APPENDIX E

Outdoor Lighting Standards

Last Updated 11/1/2020

OSU STANDARD HOLOPHANE LIGHTING FIXTURES

Poles:

Post Top Sitelink Pedestrian – North Yorkshire (NY), Aluminum (A), Height (14'), Shaft Size (L5J), Base Diameter – 17", Tenon Size (3"x3"-PO7), Pole Mounting Options (ABG), Color (Bronze)
#: NY A 14 L5J 17 PO7 ABG BZ

Parking Lot Fluted – North Yorkshire (NY), Material- Steel (S), Height (21'), Shaft Style (FTB), Base-17", Tenon P10 (3"x9"), Mounting-ABG, Finish-Bronze (BZ); Poles may also be Aluminum – No clamshell base (Parking Lots)
#: NY S 21 FTB 17 P10 ABG BZ

Roadway Fluted – North Yorkshire (NY), Material-Steel (S), Height (21'-4"), Shaft Style Round Tapered Fluted (12 Flat), Tenon (4.5" x 10"), (4) Banner Arm Provisions, Mounting 10.4" Butt Diameter Baseplate – 15" bolt circle, Color Dark Bronze (DB); Clamshell Base (CSB-24" Diameter, 42" Tall); CIS- Cast Iron Steel
#: FL210-T40B210-4.5T10-BZ-(4)BAPADS - NY24CSBCIDBH

Mounting Arms:

Parking Lot Single Arm – West Liberty (WLC), 72", Cast Aluminum (CA), Color Dark Bronze (DBH), Swivel-Dark Bronze (DBZ)
#: WLC72/1 CA DBH *WEST LIBERTY FITTER TO BE ORDERED WITH LUMINAIRE

Parking Lot Double Arm – West Liberty (WLC), 144", Cast Aluminum (CA), Color Dark Bronze (DBH), Swivel-Dark Bronze (DBZ)
#: WLC144/2 CA DBH *WEST LIBERTY FITTER TO BE ORDERED WITH LUMINAIRE

Roadway Arms Single – ***#:ATC51/1 CA DBH***

Roadway Arms Double – ***#:ATC102/2 CA DBH***

Luminaires:

Post Top LED - Utility Post top LED (PTUE), Wattage 76W, Color Temp 4K, Voltage 120/277 (AS), Optics- Asymmetric glass refractor (GL3), Color-Bronze (BZ), Finial-Spike (S), Option-ADJUSTABLE OUTPUT (AO)
Post Top LED#: PTUE2 P30 40K AS GL3 BZ S AO

Roadway-Esplanade LED 2 (ESL2), Wattage 118W, Color Temp 4K, Voltage 120-277AS or 347-480-AH, Housing Color – Bronze (BZ), Door and Glass - Teardrop Glass & Door (TG), Optics - Type 3 Asymmetric (3), Top Entry- Stem Mount (S), Adjustable Output (AO), Short Skirt (SS), with Boston Harbor Fitter - bronze (BHDF13 200 BZ) (? = Voltage Either AS or AH)
Roadway #: ESL2 P30S 40K ? BZ TG 3 S AO SS BHDF13 200 BZ

Parking Lot-Esplanade LED 2 (ESL2), Wattage 118W, Color Temp 4K, Voltage 120-277AS or 347-480-AH, Housing Color – Bronze (BZ), Door and Glass - Teardrop Glass & Door (TG), Optics - Type 3 Asymmetric (3), Top Entry- Stem Mount (S), Adjustable Output (AO),

Short Skirt (SS), with West Liberty Fitter-bronze (WLD 13 200 BZ) (? = Voltage Either AS or AH)
Parking: # ESL2 P30S 40K ? BZ TG 3 S AO SS WLDF13 200 BZ

Bollard Light-Colombia LED Series (CLBOLED), Cast Aluminum (CA), P40 LED Performance Package (P40), 4000K Color Temperature (40K), Auto-sensing voltage (120 thru 277) 60 HZ (MVOLT), Louver - semi-specular - Type 5 (LS5), Acrylic Clear Smooth Outer Lens (ASC), Black (BK),Field adjustable output device(AO), Factory Installed direct burial base for mounting without a concrete footing (DBB), GFI receptacle externally mounted with wet-location cover (FGE)**
Bollard with Concrete Foundation# : CLBOLED CA P40 40K MVOLT LS5 ACS BK AO FGE**
Bollard with Direct Burial Base# : CLBOLED CA P40 40K MVOLT LS5 ACS BK AO DBB* FGE**
*Bollard shall have a concrete foundation by default. Bollard with direct burial base (DBB) shall be only used with the permission of OSU ES.
**GFI receptacle is optional and shall be decided by each project.

Options:

Banner Arms – *BA ? BO H 4 BZ* (?= Banner Arm length: 30 for roadway and parking lot light assembly; 18 for pedestrian light assembly, Bolt On, Finial-Half Sphere (H), 1" diameter (4), Bronze (BZ)

Contractor Installed in Base:

Slow-Blow In-line fuses

All post top lights and bollard lights are typically 120V. All parking lot and roadway lights are typically 480V single phase.

OSU STANDARD HOLOPHANE LIGHTING FIXTURES

OSU has adopted the following illumination standards for outdoor spaces from the IESNA Recommended Practices, Design Guides, Guidelines, the 10th Edition Lighting Handbook and the 2013 OSU Exterior Lighting Study. All parking lots and pedestrian pathways on the campus are considered to be "Secure", which requires maintaining a more even uniformity ratio for the areas.

Parking Lots (All)

3 foot candle minimum maintained horizontal and vertical average at 5'-0" above grade Minimum maintained foot candle reading of no less than .7
Maximum maintained foot candle reading of 10.5
Average to minimum ratio no greater than 4:1
Maximum to minimum ratio no greater than 15:1

Roadways/Street (All on/around Campus)

1 foot candle minimum maintained horizontal average
Minimum foot candle reading of no less than .25
Average to minimum ratio no greater than 4:1

Sidewalks and Pedestrian Pathways (All on/around Campus)

1 foot candle horizontal average
Minimum foot candle reading of no less than .25
Average to minimum ratio no greater than 4:1

Illumination plots shall be calculated on a 5'x5' grid spacing. The illumination plot shall show fixture placement and statistics including average, minimum, maximum, average-to-minimum ratio and maximum-to-minimum ratio for each calculation zone.

Coordinate all intersection and crosswalk lighting designs with OSU Energy Services – Utilities Engineering.

References
IESNA RP-20-14 Revised, Part II, Section 7
IESNA RP-8-14
IESNA G-1-16, Section 8.2.6; Section 8.2.16

The following suite of standardized light fixtures describes the aesthetic properties of the light assemblies only. Detailed specifications for lighting standards can be found in the Oklahoma State University Building Design Standards - Section 16530, Exterior Lighting Fixtures:

Street Light Assembly - Single Fixture:

Manufacturer -	Holophane®
Pole -	SiteLink® Pole, 5.75" Fluted Aluminum, 24" North Yorkshire Base, 21' Height, Black Color
Fixture -	Esplanade Tear Drop, Decorative Shallow Skirt, West Liberty Leveling Fitter, Black Color
Cross Arm -	ATC Single Arm
Banner Arms -	Two 30" Long Banner Arms, Black Color

Street Light Assembly - Double Fixture:

Manufacturer -	Holophane®
Pole -	SiteLink® Pole, 5.75" Fluted Aluminum, 24" North Yorkshire Base, 21' Height, Black Color
Fixture -	Esplanade Tear Drop, Decorative Shallow Skirt, West Liberty Leveling Fitter, Black Color
Cross Arm -	West Liberty Twin Crossarm
Banner Arms -	Four 30" Long Banner Arms, Black Color

Parking Lot Light Assembly - Double Fixture:

