOSURE TO BE REMOVED & REPLACED

ALPHA SECTOR
EXIST. T-MOBILE (1) AIR21 B4a/B12p ANTENNA IN POSITION 2 TO BE REMOVED

ALPHA/DELTA SECTOR
RELOCATE EXIST. ANTENNA MOUNTS TO DELTA POSITION 1 (FILL/REPAIR ALL HOLES, AS REQUIRED)

GAMMA SECTOR
RELOCATE EXIST. ANTENNA MOUNTS TO POSITION 3 (FILL/REPAIR ALL HOLES, AS REQUIRED)

GAMMA SECTOR
EXIST. T-MOBILE (1) AIR21 B4a/B12p ANTENNA IN POSITION 2 TO BE REMOVED



ALPHA, BETA & GAMMA SECTORS
EXIST. T-MOBILE TMA'S MOUNTED WITHIN EXIST. CABLE TRAYS (1 PER SECTOR, TOTAL OF 3)

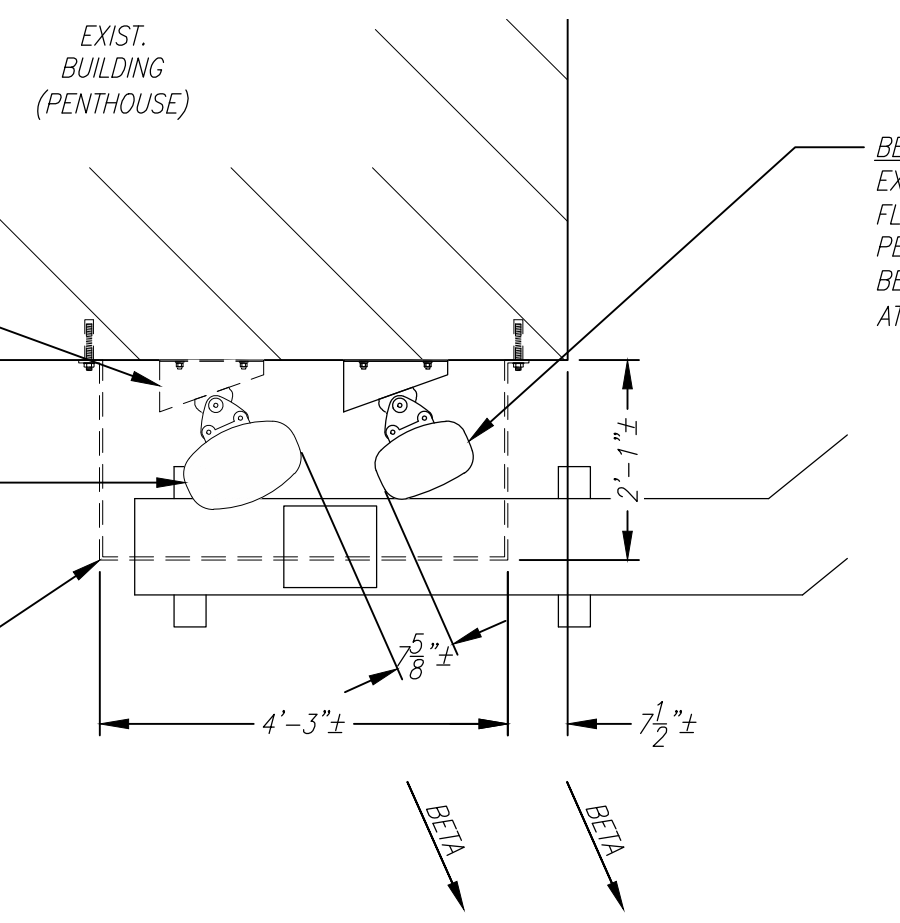
EXIST. T-MOBILE ROOFTOP CABLE TRAY (TYP.)

GAMMA SECTOR
EXIST. T-MOBILE 6'-0"Wx4'-3"Dx6'-0"H STEALTH ENCLOSURE (TO REMAIN)

BETA SECTOR
RELOCATE EXIST. ANTENNA MOUNTS TO POSITION 3 (FILL/REPAIR ALL HOLES, AS REQUIRED)

BETA SECTOR
EXIST. T-MOBILE (1) AIR21 B4a/B12p ANTENNA IN POSITION 2 TO BE REMOVED

BETA SECTOR
EXIST. T-MOBILE 4'-3"Wx2'-1"Dx6'-0"H STEALTH ENCLOSURE TO BE REMOVED & REPLACED



BETA & GAMMA SECTORS
EXIST. T-MOBILE AIR21 B2a/B4p ANTENNAS FLUSH MOUNTED TO EXIST. BUILDING PENTHOUSES ON EXIST. ANTENNA MOUNTS BEHIND EXIST./PROP. STEALTH ENCLOSURES AT POSITION 1 (1 PER SECTOR, TOTAL OF 2)

GAMMA SECTOR
INSTALL NEW 2'-6"Wx2'-1"Dx8'-0"H STEALTH ENCLOSURE (PAINT TO MATCH)

GAMMA SECTOR
INSTALL (1) AIR32 B66Aa/B2a ANTENNA TO EXIST. PENTHOUSE WALL ON EXIST. ANTENNA MOUNTS BEHIND PROP. STEALTH ENCLOSURE AT POSITION 3

GAMMA SECTOR
INSTALL (1) LNX-6513-A1M PANEL ANTENNA TO EXIST. PENTHOUSE WALL ON PROP. ANTENNA MOUNTS BEHIND EXIST. STEALTH ENCLOSURE AT POSITION 2

GAMMA SECTOR
EXIST. T-MOBILE 6'-0"Wx4'-3"Dx6'-0"H STEALTH ENCLOSURE (TO REMAIN)

BETA SECTOR
INSTALL (1) LNX-6513-A1M PANEL ANTENNA TO EXIST. PENTHOUSE WALL ON PROP. ANTENNA MOUNTS BEHIND PROP. STEALTH ENCLOSURE AT POSITION 2

BETA SECTOR
INSTALL (1) AIR32 B66Aa/B2a ANTENNA TO EXIST. PENTHOUSE WALL ON EXIST. ANTENNA MOUNTS BEHIND PROP. STEALTH ENCLOSURE AT POSITION 3

BETA SECTOR
INSTALL NEW 6'-0"Wx2'-1"Dx6'-0"H STEALTH ENCLOSURE (PAINT TO MATCH)

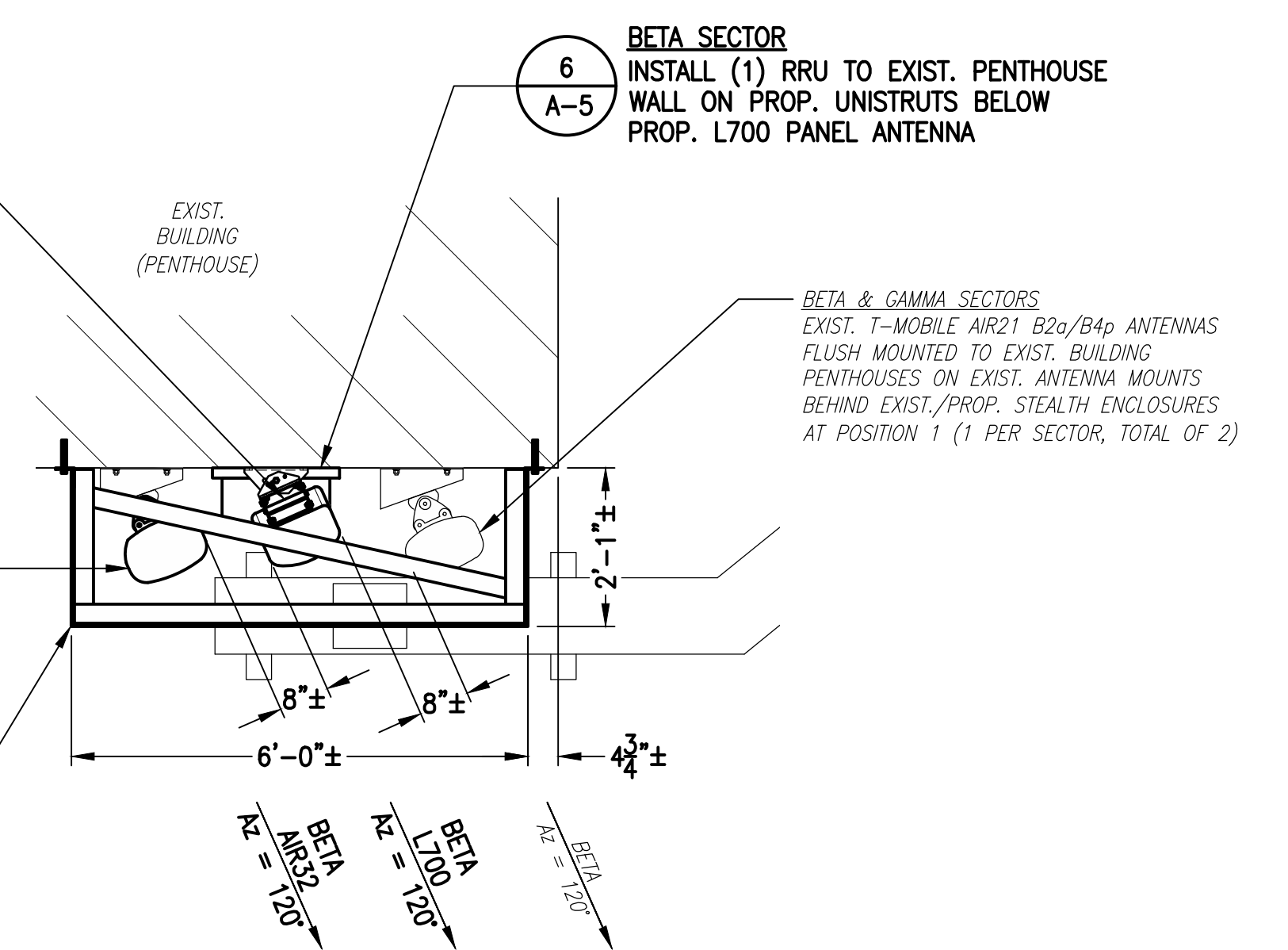
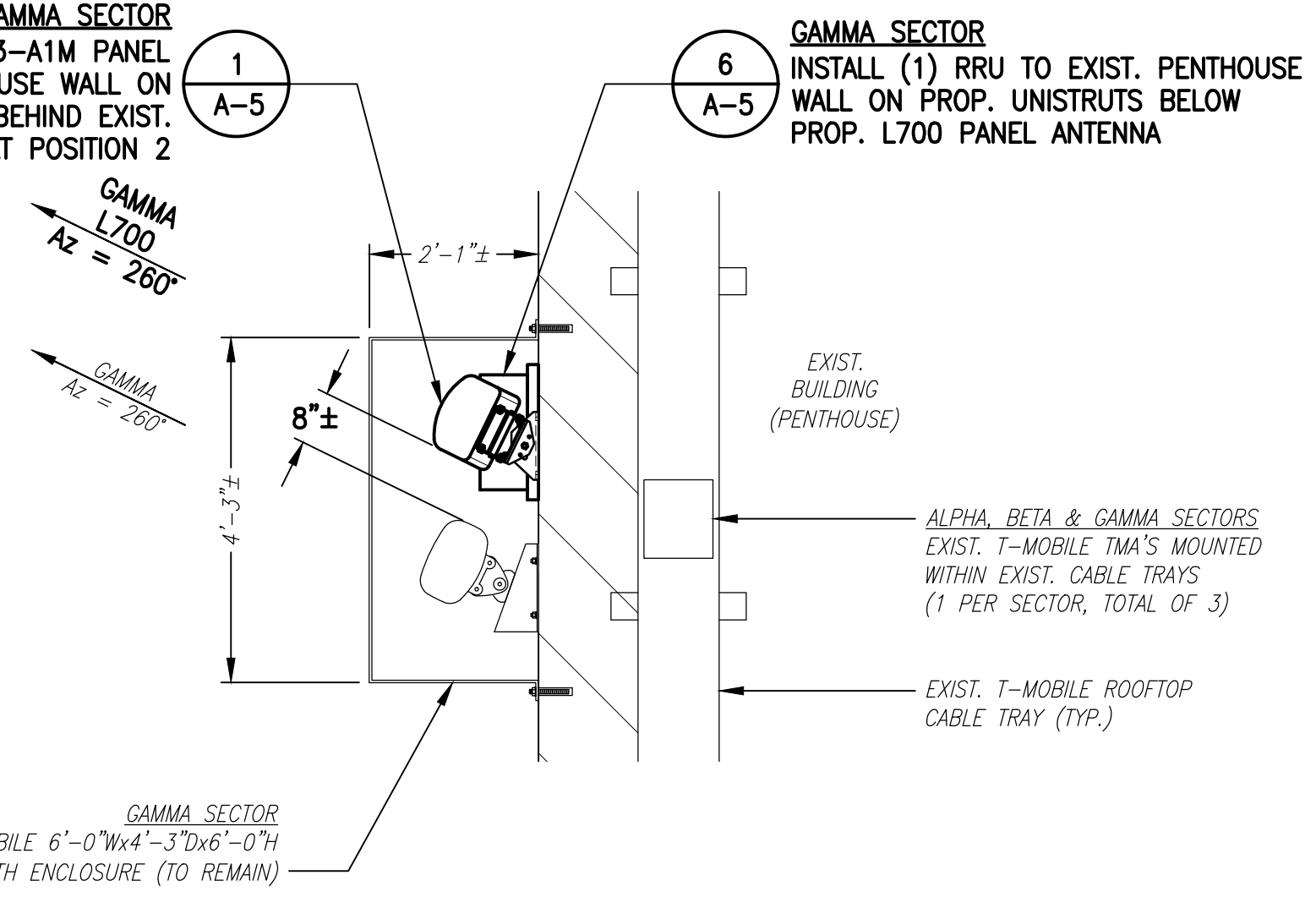
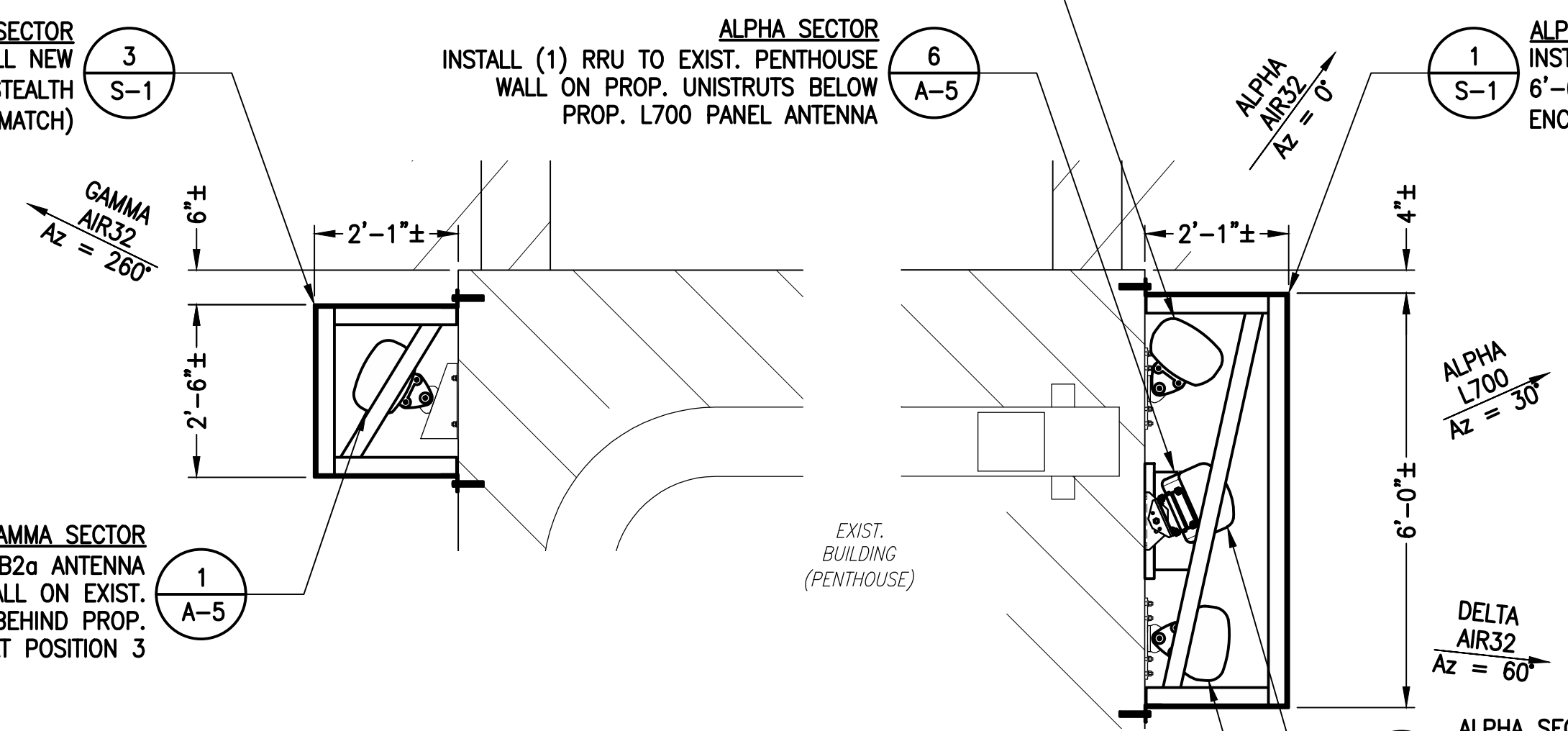
ALPHA SECTOR
INSTALL (1) AIR32 B66Aa/B2a ANTENNA TO EXIST. PENTHOUSE WALL ON EXIST. ANTENNA MOUNTS BEHIND PROP. STEALTH ENCLOSURE AT POSITION 1

ALPHA SECTOR
INSTALL (1) RRU TO EXIST. PENTHOUSE WALL ON PROP. UNISTRUTS BELOW PROP. L700 PANEL ANTENNA

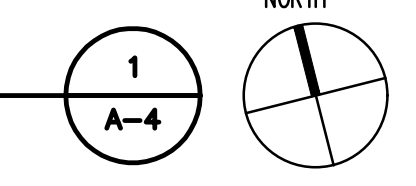
GAMMA SECTOR
INSTALL (1) RRU TO EXIST. PENTHOUSE WALL ON PROP. UNISTRUTS BELOW PROP. L700 PANEL ANTENNA

BETA SECTOR
INSTALL (1) RRU TO EXIST. PENTHOUSE WALL ON PROP. UNISTRUTS BELOW PROP. L700 PANEL ANTENNA

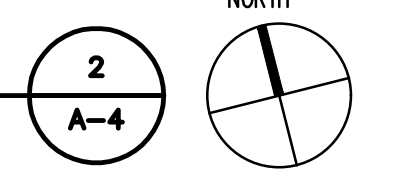
BETA SECTOR
INSTALL (1) AIR32 B66Aa/B2a ANTENNA TO EXIST. PENTHOUSE WALL ON EXIST. ANTENNA MOUNTS BEHIND PROP. STEALTH ENCLOSURE AT POSITION 3

