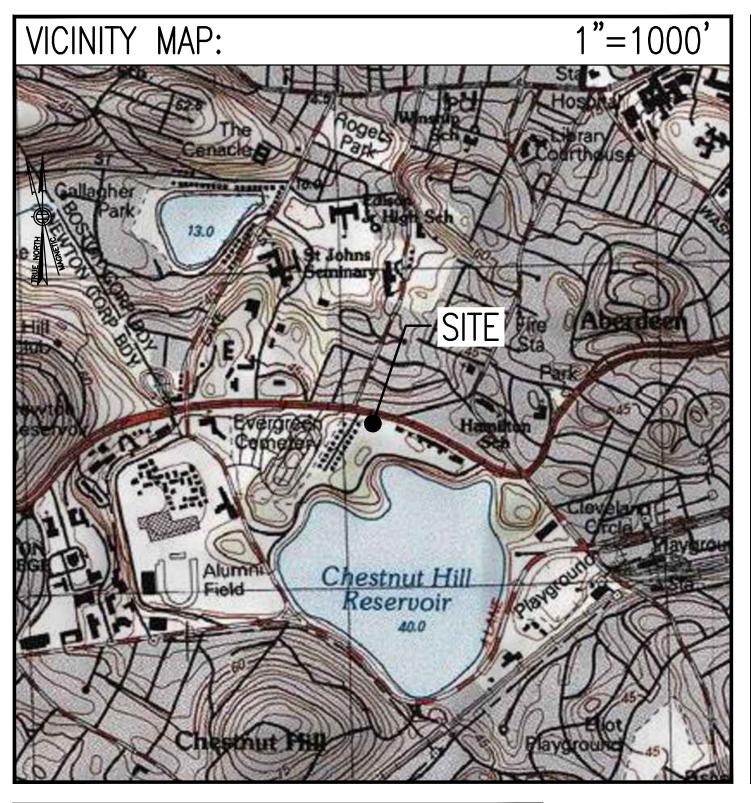
SITE NO.: 4B00090A

GENERAL NOTES

- THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.
- 2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
- THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE PROJECT OWNER'S REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
- THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
- THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- 6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS / CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S / VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
- THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
- THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

- 10. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY CONSTRUCTION CONTROL SURVEYS, ESTABLISHING AND MAINTAINING ALL LINES AND GRADES REQUIRED TO CONSTRUCT ALL IMPROVEMENTS AS SHOWN HEREIN.
- 11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
- 12. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
- 13. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
- 14. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
- 15. THE CONTRACTOR SHALL NOTIFY THE PROJECT OWNER'S REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE PROJECT OWNER'S REPRESENTATIVE.
- 16. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.
- 17. ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK. CALL THE FOLLOWING FOR ALL PRE-CONSTRUCTION NOTIFICATION 72-HOURS PRIOR TO ANY EXCAVATION ACTIVITY: DIG SAFE SYSTEM (MA, ME, NH, RI, VT): 1-888-344-7233
- CALL BEFORE YOU DIG (CT): 1-800-922-4455



CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE PROJECT OWNER'S REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

ARCHSTONE BUILDING

2000 COMMONWEALTH AVENUE BOSTON, MA 02135

SITE TYPE: MODERNIZATION UPGRADE 700MHz - 702Cu

SHEET INDEX				
SHT. NO.	DESCRIPTION	VER.		
T-1	TITLE SHEET	0		
GN-1	GENERAL NOTES	0		
C-1	PROPERTY PLAN	0		
A-1	ROOF PLAN	0		
A-2	EAST & NORTH ELEVATIONS	0		
A-3	WEST & SOUTH ELEVATIONS	0		
A-4	ANTENNA PLANS & DETAILS	0		
A-5	EQUIPMENT PLAN	0		
S-1	STRUCTURAL DETAILS	0		
E-1	ELECTRIC & GROUNDING DETAILS	0		

DO NOT SCALE DRAWINGS

PROJECT SUMMARY

SITE NUMBER:	4B00090A
SITE NAME:	ARCHSTONE BUILDING
SITE ADDRESS:	2000 COMMONWEALTH AVENUE BOSTON, MA 02135
ASSESSOR'S PARCEL NO.:	2102464000
ZONING DISTRICT:	MFR-2 (MULTIFAMILY RESIDENTIAL DISTRICT)
CONSTRUCTION TYPE:	MODERNIZATION UPGRADE 700MHz
LAND OWNER:	TRUSTEES OF BOSTON COLLEGE 140 COMMONWEALTH AVENUE BOSTON, MA 02467
APPLICANT:	T-MOBILE NORTHEAST LLC 15 COMMERCE WAY, SUITE B NORTON, MA 02766
ARCHITECT:	CHAPPELL ENGINEERING ASSOCIATES, LLC 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
STRUCTURAL ENGINEER:	CHAPPELL ENGINEERING ASSOCIATES, LLC 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752

	T-MOBIL 15 COMM NOR	• Mobile E NORTHEAST LLC ERCE WAY, SUITE B TON, MA 02766 (508) 286–2700
	R.K. EX R.K. EX 201 BOSTO MARLBOI (50	CHAPPELL ENGINEERING ASSOCIATES, LLC ural · Land Surveying KECUTIVE CENTRE ON POST ROAD WEST SUITE 101 ROUGH, MA 01752 08)481-7400 opellengineering.com
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CON	STRUCTION	N
A/E		
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GENERAL NOTES:	<u>C</u>
 FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY: CONTRACTOR – T–MOBILE SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION) 	1. D
OWNER – T-MOBILE OEM – ORIGINAL EQUIPMENT MANUFACTURER	2 H R
2. 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.	3 F/ "E
3. 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.	4 D
4. 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.	
5. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.	
6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.	5
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.	4
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.	P D H
9. 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.	M G 7
10. 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.	(I F
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY.	8 C
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION AND RETURN DISTURBED AREAS TO ORIGINAL CONDITIONS.	9 C
13. 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.	ç
14. 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.	1 U D C
15. CONSTRUCTION SHALL COMPLY WITH ALL T-MOBILE STANDARDS AND SPECIFICATIONS.	2
16. 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.	W C 3
17. THE EXISTING CELL SITES ARE IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY	U 4
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.	C 5
18. 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.	S 6
SITE WORK GENERAL NOTES:	1
1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.	Å
2. 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	2 E 3
BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION.	"(N
3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND	4 3
DISPOSED OF LEGALLY.	5 C
5. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.6. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT	A
BE PLACED IN ANY FILL OR EMBANKMENT. 7. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE	<u>(</u>
APPLICATION.	1
8. 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.	C 1, S
9. 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.	2 S
10. 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.	3 S R
11. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE T—MOBILE SPECIFICATION FOR SITE SIGNAGE.	

TE AND REINFORCING STEEL NOTES:

RETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.

CRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A ENGTH (400PSI) MAY BE USED. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 381 CODE

ING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE LL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS HOOKS SHALL BE STANDARD, UNO.

LOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON

ETE EXPOSED TO EARTH OR WEATHER: AND LARGER2 IN.

ETE NOT EXPOSED TO EARTH OR WEATHER

CAST AGAINST THE GROUND: AB AND WALL

...¾ IN. AMS AND COLUMNS11/2 IN.