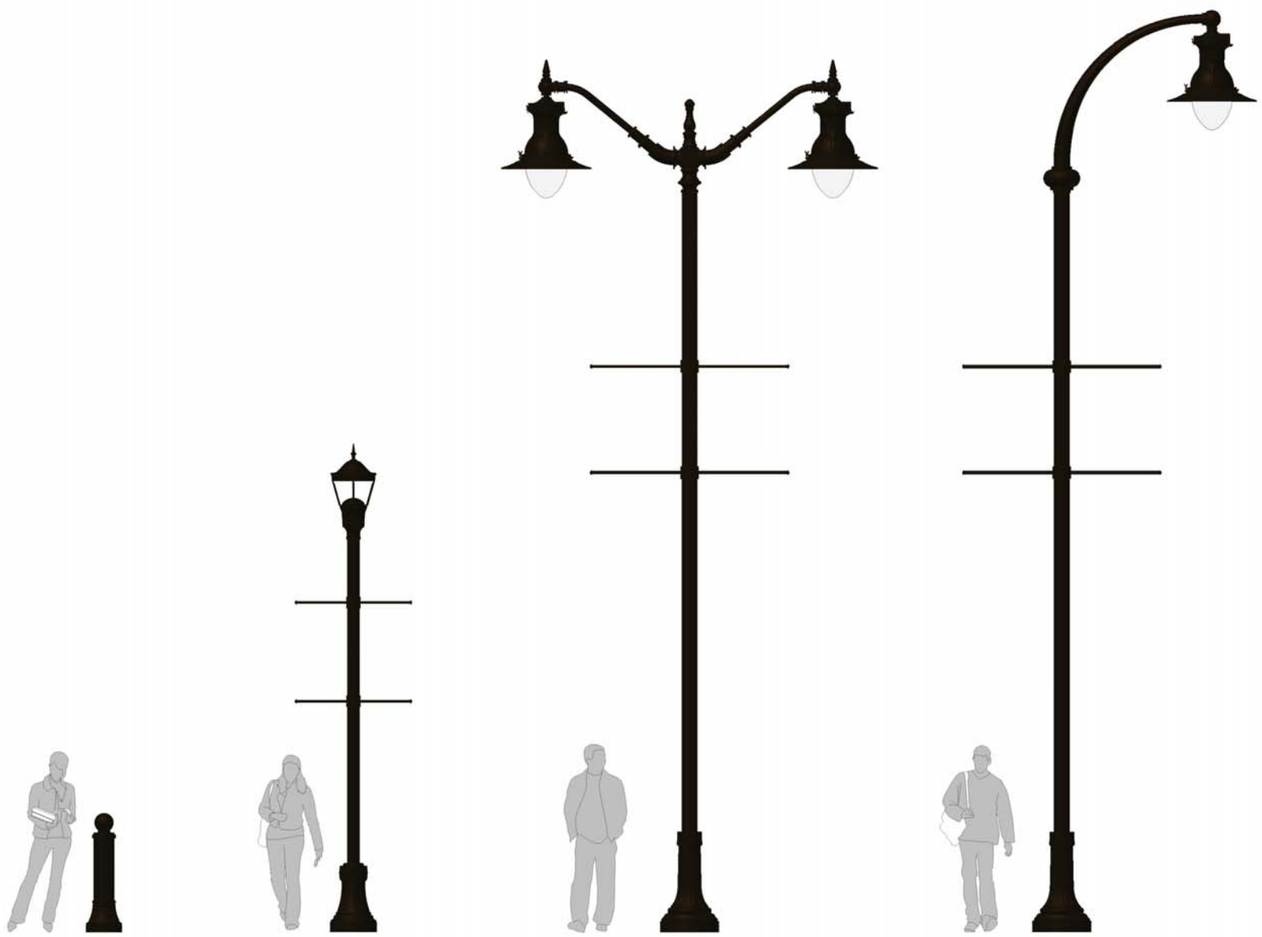
Manufacturer -	Holophane®
Pole -	SiteLink® Pole, 5.75" Fluted Aluminum, 24" North Yorkshire Base, 21' Height, Black Color
Fixture -	Esplanade Tear Drop, Decorative Shallow Skirt, West Liberty Leveling Fitter, Black Color
Cross Arm -	West Liberty Twin Crossarm
Banner Arms -	Four 30" Long Banner Arms, Black Color
Notes -	Same assembly as the Double Fixture Street Light

Pedestrian Light Assembly:

Manufacturer -	Holophane®
Pole -	SiteLink® Pole, 4.5" Fluted Aluminum, 17" North Yorkshire Base, 12' Height, Dark Bronze Color
Fixture -	Utility Postop, Full Cutoff, Spike Finial, Black Color
Banner Arms -	Four 18" Long Banner Arms, Black Color

Lighted Bollard:

Manufacturer -	Holophane®
Model -	Columbia™, 44" Height, 13" Diameter Base
Material -	Cast Aluminum or Cast Iron
Color -	Black Powder Coat
Notes -	Lighted bollards match non-lighted bollards (see Site Furnishings)



Columbia Bollard

Pedestrian Light Assembly
Utility Postop Full Cutoff

Parking Lot / Roadway Light Assembly
Esplanade Partial Cutoff

Roadway Light Assembly
Esplanade Partial Cutoff

GENERAL NOTES

I. OVERALL NOTES

1. PRIOR TO BEGINNING ANY WORK OR ORDERING ANY MATERIALS, THE CONTRACTOR SHALL COORDINATE THE STRUCTURAL DRAWINGS WITH ALL OTHER TRADES. NOTIFY THE OWNER AND THE ENGINEER OF RECORD OF ANY DISCREPANCIES OR POSSIBLE DEFICIENCIES.
2. PRIOR TO STARTING WORK, THE CONTRACTOR SHALL VERIFY THE EXISTING SITE CONDITIONS AND CONSTRAINTS AS WELL AS EXISTING BUILDING LOCATION, DIMENSIONS, AND ELEVATIONS, IF ANY.
3. NO FIELD REVISIONS OR MODIFICATIONS TO ANY STRUCTURAL COMPONENT SHALL BE PERFORMED WITHOUT PRIOR APPROVAL BY THE ENGINEER OF RECORD.
4. PLANS AND DETAILS SHALL NOT BE SCALED FOR DETERMINATION OF LENGTHS, QUANTITIES, OR CONFIGURATION OF MATERIALS.

II. COORDINATION WITH OTHER TRADES

1. THE CONTRACTOR SHALL SUPPLY ALL ITEMS FOR ATTACHING MECHANICAL AND ELECTRICAL EQUIPMENT TO THE STRUCTURE TO RESIST ALL LOADS, INCLUDING SEISMIC FORCES. COORDINATE THE LOCATION(S) AND REQUIRED ATTACHMENT(S) WITH THE STRUCTURE. REFER TO THE ELECTRICAL AND MECHANICAL DOCUMENTS FOR ADDITIONAL REQUIREMENTS.
2. COORDINATE AND PROVIDE SLEEVE LAYOUTS FOR ALL PIPES, CONDUITS, OR ANY OTHER ITEMS PENETRATING THROUGH STRUCTURAL MEMBERS. LAYOUTS ARE TO BE SUBMITTED TO AND APPROVED BY THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION.

III. GEOTECHNICAL NOTES

1. THE FOUNDATIONS FOR THIS STRUCTURE WE REDESIGNED BASED UPON THE PRESUMPTIVE ALLOWABLE VALUES AS DESCRIBED IN THE 2015 INTERNATIONAL BUILDING CODE, TABLE 1806.2 "PRESUMPTIVE LOAD-BEARING VALUES" FOR CLAY, SANDY CLAY, SILTY CLAY, CLAYEY SILT, SILT, AND SANDY SILT. SHOULD ACTUAL SITE CONDITIONS VARY FROM THIS, THE FOUNDATION SHALL BE REDESIGNED.