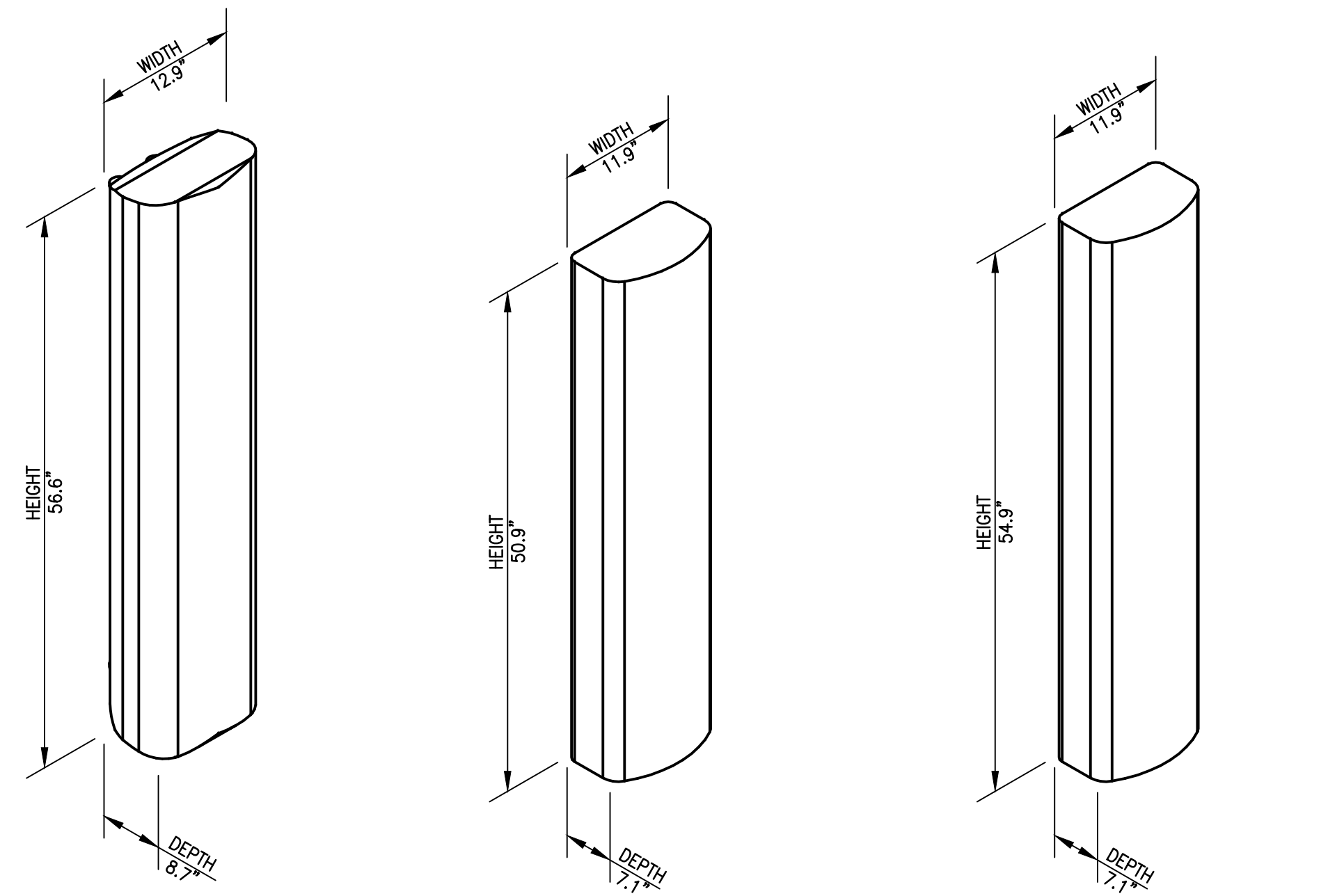


EXISTING ANTENNA PLAN
SCALE: 1/2" = 1'-0"



PROPOSED ANTENNA PLAN
SCALE: 1/2" = 1'-0"



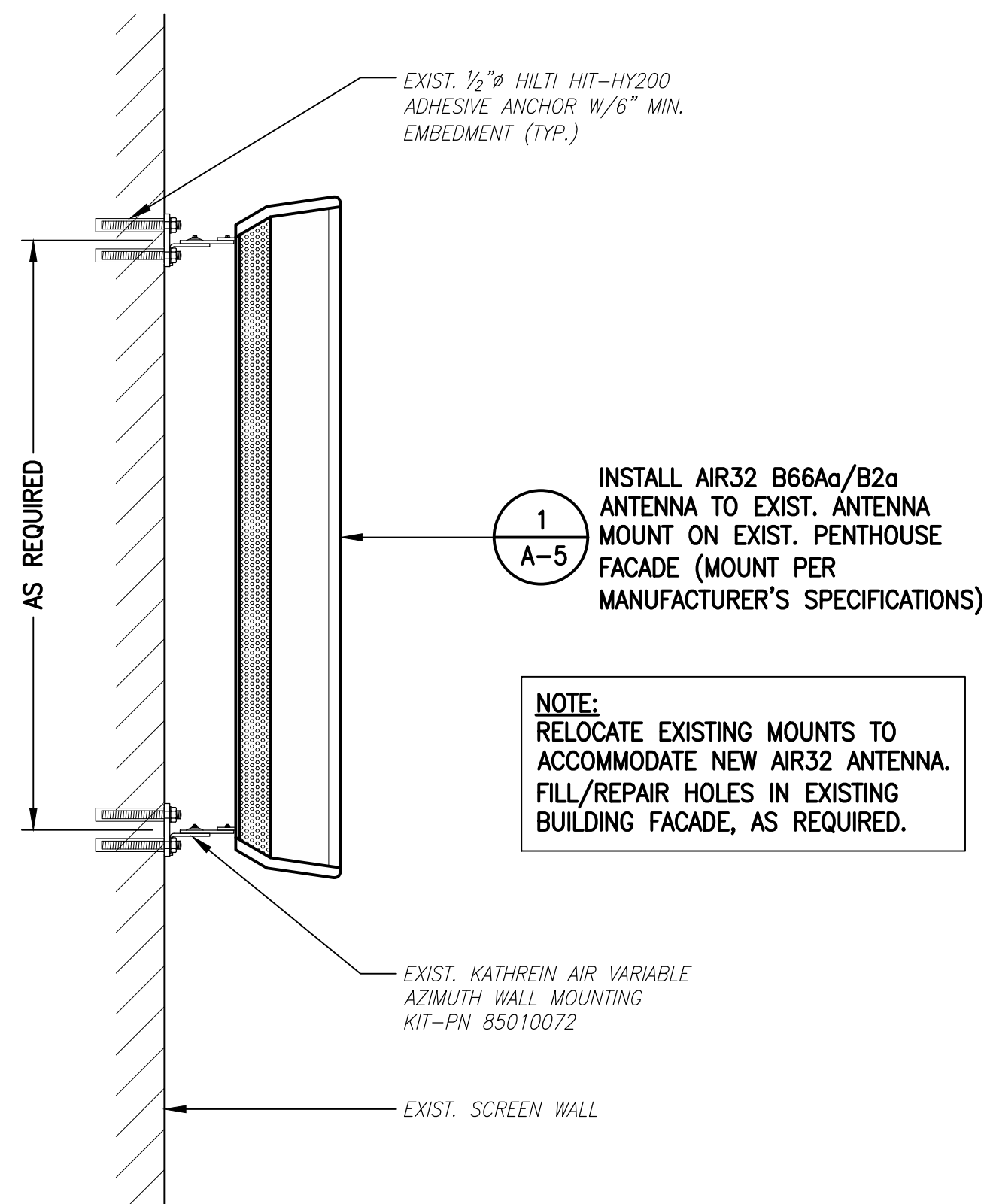


ERICSSON AIR32 B66Aa/B2a ANTENNA
 DIMENSIONS: 56.6\"/>

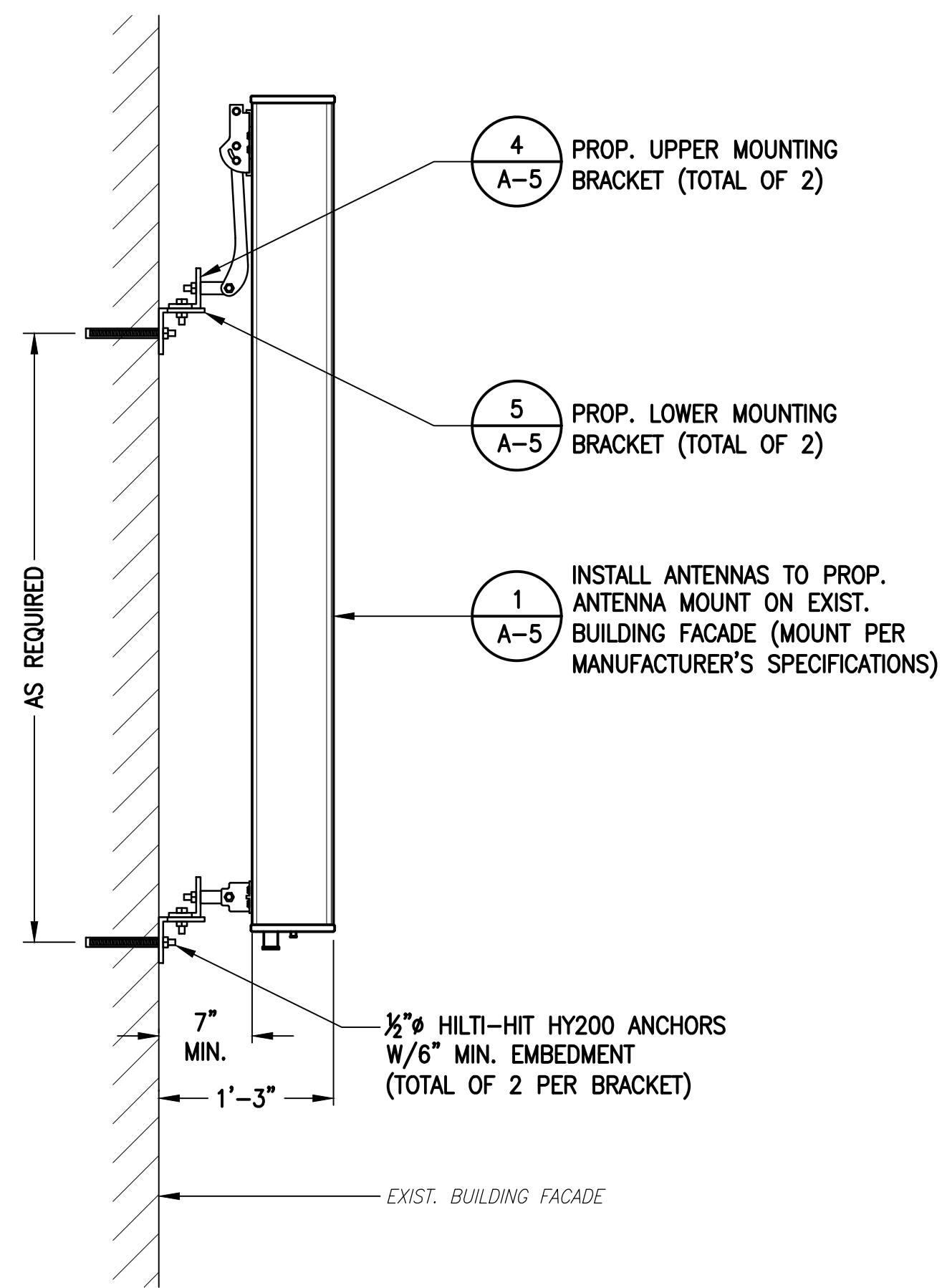
COMMSCOPE DBXNH-6565A PANEL ANTENNA
 DIMENSIONS: 50.9\"/>

COMMSCOPE LNX-6513DS-A1M PANEL ANTENNA
 DIMENSIONS: 54.9\"/>

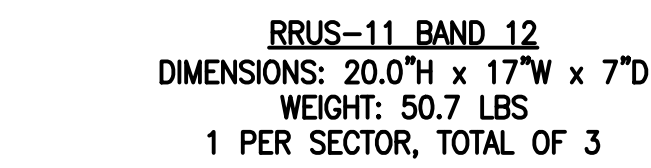
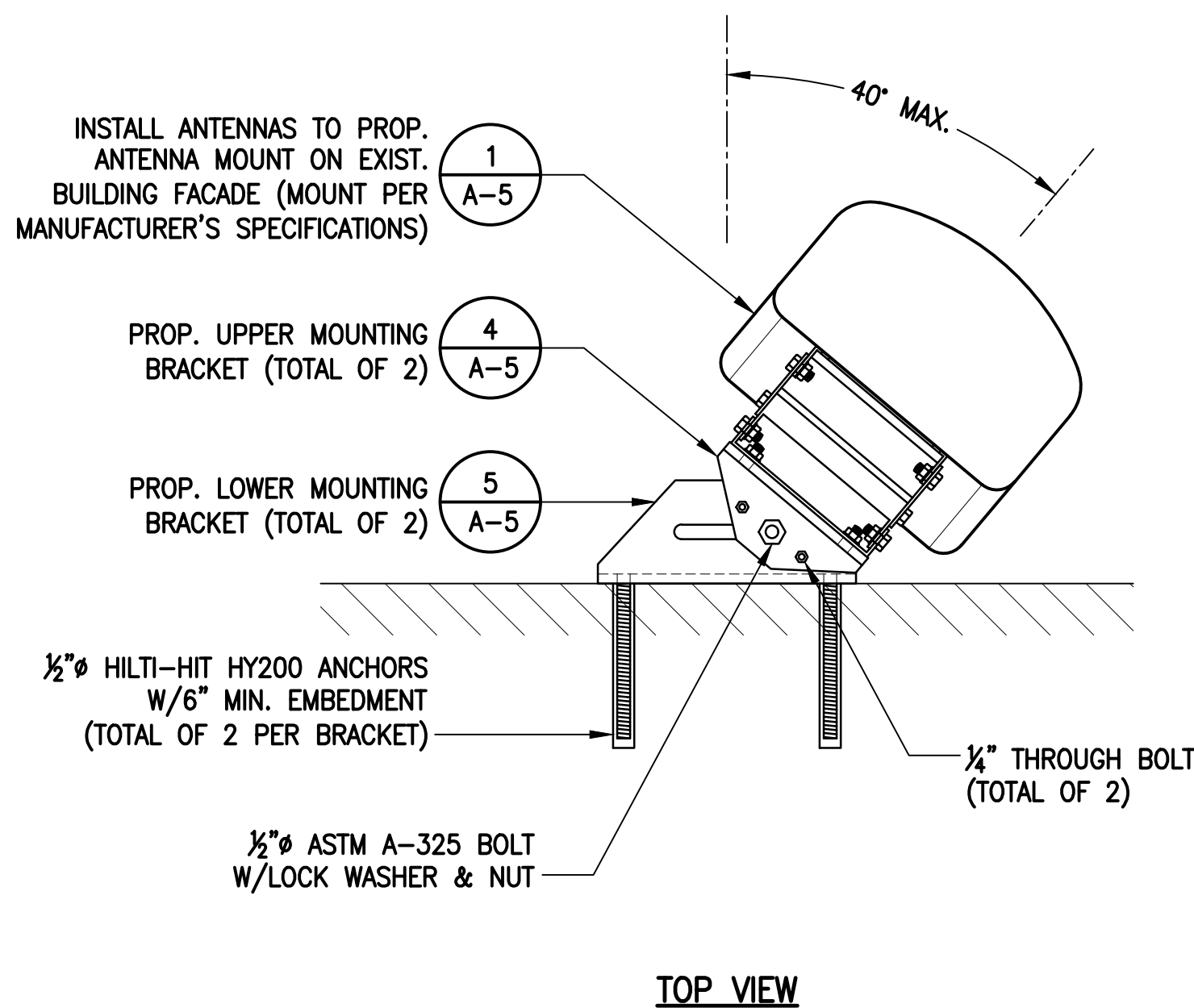
ANTENNA DETAILS 1 A-5
 SCALE: N.T.S.



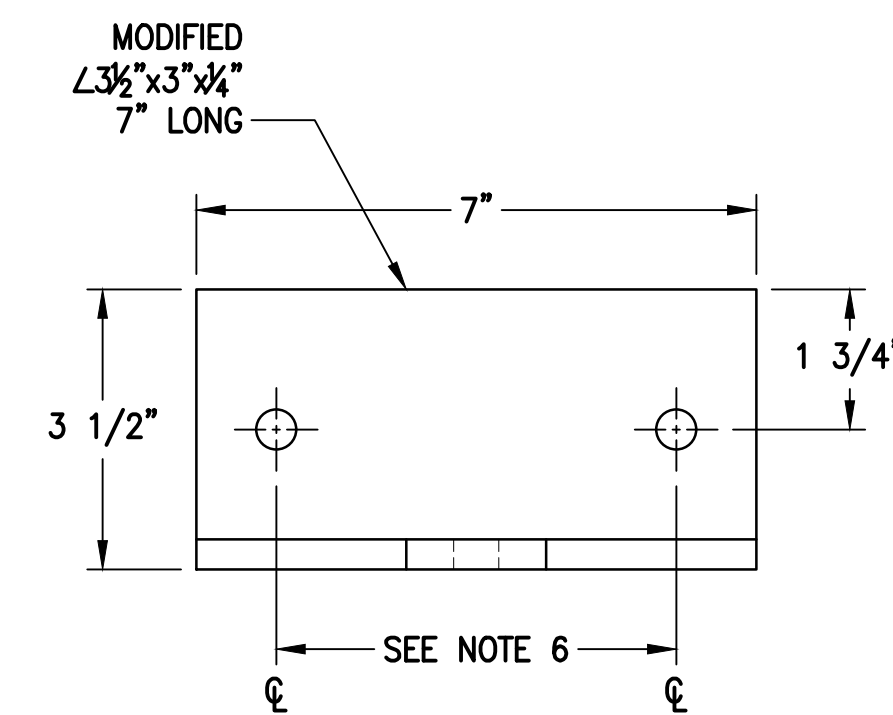
AIR32 ANTENNA MOUNTING DETAIL 2 A-5
 SCALE: N.T.S.



