



LATITUDE: 42.355840°
LONGITUDE: -71.069392°



LOCATION AND DESIGN APPROVED
BOSTON PUBLIC WORKS
STREET LIGHTING DEPARTMENT

BY: _____

DATE: _____

NE-MA-BSTN3N01-TMO

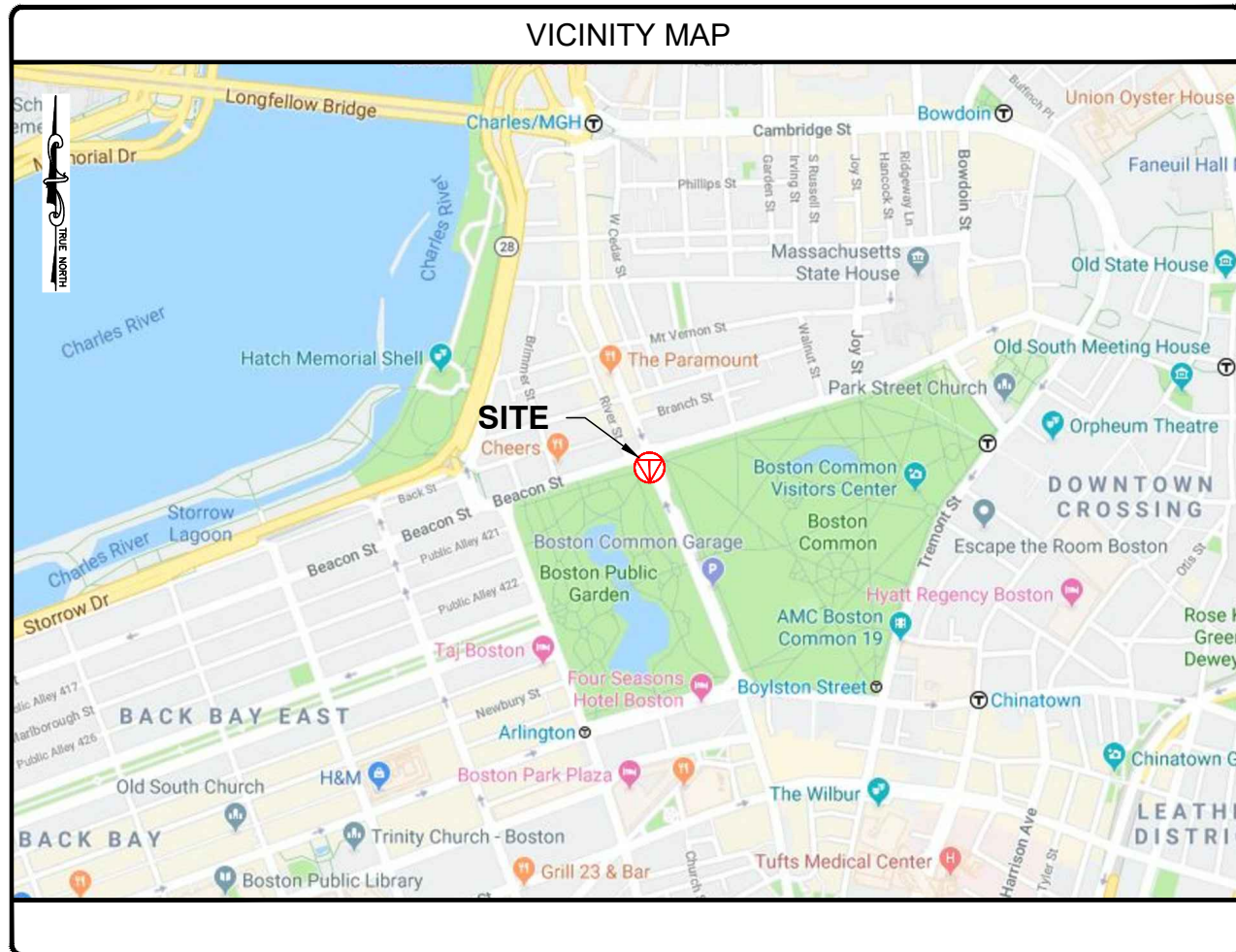
NE-MA-BSTN3N01-03038 / NE3249BA_21LAB

PROPOSED SMALL CELL NODE

ARLINGTON STREET, BOSTON, MA 02116
CITY OF BOSTON, SUFFOLK COUNTY



Know what's below.
Call before you dig.



