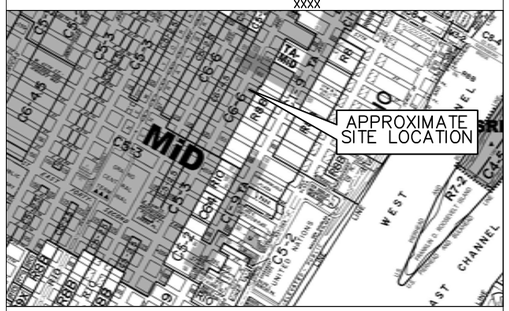
CARRIER

ANY AVENUE, ANY CITY, ANY STATE, ANY ZIP
SITE ID#: XXXXXXX



PLOT PLAN

STORIES: X HEIGHT: XX'
OCCUPANCY CLASS:
XXX-XXXXXXX
CONSTRUCTION CLASS:
XXX-XXXXXXX
MULTIPLE DWELLING CLASSIFICATION:
XXXX



ZONING MAP



FIRM MAP

ZONE– ZONE X
MAP # XXXXXXX
MAP REVISED X/XX/XX

FDNY DRAWINGS

DRAWING TITLES

DWG.	DWG. TITLE	DWG.	DWG. TITLE
FDNY-1	TITLE SHEET		
FDNY-2	EXISTING CONDITIONS PLAN		
FDNY-3	504 COMPLIANCE SHEET		
FDNY-4	VARIANCE PLAN		
FDNY-5	SMALL ROOF PLAN AND PHOTOS		
FDNY-6	SMALL ROOF PLAN AND PHOTOS		
FDNY-7	AERIAL PLAN AND TRUCK ACCESS		

LEGAL DESCRIPTION:

BLOCK: XXXXXXX
LOT: XXXXXXX
BIN#: XXXXXXX
ZONE: XXXXXXX
MAP: XXXXXXX

PROJECT INFORMATION:

SITE ADDRESS:
ANY AVENUE, ANY CITY
ANY STATE, ANY ZIP

STRUCTURE HEIGHT:
±XX'

PROJECT DIRECTORY:

PROPERTY OWNER:
XXXXXXX

PROPERTY CONTACT:
T.B.D.

UTILITY COMPANY:
XXXXXXX
XXXXXXX

APPLICANT:
XXXXXXX
XXXXXXX
XXXXXXX

CONSTRUCTION MANAGER:
T.B.D.

RF ENGINEER:
XXXXXXX

SAC REPRESENTATIVE:
XXXXXXX

REV.	DATE	REVISION DESCRIPTION
0	x/xx/xx	ISSUED FOR REVIEW

CARRIERS NAME

ENGINEERS INFORMATION

JOB#:
XXXXXXX

SITE I.D.:
XXXXXXX

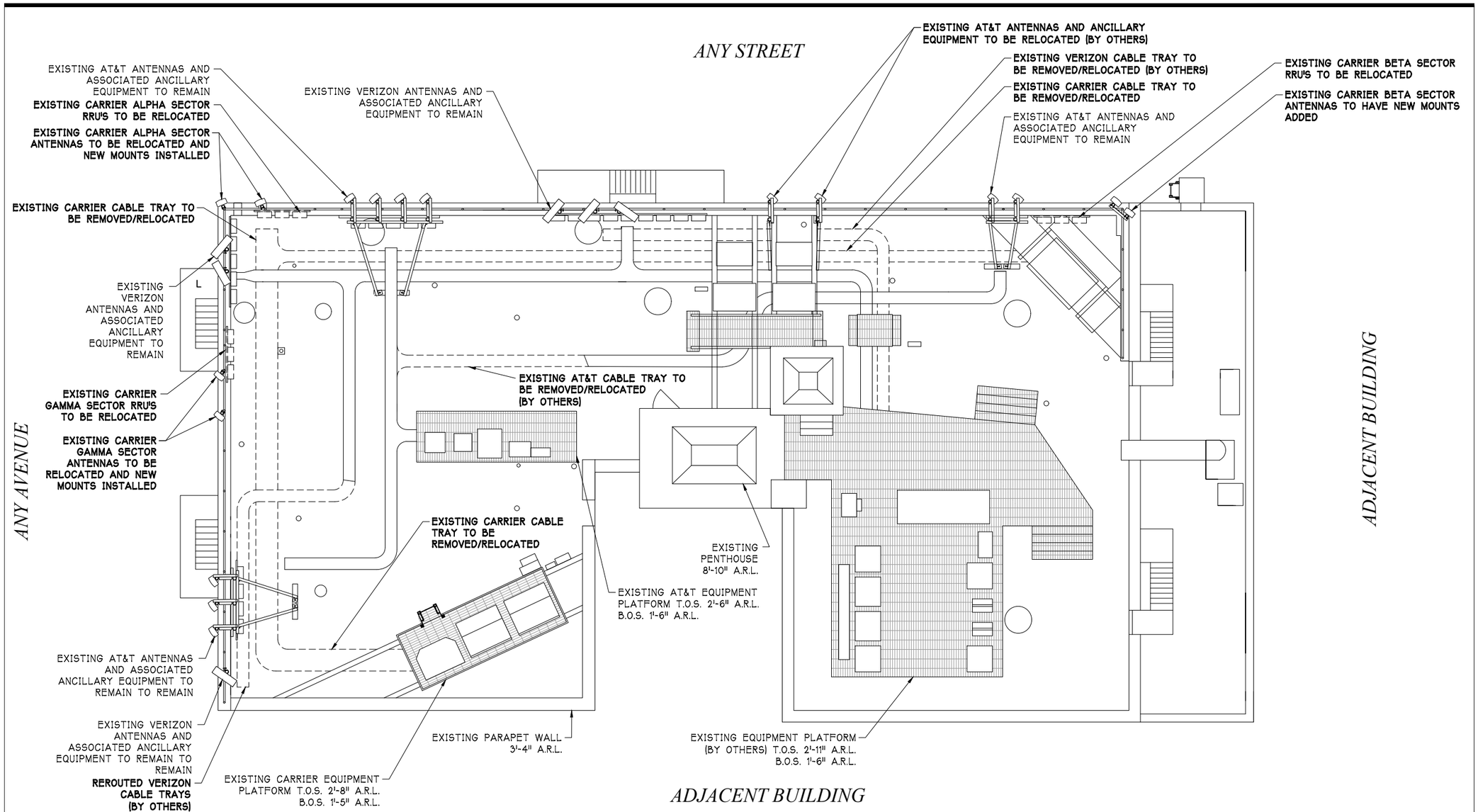
DESIGN TYPE:
FDNY DRAWINGS

SITE INFORMATION:
1234 ANY AVENUE
ANY CITY, ANY STATE, ANY ZIP

DRAWING TITLE:
TITLE SHEET

DATE:	X/X/XXXX
PROJECT NO.:	XXXXXXX
DRAWN BY:	CDC
CHECKED BY:	XX

DRAWING NO.
FDNY-1



NORTH

1 / FDNY-2 EXISTING CONDITIONS PLAN

11x17 SCALE: 3/32" = 1'-0"
24x36 SCALE: 3/16" = 1'-0"

-4 0 4 8 16

11x17 SCALE: 3/32" = 1'-0"
22x34 SCALE: 3/16" = 1'-0"

REV.	DATE	REVISION DESCRIPTION
0	x/xx/xx	ISSUED FOR REVIEW

CARRIERS NAME

ENGINEERS INFORMATION

JOB#: XXXXXXX

SITE I.D.: XXXXXXX

DESIGN TYPE: FDNY DRAWINGS

SITE INFORMATION:
1234 ANY AVENUE
ANY CITY, ANY STATE, ANY ZIP

DRAWING TITLE: EXISTING CONDITIONS PLAN

DATE:	X/X/XXXX
PROJECT NO.:	XXXXXXX
DRAWN BY:	CDC
CHECKED BY:	XX
DRAWING NO.	FDNY-2

NOTES PER NYC FIRE CODE SECTION 504.4
(ROOFTOP ACCESS & OBSTRUCTIONS)

504.4.1 ROOFTOP ACCESS. ACCESS TO BUILDING ROOFTOPS SHALL BE PROVIDED AS FOLLOWS:

(1) 1. FOR EACH 12 LINEAR FEET (3658 mm) OF BUILDING PERIMETER ACCESSIBLE FROM THE FRONTAGE SPACE OF THE BUILDING AND FROM ANY OTHER EXPOSURE ACCESSIBLE TO FIRE APPARATUS, A MINIMUM CLEARANCE OF 6 FEET (1829 mm) IN WIDTH AND 6 FEET (1829 mm) IN DEPTH FROM ANY OBSTRUCTION SHALL BE PROVIDED AT THE PARAPET WALL OR OTHER PERIMETER OF THE ROOFTOP. WHERE THE BUILDING PERIMETER IS 24 LINEAR FEET (7315 mm) OR GREATER, BUT LESS THAN 36 LINEAR FEET (10973 mm), THE REQUIRED CLEARANCE OPENINGS SHALL BE SEPARATED BY A DISTANCE OF NOT LESS THAN 12 LINEAR FEET (3658 mm). WHERE THE BUILDING PERIMETER IS 36 LINEAR FEET (10973 mm) OR GREATER, THE REQUIRED CLEARANCE OPENINGS MAY BE CONTIGUOUS, PROVIDED, HOWEVER, THAT SUCH CONTIGUOUS OPENINGS SHALL NOT EXCEED 12 LINEAR FEET (3658 mm) AND SHALL BE SEPARATED FROM OTHER REQUIRED CLEARANCE OPENINGS BY A DISTANCE OF NOT LESS THAN 12 LINEAR FEET (3658 mm).

(2) 2. MINIMUM CLEARANCE OF 6 FEET (1829 mm) IN ALL DIRECTIONS SHALL BE PROVIDED FROM EACH DOOR OPENING ONTO A ROOFTOP FROM A DWELLING UNIT, STAIRWAY, BULKHEAD, OR OTHER OCCUPIED SPACE OR MEANS OF EGRESS, AS MEASURED FROM THE DOOR HINGE.

(3) 3. A MINIMUM CLEARANCE OF 3 FEET (914 mm) IN ALL DIRECTIONS SHALL BE PROVIDED FROM ANY FIRE ESCAPE OR ROOFTOP ACCESS LADDER, AS MEASURED FROM EACH SIDE OF THE LADDER OR LANDING.

504.4.2 ROOFTOP OBSTRUCTIONS. UNOBSTRUCTED SPACE SHALL BE PROVIDED ON ROOFTOPS SUFFICIENT TO ALLOW FIREFIGHTING OPERATIONS, AS FOLLOWS:

(4) 1. A CLEAR PATH OF NOT LESS THAN 6 FEET (1829 mm) HORIZONTAL WIDTH AND 9 FEET (2743 mm) IN HEIGHT SHALL BE PROVIDED FROM THE FRONT OF THE BUILDING TO THE REAR OF THE BUILDING AND FROM ONE SIDE OF THE BUILDING TO THE OTHER, EXCEPT THAT A CONDUIT OR PIPE IN COMPLIANCE WITH THE REQUIREMENTS OF THIS SECTION MAY CROSS SUCH PATH. SUCH CLEAR PATH SHALL BE ACCESSIBLE FROM EACH POINT OF THE ROOFTOP ACCESS FROM WHICH CLEARANCE IS REQUIRED PURSUANT TO SECTION 504.4.1.

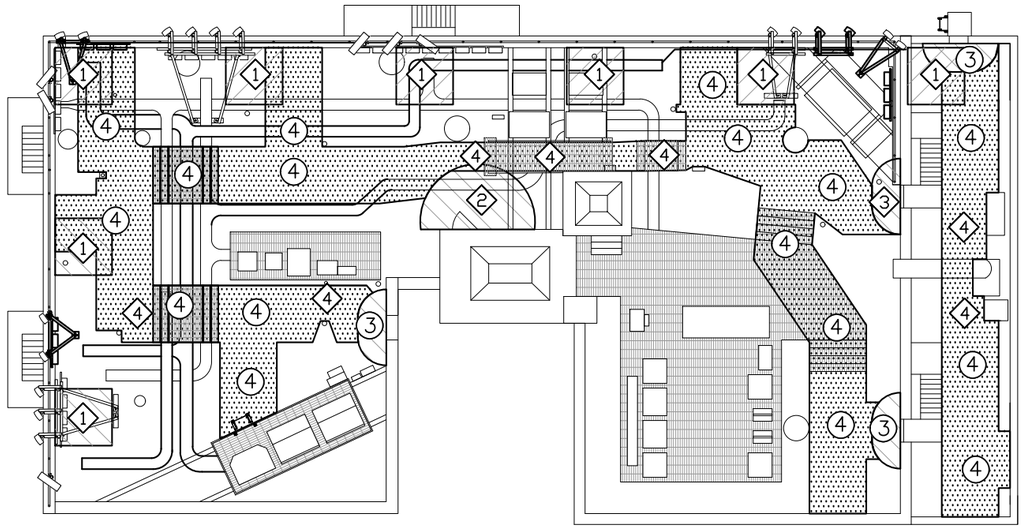
NOTE:
SITE IS NOT COMPLIANT WITH FDNY CODES (FC504.4) AND A VARIANCE (PER RCNY104-04 'MODIFICATION OF RULES') MUST BE OBTAINED BY CARRIER PRIOR TO ANY CONSTRUCTION.

FDNY VARIANCE REQUIRED

LEGEND	
(#)	COMPLIANT
◇#	NON-COMPLIANT

EAST 52ND STREET

LEXINGTON AVENUE



ADJACENT BUILDING

ADJACENT BUILDING

NORTH

1 / FDNY-3 504 COMPLIANCE PLAN
11x17 SCALE: 1/16" = 1'-0"
24x36 SCALE: 1/8" = 1'-0"

4 0 1 4 8 16
11x17 SCALE 1/16" = 1'-0"
22x34 SCALE 1/8" = 1'-0"

REV.	DATE	REVISION DESCRIPTION
0	x/xx/xx	ISSUED FOR REVIEW

CARRIERS NAME

ENGINEERS INFORMATION

JOB#: XXXXXXX

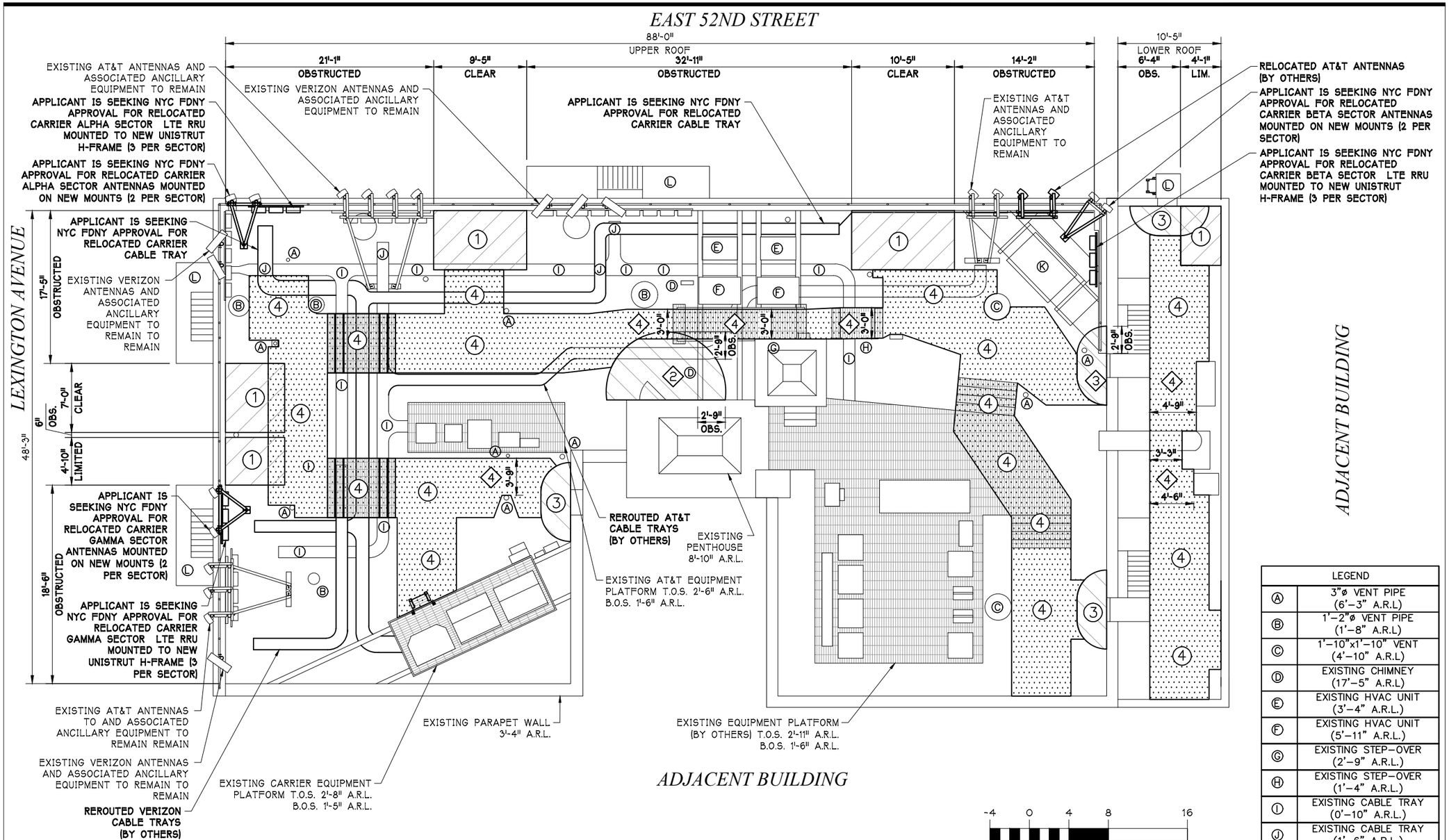
SITE I.D.: XXXXXXX

DESIGN TYPE: FDNY DRAWINGS

SITE INFORMATION:
1234 ANY AVENUE
ANY CITY, ANY STATE, ANY ZIP

DRAWING TITLE: 504 COMPLIANCE PLAN

DATE:	X/X/XXXX
PROJECT NO.:	XXXXXXX
DRAWN BY:	CDC
CHECKED BY:	XX
DRAWING NO.	FDNY-3



LEGEND	
Ⓐ	3"ø VENT PIPE (6'-3" A.R.L)
Ⓑ	1'-2"ø VENT PIPE (1'-8" A.R.L)
Ⓒ	1'-10"x1'-10" VENT (4'-10" A.R.L)
Ⓓ	EXISTING CHIMNEY (17'-5" A.R.L)
Ⓔ	EXISTING HVAC UNIT (3'-4" A.R.L.)
Ⓕ	EXISTING HVAC UNIT (5'-11" A.R.L.)
Ⓖ	EXISTING STEP-OVER (2'-9" A.R.L.)
Ⓗ	EXISTING STEP-OVER (1'-4" A.R.L.)
Ⓘ	EXISTING CABLE TRAY (0'-10" A.R.L.)
Ⓙ	EXISTING CABLE TRAY (1'-6" A.R.L.)
Ⓚ	EXISTING HVAC UNIT (12'-0" A.R.L.)
Ⓛ	FIRE ESCAPE

FDNY COMPLIANCE TABLE

PER NYC FIRE CODE SECTION 504
(ACCESS TO BUILDINGS AND ROOFS)

LABEL	FDNY CODE REQUIREMENT	FDNY COMPLIANCE	COMMENT
①	6 FT. WIDE PERIMETER ACCESS OPENINGS	NON-COMPLIANT	SEE NOTE 1
②	ROOFTOP DOOR OPENING CLEARANCE	NON-COMPLIANT	SEE NOTE 2
③	FIRE ESCAPE CLEARANCE	NON-COMPLIANT	SEE NOTE 3
④	6 FT. WIDE CLEAR PATH	NON-COMPLIANT	SEE NOTE 4
⑤	CONDUIT / TRAY < 12"	NON-COMPLIANT	SEE NOTE 4

LEGEND	
(#)	COMPLIANT
⟨#⟩	NON-COMPLIANT

NORTH

1 / FDNY-4 VARIANCE PLAN
11x17 SCALE: 3/32" = 1'-0"
24x36 SCALE: 3/16" = 1'-0"

-4 0 4 8 16
11x17 SCALE: 3/32" = 1'-0"
22x34 SCALE: 3/16" = 1'-0"

FDNY MODIFICATION VARIANCE TABLE

STREET	REQUIRED 6 FT. PERIMETER ACCESS OPENINGS	REQUIRED PERIMETER ACCESS	TOTAL STREET FRONTAGE	OBSTRUCTED PERIMETER DISTANCE (LINEAR FT.)	AVAILABLE PERIMETER ACCESS OPENINGS (LINEAR FT.)
EAST 52ND ST.	5	30'-0"	98'-5"±	74'-1"	19'-10"+4'-1"LIMITED (SEE NOTE 1)
LEXINGTON AVE.	3	18'-0"	48'-3"±	36'-5"	7'-0"+4'-10" LIMITED (SEE NOTE 1)

NOTES:

1. AVAILABLE PERIMETER ACCESS DOES NOT MATCH REQUIRED FDNY STANDARD.
2. THERE IS A ROOFTOP ACCESS DOOR PRESENT AND IT IS NON-COMPLIANT DUE TO EXISTING PLATFORM.
3. THERE ARE FOUR FIRE ESCAPES PRESENT. THREE ARE COMPLAINT. THE OTHER ONE IS NON-COMPLIANT DUE TO EXISTING HVAC PLATFORM.
4. THE CLEAR PATH FROM "NORTH-TO-SOUTH" IS NON-COMPLIANT DUE TO EXISTING PLATFORM. THE "EAST-TO-WEST" CLEAR PATH IS NON-COMPLIANT DUE TO EXISTING PLATFORM.

REV.	DATE	REVISION DESCRIPTION
0	x/xx/xx	ISSUED FOR REVIEW

CARRIERS NAME

ENGINEERS INFORMATION

JOB#: XXXXXXX

SITE I.D.: XXXXXXX

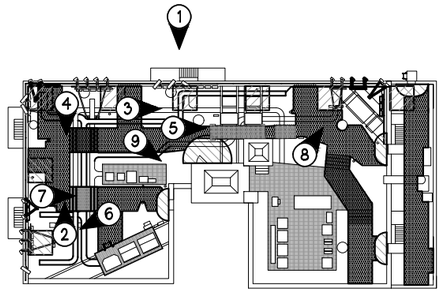
DESIGN TYPE: FDNY DRAWINGS

SITE INFORMATION:
1234 ANY AVENUE
ANY CITY, ANY STATE, ANY ZIP

DRAWING TITLE: VARIANCE PLAN

DATE:	X/X/XXXX
PROJECT NO.:	XXXXXXX
DRAWN BY:	CDC
CHECKED BY:	XX

DRAWING NO. FDNY-4



LEGEND:

(X) ➤ PHOTO # AND DIRECTION

NORTH

1 / FDNY-5 SMALL ROOF PLAN

11x17 SCALE: NOT TO SCALE
24x36 SCALE: NOT TO SCALE



PHOTO #1
VIEW LOOKING AT NON-COMPLIANT
PERIMETER ACCESS OPENING

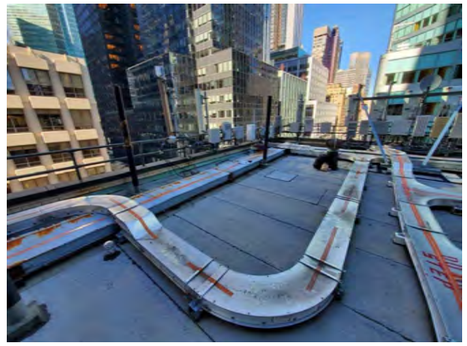


PHOTO #2
VIEW LOOKING AT NON-COMPLIANT
PERIMETER ACCESS OPENING

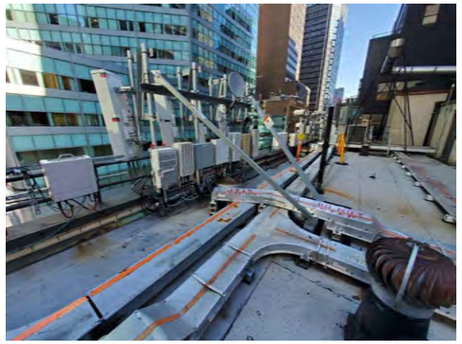


PHOTO #3
VIEW LOOKING AT NON-COMPLIANT
PERIMETER ACCESS OPENING

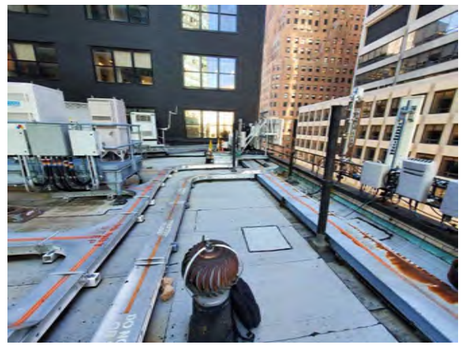


PHOTO #4
VIEW LOOKING AT NON-COMPLIANT
PERIMETER ACCESS OPENING



PHOTO #5
VIEW LOOKING AT NON-COMPLIANT
CLEAR PATH



PHOTO #6
VIEW LOOKING AT NON-COMPLIANT
PERIMETER ACCESS OPENING

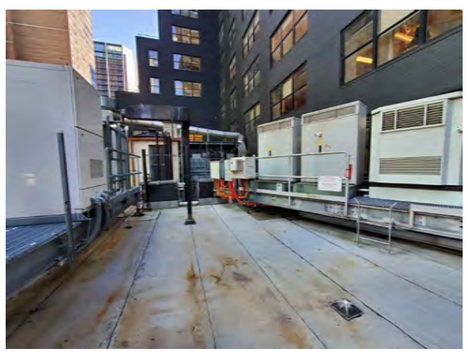


PHOTO #7
VIEW LOOKING AT NON-COMPLIANT
CLEAR PATH

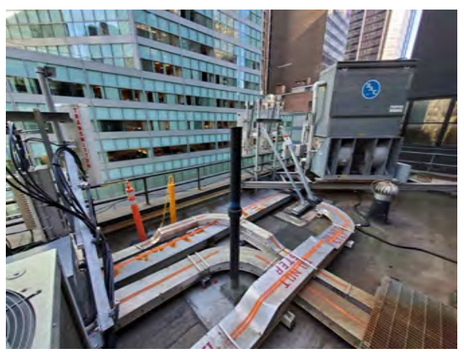


PHOTO #8
VIEW LOOKING AT NON-COMPLIANT
PERIMETER ACCESS AND CLEAR PATH



PHOTO #9
VIEW LOOKING AT NON-COMPLIANT
DOOR OPENING CLEARANCE

2 / FDNY-5 PICTURES OF OBSTRUCTIONS

11x17 SCALE: NOT TO SCALE
24x36 SCALE: NOT TO SCALE

REV.	DATE	REVISION DESCRIPTION
0	x/xx/xx	ISSUED FOR REVIEW

CARRIERS NAME

ENGINEERS INFORMATION

JOB#: XXXXXXX

SITE I.D.: XXXXXXX

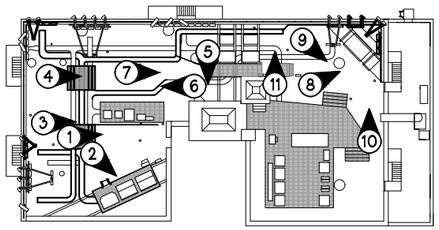
DESIGN TYPE: FDNY DRAWINGS

SITE INFORMATION:
1234 ANY AVENUE
ANY CITY, ANY STATE, ANY ZIP

DRAWING TITLE: SMALL ROOF PLAN AND PHOTOS

DATE:	X/X/XXXX
PROJECT NO.:	XXXXXXX
DRAWN BY:	CDC
CHECKED BY:	XX

DRAWING NO.: **FDNY-5**



LEGEND:

(X) ➤ PHOTO # AND DIRECTION

NORTH

1 FDNY-6 SMALL ROOF PLAN

11x17 SCALE: NOT TO SCALE

24x36 SCALE: NOT TO SCALE



PHOTO #1



PHOTO #2



PHOTO #3

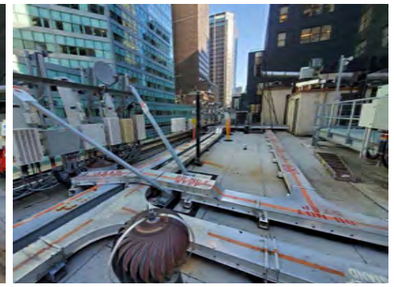


PHOTO #4



PHOTO #5



PHOTO #6



PHOTO #7

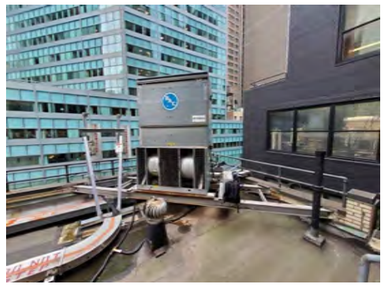


PHOTO #8

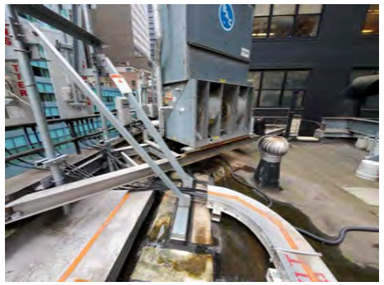


PHOTO #9



PHOTO #10



PHOTO #11

2 FDNY-6 PICTURES OF ROOFTOP

11x17 SCALE: NOT TO SCALE

24x36 SCALE: NOT TO SCALE

REV.	DATE	REVISION DESCRIPTION
0	x/xx/xx	ISSUED FOR REVIEW

CARRIERS NAME

ENGINEERS INFORMATION

JOB#: XXXXXXX

SITE I.D.: XXXXXXX

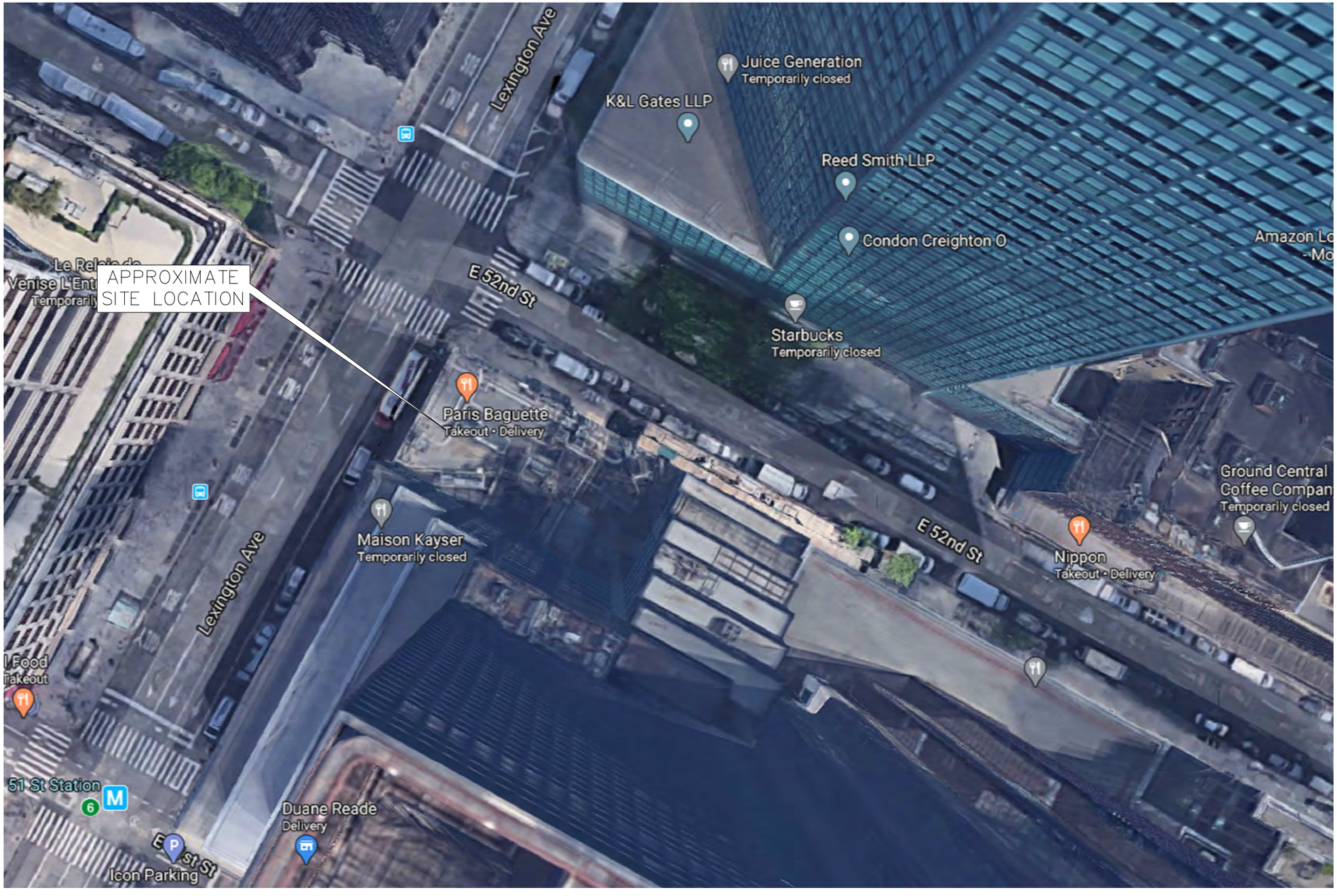
DESIGN TYPE: FDNY DRAWINGS

SITE INFORMATION:
1234 ANY AVENUE
ANY CITY, ANY STATE, ANY ZIP

DRAWING TITLE: SMALL ROOF PLAN AND PHOTOS

DATE:	X/X/XXXX
PROJECT NO.:	XXXXXXX
DRAWN BY:	CDC
CHECKED BY:	XX

DRAWING NO.: **FDNY-6**



AERIAL OF THE AREA SURROUNDING THE SUBJECT BUILDING

FIRE TRUCK ACCESS LEXINGTON AVENUE AND EAST 52ND STREET

REV.	DATE	REVISION DESCRIPTION
0	x/xx/xx	ISSUED FOR REVIEW

CARRIERS
NAME

ENGINEERS
INFORMATION

JOB#:
XXXXXXX

SITE I.D.:
XXXXXXX

DESIGN TYPE:
FDNY
DRAWINGS

SITE INFORMATION:
1234 ANY AVENUE
ANY CITY, ANY STATE, ANY ZIP

DRAWING TITLE:
AERIAL PLAN
AND TRUCK ACCESS

DATE:	X/X/XXXX
PROJECT NO.:	XXXXXXX
DRAWN BY:	CDC
CHECKED BY:	XX

DRAWING NO.
FDNY-7

CARRIER

ANY AVENUE, ANY CITY, ANY STATE, ANY ZIP
SITE ID#: XXXXXXX

SITE INFORMATION

TOWER OWNER:	XXXXXXX XXXXXXX XXXXXXX
SITE ADDRESS:	ANY ROAD ANY CITY, ANY STATE, ZIP
COUNTY:	ANY COUNTY
LATITUDE: LONGITUDE:	XXXXXXX" -XXXXXXX"
GROUND ELEVATION:	XXXX' AMSL
OCCUPANCY TYPE:	UNMANNED
ZONING JURISDICTION: ZONING CODE: PARCEL NUMBER:	XXXXXXX XXXXXXX XXXXXXX
POWER PROVIDER: TELCO PROVIDER:	XXXXXXX XXXXXXX