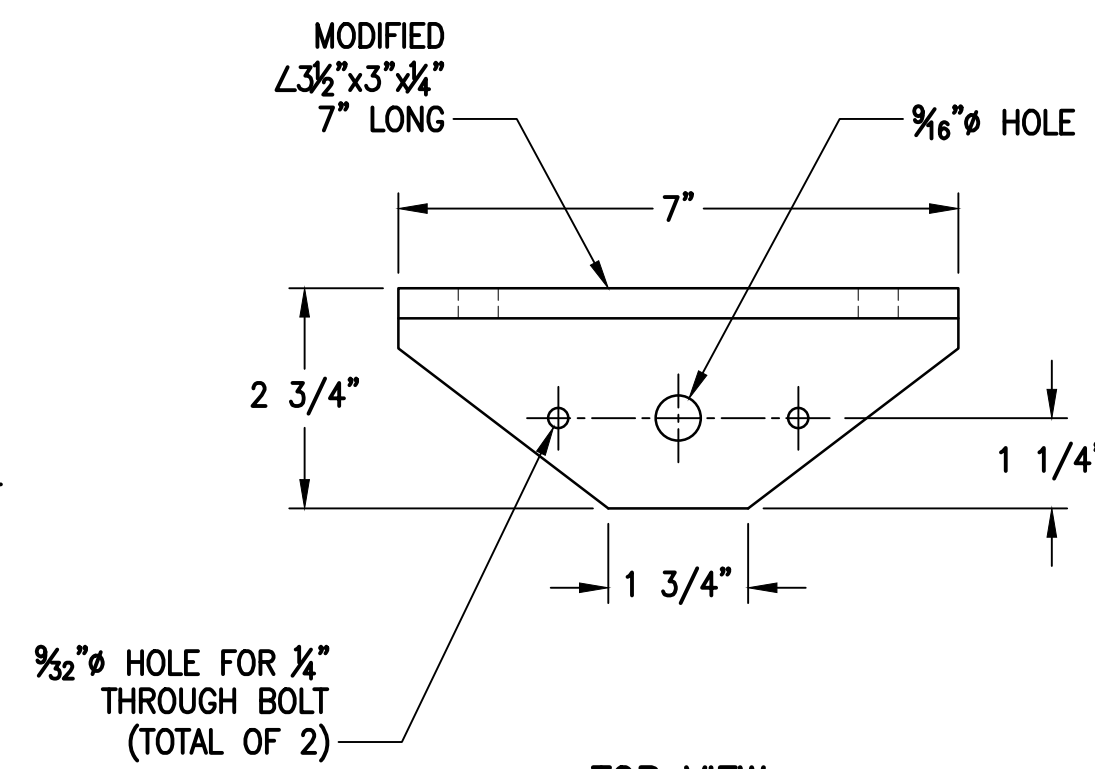
L700 ANTENNA MOUNTING DETAIL 3 A-5
 SCALE: N.T.S.



RRU DETAIL 6 A-5
 SCALE: N.T.S.

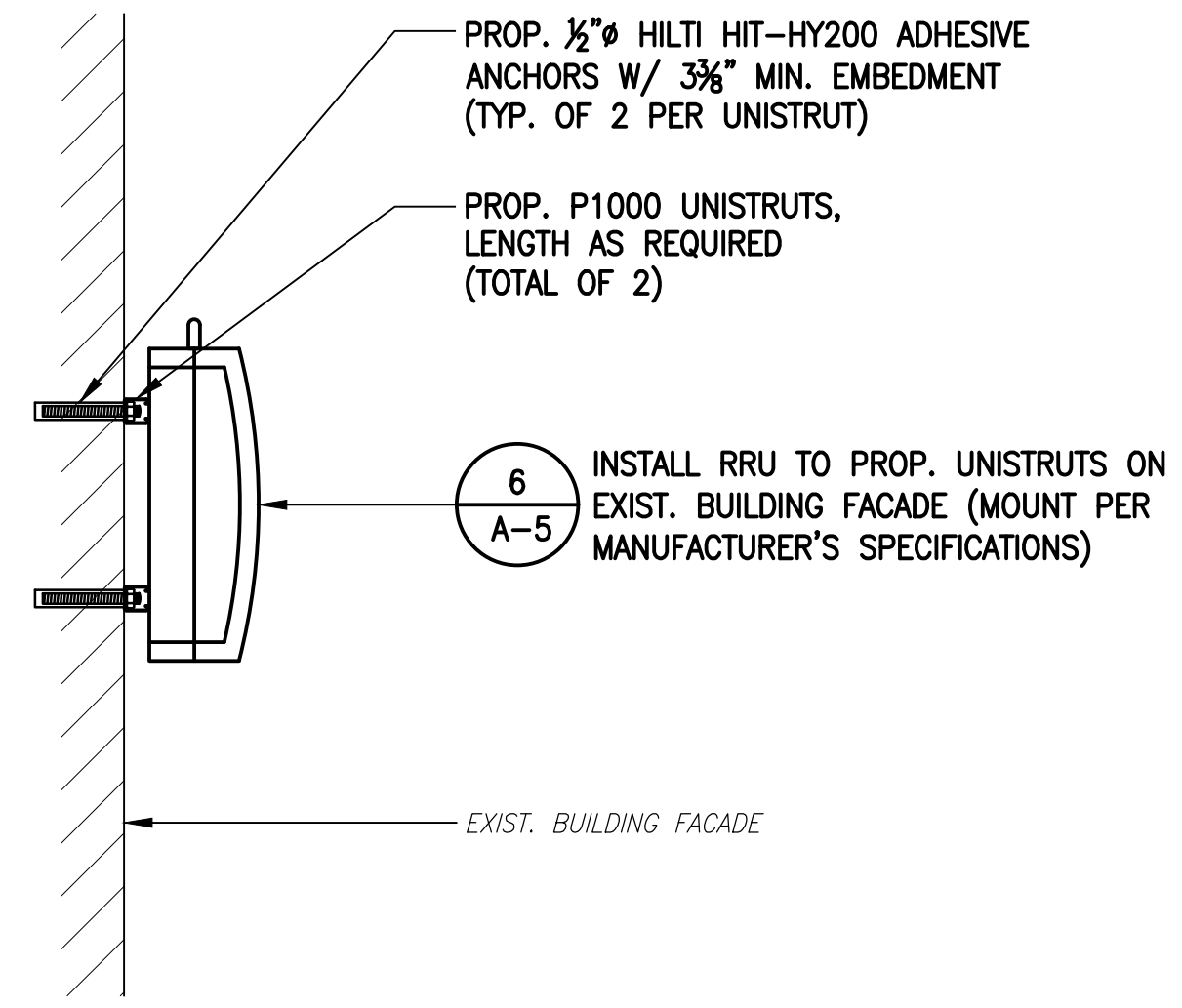


FRONT VIEW

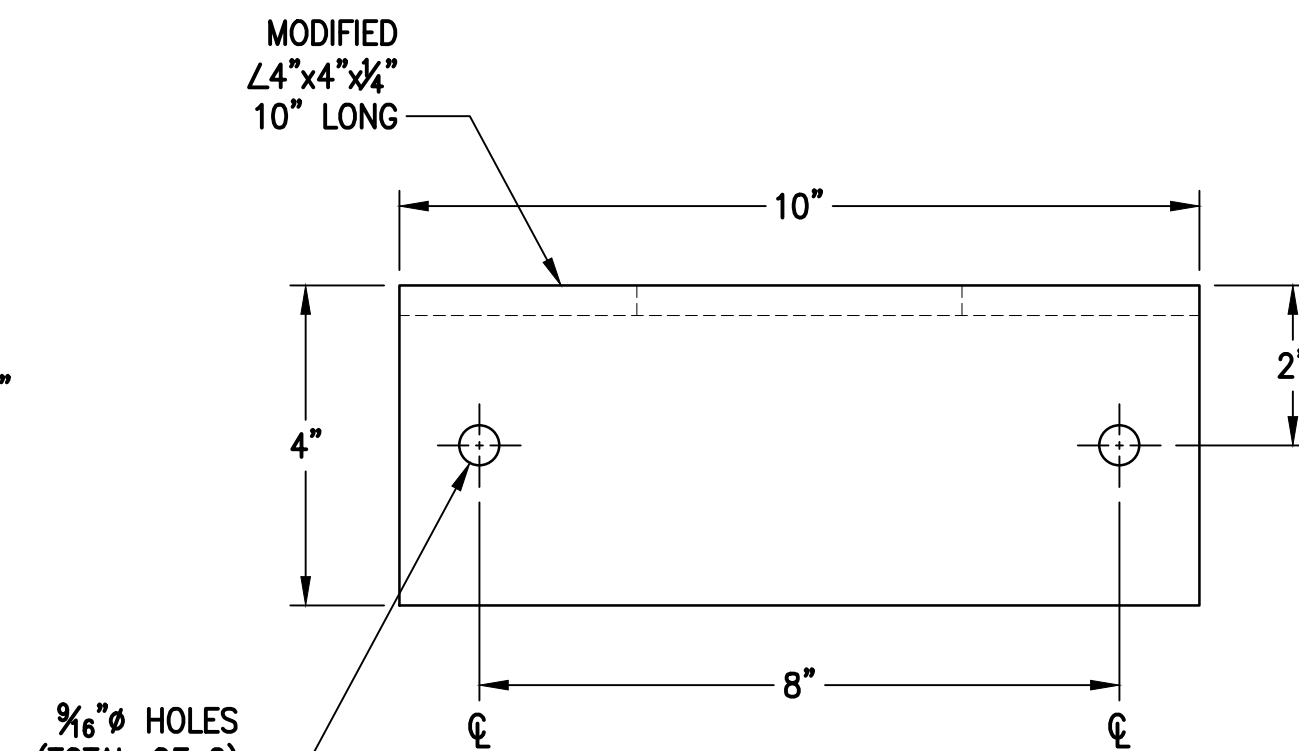


TOP VIEW

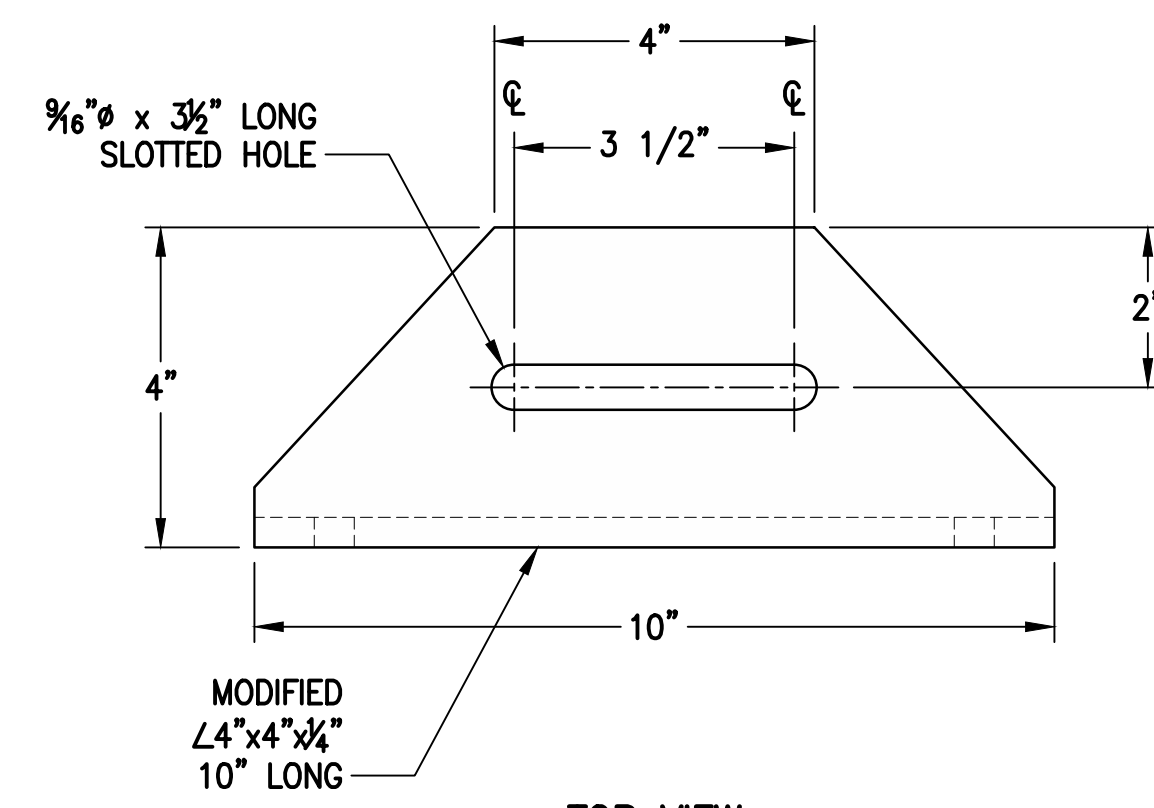
UPPER MOUNTING BRACKET 4 A-5
 SCALE: N.T.S.



RRU MOUNTING DETAIL 7 A-5
 SCALE: N.T.S.



FRONT VIEW



TOP VIEW

LOWER MOUNTING BRACKET 5 A-5
 SCALE: N.T.S.

- NOTES:**
1. VERIFY DOWNTILT MOUNTING KIT BOLT LAYOUT PRIOR TO FABRICATION.
 2. ROTATE UPPER CONNECTION TO REQUIRED AZIMUTH. TIGHTEN BOLT AND INSTALL SELF TAPPING SCREWS.
 3. WEATHER SEAL AROUND EXTERIOR WALL ATTACHMENT ANGLES WITH SILICONE SEALANT.
 4. ALL COAX IS TO BE NEATLY BUNDLED AND PAINTED TO MATCH THE BUILDING FACADE.
 5. VERIFY WITH ANTENNA BRACKET PRIOR TO CONSTRUCTION.

T-Mobile

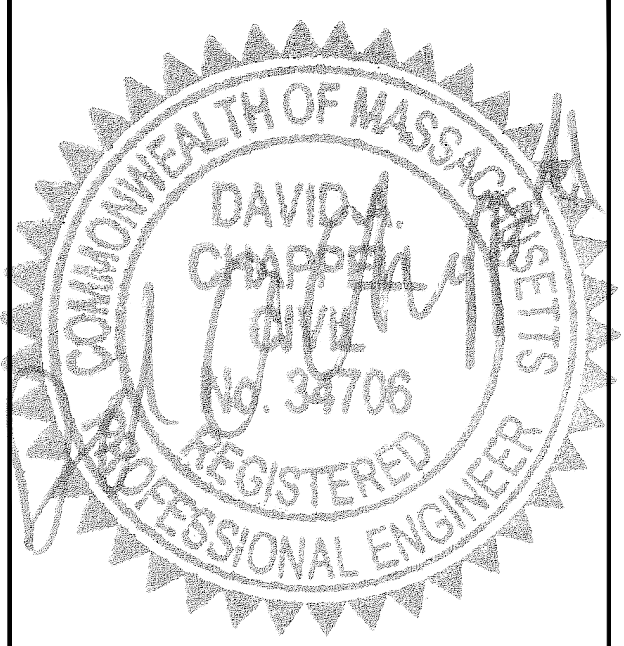
T-MOBILE NORTHEAST LLC
 15 COMMERCE WAY, SUITE B
 NORTON, MA 02766
 (508) 286-2700

CROWN CASTLE

CROWN CASTLE INTERNATIONAL
 12 GILL STREET, SUITE 5800
 WOBURN, MA 01801
 (781) 970-0052

CHAPPELL ENGINEERING ASSOCIATES, LLC
 Civil - Structural - Land Surveying

R.K. EXECUTIVE CENTRE
 201 BOSTON POST ROAD WEST, SUITE 101
 MARLBOROUGH, MA 01752
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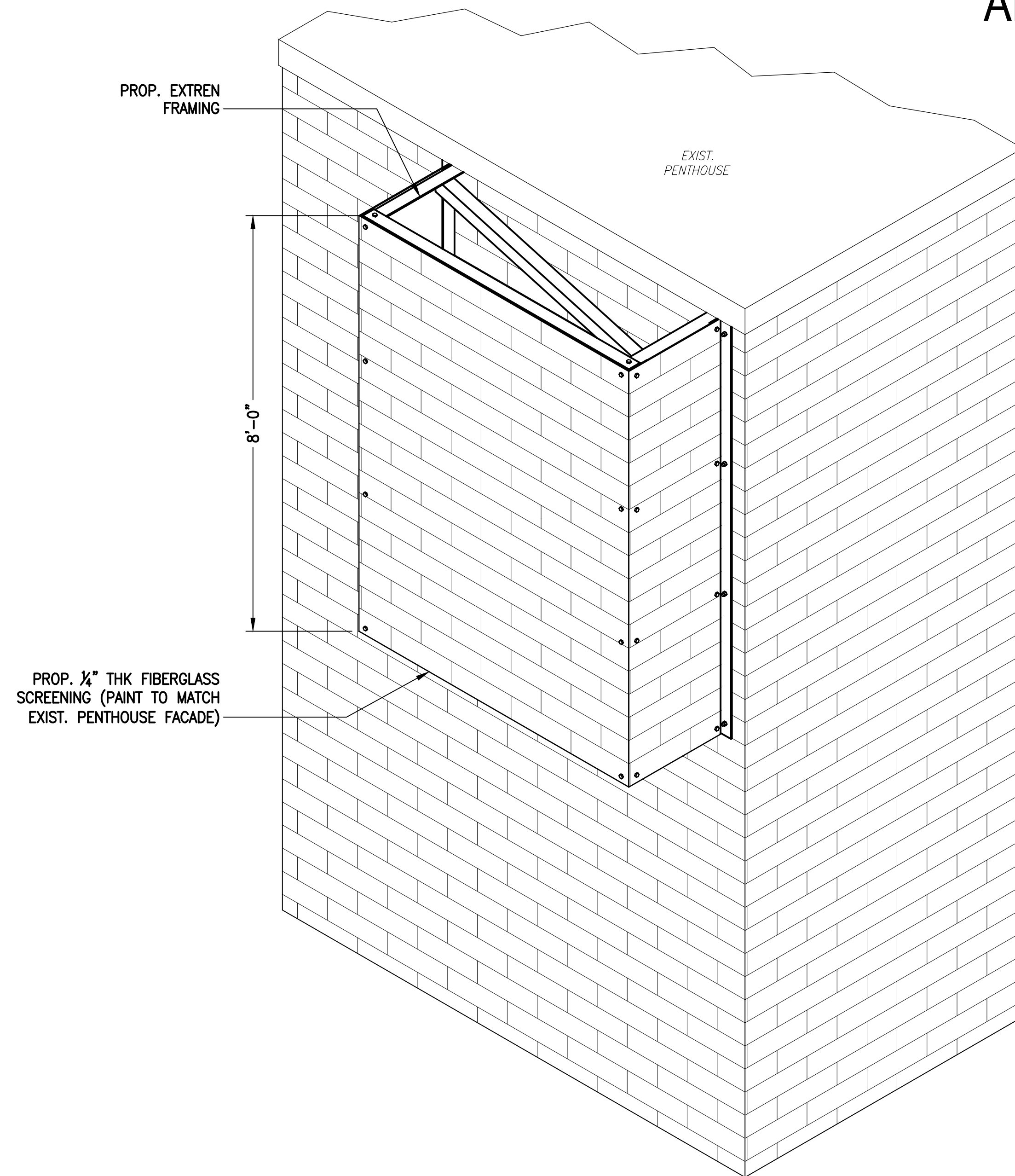
SITE NAME:
BN023/CONCORD HOUSES