IV. REINFORCED CONCRETE NOTES

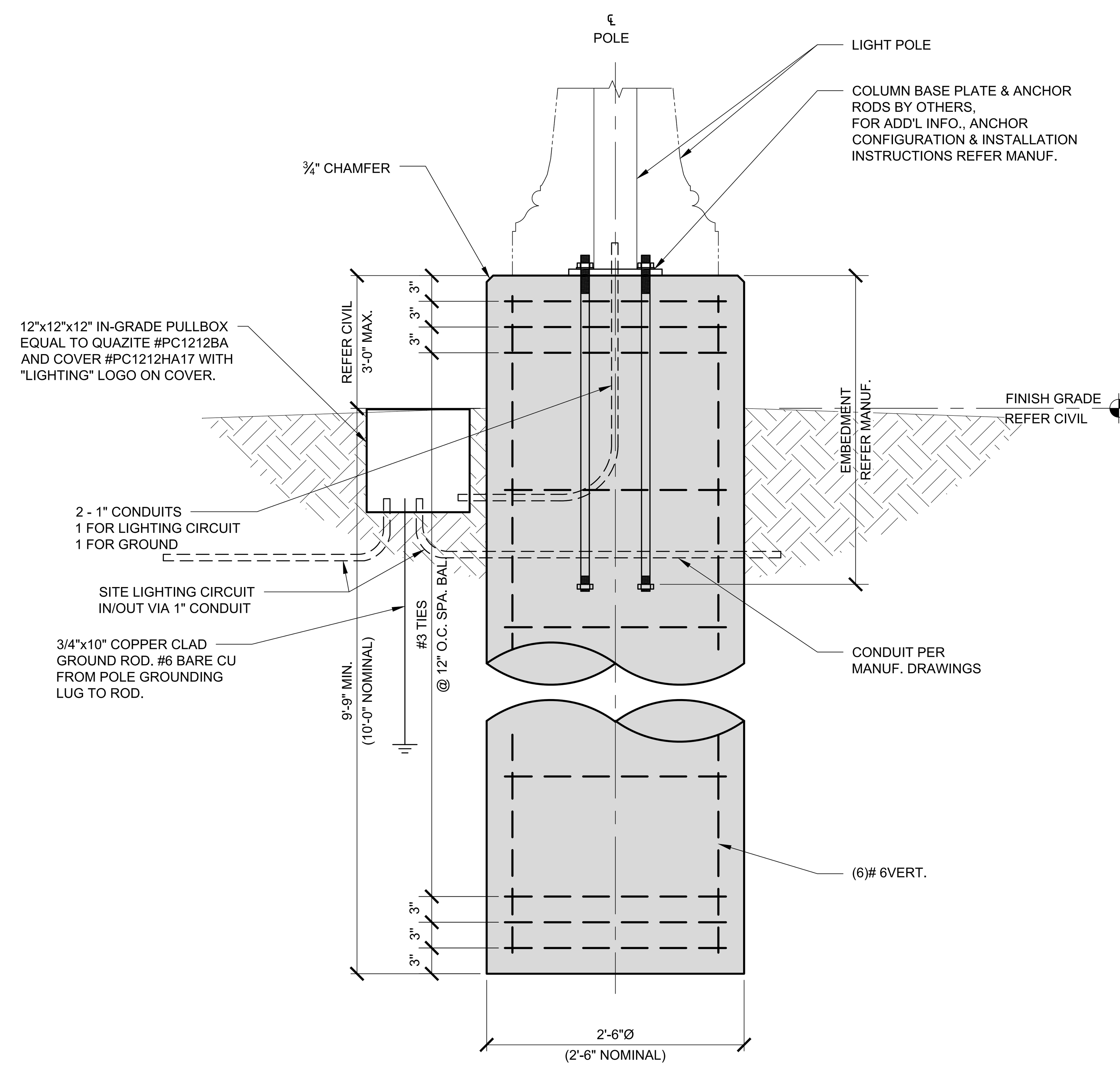
1. ALL REINFORCED CONCRETE SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", LATEST EDITION INCLUDING AMENDMENTS, AND ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", EDITION REFERENCED IN THE 2009 INTERNATIONAL BUILDING CODE.
2. TOLERANCES FOR CONCRETE MEMBERS AND COMPONENTS SHALL CONFORM TO ACI 117 "SPECIFICATION FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS."
3. DETAILING OF CONCRETE REINFORCEMENT AND ACCESSORIES SHALL CONFORM TO ACI 315 "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT."
4. U.N.O., CONCRETE SHALL HAVE SAND AND CRUSHED STONE OR GRAVEL AGGREGATE AND TYPE I, II, OR I/II PORTLAND CEMENT. THE CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,500 PSI AND A MAXIMUM WATER/CEMENTITIOUS MATERIALS RATIO OF 0.50, AND SHALL BE AIR ENTRAINED WITH AIR CONTENT OF 6% ±1.5%.
5. NORMAL WEIGHT AGGREGATE SHALL CONFORM TO ASTM C33.
6. SLUMP OF CONCRETE SHALL NOT EXCEED 3" AT THE END OF THE TRUCK OR PUMP HOSE (PER ACI 211.1 TABLE 6.3.1). SLUMP LOSS DUE TO PUMPING SHALL BE ACCOMMODATED. IF A SUPERPLASTICIZER OR MID-RANGE WATER REDUCING ADMIXTURE IS USED IN THE MIX DESIGN, THE SLUMP SHALL NOT EXCEED 8" AFTER ADDITION OF THE ADMIXTURE. DO NOT ADD WATER TO CONCRETE AFTER ADDING WATER-REDUCING ADMIXTURES TO THE MIX.
7. U.N.O., ALL CONCRETE REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60 AND BE OF DOMESTIC MANUFACTURE. REINFORCING BARS TO BE WELDED SHALL CONFORM TO THE REQUIREMENTS OF ASTM A706, GRADE 60. WELDING TO REINFORCING BARS NOT SHOWN ON THE DRAWINGS, SHALL NOT BE PERMITTED. ELECTRICAL GROUNDING AND OTHER REQUIRED CONNECTIONS TO REINFORCING BARS SHALL BE ATTAINED VIA CLAMPS OR OTHER MANUFACTURED CONNECTIONS.
8. REINFORCING SHALL BE SUPPORTED AND SECURED IN ITS PROPER LOCATION TO PREVENT DISPLACEMENT DURING PLACEMENT OF CONCRETE.
9. THE CONTRACTOR SHALL VERIFY WITH ALL DISCIPLINES THE LOCATIONS OF ALL REQUIRED OPENINGS, SLEEVES, CAST-IN-PLACE ANCHORS OR HANGERS, SLAB DEPRESSIONS, INSERTS AND ANY OTHER ITEM TO BE CAST INTO THE CONCRETE.
10. ALL HIGH-STRENGTH GROUT SHALL BE PREPACKAGED, NON-METALLIC, AND NON-GASEOUS. IT SHALL BE NON-SHRINK ACCORDING TO ASTM C-1107 OR CRD-C-621. GROUT SHALL OBTAIN A MINIMUM COMPRESSIVE STRENGTH OF 7,000 PSI IN 28 DAYS AND SHALL NOT BLEED. GROUT SHALL BE MOIST CURED FOR A MINIMUM OF 24 HOURS AFTER PLACEMENT. SUBMIT CERTIFIED, INDEPENDENT TEST DATA FOR APPROVAL.