CONTACT INFORMATION

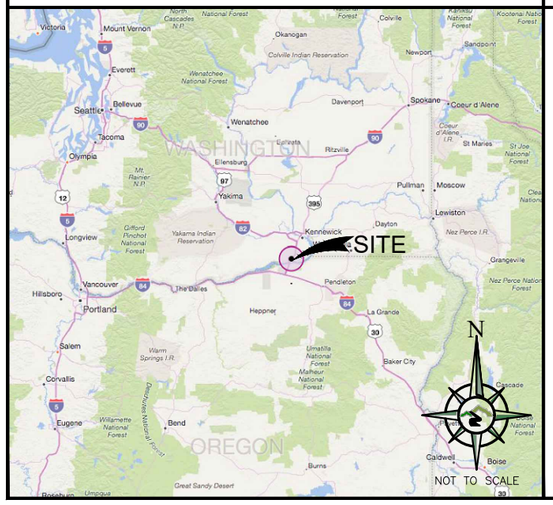
A&E SERVICES:
XXXXXXX
XXXXXXX
XXXXXXX
XXXXXXX
XXXXXXX
XXXXXXX

ENGINEERING SERVICES:
XXXXXXX
XXXXXXX
XXXXXXX
XXXXXXX
XXXXXXX
XXXXXXX

APPLICANT:
XXXXXXX
XXXXXXX
XXXXXXX
XXXXXXX
XXXXXXX
XXXXXXX

APPLICANT:
XXXXXXX
XXXXXXX
XXXXXXX
XXXXXXX
XXXXXXX
XXXXXXX

VICINITY MAP



SITE PHOTO



DRIVING DIRECTIONS

DIRECTIONS FROM AIRPORT:

XXXXXXX

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV
T-1	TITLE SHEET	
GN-1	GENERAL NOTES	
GN-2	GENERAL NOTES	
C-1	SITE PLAN	
C-2	ELEVATION	
C-3	ANTENNA PLANS	
C-4	EQUIPMENT DETAILS	
C-5	EQUIPMENT DETAILS	
E-1	GROUNDING PLANS	
E-2	GROUNDING DETAILS	

SCOPE OF WORK

THE PROJECT CONSISTS OF THE REMOVAL OF (3) EXISTING PANEL ANTENNAS. THE INSTALLATION OF (9) NEW PANEL ANTENNAS, (1) COVP, (3) FRIJ (1) PER SECTOR, (3) FHFB (1 PER SECTOR), (1) HYBRID CABLE, AND THE INSTALLATION OF (1) LARGE COVP, (3) FBBC, (2) FSMF IN AN EXISTING FCOA EQUIPMENT CABINET.

APPLICABLE CODES

BUILDING CODE 2015 IBC
ELECTRICAL CODE 2014 NEC

CARRIER

TOWER OWNER

ENGINEERING COMPANY

LICENSE #: N/A

REVISIONS

REV	DATE	DESCRIPTION	INT
A	XX/XX/XX	ISSUED FOR REVIEW 90%	XXX

PRELIMINARY NOT FOR CONSTRUCTION

SITE INFORMATION

CARRIER #: XXXXXXX

ATC #: XXXXXXXX

ANY AVENUE
ANY CITY, ANY STATE, ZIP

SHEET TITLE:

TITLE SHEET

SHEET NUMBER:

T-1

GENERAL NOTES:

1. THE CONTRACTOR'S SCOPE OF WORK SHALL INCLUDE ALL ITEMS DEFINED IN THE CONTRACT DOCUMENTS. THE CONTRACT DOCUMENTS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING: THE CONTRACT, SPECIFICATIONS AND CONSTRUCTION DRAWINGS.
2. ALL EQUIPMENT SUPPLIED BY THE OWNER SHALL BE PICKED UP BY THE CONTRACTOR AT THE APPROPRIATE WAREHOUSE.
3. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL WORK.
4. THE CONTRACTOR SHALL PROVIDE ON-SITE SUPERVISION AT ALL TIMES WHILE THE WORK IS BEING PERFORMED AND SHALL DIRECT ALL WORK, USING HIS BEST SKILL AND ATTENTION. HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, PROCEDURES AND SEQUENCES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
5. THE CONTRACTOR SHALL VISIT THE JOB SITE TO REVIEW THE SCOPE OF WORK AND EXISTING JOB SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO, MECHANICAL, ELECTRICAL SERVICE AND OVERALL COORDINATION. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO SUBMITTING HIS BID. ANY DISCREPANCIES, CONFLICTS OR OMISSIONS, ETC., SHALL BE REPORTED TO THE CARRIER CONSTRUCTION SUPERVISOR BEFORE PROCEEDING WITH THE WORK.
6. THE CONTRACTOR SHALL PROTECT ALL AREAS FROM DAMAGE WHICH MAY OCCUR DURING CONSTRUCTION. ANY DAMAGE TO NEW AND EXISTING CONSTRUCTION, STRUCTURE, LANDSCAPING OR EQUIPMENT SHALL BE IMMEDIATELY REPAIRED OR REPLACED TO THE SATISFACTION OF THE TENANT, BUILDING OWNER OR OWNER'S REPRESENTATIVE AT THE EXPENSE OF THE CONTRACTOR.
7. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES, WHETHER SHOWN HEREON OR NOT, AND TO PROTECT THEM FROM DAMAGE. THE CONTRACTOR SHALL BEAR ALL EXPENSES FOR REPAIR OR REPLACEMENT OF UTILITIES OR OTHER PROPERTY DAMAGED IN CONJUNCTION WITH THE EXECUTION OF WORK.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE SECURITY OF THE SITE WHILE THE JOB IS IN PROGRESS AND UNTIL THE JOB IS COMPLETED.
9. THE CONTRACTOR SHALL PROVIDE TEMPORARY WATER, POWER AND TOILET FACILITIES AS REQUIRED BY THE CITY OR GOVERNING AGENCY.
10. THE CONTRACTOR AND ALL SUBORDINATE CONTRACTORS SHALL COMPLY WITH ALL LOCAL AND STATE REGULATIONS.
11. THE CONTRACTOR SHALL OBTAIN AND PAY FOR PERMITS, LICENSES AND INSPECTIONS NECESSARY FOR PERFORMANCE OF THE WORK AND INCLUDE THOSE IN THE COST OF THE WORK TO CARRIER.
12. FIGURED DIMENSIONS HAVE PRECEDENCE OVER DRAWING SCALE, AND DETAIL DRAWINGS HAVE PRECEDENCE OVER SMALL DRAWINGS. CHECK ACCURACY OF ALL DIMENSIONS IN THE FIELD. UNLESS SPECIFICALLY NOTED, DO NOT FABRICATE ANY MATERIALS OFF SITE, NOR DO ANY CONSTRUCTION UNTIL THE ACCURACY OF DRAWING DIMENSIONS HAVE BEEN VERIFIED AGAINST ACTUAL FIELD DIMENSIONS.
13. THE CONTRACTOR SHALL NOTIFY THE CARRIER CONSTRUCTION SUPERVISOR OF ANY CONFLICTS OR DISCREPANCIES IN THE CONTRACT DOCUMENTS OR FIELD CONDITIONS PRIOR TO EXECUTING THE WORK IN QUESTION.
14. THE CONTRACTOR SHALL NOTIFY THE CARRIER CONSTRUCTION SUPERVISOR IF DETAILS ARE CONSIDERED UNSOUND, UNSAFE, NOT WATERPROOF, OR NOT WITHIN CUSTOMARY TRADE PRACTICE. IF WORK IS PERFORMED, IT WILL BE ASSUMED THAT THERE IS NO OBJECTION TO THE DETAIL. DETAILS ARE INTENDED TO SHOW THE END RESULT OF THE DESIGN. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB CONDITIONS, AND SHALL BE INCLUDED AS PART OF THE WORK.
15. EXISTING ELEVATIONS AND LOCATIONS TO BE JOINED SHALL BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION. IF THEY DIFFER FROM THOSE SHOWN ON THE PLANS, THE CONTRACTOR SHALL NOTIFY THE CARRIER CONSTRUCTION SUPERVISOR SO THAT MODIFICATIONS CAN BE MADE BEFORE PROCEEDING WITH THE WORK.
16. ALL SYMBOLS AND ABBREVIATIONS USED ON THE DRAWINGS ARE CONSIDERED CONSTRUCTION STANDARDS. IF THE CONTRACTOR HAS QUESTIONS REGARDING THEIR EXACT MEANING, THE CARRIER CONSTRUCTION SUPERVISOR SHALL BE NOTIFIED FOR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
17. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BLOCKING, BACKING, FRAMING, HANGERS OR OTHER SUPPORT FOR ALL OTHER ITEMS REQUIRING THE SAME.
18. CITY APPROVED PLANS SHALL BE KEPT IN A PLAN BOX AND SHALL NOT BE USED BY WORKMEN. ALL CONSTRUCTION SETS SHALL REFLECT SAME INFORMATION. AT ALL TIMES THESE ARE TO BE UNDER THE CARE OF THE JOB SUPERINTENDENT.
19. DESIGN DRAWINGS ARE DIAGRAMMATIC ONLY AND SHALL BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION CONDITIONS WILL PERMIT. ANY ERROR, OMISSION, OR DESIGN DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE T -MOBILE CONSTRUCTION SUPERVISOR FOR CLARIFICATION OR CORRECTION BEFORE CONSTRUCTION.
20. AS-BUILTS REQUIREMENTS: DO NOT USE RECORD DOCUMENTS FOR CONSTRUCTION PURPOSES. PROTECT RECORD DOCUMENTS FROM DETERIORATION AND LOSS IN A SECURE, FIRE-RESISTANT LOCATION. PROVIDE ACCESS TO RECORD DOCUMENTS FOR THE CARRIER CONSTRUCTION SUPERVISOR'S REFERENCE DURING NORMAL WORKING HOURS. MAINTAIN A CLEAN, UNDAMAGED SET OF BLUE OR BLACK LINE PRINTS OF CONTRACT DRAWINGS AND SHOP DRAWINGS. MARK THE SET TO SHOW THE ACTUAL INSTALLATION WHERE THE INSTALLATION VARIES SUBSTANTIALLY FROM THE WORK AS ORIGINALLY SHOWN. MARK WHICH DRAWINGS IS MOST CAPABLE OF SHOWING CONDITIONS FULLY AND ACCURATELY. WHERE SHOP DRAWINGS ARE USED, RECORD A CROSS-REFERENCE AT THE CORRESPONDING LOCATION ON THE CONTRACT DRAWINGS. GIVE PARTICULAR ATTENTION TO CONCEALED ELEMENTS THAT WOULD BE DIFFICULT TO MEASURE AND RECORD AT A LATER DATE. MARK RECORD SETS WITH RED ERASABLE PENCIL. USE OTHER COLORS TO DISTINGUISH BETWEEN VARIATIONS IN SEPARATE CATEGORIES OF THE WORK. MARK NEW INFORMATION THAT IS IMPORTANT TO THE OWNER BUT WAS NOT SHOWN ON THE CONTRACT DRAWINGS, DETAILS OR SHOP DRAWINGS. NOTE RELATED CHANGE ORDER NUMBERS WHERE APPLICABLE. NOTE RELATED RECORD DRAWING INFORMATION AND PRODUCT DATA. UPON COMPLETION OF THE WORK, SUBMIT ONE (1) COMPLETE SET OF RECORD DOCUMENTS TO THE CARRIER CONSTRUCTION SUPERVISOR FOR THE OWNER'S RECORDS.

PART I: GENERAL

1.1 SCOPE: CLEARING, GRUBBING, STRIPPING, EROSION CONTROL, SURVEY, LAYOUT, SUB GRADE PREPARATION, FINISH GRADING AND SECURITY FENCE, AS REQUIRED BY CONSTRUCTION DRAWINGS AND DETAIL DRAWINGS.

1.2 REFERENCES
- A. DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS FOR THE STATE IN WHICH THE PROJECT IS LOCATED.
- B. ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS)
- C. OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION)
- D. AASHTO (AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS)

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

1.4 SITE MAINTENANCE AND PROTECTION
- A. PROVIDE ALL NECESSARY JOB SITE MAINTENANCE FROM COMMENCEMENT OF THE WORK UNTIL COMPLETION OF THE CONTRACT.
- B. CONTACT THE ONE-CALL UTILITY LOCATION SERVICE PRIOR TO ANY EXCAVATING ACTIVITIES TO HAVE LOCATIONS OF UNDERGROUND UTILITIES VERIFIED.
- C. AVOID DAMAGE TO THE SITE INCLUDING EXISTING FACILITIES, STRUCTURES, TREES AND SHRUBS DESIGNATED TO REMAIN. TAKE PROTECTIVE MEASURES TO PREVENT EXISTING FACSIMILES THAT ARE NOT DESIGNATED FOR REMOVAL FROM BEING DAMAGED BY THE WORK.
- D. KEEP SITE FREE OF ALL PONDING WATER.
- E. PROVIDE EROSION CONTROL MEASURES IN ACCORDANCE WITH THE DEPARTMENT OF TRANSPORTATION & STATE IN WHICH THE PROJECT IS LOCATED.
- F. PROVIDE AND MAINTAIN ALL TEMPORARY FENCING, BARRICADES, WARNING SIGNALS AND SIMILAR DEVICES NECESSARY TO PROTECT LIFE AND PROPERTY DURING THE ENTIRE PERIOD OF CONSTRUCTION. REMOVE ALL SUCH DEVICES UPON COMPLETION OF THE WORK.

PART II: PRODUCTS

2.1 SUITABLE BACK FILL: EXCAVATED INORGANIC MATERIAL, COHESIVE AND NON-COHESIVE MATERIALS, INCLUDING GRAVEL, SAND, INORGANIC LEAN CLAY, GRAVEL SILT, GRAVEL CLAY, SAND CLAY, SAND SILT OR SILT CLAY MATERIAL FREE FROM FROZEN LUMPS, REFUSE, STONES OR ROCKS LARGER THAN 3-INCHES IN ANY DIMENSION OR OTHER MATERIAL THAT MAY MAKE THE INORGANIC MATERIAL UNSUITABLE FOR BACKFILL OR FILL MATERIAL AS DETERMINED BY THE CARRIER CONSTRUCTION SUPERVISOR AND GEOTECHNICAL ENGINEER.

2.2 POROUS AND NON POROUS EMBANKMENT AND BACK FILL:
- A. OHIO: PER OH DOT, ITEM 203
- B. PENNSYLVANIA: PER SECTION 206, PUBLICATION 408
- C. WEST VIRGINIA: PER WV DOT, SECTION 207, 716

2.3 SELECT STRUCTURAL FILL: GRANULAR FILL MATERIAL FOR USE AROUND AND UNDER STRUCTURES WHERE STRUCTURAL FILL MATERIALS ARE REQUIRED:
- A. OHIO: PER OH DOT, ITEM 304
- B. PENNSYLVANIA: PER PUBLICATION 40B, TYPE 2A
- C. WEST VIRGINIA: PER ASTM 2940-92

2.4 GRANULAR BEDDING AND TRENCH BACK FILL: WELL-GRADED SAND {SW OR SW-SM) AND THE FOLLOWING:
- A. OHIO: PER OH DOT, ITEM 603
- B. PENNSYLVANIA: PER AASHTO #57
- C. WEST VIRGINIA: PER WV DOT SECTION 604

2.5 CRUSHED STONE SURFACE COURSE FOR ACCESS ROAD:
- A. OHIO: PER OH DOT, ITEM 304
- B. PENNSYLVANIA: PER PUBLICATION 40B, TYPE 2A,
- C. WEST VIRGINIA: PER WV DOT, MODIFIED CLASS 1 AGGREGATE PER SECTION 704 OR CRUSHED LIMESTONE PER ASTM 2940-92.

2.6 CRUSHED STONE SUBBASE FOR ACCESS ROAD:
- A. OHIO: MSHTO #57 CRUSHED LIMESTONE
- B. PENNSYLVANIA: MSHTO #57 CRUSHED LIMESTONE
- C. WEST VIRGINIA: AASHTO #57 CRUSHED LIMESTONE

2.7 CRUSHED STONE GRANULAR BASE FOR COMPOUND:
- A. OHIO: MSHTO #57 CRUSHED LIMESTONE
- B. PENNSYLVANIA: PER PUBLICATION 40B, TYPE 2B
- C. WEST VIRGINIA: AASHTO #57 CRUSHED LIMESTONE

2.8 UNSUITABLE MATERIALS: TOP SOIL, HIGH AND MODERATELY PLASTIC SILTS AND CLAY, MATERIAL CONTAINING REFUSE, FROZEN LUMPS, DEMOLISHED BITUMINOUS MATERIAL, VEGETATIVE MATTER, WOOD, STONES IN EXCESS OF 3-INCHES IN ANY DIMENSION AND DEBRIS AS DETERMINED BY THE CONSTRUCTION SUPERVISOR AND CARRIER GEOTECHNICAL ENGINEER. TYPICALLY, THESE WILL BE SOILS CLASSIFIED AS PT, MH, CH, OH, ML OR OL.

2.9 GEOTEXTILE FABRIC: MIRAFI 500X OR APPROVED EQUIVALENT

2.10 PLASTIC MARKING TAPE: SHALL BE ACID- AND ALKALI-RESISTANT POLYETHYLENE FILM, SPECIFICALLY MANUFACTURED FOR MARKING AND LOCATING UNDERGROUND UTILITIES, 6-INCHES WIDE WITH A MINIMUM THICKNESS OF 0.004-INCH. TAPE SHALL HAVE MINIMUM STRENGTH OF 1500 PSI IN BOTH DIRECTIONS AND MANUFACTURED WITH INTEGRAL WIRES, FOIL BACKING OR OTHER MEANS TO ENABLE DETECTION BY A METAL DETECTOR WHEN BURIED UP TO 3 FEET DEEP. THE METALLIC CORE OF THE TAPE SHALL BE ENCASED IN A PROTECTIVE JACKET OR PROVIDED WITH OTHER MEANS TO PROTECT IT FROM CORROSION. TAPE COLOR SHALL BE RED FOR ELECTRIC UTILITIES AND ORANGE FOR TELECOMMUNICATION UTILITIES.

2.11 SECURITY FENCE
- A. PROVIDE AND INSTALL THE GALVANIZED FENCE WITH ASSOCIATED POSTS, RAILS, BRACES, FABRIC, TERMINAL POST, GATES, DROP BAR AND BARBED WIRE. USE APPLICABLE PROVISIONS OF ASTM FOR MATERIALS.
- B. FABRIC SHALL BE HEAVY GALVANIZED CHAIN LINK FENCE, CONFORMING TO ASTM A392 2-INCH MESH 9 GAUGE WIRE (0.148 INCHES IN DIAMETER) WITH THE TOP AND BOTTOM SELVAGES TWISTED AND BARBED.
- C. POSTS
  1. LINE POST FOR FABRIC UP TO 8 FEET HIGH SHALL BE 2-3/8 INCH O.D.
  2. END CORNER, PULL POST AND GATE POST SHALL BE 2-7/8 INCH O.D. ALL POSTS SHALL BE SCHEDULE 40 GALVANIZED STEEL PIPE IN ACCORDANCE WITH ASTM.I A 12D, A570 AND A525. FOR FENCE OVER 8 FEET HIGH, SIZE POST ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- D. TOP RAILS SHALL CONFORM TO 1-1/4 INCH (1.66 INCH O.D.), SCHEDULE 40GALVANIZED STEEL PIPE IN ACCORDANCE WITH ASTM4 A12D.
- E. TENSION WIRE SHALL BE 7 GAUGE U.S. STEEL WIRE GALVANIZED IN ACCORDANCE WITH ASTM A116, COATING CLASS III.
- F. BRACE BANDS, TENSION BANDS AND TENSION BARS SHALL BE FABRICATED OF 1/8 INCH BY 7/B INCH GALVANIZED STEEL WITH GALVANIZED STEEL CARRIAGE BOLTS AND NUTS IN ACCORDANCE WITH ASTM4 A123. TENSION BARS SHALL BE 1/4 INCH BY 3/4 INCH GALVANIZED STEEL BAR IN ACCORDANCE WITH ASTM A153.
- G. FABRIC TIES SHALL BE CLASS I GALVANIZED STEEL WIRE NO LESS THAN 9 GAUGE.
- H. POST TOPS SHALL BE PRESSED STEEL OR MALLEABLE IRON AND SHALL BE GALVANIZED PER ASTM A15J.
- I. BARBED WIRE SHALL CONSIST OF DOUBLE STRANDED 12 1/2 GAUGE WIRE ASTM A121, CLASS 3 WITH 4-POINT BARBS SPACED 5 INCHES APART. THE TOP 1 FOOT OF THE FENCE SHALL CONSIST OF 3 STRANDS OF BARBED WIRE ATTACHED TO 45 DEGREE ANGLE, HEAVY-PRESSED ARMS CAPABLE OF WITHSTANDING WITHOUT FAILURE 250 POUNDS DOWNWARD PULL AT THE OUTERMOST END OF THE ARM.
- J. GATE MATERIALS, SUCH AS FABRIC, BOLTS, NUTS, TENSION BARS AND BARBED WIRE SHALL BE CONSISTENT WITH FENCE MATERIALS.

PART III: EXECUTION

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

3.2 STRUCTURAL EXCAVATION
- A. FOUNDATION EXCAVATIONS SHALL BE CUT TO FIRM MATERIAL HAVING A SAFE BEARING VALUE OF 3000 PSF AND SHALL BE FREE OF ALL LOOSE AND WET MATERIALS. IF THE BOTTOM OF THE EXCAVATION IS NOT FIRM AND STABLE, OVER-EXCAVATE AN ADDITIONAL 12 INCHES, COMPACT SUB-GRADE AND FILL WITH 12 INCHES OF SELECT STRUCTURAL FILL.
- B. AFTER EXCAVATION, THE EXPOSED SOILS SHALL BE INSPECTED AND TESTED AND ANY UNSUITABLE DEPOSITS REMOVED AS DIRECTED TO REACH SUITABLE BEARING SOIL ALL OVER-EXCAVATED AREAS SHALL. BE BACK FILLED WITH SELECT STRUCTURAL FILL OR WITH LEAN CONCRETE FILL TO THE ELEVATION OF THE BOTTOM OF FOOTING OR FOUNDATION AS INDICATED ON THE DRAWINGS.
- C. PRIOR TO PLACEMENT OF CONC. FOUNDATIONS, THE SURFACE ON WHICH THE CONCRETE IS TO BE PLACED SHALL. BE COMPACTED TO A MINIMUM OF 95% OF THE MODIFIED PROCTOR DENSITY BY THE MODIFIED PROCTOR TEST, ASTM4 D1557.
- D. NO FOUNDATIONS OR STRUCTURES SHALL BE CONSTRUCTED UNTIL THE BASE MATERIALS HAVE BEEN INSPECTED BY THE CARRIER CONSTRUCTION SUPERVISOR.

3.3 STRUCTURAL FILL: All COMPACTED FILL SHALL BE PLACED IN LAYERS NOT EXCEEDING A LOOSE THICKNESS AND COMPACTED TO A MINIMUM DENSITY OF 95% OF THE MODIFIED PROCTOR DENSITY OBTAINED IN ACCORDANCE WITH ASTM4 D-1557.

3.4 BACK FILL AS SOON AS PRACTICAL AFTER COMPLETING CONSTRUCTION OF THE RELATED STRUCTURE, INCLUDING EXPIRATION OF THE SPECIFIED MINIMUM CURING PERIOD FOR CAST-IN-PLACE CONCRETE, BACKFILL THE EXCAVATION WITH APPROVED MATERIAL TO RESTORE THE REQUIRED FINISH GRADE.
- A. PRIOR TO PLACING BACKFILL AROUND STRUCTURES, ALL FORMS SHALL HAVE BEEN REMOVED AND THE EXCAVATION CLEANED OF ALL TRASH, DEBRIS AND UNSUITABLE MATERIALS.
- B. BACK FILL BY PLACING AND COMPACTING SUITABLE BACKFILL MATERIAL OR SELECT GRANULAR BACKFILL MATERIAL, WHEN REQUIRED, IN UNIFORM HORIZONTAL LAYERS OF NO GREATER THAN 8-INCH LOOSE THICKNESS. WHERE HAND-OPERATED COMPACTORS ARE USED, THE FILL MATERIALS SHALL BE PLACED IN LIFTS NOT TO EXCEED FOUR INCHES IN LOOSE DEPTH.
- C. WHENEVER THE DENSITY TESTS INDICATE THAT THE CONTRACTOR HAS NOT OBTAINED THE SPECIFIED DENSITY, THE SUCCEEDING LAYER SHALL NOT BE PLACED UNTIL THE SPECIFICATION REQUIREMENTS ARE MET UNLESS OTHERWISE AUTHORIZED BY THE GEOTECHNICAL ENGINEER. THE CONTRACTOR SHALL TAKE WHATEVER APPROPRIATE ACTION IS NECESSARY, SUCH AS DISKING AND DRYING, ADDING WATER OR INCREASING THE COMPACTIVE EFFORT.
- D. THOROUGHLY COMPACT EACH LAYER OF BACKFILL TO A MINIMUM OF 90% OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE MODIFIED PROCTOR TEST C. DO NOT PLACE UNTIL THE CONCRETE HAS CURED FOR AT LEAST 7 DAYS OR COMPRESSIVE STRENGTH TESTS INDICATE THAT THE CONCRETE HAS ACHIEVED MORE THAN BOX OF ITS SPECIFIED 28 DAY COMPRESSIVE STRENGTH.

3.5 TRENCH EXCAVATION
- A. UTILITY TRENCHES SHALL BE EXCAVATED TO THE LINES AND GRADES SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE CARRIER CONSTRUCTION SUPERVISOR. PROVIDE SHORING, SHEETING AND BRACING AS REQUIRED TO PREVENT CAVING OR SLOUGHING OF THE TRENCH WALLS.
- B. THE TRENCH WIDTH EXTENDS A MINIMUM OF 6 INCHES BEYOND EACH OUTSIDE EDGE OF THE CONDUIT OR OUTERMOST CONDUIT, WHICHEVER IS APPLICABLE.
- C. WHEN SOFT, YIELDING OR OTHERWISE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED AT THE REQUIRED TRENCH BOTTOM ELEVATION, OVER-EXCAVATE THE TRENCH TO A DEPTH OF NO LESS THAN 12 INCHES BELOW THE REQUIRED ELEVATION AND BACKFILL WITH GRANULAR BEDDING MATERIAL.

3.6 TRENCH BACK FILL
- A. PROVIDE GRANULAR BEDDING MATERIAL IN ACCORDANCE WITH THE SPECIFICATIONS, DRAWINGS AND THE UTILITY REQUIREMENTS.
- B. NOTIFY THE CARRIER CONSTRUCTION SUPERVISOR 24 HOURS IN ADVANCE OF BACK FILLING.
- C. CONDUCT UTILITY CHECK TESTS BEFORE BACK FILLING BACK FILL AND COMPACT TRENCH BEFORE ACCEPTANCE TESTING.
- D. PLACE GRANULAR TRENCH BACKFILL UNIFORMLY ON BOTH SIDES OF THE CONDUITS IN 6-INCH UNCOMPACTED LIFTS UNTIL 12 INCHES OVER THE CONDUITS. SOLIDLY RAM AND TAMP BACKFILL INTO SPACES AROUND THE CONDUITS.
- E. PROTECT CONDUIT FROM LATERAL MOVEMENT, DAMAGE FROM IMPACT OR UNBALANCED LOADING.
- F. ABOVE THE CONDUIT EMBEDMENT ZONE, PLACE AND COMPACT SATISFACTORY BACKFILL MATERIAL IN 9-INCH MAXIMUM LOOSE THICKNESS LIFTS TO RESTORE THE REQUIRED FINISHED SURFACE GRADE.
- G. COMPACT FINAL TRENCH BACKFILL TO A DENSITY EQUAL TO OR GREATER THAN THAT OF THE EXISTING UNDISTURBED MATERIAL IMMEDIATELY ADJACENT TO THE TRENCH BUT NO LESS THAN A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE MODIFIED PROCTOR TEST, ASTM D1557.

3.7 AGGREGATE ACCESS ROAD AND SITE
- A. CLEAR, GRUB, STRIP AND EXCAVATE FOR THE ACCESS ROAD AND TOWER COMPOUND TO THE LINES AND GRADES INDICATED ON THE DRAWINGS. SCARIFY TO A DEPTH OF 6 INCHES AND PROOF-ROLL ALL HOLES, RUTS, SOFT PLACES AND OTHER DEFECTS SHALL BE CORRECTED.
- B. THE ENTIRE SUB GRADE SHALL BE COMPACTED TO NOT LESS THAN 95:2:OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE MODIFIED PROCTOR TEST, ASTM D 1557.
- C. AFTER PREPARATION OF THE SUB GRADE IS COMPLETED, THE GEOTEXTILE FABRIC SHALL BE INSTALLED TO THE LIMITS INDICATED ON THE DRAWINGS BY ROLLING THE FABRIC OUT LONGITUDINALLY ALONG THE ROADWAY OR SITE. THE FABRIC SHALL NOT BE DRAGGED ACROSS THE SUB GRADE PLACE THE ENTIRE ROLL IN A SINGLE OPERATION, ROLLING THE MATERIAL AS SMOOTHLY AS POSSIBLE.
  1. OVERLAPS PARALLEL TO THE ROADWAY AND SITE WILL BE PERMITTED AT THE CENTERLINE AND AT LOCATIONS BEYOND THE ROADWAY OR SITE SURFACE WIDTH (I.E., WITHIN THE SHOULDER WIDTH) ONLY. NO LONGITUDINAL OVERLAPS SHALL BE LOCATED BETWEEN THE CENTERLINE AND THE SHOULDER. PARALLEL OVERLAPS SHALL BE A MINIMUM OF 3 FEET WIDE.
  2. TRANSVERSE (PERPENDICULAR TO THE ROADWAY) OVERLAPS AT THE END OF A ROLL SHALL OVERLAP IN THE DIRECTION OF THE AGGREGATE PLACEMENT (PREVIOUS ROLL ON TOP) AND SHALL HAVE A MINIMUM LENGTH OF 3 FEET.
  3. ALL OVERLAPS SHALL. BE PINNED WITH STAPLES OR NAILS BETWEEN 10 AND 12 INCHES LONG TO INSURE STABLE POSITIONING DURING PLACEMENT OF AGGREGATE. PIN LONGITUDINAL SEAMS AT 25-FOOT CENTERS AND TRANSVERSE SEAMS EVERY 5 FEET ON CENTER.
- D. THE AGGREGATE SUB BASE, BASE AND SURFACE COURSES SHALL BE CONSTRUCTED IN LAYERS NOT MORE THAN 4 INCHES (COMPACTED) THICKNESS. AGGREGATE TO BE PLACED ON GEOTEXTILE FABRIC SHALL BE END-DUMPED ON THE FABRIC FROM THE FREE END OF THE FABRIC OR OVER PREVIOUSLY PLACED AGGREGATE. AT NO TIME SHALL EQUIPMENT, EITHER DUMPING THE AGGREGATE OR GRADING THE AGGREGATE, BE PERMITTED ON THE ROADWAY OR COMPOUND WITH LESS THAN 8 INCHES OF MATERIAL COVERING THE FABRIC.
- E. THE AGGREGATE SUB BASE AND BASE SHALL BE IMMEDIATELY COMPACTED TO NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE MODIFIED PROCTOR TEST, ASTM4 D 1557.