ENGINEERING FIRM

APPLICANT

SITE INFORMATION

DESIGN RECORD

PROFESSIONAL STAMP

ENGINEER

SHEET TITLE

SHEET NUMBER

NE-MA-BSTN3N01-03038
TMO ID: NE3249BA_21LAB
ARLINGTON STREET
BOSTON, MA 02116
SUFFOLK COUNTY

REVISIONS

| REV | DATE | DESCRIPTION | BY |
|-----|----------|-------------|-----|
| 0 | 06/24/19 | PRELIMINARY | ALM |

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

TITLE SHEET

SHEET
01 OF 06

PROJECT INFORMATION

PROJECT NAME: NE-MA-BSTN3N01-TMO
POLE TAG: NO TAG
LATITUDE: 42.355840°
LONGITUDE: -71.069392°
JURISDICTION: CITY OF BOSTON
SUFFOLK COUNTY
EXTENET PROJECT MANAGER: RICK ANGELINI
3030 WARRENVILLE RD, SUITE 340
LISLE, IL 60532
NOC: (866) 892-5327
HUB LOCATION: HUB: 4BN0159B
19 MYRTLE STREET
BOSTON, MA 02114
ELECTRIC COMPANY: EVERSOURCE

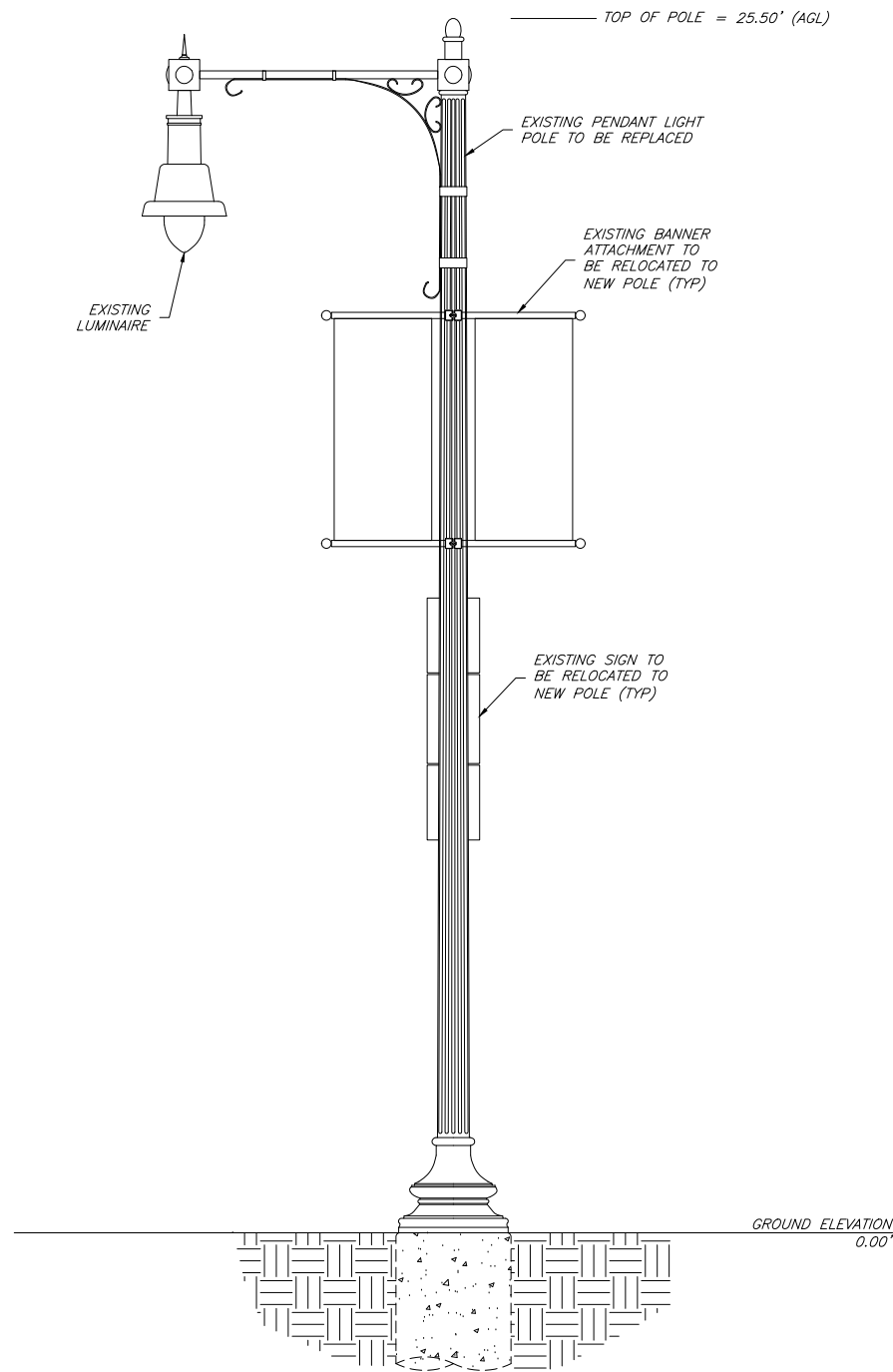
CODE COMPLIANCE

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.