LIGHT POLE REACTIONS AT T.O. FOUNDATION BASIS OF DESIGN

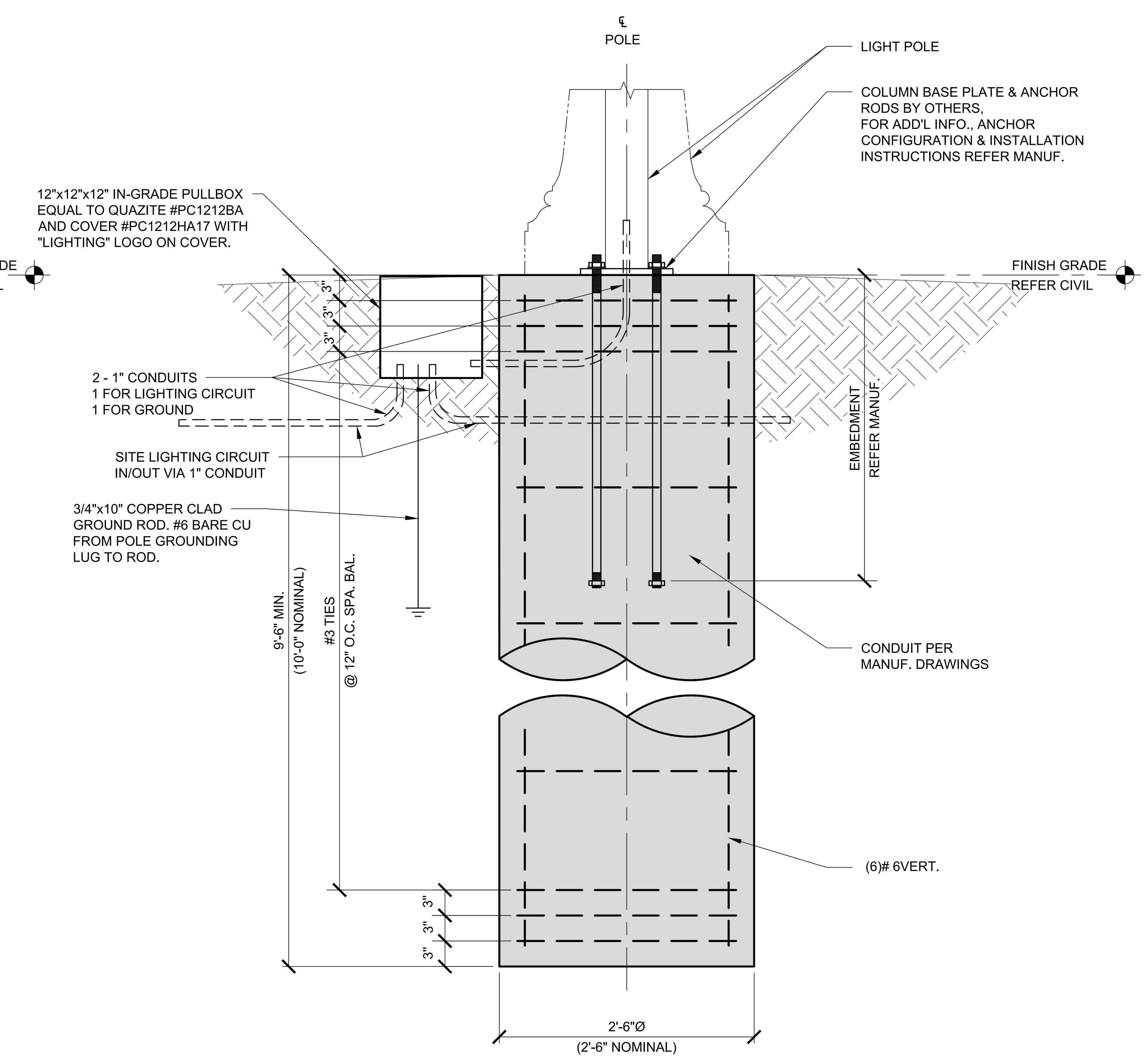
POLE SIZE	BENDING MOMENT (FT/LBS)	TORSION (FT/LBS)	SHEAR FORCE (LBS)	AXIAL FORCE (LBS)
REFER LIGHT POLE DESCRIPTIONS	17,596	1149	1089	1055

1. SHOULD FOUNDATION REACTIONS FROM SELECTED FIXTURE(S) EXCEED THE BASIS OF DESIGN, THE FOUNDATIONS SHALL BE RE-EVALUATED.
2. REFER TO PAGE 1 AND 2 OF OSU'S "OUTDOOR LIGHTING STANDARDS" FOR DESCRIPTIONS OF PRODUCTS.

ROADWAY LIGHT POLE FOUNDATION (WITH CLAMSHELL BASE)



(WITH BOLLARD)



(WITHOUT BOLLARD)

PLOT DATE:

CEC

CEC CORPORATION
4555 W. MEMORIAL ROAD
OKLAHOMA CITY, OKLAHOMA 73142
P: 405.753.4200
WWW.CONNECTCEC.COM

STATE OF OK CERTIFICATE OF AUTHORIZATION
CA#: 32 EXPIRES: 2022-06-30

LICENSED PROFESSIONAL ENGINEER
CHRISTOPHER L. SNIDER
11-02-2020
23089
OKLAHOMA

REVISION HISTORY

NO.	DESCRIPTION	DATE

SUBMITTAL:

DATE:	10/16/20
PROJECT NO:	19007.23
DESIGNED BY:	C.L.S.
DRAWN BY:	J.F.R.
APPROVED BY:	C.L.S.
SCALE:	AS SHOWN

OSU ROADWAY LIGHT POLE FOUNDATIONS

STILLWATER, OKLAHOMA

SHEET NAME

FOUNDATION DETAILS

SHEET

S1

GENERAL NOTES

I. OVERALL NOTES

1. PRIOR TO BEGINNING ANY WORK OR ORDERING ANY MATERIALS, THE CONTRACTOR SHALL COORDINATE THE STRUCTURAL DRAWINGS WITH ALL OTHER TRADES. NOTIFY THE OWNER AND THE ENGINEER OF RECORD OF ANY DISCREPANCIES OR POSSIBLE DEFICIENCIES.
2. PRIOR TO STARTING WORK, THE CONTRACTOR SHALL VERIFY THE EXISTING SITE CONDITIONS AND CONSTRAINTS AS WELL AS EXISTING BUILDING LOCATION, DIMENSIONS, AND ELEVATIONS, IF ANY.
3. NO FIELD REVISIONS OR MODIFICATIONS TO ANY STRUCTURAL COMPONENT SHALL BE PERFORMED WITHOUT PRIOR APPROVAL BY THE ENGINEER OF RECORD.
4. PLANS AND DETAILS SHALL NOT BE SCALED FOR DETERMINATION OF LENGTHS, QUANTITIES, OR CONFIGURATION OF MATERIALS.

II. COORDINATION WITH OTHER TRADES

1. THE CONTRACTOR SHALL SUPPLY ALL ITEMS FOR ATTACHING MECHANICAL AND ELECTRICAL EQUIPMENT TO THE STRUCTURE TO RESIST ALL LOADS, INCLUDING SEISMIC FORCES. COORDINATE THE LOCATION(S) AND REQUIRED ATTACHMENT(S) WITH THE STRUCTURE. REFER TO THE ELECTRICAL AND MECHANICAL DOCUMENTS FOR ADDITIONAL REQUIREMENTS.
2. COORDINATE AND PROVIDE SLEEVE LAYOUTS FOR ALL PIPES, CONDUITS, OR ANY OTHER ITEMS PENETRATING THROUGH STRUCTURAL MEMBERS. LAYOUTS ARE TO BE SUBMITTED TO AND APPROVED BY THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION.