ER ¾" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION

TION OF CONCRETE EXPANSION/WEDGE ANCHORS SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO THE MANUFACTURERS RECOMMENDATION FOR EMBEDMENT AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING DNCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN RER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED EXPANSION BOLTS SHALL BE PROVIDED BY SIMPSON OR APPROVED EQUAL.

E CYLINDER TIES ARE NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS .3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER; LTS OF CONCRETE CYLINDER TEST PERFORMED AT THE SUPPLIERS PLANT. IFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED. ER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.

TERNATIVE TO ITEM 7. TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF. ROM EACH DIFFERENT BATCH PLANT.

NT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY ESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

JRAL STEEL NOTES:

WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS AND T-MOBILE SPECIFICATIONS ERWISE NOTED. STRUCTURAL STEEL SHALL BE ASTM-A-36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC TEEL DESIGN, INSTALLATION AND BOLTING SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL ON (AISC) "MANUAL OF STEEL CONSTRUCTION".

VING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1. ET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL ON". 9TH EDITION. PAINTED SURFACES SHALL BE TOUCHED UP.

CONNECTIONS SHALL USE BEARING TYPE ASTM A325 BOLTS (3/4") AND SHALL HAVE MINIMUM OF TWO BOLTS FED OTHERWISE. ALL BOLTS SHALL BE GALVANIZED OR STAINLESS STEEL.

RUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE $\frac{5}{6}$ " DIA. ASTM A 307 BOLTS (GALV) UNLESS NOTED

TOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL

UCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

<u>IMPACTION NOTES FOR SLAB ON GRADE:</u>

AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL TO EXPOSE NATURAL SUBGRADE AND PLACE CRUSHED STONE

FION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ACCEPTABLE.

TERNATE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH I EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557

FED SUBBASE SHALL BE UNIFORM AND LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN OVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING #1 SIEVE.

LTERNATE TO ITEMS 2 AND 3, THE SUBGRADE SOILS WITH 5 PASSES OR A MEDIUM SIZED VIBRATORY PLATE (SUCH AS BOMAG BPR 30/38) OR HAND-OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). REAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL-GRADED GRANULAR FILL AND AS STATED ABOVE.

TION EQUIPMENT:

ERATED DOUBLE DRUN, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

<u>JCTION NOTES:</u>

RIFICATION: CTOR SHALL FIELD VERIFY SCOPE OF WORK. T—MOBILE ANTENNA PLATFORM LOCATION AND UTILITY TRENCHWORK.

ATION OF WORK:

CTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH CONTRACTOR.

ADDER RACK:

CTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY AND/OR ICE BRIDGE, AND CONDUIT AS TO SUPPORT CABLES TO THE NEW BTS LOCATION.

ELECTRICAL INSTALLATION NOTES:

1. WIRING, RACEWAY, AND SUPPORT METHODS AND AND TELCORDIA.

2. SUBCONTRACTOR SHALL MODIFY OR INSTALL CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL. 3. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND

TELCORDIA.

4. CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.

5. 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.

6. 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.

7. 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).

8. PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.

9. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.

10. 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.

11. 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.

12. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.

13. 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.

14. 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).

15. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.

16. NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE. 17. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC

19. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE

20. 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.

21. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

22. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.

23. CABINETS, BOXES AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.

24. CABINETS, BOXES AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

25. 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.

26. 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.

27. 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.

28. 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.

29. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

30. 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.

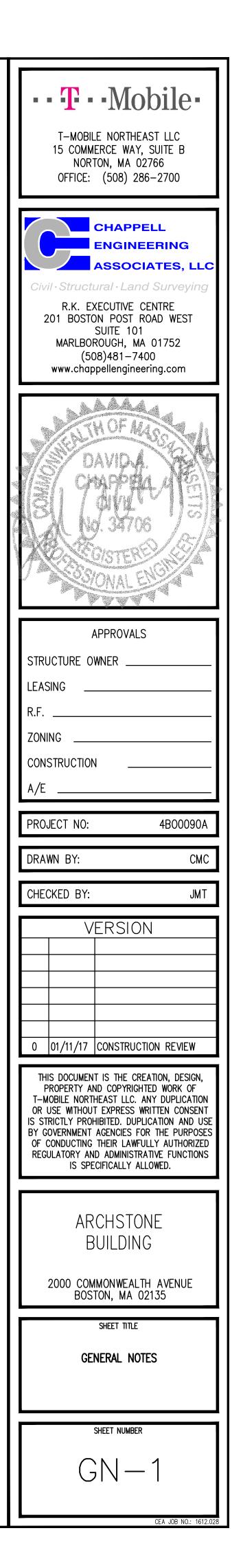
31. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.

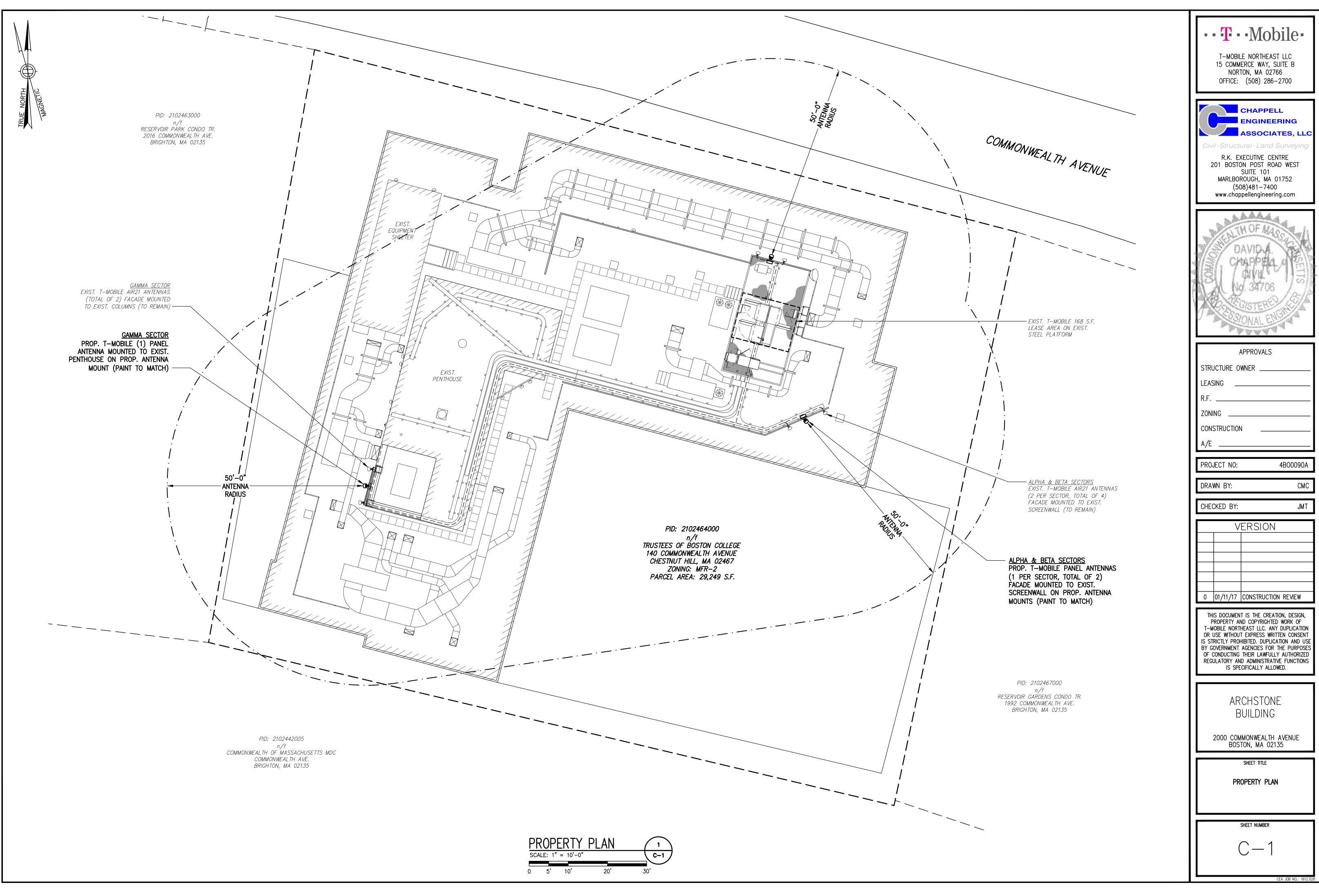
32. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.