SITE ADDRESS:
 725 TREMONT STREET
 BOSTON, MA 02116

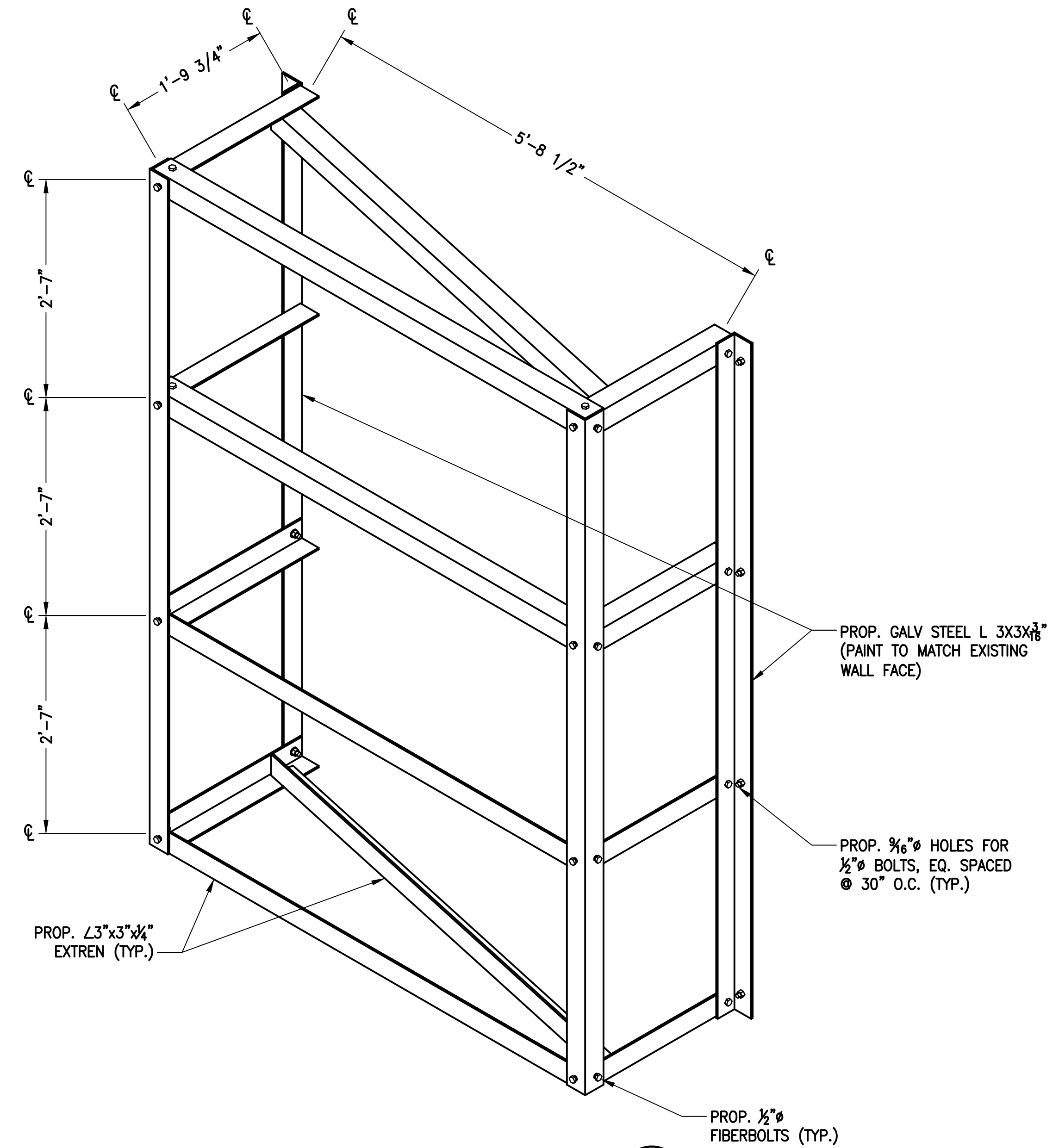
SHEET TITLE
 SITE DETAILS

SHEET NUMBER
A-5

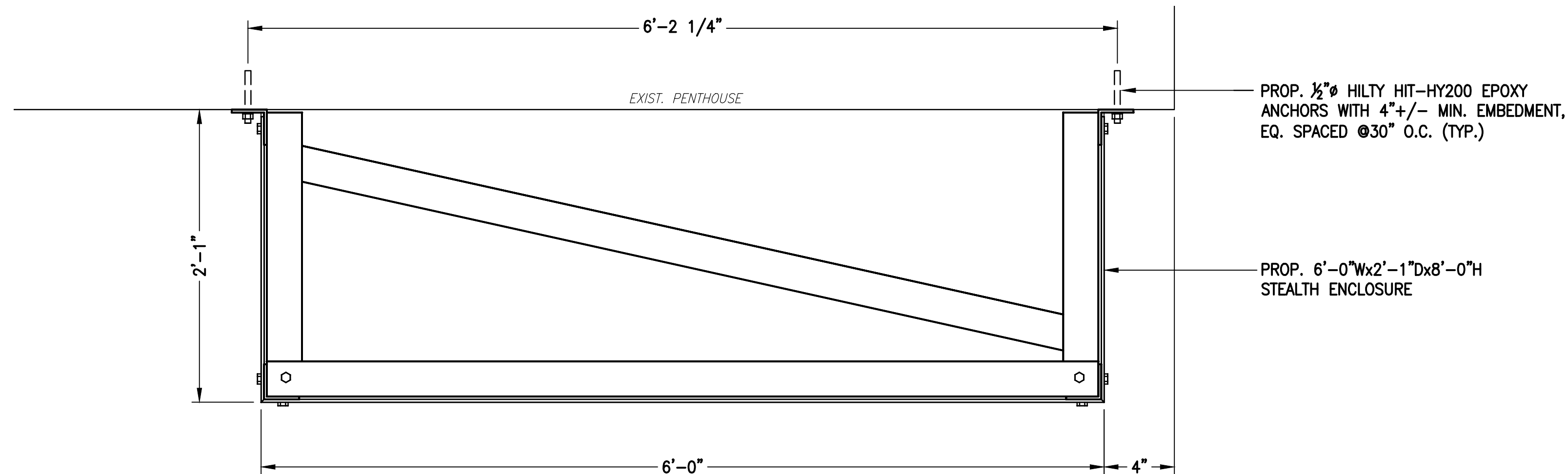
ALPHA SECTOR



STEALTH ENCLOSURE ISOMETRIC 1
SCALE: N.T.S. S-1



STEALTH FRAMING ISOMETRIC 2
SCALE: N.T.S. S-1



STEALTH ATTACHMENT PLAN 3
SCALE: 1' = 1'-0" S-1

NOTE:
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CLARITY. REFER TO ANTENNA PLANS
FOR LOCATIONS & ORIENTATIONS.



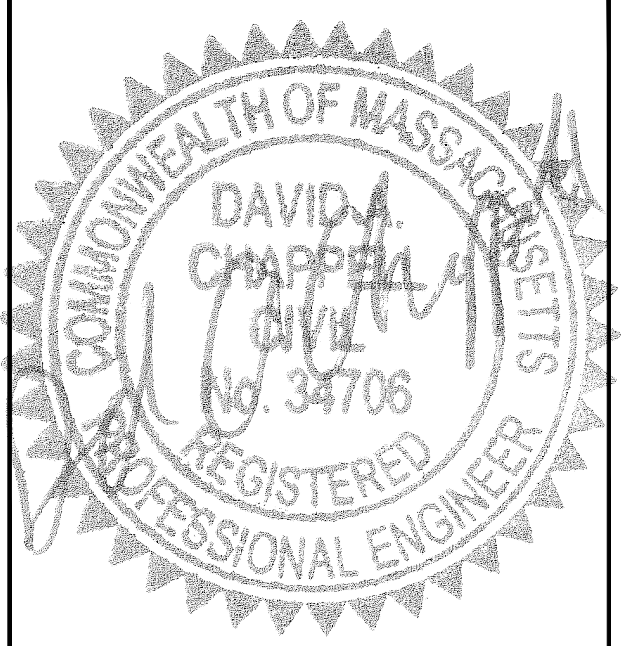
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(508) 286-2700



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WOBURN, MA 01801
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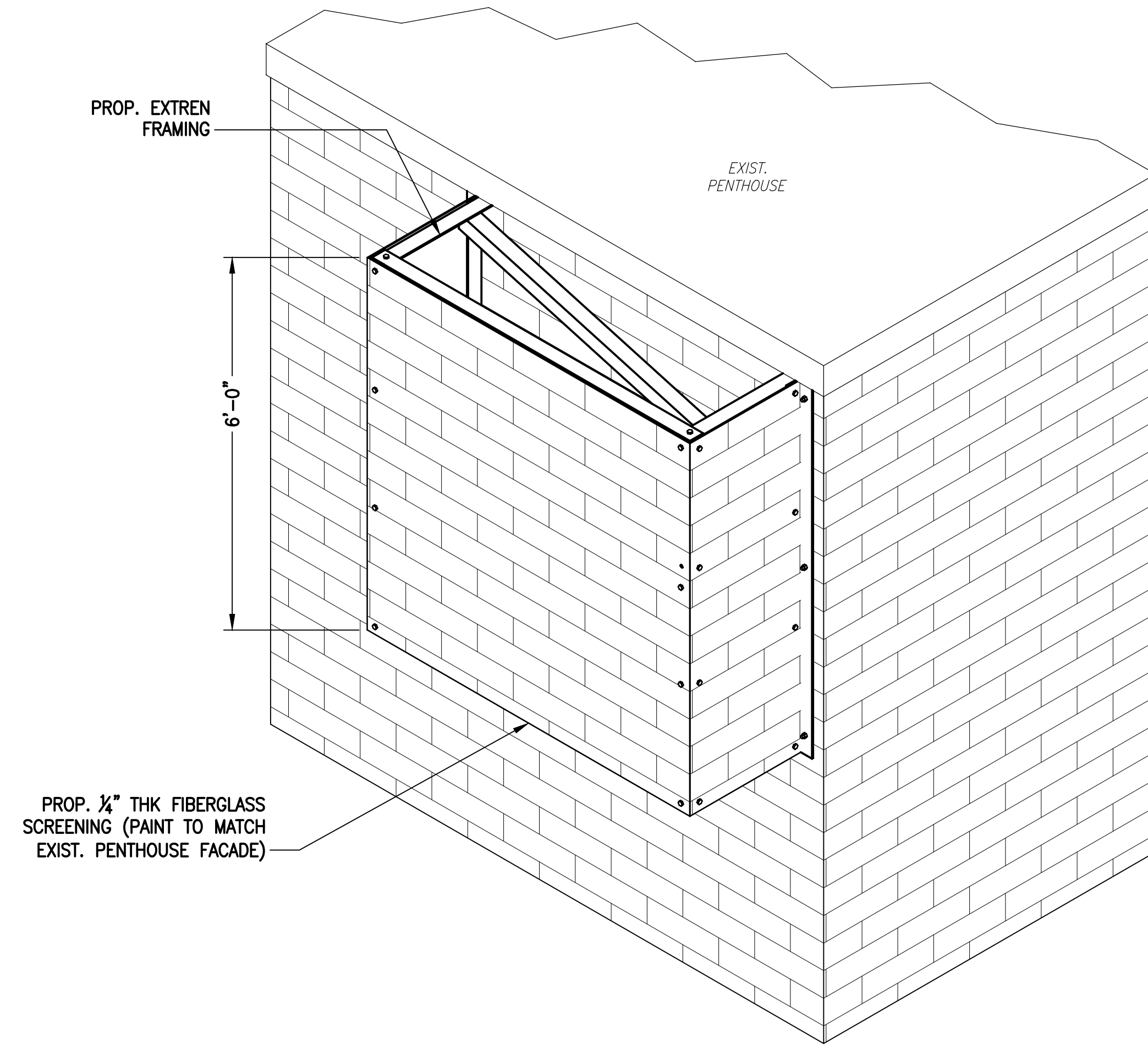
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SITE NUMBER:
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HOUSES**
SITE ADDRESS:
725 TREMONT STREET
BOSTON, MA 02116

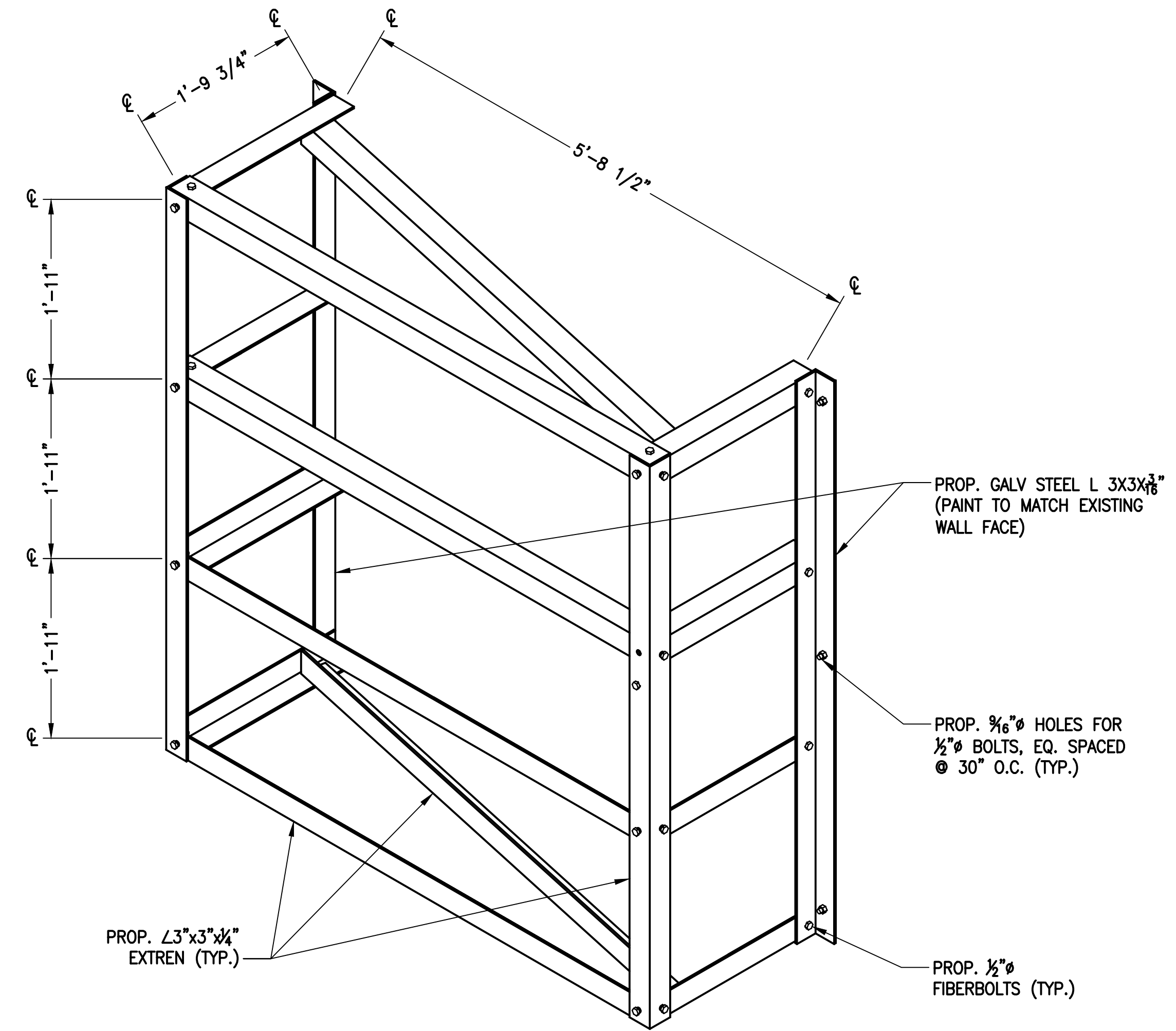
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**STRUCTURAL DETAILS -
ALPHA SECTOR**

SHEET NUMBER
S-1

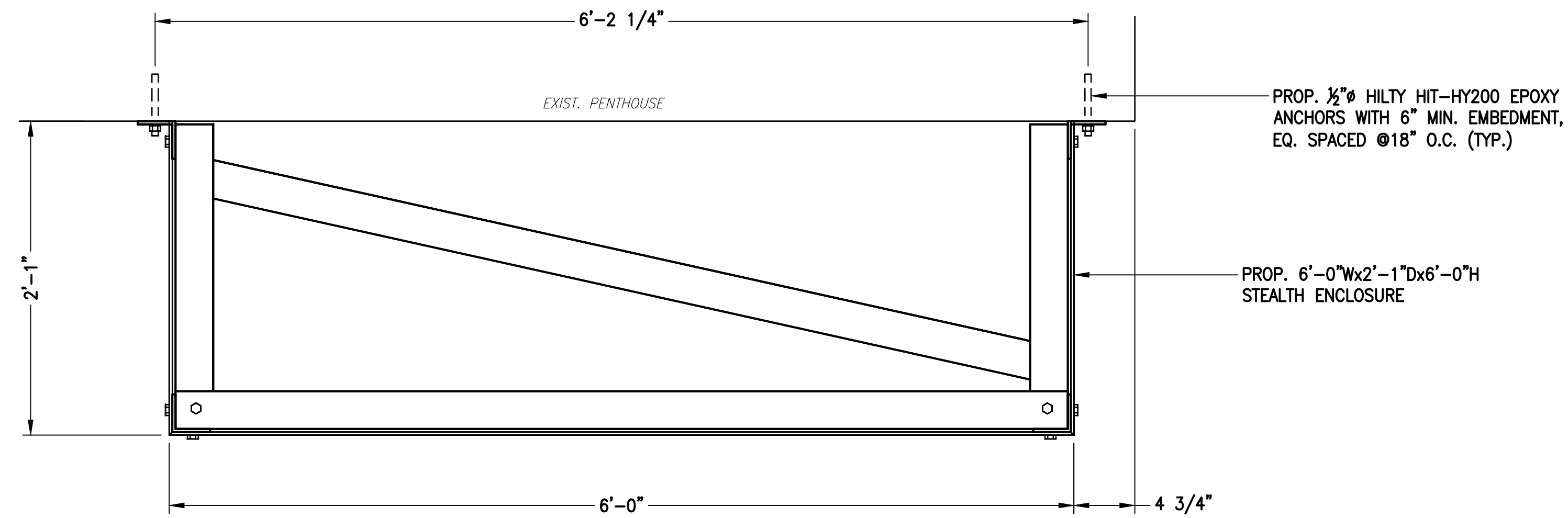
BETA SECTOR



STEALTH ENCLOSURE ISOMETRIC 1
SCALE: N.T.S. S-2



STEALTH FRAMING ISOMETRIC 2
SCALE: N.T.S. S-2



STEALTH ATTACHMENT PLAN 3
SCALE: 1" = 1'-0" S-2

NOTE:
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FOR LOCATIONS & ORIENTATIONS.



