



**CITY OF SOMERVILLE**  
Commonwealth of Massachusetts  
93 Highland Avenue  
Somerville, MA 02143  
(617) 625-6600

## **BUSINESS LICENSE APPLICATION - Small Wireless Facility**

File #: 19-014871

License #: BL19-000110

Address: 81 PENNSYLVANIA AVE

Licensee: Matthew Pricco Network Building + Consulting

DBA Name: ExteNet Systems, Inc.

Business Ownership Type: Corporation

Legal Name of Entity: ExteNet Systems, Inc.

Owners/Officers: James A. Hyde, H. Anthony Lehv, Daniel L. Timm,

### **License Information:**

**Do you believe this to be a 6409(a) application?:** No

**Describe the reason for the work, and the intended beneficiaries:** The facility will improve wireless communications services for residents, businesses, and visitors in the vicinity.

**Provide the detailed description of the work that should appear on the License:** Extenet proposes to install a small cell wireless facility on a replacement cobra style light pole of approximately the same height, painted to match the existing concrete pole. The principal elements of the proposed facility are an antenna housed in a 24" long shroud at the top of the pole and three radios in a shroud also mounted on the pole. The proposed replacement pole fully accommodates the same type of light fixture, to be installed and made operational as part of this proposal. It is structurally stronger than the existing pole. See the plans accompanying this application for details. This proposal maintains appearance of the existing streetscape and improves wireless capacity for residents, businesses and visitors

**# of installations on existing poles:** 1

**# of installations on new poles:**

**Provide the legal name of the entity that will own the License:** ExteNet Systems, Inc.

### **Approved By:**

**Hans Jensen, Approved**

**Karla Cuarezma, Approved**

**Malik Drayton, Approved with Conditions**

APPROVAL CONDITION: MD20200921: Contractor shall take all necessary precautions to avoid damaging any tree or tree part with equipment.

APPROVAL CONDITION: MD20200921: All nearby street tree(s) shall be protected prior to and during all construction activities using TREE BOX or TREE WRAPS. . TREE BOX shall be constructed from 2 in. x 4 in. lumber creating a box around the border of the tree pit with 2 in. x 4 in. lumber standing straight up at the corners and wrapped with orange snow fence. Detail attached. . TREE WRAPS (TREE TRUNK WRAPPING

PROTECTION LUMBER) shall consist of 2 in. x 4 in. and 8 ft. height lumber wired together in close spacing with zip ties or 16 gauge galvanized steel wire to form a protective enclosure around tree trunks. Use burlap to separate the wood from the bark if necessary to prevent wood from scraping or bruising bark. Do not use staples or puncture the trunk in any way.

APPROVAL CONDITION: MD20200921: Any tree roots less than two (2) inches in diameter that cannot be avoided during construction shall be carefully and cleanly cut with a clean pair of pruning shears or loppers. Roots are to be cut back flush with the edge of the trench. If any tree roots greater than two (2) inches in diameter are encountered, stop work immediately and contact the City Urban Forester. Any and all pruning of roots greater than 2 inches in diameter must be completed under the supervision of the City Urban Forester.

**John Power, Approved**

**Mark Lawhorne, Approved**

**John J. Long, Approved**



LATITUDE: 42.389105°  
LONGITUDE: -71.082855°

# NE-MA-BSTN3N01-TMO

## NE-MA-BSTN3N01-03338 / NE3202BA\_31LAB

### PROPOSED SMALL CELL NODE

81 PENNSYLVANIA AVENUE, SOMERVILLE, MA 02145  
CITY OF SOMERVILLE, MIDDLESEX COUNTY



Know what's below.  
Call before you dig.

ENGINEERING FIRM



APPLICANT



SITE INFORMATION

NE-MA-BSTN3N01-03338  
TMO ID: NE3202BA\_31LAB  
81 PENNSYLVANIA AVENUE  
SOMERVILLE, MA 02145  
MIDDLESEX COUNTY

DESIGN RECORD

#### REVISIONS

REV	DATE	DESCRIPTION	BY
5	08/28/20	POLE DETAILS ADDED	RAL
4	02/28/20	REVISED PER DPW COMMENTS	DRG
3	09/12/19	REVISED	NSB
2	08/06/19	FINAL	CWE
1	05/23/19	ADDRESS REVISED	DRG
0	05/14/19	PRELIMINARY	CJI

PROFESSIONAL STAMP



ENGINEER

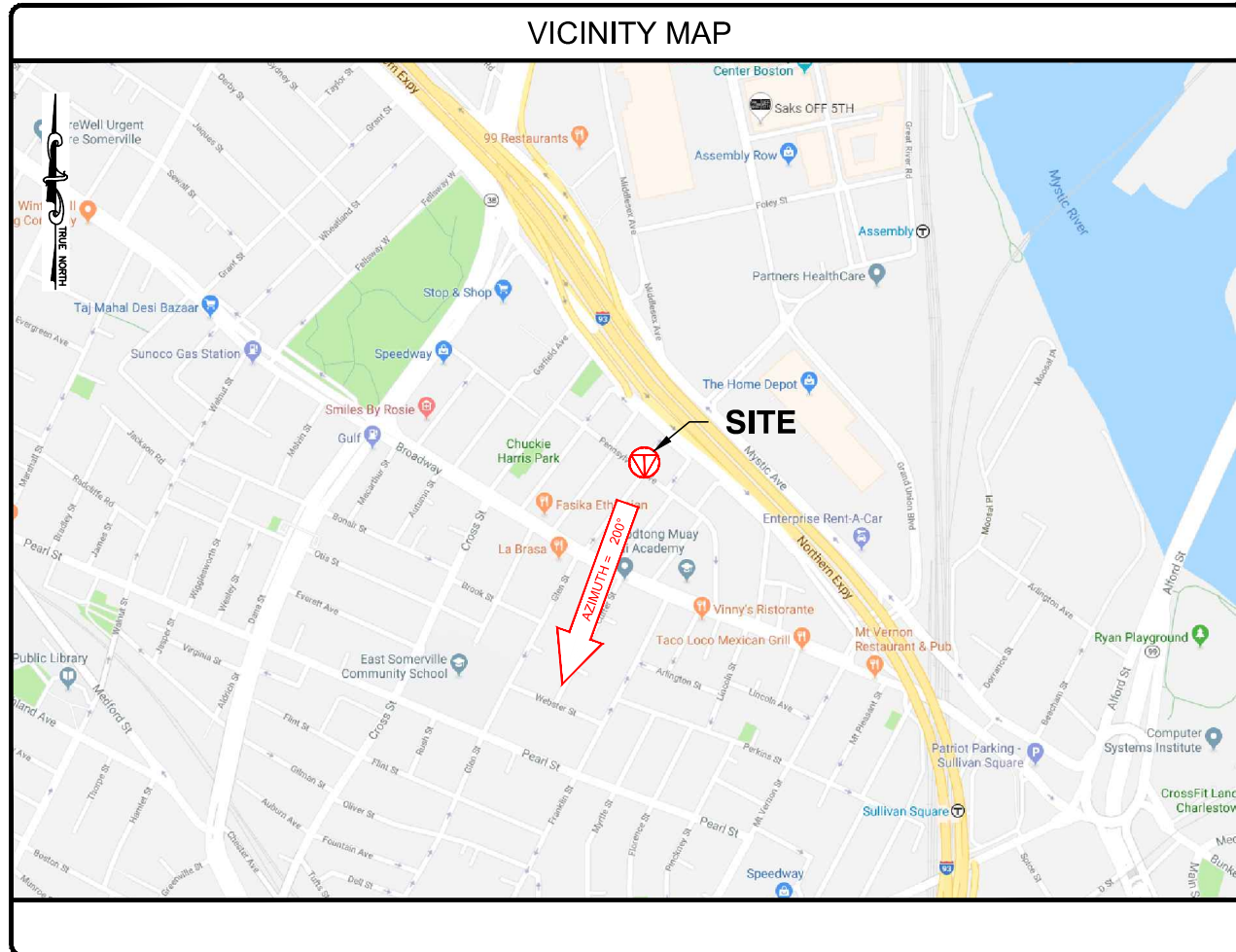
KRUPAKARAN KOLANDAIVELU, P.E.  
MA PROFESSIONAL ENGINEER LIC. #50019

SHEET TITLE

TITLE SHEET

SHEET NUMBER

SHEET  
01 OF 06



PROJECT INFORMATION	
PROJECT NAME:	NE-MA-BSTN3N01-TMO
POLE TAG:	NO TAG LATITUDE: 42.389105° LONGITUDE: -71.082855°
JURISDICTION:	CITY OF SOMERVILLE MIDDLESEX COUNTY
EXTENET PROJECT MANAGER:	RICK ANGELINI 3030 WARRENVILLE RD, SUITE 340 LISLE, IL 60532 NOC: (866) 892-5327
HUB LOCATION:	HUB: 4BS0365B 422 MYSTIC AVENUE SOMERVILLE, MA 02145
ELECTRIC COMPANY:	EVERSOURCE

CODE COMPLIANCE	
ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING CODES.	
<ul style="list-style-type: none"> <li>2015 INTERNATIONAL BUILDING CODE (MASSACHUSETTS AMENDED 9TH EDITION)</li> <li>2017 NATIONAL ELECTRICAL CODE</li> <li>NFPA 1-2015 EDITION</li> <li>2015 IFC - REFERENCE 527 CMR</li> <li>AMERICAN CONCRETE INSTITUTE</li> <li>AMERICAN INSTITUTE OF STEEL CONSTRUCTION</li> <li>MANUAL OF STEEL CONSTRUCTION 13TH EDITION</li> </ul>	<ul style="list-style-type: none"> <li>ANSI/TIA-222-G</li> <li>TIA 607</li> <li>INSTITUTE FOR ELECTRICAL &amp; ELECTRONICS ENGINEER 81</li> <li>IEEE C2 NATIONAL ELECTRIC SAFETY CODE LATEST EDITION</li> <li>TELECORDIA GR-1275</li> <li>ANSI/T 311</li> </ul>

DRAWING INDEX	
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S-1	ELEVATION VIEW & STRUCTURAL DETAILS



GENERAL NOTES:

- 1. THE CONTRACTOR SHALL GIVE ALL NOTICE AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LOCAL AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAS MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE CONSTRUCTION MANAGER OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
... 23. AFTER COMPLETION OF CONSTRUCTION, RED LINED AS-BUILT PLANS SHALL BE PROVIDED TO CONSTRUCTION MANAGER.

ELECTRICAL NOTES:

- 1. CONTRACTOR SHALL PERFORM ALL VERIFICATIONS, OBSERVATION TESTS, AND EXAMINATION WORK PRIOR TO ORDERING OF ANY EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE PROJECT MANAGER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
2. VERIFY HEIGHTS WITH PROJECT MANAGER PRIOR TO INSTALLATION.
3. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. ELECTRICAL MATERIALS SHALL BE LISTED AND APPROVED BY UNDERWRITER'S LABORATORIES AND SHALL BEAR THE INSPECTION LABEL "IT" WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH APPROVAL OF ALL GOVERNING BODIES HAVING JURISDICTION OVER THE CONSTRUCTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH ALL CURRENT APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA AND NFPA. ALL MATERIALS AND EQUIPMENT SHALL BE APPROVED FOR THEIR INTENDED USE AND LOCATION.
... 11. CONDUIT:
A. RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR. RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 1/2 LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3.
B. ELECTRICAL METALLIC TUBING SHALL HAVE U.L. LABEL, FITTINGS SHALL BE GLAND RING COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.
C. LIQUID-TIGHT FLEXIBLE METAL CONDUIT SHALL BE U.L. LISTED AND SHALL BE USED AT FINAL CONNECTIONS TO MECHANICAL EQUIPMENT & RECTIFIERS AND WHERE PERMITTED BY CODE. ALL CONDUIT IN EXCESS OF SIX FEET IN LENGTH SHALL CONTAIN A FULL-SIZE GROUND CONDUCTOR.

