

**LEASE EXHIBIT:**

THIS LEASE IS SCHEMATIC IN NATURE AND IS INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION AND SIZE OF THE PROPOSED WIRELESS COMMUNICATION FACILITY, THE SITE LAYOUT WILL BE FINALIZED UPON COMPLETION OF THE SITE SURVEY AND FACILITY DESIGN.

**STRUCTURAL NOTE:**

A STRUCTURAL ANALYSIS SHALL BE PERFORMED ON EXISTING UTILITY POLE PRIOR TO CONSTRUCTION AND SHALL BE THE RESPONSIBILITY OF UTILITY CO.

**INSTALLATION NOTE:**

INSTALL ALL EQUIPMENT, MOUNTING BRACKETS AND HARDWARE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS

**ELECTRICAL NOTE:**

GENERAL WIRING DIAGRAM AND NOTES TAKEN FROM E-MEMO BY JAMES F. GVAZDAUSKAS, P.E. DATED JANUARY 12, 2017

**COORDINATED NOTE:**

COORDINATES AND AMSL ELEVATION BASED FROM FAA-2C CERTIFICATION DATED 07/19/2017. A METES AND BOUNDS SURVEY WAS NOT CONDUCTED

**LEGEND**

- (F) = FUTURE (BLACK)
- (E) = EXISTING (YELLOW)
- (P) = PROPOSED (BLACK)
- (AGL) = ABOVE GROUND LEVEL
- (AMSL) = ABOVE MEAN SEA LEVEL
- N.T.S. = NOT TO SCALE
- MASSDOT HIGHWAY LAYOUT PLAN (WHITE)



APPROX. LOCATION (E) UTILITY POLE

NAD 83 LATITUDE: 41° 37' 32.45"  
 NAD 83 LONGITUDE: -70° 54' 02.96"  
 GROUND ELEVATION: 24.4' AMSL

TRUE NORTH



**SITE PLAN**

SCALE: 1"=40'