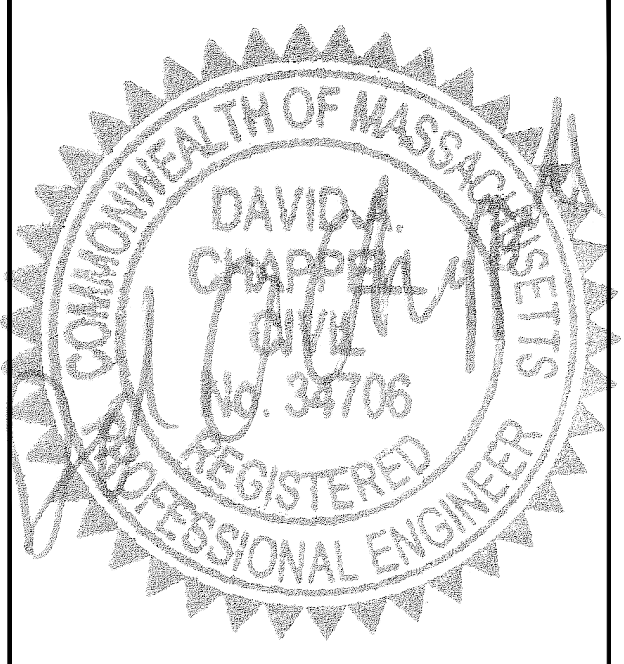
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(508) 286-2700



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WOBURN, MA 01801
(781) 970-0052



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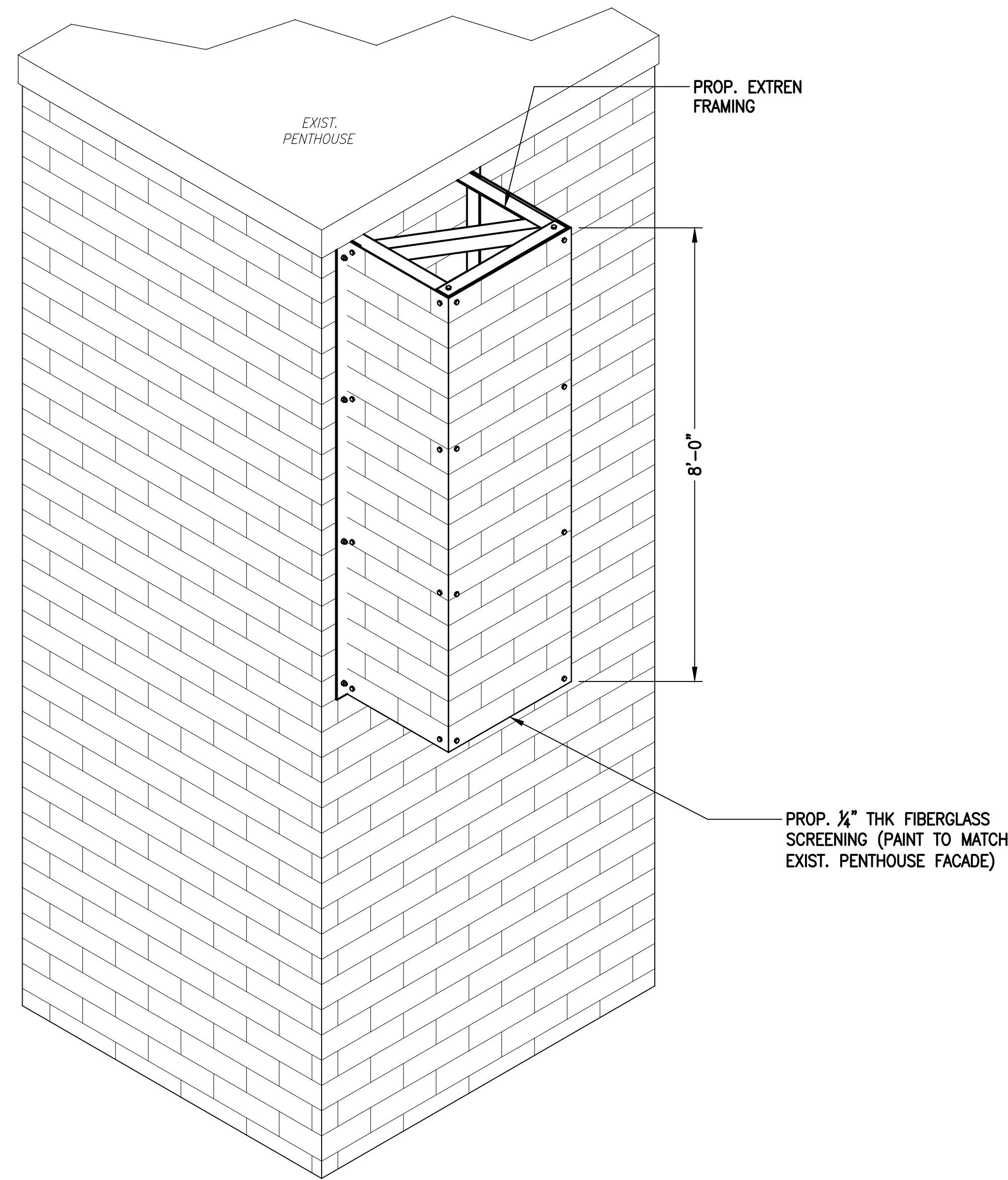
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SITE NAME:
**BN023/CONCORD
HOUSES**
SITE ADDRESS:
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BOSTON, MA 02116

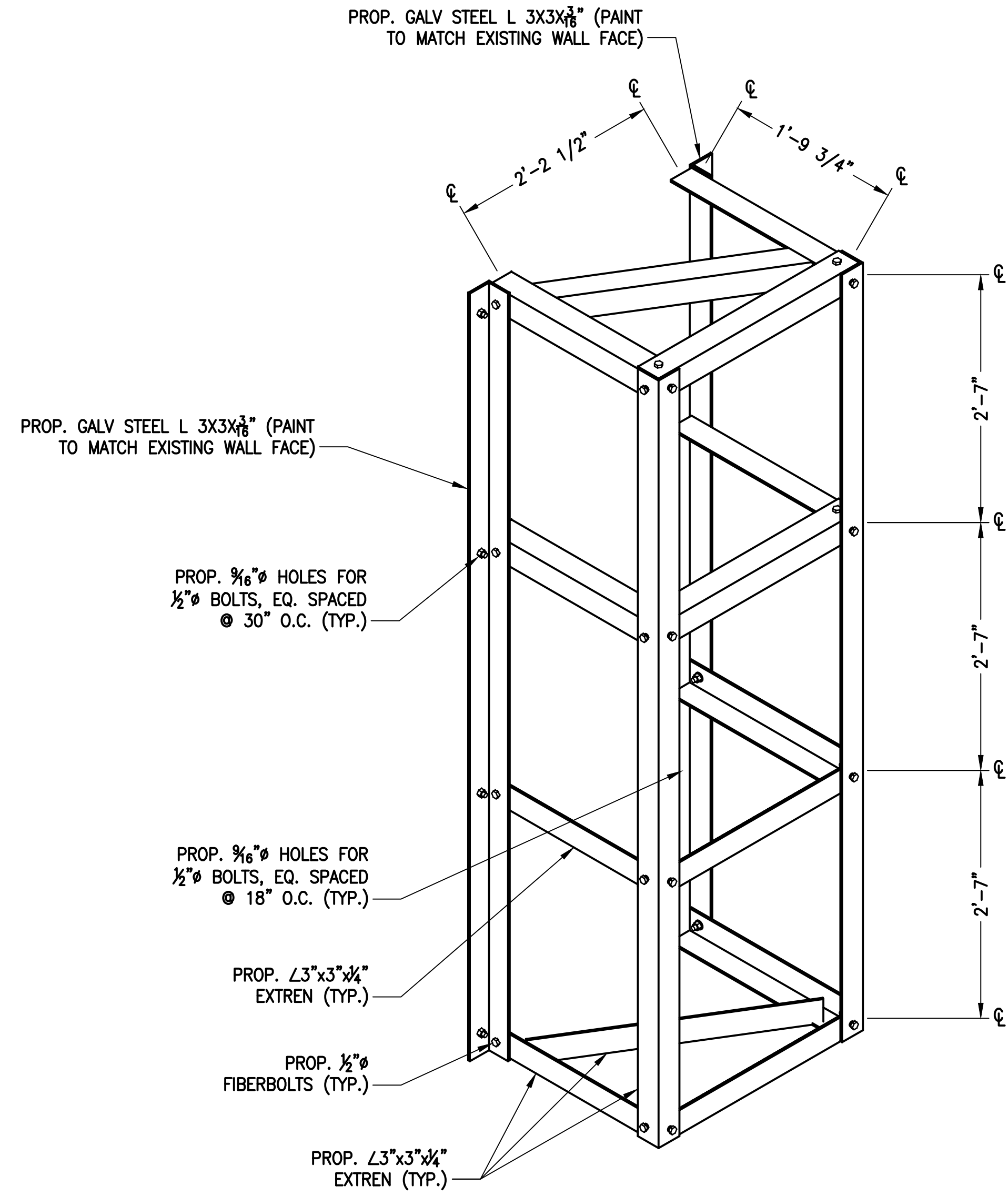
SHEET TITLE
**STRUCTURAL DETAILS -
BETA SECTOR**

SHEET NUMBER
S-2

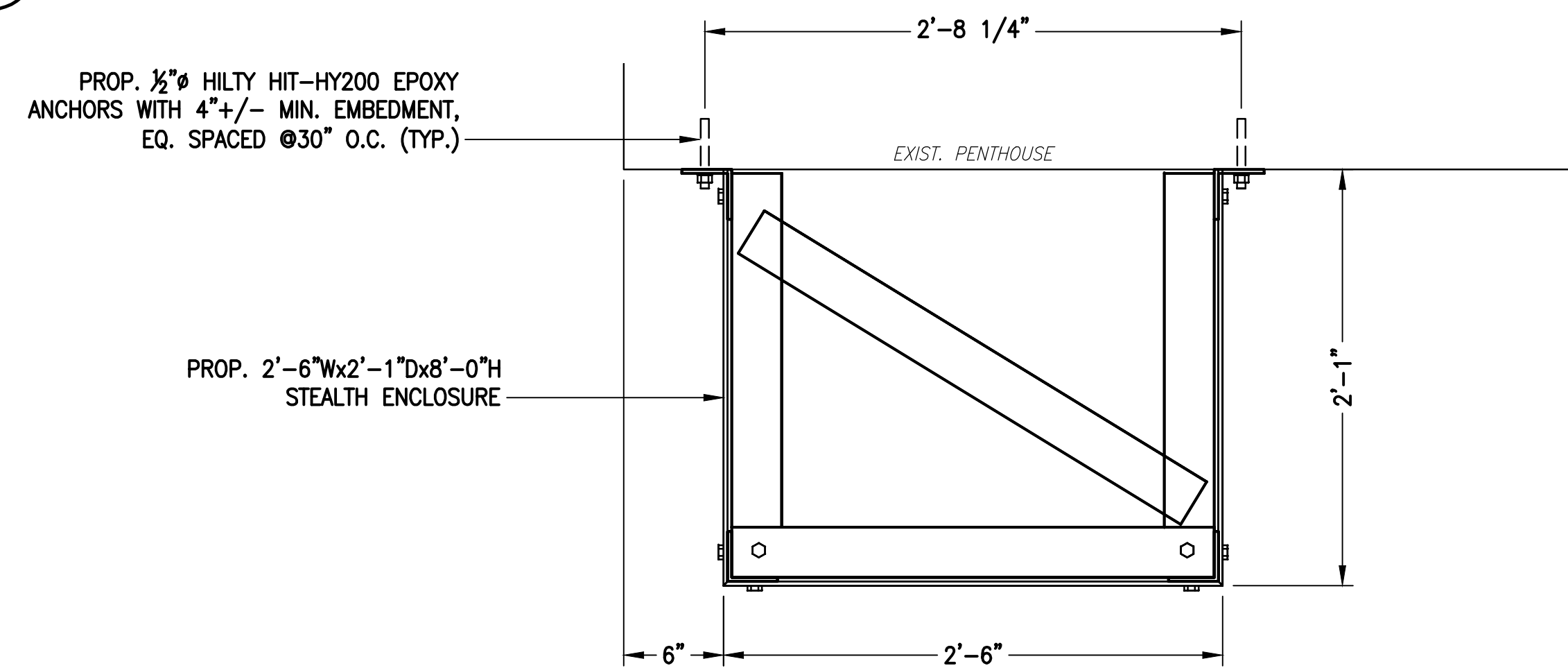
GAMMA SECTOR



STEALTH ENCLOSURE ISOMETRIC 1
SCALE: N.T.S. S-3



STEALTH FRAMING ISOMETRIC 2
SCALE: N.T.S. S-3



STEALTH ATTACHMENT PLAN 3
SCALE: 1" = 1'-0" S-3

NOTE:
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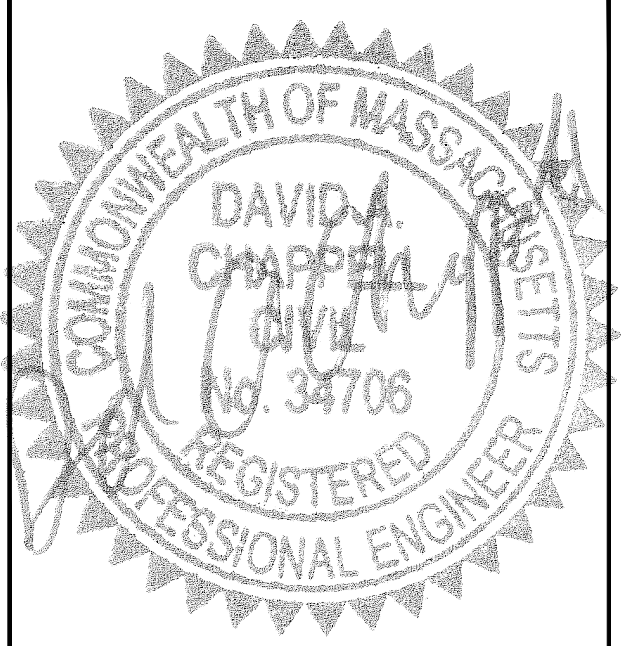
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(508) 286-2700



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WOBBURN, MA 01801
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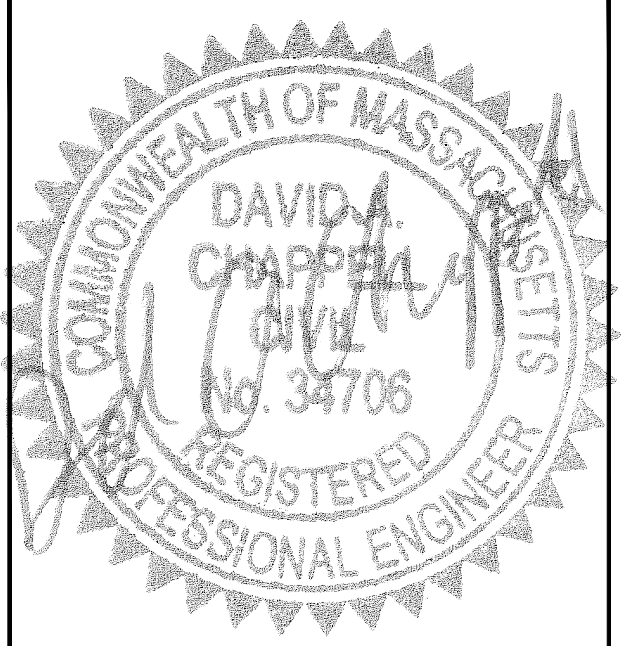
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SITE NAME:
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SITE ADDRESS:
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BOSTON, MA 02116

SHEET TITLE
STRUCTURAL DETAILS - GAMMA SECTOR

SHEET NUMBER
S-3



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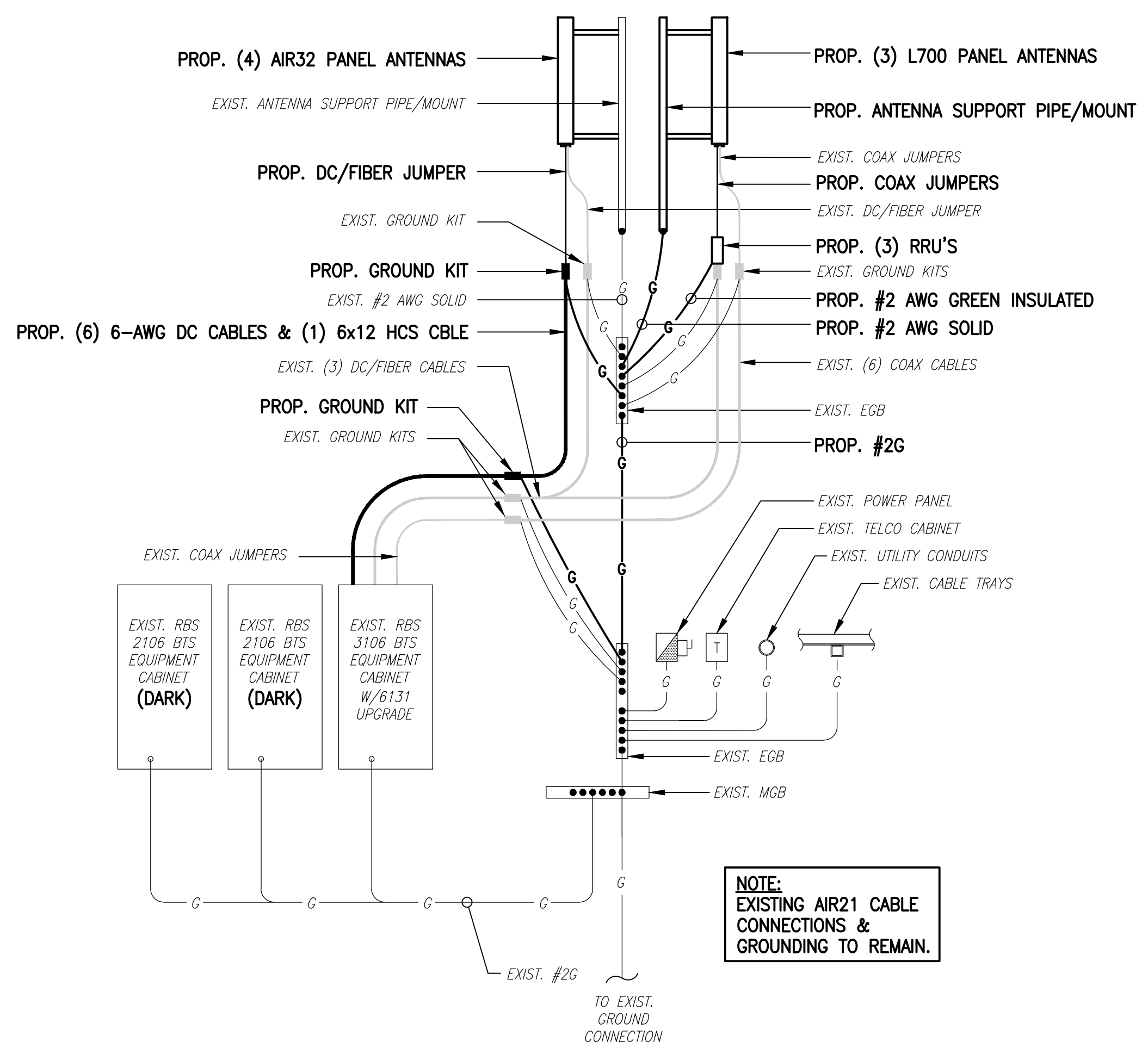
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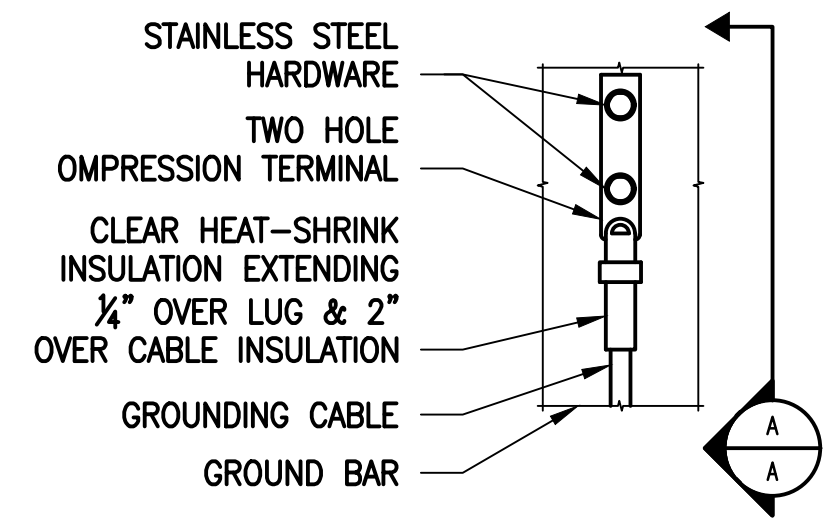
SITE NUMBER:
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SITE NAME:
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SITE ADDRESS:
725 TREMONT STREET
BOSTON, MA 02116