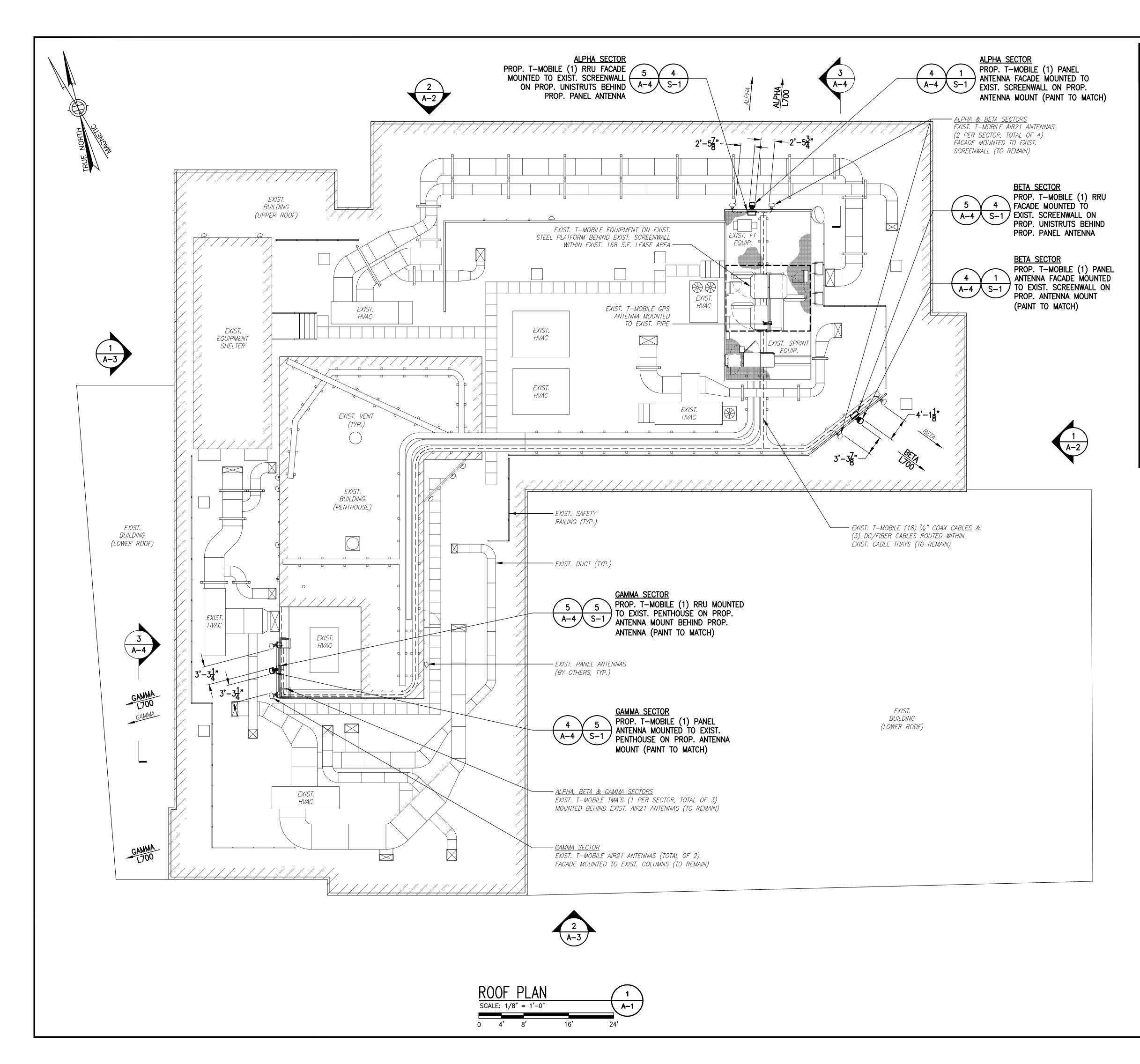
MATERIALS	SHALL	COMPLY	WITH	THE	REQUIREMENTS	OF	THE NE	С

SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

18. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.







EQUIPMENT SCHEDULE <u>CURRENT EQUIPMENT</u> - THREE (3) ERICSSON KRC118023-1 AIR21 B2A/B4P (QUAD)

- ANTENNAS - THREE (3) ERICSSON KRC118023-1 AIR21 B2P/B4A (QUAD) ANTENNAS
- THREE (3) GENERIC STYLE 1B TWIN AWS TMA'S
- EIGHTEEN (18) ⁷/₈" COAX CABLES - THREE (3) DC/FIBER CABLES
- THREE (3) DC/FIBER CABLE - ONE (1) GPS ANTENNA AND
- ONE (1) GPS ANTENNA AND ASSOCIATED ½" COAX CABLE - TWO (2) ERICSSON RBS 2106 EQUIPMENT CABINETS
- ONE (1) ERICSSON RBS 3106 EQUIPMENT CABINET WITH 6131 UPGRADE
- TWO (2) BOOSTERS - ONE (1) PPC CABINET