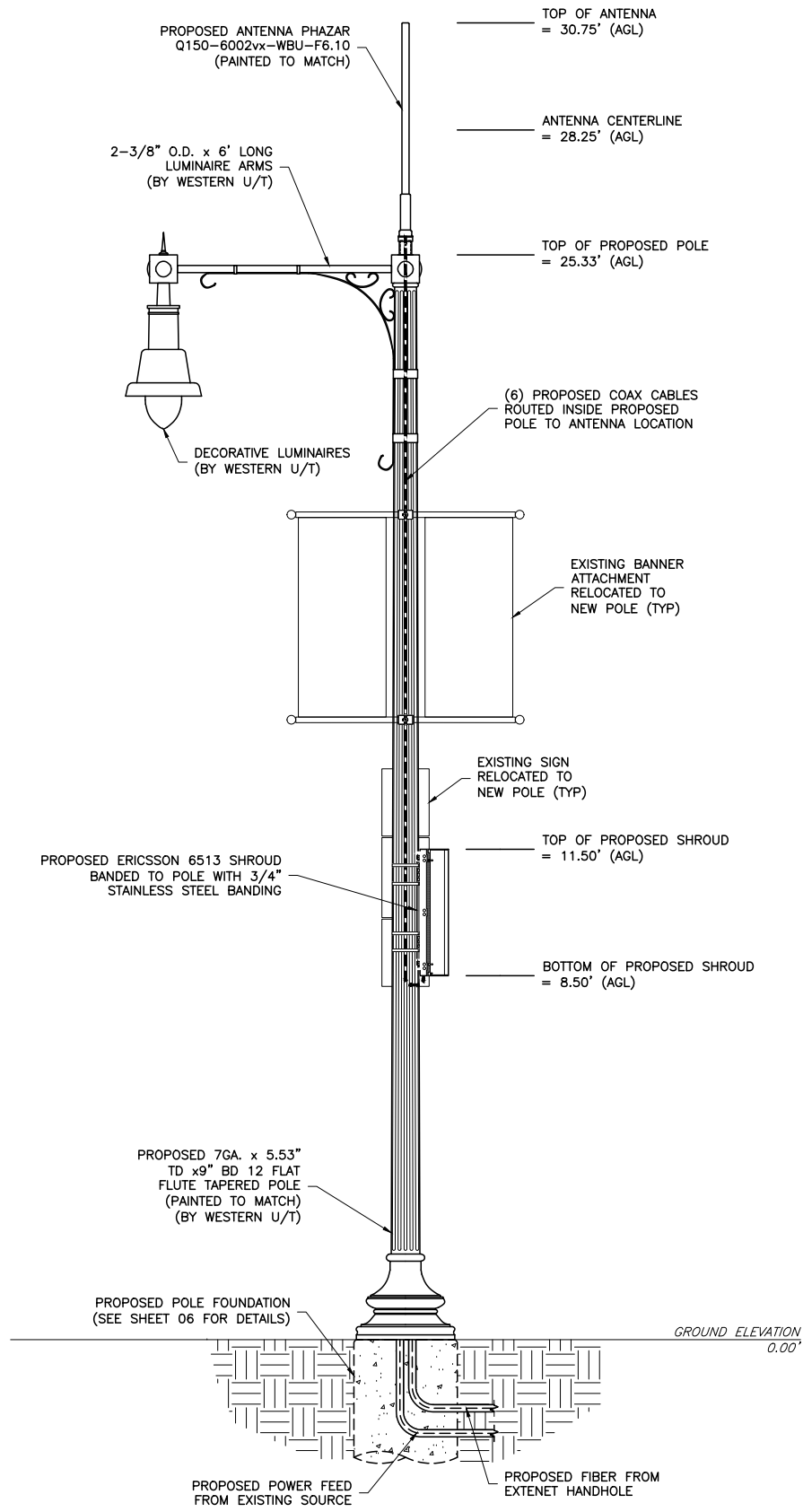
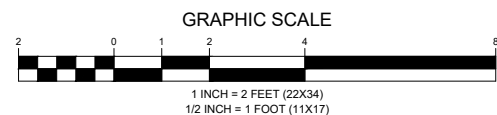
- 2015 INTERNATIONAL BUILDING CODE (MASSACHUSETTS AMENDED 9TH EDITION)
- 2017 NATIONAL ELECTRICAL CODE
- NFPA 1-2015 EDITION
- 2015 IFC - REFERENCE 527 CMR
- AMERICAN CONCRETE INSTITUTE
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION
- MANUAL OF STEEL CONSTRUCTION 13TH EDITION
- ANSI/TIA-222-G
- TIA 607
- INSTITUTE FOR ELECTRICAL & ELECTRONICS ENGINEER 81
- IEEE C2 NATIONAL ELECTRIC SAFETY CODE LATEST EDITION
- TELECORDIA GR-1275
- ANSI/T 311