- D. CONDUIT RUNS SHALL BE SURFACE MOUNTED ON CEILINGS OR WALLS UNLESS NOTED OTHERWISE. ALL CONDUIT SHALL RUN PARALLEL OR PERPENDICULAR TO WALLS, FLOOR, CEILING, OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH THE PROJECT MANAGER PRIOR TO INSTALLING.
E. PVC CONDUIT MAY BE PROVIDED ONLY WHERE SHOWN, OR IN UNDERGROUND INSTALLATIONS. PROVIDE UV-RESISTANT CONDUIT WHERE EXPOSED TO THE ATMOSPHERE. PROVIDE GROUND CONDUCTOR IN ALL PVC RUNS; EXCEPT WHERE PERMITTED BY CODE TO OMIT.
12. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS. BACKGROUND SHALL BE BLACK WITH WHITE LETTERS; EXCEPT AS REQUIRED BY CODE TO FOLLOW A DIFFERENT SCHEME.
13. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL OF POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER. GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED 5 OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE PROJECT MANAGER FOR FURTHER INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE VALUE.
14. COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS SHALL BE PAID BY THE CONTRACTOR.
15. VERIFY ALL EXISTING CIRCUITRY PRIOR TO REMOVAL AND NEW WORK. MAINTAIN POWER TO ALL OTHER AREAS & CIRCUITS NOT SCHEDULED FOR REMOVAL.

GROUNDING NOTES:

- 1. GROUNDING SHALL COMPLY WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.
2. ALL GROUNDING DEVICES SHALL BE U.L. APPROVED OR LISTED FOR THEIR INTENDED USE.
3. ALL WIRES SHALL BE AWG THHN/THWN COPPER UNLESS NOTED OTHERWISE.
4. GROUNDING CONNECTIONS TO GROUND RODS, GROUND RING WIRE, TOWER BASE AND FENCE POSTS SHALL BE EXOTHERMIC ("CADWELDS") UNLESS NOTED OTHERWISE. CLEAN SURFACES TO SHINY METAL. WHERE GROUND WIRES ARE CADWELDED TO GALVANIZED SURFACES, SPRAY CADWELD WITH GALVANIZING PAINT.
5. GROUNDING CONNECTIONS TO GROUND BARS ARE TO BE TWO-HOLE BRASS MECHANICAL CONNECTORS WITH STAINLESS STEEL HARDWARE (INCLUDING SCREW SET) CLEAN GROUND BAR TO SHINY METAL. AFTER MECHANICAL CONNECTION, TREAT WITH PROTECTIVE ANTIOXIDANT COATING.
6. GROUND COAXIAL CABLE SHIELDS AT BOTH ENDS WITH MANUFACTURER'S GROUNDING KITS.
7. ROUTE GROUNDING CONDUCTORS THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. BEND GROUNDING LEADS WITH A MINIMUM 12" RADIUS.
8. INSTALL #2 AWG GREEN-INSULATED STRANDED WIRE FOR ABOVE GRADE GROUNDING AND #2 TINNED SOLID COPPER WIRE FOR BELOW GRADE GROUNDING UNLESS OTHERWISE NOTED.
9. REFER TO GROUNDING PLAN FOR GROUND BAR LOCATIONS. GROUNDING CONNECTIONS SHALL BE EXOTHERMIC TYPE ("CADWELDS") TO ANTENNA MOUNTS AND GROUND RING. REMAINING GROUNDING CONNECTIONS SHALL BE COMPRESSION FITTINGS. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO-HOLE LUGS.
10. THE GROUND ELECTRODE SYSTEM SHALL CONSIST OF DRIVEN GROUND RODS POSITION ACCORDING TO GROUNDING PLAN. THE GROUND RODS SHALL BE 5/8"x10"-Ø COPPER CLAD STEEL INTERCONNECTED WITH #2 TINNED SOLID COPPER WIRE BURIED 36" BELOW GRADE. BURY GROUND RODS A MAXIMUM OF 15' APART, AND A MINIMUM OF 6' APART.
11. IF ROCK IS ENCOUNTERED GROUND RODS SHALL BE PLACED AT AN OBLIQUE ANGLE NOT TO EXCEED 45°.
12. EXOTHERMIC WELDS SHALL BE MADE IN ACCORDANCE WITH ERICO PRODUCTS BULLETIN A-AT OR EQUAL.
13. CONSTRUCTION OF GROUND RING AND CONNECTIONS TO EXISTING GROUND RING SYSTEM SHALL BE DOCUMENTED WITH PHOTOGRAPHS PRIOR TO BACKFILLING SITE. PROVIDE PHOTOS TO THE CONSTRUCTION MANAGER.
14. ALL GROUND LEADS EXCEPT THOSE TO THE EQUIPMENT ARE TO BE #2 TINNED SOLID COPPER WIRE. ALL EXTERIOR GROUND BARS TINNED COPPER.
15. PRIOR TO INSTALLING LUGS ON GROUND WIRES, APPLY THOMAS & BETTS KOPR-SHIELD (TM OF JET LUBE INC.). PRIOR TO BOLTING GROUND WIRE LUGS TO GROUND BARS, APPLY KOPR-SHIELD OR EQUAL.
16. ENGAGE AN INDEPENDENT ELECTRICAL TESTING FIRM TO TEST AND VERIFY THAT IMPEDANCE DOES NOT EXCEED FIVE OHMS TO GROUND BY MEANS OF "FALL OF POTENTIAL TEST". TEST SHALL BE WITNESSED BY A REPRESENTATIVE, AND RECORDED ON THE "GROUND RESISTANCE TEST" FORM.
17. WHERE BARE COPPER GROUND WIRES ARE ROUTED FROM ANY CONNECTION ABOVE GRADE TO GROUND RING, INSTALL WIRE IN 3/4" PVC SLEEVE, FROM 1' BELOW GRADE AND SEAL TOP WITH SILICONE MATERIAL.
18. PREPARE ALL BONDING SURFACES FOR GROUNDING CONNECTIONS BY REMOVING ALL PAINT AND CORROSION DOWN TO SHINY METAL. FOLLOWING CONNECTION, APPLY APPROPRIATE ANTI-OXIDIZATION PAINT.
19. ANY SITE WHERE THE EQUIPMENT (BTS, CABLE BRIDGE, PPC, GENERATOR, ETC.) IS LOCATED WITHIN 6 FEET OF METAL FENCING, THE GROUND RING SHALL BE BONDED TO THE NEAREST FENCE POST USING (3) RUNS OF #2 BARE TINNED COPPER WIRE.

GROUNDING GUIDELINES:

ALL EQUIPMENT THAT IS INSTALLED AND MAY CAUSE ANY KIND OF ELECTRICAL CHARGE OR BUILD UP MUST HAVE PROPER AND ADEQUATE GROUNDING IN PLACE TO PREVENT FROM EQUIPMENT DAMAGE AND SHOCK HAZARDS.

RRH'S
MUST BE GROUND TO A MAIN BUSS BAR OR HOME RUN GROUND FROM THE GROUND PIN OR STUD THAT IS ON THE CHASSIS. IF ANY EQUIPMENT HAS A GROUND POINT ON IT, IT SHOULD BE GROUND. THE GROUNDING CABLE SIZE SHOULD FOLLOW LOCAL GUIDELINES ON EQUIPMENT GROUNDING. NORMALLY THE STANDARD IS 6 UV RATED STRANDED GROUND CABLE TO BE USED ON RRH'S. THE LUG NEEDS TO FIT THE PROPER CABLE SIZE AS WELL AS THE HOLE SIZE FOR THE STUD. IF IT'S A SINGLE STUD IT SHOULD BE A ONE HOLE LUG. IF IT HAS A PLACE FOR TWO HOLE LUG THEN THAT SHOULD BE USED. (I.E. COMSCOPE, ION M HAS A SINGLE STUD GROUND, TE PRISM HAS A GROUND FOR A 2 HOLE LUG.) DO NOT CUT THE LUGS TO FIT. THEY MAKE LUGS IN ALL SHAPES AND SIZES. ORDER THE CORRECT ONE AND ATTACH IT PROPERLY.

COAX GROUNDS
IN LINE GROUNDS SHOULD BE INSTALLED WITH THE PROPER SIZE GROUND KITS ON ALL COAX CABLES. THE KITS ARE INSTALLED ON FRONT AND BACK OF COAX RUNS OVER APPROXIMATELY 15 FEET. ANYTHING OVER 300 FEET NEEDS AN ADDITIONAL GROUND AROUND THE 150 FOOT MARK.

SURGE ARRESTORS
IF IT HAS A PLACE FOR A GROUND - GROUND IT.

MAST PIPES
ALL MAST PIPES SHOULD BE GROUND WITH BARE METAL ON THE PLACE THE GROUND IS ATTACHED AND THEN COLD GALVANIZATION OVER THE BARE METAL TO PREVENT RUST. THE GROUND CAN BE ATTACHED MECHANICALLY OR AN EXOTHERMIC WELD (CAD WELD) MAY BE USED. IF THE MAST PIPE IS THE TALLEST POINT ON A BUILDING IT SHOULD ALSO HAVE A LIGHTNING ROD ATTACHED TO IT AS WELL.

DIPLEXERS/DUPLEXERS/SPLITTERS/PASSIVE COMPONENTS
IF IT HAS A PLACE FOR A GROUND TO BE INSTALLED - INSTALL IT.

ANY STRUCTURE OR FRAME SHOULD HAVE 2 GROUND WIRE, I.E. MAST PIPES, OUTDOOR ENCLOSURES, SHROUDS, BUSS BAR HOME RUN TO EARTH GROUND. ALL EQUIPMENT HAS 6 TO BUSS BARS.

ALL BUSS BARS NEED TO HAVE A LINK TO AN EARTH GROUND SYSTEM AND MUST BE ISOLATED IF MOUNTED ON ANYTHING THAT MAY RETAIN AN ELECTRIC CHARGE. NO EXCEPTIONS. ALL EQUIPMENT SHOULD RUN TO BUSS BARS. LUGS ON BUSS BARS SHOULD HAVE FRONT AND BACK FLAT WASHERS SANDWICHING THE LUG(S) TO THE BAR AND NOT OVERLAPPING CAUSING IT TO HOLD OR PIN DOWN OTHER LUGS ON THE BAR. THERE SHOULD ALWAYS BE A LOCK WASHER CLOSEST TO THE NUT ON THE BOLT FOR A LUG. NEVER IS IT OK TO STACK LUGS ON TOP OF EACH OTHER. IF THERE IS NOT ENOUGH SPACE, GET A BIGGER BUSS BAR. THEY SHOULD ALL HAVE A DIRECT CONTACT TO A BUSS BAR WITH NO-ØX COATED BETWEEN THE LUG AND THE BUSS BAR. ALL GROUNDS SHOULD HAVE HEAT SHRINK OVER THE LUG (UNLESS IT'S NON-JACKETED WIRE). ALL LUGS NEED TO BE CRIMPED ON SECURELY WITH THE PROPER DYE AND TOOL (NOT CHANNEL LOCK CRIMPED). THERE SHOULD BE NO MORE THAN 1/16 INCH BARE CABLE SHOWING (SHINER) BETWEEN THE JACKET AND THE LUG. INSIDE LUGS SHOULD HAVE CLEAR HEAT SHRINK TO INSPECT THE CRIMPS AND SHINERS. INSIDE LUGS SHOULD HAVE INSPECTION WINDOWS TO SHOW THE GROUND WIRE IS INSERTED INTO THE LUG ALL THE WAY AND IS PROPERLY INSTALLED. OUTDOOR LUGS MAY HAVE BLACK OR GREEN HEAT SHRINK.