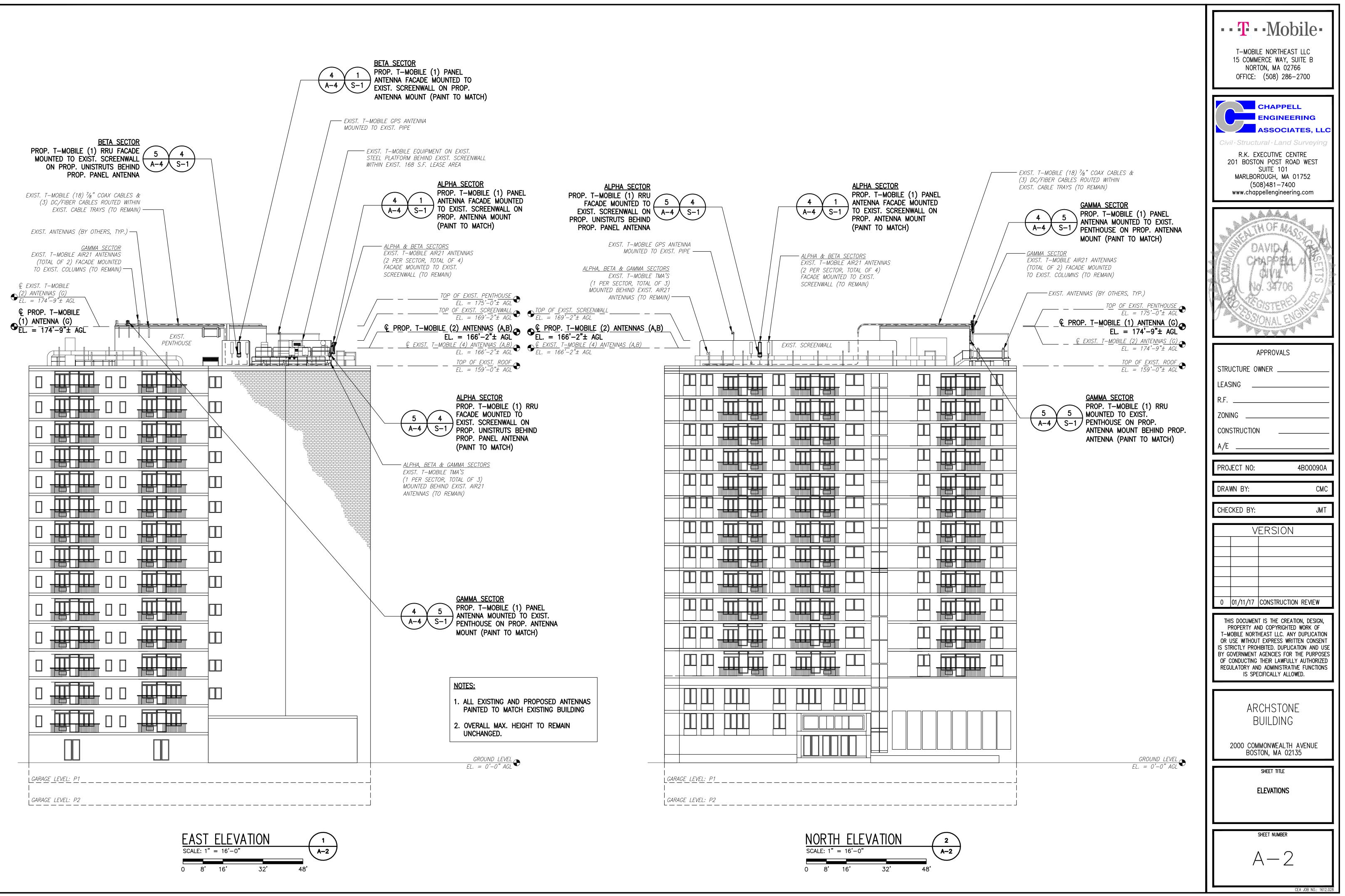
- NONE

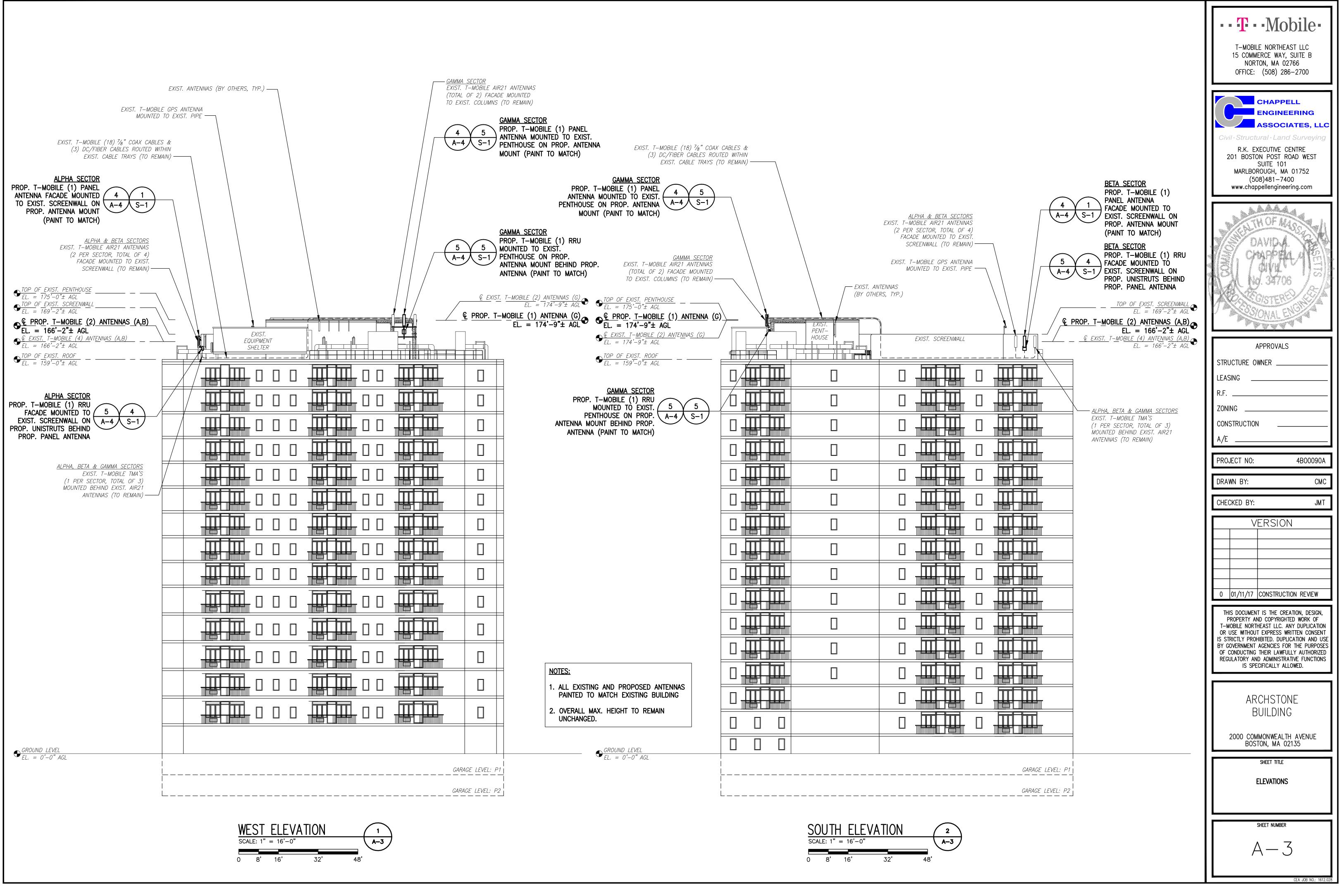
- EQUIPMENT TO BE REMOVED
- EQUIPMENT TO BE ADDED
- THREE (3) COMMSCOPE LNX-6513DS-A1M 4' (DUAL) ANTENNAS - THREE (3) RRUS11 B12
- FINAL EQUIPMENT CONFIGURATION
- THREE (3) ERICSSON KRC118023-1 AIR21 B2A/B4P (QUAD) ANTENNAS
- THREE (3) ERICSSON KRC118023-1 AIR21 B2P/B4A (QUAD) ANTENNAS
- THREE (3) COMMSCOPE LNX-6513DS-A1M 4' (DUAL) ANTENNAS - THREE (3) GENERIC STYLE 1B TWIN AWS TMA'S
- THREE (3) GENERIC STYLE - THREE (3) RRUS11 B12
- EIGHTEEN (18) 7/8" COAX CABLES
- THREE (3) DC/FIBER CABLES
- ONE (1) GPS ANTENNA AND ASSOCIATED 1/2" COAX CABLE
- TWO (2) ERICSSON RBS 2106 EQUIPMENT CABINETS - ONE (1) ERICSSON RBS 3106 EQUIPMENT CABINET WITH 6131
- UPGRADE
- TWO (2) BOOSTERS - ONE (1) PPC CABINET
- ONE (1) PPC CABINET