DRAWING INDEX

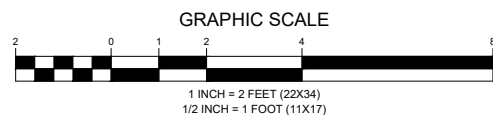
- | | |
|----|--------------------------------|
| 01 | TITLE SHEET |
| 02 | NOTES |
| 03 | ELEVATION |
| 04 | ANTENNA & EQUIPMENT DETAILS |
| 05 | ELECTRICAL & GROUNDING DETAILS |
| 06 | FOUNDATION DETAILS & NOTES |



EXISTING ELEVATION (LOOKING SOUTHEAST)



PROPOSED ELEVATION (LOOKING SOUTHEAST)

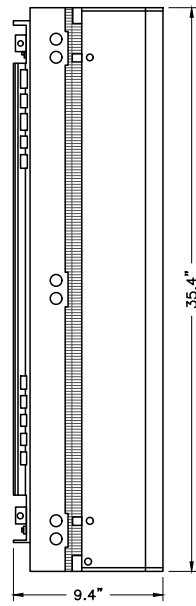


EXISTING CONDITIONS

NOTES:

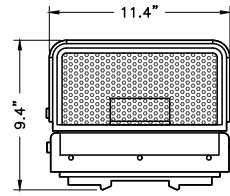
- ALL MATERIALS WILL MATCH CURRENTLY EXISTING MATERIALS AND WHERE NEEDED ANY RF FRIENDLY MATERIAL WILL BE PAINTED TO MATCH.
- IT IS ASSUMED THAT ALL PROPOSED UTILITIES WILL BE ROUTED BELOW GRADE TO THE PROPOSED INSTALLATION.
- EXTENET WILL PLACE SMALL PLACARD ON POLE IDENTIFYING OWNERSHIP/CONTACT INFORMATION.
- 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 | <p>TOTALLY COMMITTED.</p> <p>NB+C ENGINEERING SERVICES, LLC. 100 APOLLO DRIVE, SUITE 303 CHELMSFORD, MA 01824 (978) 856-8308</p> | | | | | | | | | | | | |
|--------------------|--|-------------|-----|--|--|-----|------|-------------|----|---|----------|-------------|-----|
| APPLICANT | <p>extenet SYSTEMS 3030 WARRENVILLE ROAD, SUITE 340 LISLE, IL 60532 (630) 505-3800</p> | | | | | | | | | | | | |
| SITE INFORMATION | <p>NE-MA-BSTN3N01-03038 TMO ID: NE3249BA_21LAB ARLINGTON STREET BOSTON, MA 02116 SUFFOLK COUNTY</p> | | | | | | | | | | | | |
| DESIGN RECORD | <table border="1"> <thead> <tr> <th colspan="4">REVISIONS</th> </tr> <tr> <th>REV</th> <th>DATE</th> <th>DESCRIPTION</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>06/24/19</td> <td>PRELIMINARY</td> <td>ALM</td> </tr> </tbody> </table> | REVISIONS | | | | REV | DATE | DESCRIPTION | BY | 0 | 06/24/19 | PRELIMINARY | ALM |
| REVISIONS | | | | | | | | | | | | | |
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| 0 | 06/24/19 | PRELIMINARY | ALM | | | | | | | | | | |
| PROFESSIONAL STAMP | | | | | | | | | | | | | |
| ENGINEER | <p>KRUPAKARAN KOLANDAIVELU, P.E. MA PROFESSIONAL ENGINEER LIC. #50019</p> | | | | | | | | | | | | |
| SHEET TITLE | <p>ELEVATION</p> | | | | | | | | | | | | |
| SHEET NUMBER | <p>SHEET 03 OF 06</p> | | | | | | | | | | | | |

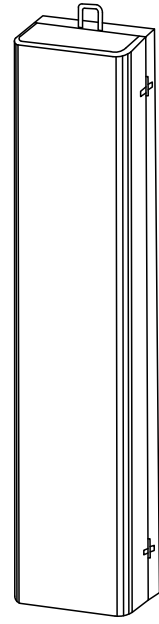


SIDE ELEVATION

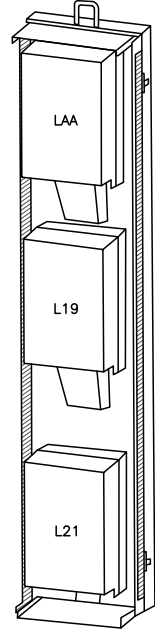
MECHANICAL SPECIFICATIONS
 ERICSSON PART# - ENCLOSURE 6513
 HEIGHT: 35.4 IN
 WIDTH: 11.4 IN
 DEPTH: 9.4 IN
 WEIGHT: 29.8 LBS (ENCLOSURE ONLY)
 WEIGHT: 71.4 LBS (FULLY EQUIPPED)