WEATHER SEAL GUIDELINES:

- 1. PRE WRAP ALL CONNECTIONS WITH BLACK ELECTRICAL TAPE TO COVER ALL METAL SHOWING TO PREVENT DAMAGE TO CONNECTOR WHEN WEATHER SEAL IS TO BE REMOVED. 3/4 INCH OR 2 INCH TAPE CAN BE USED FOR THIS PROCESS.
2. WRAP CONNECTIONS WITH BUTYL WEATHER SEALANT WITH TWO LAYERS TO FORM A CONE LIKE SHAPE. OVER LAPPING THE LAYERS BY AT LEAST 50%. MOLD SEALANT TO PROPER SHAPE. THIS STEP IS CRUCIAL OR THE BUTYL WILL LEAK OVER TIME.
3. WRAP SEALANT WITH 2 LAYERS OF 2 INCH TAP. (YOU CAN CUT INTO STRIPS IN TIGHT AREAS). FIRST WRAP SHOULD BE PULLED SMOOTH TO MAKE FINAL WRAPS CLEAN AND CRISP. 2ND WRAP SHOULD BE PULLED TIGHTER THAN FIRST TO HOLD SEALANT INTO PROPER (CONE LIKE) SHAPE. OVER LAPPING TAPE SHOULD COVER AT LEAST 50% OF EACH LAYER OF TAPE PRIOR.
4. UPON COMPLETION OF 2 LAYERS OF 2 INCH TAPE FINALIZE WITH AT LEAST 3 LAYERS OF 3/4 INCH TAPE. EACH WRAP OF TAPE SHOULD BE PULLED TIGHTER THAN WRAP BEFORE TO SQUEEZE SEALANT INTO A MOLD AND WILL PREVENT ANY SEALANT FROM LEAKING OUT THE SIDES OVER TIME. EACH LAYER SHOULD COVER PRIOR LAYERS AT LEAST 50%.
5. OVERLAP THE TAPE 50% OF THE PREVIOUS LAYER.
6. ALWAYS FINISH THE LAST WRAP OF TAPE GOING UP TO CREATE A SHINGLING OF THE TAPE SO IN THE WEATHER ANYTHING THAT RUNS DOWN THE CABLE WILL NOT LEAK INTO THE SEALANT. CUT THE END OF THE TAPE AND LAY IT ONTO THE FINISH. DO NOT STRETCH THE END OF THE TAPE. THIS WILL CAUSE THE TAPE TO PULL OFF OVER TIME AND CREATE A FLAGGING AFFECT.

FUSION TAPE

- 1. CHECK TO MAKE SURE ALL CONNECTORS ARE TORQUED TO PROPER SPECIFICATIONS BEFORE YOU BEGIN.
2. NOTE: THIS STEP DOES NOT NEED A CURTUSY WRAP BECAUSE THE TAPE DOES NOT ACTUALLY ADHERE TO THE CONNECTOR ITSELF BUT BINDS TO ITSELF. ALSO KNOWN AS "SELF-AMALGAMATING TAPE."
3. WRAP CONNECTIONS FUSION TAPE SEALANT WITH TWO LAYERS TO FORM A CONE LIKE SHAPE. FUSION TAPE MUST OVER LAP AT LEAST 50% TO FORM A PROPER SEAL. COVER ALL OF THE BARE METAL SHOWING (AT LEAST 1-1/2 INCH PAST END OF CONNECTOR.)
4. IF THIS "TAPE" IS NOT PULLED TIGHT WHILE WRAPPING YOU WILL NOT CREATE A PROPER SEAL, IT MUST BE STRETCHED TO CREATE BOND TO ITSELF.
5. WRAP AT LEAST 2 LAYERS OF 3/4 INCH TAPE. EACH LAYER SHOULD COVER AT LEAST 50% OF PREVIOUS TAPE WRAP.
6. ALWAYS FINISH THE LAST WRAP OF TAPE GOING UP TO CREATE A SHINGLING OF THE TAPE SO IN THE WEATHER ANYTHING THAT RUNS DOWN THE CABLE WILL NOT LEAK INTO THE SEALANT. CUT THE END OF THE TAPE AND LAY IT ONTO THE FINISH. DO NOT STRETCH THE END OF THE TAPE. THIS WILL CAUSE THE TAPE TO PULL OFF OVER TIME AND CREATE A FLAGGING AFFECT.

HEAT SHRINK

- 1. PRE WRAP ALL CONNECTIONS WITH BLACK ELECTRICAL TAPE TO COVER ALL METAL SHOWING TO PREVENT DAMAGE TO CONNECTOR WHEN WEATHER SEAL IS TO BE REMOVED. 3/4 INCH OR 2 INCH TAPE CAN BE USED FOR THIS PROCESS.
2. USE ONLY OUTDOOR RATED HEAT SHRINK THAT HAS THE SELF-ADHESIVE WHEN HEATED PROPERLY. THIS IS WHAT WILL CREATE THE SEAL TO THE CONNECTOR.
3. MAKE SURE HEAT SHRINK COVERS ALL OF THE COUPLERS AND CONNECTIONS. HEAT THE HEAT SHRINK TO SHRINK TIGHTLY TO THE CONNECTIONS AND CABLE. MAKE SURE THE HEAT SHRINK IS SEALED TOP AND BOTTOM OF THE CONNECTIONS. ALSO CHECK TO MAKE SURE HEAT SHRINK WAS NOT OVER HEATED AND THERE ARE NO BREAKS IN SEAL THROUGH-OUT THE SHRINK TUBING.

ANDREWS CLAM SHALL

- 1. PROPERLY TORQUE CONNECTOR TO SPECIFICATION.
2. APPLY ONE LAYER OF 3/4 INCH BLACK TAPE AROUND ENTIRE CONNECTOR ENDING AT LEAST 1-1/2 INCHES PAST TOP AND BOTTOM OF CONNECTOR TO PREVENT ANY MOISTURE FROM STICKING TO THE CONNECTOR.
3. INSPECT THE DEVICE TO MAKE SURE IT IS NOT CHIPPED, CRACKED OR ANY SIGNS OF NEGLECT THAT WILL TAKE AWAY FROM MAKING A FULL SEAL AROUND THE CONNECTOR.
4. USE ONLY CORRECT SIZE PER CABLE AND CONNECTOR TYPE - I.E. 1/2 INCH FOR 1/2 INCH NOT 7/8TH FOR 1/2 INCH.
5. FOLLOW DIRECTIONS THAT COME WITH PRODUCT - MOST CLAM SHELL TYPE SEALANT DEVICES WRAP AROUND OR CLAMP AROUND A CONNECTION POINT.
6. BE CAREFUL WHEN SETTING LOCKING DEVICE INTO PLACE ON CLAM SHELL STYLE SEALANTS (THEY ARE PLASTIC AND TEND TO BREAK OR CRACK IN EXTREME WEATHER CONDITIONS WHEN LOCKING DEVICE CLOSED TO CREATE THE SEAL.) IF THE LOCKING MECHANISM CRACKS OR BREAKS, REPLACE IT. DO NOT TAPE THE CLAMP CLOSED OR TRY TO RE-ENGINEER IT.
7. ONCE THE CLAMP IS ON AND LOCKED AROUND THE CONNECTOR THE PROCESS IS COMPLETE.

PPC BOOT

- 1. PLACE BOOT OVER CABLE BEFORE CONNECTOR IS ATTACHED TO CABLE. THIS IS ONLY RATED FOR PPC TYPE CONNECTORS. (NOTE: IF THIS STEP IS SKIPPED OR NOT COMPLETED BEFORE MAKING A CONNECTOR THE SUBCONTRACTOR WILL NOT BE ABLE TO USE THE BOOT STYLE DEVICE TO SEAL THE CONNECTOR. IT IS NOT RECOMMENDED TO WASTE A CONNECTOR AND CUT IT OFF AND START AT STEP NO. 1 AGAIN. SINCE PPC CONNECTORS ARE NOT REUSABLE AND CAN GET QUITE EXPENSIVE. DO NOT TRY TO STRETCH THE BOOT TO SLIDE IT OVER THE CONNECTION.)
2. PLACE THE BOOT OVER THE CABLE, AND THEN MAKE THE CONNECTOR.
3. TORQUE THE CONNECTION TO PROPER SPECIFICATIONS.
4. SLIDE BOOT UP TO COVER THE ENTIRE CONNECTOR, FOLLOWING THE PPC GUIDELINES.
5. THIS PROCESS IS COMPLETE AT THIS TIME.

ENGINEERING FIRM



APPLICANT



SITE INFORMATION

NE-MA-BSTN3N01-03338 TMO ID: NE3202BA\_31LAB 81 PENNSYLVANIA AVENUE SOMERVILLE, MA 02145 MIDDLESEX COUNTY

DESIGN RECORD

Table with columns: REV, DATE, DESCRIPTION, BY. Includes entries for POLE DETAILS ADDED, REVISED PER DPW COMMENTS, REVISED, FINAL, ADDRESS REVISED, and PRELIMINARY.