SHEET TITLE
ELECTRIC & GROUNDING DETAILS

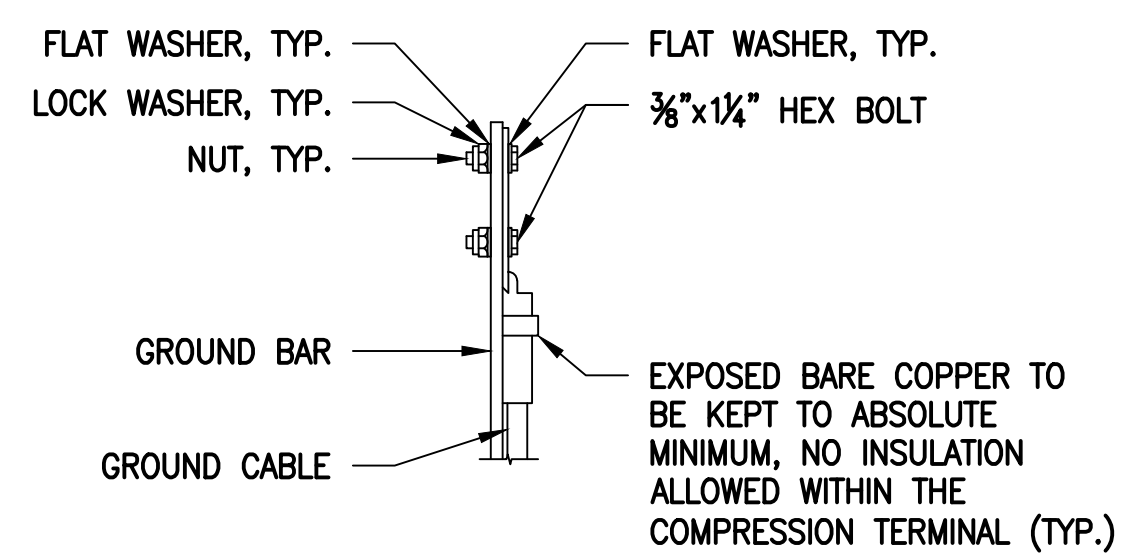
SHEET NUMBER
E-1



NOTE:
EXISTING AIR21 CABLE
CONNECTIONS &
GROUNDING TO REMAIN.



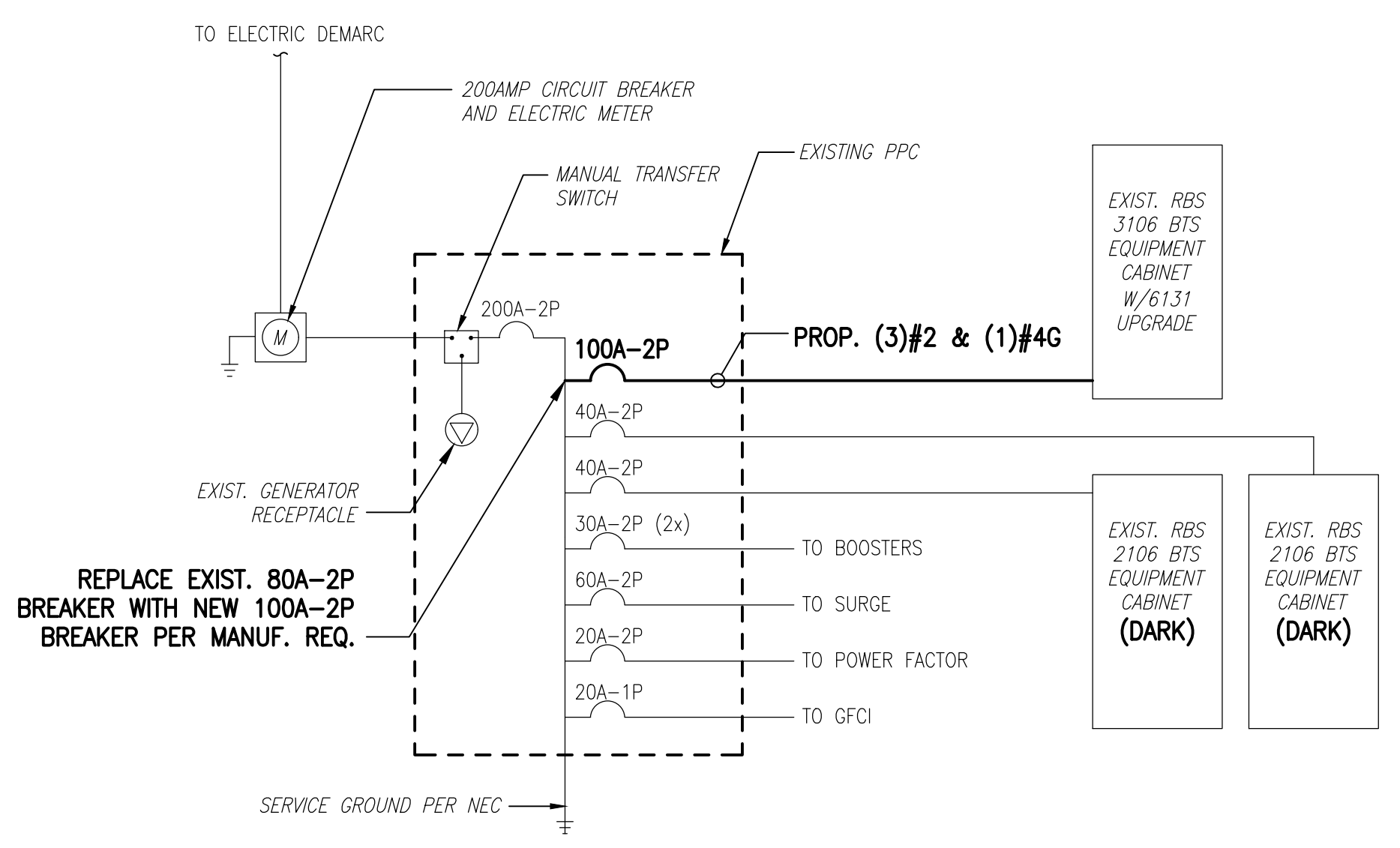
ELEVATION



SECTION A-A

- NOTES:
- "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
 - OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
 - CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.

TYPICAL GROUND BAR
CONNECTIONS DETAIL
SCALE: NOT TO SCALE

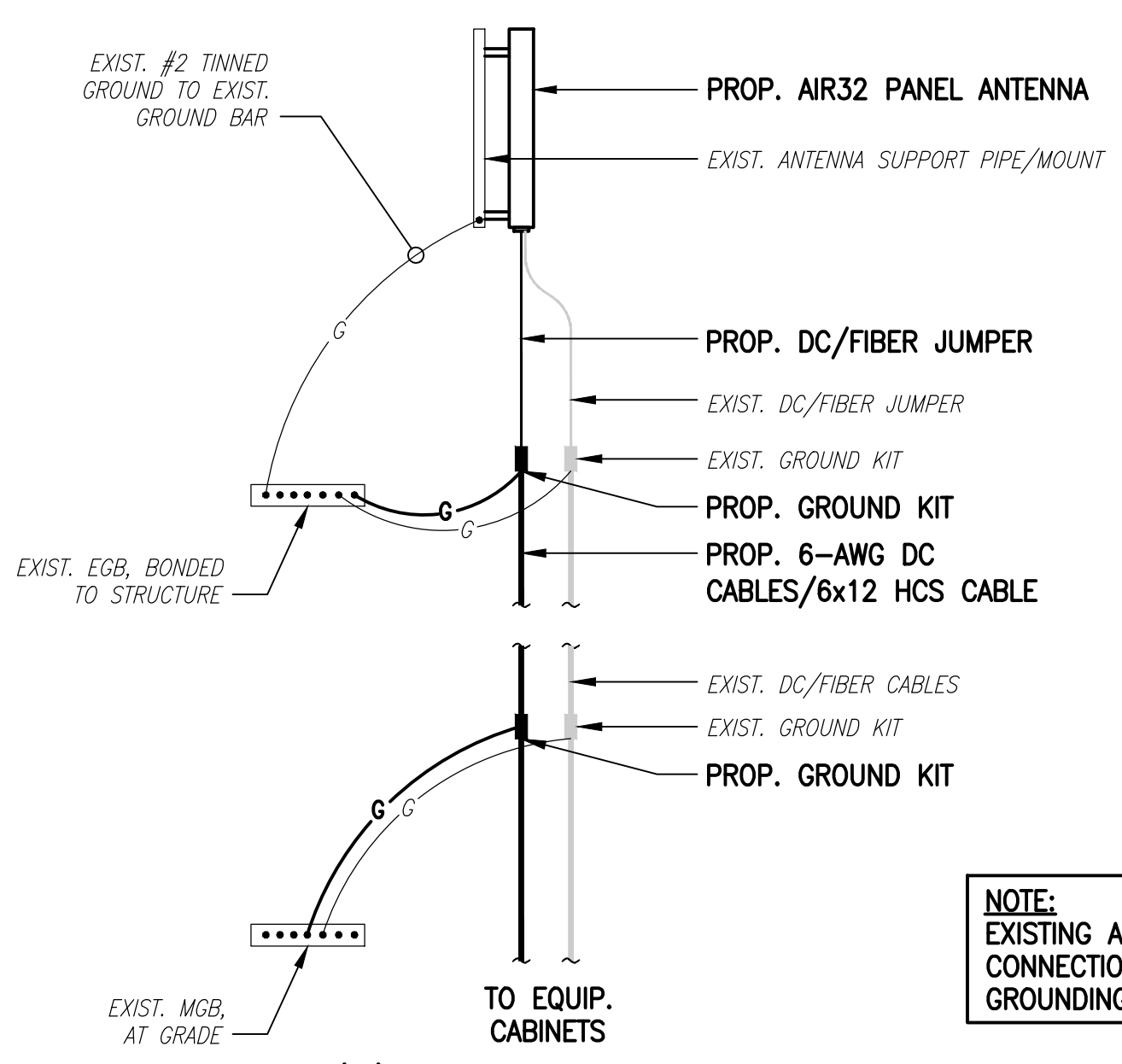


ONE LINE DIAGRAM
SCALE: NOT TO SCALE

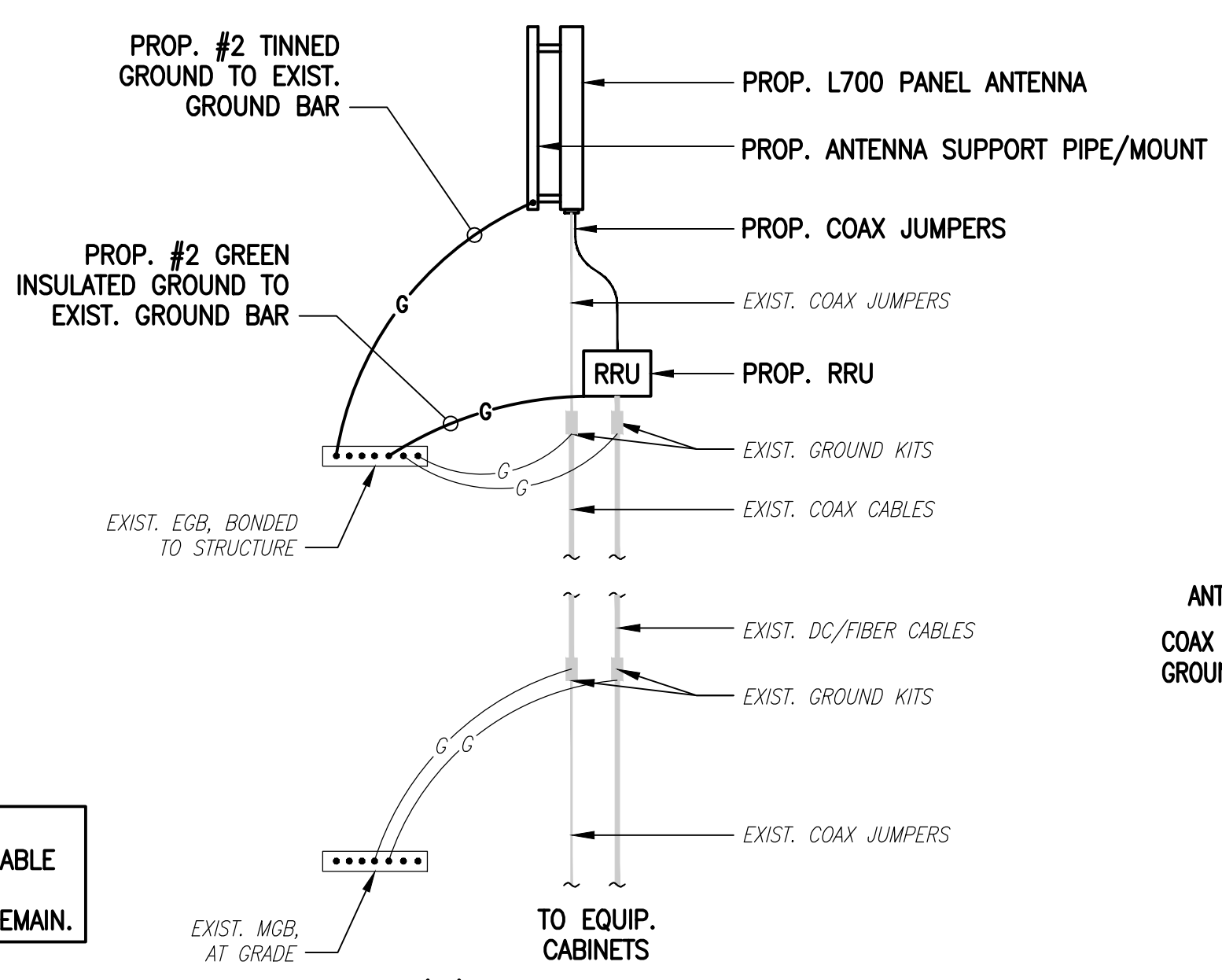
GROUNDING RISER DIAGRAM
SCALE: NOT TO SCALE

ELECTRICAL AND GROUNDING NOTES

- ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
- ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
- THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
- GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
- ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
- BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
- ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THININSULATION.
- RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
- RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
- WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
- ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
- PPC SUPPLIED BY PROJECT OWNER.
- GROUNDING SHALL COMPLY WITH NEC ART. 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTNING PROTECTION SHALL BE DONE IN ACCORDANCE WITH T-MOBILE BTS SITE GROUNDING STANDARDS.
- GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
- USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
- ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
- ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
- CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
- APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
- CONTRACTOR SHALL PROVIDE AND INSTALL OMNI DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALLS OVER EACH GROUND ROD AND BONDING POINT BETWEEN EXISTING TOWER/ MONOPOLE GROUNDING RING AND EQUIPMENT GROUNDING RING.
- CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMS MINIMUM RESISTANCE REQUIRED.
- CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE- TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.

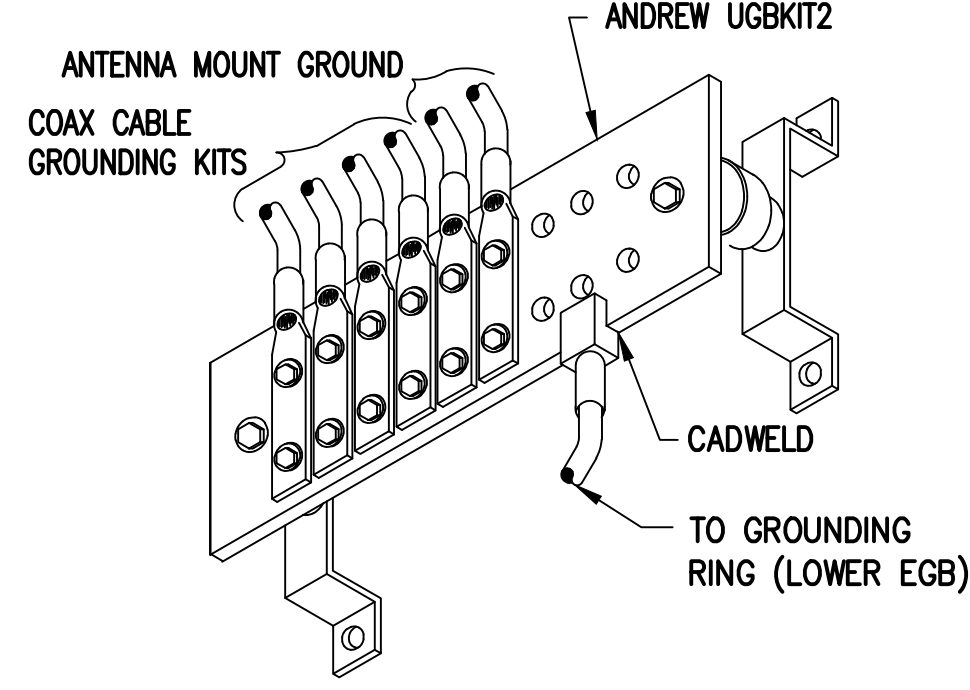


(P) AIR32 ANTENNA



(P) L700 ANTENNA

NOTE:
EXISTING AIR21 CABLE
CONNECTIONS &
GROUNDING TO REMAIN.