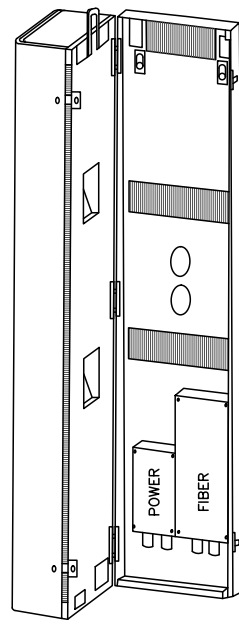
BOTTOM PLAN



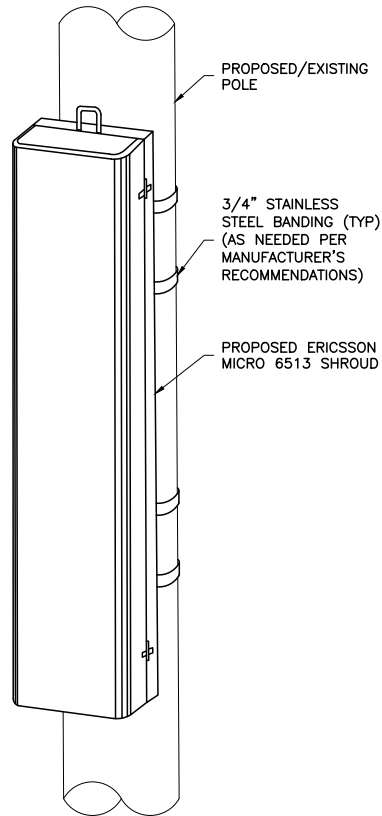
FRONT CLOSED ELEVATION



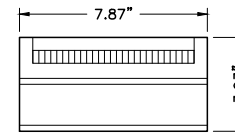
FRONT INTERIOR ELEVATION



BACK INTERIOR ELEVATION

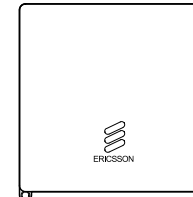


2 EQUIPMENT MOUNTING DETAIL
04 NTS

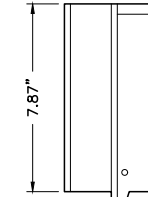


TOP VIEW

WEIGHT = 9.92LBS



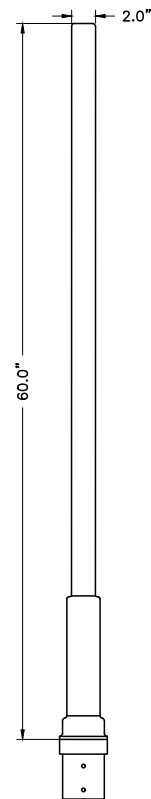
FRONT ELEVATION



SIDE ELEVATION

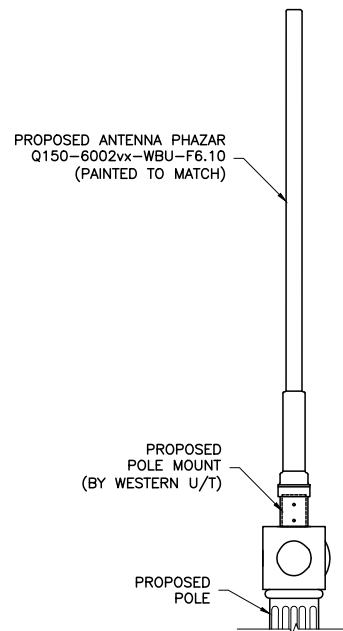
| ERICSSON RADIO | | | | |
|----------------|--------------|--|--------------------------|------------------------|
| 2203 B66 & B25 | AC: 100-250V | NORMAL VOLTAGE RANGE AT RADIO INPUT CONNECTOR DC: -36 TO -58.5 | NOMINAL VOLTAGE: -48V DC | 95W TYPICAL / 130W MAX |
| 2205 B46 | AC: 100-250V | NORMAL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