PROFESSIONAL STAMP



ENGINEER

KRUPAKARAN KOLANDAIVELU, P.E. MA PROFESSIONAL ENGINEER LIC. #50019

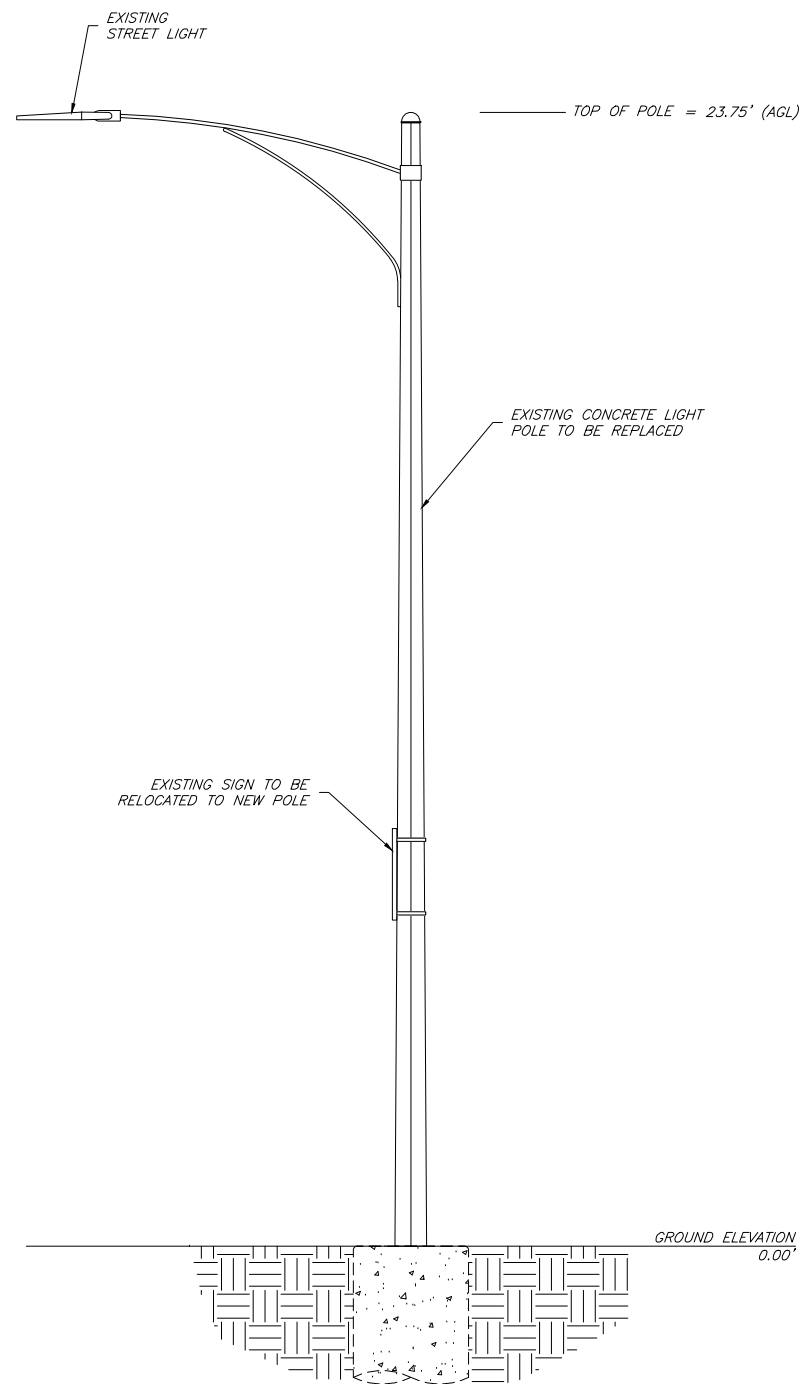
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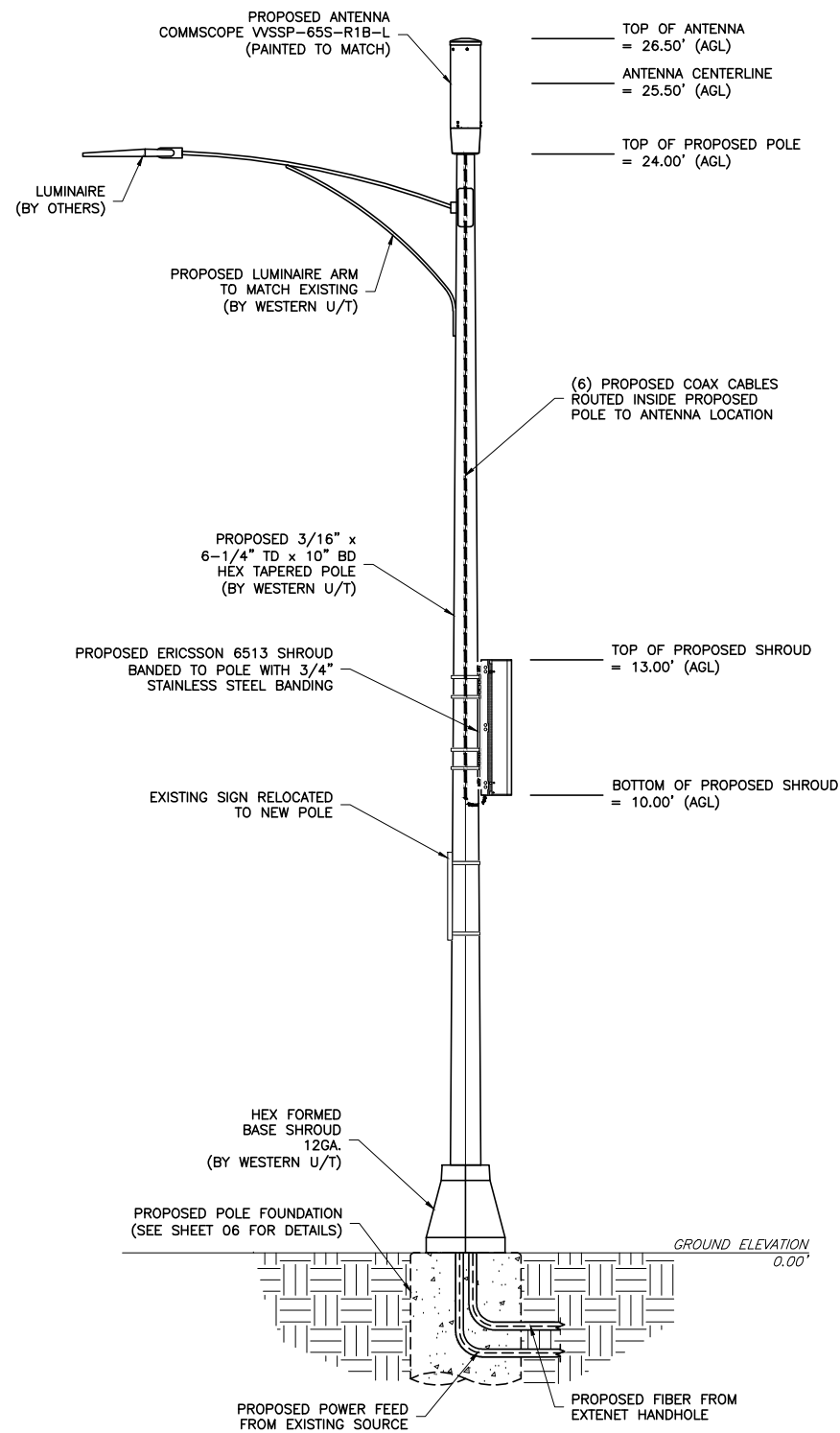
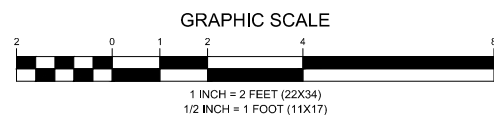
SHEET NUMBER

SHEET 02 OF 06

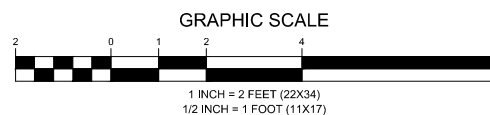




EXISTING ELEVATION (LOOKING NORTHWEST)



PROPOSED ELEVATION (LOOKING NORTHWEST)



EXISTING CONDITIONS

NOTES:

- ALL MATERIALS WILL MATCH CURRENTLY EXISTING MATERIALS AND WHERE NEEDED ANY RF FRIENDLY MATERIAL WILL BE PAINTED TO MATCH.
- IT IS ASSUMED THAT ALL PROPOSED UTILITIES WILL BE ROUTED BELOW GRADE TO THE PROPOSED INSTALLATION.
- EXTENET WILL PLACE SMALL PLACARD ON POLE IDENTIFYING OWNERSHIP/CONTACT INFORMATION.
- CONTRACTOR SHALL FIELD VERIFY SITE OR LAYOUT RESTRICTIONS, SITE CONDITIONS, DIMENSIONS, AND ELEVATIONS BEFORE START OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF ENGINEER OF RECORD PRIOR TO BEGINNING PROJECT. ALL WORK SHALL BE PERFORMED USING ACCEPTED CONSTRUCTION PRACTICES.
- NO FIELD MODIFICATIONS MAY BE MADE TO THE STRUCTURE WITHOUT THE EXPRESS WRITTEN CONSENT FROM THE ENGINEER OF RECORD. WESTERN UT, INC. AND ENGINEER OF RECORD ASSUME NO RESPONSIBILITY FOR THE STRUCTURE IF ALTERATIONS AND/OR ADDITIONS ARE MADE.
- THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL COMPLY WITH ALL LOCAL CODES, REGULATIONS, AND ORDINANCES AS WELL AS STATE DEPARTMENT OF INDUSTRIAL REGULATIONS AND DIVISION OF INDUSTRIAL SAFETY (OSHA) REQUIREMENTS.
- THE CONTRACTOR SHALL SUPERVISE AND DIRECT ALL WORK TO THE BEST OF HIS/HER ABILITY AND SKILL. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, PROCEDURES, AND SEQUENCES, AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
- THE CONTRACTOR SHALL VERIFY, COORDINATE, AND PROVIDE ALL NECESSARY BLOCKING, BACKING, FRAMING, HANGERS, OR OTHER SUPPORTS FOR ALL ITEMS REQUIRING SAME, WHETHER SHOWN OR NOT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY BRACING, SHORING, FORMWORK, ETC., AND SHALL CONFORM TO ALL NATIONAL, STATE, AND LOCAL ORDINANCES AND CODES IN ORDER TO SAFELY EXECUTE ALL STAGES OF WORK TO COMPLETE THIS PROJECT.
- CONTRACTOR ASSUMES RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES. THIS REQUIREMENT APPLIES CONTINUOUSLY, AND IS NOT LIMITED TO NORMAL WORKING HOURS.
- CONTRACTOR TO HOLD ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN. THE CONTRACTOR IS FINANCIALLY RESPONSIBLE FOR REPAIR OR REPLACEMENT OF UTILITIES OR OTHER PROPERTY DAMAGED IN CONJUNCTION WITH THE EXECUTION OF WORK ON THIS PROJECT.