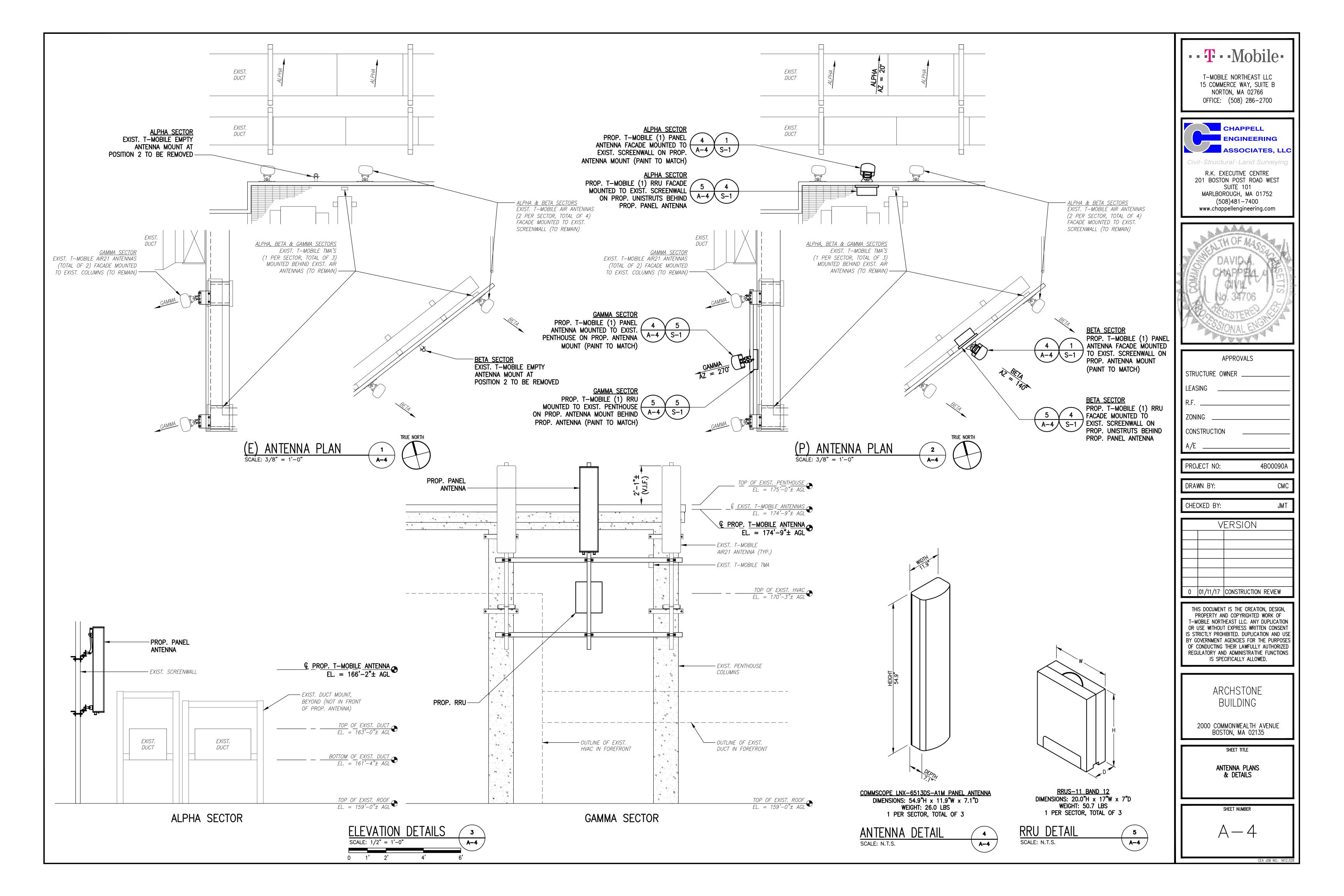
EXISTING EQUIPMENT SPACE REQUIREMENTS WILL NOT CHANGE

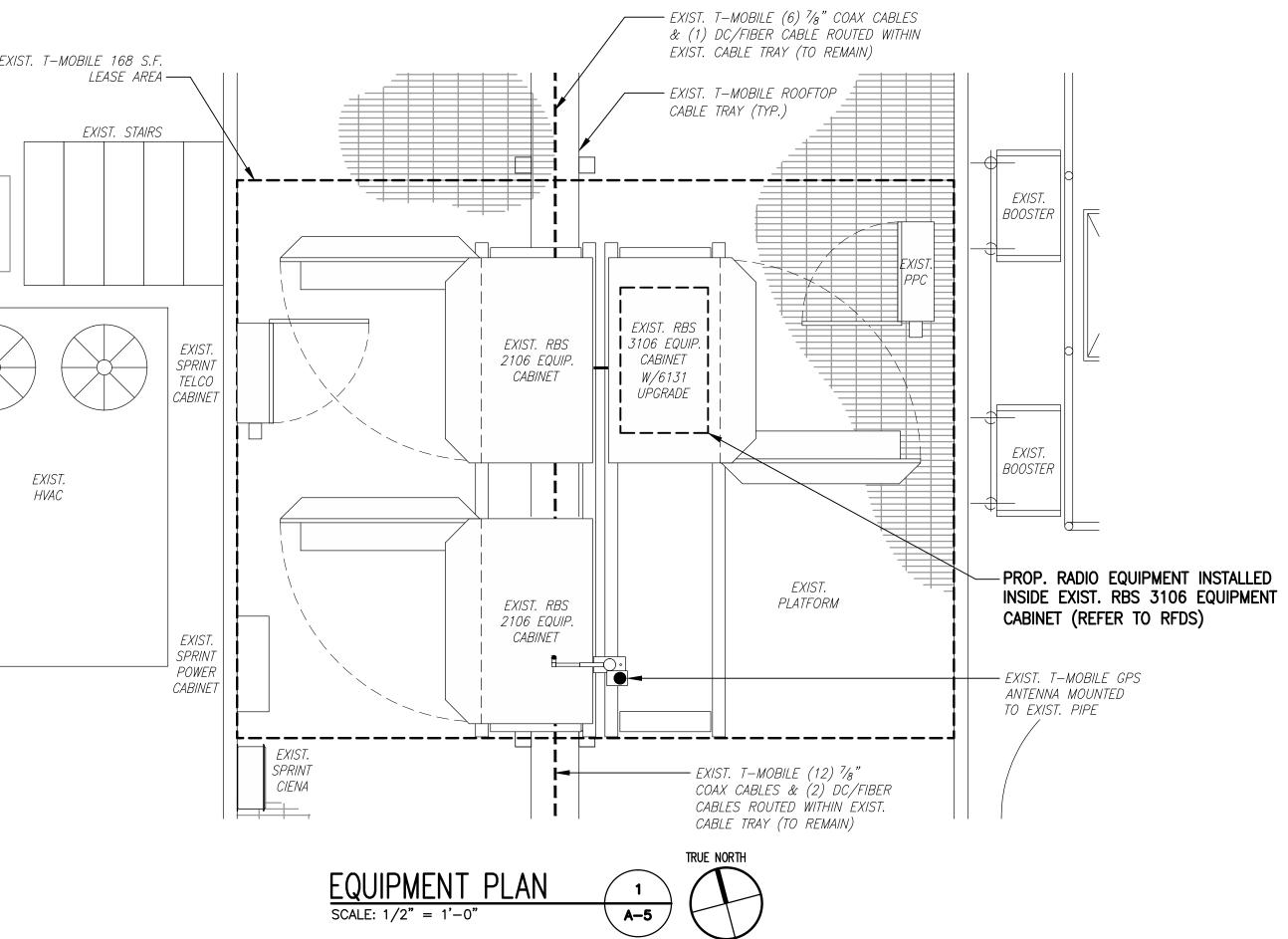
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