GROUND BAR (EGB)
SCALE: NOT TO SCALE

COAX CABLE CONNECTION
AND GROUNDING DETAIL
SCALE: NOT TO SCALE

April 5, 2017

•T-Mobile•
15 Commerce Way
Suite B
Norton, MA 02766

Structural Evaluation of Antenna Loads

RE:

Candidate Number 4BN0023D
Candidate Name BN023/Concord Houses
Candidate Address 725 Tremont Street, Boston, MA 02116

To whom it may concern:

Chappell Engineering Associates, LLC has performed a structural evaluation of the existing facade mounted antennas at the above-referenced location. Based upon our site evaluation, the existing antennas are mounted to the face of the structure with flush-style antenna mounting hardware, and are hidden from view by an RF enclosure secured to the face of the penthouse in front of the antennas.

T-Mobile now proposes to re-configure the antennas at the Alpha sector located on the penthouse. The existing and proposed configurations are shown below.

The current antenna configuration consists of:

<u>Sectors</u>	<u>Antenna</u>	<u>Dimensions (in)</u>	<u>Location</u>
Alpha	(1) Ericsson AIR21 (B2A/B4P)	56.2H x 12.1W x 7.9D	Façade Mount to Penthouse
Alpha	(1) Commscope LNX-6513DS	54.9H x 11.9W x 7.1D	Façade Mount to Penthouse
Alpha	(1) Ericsson AIR32 (B66Aa/B2a)	56.6H x 12.9W x 8.7D	Façade Mount to Penthouse
Alpha	(1) RRUS-11 Remote Radio Head	20H x 17W x 7D	Façade Mount to Penthouse

T-Mobile currently proposes to re-configure the existing antennas to the final total arrangement as shown:

Alpha	(1) Ericsson AIR32 (B66Aa/B2a)	56.6H x 12.9W x 8.7D	Façade Mount to Penthouse
Alpha	(1) Commscope DBXNH-6565A-A2M	55.6H x 11.9W x 7.1D	Façade Mount to Penthouse
Alpha	(1) RRUS-11 Remote Radio Head	20H x 17W x 7D	Façade Mount to Penthouse
Delta	(1) Ericsson AIR32 (B66Aa/B2a)	56.6H x 12.9W x 8.7D	Façade Mount to Penthouse

Based upon our site evaluation on 12/11/2016, a review of the previous structural analysis by Chappell Engineering dated 9/9/2016 (enclosed) and a review of the comparative antenna sizes, Chappell Engineering Associates, LLC has determined that the existing structure has adequate capacity to support the proposed Sector Add upgrade configuration as shown above. The proposed antennas represent a negligible increase in both the static and wind loaded conditions at the connections and on the overall stability of the antenna mounts.

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

Very truly yours,

CHAPPELL ENGINEERING ASSOCIATES

Clement J Salek, P.E.
CJS/cjs



• • **T** • • **Mobile** • •

15 Commerce Way
Suite B
Norton, MA 02766

STRUCTURAL ANALYSIS
4BN0023D – BN023 / CONCORD HOUSES



Address:
725 TREMONT STREET
WORCESTER, MA 01605

Date:
SEPTEMBER 19, 2016



September 19, 2016

•T-Mobile•
15 Commerce Way
Suite B
Norton, MA 02766

Structural Analysis of Antenna Loads

RE:

Candidate Number 4BN0023D
Candidate Name BN023/Concord Houses
Candidate Address 725 Tremont Street, Boston, MA 02116

To whom it may concern:

Chappell Engineering Associates, LLC has performed a structural analysis of the larger RF enclosures being proposed at the above referenced location. Based upon the site visit completed by this office on 10-29-2015, the existing alpha, beta and gamma sector antennas are mounted to the face of the existing rooftop penthouse faces. The antennas are mounted to the face of the structure with flush-style antenna mounting hardware, and are hidden from view by an RF enclosure secured to the face of the penthouse in front of the antennas.

T-Mobile currently proposes to re-configure the existing antenna configuration by installing one (1) additional antenna per sector at each of the three (3) antenna sectors. The proposed antennas will supplement and/or replace the existing in-service antennas. Because the existing RF enclosures are not large enough to accommodate the additional antenna, the existing RF enclosures will be removed and replaced with larger RF enclosures. The proposed installation is summarized below:

The current antenna configuration consists of:

<u>Sectors</u>	<u>Antenna</u>	<u>Dimensions (in)</u>	<u>Location</u>
Alpha, Beta, & Gamma	(2) Ericsson AIR21	56H x 12.0W x 7.9D	Existing PH Wall Face

T-Mobile currently proposes to re-configure the existing antennas to the final configuration as shown:


Alpha, Beta, & Gamma	(1) Ericsson Air21 B2A/B4P	55.0H x 12.0W x 7.9D	Existing PH Wall Face
	(1) Ericsson Air32 66Aa/B2a	56.6H x 12.9W x 8.7D	Existing PH Wall Face
	(1) Commscope LNX-6513DS-A1M	54.9H x 11.9W x 7.1D	Existing PH Wall Face
	(1) RRUS-11 B12	20.0H x 17.0W x 7.0D	Existing PH Wall Face

Based upon our review of the loads, our review of the proposed antenna sizes, and our analysis of the proposed RF enclosures, Chappell Engineering Associates, LLC has determined that the existing structure has adequate capacity to support the proposed L1900MHz modernization upgrade configuration as shown above. Photos of the existing antenna mounts and RF enclosures are enclosed for your convenience. A copy of the proposed L1900MHz antenna upgrade mounting plan and the construction details for the proposed RF enclosures being proposed by Chappell Engineering are also enclosed.

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

Very truly yours,

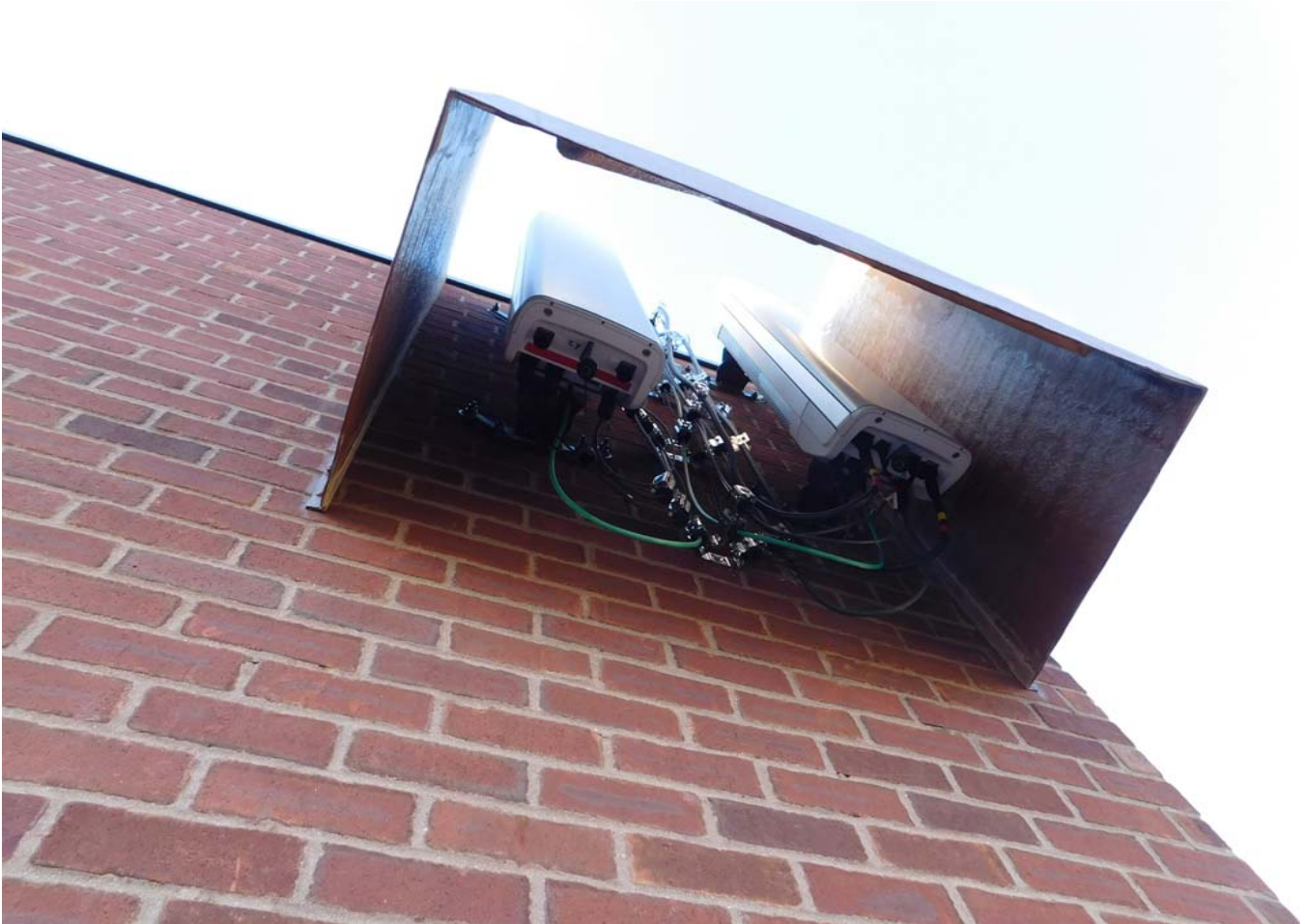
CHAPPELL ENGINEERING ASSOCIATES, LLC


Clement J Salek, P.E.
CJS/cjs





Existing Alpha Sector Antenna RF Enclosure



Existing Alpha Sector Antennas



Existing Beta Sector Antenna RF Enclosure



Existing Beta Sector Antennas



Existing Gamma Sector Antenna RF Enclosure



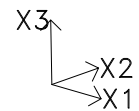
Existing Gamma Sector Antennas



Existing Alpha Sector Antennas - Top View

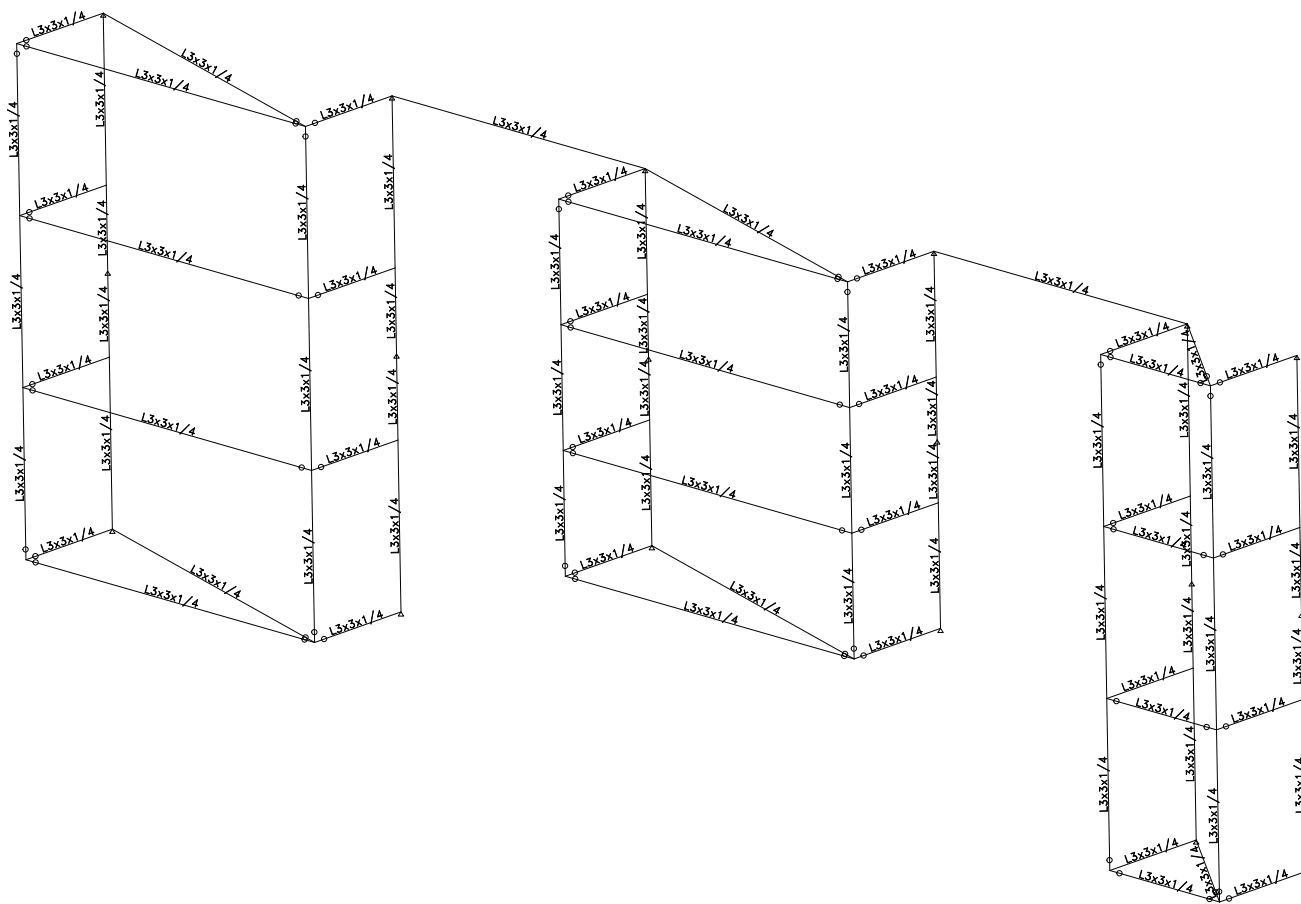


Existing Gamma Sector Antennas - Top View



SCALE = 1:33

DATE: 9/19/16



4BN0023D Concord Houses Tremont St

Page: 1
Date: 9/19/16

Prepared by:

Load no. 1: X2 Wind (units - kips ft.)

/ GLOBAL LOADS

/ GLOBAL LOADS

DIST FX2 -0.03 PLANE -22.306 -6.526 0. -22.306 -6.526 7.8 -16.606

-6.526 7.8 PT 0. 5.7 BEAMS

DIST FX2 -0.03 PLANE -11.606 -6.526 2.1 -11.606 -6.526 7.8 -5.906

-6.526 7.8 PT 0. 5.7 BEAMS

DIST FX2 -0.03 PLANE -0.906 -6.526 0. -0.906 -6.526 7.8 1.26 -6.526

7.8 PT 0. 2.166 BEAMS

/ END

FORCE SUMMATION

FX1=0. kip

FX2=-2.8153 kip

FX3=0. kip

Load no. 2: X1 Wind (units - kips ft.)