ENGINEERING FIRM

**NB+C**  
TOTALLY COMMITTED.  
NB+C ENGINEERING SERVICES, LLC.  
100 APOLLO DRIVE, SUITE 303  
CHELMSFORD, MA 01824  
(978) 856-8308

APPLICANT

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3030 WARRENVILLE ROAD, SUITE 340  
LISLE, IL 60532  
(630) 505-3800

SITE INFORMATION

NE-MA-BSTN3N01-03338  
TMO ID: NE3202BA\_31LAB  
81 PENNSYLVANIA AVENUE  
SOMERVILLE, MA 02145  
MIDDLESEX COUNTY

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PROFESSIONAL STAMP



ENGINEER

KRUPAKARAN KOLANDAIVELU, P.E.  
MA PROFESSIONAL ENGINEER LIC. #50019

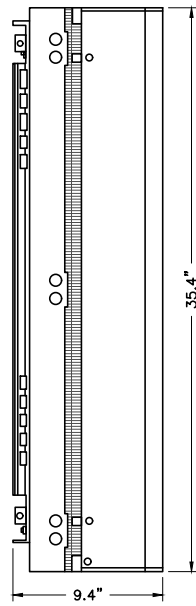
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ELEVATION

SHEET NUMBER

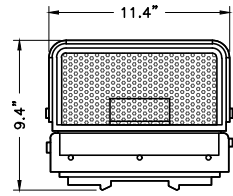
SHEET  
03 OF 06



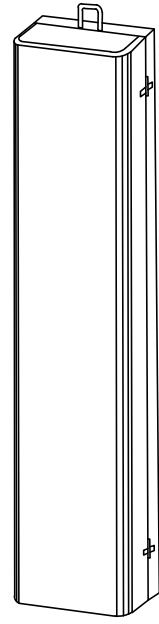


SIDE ELEVATION

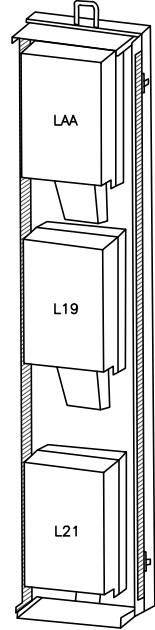
**MECHANICAL SPECIFICATIONS**  
 ERICSSON PART# - ENCLOSURE 6513  
 HEIGHT: 35.4 IN  
 WIDTH: 11.4 IN  
 DEPTH: 9.4 IN  
 WEIGHT: 29.8 LBS (ENCLOSURE ONLY)  
 WEIGHT: 71.4 LBS (FULLY EQUIPPED)



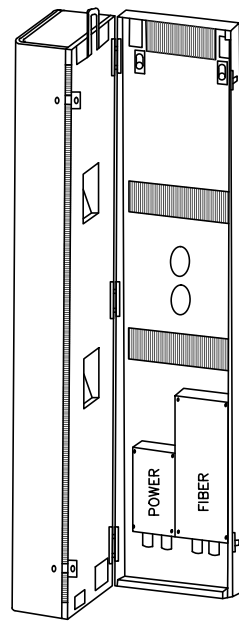
BOTTOM PLAN



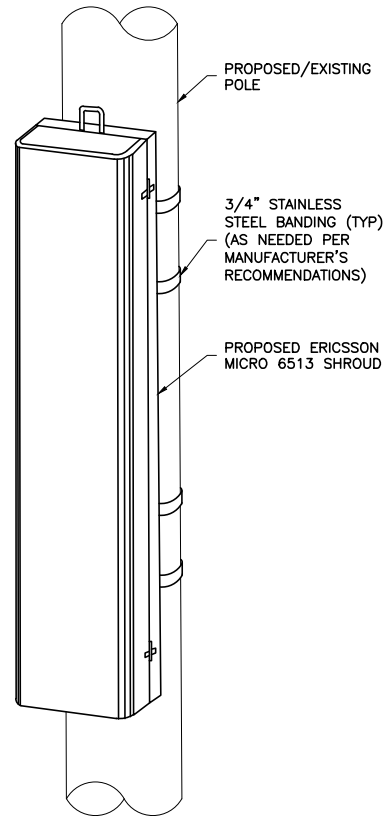
FRONT CLOSED ELEVATION



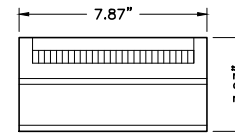
FRONT INTERIOR ELEVATION



BACK INTERIOR ELEVATION

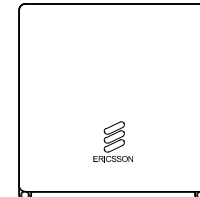


2 EQUIPMENT MOUNTING DETAIL  
04 NTS

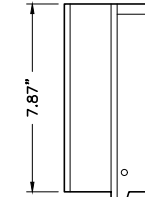


TOP VIEW

WEIGHT = 9.92LBS



FRONT ELEVATION

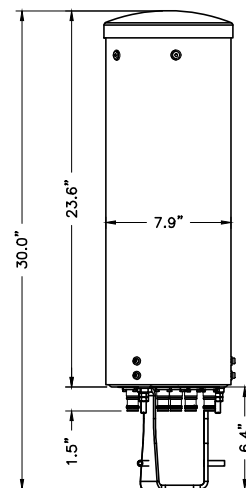


SIDE ELEVATION

ERICSSON RADIO				
2203 B66 & B25	AC: 100-250V	NORMAL VOLTAGE RANGE AT RADIO INPUT CONNECTOR DC: -36 TO -58.5	NOMINAL VOLTAGE: -48V DC	95W TYPICAL / 130W MAX
2205 B46	AC: 100-250V	NORMAL VOLTAGE RANGE AT RADIO INPUT CONNECTOR DC: -36 TO -58.5	NOMINAL VOLTAGE: -48V DC	75W TYPICAL / 130W MAX

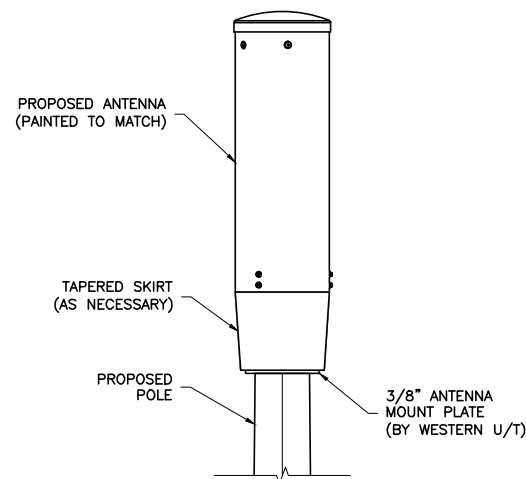
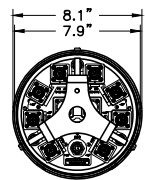
3 ERICSSON REMOTE RADIO UNIT (RRU)  
04 NTS

1 ERICSSON MICRO 6513 SHROUD DETAIL  
04 NTS

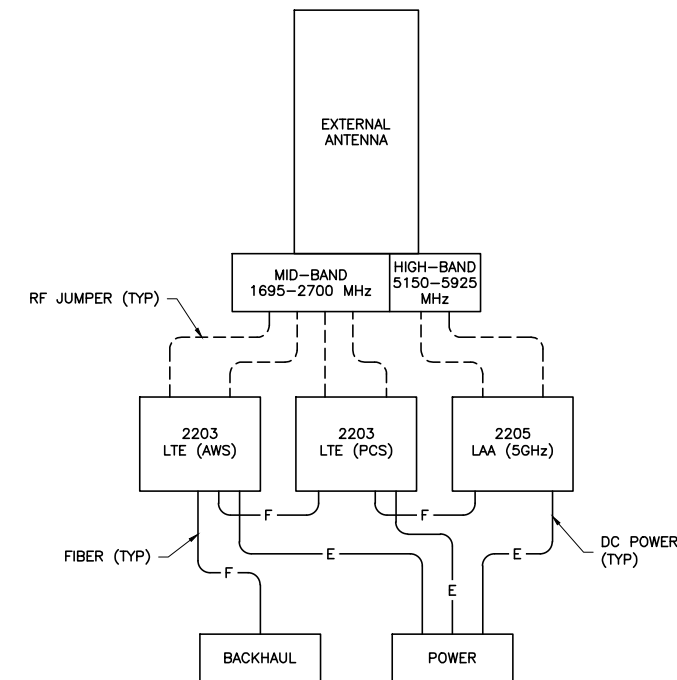


4 ANTENNA DETAIL  
04 NTS

**MECHANICAL SPECIFICATIONS**  
 COMMSCOPE PART# - WVSP-65S-R1B-L  
 HEIGHT: 23.6 IN  
 WIDTH: 7.9 IN  
 WEIGHT: 13.0 LBS (WITHOUT MOUNT)



5 ANTENNA MOUNT DETAIL  
04 NTS



6 WIRING DIAGRAM  
04 NTS

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 TMO ID: NE3202BA\_31LAB  
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PROFESSIONAL STAMP



ENGINEER

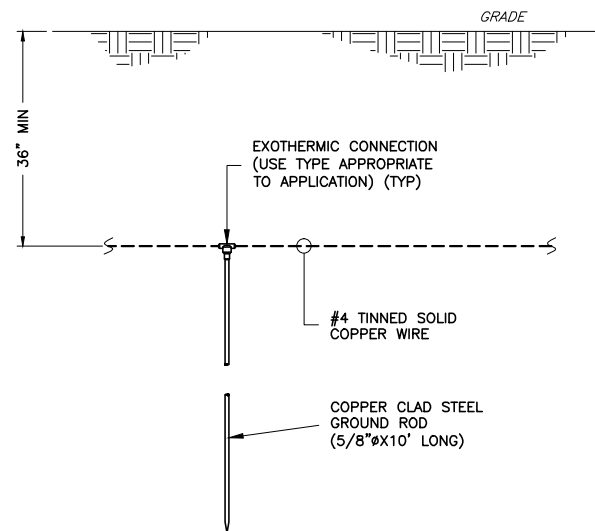
KRUPAKARAN KOLANDAIVELU, P.E.  
 MA PROFESSIONAL ENGINEER LIC. #50019

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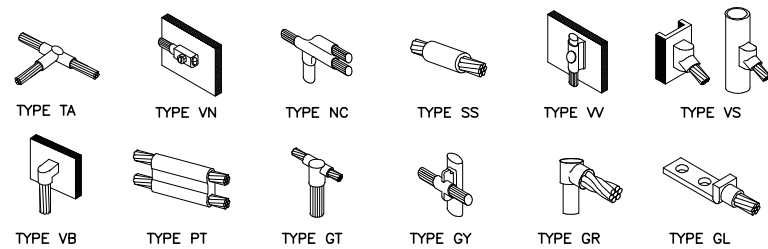
**ANTENNA & EQUIPMENT DETAILS**

SHEET NUMBER

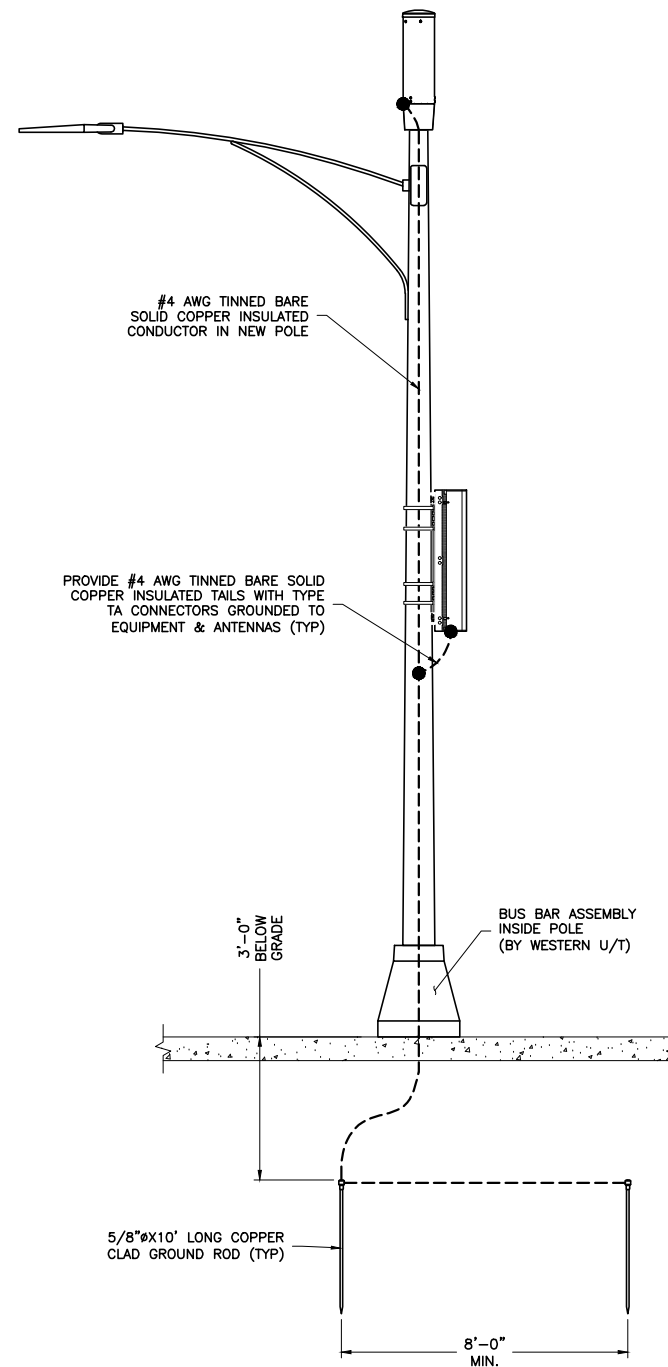
SHEET  
**04 OF 06**



1 TYPICAL GROUND ROD DETAIL  
05 NTS



2 GROUNDING CONNECTION DETAILS  
05 NTS



3 ELECTRICAL & GROUNDING RISER DIAGRAM  
05 NTS

NOTE:  
EXISTING/PROPOSED UTILITY WIRES,  
SIGNS, AND EXISTING EQUIPMENT  
NOT SHOWN FOR CLARITY.