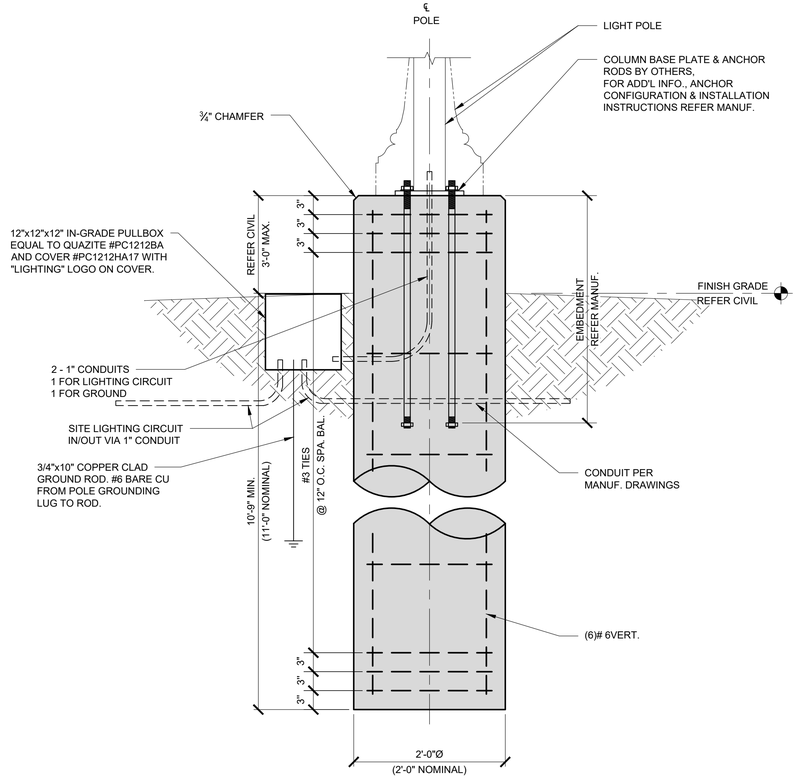
III. GEOTECHNICAL NOTES

1. THE FOUNDATIONS FOR THIS STRUCTURE WE REDESIGNED BASED UPON THE PRESUMPTIVE ALLOWABLE VALUES AS DESCRIBED IN THE 2015 INTERNATIONAL BUILDING CODE, TABLE 1806.2 “PRESUMPTIVE LOAD-BEARING VALUES” FOR CLAY, SANDY CLAY, SILTY CLAY, CLAYEY SILT, SILT, AND SANDY SILT. SHOULD ACTUAL SITE CONDITIONS VARY FROM THIS, THE FOUNDATION SHALL BE REDESIGNED.

IV. REINFORCED CONCRETE NOTES

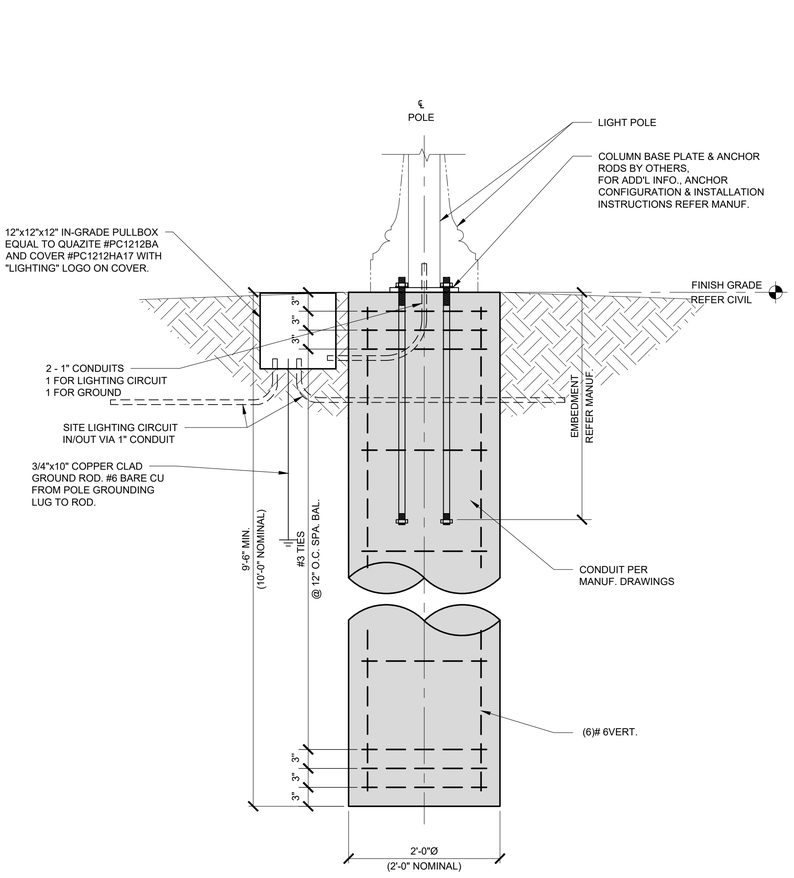
1. ALL REINFORCED CONCRETE SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301 “SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS”, LATEST EDITION INCLUDING AMENDMENTS, AND ACI 318 “BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE”, EDITION REFERENCED IN THE 2009 INTERNATIONAL BUILDING CODE.
2. TOLERANCES FOR CONCRETE MEMBERS AND COMPONENTS SHALL CONFORM TO ACI 117 “SPECIFICATION FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS.”
3. DETAILING OF CONCRETE REINFORCEMENT AND ACCESSORIES SHALL CONFORM TO ACI 315 “DETAILS AND DETAILING OF CONCRETE REINFORCEMENT.”
4. U.N.O., CONCRETE SHALL HAVE SAND AND CRUSHED STONE OR GRAVEL AGGREGATE AND TYPE I, II, OR I/II PORTLAND CEMENT. THE CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,500 PSI AND A MAXIMUM WATER/CEMENTITIOUS MATERIALS RATIO OF 0.50, AND SHALL BE AIR ENTRAINED WITH AIR CONTENT OF 6% ±1.5%.
5. NORMAL WEIGHT AGGREGATE SHALL CONFORM TO ASTM C33.
6. SLUMP OF CONCRETE SHALL NOT EXCEED 3” AT THE END OF THE TRUCK OR PUMP HOSE (PER ACI 211.1 TABLE 6.3.1). SLUMP LOSS DUE TO PUMPING SHALL BE ACCOMMODATED. IF A SUPERPLASTICIZER OR MID-RANGE WATER REDUCING ADMIXTURE IS USED IN THE MIX DESIGN, THE SLUMP SHALL NOT EXCEED 8” AFTER ADDITION OF THE ADMIXTURE. DO NOT ADD WATER TO CONCRETE AFTER ADDING WATER-REDUCING ADMIXTURES TO THE MIX.
7. U.N.O., ALL CONCRETE REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60 AND BE OF DOMESTIC MANUFACTURE. REINFORCING BARS TO BE WELDED SHALL CONFORM TO THE REQUIREMENTS OF ASTM A706, GRADE 60. WELDING TO REINFORCING BARS NOT SHOWN ON THE DRAWINGS, SHALL NOT BE PERMITTED. ELECTRICAL GROUNDING AND OTHER REQUIRED CONNECTIONS TO REINFORCING BARS SHALL BE ATTAINED VIA CLAMPS OR OTHER MANUFACTURED CONNECTIONS.
8. REINFORCING SHALL BE SUPPORTED AND SECURED IN ITS PROPER LOCATION TO PREVENT DISPLACEMENT DURING PLACEMENT OF CONCRETE.
9. THE CONTRACTOR SHALL VERIFY WITH ALL DISCIPLINES THE LOCATIONS OF ALL REQUIRED OPENINGS, SLEEVES, CAST-IN-PLACE ANCHORS OR HANGERS, SLAB DEPRESSIONS, INSERTS AND ANY OTHER ITEM TO BE CAST INTO THE CONCRETE.
10. ALL HIGH-STRENGTH GROUT SHALL BE PREPACKAGED, NON-METALLIC, AND NON-GASEOUS. IT SHALL BE NON-SHRINK ACCORDING TO ASTM C-1107 OR CRD-C-621. GROUT SHALL OBTAIN A MINIMUM COMPRESSIVE STRENGTH OF 7,000 PSI IN 28 DAYS AND SHALL NOT BLEED. GROUT SHALL BE MOIST CURED FOR A MINIMUM OF 24 HOURS AFTER PLACEMENT. SUBMIT CERTIFIED, INDEPENDENT TEST DATA FOR APPROVAL.