**NOTE:**  
 SUBJECT POLE DOES NOT FALL WITHIN STATE HIGHWAY PERIMETER LAYOUT.



**FAIRHAVEN SC07 MA**

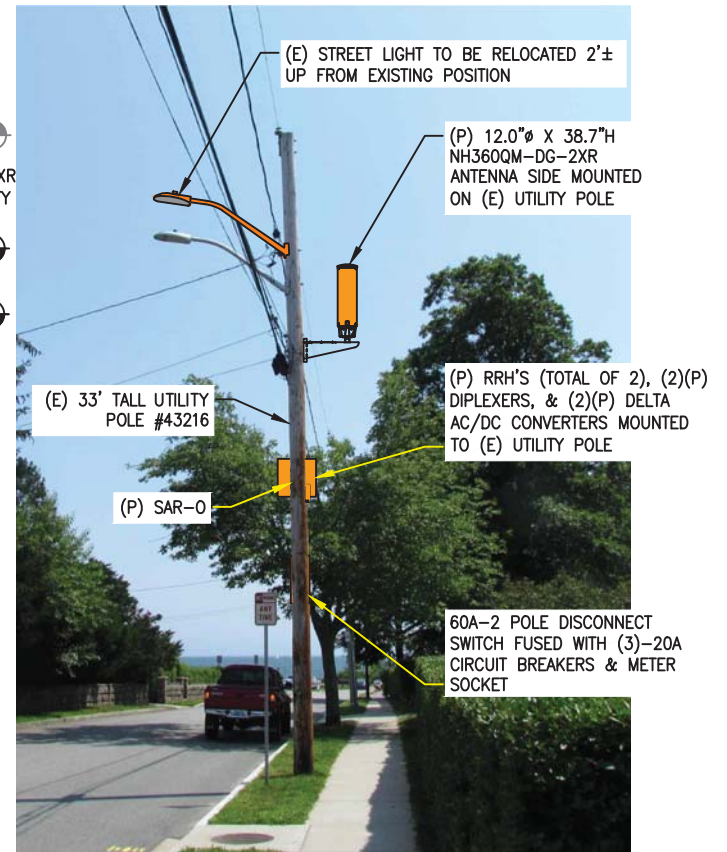
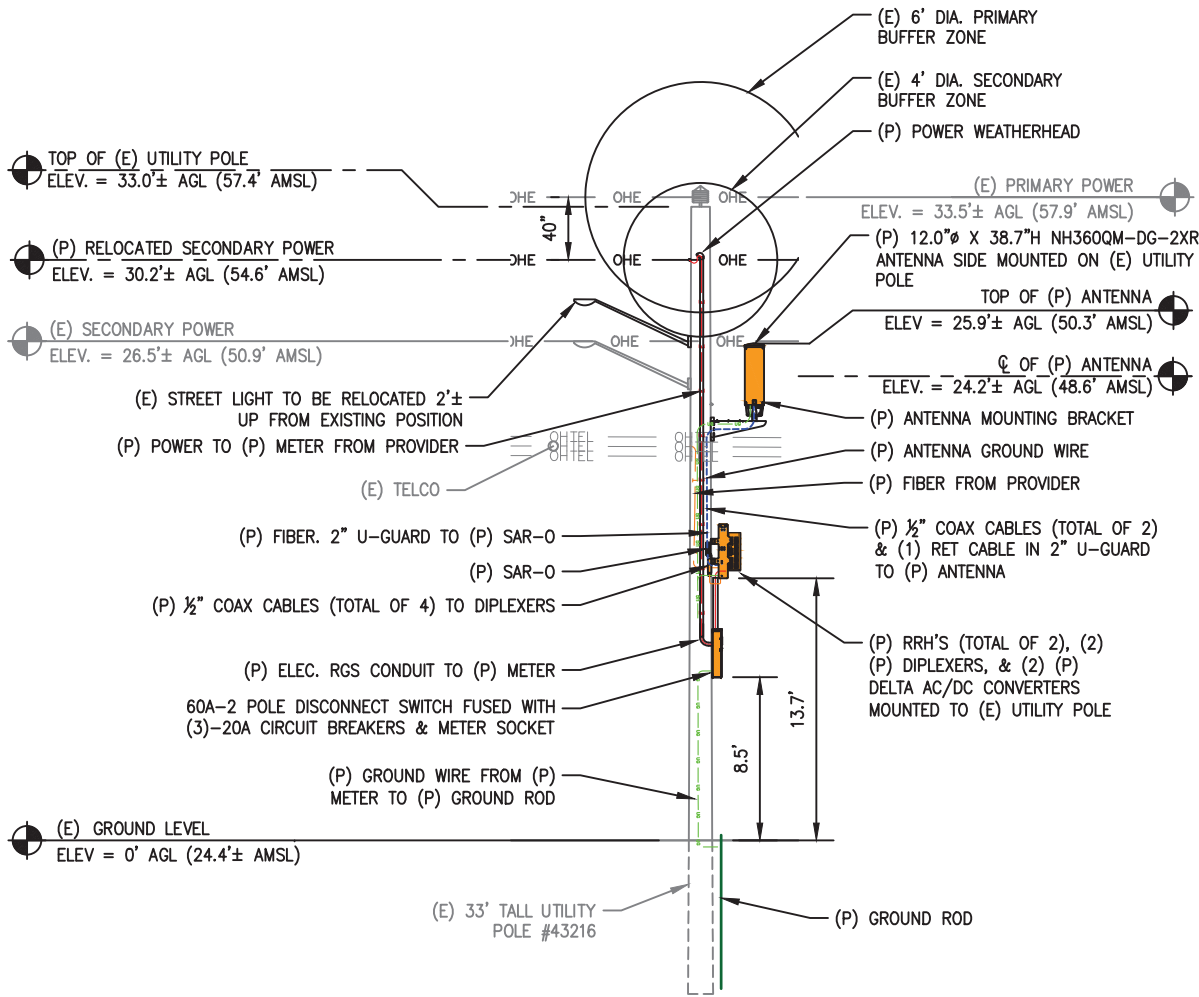
6 FORT STREET  
 FAIRHAVEN, MA 02719

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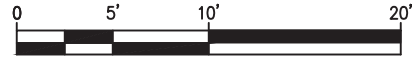
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 2

DATE: 08/09/2017
DRAWN BY: JWH
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SCALE: 1"=40'
SHEET: 1 OF 5