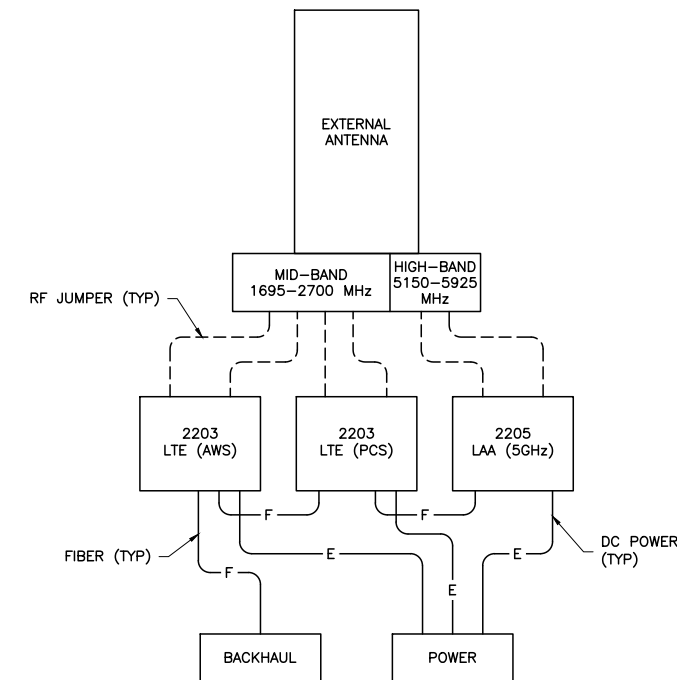


4 ANTENNA DETAIL
04 NTS

MECHANICAL SPECIFICATIONS
 PHAZAR PART# - Q150-6002vx-WBU-F6.10
 HEIGHT: 60 IN
 DIAMETER: 2 IN
 WEIGHT: <10 LBS



5 ANTENNA MOUNT DETAIL
04 NTS



6 WIRING DIAGRAM
04 NTS

ENGINEERING FIRM

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

APPLICANT

extenet
 YOUR NETWORK. EVERYWHERE.
 SYSTEMS
 3030 WARRENVILLE ROAD, SUITE 340
 LISLE, IL 60532
 (630) 505-3800

SITE INFORMATION

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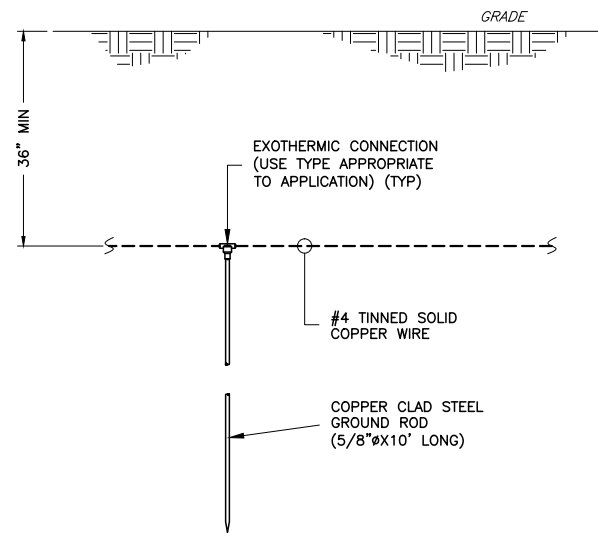
KRUPAKARAN KOLANDAIVELU, P.E.
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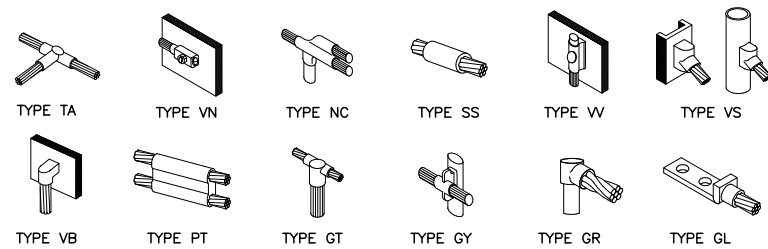
ANTENNA & EQUIPMENT DETAILS