PARKING LOT LIGHT POLE FOUNDATION (WITH INTEGRATED BASE)



(WITH BOLLARD)

USE THIS DESIGN UNLESS OTHERWISE NOTED BY ESUE



(WITHOUT BOLLARD)

LIGHT POLE REACTIONS AT T.O. FOUNDATION BASIS OF DESIGN

POLE SIZE	BENDING MOMENT (FT/LBS)	TORSION (FT/LBS)	SHEAR FORCE (LBS)	AXIAL FORCE (LBS)
REFER LIGHT POLE DESCRIPTIONS	17,596	1149	1089	1055

1. SHOULD FOUNDATION REACTIONS FROM SELECTED FIXTURE(S) EXCEED THE BASIS OF DESIGN, THE FOUNDATIONS SHALL BE RE-EVALUATED.
2. REFER TO PAGE 1 AND 2 OF OSU'S "OUTDOOR LIGHTING STANDARDS" FOR DESCRIPTIONS OF PRODUCTS.

PLOT DATE:

CEC

CEC CORPORATION
4545 N. LINCOLN BLVD
OKLAHOMA CITY, OKLAHOMA 73142
405.478.8770
WWW.CONNECTCEC.COM

STATE OF OK CERTIFICATE OF AUTHORIZATION
CA# 32 EXPIRES 2023-06-30

LICENSED PROFESSIONAL ENGINEER
CHRISTOPHER J. SNIDER
11-02-2020
23089
OKLAHOMA

REVISION HISTORY

NO.	DESCRIPTION	DATE

SUBMITTAL:
DATE: 10/16/20
PROJECT NO: 190071.23
DESIGNED BY: C.L.S.
DRAWN BY: J.F.R.
APPROVED BY: C.L.S.
SCALE: AS SHOWN

OSU ROADWAY/PARKING LIGHT POLE FOUNDATIONS
STILLWATER, OKLAHOMA

SHEET NAME
FOUNDATION DETAILS

SHEET
S2

PEDESTRIAN WALKWAY LIGHT POLE FOUNDATIONS

GENERAL NOTES

I. OVERALL NOTES

1. PRIOR TO BEGINNING ANY WORK OR ORDERING ANY MATERIALS, THE CONTRACTOR SHALL COORDINATE THE STRUCTURAL DRAWINGS WITH ALL OTHER TRADES. NOTIFY THE OWNER AND THE ENGINEER OF RECORD OF ANY DISCREPANCIES OR POSSIBLE DEFICIENCIES.
2. PRIOR TO STARTING WORK, THE CONTRACTOR SHALL VERIFY THE EXISTING SITE CONDITIONS AND CONSTRAINTS AS WELL AS EXISTING BUILDING LOCATION, DIMENSIONS, AND ELEVATIONS, IF ANY.
3. NO FIELD REVISIONS OR MODIFICATIONS TO ANY STRUCTURAL COMPONENT SHALL BE PERFORMED WITHOUT PRIOR APPROVAL BY THE ENGINEER OF RECORD.
4. PLANS AND DETAILS SHALL NOT BE SCALED FOR DETERMINATION OF LENGTHS, QUANTITIES, OR CONFIGURATION OF MATERIALS.

II. COORDINATION WITH OTHER TRADES

1. THE CONTRACTOR SHALL SUPPLY ALL ITEMS FOR ATTACHING MECHANICAL AND ELECTRICAL EQUIPMENT TO THE STRUCTURE TO RESIST ALL LOADS, INCLUDING SEISMIC FORCES. COORDINATE THE LOCATION(S) AND REQUIRED ATTACHMENT(S) WITH THE STRUCTURE. REFER TO THE ELECTRICAL AND MECHANICAL DOCUMENTS FOR ADDITIONAL REQUIREMENTS.
2. COORDINATE AND PROVIDE SLEEVE LAYOUTS FOR ALL PIPES, CONDUITS, OR ANY OTHER ITEMS PENETRATING THROUGH STRUCTURAL MEMBERS. LAYOUTS ARE TO BE SUBMITTED TO AND APPROVED BY THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION.

III. GEOTECHNICAL NOTES

1. THE FOUNDATIONS FOR THIS STRUCTURE WE REDESIGNED BASED UPON THE PRESUMPTIVE ALLOWABLE VALUES AS DESCRIBED IN THE 2015 INTERNATIONAL BUILDING CODE, TABLE 1806.2 "PRESUMPTIVE LOAD-BEARING VALUES" FOR CLAY, SANDY CLAY, SILTY CLAY, CLAYEY SILT, SILT, AND SANDY SILT. SHOULD ACTUAL SITE CONDITIONS VARY FROM THIS, THE FOUNDATION SHALL BE REDESIGNED.