2 PHOTO ELEVATION  
LE-2 SCALE: N.T.S.

1 ELEVATION  
LE-2 SCALE: 1"=10'



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LEGEND	
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(AMSL)	= ABOVE MEAN SEA LEVEL
(AIP)	= ABANDONED IN PLACE
N.T.S.	= NOT TO SCALE

**FAIRHAVEN SC07 MA**

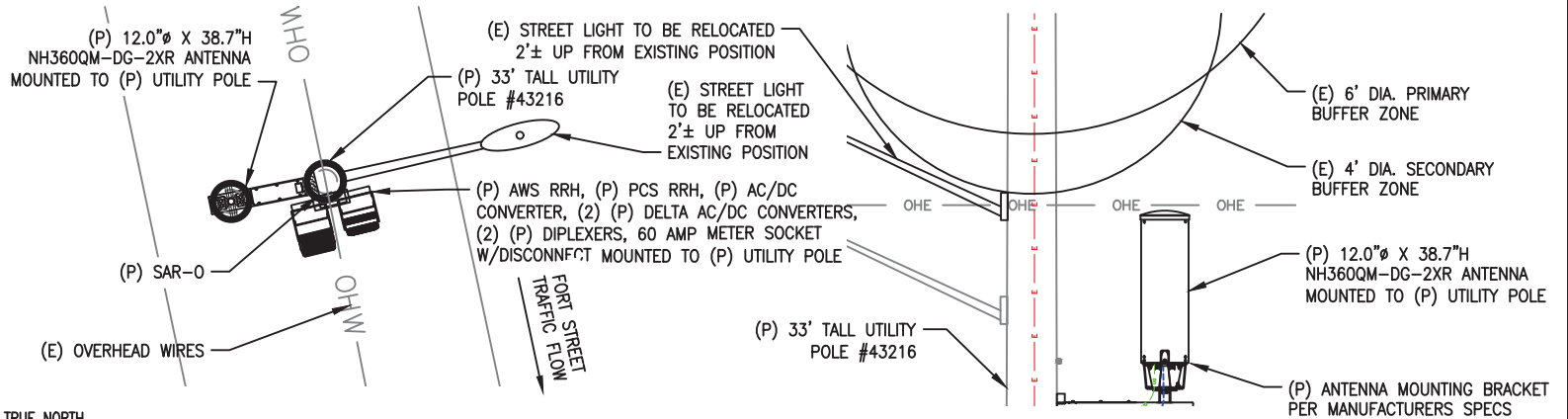
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DATE: 08/09/2017
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**INSTALLATION NOTE:**  
 INSTALL ALL EQUIPMENT, MOUNTING BRACKETS AND HARDWARE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS

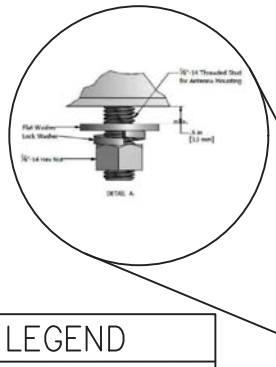
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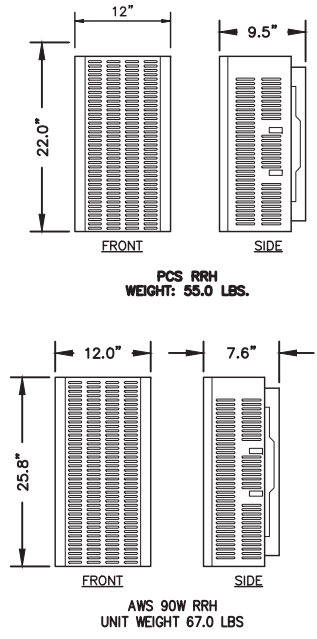
TRUE NORTH  
 4 ANTENNA PLAN  
 LE-3 SCALE: 1"=4'