ENGINEERING FIRM

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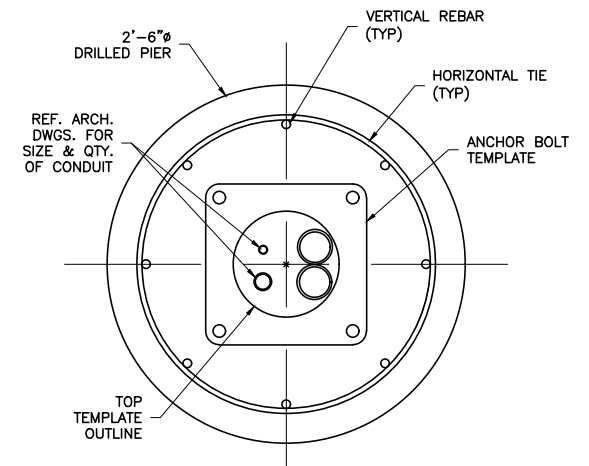
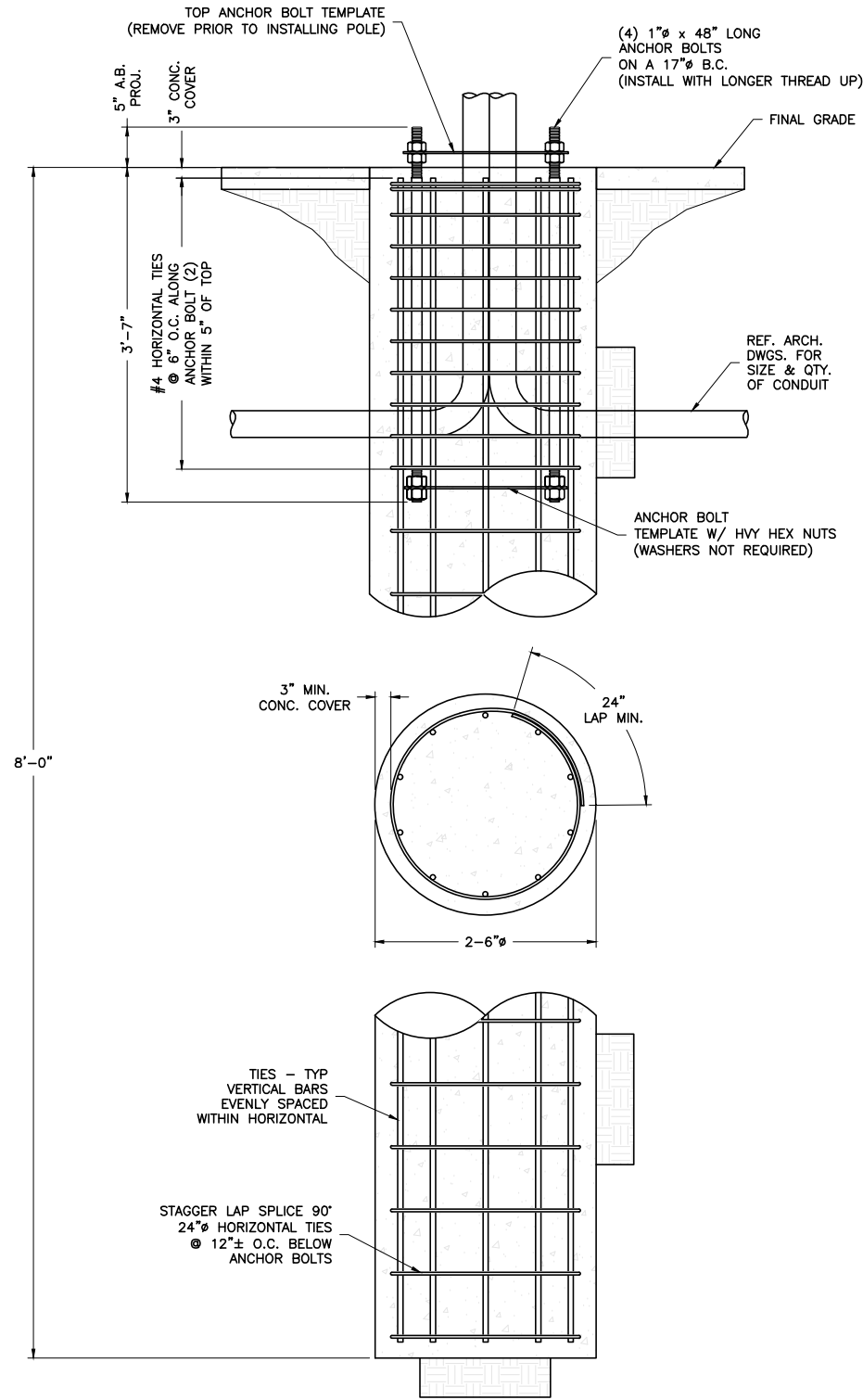
KRUPAKARAN KOLANDAIVELU, P.E.  
MA PROFESSIONAL ENGINEER LIC. #50019

SHEET TITLE

**ELECTRICAL  
& GROUNDING  
DETAILS**

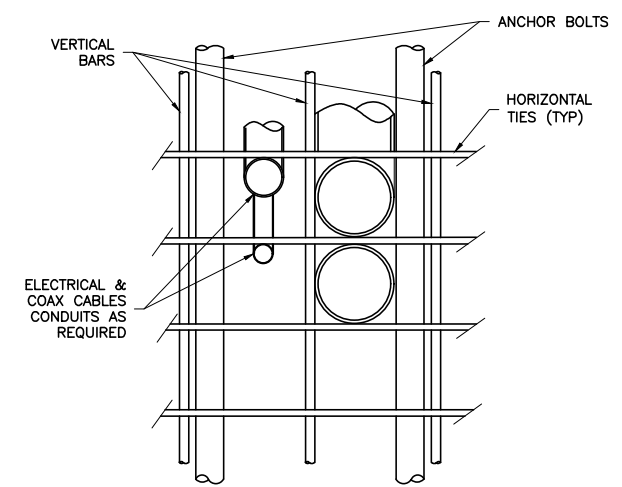
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SHEET  
**05 OF 06**



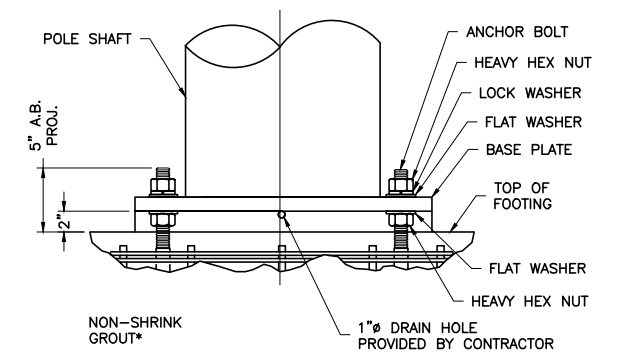
INSTALL CONDUIT IN CENTER OF CLUSTER TO CLEAR BASEPLATE

1 CONDUIT DETAIL @ PIER SEC.  
06 NTS



ADJUST REBAR AS NEEDED TO ACCOMMODATE CONDUIT. SEE REINFORCEMENT SUMMARY FOR SIZE, QUANTITY AND LOCATION OF VERTICAL BARS AND HORIZONTAL TIES.

2 CONDUIT DETAIL  
06 NTS



\*NON-SHRINK GROUT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 6,000 PSI.

BASE PLATE SHALL NOT BE GROUTED UNTIL AFTER THE STRUCTURE HAS BEEN INSTALLED AND PLUMBED.

3 BASE GROUNDING DETAIL  
06 NTS

**GENERAL NOTES**

- CONTRACTOR IS RESPONSIBLE FOR CHECKING AREA FOR UNDERGROUND FACILITIES PRIOR TO EXCAVATING ANY MATERIALS.
- CONTRACTOR SHALL INSPECT AND REMOVE ALL DEBRIS FROM BOTTOM OF EXCAVATION.
- CONTRACTOR SHALL VERIFY ANCHOR BOLT LAYOUT PRIOR TO, AND IMMEDIATELY AFTER PLACING CONCRETE. ANCHOR BOLT LAYOUT IS CRITICAL FOR MONOPOLE INSTALLATION.
- CONTRACTOR SHALL USE AND PROVIDE DEFORMED REINFORCING BARS CONFORMING TO ASTM A615 GR. 60 (60,000 PSI MIN. YIELD). CONTRACTOR SHALL USE STEEL WIRE TO HOLD REINFORCING BARS TOGETHER. IF WELDING REBAR IS PREFERRED, SUBSTITUTE USING A706 GR. 60 DEFORMED BARS.
- CONTRACTOR SHALL USE AND PROVIDE CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI. CONCRETE SHALL USE 1" MAXIMUM STONE AGGREGATE MIX DESIGN: 6 1/2 SACKS OF CEMENT MINIMUM PER CUBIC YARD. 5" MINIMUM AND 7" MAXIMUM CONCRETE SLUMP.
- CONCRETE SHALL BE CONSOLIDATED USING VIBRATORY METHODS THROUGHOUT DEPTH OF FOUNDATION. VIBRATING LOWER DEPTHS MAY BE ACCOMPLISHED BY TOUCHING REBAR CAGE WITH VIBRATOR.
- CONTRACTOR SHOULD ANTICIPATE THE USE OF A FULL-LENGTH TEMPORARY CASING TO STABILIZE THE EXCAVATION. THE CASING SHALL BE WITHDRAWN DURING THE PLACEMENT OF CONCRETE IN THE EXCAVATED HOLE. CONCRETE SHALL BE PLACED USING CONVENTIONAL METHODS TO MINIMIZE SEGREGATION OF CONCRETE AND AGGREGATE. CONCRETE SHALL NOT FREE FALL MORE THAN 5 FT. CONCRETE MAY BE PLACED BELOW WATER USING TREMIE METHODS.
- CONCRETE SHALL BE PLACED TO THE DEPTH INDICATED, AND THE ABOVE GRADE PORTION SHALL BE FORMED. THE REBAR CAGE, ANCHOR BOLTS, AND CONCRETE SHALL BE PLACED WITHIN 24 HOURS OF COMPLETING THE EXCAVATION. COLD JOINTS ARE NOT ALLOWED.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ADEQUATE CONCRETE COVERAGE OVER REINFORCING BARS TO MINIMIZE CORROSION POTENTIAL. UNLESS OTHERWISE NOTED, CONTRACTOR SHALL USE 3" CONCRETE COVER OVER REBAR. TOP OF FOOTING SHALL BE TROWELLED LEVEL AND SMOOTH.
- DRILLED PIER FOUNDATION DESIGN PER 2009/2012 IBC, TABLE 1806.2, CLASS 4 MATERIAL.
- TOTAL VOLUME OF CONCRETE REQUIRED FOR THIS FOUNDATION IS APPROXIMATELY 1.5 CU. YDS.