3.8 FINISH GRADING
- A. PERFORM ALL FINISHED GRADING TO PROVIDE SMOOTH, EVEN SURFACE AND SUBSURFACE DRAINAGE OF THE ENTIRE AREA WITHIN THE LIMITS OF CONSTRUCTION. GRADING SHALL BE COMPATIBLE WITH ALL SURROUNDING TOPOGRAPHY AND STRUCTURES.
- B. UTILIZE SATISFACTORY FILL MATERIALS RESULTING FROM THE EXCAVATION WORK IN THE CONSTRUCTION OF FILLS, EMBANKMENTS AND FOR THE REPLACEMENT OF REMOVED UNSUITABLE MATERIALS.
- C. REPAIR All ACCESS ROADS AND SURROUNDING AREAS USED DURING THE COURSE OF THIS WORK TO THEIR ORIGINAL CONDITION.

3.9 SECURITY FENCE
- A. THE BOTTOM OF THE FENCE SHALL BE 2 INCHES BELOW THE TOP OF THE COMPOUND GRAVEL IF THE SITE CROSSES FEATURES SUCH AS DRAINAGE DITCHES, ETC., THE FENCE SHALL SPAN THE DEPRESSION. CLOSE THE SPACE BELOW THE BOTTOM OF THE FENCE WITH EXTRA FENCE FABRIC OR BARBED WIRE AS DIRECTED BY THE CARRIER CONSTRUCTION SUPERVISOR. PRIOR TO PLACING COMPONENTS SUCH AS FABRIC, RAILS, TENSION WIRE AND GATES, ENSURE THAT THE CONCRETE POST FOUNDATION HAS REACHED AT LEAST 75% OF ITS DESIGN STRENGTH OR HAS CURED A MINIMUM OF 7 DAYS AFTER SETTING THE POST.
- B. FURNISH GATES WITH NECESSARY FITTINGS AND HARDWARE. HINGES SHALL ALLOW SWING GATES TO SWING 180 DEGREES. PLUNGER BARS SHALL HAVE TOP, BOTTOM AND MIDDLE LOCKING POINTS WITH THE MIDDLE POINT ARRANGED FOR PADLOCKING. GATES SHALL HAVE KEEPERS ON EACH LEAF THAT ENGAGE AUTOMATICALLY WHEN THE GATE IS SWUNG OPEN. REPAIR GALVANIZED COATING DAMAGED IN THE FIELD WITH METHODS AND TECHNIQUES AS RECOMMENDED BY THE MANUFACTURER.

3.10 LANDSCAPING SITE LANDSCAPING OPERATIONS SHALL BE IN CONFORMANCE WITH THE FOLLOWING SPECIFICATIONS:
- A. OHIO: PER OH DOT ITEMS 658-662, 667, 668, 670-673
- B. PENNSYLVANIA: PER PA DOT SECTIONS 804-B06, 808-B11, B56, 864-B65
- C. WEST VIRGINIA: PER WV DOT SECTIONS 642, 651-655, 715

3.11 STORM WATER MANAGEMENT AND EROSION CONTROL STORM WATER MANAGEMENT AND EROSION CONTROL SHALL BE IN CONFORMANCE WITH THE FOLLOWING SPECIFICATIONS:
- A. OHIO: PER OH DOT ITEMS 207, 603-605, 673
- B. PENNSYLVANIA: PA DOT SECTIONS 601-604, 610, 612, 615-617, B06, B64-B65
- C. WEST VIRGINIA: WV DOT SECTIONS 642 AND 655

GENERAL NOTES

SCALE: NTS

1

CARRIER

TOWER OWNER

ENGINEERING COMPANY

LICENSE #: N/A

REVISIONS

REV	DATE	DESCRIPTION	INT
A	XX/XX/XX	ISSUED FOR REVIEW 90%	XXX

PRELIMINARY NOT FOR CONSTRUCTION

SITE INFORMATION

CARRIER #: XXXXXXX

ATC #: XXXXXXXX

ANY AVENUE
ANY CITY, ANY STATE, ZIP

SHEET TITLE:

GENERAL NOTES

SHEET NUMBER:

GN-1

PROJECT SPECIFICATION 16000 (ELECTRICAL)
PART I: GENERAL
1.1 SCOPE: THIS SPECIFICATION DESCRIBES THE MINIMUM REQUIREMENT FOR INSTALLATION OF ALL ELECTRICAL SYSTEMS.
1.2 REFERENCES: THE PUBLICATIONS LISTED BELOW FORM PART OF THIS SPECIFICATION. EACH PUBLICATION SHALL BE THE LATEST REVISION AND ADDENDUM IN EFFECT ON THE DATE THIS SPECIFICATION IS ISSUED FOR CONSTRUCTION, UNLESS NOTED OTHERWISE. EXCEPT AS MODIFIED BY THE REQUIREMENTS SPECIFIED HEREIN, OR THE DETAILS OF THE DRAWINGS, WORK INCLUDED IN THIS SPECIFICATION SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THESE PUBLICATIONS.
A. ANSI (AMERICAN NATIONAL STANDARDS INSTITUTE)
B. NESC (NATIONAL ELECTRICAL SAFETY CODE), LATEST EDITION
C. NEC (NATIONAL ELECTRICAL CODE), LATEST EDITION
D. NFPA 70 (NATIONAL FIRE PROTECTION ASSOCIATION)
E. OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION), INCLUDING ALL APPLICABLE AMENDMENTS
F. F. U.L. (UNDERWRITERS LABORATORIES)
1.3 SYSTEM DESCRIPTION
A. DESIGN REQUIREMENTS: THE CONTRACTOR SHALL INSTALL UNDERGROUND ELECTRICAL AND TELEPHONE CONDUITS AND CABLE AS SPECIFIED HEREIN AND AS SHOWN ON THE DRAWINGS.
B. PERFORMANCE REQUIREMENTS: WHEN FINISHED, WORK SHALL BE IN A COMPLETE AND UNDAMAGED STATE, AS REQUIRED IN THE CONTRACT DOCUMENTS.
PART II: PRODUCTS
2.1 GENERAL
A. ITEMS SHALL BE NEW AND SHALL BE INSTALLED ONLY IF IN FIRST-CLASS CONDITION.
B. SUBSTITUTIONS FOR MATERIAL WILL BE PERMITTED ONLY BY WRITTEN APPROVAL OF THE CARRIER CONSTRUCTION SUPERVISOR.
2.2 MATERIALS: THE CONTRACTOR SHALL PROVIDE ALL MATERIAL EXCEPT AS SPECIFIED IN THE CONTRACT DOCUMENTS. ALL MATERIAL SHALL BE APPROVED AND LISTED BY OR BEAR THE U.L. LABEL, AND WILL COMPLY WITH ANSI, IEEE AND NEMA STANDARDS WHERE APPLICABLE.
A. CONDUITS:
1. ALL UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC, SIZED AS SHOWN ON THE CONSTRUCTION DRAWINGS.
2. ALL EXTERIOR ABOVEGROUND CONDUIT SHALL BE PER LOCAL CODE REQUIREMENTS.
3. ALL INTERIOR CONDUIT SHALL BE EMT WITH COMPRESSION-TYPE FITTINGS.
4. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT SHALL BE USED FOR OUTDOOR LOCATIONS WHERE FLEXIBLE CONNECTION IS REQUIRED.
B. CABLES CONDUCTORS FOR GENERAL WIRING SHALL BE NEC STANDARD ANNEALED COPPER WIRE WITH NEC 600 VOLT INSULATION.
1. #8 AND LARGER-STRANDED TYPE, THHN OR THWN
2. #10 AND SMALLER-SOLID TYPE THHN OR THWN
3. CONDUCTORS IN CONDUIT IN OR ADJACENT TO HIGH HEAT SOURCE SHALL BE TYPE XHHW
4. CONDUCTORS IN CONDUITS ABOVE ROOF, ON TOP OF ROOF OR INSIDE BUILT-UP ROOFING MATERIAL SHALL BE TYPE XHHW
C. CONVENIENCE OUTLET, UNLESS NOTED OTHERWISE, SURFACE-MOUNTED OUTLETS FOR EXTERIOR LOCATIONS SHALL BE FERALOY, CAD/ZINC ELECTROPLATED WITH THREADED HUBS OR CONDUIT ENTRANCES DRILLED AND TAPPED. ALL COVERS SHALL BE SELF-CLOSING AND GASKETED. SURFACE MOUNTED OUTLETS FOR INTERIOR LOCATIONS SHALL BE GALVANIZED, PRESSED STEEL WITH COVER PLATE, SIERRA PLASTIC STYLE, IVORY COLOR.
D. COAXIAL CABLE SUPPORTS 1. ALL WAVE GUIDE SUPPORTS SHALL BE MANUFACTURED TO MEET ALL COAX MINIMUM BENDING REQUIREMENTS WAVE GUIDES, AND B1587 FOR 6 WAVE GUIDES. SUPPORTS SHALL BE PROVIDED 3'-0" ON CENTERS.
PART III: EXECUTION
3.1 PREPARATION
A. BEFORE LAYING OUT WORK, EXERCISE PROPER PRECAUTION TO VERIFY EACH MEASUREMENT.
B. USE EXTREME CAUTION BEFORE EXCAVATING IN EXISTING AREAS TO LOCATE EXISTING UNDERGROUND SERVICES.
3.2 INSPECTION
A. A VISUAL CHECK OF ELECTRICAL AND TELEPHONE CABLES, CONDUITS AND OTHER ITEMS SHALL BE MADE BY A CARRIER CONSTRUCTION SUPERVISOR BEFORE THESE ITEMS ARE PERMANENTLY INSTALLED.
B. THE CONTRACTOR SHALL NOTIFY THE CARRIER CONSTRUCTION SUPERVISOR 24 HOURS PRIOR TO TRENCH BACK FILL.
3.3 INSTALLATION
A. TRENCHING, BACK FILLING, BEDDING AND COMPACTING SHALL COMPLY WITH SITE WORK SPECIFICATIONS.
B. DIG TRENCHES TO THE REQUIRED DEPTH AS SHOWN ON THE DRAWINGS WITHOUT POCKETS OR DIPS. REMOVE LARGE STONES FROM THE BOTTOM OF THE TRENCH AND FIRMLY TAMP LOOSE FILL IN THE BOTTOM BEFORE CONDUIT IS LAID.
C. INSTALL UNDERGROUND CONDUIT WITH A MINIMUM 3-INCH TO 100-FOOT SLOPE OR TO A SLOPE SHOWN ON THE DRAWINGS.
D. UNLESS SHOWN OTHERWISE ON THE DRAWINGS, TERMINATE AND CAP ALL STUB-UPS 12 INCHES ABOVE FINISHED GRADE ELEVATION.
E. WHEREVER CONDUITS CROSS UNDER ROADWAYS, USE GALVANIZED RIGID STEEL CONDUITS IN ALL CASES, EXTENDING 5 FEET BEYOND THE EDGE OF THE ROAD BED. MINIMUM DEPTH FOR CONDUIT SHALL BE 4 FEET BELOW ROADWAY GRADE.
F. MARK UNDERGROUND CONDUITS WITH A 6-INCH WIDE RED POLYETHYLENE TAPE BURIED 6 INCHES UNDER THE SURFACE DIRECTLY OVER THE CONDUITS. MARK THE TAPE THUS: CAUTION-BURIED ELECTRICAL CABLE.
G. FOR SEALING CONDUITS, USE ONLY NON-THERMOPLASTIC COMPOUNDS SUCH AS J.M. DUXSEAL, OR AN APPROVED SUBSTITUTE. THE COMPOUND SHALL HAVE NO EFFECT ON RUBBER OR RUBBER-LIKE INSULATIONS, LEAD, ALUMINUM OR FERROUS ALLOYS; IT SHALL BE INSOLUBLE IN WATER AND WITHSTAND MAXIMUM TEMPERATURE RANGES OF THE LOCALITY.
H. COAXIAL – REFER TO NOKIA ANTENNA AND COAXIAL CABLE INSULATION PROCEDURES.
I. ANTENNA – REFER TO NOKIA ANTENNA AND COAXIAL CABLE INSULATION PROCEDURES.
J. LNA/MHA – REFER TO NOKIA ANTENNA AND COAXIAL CABLE INSULATION PROCEDURES.
END OF ELECTRICAL SPECIFICATIONS

PROJECT SPECIFICATION 16670 (GROUNDING)
PART I: GENERAL
1.1 SCOPE
A. THIS SPECIFICATION PRESCRIBES THE REQUIREMENTS FOR FURNISHING, INSTALLATION AND TESTING OF THE GROUNDING CABLE, CONNECTORS AND ASSOCIATED COMPONENTS AS INDICATED ON THE DRAWINGS.
B. APPLICATIONS OF ELECTRICAL GROUNDING AND BONDING WORK SPECIFIED IN THIS SPECIFICATION INCLUDE THE FOLLOWING:
1. FENCE AND GATE POSTS
2. ELECTRICAL POWER SYSTEMS
3. GROUNDING ELECTRODES
4. GROUND BUS BAR
5. SERVICE EQUIPMENT
6. ENCLOSURES
7. MONOPOLE / LATTICE TOWER
8. ICE BRIDGE
1.2 REFERENCES: THE PUBLICATIONS LISTED BELOW FORM PART OF THIS SPECIFICATION. EACH PUBLICATION SHALL BE THE LATEST REVISION AND ADDENDUM IN EFFECT ON THE DATE THIS SPECIFICATION IS ISSUED FOR CONSTRUCTION, UNLESS NOTED OTHERWISE. EXCEPT AS MODIFIED BY THE REQUIREMENTS SPECIFIED HEREIN, OR THE DETAILS OF THE DRAWINGS, WORK INCLUDED IN THIS SPECIFICATION SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THESE PUBLICATIONS.
A. ANSI (AMERICAN NATIONAL STANDARDS INSTITUTE)
B. IEEE (INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS)
C. NEC (NATIONAL ELECTRICAL CODE), LATEST EDITION
D. NEMA (NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION)
E. NESC (NATIONAL ELECTRICAL SAFETY CODE), LATEST EDITION
F. OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION)
G. U.L. (UNDERWRITERS LABORATORIES)
H. APPLICABLE LOCAL CODES AND ORDINANCES
PART II: PRODUCTS
2.1 MATERIALS' EXCEPT AS OTHERWISE INDICATED, PROVIDE ELECTRICAL GROUNDING AND BONDING SYSTEMS INDICATED; WITH ASSEMBLY OF MATERIAL, INCLUDING, BUT NOT LIMITED TO, GROUNDING ELECTRODES, BONDING JUMPER AND ADDITIONAL ACCESSORIES NEEDED FOR A COMPLETE INSTALLATION. WHERE MORE THAN ONE TYPE COMPONENT PRODUCT MEETS INDICATED REQUIREMENTS, SELECTION IS INSTALLER'S OPTION. WHERE MATERIALS OR COMPONENTS ARE NOT INDICATED, PROVIDE PRODUCTS WHICH COMPLY WITH NEC, U.L. AND IEEE REQUIREMENTS AND WITH ESTABLISHED INDUSTRY STANDARDS FOR THOSE APPLICATIONS INDICATED.
A. GROUNDING
1. THE EQUIPMENT SHALL BE GROUNDED AS FOLLOWS, AS SHOWN ON THE DRAWINGS AND IN COMPLIANCE WITH NEC ARTICLE 250 AND STATE AND LOCAL CODES.
2. GROUND RODS AND QUANTITY SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC. THE CONTRACTOR SHALL PERFORM A GROUND-RESISTANCE-TO-EARTH TEST. SHOULD THE INSTALLATION HAVE A RESISTANCE OF 5 OHMS OR MORE, CONTRACTOR SHALL INSTALL MORE GROUND RODS AS NECESSARY SO THAT THE OVERALL GROUND-TO-EARTH RESISTANCE IS LESS THAN 5 OHMS.
3. INSTALL ELECTRICAL GROUNDING AND BONDING SYSTEMS AS INDICATED, IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, NEC'S "STANDARD OF INSTALLATION," AND IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT PRODUCTS COMPLY WITH REQUIREMENTS.
4. COORDINATE WITH OTHER ELECTRICAL WORK AS NECESSARY TO INTERFACE INSTALLATION OF ELECTRICAL GROUNDING AND BONDING SYSTEMS.
5. INSTALL GROUND CONDUCTORS A MINIMUM OF 36 INCHES BELOW FINISHED GRADE WHICH ENCIRCLES THE TOWER AND EQUIPMENT AND ARE CONNECTED TO EACH DRIVEN GROUND ROD. GROUND TRENCH SHALL BE AT LEAST 24 INCHES AWAY FROM FOUNDATIONS.
6. TIGHTEN GROUNDING AND BONDING CONNECTORS, INCLUDING SCREWS AND BOLTS, IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED TORQUE TIGHTENING VALUE FOR CONNECTORS AND BOLTS. WHERE MANUFACTURER'S TORQUING REQUIREMENTS ARE NOT INDICATED, TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUE VALUE SPECIFIED IN U.L. 486A TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.
7. APPLY CORROSION-RESISTANT FINISH (NO-OX) TO FIELD-CONNECTIONS, AT COPPER GROUND BARS AND PLACES WHERE FACTORY APPLIED PROTECTIVE COATING HAVE BEEN DESTROYED, WHICH ARE SUBJECTED TO CORROSIVE AND/OR OXIDATION PROCESS.
8. ON EXISTING LATTICE TOWERS, WATER TOWERS AND ROOF TOPS WHEN A NEW GROUNDING SYSTEM IS INSTALLED, THE CONTRACTOR SHALL TIE THE NEW GROUND SYSTEM TO THE EXISTING WATER TOWER, LATTICE TOWER STRUCTURAL STEEL OR BUILDING STRUCTURAL STEEL AS THE CASE MAY BE AT LEAST AT ONE LOCATION SO THAT THEY ARE AT THE SAME POTENTIAL.
B. GROUND RODS
1. GROUND RODS SHALL BE 5/8" DIAMETER 8'-0" LONG, COPPER CLAD DRIVEN ROD(S).
2. GROUND ROD(S) SHALL BE LOCATED AT THE PERIMETER OF EQUIPMENT AS TO CREATE A GROUND RING AS SHOWN ON THE DRAWINGS.
3. GROUND ROD(S) SHALL BE SPACED AT A MINIMUM SPACING OF 8'-0" AND A MAXIMUM SPACING OF 10'-0".
4. GROUND RODS SHELL BE BURIED BELOW THE FROSTLINE. AT NO TIME SHALL THIS DEPTH BE LESS THAN 18" BELOW FINISHED GRADE.
5. GROUND RODS WHICH CANNOT BE DRIVEN STRAIGHT DOWN THE ENTIRE (10) FEET, SHALL BE DRIVEN AT AN ANGLE NOT GRATER THAN 45 DEGREES (NEC 250-83 AND 250-84).
6. GROUND ROD LOCATIONS SHALL BE NOTED ON THE AS-BUILT DRAWING COMPLETE WITH DIMENSIONS.
7. PROVIDE GROUND TEST WELLS AS SHOWN ON THE CONSTRUCTION DRAWINGS.
C. GROUND CONDUCTOR
1. ALL DIRECT BURIED GROUND CONDUCTORS SHALL BE TINNED SOLID (#2 AWG) WIRE. BURIED GROUND CONDUCTOR SHALL BE INSTALLED AT MINIMUM DEPTH OF 36" BELOW GRADE.
2. ALL SUB GRADE GROUND CONNECTIONS SHALL BE MADE THROUGH THE USE OF EXOTHERMIC WELD PROCESS. CONNECTIONS SHALL INCLUDE ALL CABLE TO CABLE SPLICES, TEES AND ALL GROUND ROD CONNECTIONS. MOLD, WELD KITS, ETC., SHALL BE MANUFACTURED BY CADWELD AND SHALL BE INSTALLED AS PER THE MANUFACTURER'S INSTRUCTIONS.
3. GROUND CONDUCTORS SHALL BE ROUTED IN THE SHORTEST AND STRAIGHTEST DISTANCES POSSIBLE TO MINIMIZE TRANSIENT VOLTAGE RISES. CONDUCTORS SHALL BE INSTALLED AS FOLLOWS:
a. ALL GROUND CONDUCTORS SHALL FOLLOW A CONTINUOUS DOWNWARD PATTERN TO THE GROUND SOURCE. (NEVER RUN GROUND CONDUCTOR IN AN UPWARD DIRECTION.)
b. CONDUCTORS SHALL BE INSTALLED WITH A MINIMUM OF 12 INCH MINIMUM BENDING RADIUS.
c. WHEN THE MINIMUM BENDING RADIUS CANNOT BE ACHIEVED, GROUND CABLES SHALL BE ROUTED AT 90 DEGREE BENDS WITH THE USE OF EXOTHERMIC CONNECTIONS AT 90 DEGREES. THE INTENT IS TO ELIMINATE THE CABLE BEND RADIUS AND REPLACE THE RADIUS WITH AN EXOTHERMIC CONNECTION.

PART III: EXECUTION
3.1 PREPARATION
A. ALL SURFACES TO WHICH GROUND CONNECTIONS WILL BE MADE SHALL BE FREE OF PAINT, GALVANIZING DIRECT CORROSION ETC,.
B. ALL METAL SURFACES EXPOSED ON GROUNDING SHALL BE EITHER COLD GALVANIZE, OR PAINTED TO MATCH ORIGINAL SURFACE.
3.2 EXAMINATION
A. EXAMINE AREAS AND CONDITIONS UNDER WHICH ELECTRICAL GROUNDING AND BONDING CONNECTIONS ARE TO BE MADE AND NOTIFY CARRIER CONSTRUCTION SUPERVISOR IN WRITING OF CONDITIONS DETRIMENTAL TO PROPER COMPLETION OF WORK. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
B. THE CONTRACTOR SHALL NOTIFY THE CARRIER CONSTRUCTION SUPERVISOR 24 HOURS PRIOR TO TRENCH BACK FILL ALL WORK DONE BELOW FINISHED GRADE SHALL BE INSPECTED BY THE AERIAL CONSTRUCTION SUPERVISOR DURING THAT PERIOD OR THE CONTRACTOR SHALL PROCEED.
3.3 GROUND TESTING
A. THE CONTRACTOR SHALL TEST THE GROUND ELECTRODE ROD RESISTANCE IN ACCORDANCE WITH THE METHODS OF MEASUREMENT SHOWN IN THE FALL OF POTENTIAL METHOD.
B. TEST INSTRUMENTS SHALL OPERATE AT A FREQUENCY OTHER THAN 60 HERTZ AND SHALL CONTAIN STRAY CURRENT AND DC FILTERS, FAULT CURRENT PROTECTION AND HAVE SENSITIVITY TO OPERATE A LOW SIGNAL STRENGTH.
C. PRIOR TO TESTING, THE CONTRACTOR SHALL DE-ENERGIZE ALL POWER SOURCES, DISCONNECT THE ELECTRODE CONDUCTOR FROM THE GROUND ROD, WEAR HIGH VOLTAGE RUBBER SAFETY GLOVES AND WILL NOT HANDLE TEST INSTRUMENTS IF AT ALL POSSIBLE.
D. GROUND TESTS ARE TO BE PERFORMED BY QUALIFIED PERSONS FAMILIAR WITH THE CONSTRUCTION AND OPERATION OF THE EQUIPMENT AND THE HAZARDS INVOLVED.
E. AN INDEPENDENT, APPROVED OUTSIDE FIRM SHALL PERFORM THE GROUND TEST AS OUTLINED. ALL TEST RESULTS SHALL BE FORWARDED TO THE CARRIER CONSTRUCTION SUPERVISOR FOR APPROVAL.
END OF GROUNDING SPECIFICATIONS
CLOSE OUT DOCUMENTATION
CLOSEOUT BOOK CONTAINING THE FOLLOWING:
A. AS BUILT DESIGN DRAWINGS
B. SWEEP TEST RESULTS
C. RESISTIVELY TEST
D. PHOTO DOCUMENTATION OF:
1. UNDERGROUND CONDUITS AND GROUND RING
2. ANTENNA, COAX, JUMPER ATTACHMENTS AND GROUND KIT ATTACHMENTS
3. ANTENNA DOWN TILT MEASUREMENT USING AN INCLINOMETER ON THE BACK PLANE OF THE ANTENNA
4. GROUND BAR ATTACHMENTS
E. SIGNED OFF PERMIT CARDS
F. CERTIFICATE OF OCCUPANCY
G. RETURN OF KEYS AND/OR ACCESS AUTHORIZATION
H. ORIGINAL BUILDING PERMIT

CARRIER

TOWER OWNER

ENGINEERING COMPANY

PRELIMINARY NOT FOR CONSTRUCTION

LICENSE #: N/A

REVISIONS

REV	DATE	DESCRIPTION	INT
A	XX/XX/XX	ISSUED FOR REVIEW 90%	XXX

SITE INFORMATION

CARRIER #: XXXXXXX

ATC #: XXXXXXXX

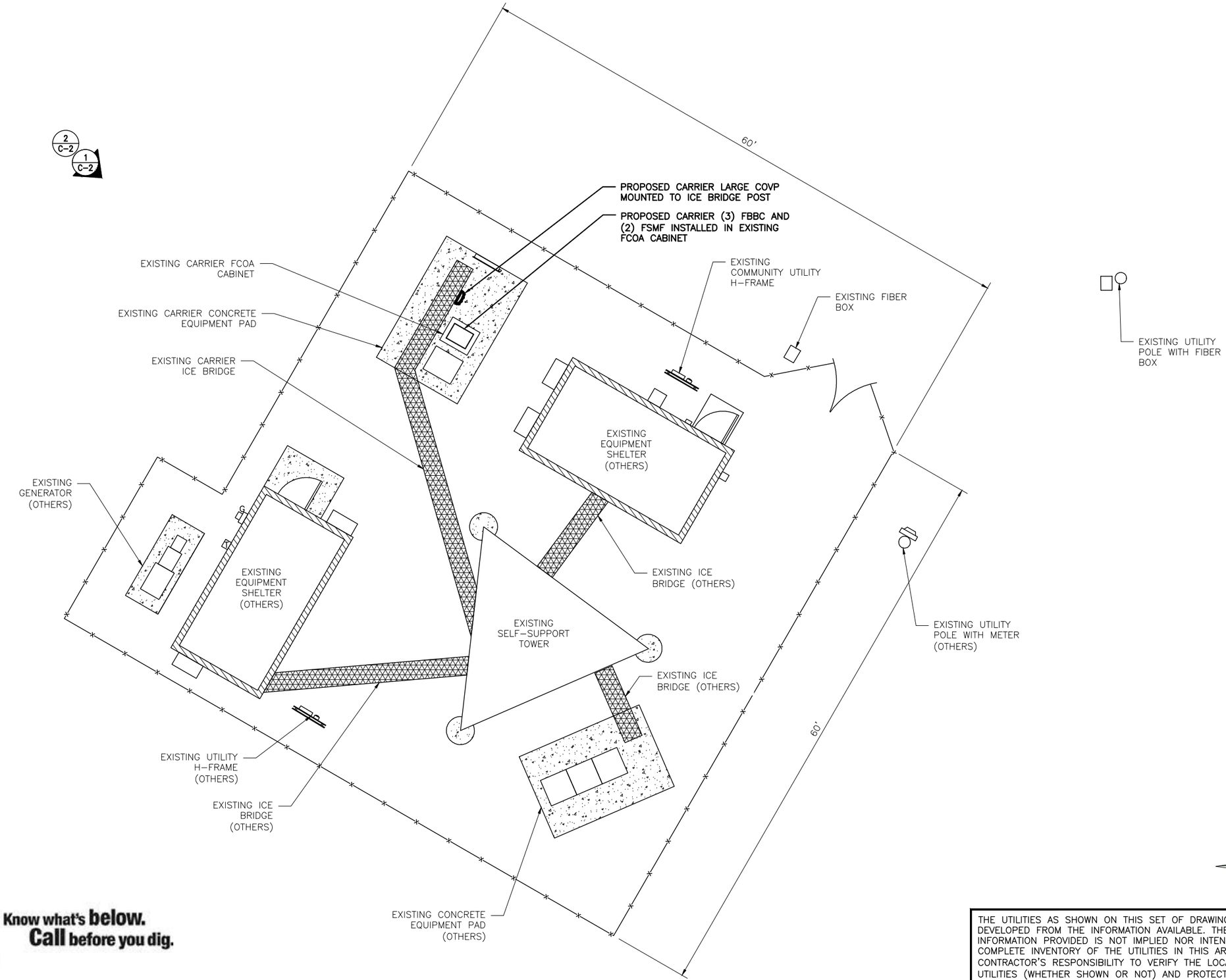
ANY AVENUE
ANY CITY, ANY STATE, ZIP

SHEET TITLE:

GENERAL NOTES

SHEET NUMBER:

GN-2



811 Know what's below. Call before you dig.

THE UTILITIES AS SHOWN ON THIS SET OF DRAWINGS WERE DEVELOPED FROM THE INFORMATION AVAILABLE. THE INFORMATION PROVIDED IS NOT IMPLIED NOR INTENDED TO BE A COMPLETE INVENTORY OF THE UTILITIES IN THIS AREA. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UTILITIES (WHETHER SHOWN OR NOT) AND PROTECT SAID UTILITIES FROM ANY DAMAGE CAUSED BY CONTRACTOR'S ACTIVITIES.