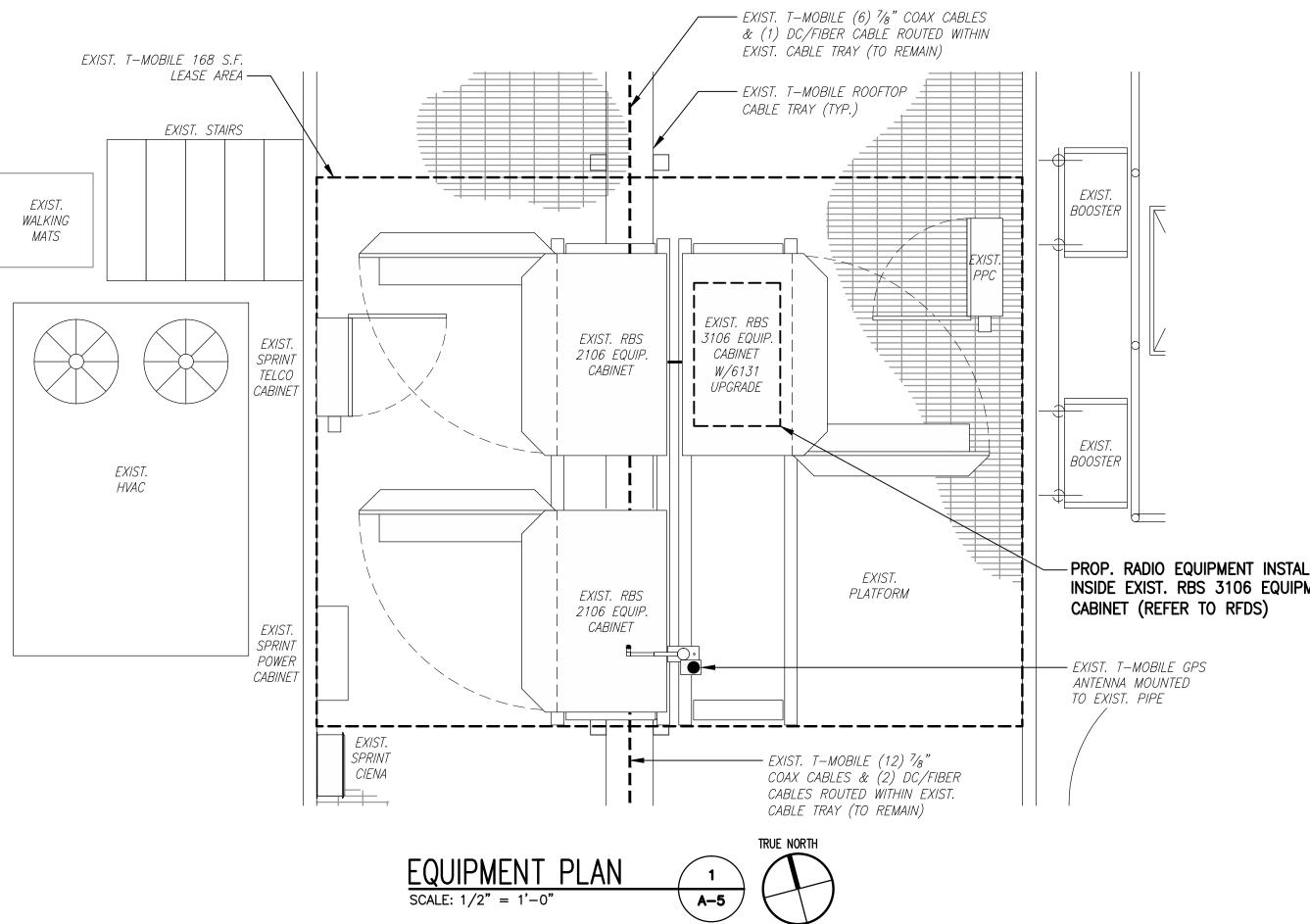
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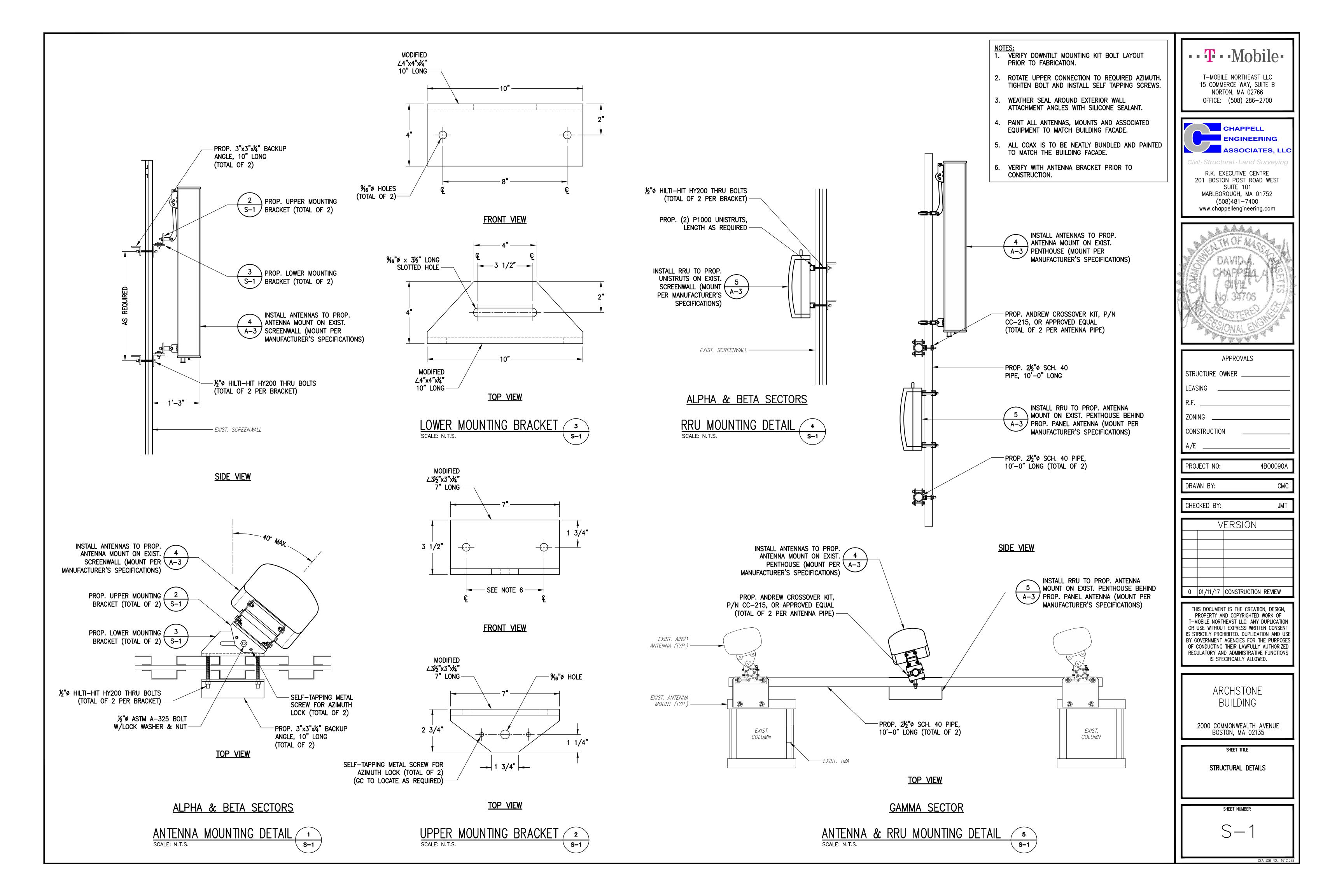