FACTORED BASE REACTIONS	
MOMENT	= 44.3 ft-kips
SHEAR	= 2.86 kips
VERTICAL	= 1.44 kips




**SPECIAL INSPECTIONS**

SPECIAL INSPECTION: THE FOLLOWING ELEMENTS OF CONSTRUCTION SHALL REQUIRE SPECIAL INSPECTION PER 2009/2012 IBC, SECTION 1704

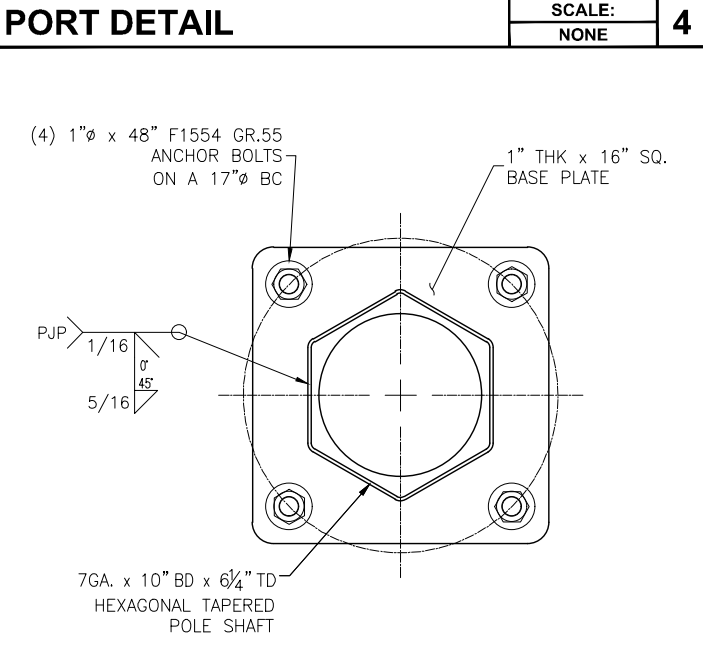
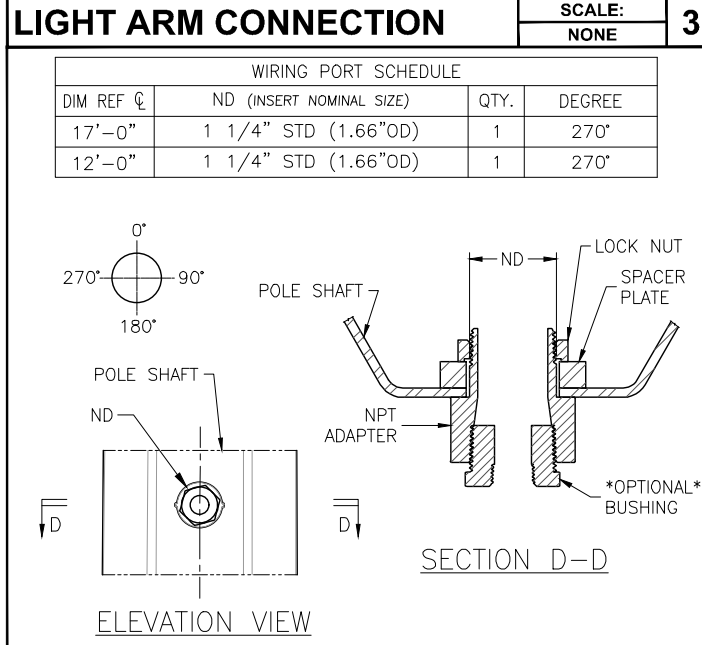
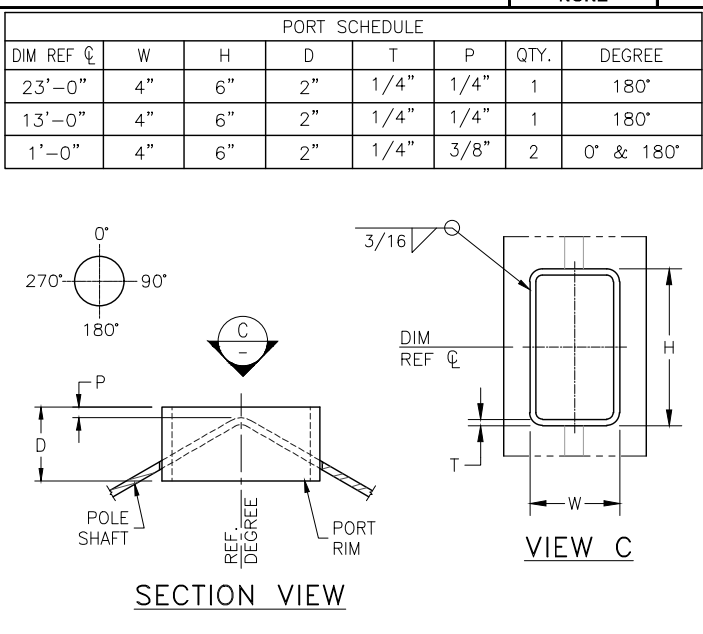
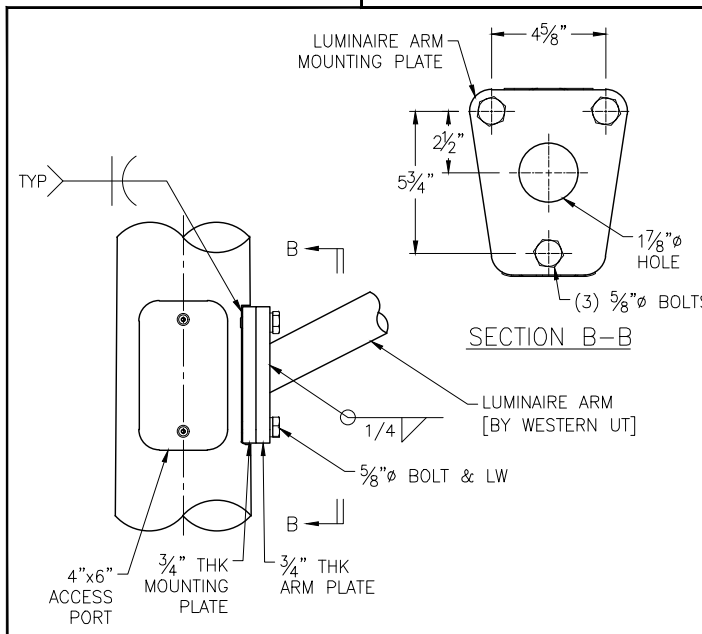
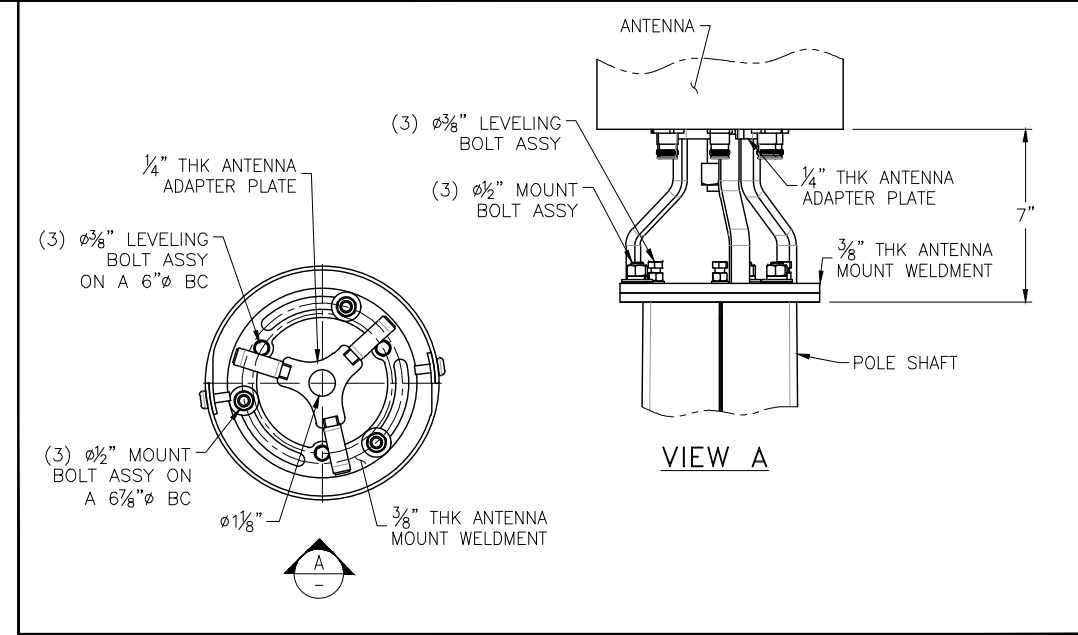
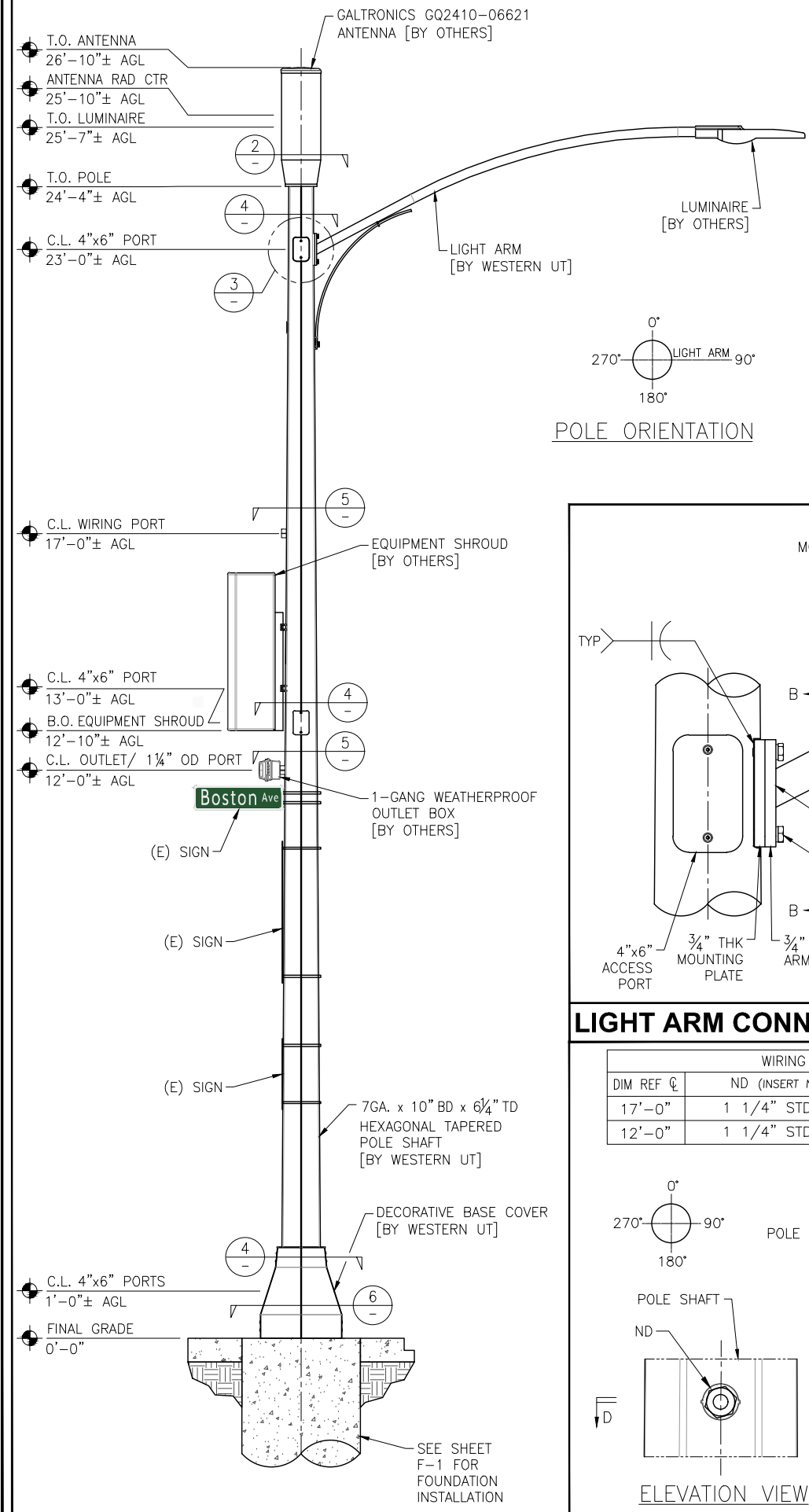
ITEM DESCRIPTION	INSPECTION BY	MATERIAL
1. PIER EXCAVATION LATERAL BEARING CAPACITY	SOILS ENGINEER	300 PSF/FT LATERAL
2. PIER CONSTRUCTION REINFORCING STEEL BAR SIZES AND INSTALLATION	SPECIAL INSPECTOR	ASTM A615 GR. 60
3. ANCHOR BOLTS BOLT SIZE AND LENGTHS INSTALLATION	SPECIAL INSPECTOR	ASTM F1554 GR. 55
4. CONCRETE TEST SPECIMENS PLACEMENT OF CONCRETE	SPECIAL INSPECTOR	f'c=4,000 PSI TYPE II CEMENT