SITE PLAN

6' 0 3' 6'

SCALE: 3/16" = 1'-0" (24x36)
(OR) 3/32" = 1'-0" (11x17)

CARRIER

TOWER OWNER

ENGINEERING COMPANY

LICENSE #: N/A

REVISIONS

REV	DATE	DESCRIPTION	INT
A	XX/XX/XX	ISSUED FOR REVIEW 90%	XXX

PRELIMINARY NOT FOR CONSTRUCTION

SITE INFORMATION

CARRIER #: XXXXXXX

ATC #: XXXXXXXX

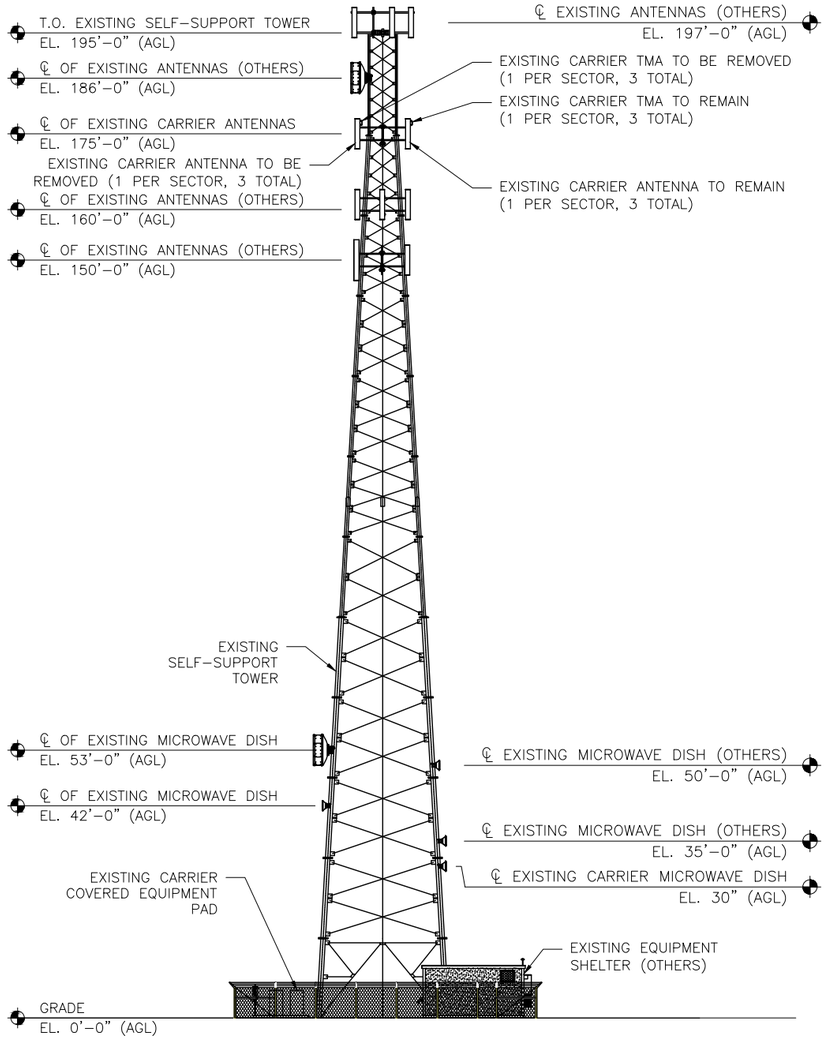
ANY AVENUE
ANY CITY, ANY STATE, ZIP

SHEET TITLE:

SITE PLAN

SHEET NUMBER:

C-1



TOWER ELEVATION (EXISTING)

15' 0 15'

SCALE: 1" = 15' (24x36)
(OR) 1" = 30' (11x17)

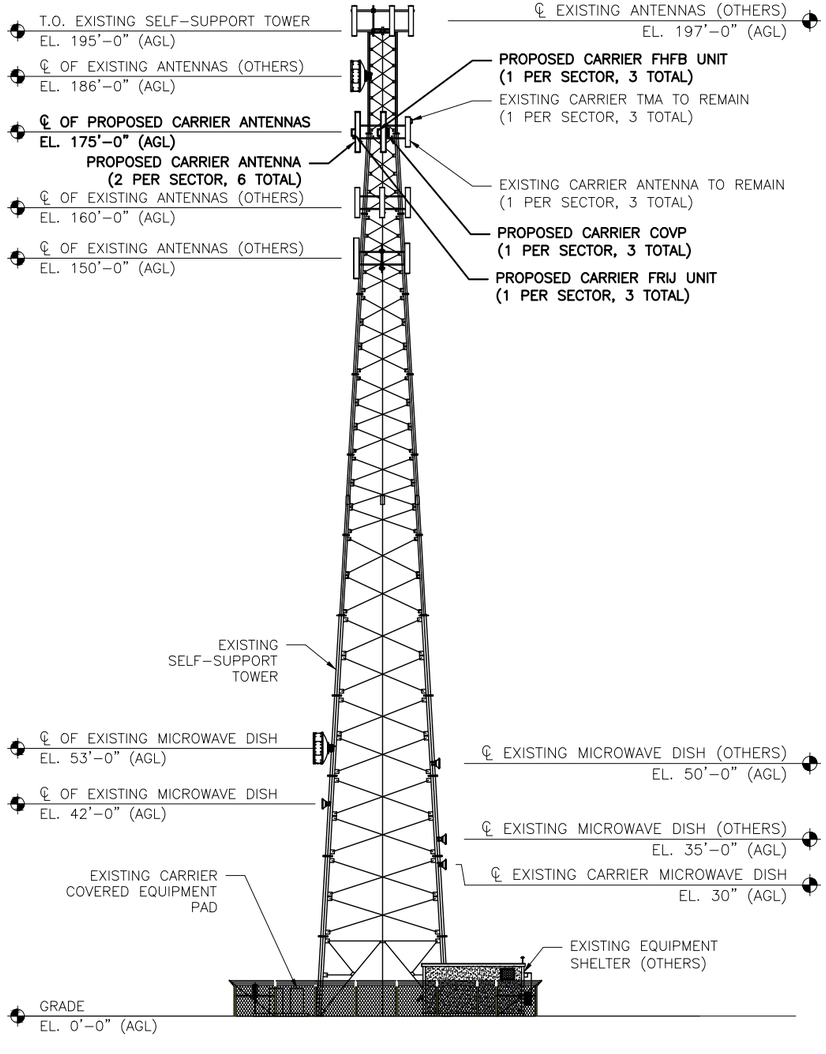
2

NOTE:

STRUCTURAL ANALYSIS MUST BE PERFORMED ON ALL ROOFTOPS, FLAGPOLES, LIGHT POLES, AND TOWER SITES BEFORE INSTALLATION OF NEW ANTENNAS, RADIO UNITS, ETC.

TRANSMISSION LINES:

(1) ADDITIONAL HYBRID CABLE TO BE INSTALLED FOR A TOTAL OF (2) HYBRID CABLES AND (12) COAX LINES.



TOWER ELEVATION (PROPOSED)

15' 0 15'

SCALE: 1" = 15' (24x36)
(OR) 1" = 30' (11x17)

1

CARRIER

TOWER OWNER

ENGINEERING COMPANY

LICENSE #: N/A

REVISIONS

REV	DATE	DESCRIPTION	INT
A	XX/XX/XX	ISSUED FOR REVIEW 90%	XXX

PRELIMINARY NOT FOR CONSTRUCTION

SITE INFORMATION

CARRIER #: XXXXXXX

ATC #: XXXXXXXX

ANY AVENUE
ANY CITY, ANY STATE, ZIP

SHEET TITLE:

ELEVATION

SHEET NUMBER:

C-2

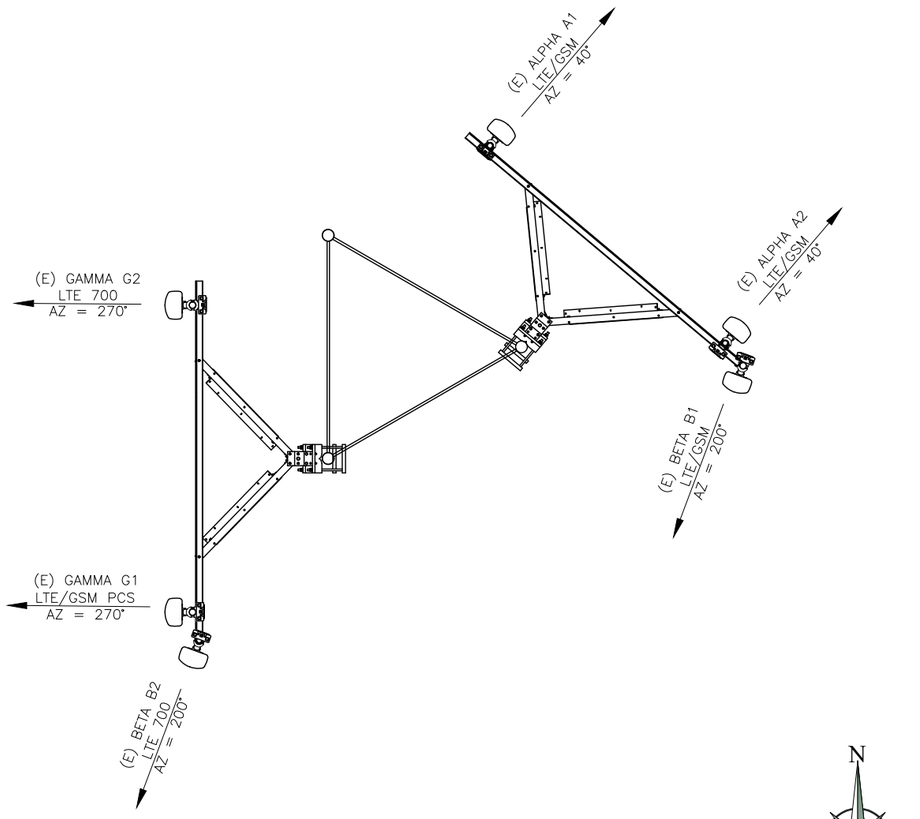
NOTE:

STRUCTURAL ANALYSIS MUST BE PERFORMED ON ALL ROOFTOPS, FLAGPOLES, LIGHT POLES, AND TOWER SITES BEFORE INSTALLATION OF NEW ANTENNAS, RADIO UNITS, ETC.

ANTENNA SCHEDULE									
SECTOR	ALPHA (RED)			BETA (GREEN)			GAMMA (BLUE)		
ANTENNA POSITION	A-1	**A-2**	**A-3**	B-1	**B-2**	**B-3**	G-1	**G-2**	**G-3**
ANTENNA TYPE	GSM PCS	**LTE 600/UMTS PCS**	**LTE 600/AWS**	GSM PCS	**LTE 600/UMTS PCS**	**LTE 600/AWS**	GSM PCS	**LTE 600/UMTS PCS**	**LTE 600/AWS**
AZIMUTH	40°	**40°**	**40°**	200°	**200°**	**200°**	270°	**270°**	**270°**
RAD CENTER (AGL)	175'-0"	**175'-0"**	**175'-0"**	175'-0"	**175'-0"**	**175'-0"**	175'-0"	**175'-0"**	**175'-0"**
MODEL	CELLMAX CMA-B/6519/E0-8	**COMMSCOPE FHH-65C-R3**	**COMMSCOPE FHH-65C-R3**	CELLMAX CMA-B/6519/E0-8	**COMMSCOPE FHH-65C-R3**	**COMMSCOPE FHH-65C-R3**	CELLMAX CMA-B/6519/E0-8	**COMMSCOPE FHH-65C-R3**	**COMMSCOPE FHH-65C-R3**
CABLE LENGTH	±215'								

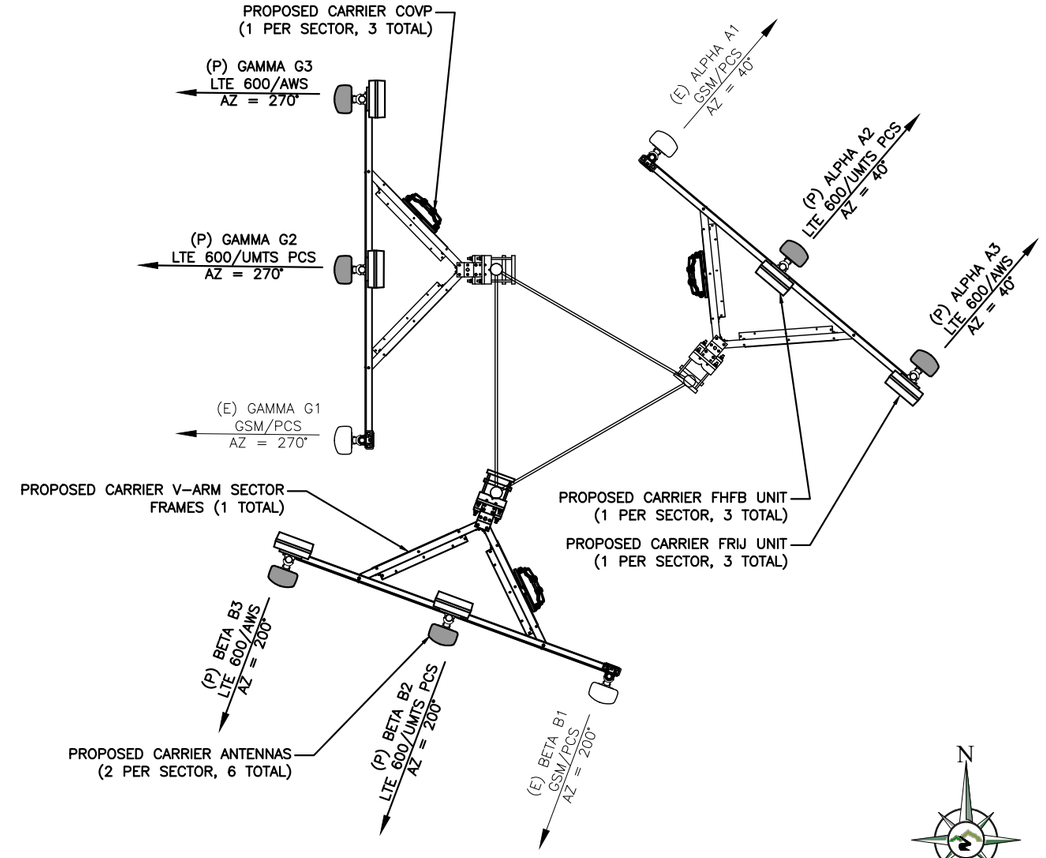
ANTENNA SCHEDULE (PROPOSED)

SCALE: NTS — 1



ANTENNA PLAN (EXISTING)

SCALE: NTS — 3



ANTENNA PLAN (PROPOSED)

SCALE: NTS — 2

CARRIER

TOWER OWNER

ENGINEERING COMPANY

LICENSE #: N/A

REVISIONS

REV	DATE	DESCRIPTION	INT
A	XX/XX/XX	ISSUED FOR REVIEW 90%	XXX

PRELIMINARY NOT FOR CONSTRUCTION

SITE INFORMATION

CARRIER #: XXXXXXX

ATC #: XXXXXXXX

ANY AVENUE
ANY CITY, ANY STATE, ZIP

SHEET TITLE:

ANTENNA PLAN

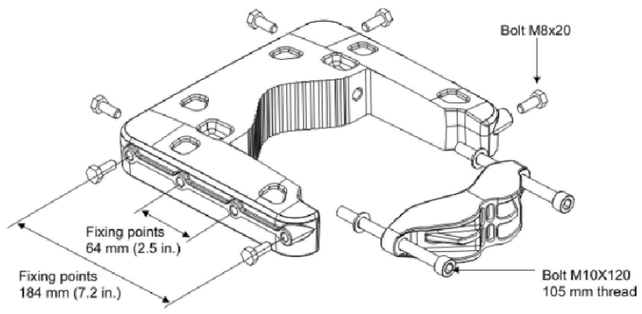
SHEET NUMBER:

C-3

Flexi Pole Kit (FPKA) description

This section describes Flexi Pole Kit (FPKA) 471649A.

Figure: Flexi Pole Kit (FPKA)



Flexi Pole Kit (FPKA) can be used as follows:

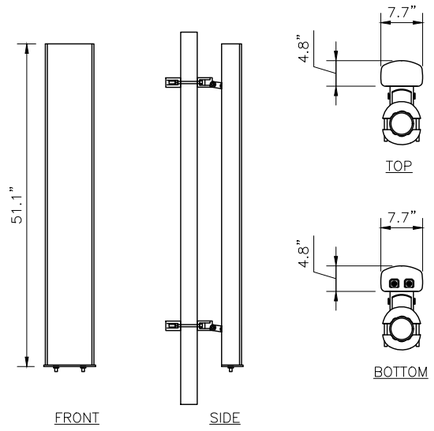
- Version 101: poles between 60 mm (2.4 in.) and 120 mm (4.7 in.) in diameter
- Version 202: poles between 30 mm (1.2 in.) and 120 mm (4.7 in.) in diameter (the bracket strainer is flipped around when the pole size is 59 mm or smaller in diameter)

The width of the fixing points is 184 mm (7.2 in) and 64 mm (2.5 in). There are fixing points on three sides of the FPKA. The M10 screws should be tightened to 30 Nm (22.13 ft-lb) and the M8 screws to 20 Nm (14.75 ft-lb). The maximum allowed weight on the FPKA is 160 kg (352.7 lbs). Two FPKA kits support two FMFAs, one on each side of the pole. Each FMFA (plinth) can support a maximum of two 2U or 3U Flexi modules with casings, cables, and auxiliary boxes (for example, OVP). Note that for larger configurations it is recommended to use the FPKC pole kit.

Installation with Remote Radio Heads

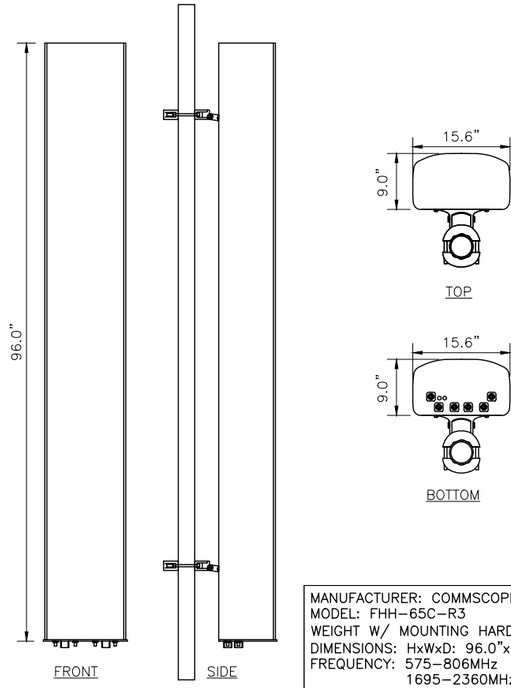
The FPKA has room for three Remote Radio Heads (FRIC/FRHE/FRHD/FHPC excluded). It is possible to use three installation directions. See Figure: FPKA with three Remote Radio Heads for the FPKA installation with three Remote Radio Heads.

FPKA DETAIL | SCALE: NTS | 5



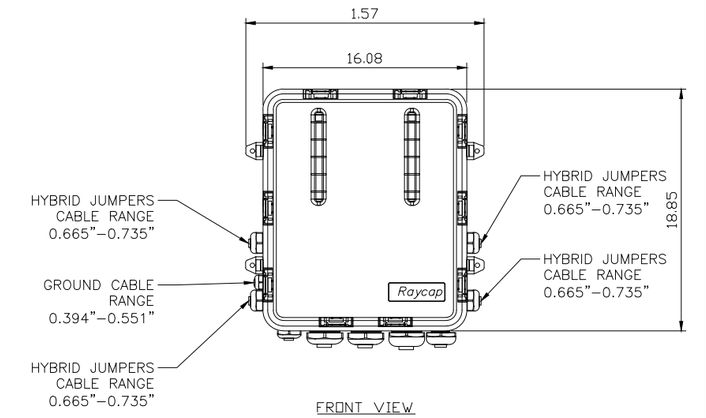
MANUFACTURER: CELLMAX
MODEL: CMA-B_6519_E0-8
WEIGHT W/ MOUNTING HARDWARE: 34 LBS
DIMENSIONS: HxWxD: 64.6"x7.7"x4.8"
FREQUENCY: 1710-1880 MHz
1850-1990 MHz
1920-2170 MHz
CONNECTION: (2) 7/16 FEMALE

ANTENNA DETAIL | SCALE: NTS | 3

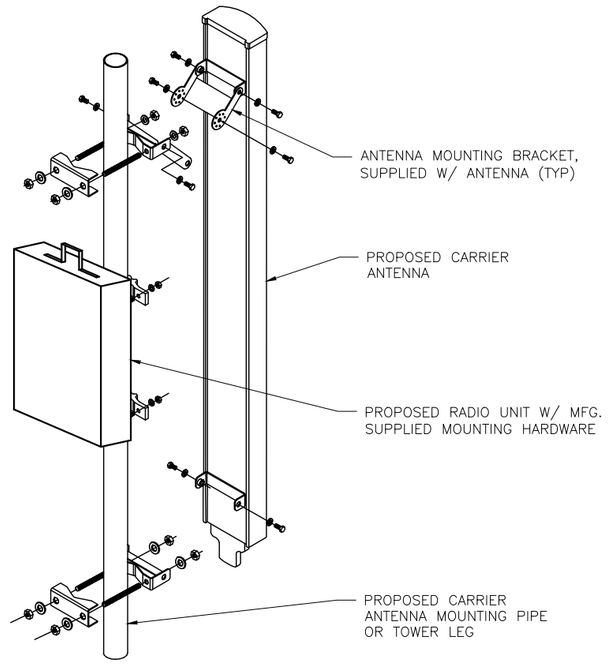


MANUFACTURER: COMMSCOPE
MODEL: FHH-65C-R3
WEIGHT W/ MOUNTING HARDWARE: 69.4 LBS
DIMENSIONS: HxWxD: 96.0"x15.6"x9.0"
FREQUENCY: 575-806MHz
1695-2360MHz
CONNECTION: (6) 4.3-10 FEMALE

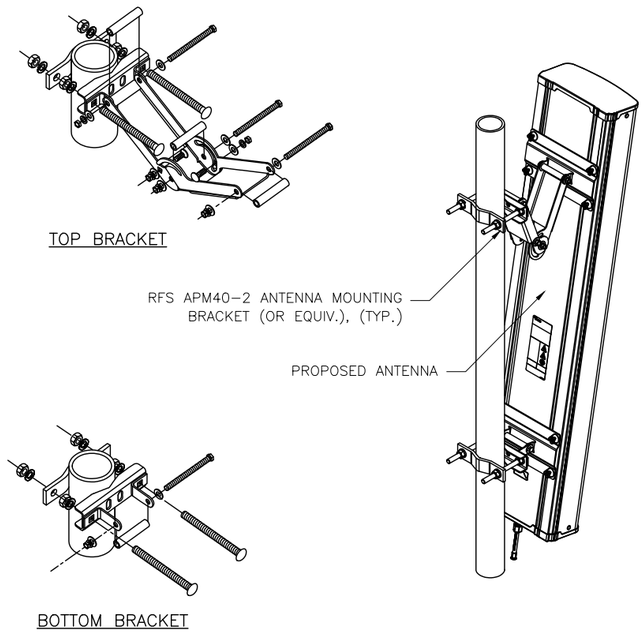
ANTENNA DETAIL | SCALE: NTS | 1



COVP DETAIL | SCALE: NTS | 6



RADIO MOUNTING DETAIL | SCALE: NTS | 4



SCALE: NTS | 2

CARRIER

TOWER OWNER

ENGINEERING COMPANY

LICENSE #: N/A

REVISIONS

REV	DATE	DESCRIPTION	INT
A	XX/XX/XX	ISSUED FOR REVIEW 90%	XXX

PRELIMINARY
NOT FOR
CONSTRUCTION

SITE INFORMATION

CARRIER #: XXXXXXX

ATC #: XXXXXXXX

ANY AVENUE
ANY CITY, ANY STATE, ZIP

SHEET TITLE:
EQUIPMENT DETAILS

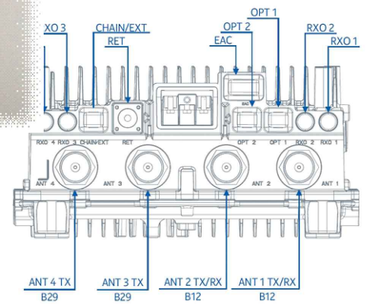
SHEET NUMBER:
C-4

NOT USED

SCALE: NTS

5





NOTE:

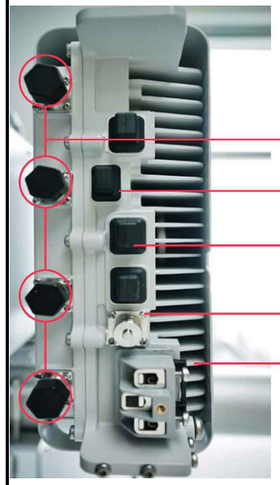
SOLAR SHIELD NOT SHOWN

MANUFACTURER: NOKIA
MODEL: RRH 4x40W
DIMENSIONS: H = 23.0" (NO BRACKETS)
W = 12.6" (NO SOLAR SHIELD)
D = 7.8"
FREQUENCY: 1850MHz–1995MHz FHFB
WEIGHT: 51.0 LBS

FHFB DETAIL

SCALE: NTS

3





RF Connectors
4x 4.3-10

External Alarm Connector
USB3 Type-A: Up to 4 Alarms

Fiber Optic Interface
3x Connectors 6Gbps OBSAI

Remote Electrical Tilt Connector
RS-485, 14.5 VDC, steady state load max 30 W

DC Power Connector
Nominal -57 to -40.5 V
Separate ground point on the unit

Optional Fan Connector (Side of Unit)
Required for Horizontal Mounting, Optional for vertical

Confidential, non-binding

MANUFACTURER: NOKIA
MODEL: RRH 4x40W 1700MHz / 2100MHz FRIJ
WEIGHT: 20 kg
DIMENSIONS: HxWxD: 587.2mm x 320mm x 123mm

FRIJ DETAIL

SCALE: NTS

1

NOT USED

SCALE: NTS

6

NOT USED

SCALE: NTS

4

NOT USED

SCALE: NTS

2

CARRIER

TOWER OWNER

ENGINEERING COMPANY

LICENSE #: N/A

REVISIONS

REV	DATE	DESCRIPTION	INT
A	XX/XX/XX	ISSUED FOR REVIEW 90%	XXX

PRELIMINARY
NOT FOR CONSTRUCTION

SITE INFORMATION

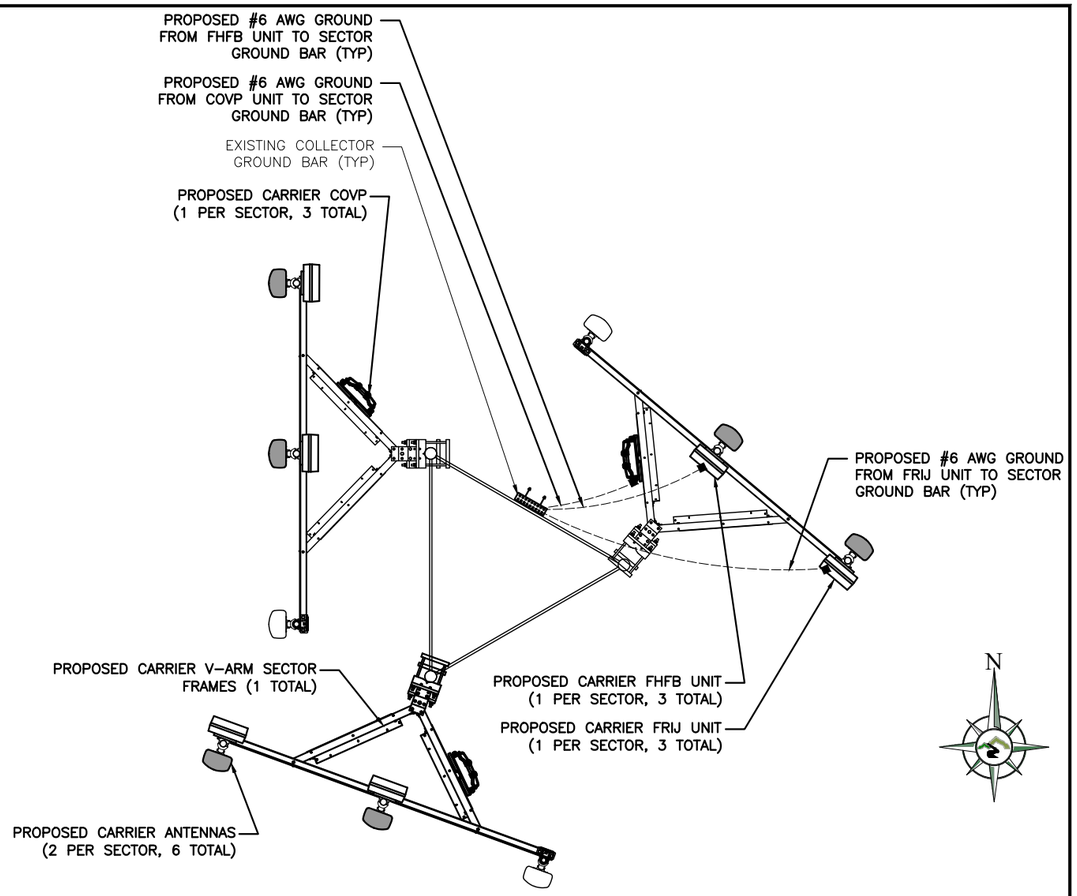
CARRIER #: XXXXXXX

ATC #: XXXXXXXX

ANY AVENUE
ANY CITY, ANY STATE, ZIP

SHEET TITLE:
EQUIPMENT DETAILS

SHEET NUMBER:
C-5



GENERAL GROUNDING NOTES:

1. GROUNDING SHALL COMPLY WITH NEC, CARRIER AND NSN STANDARDS. CONTRACTOR SHALL VERIFY EXISTING GROUNDING CONDITIONS. CORRECTING ANY DEFICIENCIES TO BE INCLUDED IN ORIGINAL PRICING AND CORRECT DEFICIENCIES DURING NEW CONSTRUCTION. INCLUDING MISSING GROUND BARS, BAD GROUND WELDS, MISSING GROUND LEADS OR BROKEN GROUND LEADS, ETC.
2. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/ GROUND BARS AND THE GROUND RING, SHALL BE #2 AWG SOLID TIN PLATED COPPER IN 3/4" PROTECTIVE PVC UNLESS OTHERWISE INDICATED.
3. APPROVED ANTIOXIDANT COATINGS (NO-OX) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
4. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED. IN ALL CASES, BENDS SHALL BE MADE WITH A MINIMUM BEND RADIUS OF 12 INCHES.
5. ALL TOWER TOP GROUND WIRES SHALL BE SUPPORTED EVERY TWO FEET.

LEGEND:

- EXISTING GROUND RING
- ▲ CADWELD CONNECTION (EXOTHERMIC WELD)
- ■ MECHANICAL CONNECTION
- ⊗ GROUND ROD
- ◉ TEST WELL

ANTENNA GROUNDING PLAN (TYPICAL) SCALE: NTS 1

NOT USED SCALE: NTS 2

CARRIER

TOWER OWNER

ENGINEERING COMPANY

LICENSE #: N/A

REVISIONS

REV	DATE	DESCRIPTION	INT
A	XX/XX/XX	ISSUED FOR REVIEW 90%	XXX

PRELIMINARY NOT FOR CONSTRUCTION

SITE INFORMATION

CARRIER #: XXXXXXX

ATC #: XXXXXXXX

ANY AVENUE
ANY CITY, ANY STATE, ZIP

SHEET TITLE:

GROUNDING PLANS

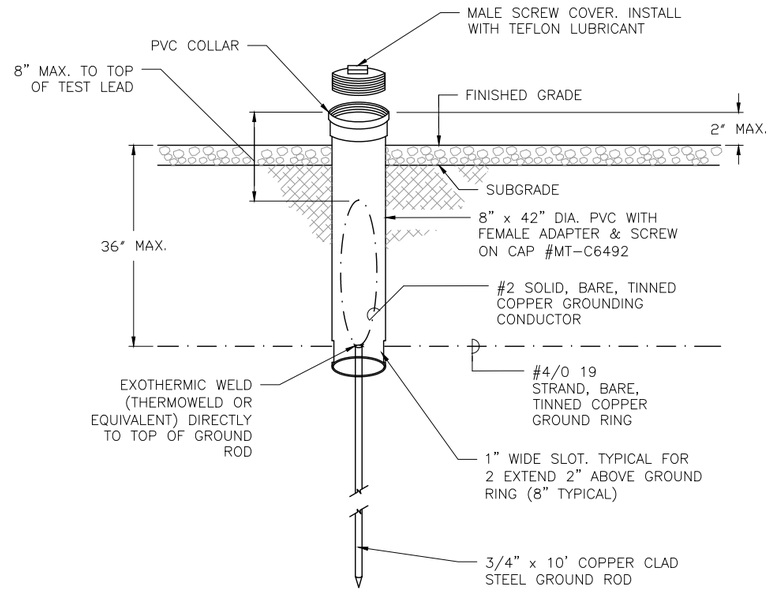
SHEET NUMBER:

E-1

NOT USED

SCALE: NTS

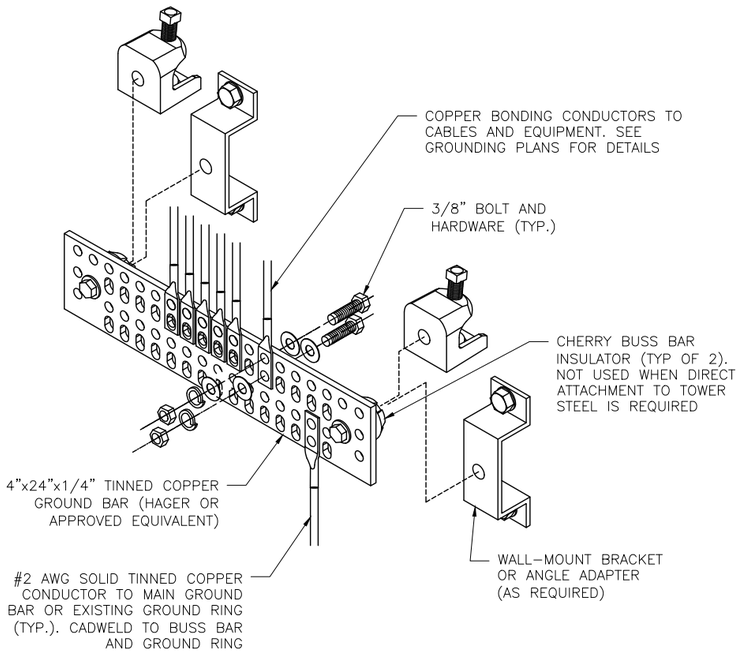
3



TEST WELL DETAIL

SCALE: NTS

1



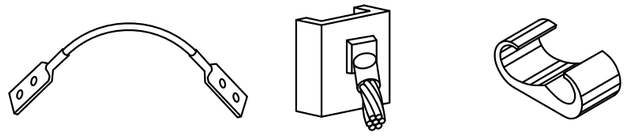
GROUND BAR DETAIL

SCALE: NTS

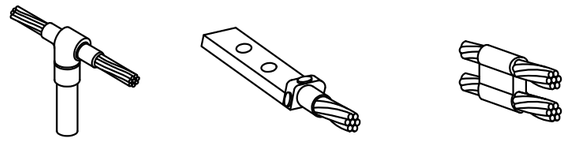
4

NOTES:

1. CADWELD "TYPES" SHOWN ARE EXAMPLES. CONSULT WITH CONSTRUCTION MANAGER FOR SPECIFIC TYPES OF CADWELDS TO BE USED FOR THIS PROJECT.
2. CADWELDING IS NOT ALLOWED ON CROWN CASTLE TOWERS.