SHEET NUMBER

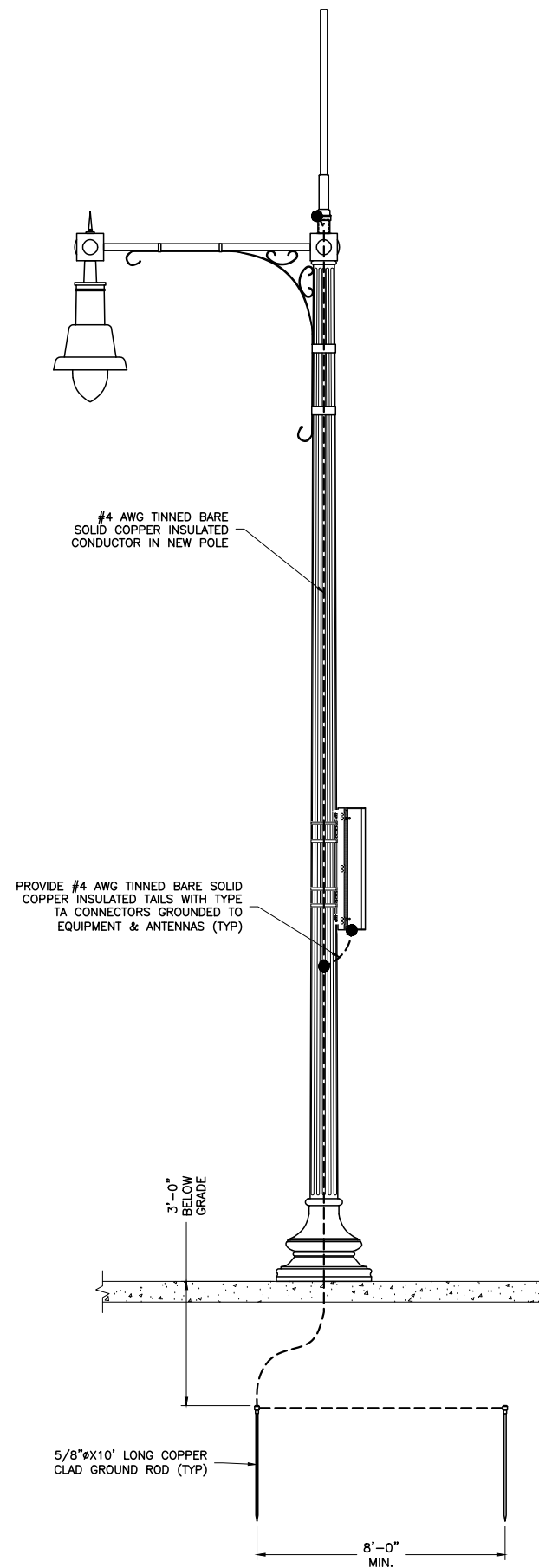
SHEET
04 OF 06



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

NB+C
TOTALLY COMMITTED.

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100 APOLLO DRIVE, SUITE 303
CHELMSFORD, MA 01824
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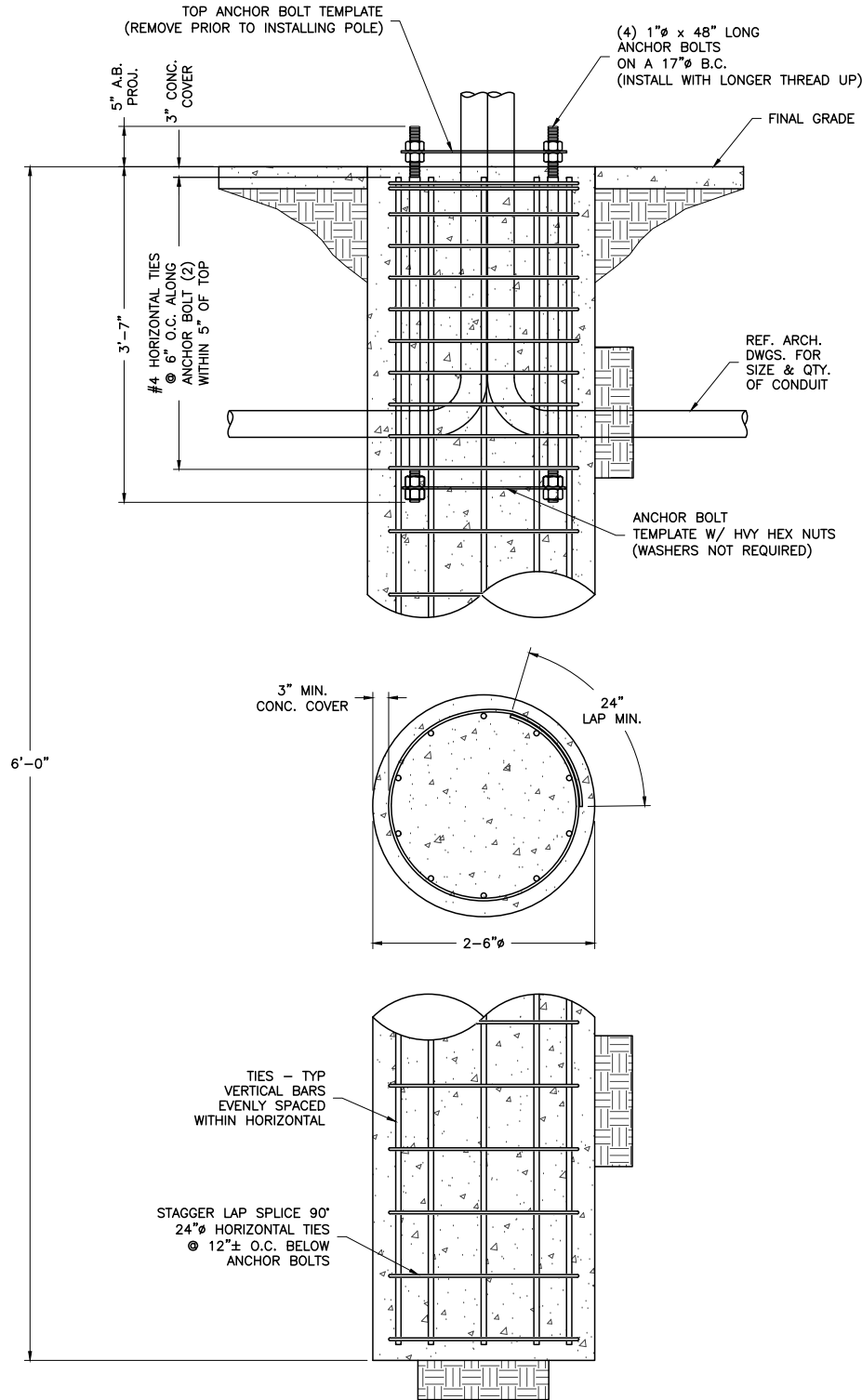
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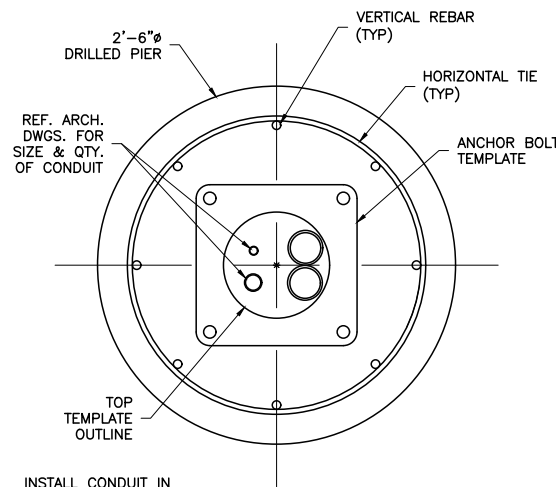
**ELECTRICAL
& GROUNDING
DETAILS**