FOUNDATION DESIGN PREPARED BY WESTERN UTILITY/TELECOM, INC.

DESCRIPTION	QTY.	SIZE	LENGTH	WEIGHT	OVERLAP
VERTICAL BARS	8	#6	7'-6"	90 LBS.	N/A
HORIZONTAL TIES	12	#4	8'-4"	67 LBS.	2'-0"

ENGINEERING FIRM	 <b>TOTALLY COMMITTED.</b> <small>NB+C ENGINEERING SERVICES, LLC. 100 APOLLO DRIVE, SUITE 303 CHELMSFORD, MA 01824 (978) 856-8308</small>																																
APPLICANT	 <b>extenet</b> <small>SYSTEMS 3030 WARRENVILLE ROAD, SUITE 340 LISLE, IL 60532 (630) 505-3800</small>																																
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ENGINEER	<p>KRUPAKARAN KOLANDAIVELU, P.E. MA PROFESSIONAL ENGINEER LIC. #50019</p>																																
SHEET TITLE	<p><b>FOUNDATION DETAILS &amp; NOTES</b></p>																																
SHEET NUMBER	<p>SHEET <b>06 OF 06</b></p>																																





**GENERAL DESIGN NOTES:**

DESIGN NOTES AND MATERIAL REQUIREMENTS:

1) THE DESIGN CRITERIA FOR THIS STRUCTURE IS AS FOLLOWS:

A) STANDARDS AND DESIGN CODES:  
INDUSTRY STANDARD: ANSI/TIA-222-G, 2015 IBC  
1609.1.1 EXCEPTION 5  
STEEL MANUAL: AISC 14TH EDITION  
CONCRETE CODE: ACI 318-14  
WELDING CODE: ANSI/AWS D1.1.1

B) DESIGN:  
WIND(V<sub>std</sub>): 110 MPH (3-SECOND GUST) PER ANSI/TIA-222-G  
CLASSIFICATION OF STRUCTURE: II  
EXPOSURE CATEGORY: B  
TOPOGRAPHIC CATEGORY: 1  
WIND(V<sub>ult</sub>): 142 MPH (3-SECOND GUST) RISK CAT. II, PER 2015 IBC, SECTION 1609.3.1  
ICE: 1" RADIAL ICE @ 40 MPH (3-SECOND GUST)  
SOIL: PER 2015 IBC, TABLE 1806.2, CLASS 5 MAT'L  
SEISMIC: PER 2015 IBC SECTION 1613, ASCE 7-10, SECTIONS 15.1.3 & 12.8

C) LOADING:  
(1) 10" Ø X 24.9" TALL CANISTER ANTENNA, WT. = 35 LBS., C.L. @ 25.83' ± AGL  
(1) TOP MOUNT W/SHROUD, WT. = 35 LBS., C.L. @ 24.42' ± AGL  
(1) COBRA HEAD LUMINAIRE, WT. = 35 LBS., C.L. @ 25.58' ± AGL  
(1) 8'-0" LONG RAISED LIGHT ARM, WT. = 120 LBS. C.L. @ 25' ± AGL  
(2) 72" TALL X 30" BANNER, WT. = 25 LBS. C.L. @ 17.5' ± AGL  
(1) EXISTING CAMERA, WT. = 30 LBS. C.L. @ 18.6' ± AGL  
(1) EQUIPMENT SHROUD, WT. = 200 LBS. C.L. @ 14.6' ± AGL  
(1) EXISTING SPEED LIMIT SIGN GROUP, WT. = 35 LBS. C.L. @ 10.5' ± AGL  
(1) EXISTING SIGN, WT. = 35 LBS. C.L. @ 5.58' ± AGL  
(1) DISCONNECT BOX, WT. = 15 LBS. C.L. @ 12' ± AGL

D) FACTORED BASE REACTIONS:  
OVERTURNING MOMENT = 35.6 FT-KIPS  
BASE SHEAR = 2.43 KIPS  
BASE WEIGHT = 1.19 KIPS

2) GENERAL STRUCTURAL NOTES:  
A) ALL MATERIALS SHALL CONFORM TO THE FOLLOWING STANDARDS:  
POLE SHAFT: ASTM A595 GR. A/A1011 HSLA GR. 55  
BASE PLATE: ASTM A572 GR. 50  
PORTS: ASTM A500 GR. B (RECT.)  
SHAPES/PLATES: ASTM A36  
WELDS: E70XX ELECTRODES  
STRUCTURAL BOLTS: ASTM F3125 GR. A325  
ANCHOR BOLTS: ASTM F1554 GR. 55  
REBAR: ASTM A615 GR. 60  
B) ALL WELDING TO BE PERFORMED BY WELDERS CERTIFIED IN ACCORDANCE WITH AWS D1.1. FIELD WELDING IS PROHIBITED.  
C) ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.  
D) ALL STRUCTURAL BOLTS SHALL BE TIGHTENED TO SNUG-TIGHT AS DEFINED BY AISC 14TH EDITION, PG. 16.2-46 PARAGRAPH 8.1

**GENERAL NOTES:**

1) CONTRACTOR SHALL FIELD VERIFY SITE OR LAYOUT RESTRICTIONS, SITE CONDITIONS, DIMENSIONS, AND ELEVATIONS BEFORE START OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF WESTERN UT, INC. PRIOR TO BEGINNING PROJECT. ALL WORK SHALL BE PERFORMED USING ACCEPTED CONSTRUCTION PRACTICES.

2) NO FIELD MODIFICATIONS MAY BE MADE TO MONOPOLE WITHOUT THE EXPRESS WRITTEN CONSENT FROM THE ENGINEER OF RECORD. WESTERN UT, INC. AND ENGINEER OF RECORD ASSUME NO RESPONSIBILITY FOR THE STRUCTURE IF ALTERATIONS AND/OR ADDITIONS ARE MADE TO THE DESIGN AS SHOWN IN THESE DRAWINGS.

3) THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL COMPLY WITH ALL LOCAL CODES, REGULATIONS, AND ORDINANCES AS WELL AS STATE DEPARTMENT OF INDUSTRIAL REGULATIONS AND DIVISION OF INDUSTRIAL SAFETY (OSHA) REQUIREMENTS.

4) THE CONTRACTOR SHALL SUPERVISE AND DIRECT ALL WORK TO THE BEST OF HIS/HER ABILITY AND SKILL. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, PROCEDURES, AND SEQUENCES, AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

5) THE CONTRACTOR SHALL VERIFY, COORDINATE, AND PROVIDE ALL NECESSARY BLOCKING, BACKING, FRAMING, HANGERS, OR OTHER SUPPORTS FOR ALL ITEMS REQUIRING SAME, WHETHER SHOWN OR NOT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY BRACING, SHORING, FORMWORK, ETC., AND SHALL CONFORM TO ALL NATIONAL, STATE, AND LOCAL ORDINANCES AND CODES, IN ORDER TO SAFELY EXECUTE ALL STAGES OF WORK TO COMPLETE THIS PROJECT.

6) IT IS THE INTENT OF THESE DRAWINGS TO SHOW THE COMPLETED INSTALLATION OF THE STRUCTURE SHOWN.

7) CONTRACTOR ASSUMES RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES. THIS REQUIREMENT APPLIES CONTINUOUSLY, AND IS NOT LIMITED TO NORMAL WORKING HOURS.

8) CONTRACTOR TO HOLD ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT.

9) IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN. THE CONTRACTOR IS FINANCIALLY RESPONSIBLE FOR REPAIR OR REPLACEMENT OF UTILITIES OR OTHER PROPERTY DAMAGED IN CONJUNCTION WITH THE EXECUTION OF WORK ON THIS PROJECT.

CONSULTANT

**WESTERN**  
UTILITY / TELECOM, INC.

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SALEM, OR 97304  
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CLIENT

**extenet**  
SYSTEMS

PROJECT  
24'- 4" TALL, HEXAGONAL  
TAPERED ANTENNA/LIGHT POLE

LOCATION  
**NE-MA-CMARD3M1-ATT**  
**NODE 39**  
693 BROADWAY  
SOMMERVILLE, MA 02155  
MIDDLESEX COUNTY

ISSUED FOR  
**PERMIT/INSTALL**

DW'N BY: JH CK'D BY: AM DATE: 05MAY20

REVISIONS

REV.	CHANGES	DATE	BY

ENGINEER SEAL

ALVIN A. KRAFT  
STRUCTURAL  
No. 38569  
REGISTERED PROFESSIONAL ENGINEER

5/7/2020

SHEET TITLE  
**ELEVATION VIEW & STRUCTURAL DETAILS**

WUT PROJECT NUMBER  
**20-0116**

DRAWING NUMBER  
**PD-002009**

PAGE NUMBER  
**S-1**

**ELEVATION VIEW**

SCALE: NONE 1

**WIRING PORT DETAIL**

SCALE: NONE 5

**BASE PLATE DETAIL**

SCALE: NONE 6