TYPE 2-YA-2 | TYPE VS | TYPE YGHC



TYPE GT | TYPE YA-2 | TYPE PT

CADWELD CONNECTION TYPES

SCALE: NTS

2

CARRIER

TOWER OWNER

ENGINEERING COMPANY

LICENSE #: N/A

REVISIONS

REV	DATE	DESCRIPTION	INT
A	XX/XX/XX	ISSUED FOR REVIEW 90%	XXX

PRELIMINARY NOT FOR CONSTRUCTION

SITE INFORMATION

CARRIER #: XXXXXXX

ATC #: XXXXXXXX

ANY AVENUE
ANY CITY, ANY STATE, ZIP

SHEET TITLE:

GROUNDING DETAILS

SHEET NUMBER:

E-2

SCOPE OF WORK:

- XXXXXXX

CARRIER

ANY AVENUE, ANY CITY, ANY STATE, ANY ZIP
SITE ID#: XXXXXXX

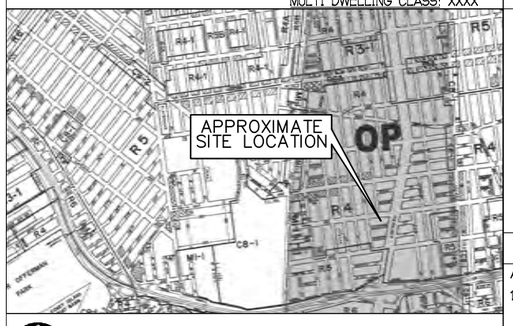
CONSTRUCTION DRAWINGS

STRUCTURAL NOTE:
I CERTIFY THAT EXISTING BUILDING AND ROOF IS CAPABLE OF CARRYING ALL ADDITIONAL LOADS INCLUDING DEAD LOAD, SNOW LOAD AND WIND LOAD PER 2014 BC CHAPTER 16 AND BC3108. AT THE LOCATIONS OF THE TELECOMMUNICATIONS EQUIPMENT ASSOCIATED WITH THIS SCOPE OF WORK AS OUTLINED IN THIS SET OF PLANS.



PLOT PLAN

STORIES: XX HEIGHT: ±70'
OCCUPANCY CLASS:
XXX-XXXXXXX
CONSTRUCTION CLASS:
XXX-XXXXXXX
MULTI DWELLING CLASS: XXXX



ZONING MAP



FIRM MAP

ZONE– ZONE X
MAP # XXXXXXX
MAP REVISED X/XX/XX

DRAWING TITLES

DWG.	DWG. TITLE	DWG.	DWG. TITLE
ANT-000.00	TITLE SHEET	ANT-104.00	ANTENNA PLAN AND SECTION (BETA)
ANT-001.00	GENERAL NOTES	ANT-106.00	SECTOR REINFORCEMENT (ALPHA AND BETA)
ANT-002.00	GENERAL NOTES	ANT-106.00	ANTENNA PLAN AND SECTION (GAMMA)
ANT-003.00	HILTI ANCHORING NOTES	ANT-107.00	SECTOR REINFORCEMENT (GAMMA)
ANT-100.00	ROOF PLAN	ANT-108.00	ANTENNA AND EQUIPMENT DETAILS
ANT-101.00	BUILDING ELEVATION	ANT-109.00	ANTENNA SCHEDULE
ANT-102.00	EQUIPMENT PLANS		
ANT-103.00	ANTENNA PLAN AND SECTION (ALPHA)		

TPPN # 5/98 COMPLIANCE NOTES:

THE EXISTING ANTENNAS DO NOT EXTEND HIGHER THAN SIX (6) FEET ABOVE THE HEIGHT OF THE STRUCTURE TO WHICH THEY ARE ATTACHED.
THE EXISTING ANTENNAS DO NOT EXCEED 8.45 SQUARE FEET OR ONE METER IN DIAMETER.

1. SQUARE FOOTAGE OF EXISTING COMMUNICATIONS CARRIER(S) = ±40.0 SF
   SQUARE FOOTAGE OF EXISTING EQUIPMENT TO BE REMOVED = ±18.0 SF
   SQUARE FOOTAGE OF NEW COMMUNICATIONS EQUIPMENT = ±9.0 SF
   TOTAL SQUARE FOOTAGE OF COMMUNICATIONS EQUIPMENT = ±31.0 SF
   TOTAL SQUARE FOOTAGE OF BUILDING = ±62,115 SF
   (LESS THAN 400 SQUARE FEET & LESS THAN 5% EXISTING FLOOR AREA)
2. THE PROPOSED WORK WILL HAVE NO EFFECT IN THE STRUCTURAL STABILITY.
3. NO CHANGE IN USE, EGRESS OR OCCUPANCY

CONTROLLED INSPECTIONS:

ALL WORK SHOWN IS SUBJECT TO THE REQUIREMENTS OF THE BUILDING CODE OF THE CITY OF NEW YORK AND DIRECTIVE 14 PERMITS AND INSPECTIONS.

1. ITEMS SUBJECT TO CONTROLLED INSPECTIONS ARE:

CODE/SECTIONS	PERMIT/INSPECTIONS
28-116.2.4.4, 109.5 & DIRECTIVE 14 & 1 RCNY 101-10	FINAL INSPECTION
BC 1704.3.2	STRUCTURAL STEEL - DETAILS
BC 1704.3.3	STRUCTURAL STEEL - ERECTION AND BOLTING

2. CONTRACTOR SHALL COORDINATE WITH CARRIER, OWNER AND ENGINEER FOR CONTROLLED INSPECTION PRIOR TO INSTALLATION OF CONCEALMENT AND FINISHES. CONTRACTOR SHALL BE RESPONSIBLE TO RE-OPEN CONCEALED CONDITIONS IF ENGINEER IS NOT CONTACTED FOR SPECIAL INSPECTION PRIOR.
3. CONTRACTOR SHALL ALLOW 48HOURS ADVANCED NOTICE FOR ALL INSPECTIONS.
4. CONTRACTOR SHALL PHOTOGRAPH ALL ITEMS TO BE CONCEALED FOR RECORD PURPOSE AND ISSUE TO CARRIER & ENGINEER.
5. THERE ARE NO PENETRATIONS TO BUILDING'S THERMAL ENVELOPE OR TO ANY FIRE BARRIERS UNDER THIS PROPOSED APPLICATION.
6. I CERTIFY THAT THERE IS NO STRUCTURAL ANCHORS PROPOSED UNDER THE SCOPE OF WORK PER BB #2014-018 &/19, THEREFORE, POST- INSTALLED ANCHORS INSPECTION IS NOT REQUIRED.

2016 NYCECC ENERGY ANALYSIS FOR ALTERATION – ZONE – 4:

WORK ITEMS INCLUDING NEW AND/OR REPLACEMENT	PROPOSED DESIGNED VALUES	CODE PRESCRIBED VALUE & CITATION
ENVELOPE, WINDOWS, DOORS, STORE FRONT BASEMENT.	N/A OR NO CHANGE	N/A
INTERIOR PARTITIONS BETWEEN CONDITIONED CORRIDOR AND CONDITIONED APARTMENT	N/A OR NO CHANGE	N/A
PIPING INSULATIONS < 1.5" DIA	N/A OR NO CHANGE	N/A
EXTERIOR LIGHTING	N/A OR NO CHANGE	N/A
BOILER/HEATING FURNACES	N/A OR NO CHANGE	N/A
HVAC SYSTEM < 65,000 BT/HR, SPLIT SYSTEM, AIR COOLED	N/A OR NO CHANGE	N/A

NOTE:

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, ALL WORK UNDER THIS APPLICATION IS IN COMPLIANCE WITH THE 2016 NYCECC

LEGAL DESCRIPTION:

BLOCK: XXXX ZONE: XX
LOT: XX MAP: XXXX
BIN#: XXXXXXX

PROJECT INFORMATION:

SITE ADDRESS:
ANY AVENUE, ANY CITY
ANY STATE, ANY ZIP

STRUCTURE HEIGHT:
± 70'

PROJECT DIRECTORY:

PROPERTY OWNER:
XXXXXXX

PROPERTY CONTACT:
T.B.D.

UTILITY COMPANY:
XXXXXXX
XXXXXXX

APPLICANT:
XXXXXXX
XXXXXXX
XXXXXXX

CONSTRUCTION MANAGER:
T.B.D.

RF ENGINEER:
XXXXXXX

SAC REPRESENTATIVE:
XXXXXXX

REV.	DATE	REVISION DESCRIPTION
0	x/xx/xx	ISSUED FOR REVIEW

CARRIERS NAME

ENGINEERS INFORMATION

JOB#: XXXXXXX

SITE I.D.: XXXXXXX

DESIGN TYPE: CONSTRUCTION DRAWINGS

SITE INFORMATION:
1234 ANY AVENUE
ANY CITY, ANY STATE, ANY ZIP

DRAWING TITLE: TITLE SHEET

DATE:	X/X/XXXX
PROJECT NO.:	XXXXXXX
DRAWN BY:	CDC
CHECKED BY:	XX

DRAWING NO.
ANT-000.00
1 of 14

GENERAL CONSTRUCTION NOTES:

1. THIS SET OF PLANS HAS BEEN PREPARED FOR THE PURPOSES OF MUNICIPAL AND AGENCY REVIEW AND APPROVED. THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL DRAWING HAVE BEEN REVISED TO INDICATE "ISSUED FOR CONSTRUCTION."

2. ADA COMPLIANCE THE FACILITY IS A NORMALLY UNOCCUPIED MOBILE RADIO FACILITY.

3. THESE PLANS ARE INTENDED TO BE USED TO DIRECT THE PROPOSED LAYOUT. DRAWING SHOULD NOT BE SCALED UNLESS OTHERWISE NOTED, PLANS, ELEVATIONS AND DETAILS ARE INTENDED TO SHOW THE END RESULT OF DESIGN. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS.

4. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AND NOTIFY THE PROJECT MANAGER OF ANY DISCREPANCIES BEFORE STARTING ANY WORK.

5. THESE PLANS ARE DESIGNED TO REFLECT OBSERVED FIELD CONDITIONS. CERTAIN CONDITIONS ARE ASSUMED TO COMPLY WITH GENERAL STANDARD CONSTRUCTION DESIGN METHODS AND PRINCIPLES AND THE CONTRACTOR SHALL NOTE THAT NOT ALL AREAS OF STRUCTURAL ATTACHMENT HAVE BEEN OPENED SPECIFICALLY VERIFIED. THE CONTRACTOR IS THEREFORE REQUESTED TO NOTIFY THE ENGINEER IMMEDIATELY SHOULD ENCOUNTERED FIELD CONDITIONS VARY FROM THOSE DEPICTED ON THE DRAWINGS. ENGINEERING FIRM WILL ISSUE FIELD CHANGE DIRECTION IF REQUIRED. THE PROJECT MANAGER IS REFERENCED ON THE DRAWING BORDER.

6. ALL EQUIPMENT AND MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS UNLESS OTHERWISE NOTED BY THE ENGINEER OF RECORD.

7. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK PERFORMED AND MATERIALS INSTALLED TO BE IN STRICT CONFORMANCE, AS A MINIMUM STANDARD, WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCE HAVING JURISDICTION.

8. THE CONTRACTOR SHALL KEEP CONTRACT AREA CLEAN, HAZARD FREE AND DISPOSE OF ALL DIRT, STUMPS, STONES, RUBBISH OR DEBRIS IN ACCORDANCE WITH ALL LOCAL AND ENVIRONMENTAL LAWS. NO MATERIALS OR EQUIPMENT SHALL BE PLACED ANYWHERE ON OR IN THE STRUCTURE WITHOUT MAKING ADEQUATE PROVISIONS TO PROTECT EXISTING PROPERTY. UPON COMPLETION REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DURING CONSTRUCTION. REPAIR ALL EXISTING WALL SURFACES DAMAGED DURING CONSTRUCTION SUCH THAT THEY MATCH AND BLEND WITH ADJACENT SURFACES.

9. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE AND HAVE CONTROL OVER CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES.

GENERAL SITE NOTES:

10. THE CONTRACTOR SHALL CALL UTILITIES PRIOR TO THE START OF CONSTRUCTION
11. 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 CAUTIONS SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW, THIS WILL INCLUDE BUT NOT LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.
12. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWING.
13. THE AREAS OF THE OWNERS PROPERTY DISTRIBUTED BY THE WORK AND NOT COVERED BY THE BUILDING OR DRIVEWAY SHALL BE GRADED TO A UNIFORM SLOPE FERTILIZED SEEDED AND COVERED WITH MULCH.
14. CONTRACTOR 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.

GENERAL CONSTRUCTION NOTES:

DIVISION 1- GENERAL REQUIREMENTS SECTION 01010 SUMMARY OF WORKS:

15. THE CONTRACTOR SHALL REVIEW AND BECOME FAMILIAR WITH SPECIFICATIONS CONTAINED IN THE BID PACKAGE PREPARED BY ENGINEERING FRIM. AND THE CLIENT.

16. IN THE EVENT OF CONFLICT BETWEEN THE BID PACKAGE SPECIFICATION AND THESE NOTES, THE PROVISIONS OF THE CLIENT SPECIFICATION SHALL TAKE PRECEDENCE.

17. THE CONTRACTOR SHALL VISIT THE SITE OF THE PROPOSED WORK AND FULLY ACQUAINT THEMSELVES WITH THE CONDITION AS THEY EXIT IN ORDER THAT ANY RESTRICTIONS PERTAINING TO THE WORK ARE UNDERSTOOD. ALL AREAS AND DIMENSIONS ARE INDICATED ON THE DRAWINGS AS ACCURATELY AS POSSIBLE, BUT ALL CONDITIONS SHALL BE VERIFIED BY EACH CONTRACTOR AND/OR SUBCONTRACTOR AT THE SITE. THE FAILURE OF THE CONTRACTOR TO EXAMINE OR RECEIVE ANY FORM, INSTRUMENT OR DOCUMENT, OR TO VISIT THE SITE SHALL NOT RELIEVE THE CONTRACTOR FROM ANY OBLIGATION WITH RESPECT TO THEIR QUOTED PRICE. THE SUBMISSION OF A QUOTATION SHALL ACKNOWLEDGE THAT THE CONTRACTOR AND THEIR SUBCONTRACTORS HAVE FULLY EXAMINED THE SITE AND KNOW THE EXISTING CONDITION AND HAVE MADE PROVISIONS FOR OPERATING UNDER THE CONDITIONS AS THEY EXIST AT THE SITE AND HAVE INCLUDED ALL NECESSARY ITEMS.

18. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH THE BUILDING LANDLORD IN ORDER TO AVOID CONFLICTS WITH CURRENT USE OF THE SITE.

19. THE OWNER MAY HAVE WORK PERFORMED UNDER SEPARATE CONTRACTS, CONCURRENTLY, WITH THE WORK OF THIS CONTRACT.

20. THE GENERAL CONTRACTOR SHALL PERMIT ACCESS TO THE PROJECT OF THESE CONTRACTORS TO PERFORM THEIR WORK.

21. CONTRACTOR SHALL CONFORM TO ALL APPLICABLE LOCAL, COUNTY, STATE, AND FEDERAL CODES, LAWS AND REQUIREMENTS, INCLUDING OSHA.

22. THE CONTRACTOR SHALL APPLY AND PAY FOR THE CONSTRUCTION PERMIT, CERTIFICATE OF OCCUPANCY AND ALL OTHER REQUIRED PERMITS OR LICENSES. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL INSPECTIONS.

23. CARE SHALL BE EXERCISED IN PROTECTING THE BUILDING OCCUPANTS DURING THE DEMOLITION AND CONSTRUCTION PERIODS OF THIS PROJECT. EVERY EFFORT SHALL BE MADE TO MAINTAIN A CLEAN OPERATION. DEBRIS SHALL NOT ACCUMULATE. ALL DEBRIS WILL BE DEPOSITED IN A SUITABLE CONTAINER ON A DAILY BASIC AND SHALL BE EMPTIED ON A REGULAR SCHEDULE. THE LOCATION OF THE CONTAINER SHALL BE COORDINATED WITH THE BUILDING MANAGER.

24. SAFETY PROCEDURES; ATTENTION IS DIRECTED TO FEDERAL, STATE, AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH STANDARDS. THE CONSTRUCTION COMPANY AWARDED THIS PROJECT SHALL ENSURE ALL WORKING SURROUNDINGS AND CONDITIONS ARE SANITARY, AND ARE NOT HAZARDOUS OR DANGEROUS TO THE HEALTH OR SAFETY OF THE WORK CREWS OR BUILDING OCCUPANTS. PRECAUTION SHALL BE EXERCISED AT ALL TIMES FOR THE PROTECTION OF PERSONS AND PROPERTY. IT IS MANDATORY THAT THE SAFETY PROVISIONS OF APPLICABLE LOCAL LAWS, OSHA REGULATIONS AND BUILDING AND CONSTRUCTION CODES, BE OBSERVED FOR ALL CONTRACTORS AND ANTENNA RIGGERS.

25. IF APPLICABLE (ROOFTOP SITES) THE GENERAL CONTRACTOR MUST COORDINATE ALL ROOF RELATED WORK WITHE THE LANDLORD'S PRE-APPROVED ROOFER. THE GENERAL CONTRACTOR MUST CONFIRM THE COMPATIBILITY OF ALL MATERIALS AND ENSURE THAT ALL EXISTING ROOF WARRANTIES, IF ANY, REMAIN IN EFFECT.

SECTION 01615-DELIVERY, STORAGE AND HANDLING:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROCEDURES AND SCHEDULING ASSOCIATED WITH HOSTING, STAGING AND ERECTING OF MATERIALS AND EQUIPMENT TO AND/OR UPON THE SITE.

2. ALL ELEMENTS OF THE EXISTING SITE, I.E. STRUCTURES, SITE PLANNING, ETC. SHALL BE PROTECTED AS NECESSARY FROM SAID ACTIONS. THIS WORK MUST BE DONE IN A SAFE, SECURE NONDESTRUCTIVE MANNER FOR PROTECTING PERSONNEL AND PROPERTY.

SECTION 01740 WARRANTIES AND BONDS:

3. THE CONTRACTOR SHALL GUARANTEE ALL LABOR AND MATERIALS USED IN THIS PROJECT FOR A MINIMUM PERIOD OF ONE (1) YEAR COMMENCING FROM THE DATE OF FINAL ACCEPTANCE BY THE CLIENT. THE CONTRACTOR IS NOT REQUIRED TO GUARANTEE MATERIAL SUPPLIED BY THE OWNER.

4. FINAL DATE OF ACCEPTANCE IS DESIRED AS THE ALL REQUIRED STATE AND FEDERAL APPROVAL HAVE BEEN OBTAINED INCLUDING, BUT NOT LIMITED TO:
   A. FINAL INSPECTION
   B. CERTIFICATE OF OCCUPANCY

5. ANY DEFICIENCIES THAT COME EVIDENT DURING THIS ONE (1) YEAR PERIOD SHALL BE CORRECTED BY THE CONTRACTOR at the contractor's expense.

REV.	DATE	REVISION DESCRIPTION
0	x/xx/xx	ISSUED FOR REVIEW

CARRIERS NAME

ENGINEERS INFORMATION

JOB#: XXXXXXX

SITE I.D.: XXXXXXX

DESIGN TYPE: CONSTRUCTION DRAWINGS

SITE INFORMATION:
1234 ANY AVENUE
ANY CITY, ANY STATE, ANY ZIP

DRAWING TITLE: GENERAL NOTES

DATE:	X/X/XXXX
PROJECT NO.:	XXXXXXX
DRAWN BY:	CDC
CHECKED BY:	XX

DRAWING NO.
ANT-001.00
2 of 14

DIVISION 5 METALS:

SECTION 05120-STRUCTURAL STEEL

1. CODES AND SPECIFICATIONS:
   - A. THE FABRICATION/ERECTION SHALL CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES AND SPECIFICATIONS, LATEST ADDITION, UNLESS OTHERWISE NOTED:
     - THE LOCAL BUILDING CODE.
     - AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, ANSI/AISC 360-05.
     - ASTM A992 STRUCTURAL STEEL (FOR ALL W. SECTIONS ONLY).
     - ASTM A36 STRUCTURAL STEEL (ALL OTHER SECTIONS).
     - ASTM A53, TYPE E, GRADE B, ELECTRIC RESISTANCE WELDED STEEL PIPE.
     - ASTM 123 ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS.
     - ASTM 153 ZINC COATED (HOT-DIP) IRON AND STEEL HARDWARE
     - AWS D1.1 STRUCTURAL WELDING CODE.
     - E1A/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNAS TOWERS AND ANTENNA SUPPORTING STRUCTURES.
2. DESIGN PARAMETERS: (IF ANTENNAS WORK IS INCLUDED WITH DESIGN)
   - A. THE STRUCTURAL STEEL ANTENNA MOUNTING FRAMES ARE DESIGNED TO PROVIDE SUPPORT FOR ANTENNAS AND ALL HARDWARE AND ACCESSORIES ASSOCIATED WITH ANTENNAS.
3. FABRICATION AND INSTALLATION REQUIREMENTS:
   - B. ALL STRUCTURAL ELEMENTS AND FASTENERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123 AND A153.
   - C. WELDS SHOULD BE SHOP MADE WHATEVER POSSIBLE, CONFORMING TO AISC SPECIFICATION AND AWS REQUIREMENTS. ALL WELDS ARE TO BE OF THE SIZE AND TYPE INDICATED. CONTRACTOR SHALL EMPLOY A LICENSED WELDER AND SHALL PROVIDE THE ENGINEER WITH THEIR NAME AND A COPY OF THEIR LICENCE PRIOR TO COMMENCING ANY FIELD WELDING.
   - D. CONTRACTOR SHALL PROVIDE FIRE WATCH DURING ALL WELDING OPERATIONS, BRAZING AND SOLDERING AND OTHER WORK REQUIRING THE USE OF AN OPEN FLAME ITEMS. TWO (2) HAND HELD 30 LB. FIRE EXTINGUISHERS AND ADEQUATE WATER SUPPLY SHALL BE MAINTAINED ON SITE. FIRE WATCH PLAN SHALL BE SUBMITTED TO THE CLIENT FOR APPROVAL PRIOR TO WELDING.
   - E. ALL BOLTED CONNECTIONS SHALL BE A325 HIGH STRENGTH BOLTS 5/8" DIAMETER MINIMUM SIZE UNLESS OTHERWISE NOTED. BOLTS SHALL BE SUPPLIED WITH LOCK WASHERS. BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH THE AISE TURN OF NUT METHOD, TO THE SNUG TIGHT CONDITION, UNLESS OTHERWISE NOTED.
   - F. PROTECTIVE GALVANIZED COSTING WHICH WERE DAMAGED OR REMOVED DURING ERECTION OR TRANSPORTATION SHALL BE RESTORED BY PAINTING WITH ZINC-RICH PRIMER.
   - G. ALL THREADED RODS SHALL BE 1/2" DIAMETER A36 STEEL UNLESS OTHERWISE NOTED.
   - H. TEMPORARY STRUCTURES FOR STAGING AND CONSTRUCTION SHALL BE CAPABLE OF WITHSTANDING FORCES SPECIFIED BY THE LOCAL BUILDING CODE CURRENT EDITION.
4. INSPECTIONS:
   - A. COORDINATE ALL INSPECTIONS WITH THE CLIENTS CONSTRUCTION MANAGER,
   - B. CONTRACTOR TO MAKE NOTIFICATIONS 24 HOURS PRIOR TO ANY REQUIRED INSPECTIONS.

TENANT SAFETY PLAN:

1. EGRESS. AT ALL TIMES IN THE COURSE OF CONSTRUCTION PROVISION SHALL BE MADE FOR ADEQUATE EGRESS AS REQUIRED BY THIS CODE AND THE TENANT PROTECTION PLAN SHALL IDENTIFY THE EGRESS THAT WILL BE PROVIDED. REQUIRED EGRESS SHALL NOT BE OBSTRUCTED AT ANY TIME EXCEPT WHERE APPROVED BY THE COMMISSIONER.

2. FIRE SAFETY. ALL NECESSARY LAWS AND CONTROLS, INCLUDING THOSE WITH RESPECT TO OCCUPIED DWELLINGS, AS WELL AS ADDITIONAL SAFETY MEASURES NECESSITATED BY THE CONSTRUCTION SHALL BE STRICTLY OBSERVED.

3. HEALTH REQUIREMENTS. SPECIFICATION OF MEANS AND METHODS TO BE USED FOR CONTROL OF DUST, DISPOSAL OF CONSTRUCTION DEBRIS, PEST CONTROL AND MAINTENANCE OF SANITARY FACILITIES, AND LIMITATION OF NOISE TO ACCEPTABLE LEVELS SHALL BE INCLUDED.
   3.1. THERE SHALL BE INCLUDED A STATEMENT OF COMPLIANCE WITH APPLICABLE PROVISIONS OF LAW RELATING TO LEAD AND ASBESTOS, AND SUCH STATEMENT SHALL DESCRIBE WITH PARTICULARITY WHAT MEANS AND METHODS ARE BEING UNDERTAKEN TO MEET SUCH COMPLIANCE.

4. COMPLIANCE WITH HOUSING STANDARDS. THE REQUIREMENTS OF THE NEW YORK CITY HOUSING MAINTENANCE CODE, AND, WHERE APPLICABLE, THE NEW YORK STATE MULTIPLE DWELLING LAW SHALL BE STRICTLY OBSERVED.

5. STRUCTURAL SAFETY. NO STRUCTURAL WORK SHALL BE DONE THAT MAY ENDANGER THE OCCUPANTS.

6. NOISE RESTRICTIONS. WHERE HOURS OF THE DAY OR THE DAYS OF THE WEEK IN WHICH CONSTRUCTION WORK MAY BE UNDERTAKEN ARE LIMITED PURSUANT TO THE NEW YORK CITY NOISE CONTROL CODE, SUCH LIMITATIONS SHALL BE STATED.

7. MAINTAINING ESSENTIAL SERVICES. WHERE HEAT, HOT WATER, COLD WATER, GAS, ELECTRICITY, OR OTHER UTILITY SERVICES ARE PROVIDED IN SUCH BUILDING OR IN ANY DWELLING UNIT LOCATED THEREIN, THE TENANT PROTECTION PLAN SHALL SPECIFY THE MEANS AND METHODS TO BE USED FOR MAINTAINING SUCH SERVICES DURING SUCH WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE NEW YORK CITY HOUSING MAINTENANCE CODE. IF A DISRUPTION OF ANY SUCH SERVICE IS ANTICIPATED DURING THE WORK, THEN SUCH PLAN SHALL SPECIFY THE ANTICIPATED DURATION OF SUCH DISRUPTION AND THE MEANS AND METHODS TO BE EMPLOYED TO MINIMIZE SUCH DISRUPTION, INCLUDING THE PROVISION OF SUFFICIENT ALTERNATIVES FOR SUCH SERVICE DURING SUCH DISRUPTION.

CONSTRUCTION SAFETY PLAN:

1. ALL PRECAUTIONS AND MEASUREMENTS WILL BE TAKEN TO INSURE THE SAFETY OF THE OCCUPANTS OF THE BUILDING AS WELL AS THE SAFETY OF THE PEDESTRIANS BELOW.
2. BARRICADES WILL BE ERECTED SEPARATING WORK AREAS FROM ALL PUBLIC SPACES AS NEEDED
3. ALL FIRE AND OTHER REQUIRED EXITS, WAY OF APPROACH THERETO AND WAY OF TRAVEL FROM THE EXIT TO THE STREET SHALL BE CONTINUOUSLY MAINTAINED FREE FOR UNOBSTRUCTED EGRESS.
4. PROVIDE A PORTABLE FIRE EXTINGUISHER(S) WITH A RATING NOT LESS THAN 2-A OR 2-A1-BC WITHIN 75 FEET OF ALL PORTIONS OF THE WORK AREA.

2014 NYC BUILDING CODE - SECTION BC 3108: RADIO, TELEVISION AND TELECOMMUNICATION TOWERS AND ANTENNAS:

3108.1 GENERAL.
SUBJECT TO THE PROVISIONS OF CHAPTER 16 AND THE REQUIREMENTS OF CHAPTER 15 GOVERNING THE FIRE-RESISTANCE RATING OF BUILDING FOR THE SUPPORT OF ROOF STRUCTURES, RADIO, TELEVISION, AND TELECOMMUNICATIONS TOWERS AND ANTENNAS SHALL BE DESIGNED AND CONSTRUCTED AS HEREIN PROVIDED. ALL SUCH TOWERS AND ANTENNAS SHALL BE COLLECTIVELY REFERRED TO AS "TOWERS" FOR THE PURPOSES OF THIS SECTION. TOWERS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF TIA-222.

3108.2 LOCATION AND ACCESS.
TOWER SHALL BE LOCATED AND EQUIPPED WITH STEP BOLTS AND LADDERS SO AS TO PROVIDE READY ACCESS FOR INSPECTION PURPOSES. GUY WIRES OR OTHER ACCESSORIES SHALL NOT CROSS OR ENCROACH UPON ANY STREET OR OTHER PUBLIC SPACE, OR OVER ABOVE-GROUND ELECTRIC UTILITY LINES, OR ENCROACH UPON ANY PRIVATELY OWNED PROPERTY WITHOUT WRITTEN CONSENT OF THE OWNER OF THE ENCROACHED-UPON PROPERTY, SPACE OR ABOVE-GROUND ELECTRIC UTILITY LINES. TOWERS SHALL BE EQUIPPED WITH CLIMBING AND WORKING FACILITIES IN COMPLIANCE WITH TIA-222, SEE APPLICABLE OSHA, FCC AND EPA REGULATIONS RELATING TO LIMITATIONS ON ACCESS TO TOWER SITE.

3108.3 CONSTRUCTION.
TOWERS SHALL BE CONSTRUCTED OF APPROVED CORROSION-RESISTANT NONCOMBUSTIBLE MATERIAL. THE MINIMUM TYP OF CONSTRUCTION OF ISOLATED RADIO TOWERS NOT MORE THAN 100 FEET (30,480 MM) IN HEIGHT SHALL BE TYPE IIB.

3108.4 LOADS.
TOWERS SHALL BE DESIGNED TO RESIST WIND LOADS IN ACCORDANCE WITH TIA/EIA-222. CONSIDERATION SHALL BE GIVEN TO CONDITIONS INVOLVING WIND LOAD ON ICE-COVERED SECTIONS.

3108.4.1 DEAD LOAD.
TOWERS SHALL BE DESIGNED FOR THE DEAD LOAD PLUS ICE LOAD.

3108.4.2 TOWER SHALL BE PROVED WITH ADEQUATE FOUNDATIONS AND ANCHORAGE DESIGNED TO RESIST TWO TIMES THE CALCULATED WIND LOAD.

3108.5 GROUNDING.
TOWERS SHALL BE PERMANENTLY AND EFFECTIVELY GROUNDED IN ACCORDANCE WITH THE NEW YORK CITY ELECTRICAL CODE.

REV.	DATE	REVISION DESCRIPTION
0	x/xx/xx	ISSUED FOR REVIEW

CARRIERS NAME

ENGINEERS INFORMATION

JOB#: XXXXXXX

SITE I.D.: XXXXXXX

DESIGN TYPE: CONSTRUCTION DRAWINGS

SITE INFORMATION:
1234 ANY AVENUE
ANY CITY, ANY STATE, ANY ZIP

DRAWING TITLE: GENERAL NOTES

DATE:	X/X/XXXX
PROJECT NO.:	XXXXXXX
DRAWN BY:	CDC
CHECKED BY:	XX

DRAWING NO.: ANT-002.00

HILTI HIT HY-270 ADHESIVE ANCHORS NOTES:

CONTRACTOR TO INSPECT WALL PRIOR TO FABRICATION. IF THE WALL IS IN POOR CONDITION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

DRILLING FOR BOLT HOLES SHALL BE DONE WITH ELECTRIC ROTARY DRILL. IMPACT TOOLS SHALL NOT BE USED FOR DRILLING HOLES OR FOR TIGHTENING ANCHORS AND SHEAR BOLT NUTS.

ANCHORS RESISTING TENSION FORCES OR A COMBINATION OF TENSION AND SHEAR FORCES MUST BE TESTED AS FOLLOWS:

MINIMUM WALL THICKNESS SHALL BE 12" FOR THE HILTI ADHESIVE ANCHOR SYSTEM. TENSION TEST SHALL BE PERFORMED BY A NEW YORK CITY APPROVED TESTING LABORATORY. FIVE PERCENT OF THE ANCHORS SHALL BE TESTED WITH A MINIMUM OF TWO TESTS. WHERE THE WALL THICKNESS VARIES, AT LEAST ONE TEST SHALL BE PERFORMED ON AN ANCHOR WHICH HAS THE LEAST AMOUNT OF EMBEDMENT. THE TEST SHALL SHOW THAT THE BOLTS CAN MAINTAIN A TENSILE LOAD MANUFACTURES ALLOWABLE WORKING LOAD FOR A PERIOD OF 5 MINUTES WITH THE ALLOWABLE DISSIPATION OF NO MORE THAN 10% DEVIATION FROM THE INITIALLY APPLIED LOAD. THE ALLOWABLE DISPLACEMENT OF THE ANCHOR FROM THE FACE OF THE WALL SHALL NOT BE MORE THAN 1/8". THE TEST REPORT SHALL INCLUDE:

1. TEST LOCATION(S).
2. BRICK/MORTAR CONDITION.
3. EMBEDMENT DEPTH.
4. APPLIED LOAD.
5. REMAINING TENSILE LOAD AFTER 5 MINUTES.
6. ANCHOR DISPLACEMENT.
7. CALIBRATION OF THE TENSION LOAD TEST EQUIPMENT.