5 ANTENNA MOUNTING DETAIL  
 LE-3 SCALE: 1"=4'

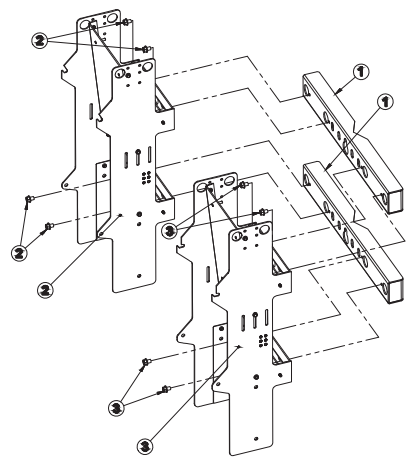
COMMSCOPE NH360QM-DG-2XR  
 DIMENSIONS: 12.0" x 38.7"  
 WEIGHT: 33.7 LBS



1 ANTENNA DETAIL  
 LE-3 SCALE: N.T.S.

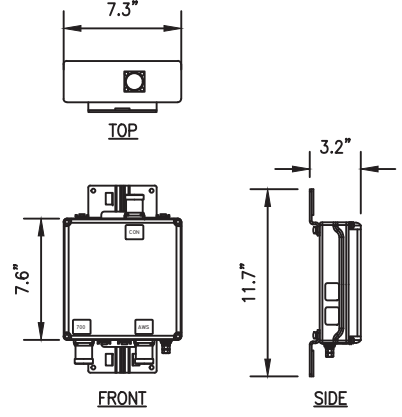


2 RRH DETAILS  
 LE-3 SCALE: N.T.S.



WIRELESS CONSTRUCTION, INC.  
 POLE/WALL MOUNT FOR DUAL RADIO BRACKET

ITEM	DESCRIPTION	QTY.
1	DOUBLE MOUNT	2
2	PCS RRH RACK W/ SUPPLIED HARDWARE	1
3	AWS RRH RACK W/ SUPPLIED HARDWARE	1



DIPLEXER  
 DIMENSIONS: 7.6" H x 7.3" W x 3.2" D  
 WEIGHT: 6.6 LBS

NOTE: MOUNT DIPLEXERS TO BACKSIDE OF DBL-MNT BRKT

3 DIPLEXER DETAIL  
 LE-3 SCALE: N.T.S.

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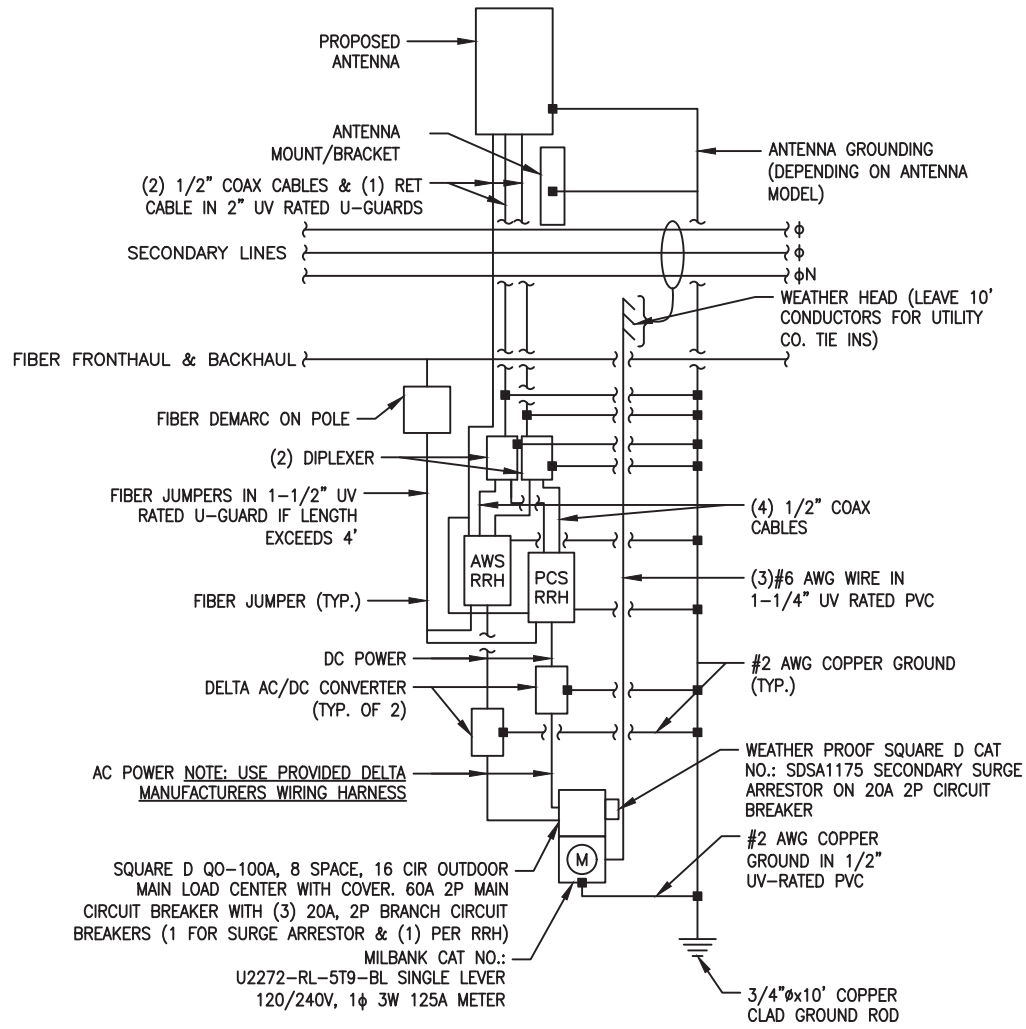
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 SHEET: 3 OF 5