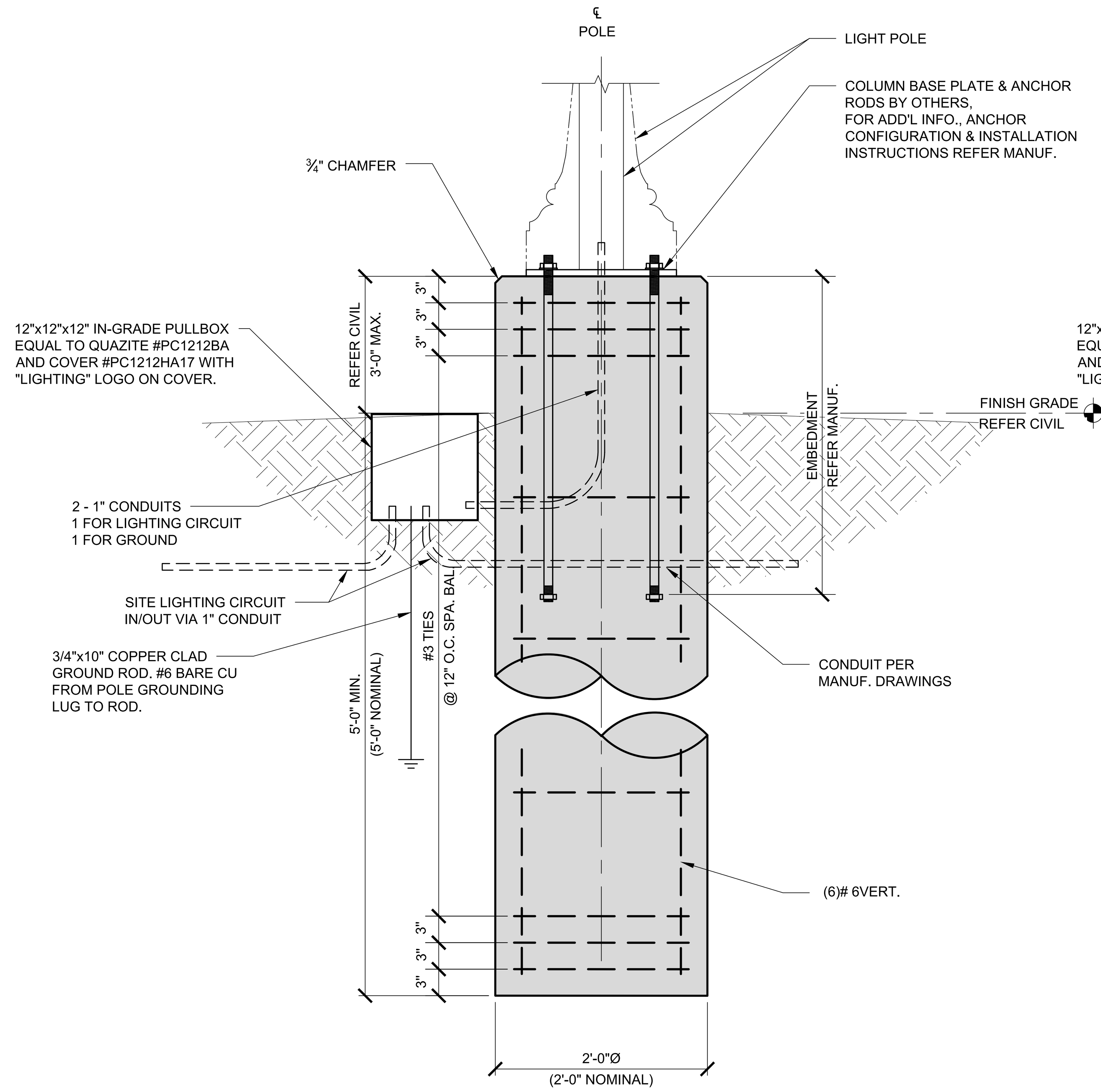
IV. REINFORCED CONCRETE NOTES

1. ALL REINFORCED CONCRETE SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", LATEST EDITION INCLUDING AMENDMENTS, AND ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", EDITION REFERENCED IN THE 2009 INTERNATIONAL BUILDING CODE.
2. TOLERANCES FOR CONCRETE MEMBERS AND COMPONENTS SHALL CONFORM TO ACI 117 "SPECIFICATION FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS."
3. DETAILING OF CONCRETE REINFORCEMENT AND ACCESSORIES SHALL CONFORM TO ACI 315 "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT."
4. U.N.O., CONCRETE SHALL HAVE SAND AND CRUSHED STONE OR GRAVEL AGGREGATE AND TYPE I, II, OR I/II PORTLAND CEMENT. THE CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,500 PSI AND A MAXIMUM WATER/CEMENTITIOUS MATERIALS RATIO OF 0.50, AND SHALL BE AIR ENTRAINED WITH AIR CONTENT OF 6% ±1.5%.
5. NORMAL WEIGHT AGGREGATE SHALL CONFORM TO ASTM C33.
6. SLUMP OF CONCRETE SHALL NOT EXCEED 3" AT THE END OF THE TRUCK OR PUMP HOSE (PER ACI 211.1 TABLE 6.3.1). SLUMP LOSS DUE TO PUMPING SHALL BE ACCOMMODATED. IF A SUPERPLASTICIZER OR MID-RANGE WATER REDUCING ADMIXTURE IS USED IN THE MIX DESIGN, THE SLUMP SHALL NOT EXCEED 8" AFTER ADDITION OF THE ADMIXTURE. DO NOT ADD WATER TO CONCRETE AFTER ADDING WATER-REDUCING ADMIXTURES TO THE MIX.
7. U.N.O., ALL CONCRETE REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60 AND BE OF DOMESTIC MANUFACTURE. REINFORCING BARS TO BE WELDED SHALL CONFORM TO THE REQUIREMENTS OF ASTM A706, GRADE 60. WELDING TO REINFORCING BARS NOT SHOWN ON THE DRAWINGS, SHALL NOT BE PERMITTED. ELECTRICAL GROUNDING AND OTHER REQUIRED CONNECTIONS TO REINFORCING BARS SHALL BE ATTAINED VIA CLAMPS OR OTHER MANUFACTURED CONNECTIONS.
8. REINFORCING SHALL BE SUPPORTED AND SECURED IN ITS PROPER LOCATION TO PREVENT DISPLACEMENT DURING PLACEMENT OF CONCRETE.
9. THE CONTRACTOR SHALL VERIFY WITH ALL DISCIPLINES THE LOCATIONS OF ALL REQUIRED OPENINGS, SLEEVES, CAST-IN-PLACE ANCHORS OR HANGERS, SLAB DEPRESSIONS, INSERTS AND ANY OTHER ITEM TO BE CAST INTO THE CONCRETE.
10. ALL HIGH-STRENGTH GROUT SHALL BE PREPACKAGED, NON-METALLIC, AND NON-GASEOUS. IT SHALL BE NON-SHRINK ACCORDING TO ASTM C-1107 OR CRD-C-621. GROUT SHALL OBTAIN A MINIMUM COMPRESSIVE STRENGTH OF 7,000 PSI IN 28 DAYS AND SHALL NOT BLEED. GROUT SHALL BE MOIST CURED FOR A MINIMUM OF 24 HOURS AFTER PLACEMENT. SUBMIT CERTIFIED, INDEPENDENT TEST DATA FOR APPROVAL.

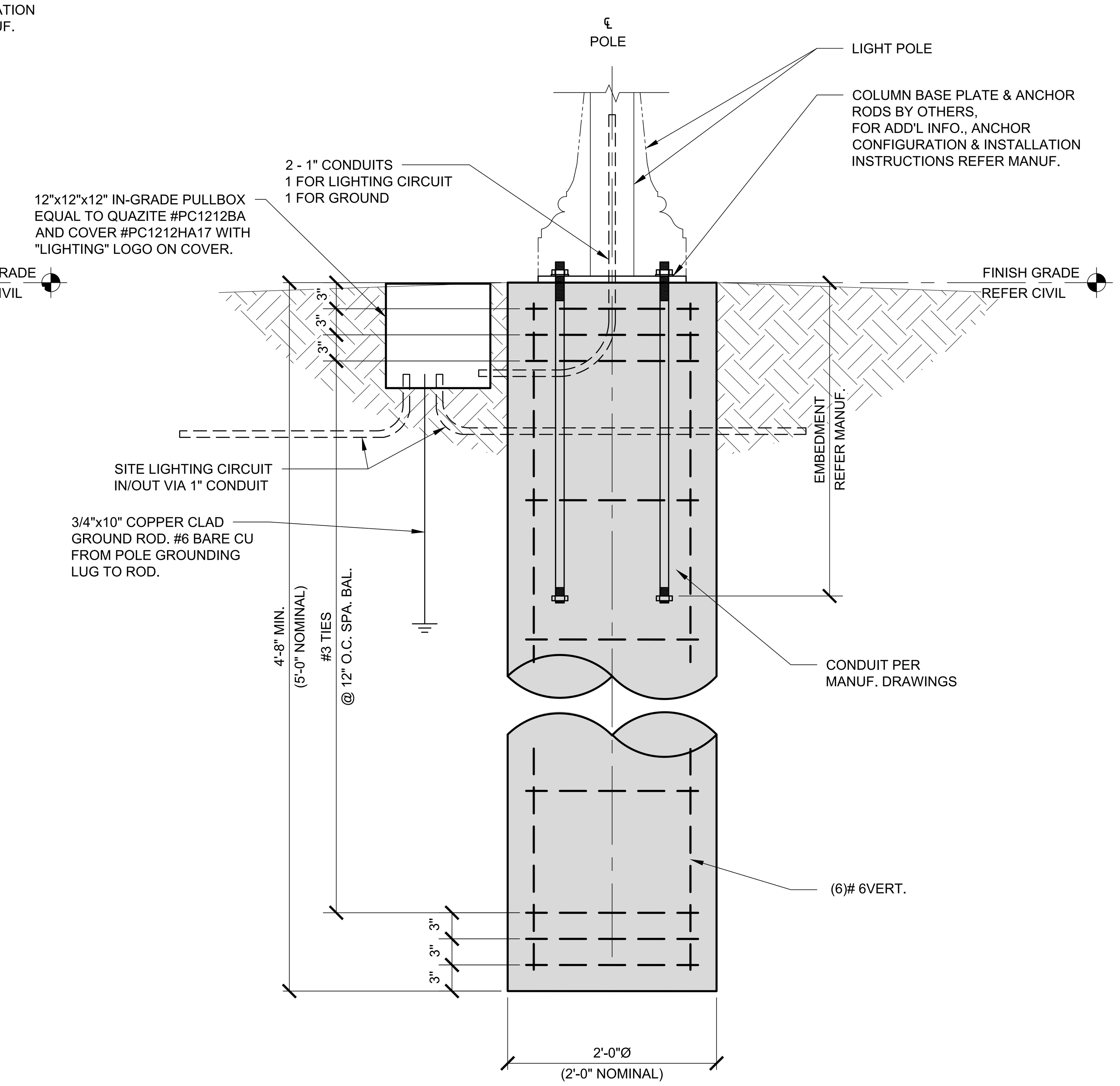
LIGHT POLE REACTIONS AT T.O. FOUNDATION BASIS OF DESIGN

POLE SIZE	BENDING MOMENT (FT/LBS)	TORSION (FT/LBS)	SHEAR FORCE (LBS)	AXIAL FORCE (LBS)
REFER LIGHT POLE DESCRIPTIONS	1666.43	---	220.20	212.32

1. SHOULD FOUNDATION REACTIONS FROM SELECTED FIXTURE(S) EXCEED THE BASIS OF DESIGN, THE FOUNDATIONS SHALL BE RE-EVALUATED.
2. REFER TO PAGE 1 AND 2 OF OSU'S "OUTDOOR LIGHTING STANDARDS" FOR DESCRIPTIONS OF PRODUCTS.