THE TEST RESULTS SHALL BE OBSERVED AND APPROVED BY A NEW YORK SPECIAL INSPECTOR FOR EACH JOB. THE TEST SHALL BE CONDUCTED IN ACCORDANCE WITH ASTM E-488 AND HILTI'S QUALITY CONTROL PROCEDURES. SHOULD ANY OF THE BOLTS FAIL THE ABOVE CRITERIA, THEN ALL OF THE ANCHORS SHALL BE TESTED AND REPLACED OR SUBSTITUTED AS NECESSARY.

ONE FIFTH (20%) OF THE INSTALLED ANCHORS SHALL BE TESTED BY A NEW YORK CITY SPECIAL INSPECTOR USING A TORQUE CALIBRATED WRENCH TO A MINIMUM TORQUE OF 60 FOOT-LBS.

NOTE:
CONTRACTOR TO INSPECT WALL PRIOR TO FABRICATION. IF THE WALL IS IN POOR CONDITION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

HILTI HIT HY-200 ADHESIVE ANCHORS NOTES:

GENERAL NOTES FOR POST-INSTALLED ANCHORS

1) EXCEPT WHERE INDICATED ON THE DRAWINGS, POST-INSTALLED ANCHORS SHALL CONSIST OF THE FOLLOWING ANCHOR TYPES AS PROVIDED BY HILTI, INC. CONTACT HILTI AT (800) 879-8000 FOR PRODUCT RELATED QUESTIONS.

   a) ANCHORAGE TO CONCRETE

   i) ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
      (1) HILTI HIT-HY 200 SAFE SET SYSTEM WITH THE HILTI HIT-Z ROD PER ICC SER-3187
      (2) HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT (UTE-CD OR TE-YD) AND VC 20/40/150/300 VACUUM SYSTEM WITH HAS-E THREADED ROD PER ICC ESR-3187
      (3) HILTI HIT-RE 500 V3 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT (TE-CD OR TE-YD) AND VC 20/40150/300 VACUUM WITH HAS-E THREADED ROD PER ICC ESR-3814
      (4) HILTI HIT-RE 500 V3 SAFE SET SYSTEM WITH HILTI ROUGHENING TOOL (TE-YRT) WITH HAS-E THREADED ROD PER ICC ESR-3814 FOR DIAMOND CORED HOLES

   ii) MEDIUM DUTY MECHANICAL ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
      (1) HILTI KWIK HUS EZ AND KWIK HUS EZ-I SCREW ANCHORS PER ICC ESR-3027
      (2) HILTI KWIK BOLT-TZ EXPANSION ANCHORS PER ICC ESR-1917
      (3) HILTI KWIK BOLT 3 EXPANSION ANCHORS (UNCRACKED CONCRETE ONLY) PER ICC ESR-2302

   iii) HEAVY DUTY MECHANICAL ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
      (1) HILTI HDA UNDERCUT ANCHORS PER ICC ESR 1546
      (2) HILTI HSL-3 EXPANSION ANCHORS PER ICC ESR 1545

HILTI HIT HY-200 ADHESIVE ANCHORS NOTES (CONT.):

   b) REBAR DOWELING INTO CONCRETE

   i) ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
      (1) HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT (TE-CD OR TE-YD) AND VC 20/40/150/300 VACUUM SYSTEM WITH CONTINUOUSLY DEFORMED REBAR PER ICC ESR-3187
      (2) HILTI HIT-HY 500 V3 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT (TE-CD OR TE-YD) AND VC 20/40/150/300 VACUUM SYSTEM WITH CONTINUOUSLY DEFORMED REBAR PER ICC ESR-3814
      (3) HILTI HIT-RE 500 V3 SAFE SET SYSTEM WITH HILTI ROUGHENING TOOL (TE-YRT) WITH CONTINUOUSLY DEFORMED REBAR PER ICC ESR-3814 IN DIAMOND CORED HOLES

   c) ANCHORAGE TO SOLID GROUTED MASONRY

   i) ADHESIVE ANCHORS USE:
      (1) HILTI HIT-HY 270 SAFE SET MASONRY ADHESIVE ANCHORING SYSTEM WITH HILTI HOLLOW DRILL BIT (TE-CD OR TE-YD) AND VC 20/40/150/300 VACUUM PER ICC ESR-4143
      (2) STEEL ANCHOR ELEMENT SHALL BE HILTI HAS-E CONTINUOUSLY THREADED ROD OR CONTINUOUSLY DEFORMED STEEL REBAR

   ii) MECHANICAL ANCHORS USE
      (1) HILTI KWIK BOLT-3 EXPANSION ANCHORS PER ICC ESR 1385

   d) ANCHORAGE TO HOLLOW / MULTI-WYTHE MASONRY

   i) ADHESIVE ANCHORS USE:
      (1) HILTI HIT-HY 270 MASONRY ADHESIVE ANCHORING SYSTEM PER ICC ESR-4144
      (2) STEEL ANCHOR ELEMENT SHALL BE HILTI HAS-E CONTINUOUSLY THREADED ROD OR CONTINUOUSLY DEFORMED STEEL REBAR
      (3) THE APPROPRIATE SIZE SCREEN TUBE SHALL BE USED PER ADHESIVE MANUFACTURER'S INSTRUCTIONS

2) ANCHOR CAPACITY USED IN DESIGN SHALL BE BASED ON THE TECHNICAL DATA PUBLISHED BY HILTI OR IN THE APPLICABLE ICC-ESR, OR SUCH OTHER METHOD AS APPROVED BY THE STRUCTURAL ENGINEER OF RECORD. SUBSTITUTION REQUESTS FOR ALTERNATE PRODUCTS MUST BE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO USE. CONTRACTOR SHALL PROVIDE CALCULATIONS DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERFORMANCE VALUES OF THE SPECIFIED PRODUCT. SUBSTITUTIONS WILL BE EVALUATED BY THEIR HAVING AN ICC ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR SEISMIC USES, LOAD RESISTANCE, INSTALLATION CATEGORY, AND AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE AND INSTALLATION TEMPERATURE.

3) INSTALL ANCHORS PER THE MANUFACTURER INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING.

4) OVERHEAD ADHESIVE ANCHORS MUST BE INSTALLED USING THE HILTI PROFI SYSTEM.

5) INSTALLATION OF ADHESIVE ANCHORS HORIZONTALLY OR UPWARDLY INCLINED TO SUPPORT TENSION LOADS SHALL BE PERFORMED BY PERSONNEL CERTIFIED BY AN APPLICABLE CERTIFICATION PROGRAM. CERTIFICATION SHALL INCLUDE WRITTEN AND PERFORMANCE TESTS IN ACCORDANCE WITH THE ACI/CRSI ADHESIVE ANCHOR INSTALLER CERTIFICATION PROGRAM, OR EQUIVALENT. THE ACCEPTABILITY OF CERTIFICATION OTHER THEN THE ACI/CRSI ADHESIVE ANCHOR INSTALLER CERTIFICATION SHALL BE THE RESPONSIBILITY OF THE LICENSED DESIGN PROFESSIONAL. THE STRUCTURAL ENGINEER OF RECORD MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF INSTALLING ANCHORS.

6) ANCHOR CAPACITY IS DEPENDANT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.

7) EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS. UNLESS NOTED ON THE DRAWINGS THAT THE BARS CAN BE CUT, THE CONTRACTOR SHALL REVIEW THE EXISTING STRUCTURAL DRAWINGS AND SHALL UNDERTAKE TO LOCATE THE POSITION OF THE REINFORCING BARS AT THE LOCATIONS OF THE CONCRETE ANCHORS, BY HILTI FERROSCAN, GPR, X-RAY, CHIPPING OR OTHER MEANS.

REV.	DATE	REVISION DESCRIPTION
0	x/xx/xx	ISSUED FOR REVIEW

CARRIERS NAME

ENGINEERS INFORMATION

JOB#: XXXXXXX

SITE I.D.: XXXXXXX

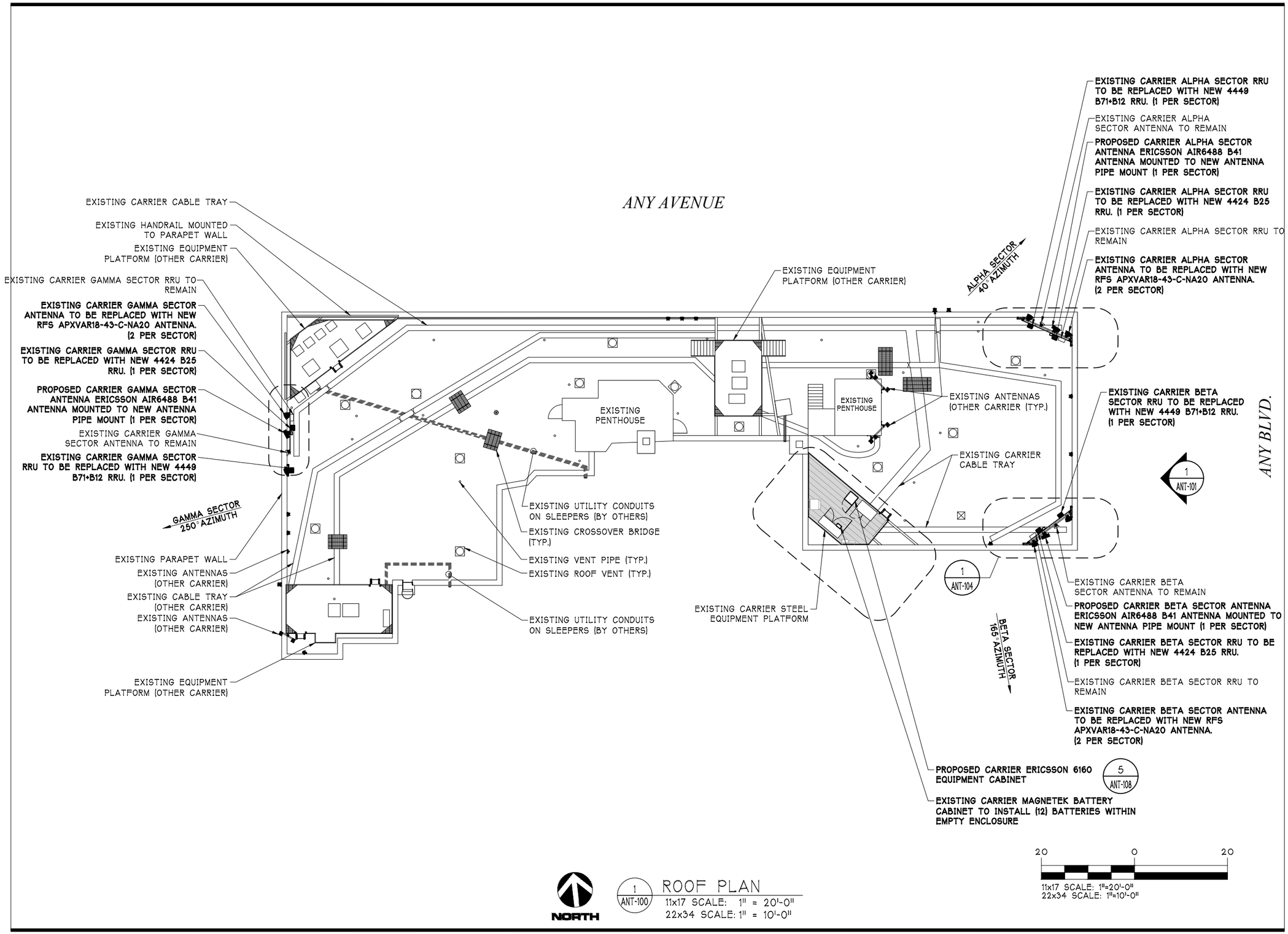
DESIGN TYPE: CONSTRUCTION DRAWINGS

SITE INFORMATION:
1234 ANY AVENUE
ANY CITY, ANY STATE, ANY ZIP

DRAWING TITLE: HILTI ANCHORING NOTES

DATE:	X/X/XXXX
PROJECT NO.:	XXXXXXX
DRAWN BY:	CDC
CHECKED BY:	XX

DRAWING NO.
ANT-003.00



1 ANT-100 ROOF PLAN

11x17 SCALE: 1" = 20'-0"
22x34 SCALE: 1" = 10'-0"

REV.	DATE	REVISION DESCRIPTION
0	x/xx/xx	ISSUED FOR REVIEW

CARRIERS NAME

ENGINEERS INFORMATION

JOB#: XXXXXXX

SITE I.D.: XXXXXXX

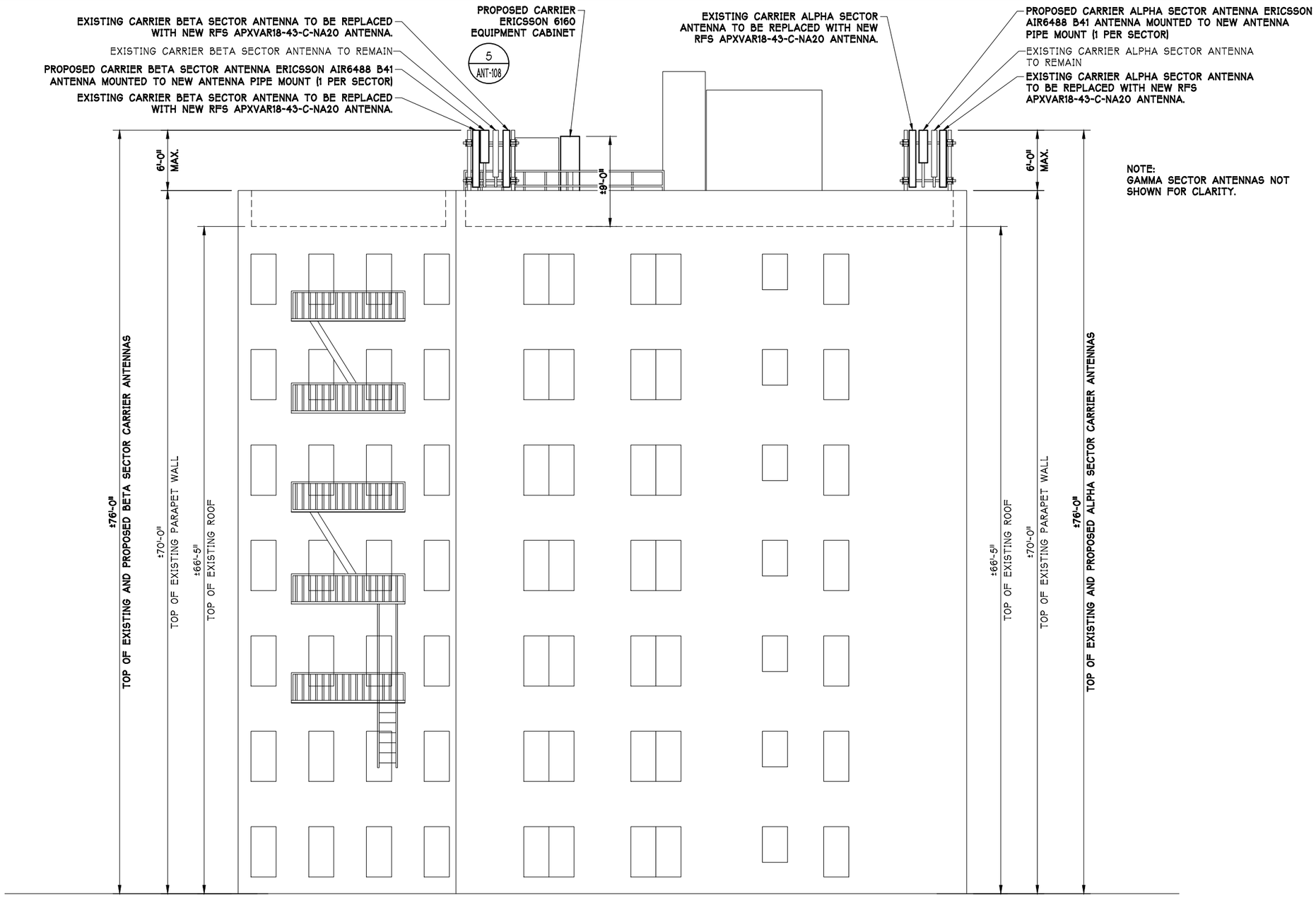
DESIGN TYPE: CONSTRUCTION DRAWINGS

SITE INFORMATION:
1234 ANY AVENUE
ANY CITY, ANY STATE, ANY ZIP

DRAWING TITLE: ROOF PLAN

DATE:	X/X/XXXX
PROJECT NO.:	XXXXXXX
DRAWN BY:	CDC
CHECKED BY:	XX

DRAWING NO.
ANT-100.00
5 of 14



NOTE:
GAMMA SECTOR ANTENNAS NOT SHOWN FOR CLARITY.

1 ANT-101 BUILDING ELEVATION
11x17 SCALE: 3/32" = 1'-0"
22x34 SCALE: 3/16" = 1'-0"

-4 0 4 8 16
11x17 SCALE: 3/32" = 1'-0"
22x34 SCALE: 3/16" = 1'-0"

REV.	DATE	REVISION DESCRIPTION
0	x/xx/xx	ISSUED FOR REVIEW

CARRIERS NAME

ENGINEERS INFORMATION

JOB#: XXXXXXX

SITE I.D.: XXXXXXX

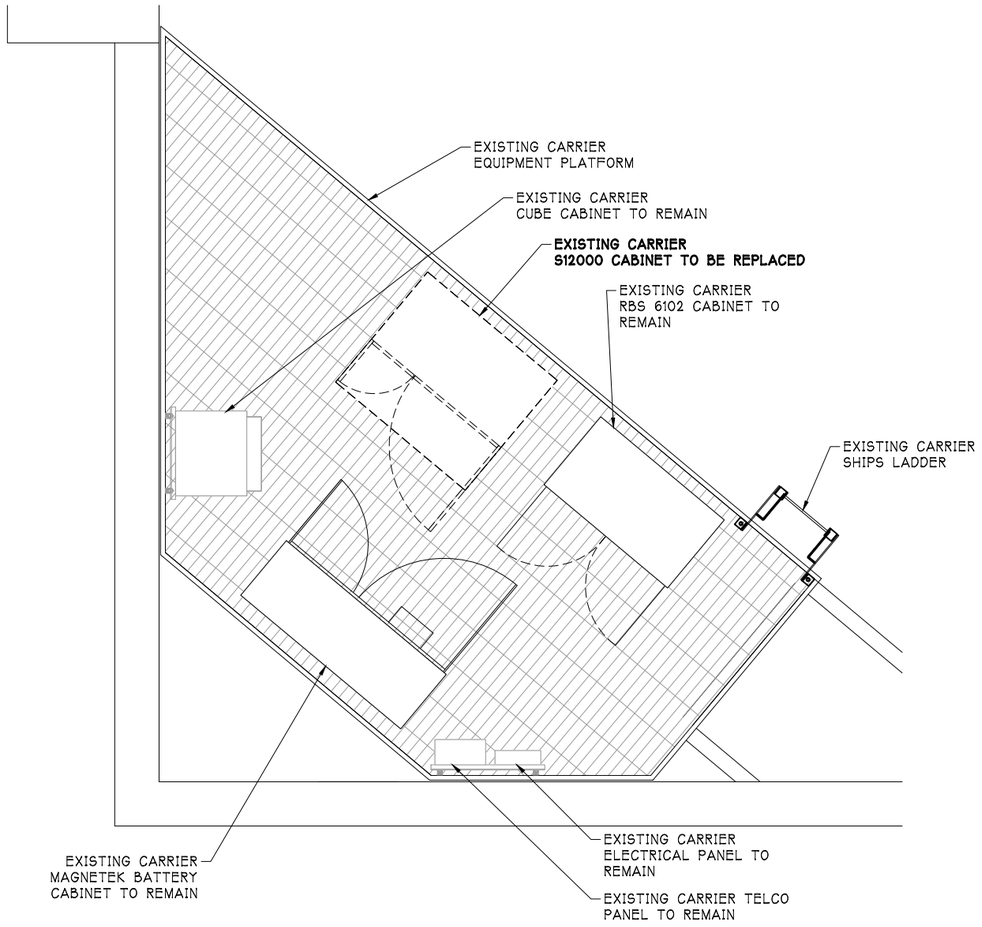
DESIGN TYPE: CONSTRUCTION DRAWINGS

SITE INFORMATION:
1234 ANY AVENUE
ANY CITY, ANY STATE, ANY ZIP

DRAWING TITLE: BUILDING ELEVATION

DATE:	X/X/XXXX
PROJECT NO.:	XXXXXXX
DRAWN BY:	CDC
CHECKED BY:	XX

DRAWING NO. ANT-101.00

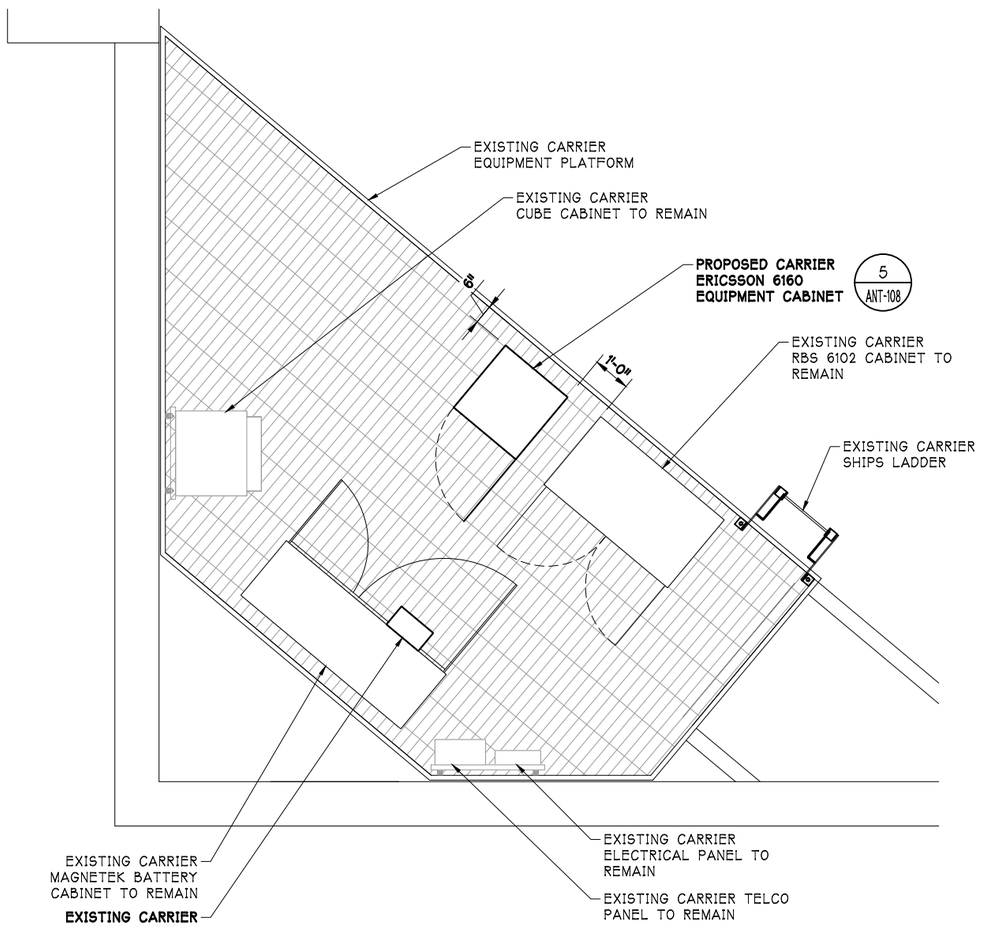


NORTH

1 ANT-102 EXISTING EQUIPMENT PLAN

11x17 SCALE: 1/4" = 1'-0"

22x34 SCALE: 1/2" = 1'-0"



NORTH

2 ANT-102 PROPOSED EQUIPMENT PLAN

11x17 SCALE: 1/4" = 1'-0"

22x34 SCALE: 1/2" = 1'-0"

2 0 1 2 4

11x17 SCALE 1/4" = 1'-0"

22x34 SCALE 1/2" = 1'-0"

REV.	DATE	REVISION DESCRIPTION
0	x/xx/xx	ISSUED FOR REVIEW

CARRIERS
NAME

ENGINEERS
INFORMATION

JOB#:
XXXXXXX

SITE I.D.:
XXXXXXX

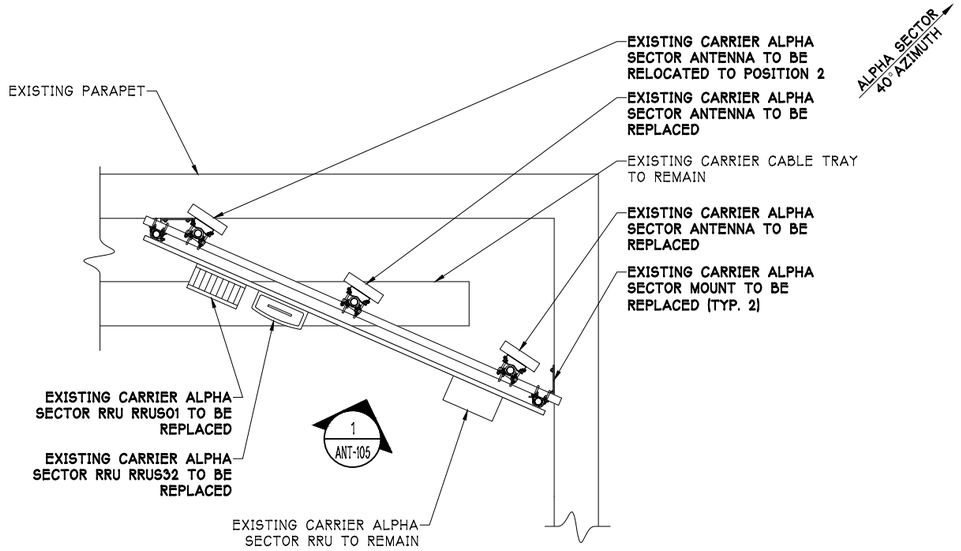
DESIGN TYPE:
CONSTRUCTION
DRAWINGS

SITE INFORMATION:
1234 ANY AVENUE
ANY CITY, ANY STATE, ANY ZIP

DRAWING TITLE:
EQUIPMENT PLANS

DATE:	X/X/XXXX
PROJECT NO.:	XXXXXXX
DRAWN BY:	CDC
CHECKED BY:	XX

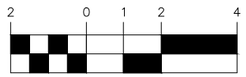
DRAWING NO.
ANT-102.00
7 of 14

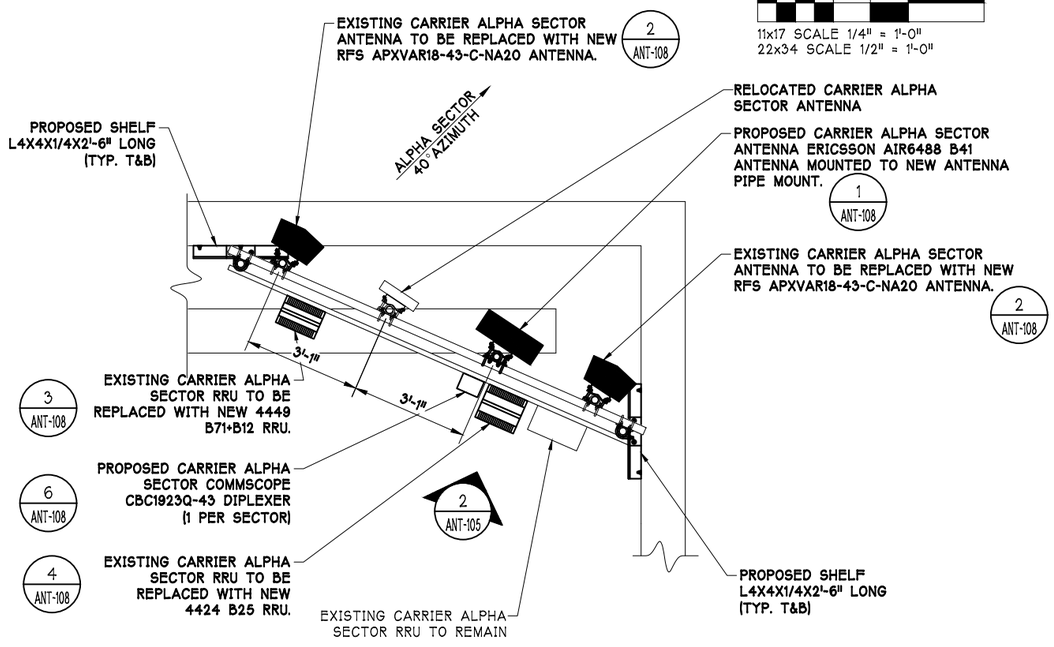


NORTH

1 ANT-103 EXISTING ANTENNA PLAN VIEW @ ALPHA

11x17 SCALE: 1/4" = 1'-0"
22x34 SCALE: 1/2" = 1'-0"

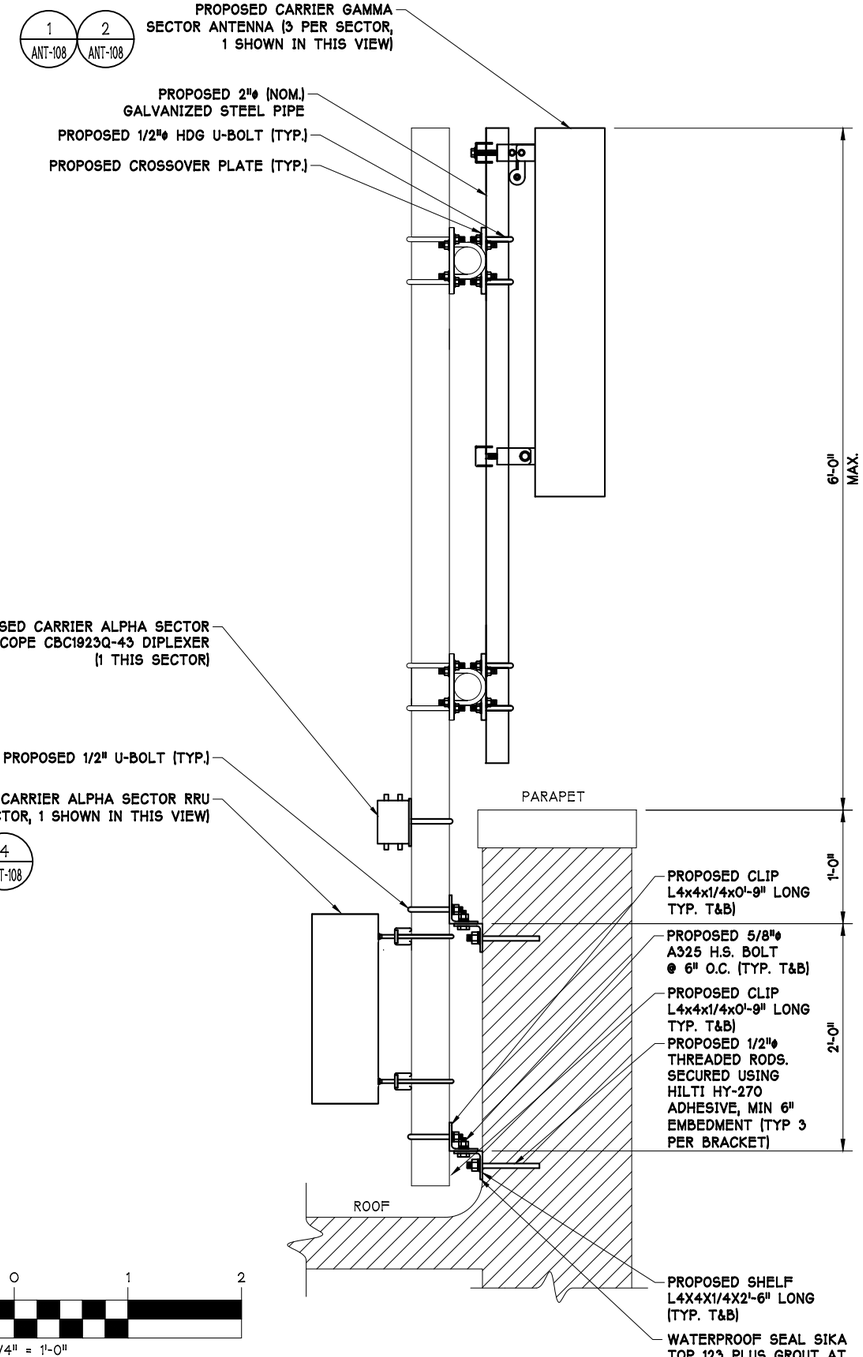




NORTH

2 ANT-103 PROPOSED ANTENNA PLAN VIEW @ ALPHA

11x17 SCALE: 1/4" = 1'-0"
22x34 SCALE: 1/2" = 1'-0"