SHEET NUMBER

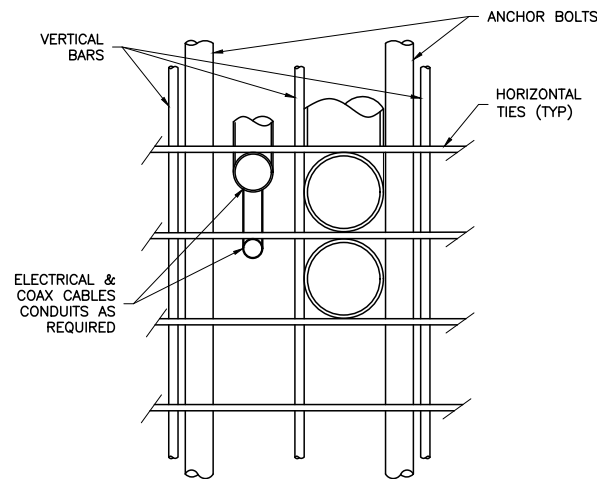
SHEET
05 OF 06



| DESCRIPTION | QTY. | SIZE | LENGTH | WEIGHT | OVERLAP |
|-----------------|------|------|--------|---------|---------|
| VERTICAL BARS | 8 | #6 | 5'-6" | 66 LBS. | N/A |
| HORIZONTAL TIES | 10 | #4 | 8'-4" | 55 LBS. | 2'-0" |

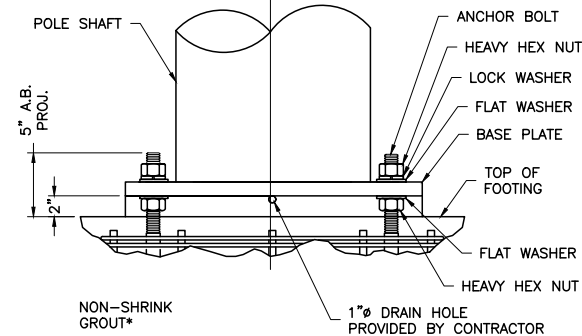


1 CONDUIT DETAIL @ PIER SEC.
06 NTS



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 1.1 CU. YDS.

FACTORED BASE REACTIONS

MOMENT = 38.0 ft-kips
SHEAR = 2.29 kips
VERTICAL = 1.80 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.

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06 OF 06