1  
LE-4

**GENERAL WIRING DIAGRAM**

SCALE: N.T.S.

**ELECTRICAL NOTE:**  
GENERAL WIRING DIAGRAM AND NOTES TAKEN FROM E-MEMO BY JAMES F. GVAZDAUSKAS, P.E. DATED JANUARY 12, 2017



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**GENERAL NOTES**

1. INSTALL ALL EQUIPMENT, MOUNTING BRACKETS AND HARDWARE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.
2. GROUND DISTRIBUTION BOXES, MOUNTING PIPES AND RRHs (AS APPLICABLE) IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS
3. INSTALL EQUIPMENT AND MOUNTING BRACKETS TO PRESERVE CLIMBING ACCESS ON POLE
4. EQUIPMENT TO BE INSTALLED AT VERIZON RAD CENTER IN ACCORDANCE WITH STRUCTURAL ANALYSIS
5. ADVANCED ENGINEERING GROUP, P.C. HAS NOT PERFORMED A STRUCTURAL ANALYSIS OF THE EXISTING POLE TO CARRY THE ADDITIONAL LOADING

**ELECTRICAL AND GROUNDING NOTES**

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

**STRUCTURAL NOTES:**

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, ANSI/ASCE7, EIA/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNA SUPPORTING STRUCTURES.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER.
3. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
4. STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 STRUCTURAL STEEL UNLESS OTHERWISE INDICATED.
5. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE A, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
6. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 5/8" DIA. UN.
7. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
8. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
9. FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZINC BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
10. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND D.I.L. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION.
11. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
12. UNISTRUTS SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP, WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
13. EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF 1/2" DIAMETER STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS, AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HLT-HIT HY-20 AND OR HY-150 SYSTEMS (AS SPECIFIED AN DWG.) OR ENGINEERS APPROVED EQUAL WITH 4-1/4" MIN. EMBEDMENT DEPTH.
14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HLT1 KWIK BOLT II OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE THREE AND ONE HALF (3 1/2) INCHES.
15. GRAVEL SUB BASE AND CONCRETE SHALL BE PLACED AGAINST UNDISTURBED SOIL.
16. CONCRETE FOR FENCE AND ICE BRIDGE SUPPORT SHALL BE 3000 PSI AIR ENTRAINED (4%-6%) NORMAL WEIGHT CONCRETE.
17. ALL CAST IN PLACE CONCRETE SHALL BE MIXED AND PLACED IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 318 AND ACI 301.
18. THE FOLLOWING MINIMUM CONCRETE COVER OVER REINFORCING STEEL SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:  
 CONCRETE CAST AGAINST EARTH ... 3 INCHES.  
 CONCRETE EXPOSED TO EARTH OR WATER  
 #6 AND LARGER .....2 INCHES  
 #5 AND SMALLER .....1 1/2 INCHES  
 ALL EXPOSED EDGES SHALL BE PROVIDED WITH A 3/4"x3/4" CHAMFER UNLESS NOTED OTHERWISE.
19. LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.



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2

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SHEET: 5 OF 5