3 ANT-103 ANTENNA MOUNT SECTION @ ALPHA

11x17 SCALE: 3/4" = 1'-0"
22x34 SCALE: 1-1/2" = 1'-0"

REV.	DATE	REVISION DESCRIPTION
0	x/xx/xx	ISSUED FOR REVIEW

CARRIERS NAME

ENGINEERS INFORMATION

JOB#: XXXXXXX

SITE I.D.: XXXXXXX

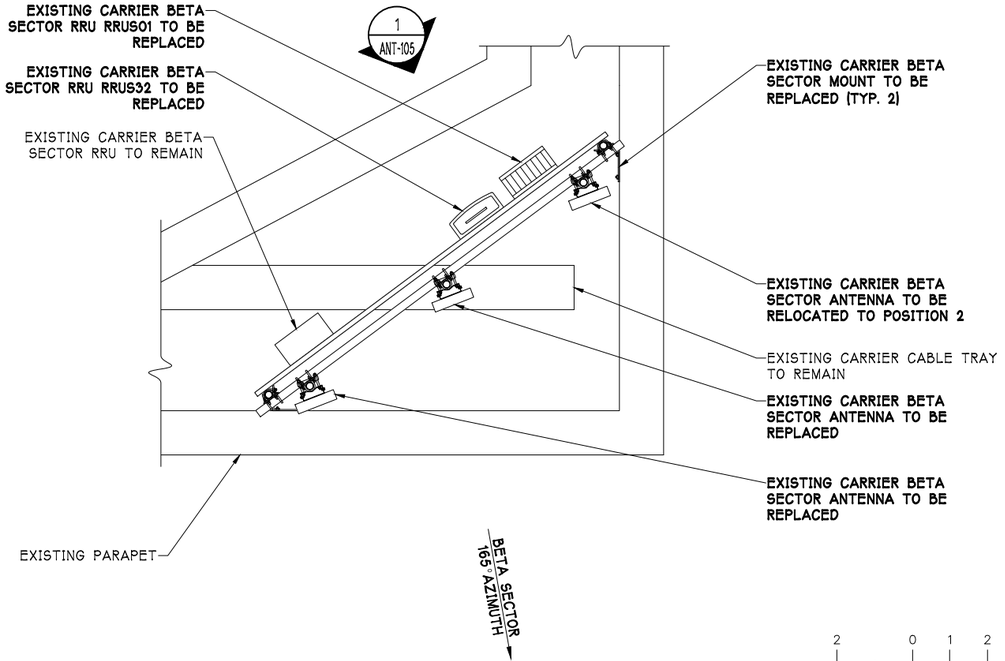
DESIGN TYPE: CONSTRUCTION DRAWINGS

SITE INFORMATION:
1234 ANY AVENUE
ANY CITY, ANY STATE, ANY ZIP

DRAWING TITLE:
ANTENNA PLAN AND SECTION (ALPHA)

DATE:	X/X/XXXX
PROJECT NO.:	XXXXXXX
DRAWN BY:	CDC
CHECKED BY:	XX

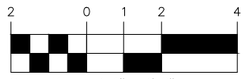
DRAWING NO.
ANT-103.00
8 of 14

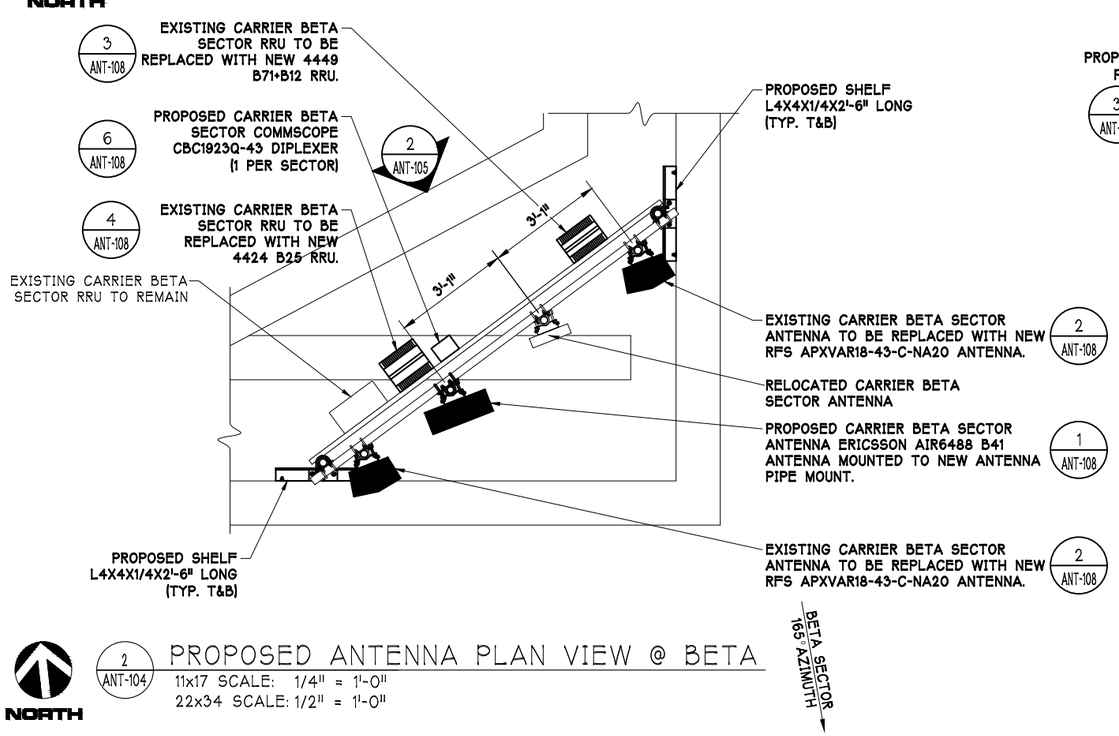


1 ANT-104 EXISTING ANTENNA PLAN VIEW @ BETA

11x17 SCALE: 1/4" = 1'-0"
22x34 SCALE: 1/2" = 1'-0"

NORTH

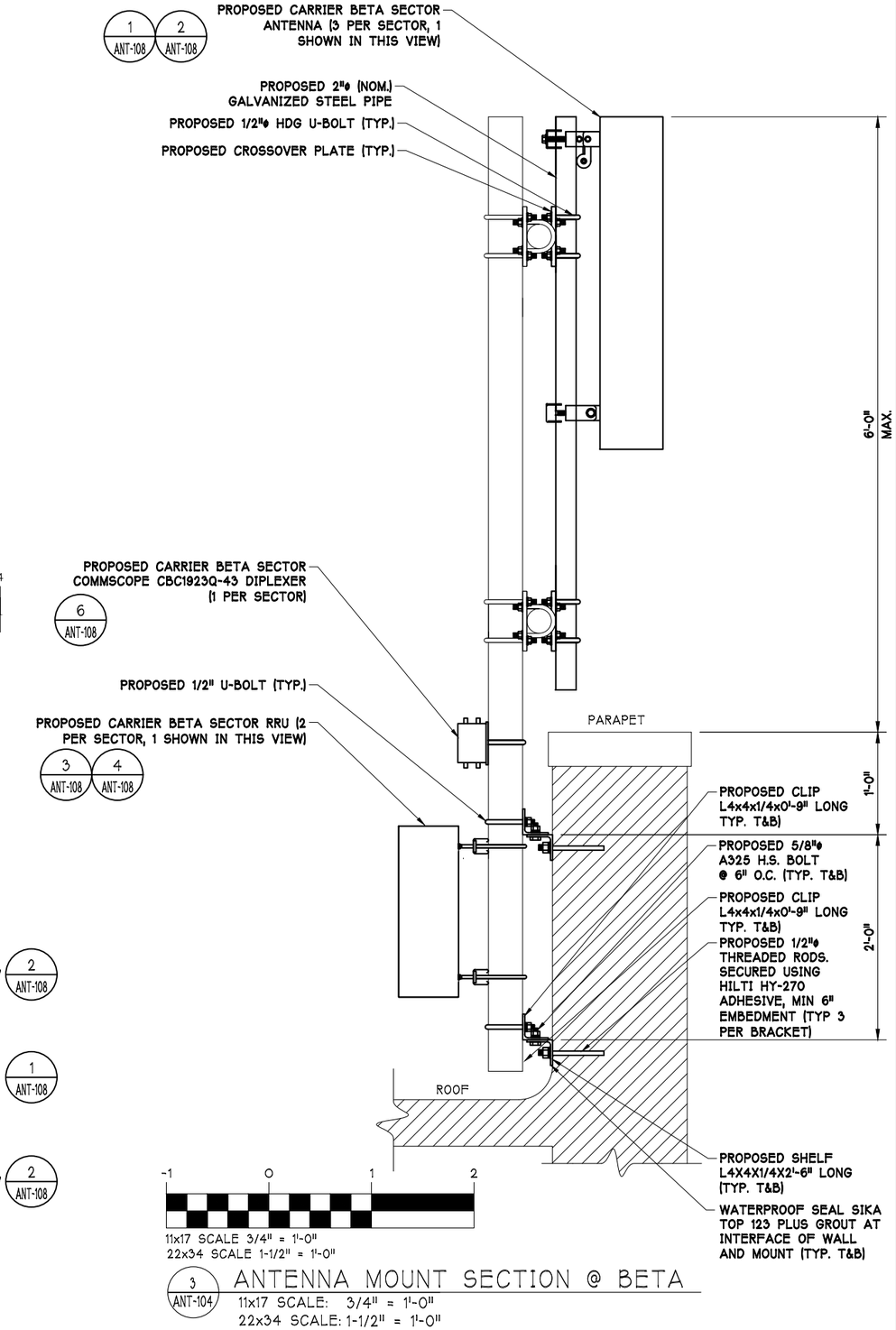




2 ANT-104 PROPOSED ANTENNA PLAN VIEW @ BETA

11x17 SCALE: 1/4" = 1'-0"
22x34 SCALE: 1/2" = 1'-0"

NORTH



3 ANT-104 ANTENNA MOUNT SECTION @ BETA

11x17 SCALE: 3/4" = 1'-0"
22x34 SCALE: 1-1/2" = 1'-0"

REV.	DATE	REVISION DESCRIPTION
0	x/xx/xx	ISSUED FOR REVIEW

CARRIERS NAME

ENGINEERS INFORMATION

JOB#: XXXXXXX

SITE I.D.: XXXXXXX

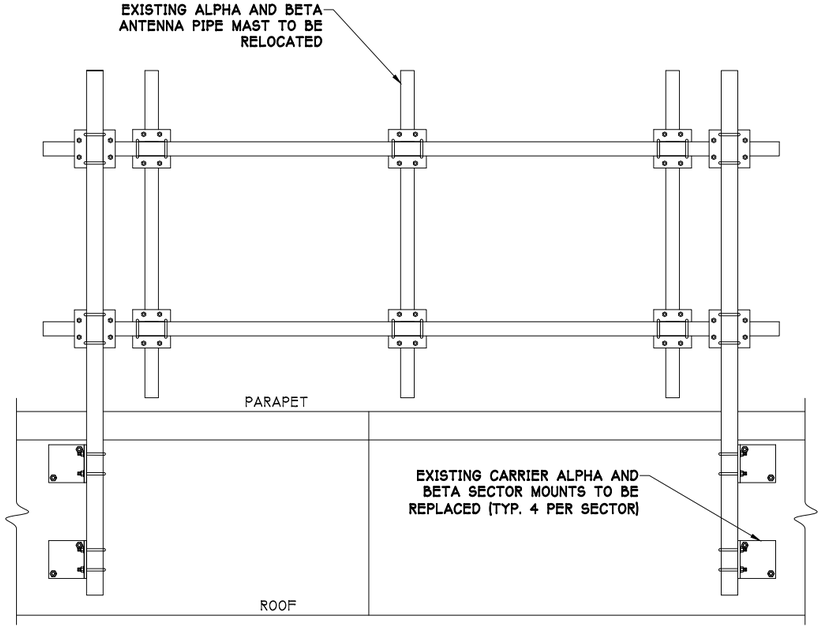
DESIGN TYPE: CONSTRUCTION DRAWINGS

SITE INFORMATION:
1234 ANY AVENUE
ANY CITY, ANY STATE, ANY ZIP

DRAWING TITLE: ANTENNA PLAN AND SECTION (BETA)

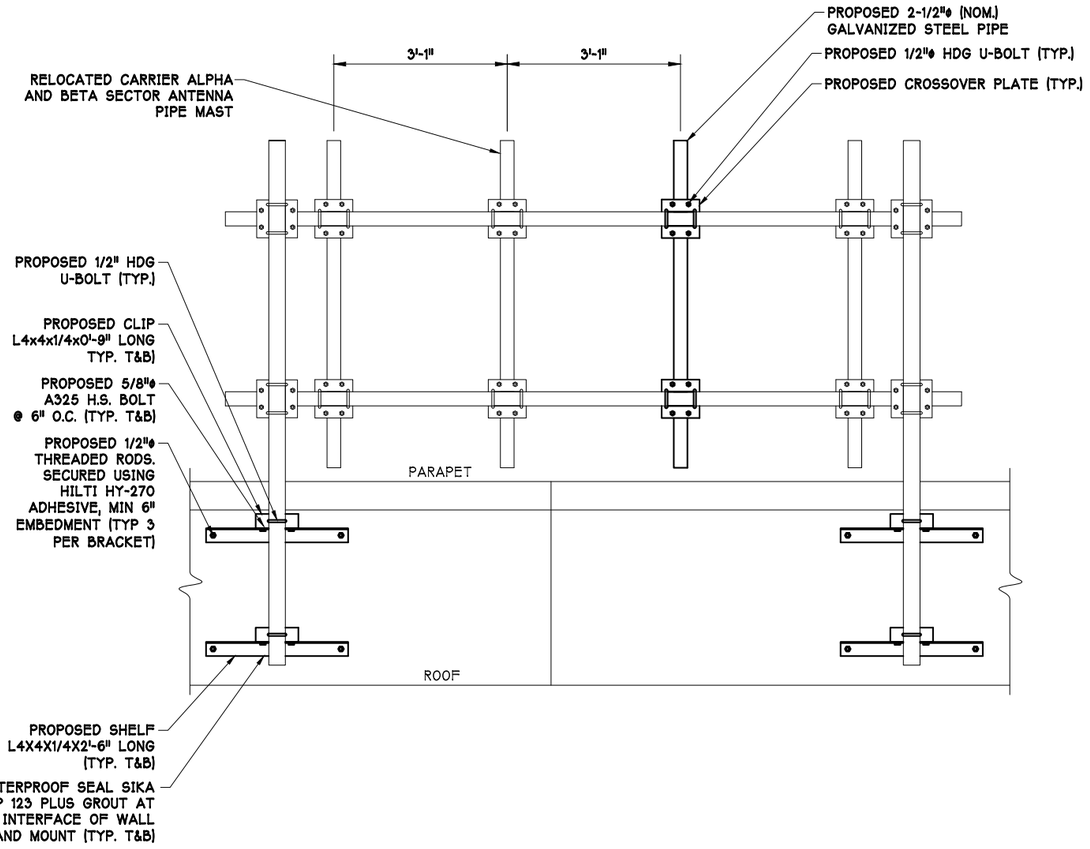
DATE:	X/X/XXXX
PROJECT NO.:	XXXXXXX
DRAWN BY:	CDC
CHECKED BY:	XX

DRAWING NO. ANT-104.00



1 ANT-105 EXISTING ANTENNA MOUNT ELEVATION VIEW @ ALPHA AND BETA

11x17 SCALE: 3/8" = 1'-0"
22x34 SCALE: 3/4" = 1'-0"



2 ANT-105 PROPOSED ANTENNA MOUNT ELEVATION VIEW @ ALPHA AND BETA

11x17 SCALE: 3/8" = 1'-0"
22x34 SCALE: 3/4" = 1'-0"

-1 0 1 2 4

11x17 SCALE 3/8" = 1'-0"
22x34 SCALE 3/4" = 1'-0"

REV.	DATE	REVISION DESCRIPTION
0	x/xx/xx	ISSUED FOR REVIEW

CARRIERS NAME

ENGINEERS INFORMATION

JOB#: XXXXXXX

SITE I.D.: XXXXXXX

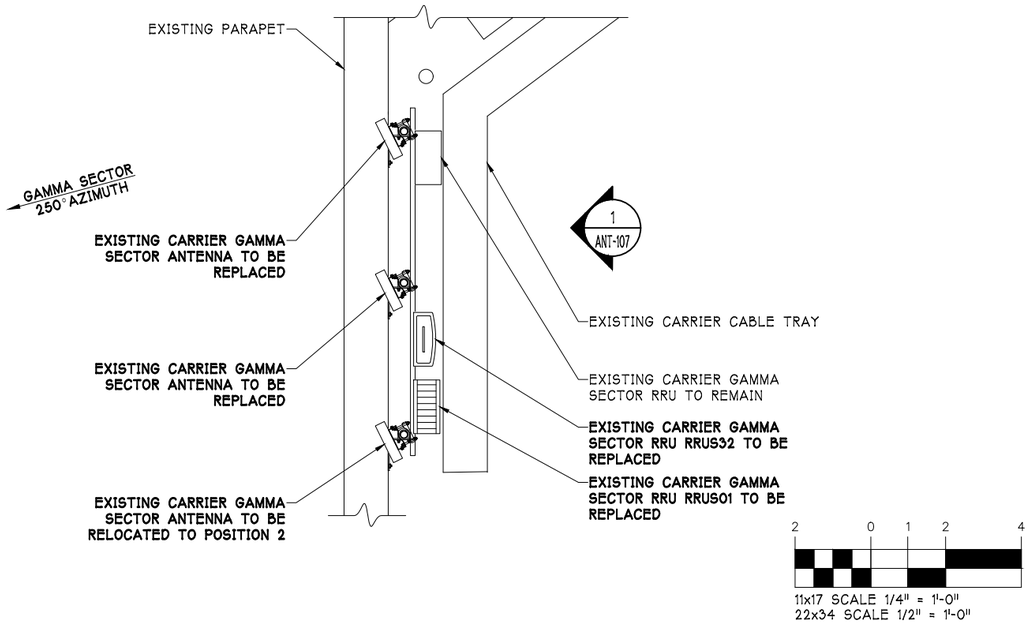
DESIGN TYPE: CONSTRUCTION DRAWINGS

SITE INFORMATION:
1234 ANY AVENUE
ANY CITY, ANY STATE, ANY ZIP

DRAWING TITLE: SECTOR REINFORCEMENT (ALPHA AND BETA)

DATE:	X/X/XXXX
PROJECT NO.:	XXXXXXX
DRAWN BY:	CDC
CHECKED BY:	XX

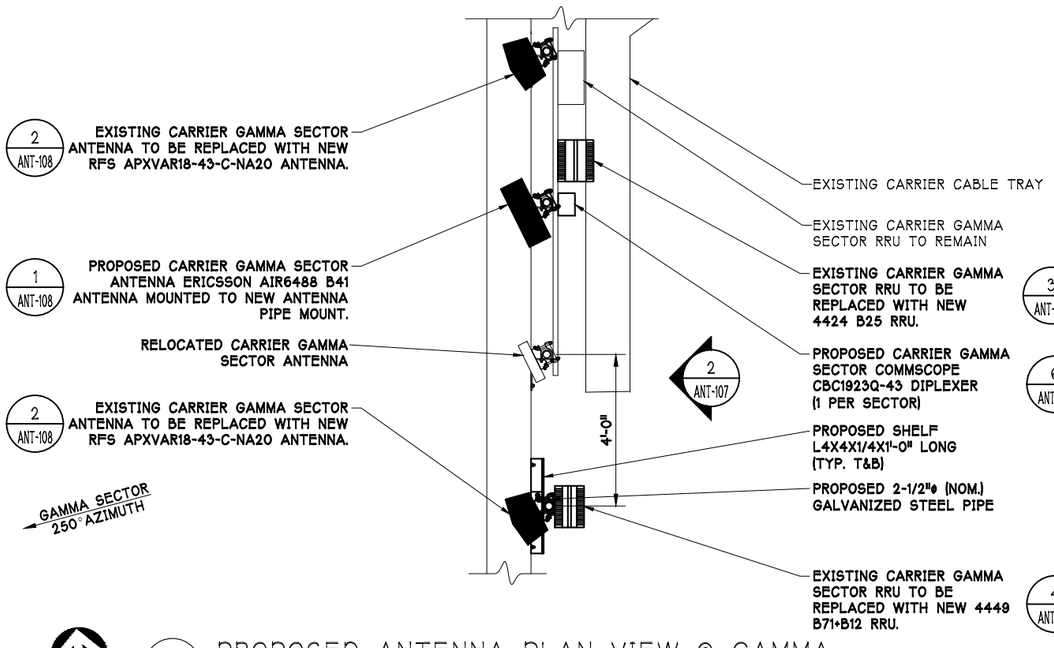
DRAWING NO.
ANT-105.00
10 of 14



NORTH

1 ANT-106 EXISTING ANTENNA PLAN VIEW @ GAMMA

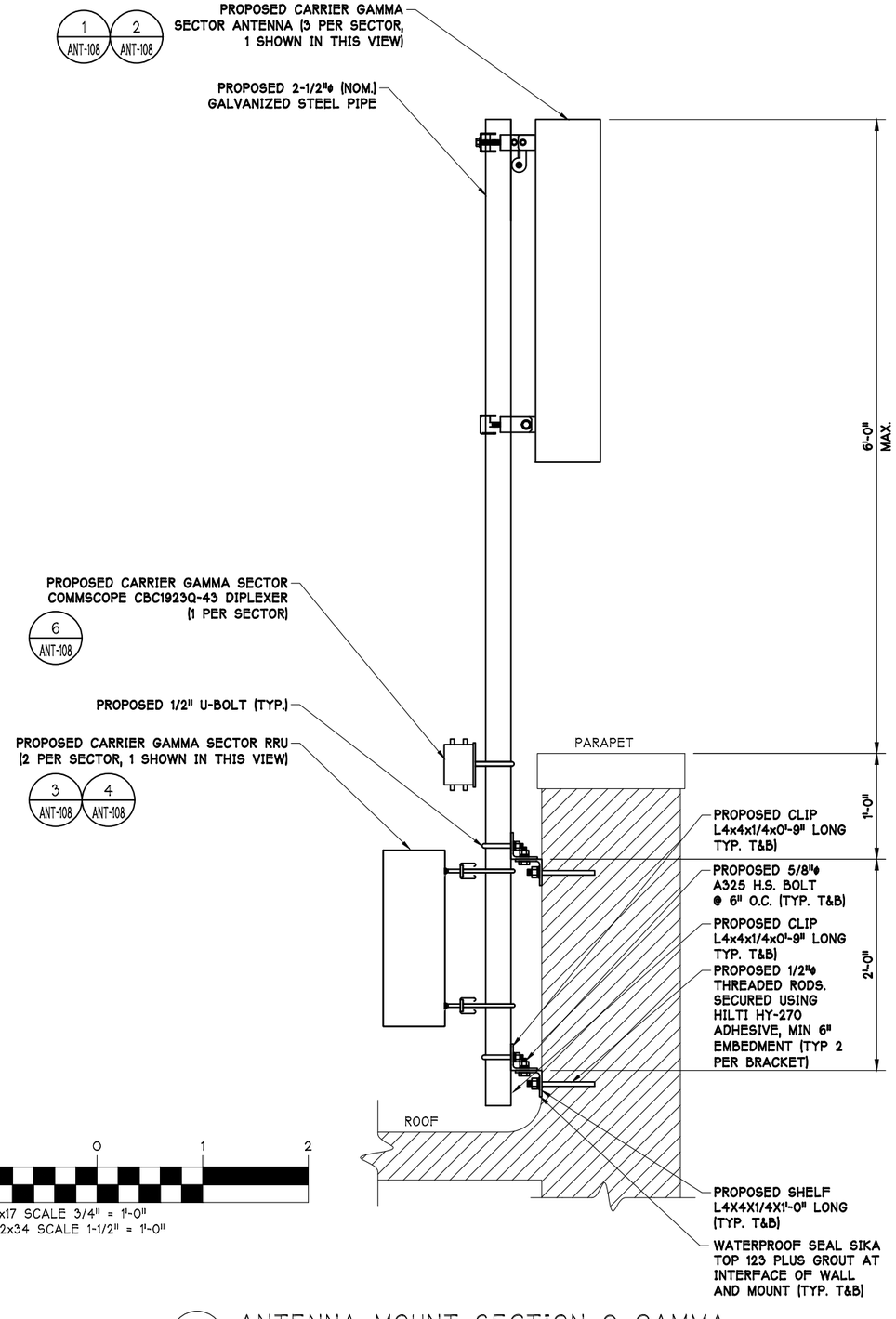
11x17 SCALE: 1/4" = 1'-0"
22x34 SCALE: 1/2" = 1'-0"



NORTH

2 ANT-106 PROPOSED ANTENNA PLAN VIEW @ GAMMA

11x17 SCALE: 1/4" = 1'-0"
22x34 SCALE: 1/2" = 1'-0"



3 ANT-106 ANTENNA MOUNT SECTION @ GAMMA

11x17 SCALE: 3/4" = 1'-0"
22x34 SCALE: 1-1/2" = 1'-0"

REV.	DATE	REVISION DESCRIPTION
0	x/xx/xx	ISSUED FOR REVIEW

CARRIERS NAME

ENGINEERS INFORMATION

JOB#: XXXXXXX

SITE I.D.: XXXXXXX

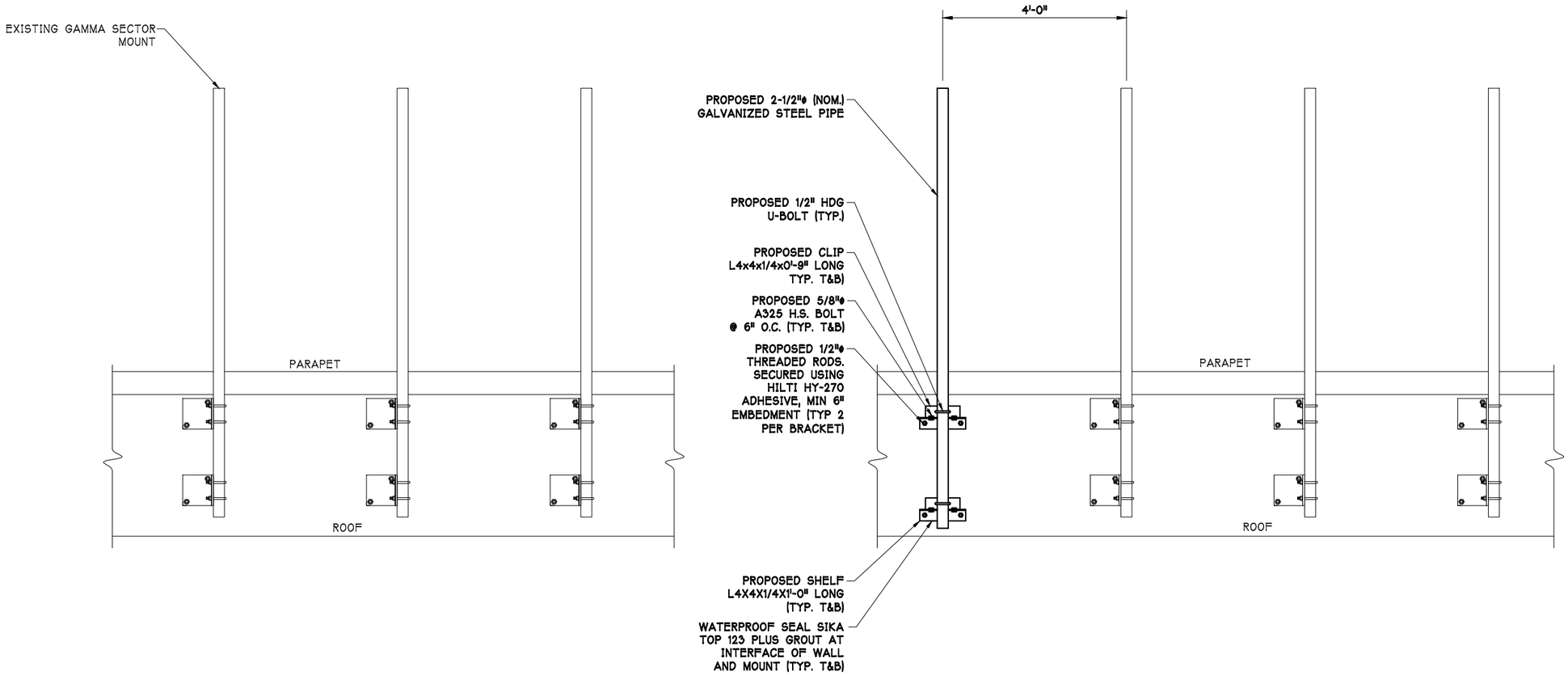
DESIGN TYPE: CONSTRUCTION DRAWINGS

SITE INFORMATION:
1234 ANY AVENUE
ANY CITY, ANY STATE, ANY ZIP

DRAWING TITLE:
ANTENNA PLAN AND SECTION (GAMMA)

DATE:	X/X/XXXX
PROJECT NO.:	XXXXXXX
DRAWN BY:	CDC
CHECKED BY:	XX

DRAWING NO.
ANT-106.00
11 of 14



1 ANT-107 EXISTING ANTENNA MOUNT ELEVATION VIEW @ GAMMA

11x17 SCALE: 3/8" = 1'-0"
22x34 SCALE: 3/4" = 1'-0"

2 ANT-107 PROPOSED ANTENNA MOUNT ELEVATION VIEW @ GAMMA

11x17 SCALE: 3/8" = 1'-0"
22x34 SCALE: 3/4" = 1'-0"

-1 0 1 2 4

11x17 SCALE 3/8" = 1'-0"
22x34 SCALE 3/4" = 1'-0"

REV.	DATE	REVISION DESCRIPTION
0	x/xx/xx	ISSUED FOR REVIEW

CARRIERS NAME

ENGINEERS INFORMATION

JOB#: XXXXXXX

SITE I.D.: XXXXXXX

DESIGN TYPE: CONSTRUCTION DRAWINGS

SITE INFORMATION:
1234 ANY AVENUE
ANY CITY, ANY STATE, ANY ZIP

DRAWING TITLE: SECTOR REINFORCEMENT (GAMMA)

DATE:	X/X/XXXX
PROJECT NO.:	XXXXXXX
DRAWN BY:	CDC
CHECKED BY:	XX

DRAWING NO.: ANT-107.00



ERICSSON AIR 6488 B41

RADOME MATERIAL: FIBERGLASS, UV RESISTANT
RADOME COLOR: LIGHT GREY
DIMENSIONS HxWxD: 38.9"x20.47"x7.36"
WEIGHT, WITHOUT MOUNTING: 133 LBS

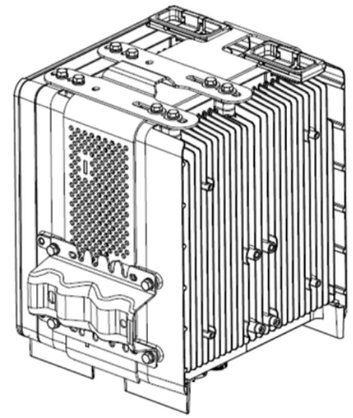
1 ANT-108 ANTENNA DETAIL
11x17 SCALE: NOT TO SCALE
22x34 SCALE: NOT TO SCALE



RFS APXVAR18-43-C-NA20

RADOME MATERIAL: FIBERGLASS, UV RESISTANT
RADOME COLOR: LIGHT GREY
DIMENSIONS HxWxD: 68"x16"x9"
WEIGHT, WITHOUT MOUNTING: 48.4 LBS
WIND LOADING, FRONTAL: 150 LBF
CONNECTOR: 4x4.3-10 LONG NECK FEMALE
4 AISG RET CONNECTORS (2 MALE, 2 FEMALE)

2 ANT-108 ANTENNA DETAIL
11x17 SCALE: NOT TO SCALE
22x34 SCALE: NOT TO SCALE



ERICSSON 4424 B25 RRU

COLOR: LIGHT GREY
DIMENSIONS (HxWxD): 17.1" X 14.4" X 11.3"
WEIGHT: 86 lbs WITHOUT MOUNTING HARDWARE
CONNECTOR: 4.3-10 FEMALE CONNECTORS
RF OUTPUT POWER: UP TO 4x80W