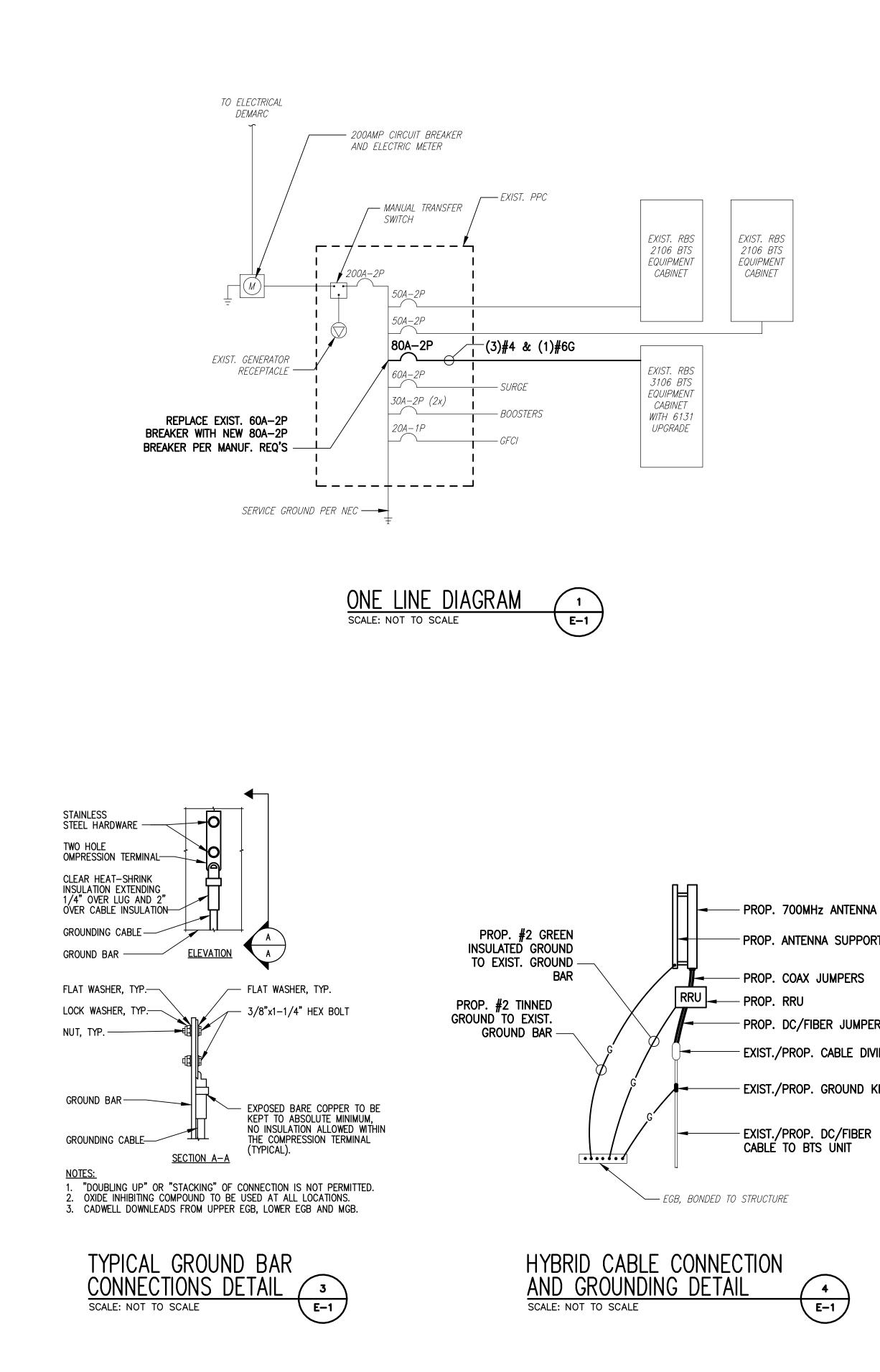


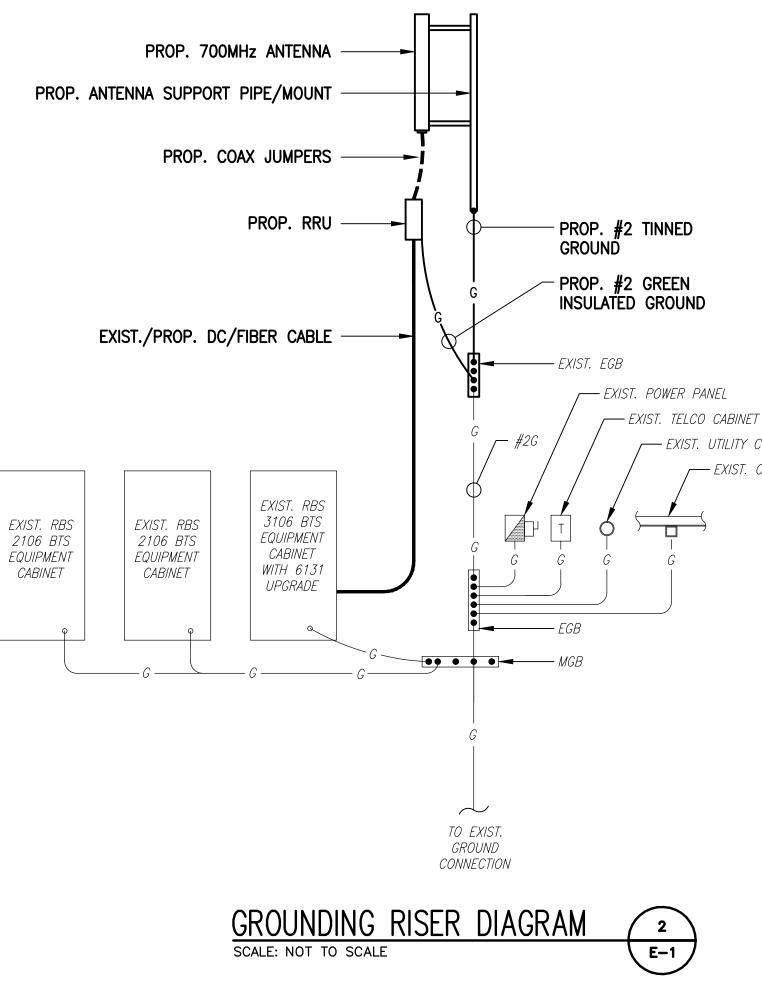




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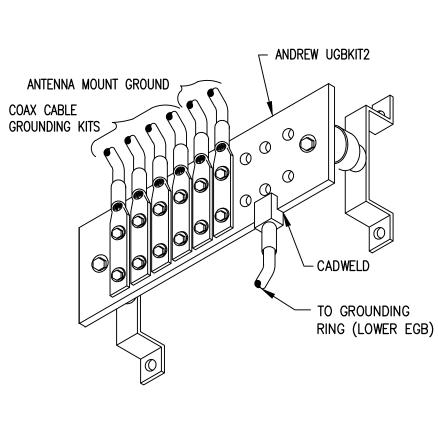




ELECTRICAL AND GROUNDING NOTES

- AND LOCAL CODES.
- 2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
- PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
- INSPECTIONS.
- CONDUITS.
- 6. BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
- 7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THININSULATION.
- MEASURING TAPE AT EACH END.
- 11. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
- 12. PPC SUPPLIED BY PROJECT OWNER.
- ACCORDANCE WITH "T-MOBILE BTS SITE GROUNDING STANDARDS".
- OWNER. SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
- BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
- GROUNDING RING.
- TO ALL LOCATIONS.
- 19. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
- MINIMUM RESISTANCE REQUIRED.
- RECORD RESULTS FOR PROJECT CLOSE OUT.

- PROP. ANTENNA SUPPORT PIPE/MOUNT
- PROP. DC/FIBER JUMPERS
- EXIST./PROP. CABLE DIVIDER
- EXIST./PROP. GROUND KIT





— EXIST. UTILITY CONDUITS — EXIST. CABLE TRAYS

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE

3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO

4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF

5. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC

8. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY. 9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT

10. WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.

13. GROUNDING SHALL COMPLY WITH NEC ART. 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTNING PROTECTION SHALL BE DONE IN

14. GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT

15. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 16. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW

17. 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 18. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND

20. 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. 21. CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMNS

22. CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE- TO-FAULT MEASUREMENTS (SWEEP TESTS) AND

•	T-MOBILE NORTHEAST LLC 15 COMMERCE WAY, SUITE B NORTON, MA 02766
	OFFICE: (508) 286-2700