/ GLOBAL LOADS

/ GLOBAL LOADS

DIST FX1 -0.021 PLANE -22.306 -6.526 7.8 -22.306 -4.726 7.8 -22.306

-4.726 0. PT 0. 7.8 BEAMS

DIST FX1 -0.021 PLANE -11.606 -6.526 7.8 -11.606 -4.726 7.8 -11.606

-4.726 2.1 PT 0. 5.7 BEAMS

DIST FX1 -0.021 PLANE -0.906 -6.526 7.8 -0.906 -4.726 7.8 -0.906

-4.726 0. PT 0. 7.8 BEAMS

DIST FX1 -0.01 PLANE -16.606 -6.526 7.8 -16.606 -4.726 7.8 -16.606

-4.726 0. PT 0. 7.8 BEAMS

DIST FX1 -0.01 PLANE -5.906 -6.526 7.8 -5.906 -4.726 7.8 -5.906

-4.726 2.1 PT 0. 5.7 BEAMS

DIST FX1 -0.01 PLANE 1.26 -6.526 7.8 1.26 -4.726 7.8 1.26 -4.726

0. PT 0. 7.8 BEAMS

/ END STATIC

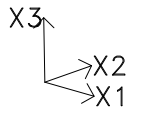
FORCE SUMMATION

FX1=-1.1871 kip

FX2=0. kip

FX3=0. kip

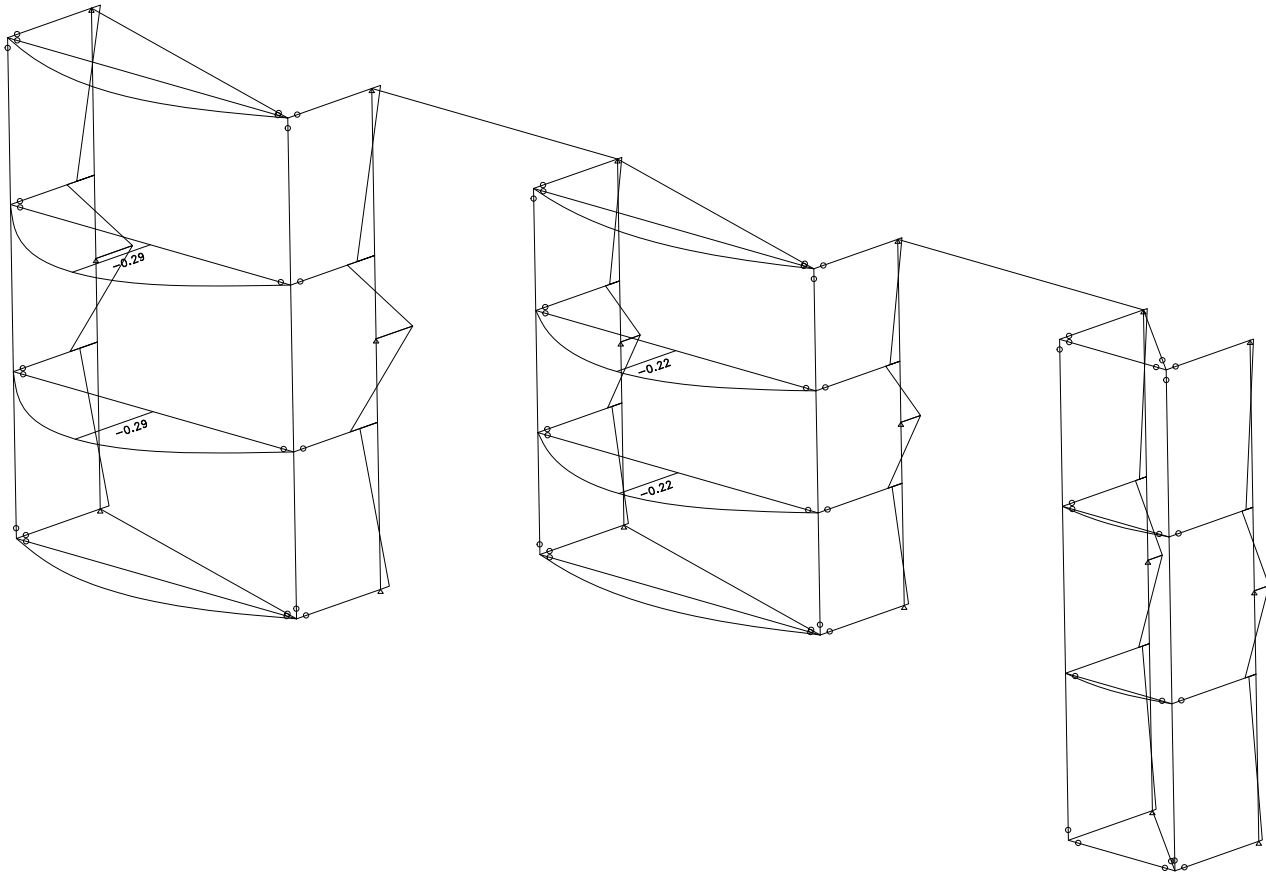
4BN0023D Concord Houses Tremont St



SCALE = 1:34

UNITS: kip*ft

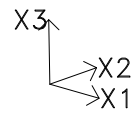
DATE: 9/19/16



M3 MOMENT

LOAD NO. 1 X2 Wind

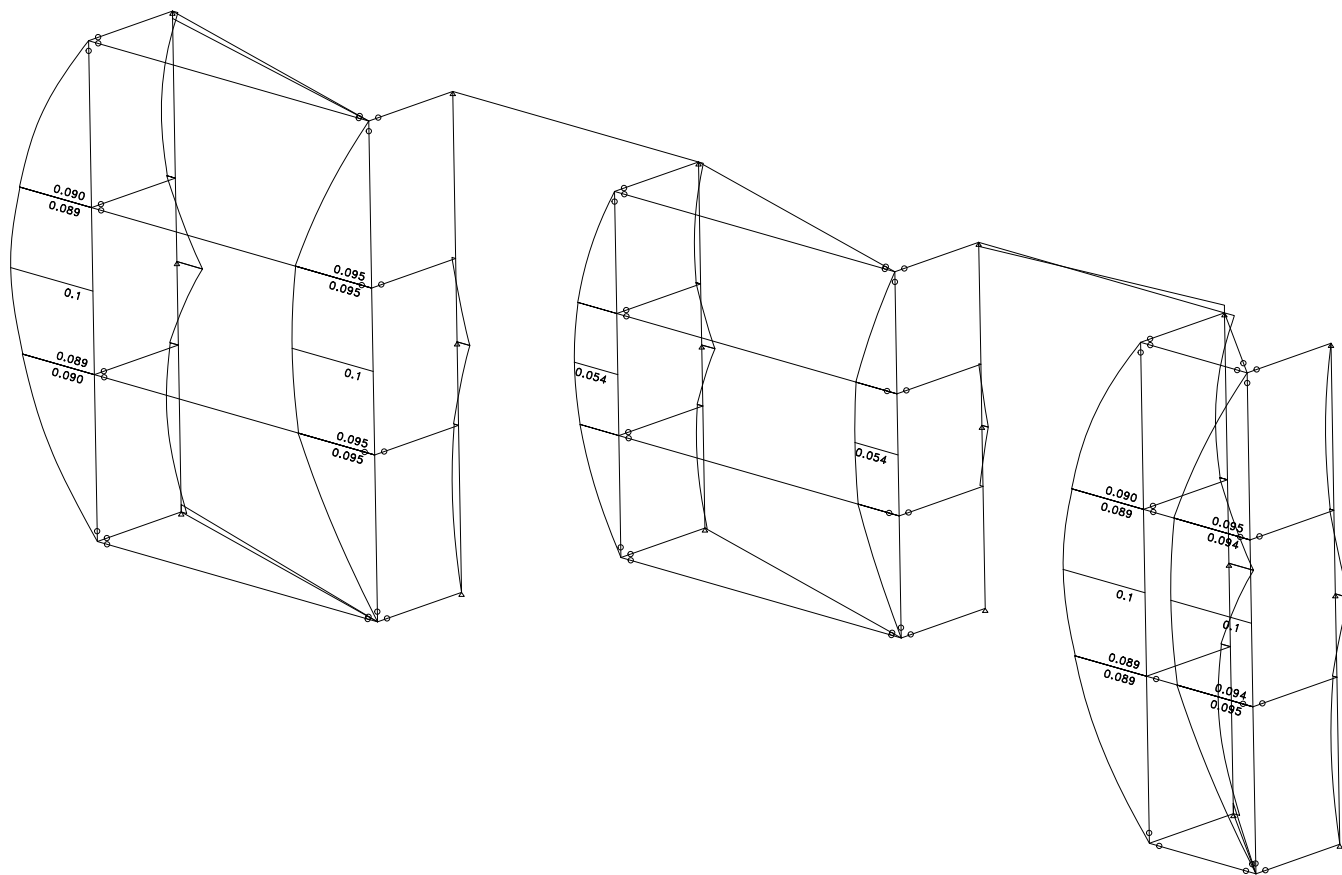
4BN0023D Concord Houses Tremont St



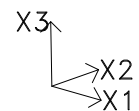
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UNITS: kip*ft

DATE: 9/19/16



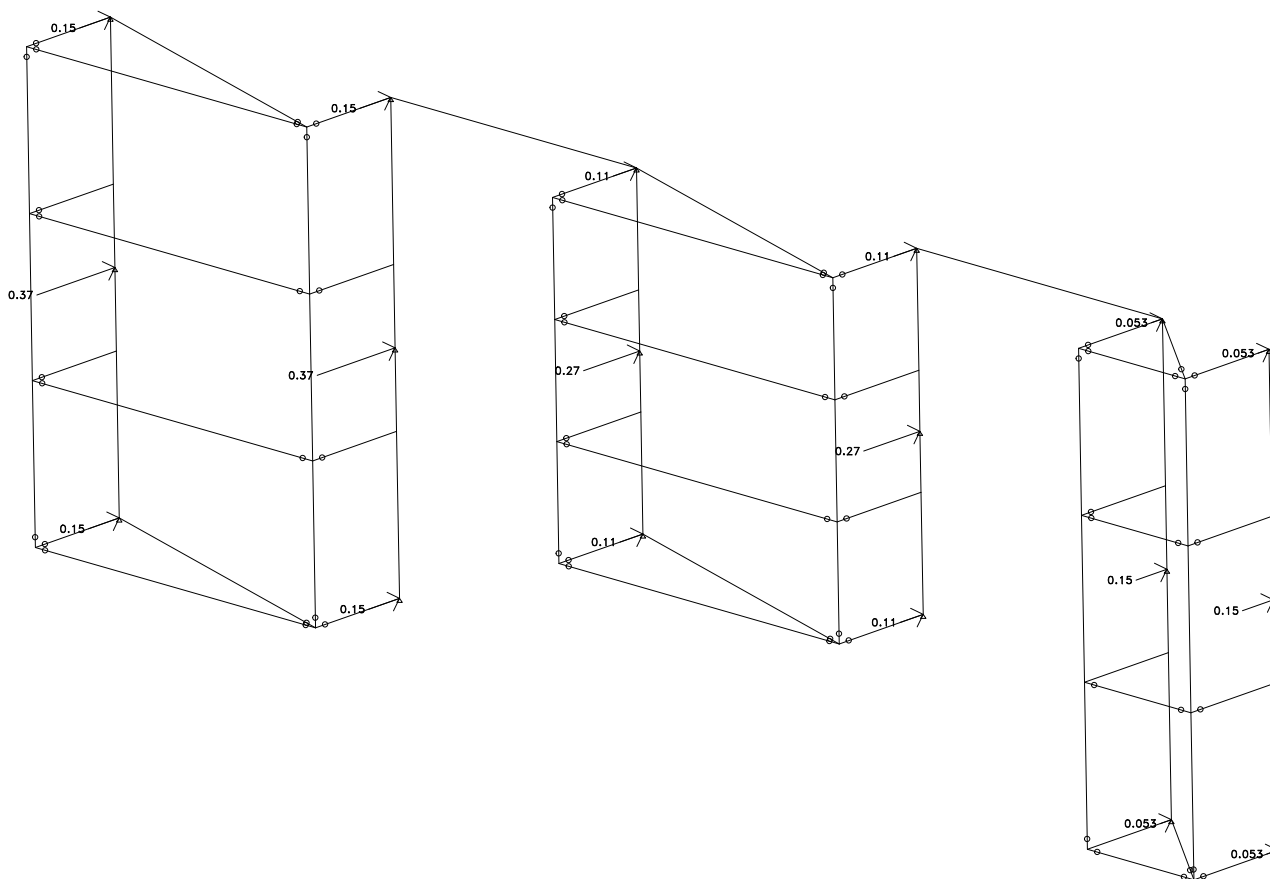
M2 MOMENT LOAD NO. 2 X1 Wind



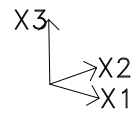
SCALE = 1:34

UNITS: kip

DATE: 9/19/16



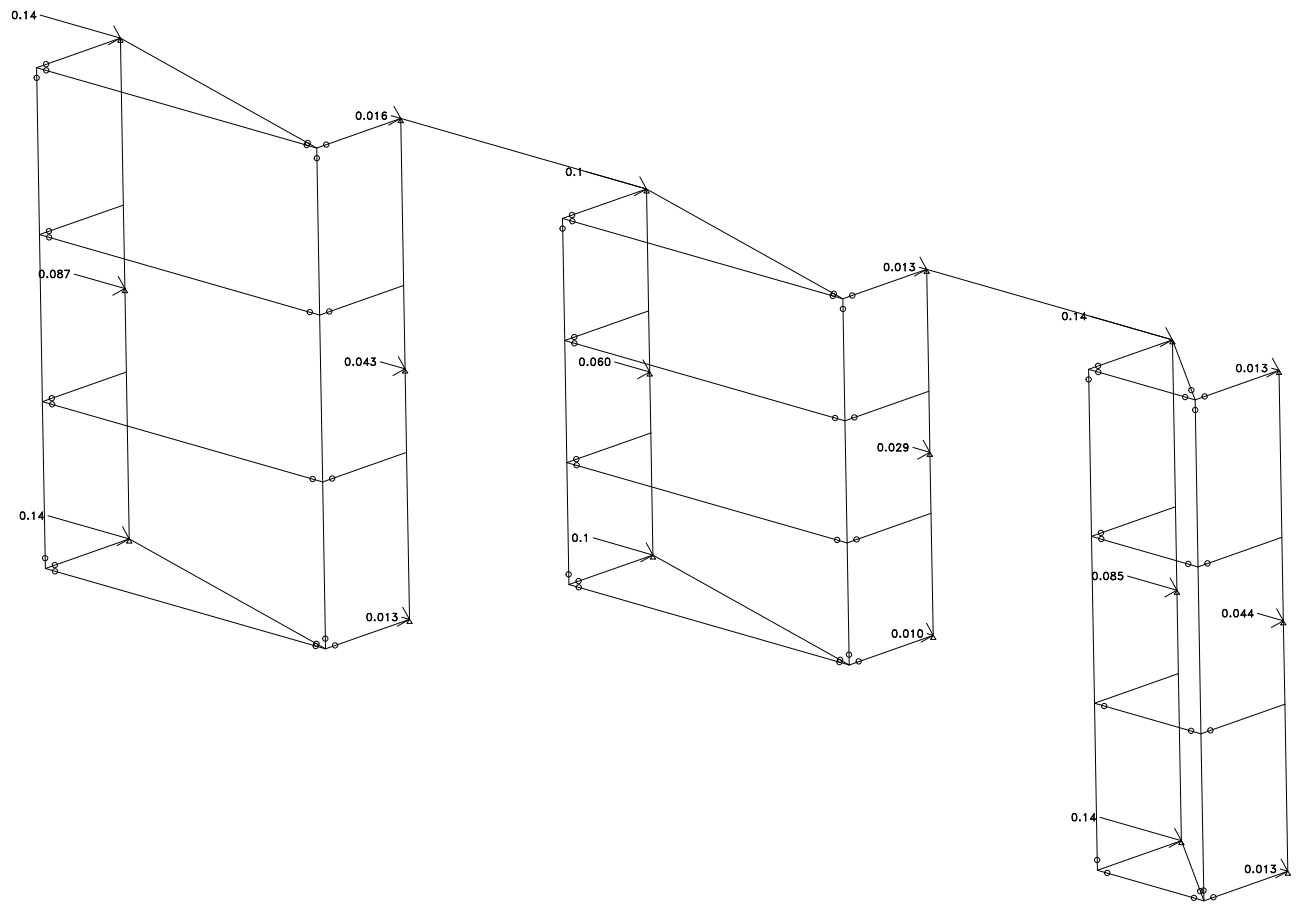
X2 REACTIONS LOAD NO. 1 X2 Wind



SCALE = 1:34

UNITS: kip

DATE: 9/19/16



X1 REACTIONS LOAD NO. 2 X1 Wind

HIT-HY 70 Hybrid for Masonry Construction 3.2.7

Table 10 - HIT-HY 70 allowable adhesive bond loads for threaded rods in the face of hollow brick^{1, 2, 3, 4, 5}

Nominal anchor diameter	Effective embedment in. (mm) ⁶	Tension lb (kN) ^{7, 8}	Minimum edge distance c_{min} in. (mm) ⁹	Load reduction factor @ c_{min}	Shear lb (kN) ^{7, 8}	Edge distance ⁶		
						Critical c_{cr} in. (mm)	Minimum c_{min} in. (mm)	Load reduction factor @ c_{min}
1/4	3-1/8 (79)	530 (2.4)	8 (203)	1.00	370 (1.6)	12 (304.8)	8 (203)	1.00
5/16		735 (3.3)			595 (2.6)			1.00
3/8		905 (4.0)			1,045 (4.7)			0.76
1/2		905 (4.0)			1,685 (7.5)			0.52

Table 11 - HIT-HY 70 allowable adhesive bond loads for HIT-IC inserts in the face of hollow brick^{1, 2, 3, 4, 5}

Thread size	Effective embedment in. (mm) ⁶	Tension lb (kN) ^{7, 8}	Minimum edge distance c_{min} in. (mm) ⁹	Load reduction factor @ c_{min}	Shear lb (kN) ^{7, 8}	Edge distance ⁶		
						Critical c_{cr} in. (mm)	Minimum c_{min} in. (mm)	Load reduction factor @ c_{min}
#14 Screw	2 (51)	170 (0.8)	8 (203)	1.00	222 (1.0)	12 (304.8)	8 (203)	1.00
5/16-18 UNC	3-1/8 (79)	880 (3.9)			650 (2.9)			1.00
3/8-16 UNC		880 (3.9)			1,290 (5.7)			0.63
1/2-13 UNC		990 (4.4)			1,780 (7.9)			0.47

- All values are for anchors installed in hollow brick masonry with minimum masonry prism strength of 3,000 psi. Hollow brick units shall be conforming to ASTM C652. Allowable loads are calculated using a safety factor of 5.
- Anchors shall be installed in the face of the hollow brick masonry wall.
- Anchors are not recognized for resisting earthquake forces. For short-term loading due to wind forces, the allowable loads shall not be increased.
- Tabulated allowable loads shall be adjusted for increased base material temperatures in accordance with figure 12.
- Tabulated embedment depth is limited by the length of the plastic HIT-SC screens.
- Tabulated values are for one anchor installed in any location of the brick wall including the horizontal and head mortar joints.
- One anchor shall be permitted to be installed in each brick. Two anchors may be spaced as close as the lesser of 2 bricks or 8 in. apart without any load reduction.
- Allowable loads must be the lesser of the adjusted masonry or bond tabulated above and the steel values given in table 4.
- The critical edge distance, c_{cr} , is the edge distance where full load values in the table may be used. The minimum edge distance, c_{min} , is the minimum edge distance for which values are available and installation is recommended. Edge distance is measured from the center of the anchor to the closest edge.

Table 12 - HIT-HY 70 allowable adhesive bond loads for threaded rods in multi-wythe solid brick walls^{1, 2, 3, 4, 5, 6}

Nominal anchor diameter	Effective embedment ⁷		Tension		Shear		Minimum spacing s_{min} in. (mm)	Minimum edge distance c_{min} in. (mm)
	in.	(mm)	lb	(kN)	lb	(kN)		
3/8	6	(152)	895	(4.0)	680	(3.0)	16 (406.4)	16 (406.4)
	10	(254)	1,325	(5.9)	795	(3.5)		
1/2	6	(152)	895	(4.0)	1,075	(4.8)		
	10	(254)	1,455	(6.5)	1,115	(5.0)		
5/8	6	(152)	1,025	(4.6)	1,405	(6.3)		
	10	(254)	1,955	(8.7)	1,445	(6.4)		
3/4	8	(203)	1,575	(7.0)	1,985	(8.8)		
	13	(330)	2,135	(9.5)	1,985	(8.8)		

- All values are based on mortar shear strength of 45 psi or greater. Allowable loads are calculated using a safety factor of 5.
- Anchors must be installed in the face of the multi-wythe URM wall. The wall must have a minimum thickness of 13 inches representing 3 wythes of brick.
- Tabulated values are for maximum one anchor installed in the center of the brick of the multi-wythe URM wall.
- Edge distance, c_{min} , and spacing, s_{min} , are the minimum distances for which values are available and installation is recommended. Edge distance is measured from the center of the anchor to the closest edge. Spacing is measured from the center of one anchor to the center of an adjacent anchor.
- Allowable loads must be the lesser of the adjusted masonry or bond tabulated values and the steel values given in table 4.
- Tabulated allowable loads shall be adjusted for increased base material temperatures in accordance with figure 12.
- Tabulated embedment depth is limited by the length of the plastic HIT-SC screens.

Figure 7 - HIT-HY 70 specifications for HAS rods in multi-wythe brick wall

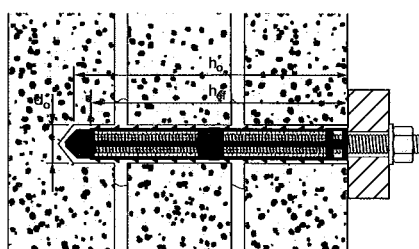
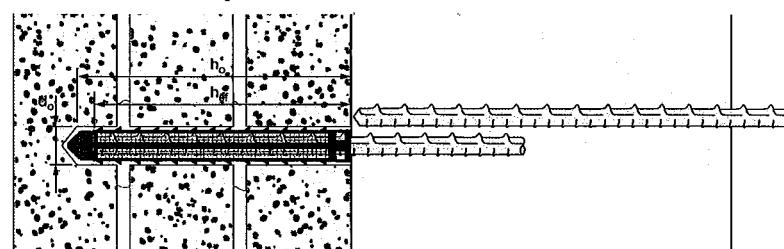


Figure 8 - HIT-HY 70 specifications for rebar in multi-wythe brick wall



3.2.7