3 ANT-108 4424 B25 RRU DETAIL
11x17 SCALE: NOT TO SCALE
22x34 SCALE: NOT TO SCALE



ERICSSON 4449 B71+B12 RRU

COLOR: LIGHT GREY
DIMENSIONS (HxWxD): 14.95" X 13.19" X 9.25"
WEIGHT: 74 lbs WITHOUT MOUNTING HARDWARE
CONNECTOR: 4TX 4RX PORTS 4.3-10 FEMALE CONNECTORS
RF OUTPUT POWER: 4T4R 40W PER BAND

4 ANT-108 4449 B12+B71 RRU DETAIL
11x17 SCALE: NOT TO SCALE
22x34 SCALE: NOT TO SCALE



ERICSSON RBS6160 EQUIPMENT CABINET

ENCLOSURE: ALUMINUM
DIMENSIONS (HxWxD): 63" X 25.6" X 25.6"
WEIGHT: 188 lbs (EXCLUDES EQUIPMENT)
WEATHER TIGHTNESS: NEMA TYPE 3R

5 ANT-108 ERICSSON RBS6160 EQUIPMENT CABINET
11x17 SCALE: NOT TO SCALE
22x34 SCALE: NOT TO SCALE



COMMSCOPE CBC1923Q-43 DIPLEXER

MANUFACTURER: COMMSCOPE
DIMENSIONS (HxWxD): 4.567" X 8.346" X 3.37"
WEIGHT: 7.275 lbs WITHOUT MOUNTING HARDWARE
CONNECTOR: 4.3-10 FEMALE LONG NECK

6 ANT-108 CBC1923Q-43 DIPLEXER
11x17 SCALE: NOT TO SCALE
22x34 SCALE: NOT TO SCALE

REV.	DATE	REVISION DESCRIPTION
0	x/xx/xx	ISSUED FOR REVIEW

CARRIERS NAME

ENGINEERS INFORMATION

JOB#: XXXXXXX

SITE I.D.: XXXXXXX

DESIGN TYPE: CONSTRUCTION DRAWINGS

SITE INFORMATION:
1234 ANY AVENUE
ANY CITY, ANY STATE, ANY ZIP

DRAWING TITLE: ANTENNA AND EQUIPMENT DETAILS

DATE:	X/X/XXXX
PROJECT NO.:	XXXXXXX
DRAWN BY:	CDC
CHECKED BY:	XX

DRAWING NO.
ANT-108.00
13 of 14

ANTENNA SCHEDULE											CABLE SCHEDULE		
SECTOR	HEIGHT	EXISTING	MANUFACTURER MODEL NUMBER	SF	E-TILT	M-TILT	RRU	TMA	DIPLEXERS	FIBER (CPRI)	LENGTH	DIAMETER	LABEL
"A" 40° AZIMUTH	±76'	PROPOSED	RFS APXVAR18_43-C-NA20	7.6 SF	-	-	1	-	-	FIBER	±100 FT	(2) 7/8"ø FIBER	1 RED
"A" 40° AZIMUTH	±76'	RELOCATED	RFS APX16DWV_16DWV-S-E-A20	5.1 SF	-	-	-	-	-	-	±100 FT	(2) 7/8"ø	2 RED
"A" 40° AZIMUTH	±76'	PROPOSED	ERICSSON AIR6488_B41	5.5 SF	-	-	1	-	1	FIBER	±100 FT	FIBER	3 RED
"A" 40° AZIMUTH	±76'	PROPOSED	RFS APXVAR18_43-C-NA20	7.6 SF	-	-	1	-	-	FIBER	±100 FT	(2) 7/8"ø	4 RED
"B" 165° AZIMUTH	±76'	PROPOSED	RFS APXVAR18_43-C-NA20	7.6 SF	-	-	1	-	-	FIBER	±80 FT	(2) 7/8"ø FIBER	1 WHITE
"B" 165° AZIMUTH	±76'	RELOCATED	RFS APX16DWV_16DWV-S-E-A20	5.1 SF	-	-	-	-	-	-	±80 FT	(2) 7/8"ø	2 WHITE
"B" 165° AZIMUTH	±76'	PROPOSED	ERICSSON AIR6488_B41	5.5 SF	-	-	1	-	1	FIBER	±80 FT	(2) 7/8"ø FIBER	3 WHITE
"B" 165° AZIMUTH	±76'	PROPOSED	RFS APXVAR18_43-C-NA20	7.6 SF	-	-	1	-	-	FIBER	±80 FT	FIBER	4 WHITE
"C" 250° AZIMUTH	±76'	PROPOSED	RFS APXVAR18_43-C-NA20	7.6 SF	-	-	1	-	-	FIBER	±210 FT	(2) 7/8"ø FIBER	1 BLUE
"C" 250° AZIMUTH	±76'	RELOCATED	RFS APX16DWV_16DWV-S-E-A20	5.1 SF	-	-	-	-	-	-	±210 FT	(2) 7/8"ø FIBER	2 BLUE
"C" 250° AZIMUTH	±76'	PROPOSED	ERICSSON AIR6488_B41	5.5 SF	-	-	1	-	1	FIBER	±210 FT	(2) 7/8"ø FIBER	3 BLUE
"C" 250° AZIMUTH	±76'	PROPOSED	RFS APXVAR18_43-C-NA20	7.6 SF	-	-	1	-	-	FIBER	±210 FT	FIBER	4 BLUE

REV.	DATE	REVISION DESCRIPTION
0	x/xx/xx	ISSUED FOR REVIEW

CARRIERS NAME

ENGINEERS INFORMATION

JOB#: XXXXXXX

SITE I.D.: XXXXXXX

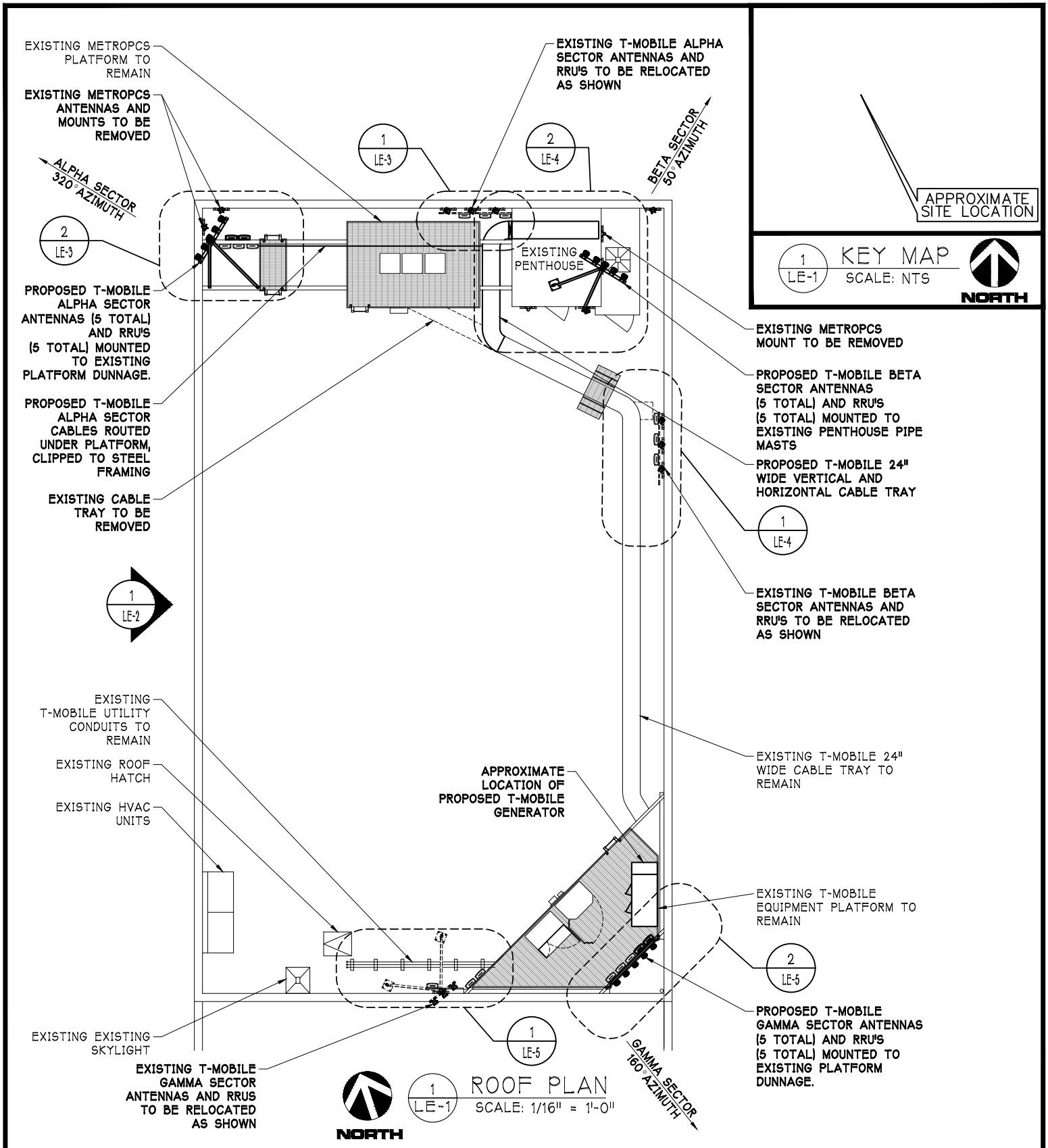
DESIGN TYPE: CONSTRUCTION DRAWINGS

SITE INFORMATION:
1234 ANY AVENUE
ANY CITY, ANY STATE, ANY ZIP

DRAWING TITLE: ANTENNA SCHEDULE

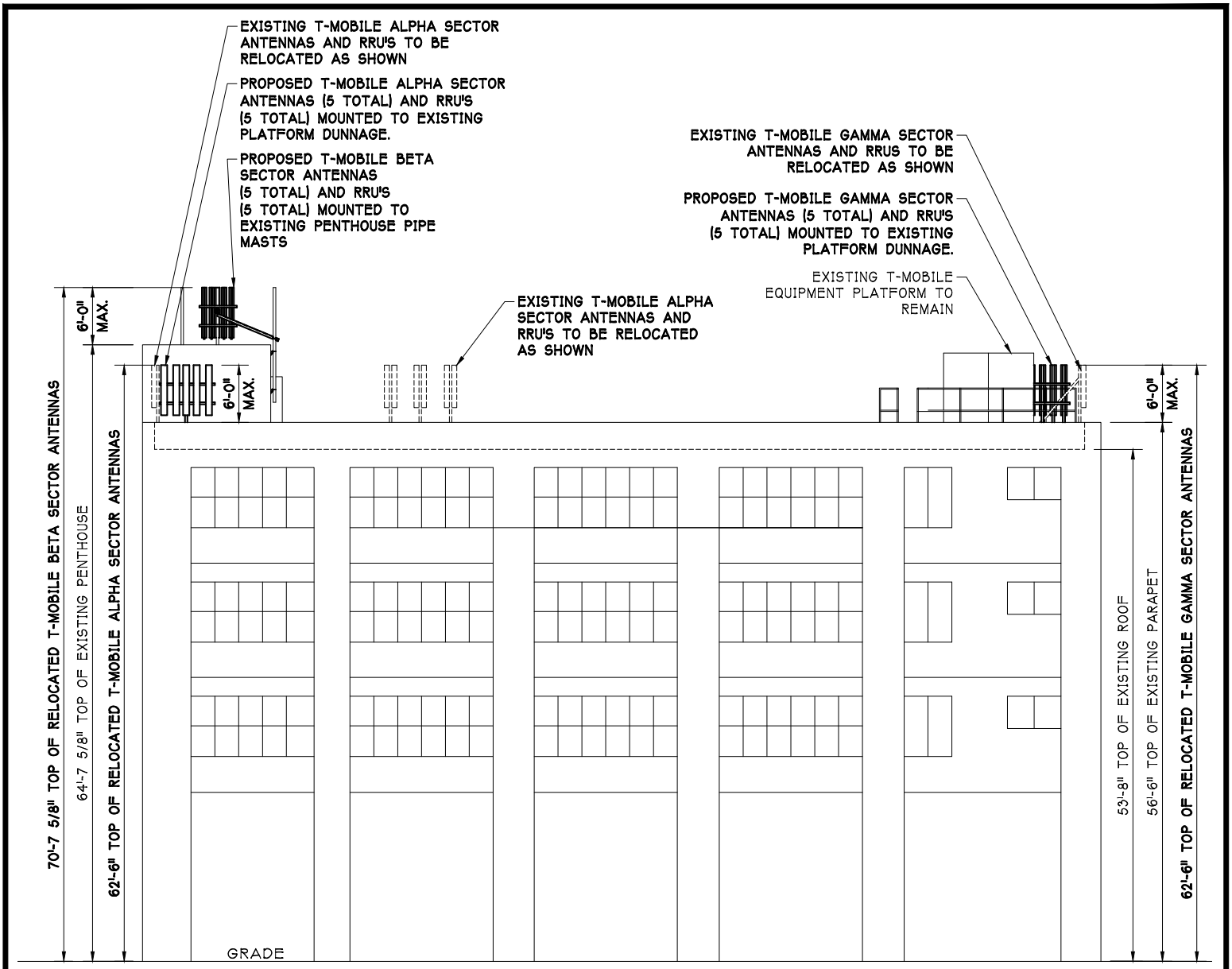
DATE:	X/X/XXXX
PROJECT NO.:	XXXXXXX
DRAWN BY:	CDC
CHECKED BY:	XX

DRAWING NO.
ANT-109.00
14 of 14



LE-1

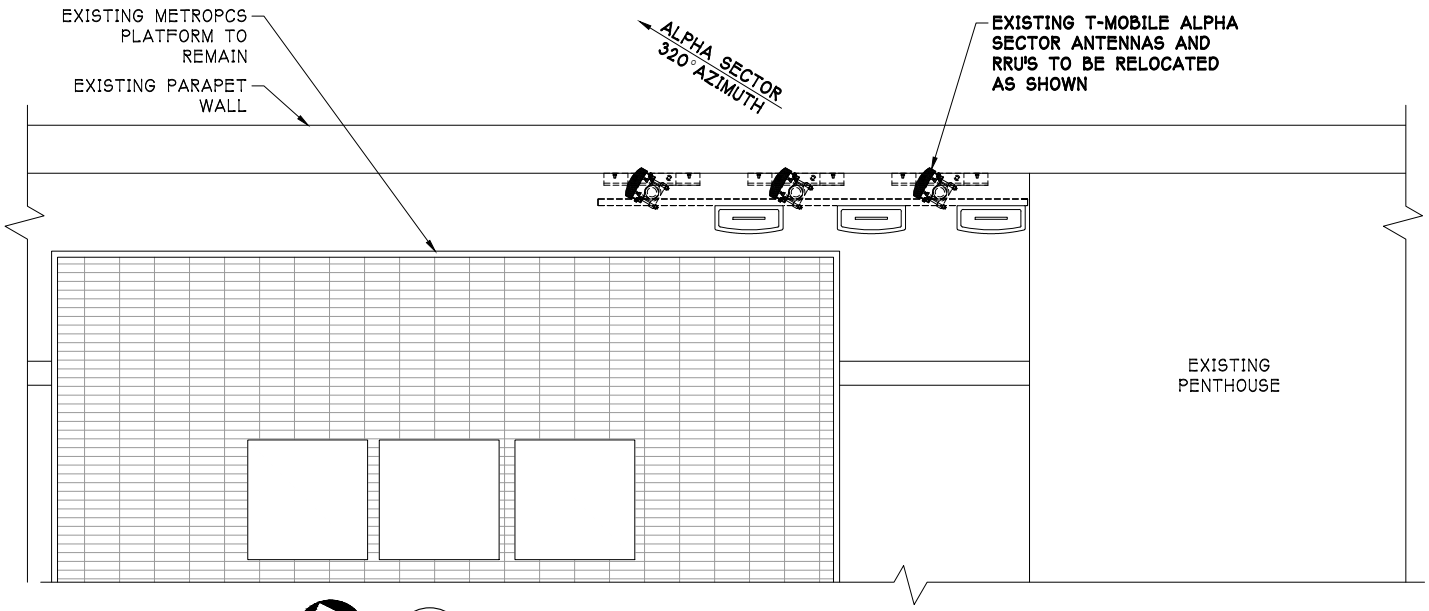
ROOF PLAN



1 / LE-2 ELEVATION
SCALE: 1/16" = 1'-0"

LE-2

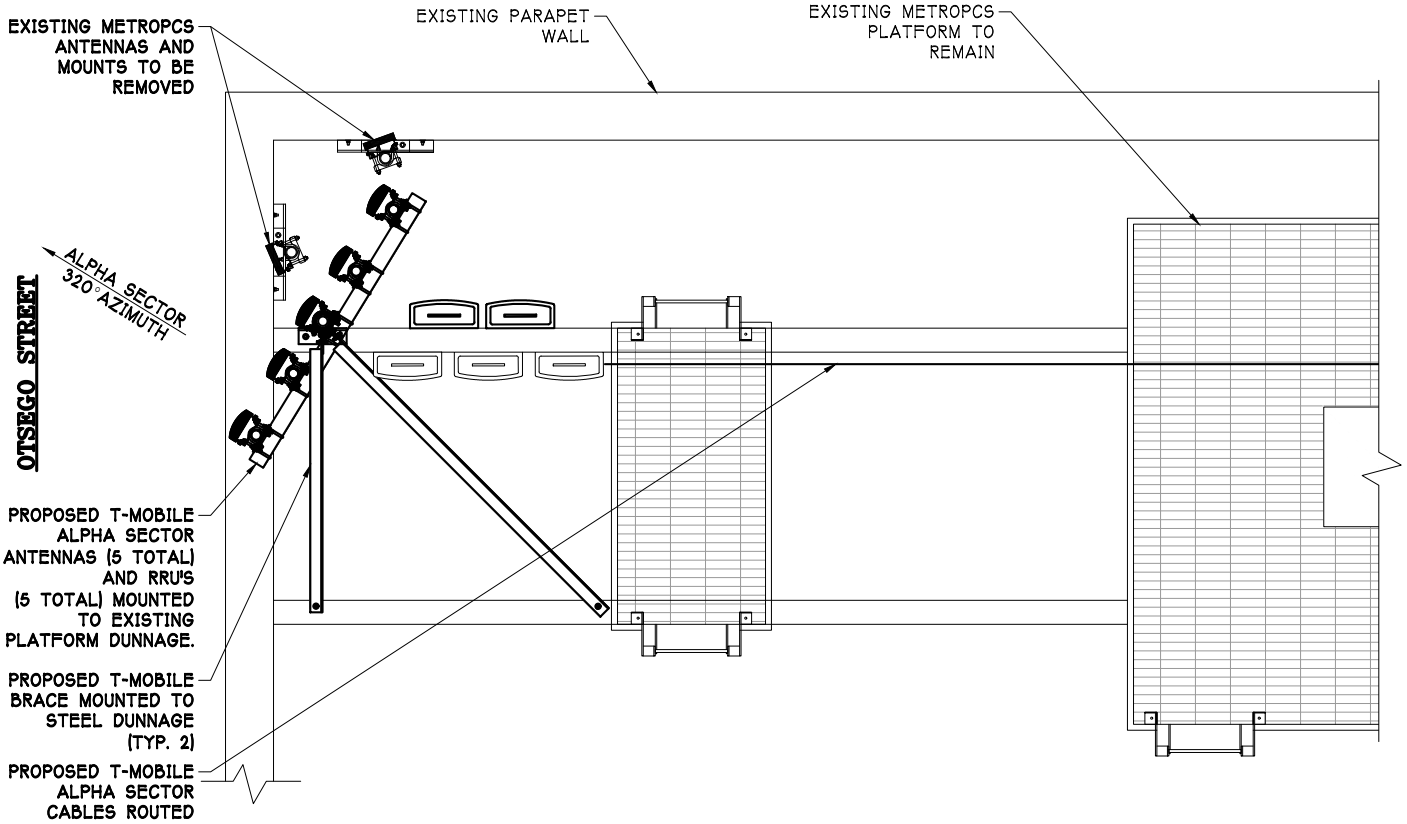
ELEVATION



NORTH

1 LE-3 EXISTING PLAN VIEW @ ALPHA

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



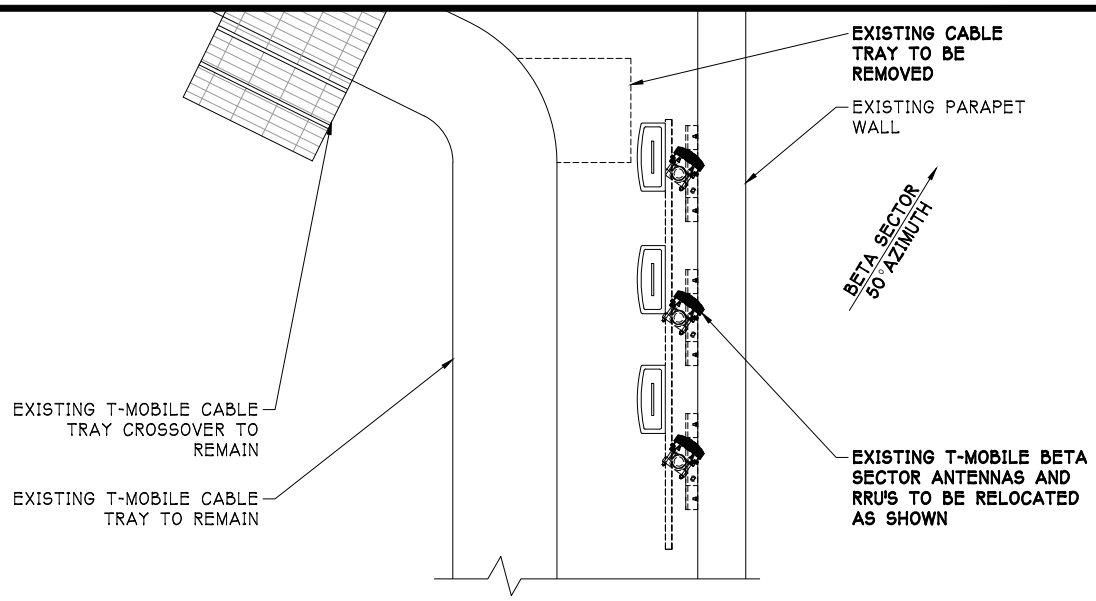
NORTH

2 LE-3 PROPOSED PLAN VIEW @ ALPHA

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

LE-3

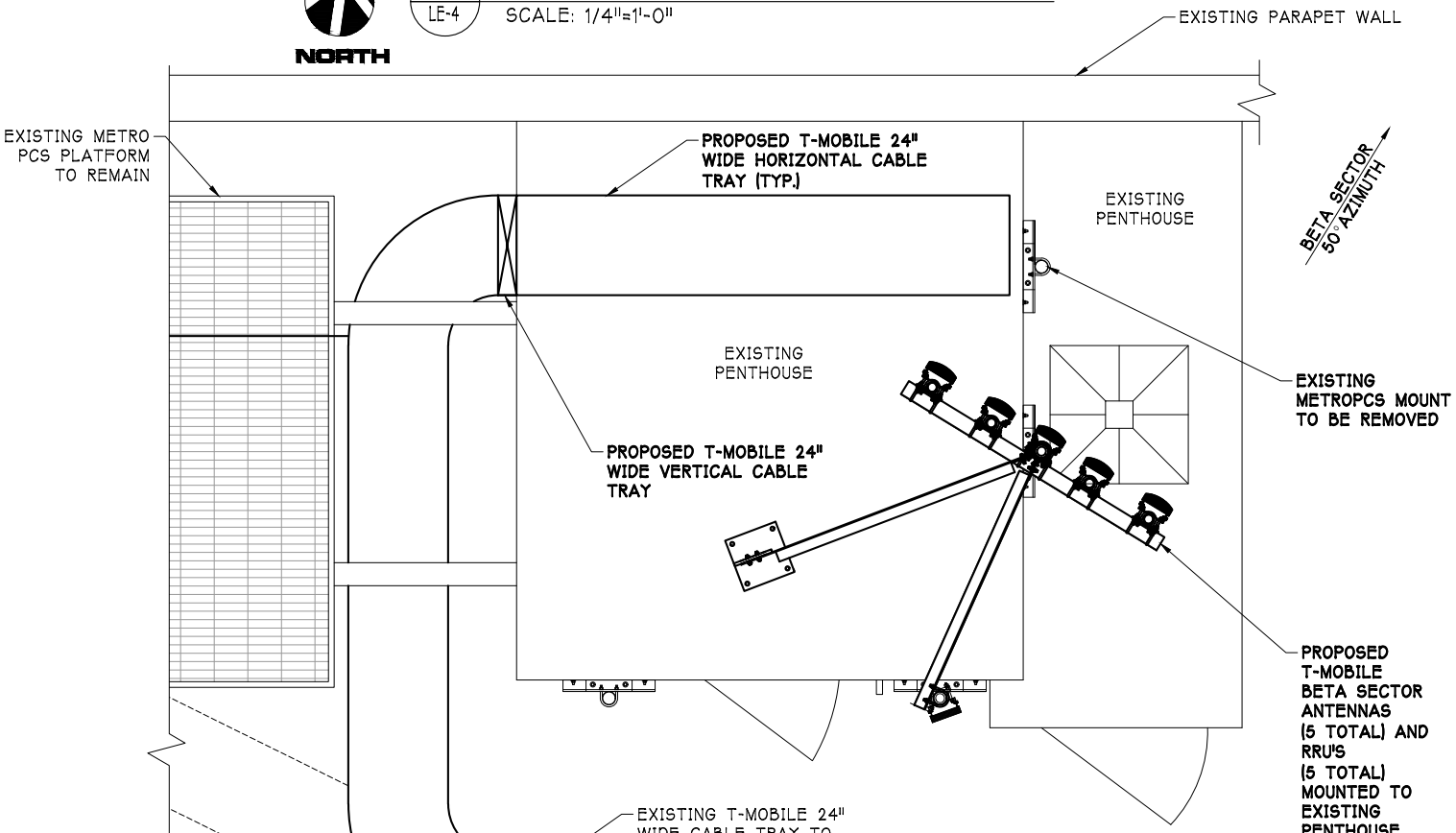
ALPHA SECTOR



NORTH

1 / LE-4 EXISTING PLAN VIEW @ BETA

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



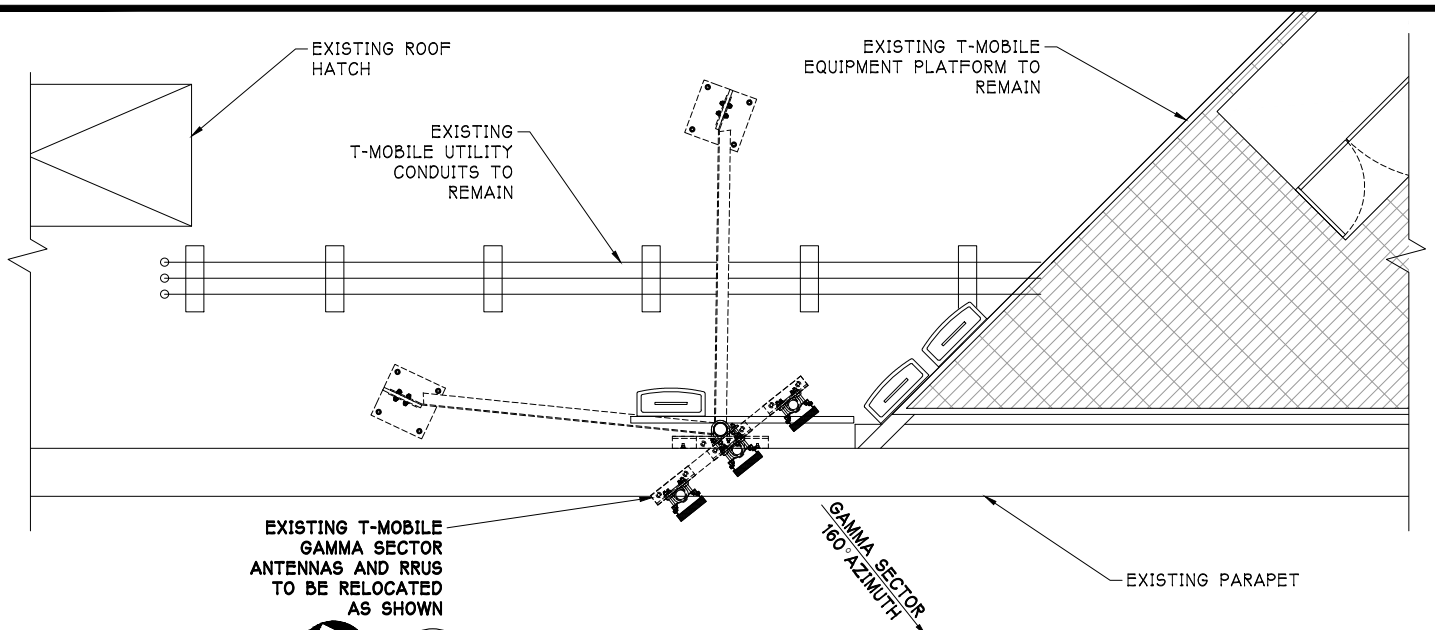
NORTH

2 / LE-4 PROPOSED PLAN VIEW @ BETA

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

LE-4

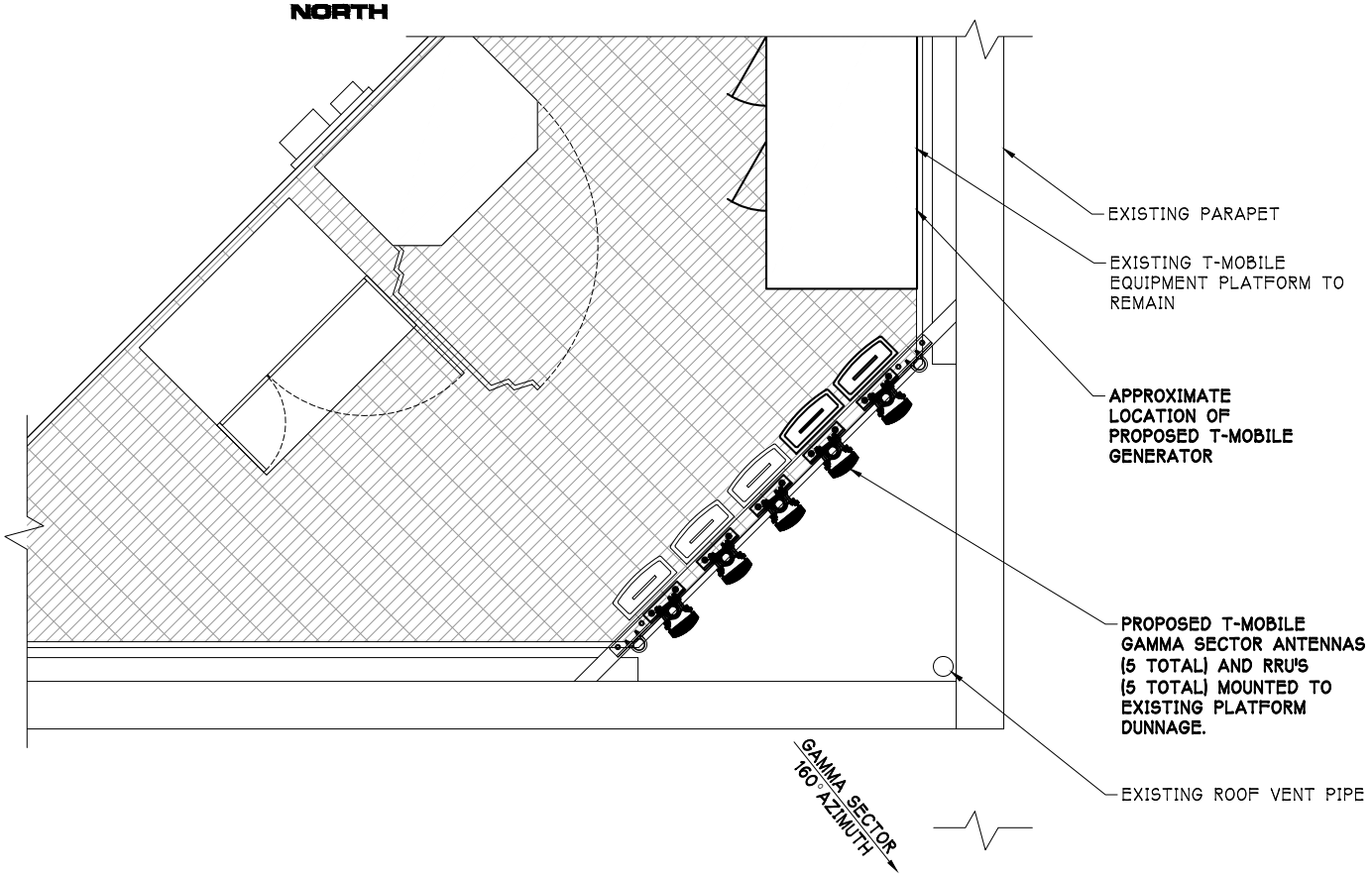
BETA SECTOR



NORTH

1 / LE-5 EXISTING PLAN VIEW @ GAMMA

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



NORTH

2 / LE-5 PROPOSED PLAN VIEW @ GAMMA

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

LE-5

GAMMA SECTOR