	CHAPPELL ENGINEERING ASSOCIATES, LLC ASSOCIATES, LLC ASSOCIATE
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STRU	JCTURE OWNER
LEAS	SING
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Photographic Simulation Package

Proposed Upgrade to Existing Wireless Telecommunications Facility:

4BO0090A Archstone Building 2000 Commonwealth Avenue Boston, MA 02135

- proposed changes to existing Rooftop Mount Antenna Structure Revised Per LE 01-06-17

- documentation photographs taken 10/30/16

Simulation package prepared by:

Virtual Site Simulations, LLC 9 walts way Narragansett, Rhode Island 02882

www.VirtualSiteSimulations.com

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













Proposed Upgrade to Existing Wireless Telecommunications Facility:

4BO0090A Archstone Building 2000 Commonwealth Avenue Boston, MA 02135

Legend:



Photo Documentation location

1000 Ft Radius

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VSS





Photo	# Location	Gps Co	ordinates	Distance to si	e Orientatior	n Bearing to	site Visibility
1	Comm Ave East	42.33878	-71.15517	+/- 0.18 Mil	es West	285.57	Year Round
Site:	4BO0090A Archstone Build	ing		\square		SED .	
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Photo #	Location	Gps Co	ordinates	Distance to site	Orientation	Bearing to site	Visibility
2	Randor @ Kirkwood Rd	42.34072	-71.15652	+/- 0.13 Miles	North West	222.45	Year Round
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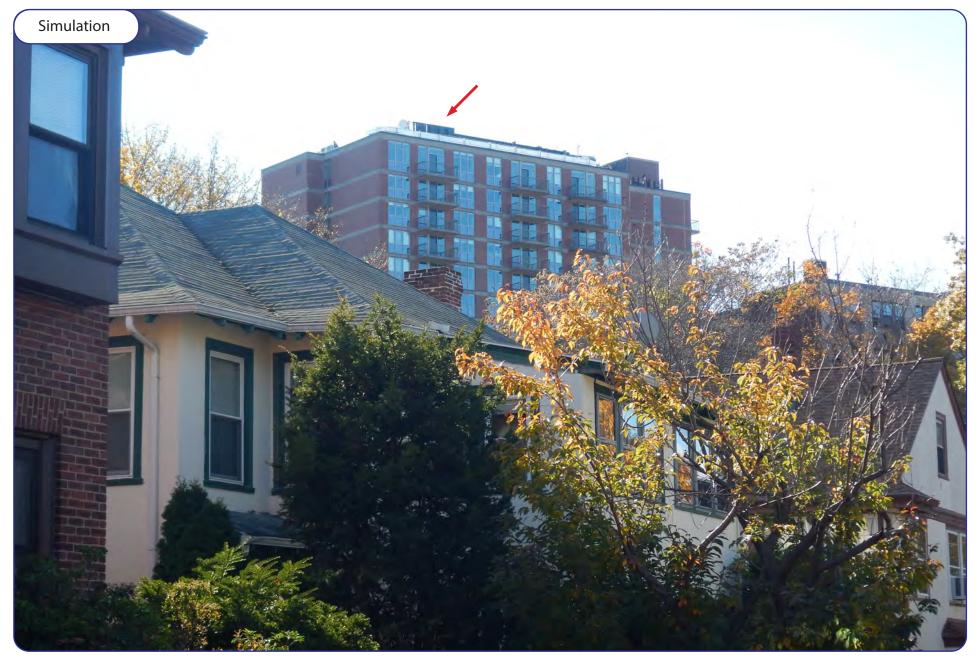


Photo #	Location	Gps Co	ordinates	Distance to site	Orientation	Bearing to site	Visibility
2	Randor @ Kirkwood Rd	42.34072	-71.15652	+/- 0.13 Miles	North West	222.45	Year Round
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Photo #	Location	Gps Co	ordinates	Distance to site	Orientation	Bearing to site	Visibility
4	Evergreen Cemetery	42.33906	-71.16170	+/- 0.16 Miles	East	80.5	Year Round
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Photo #	Location	Gps Co	ordinates	Distance to site	Orientation	Bearing to site	Visibility
4	Evergreen Cemetery	42.33906	-71.16170	+/- 0.16 Miles	East	80.5	Year Round
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Site: 4BO0090A Archstone Building

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Site:	4BO0090A	Archstone	Building

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