(WITH BOLLARD)



(WITHOUT BOLLARD)

USE THIS DESIGN UNLESS OTHERWISE NOTED BY ESUE

CEC

CEC CORPORATION
4555 W. MEMORIAL ROAD
OKLAHOMA CITY, OKLAHOMA 73142
P: 405.753.4200
WWW.CONNECTCEC.COM

STATE OF OK CERTIFICATE OF AUTHORIZATION
CA#: 32 EXPIRES: 2022-06-30

LICENSED PROFESSIONAL ENGINEER
CHRISTOPHER L. SNIDER
11-02-2020
23089
OKLAHOMA

REVISION HISTORY

NO.	DESCRIPTION	DATE

SUBMITTAL:	
DATE:	10/16/20
PROJECT NO:	190071.23
DESIGNED BY:	C.L.S.
DRAWN BY:	J.F.R.
APPROVED BY:	C.L.S.
SCALE:	AS SHOWN

OSU PEDESTRIAN WALKWAY LIGHT POLE FOUNDATIONS

STILLWATER, OKLAHOMA

SHEET NAME

FOUNDATION DETAILS

SHEET

S3

PLOT DATE:

GENERAL NOTES

I. **OVERALL NOTES**

1. PRIOR TO BEGINNING ANY WORK OR ORDERING ANY MATERIALS, THE CONTRACTOR SHALL COORDINATE THE STRUCTURAL DRAWINGS WITH ALL OTHER TRADES. NOTIFY THE OWNER AND THE ENGINEER OF RECORD OF ANY DISCREPANCIES OR POSSIBLE DEFICIENCIES.
2. PRIOR TO STARTING WORK, THE CONTRACTOR SHALL VERIFY THE EXISTING SITE CONDITIONS AND CONSTRAINTS AS WELL AS EXISTING BUILDING LOCATION, DIMENSIONS, AND ELEVATIONS, IF ANY.
3. NO FIELD REVISIONS OR MODIFICATIONS TO ANY STRUCTURAL COMPONENT SHALL BE PERFORMED WITHOUT PRIOR APPROVAL BY THE ENGINEER OF RECORD.
4. PLANS AND DETAILS SHALL NOT BE SCALED FOR DETERMINATION OF LENGTHS, QUANTITIES, OR CONFIGURATION OF MATERIALS.

II. **COORDINATION WITH OTHER TRADES**

1. THE CONTRACTOR SHALL SUPPLY ALL ITEMS FOR ATTACHING MECHANICAL AND ELECTRICAL EQUIPMENT TO THE STRUCTURE TO RESIST ALL LOADS, INCLUDING SEISMIC FORCES. COORDINATE THE LOCATION(S) AND REQUIRED ATTACHMENT(S) WITH THE STRUCTURE. REFER TO THE ELECTRICAL AND MECHANICAL DOCUMENTS FOR ADDITIONAL REQUIREMENTS.
2. COORDINATE AND PROVIDE SLEEVE LAYOUTS FOR ALL PIPES, CONDUITS, OR ANY OTHER ITEMS PENETRATING THROUGH STRUCTURAL MEMBERS. LAYOUTS ARE TO BE SUBMITTED TO AND APPROVED BY THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION.

III. **GEOTECHNICAL NOTES**

1. THE FOUNDATIONS FOR THIS STRUCTURE WE REDESIGNED BASED UPON THE PRESUMPTIVE ALLOWABLE VALUES AS DESCRIBED IN THE 2015 INTERNATIONAL BUILDING CODE, TABLE 1806.2 "PRESUMPTIVE LOAD-BEARING VALUES" FOR CLAY, SANDY CLAY, SILTY CLAY, CLAYEY SILT, SILT, AND SANDY SILT. SHOULD ACTUAL SITE CONDITIONS VARY FROM THIS, THE FOUNDATION SHALL BE REDESIGNED.

IV. **REINFORCED CONCRETE NOTES**

1. ALL REINFORCED CONCRETE SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", LATEST EDITION INCLUDING AMENDMENTS, AND ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", EDITION REFERENCED IN THE 2009 INTERNATIONAL BUILDING CODE.
2. TOLERANCES FOR CONCRETE MEMBERS AND COMPONENTS SHALL CONFORM TO ACI 117 "SPECIFICATION FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS."
3. DETAILING OF CONCRETE REINFORCEMENT AND ACCESSORIES SHALL CONFORM TO ACI 315 "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT."
4. U.N.O., CONCRETE SHALL HAVE SAND AND CRUSHED STONE OR GRAVEL AGGREGATE AND TYPE I, II, OR I/II PORTLAND CEMENT. THE CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,500 PSI AND A MAXIMUM WATER/CEMENTITIOUS MATERIALS RATIO OF 0.50, AND SHALL BE AIR ENTRAINED WITH AIR CONTENT OF 6% ±1.5%.
5. NORMAL WEIGHT AGGREGATE SHALL CONFORM TO ASTM C33.
6. SLUMP OF CONCRETE SHALL NOT EXCEED 3" AT THE END OF THE TRUCK OR PUMP HOSE (PER ACI 211.1 TABLE 6.3.1). SLUMP LOSS DUE TO PUMPING SHALL BE ACCOMMODATED. IF A SUPERPLASTICIZER OR MID-RANGE WATER REDUCING ADMIXTURE IS USED IN THE MIX DESIGN, THE SLUMP SHALL NOT EXCEED 8" AFTER ADDITION OF THE ADMIXTURE. DO NOT ADD WATER TO CONCRETE AFTER ADDING WATER-REDUCING ADMIXTURES TO THE MIX.
7. U.N.O., ALL CONCRETE REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60 AND BE OF DOMESTIC MANUFACTURE. REINFORCING BARS TO BE WELDED SHALL CONFORM TO THE REQUIREMENTS OF ASTM A706, GRADE 60. WELDING TO REINFORCING BARS NOT SHOWN ON THE DRAWINGS, SHALL NOT BE PERMITTED. ELECTRICAL GROUNDING AND OTHER REQUIRED CONNECTIONS TO REINFORCING BARS SHALL BE ATTAINED VIA CLAMPS OR OTHER MANUFACTURED CONNECTIONS.
8. REINFORCING SHALL BE SUPPORTED AND SECURED IN ITS PROPER LOCATION TO PREVENT DISPLACEMENT DURING PLACEMENT OF CONCRETE.
9. THE CONTRACTOR SHALL VERIFY WITH ALL DISCIPLINES THE LOCATIONS OF ALL REQUIRED OPENINGS, SLEEVES, CAST-IN-PLACE ANCHORS OR HANGERS, SLAB DEPRESSIONS, INSERTS AND ANY OTHER ITEM TO BE CAST INTO THE CONCRETE.
10. ALL HIGH-STRENGTH GROUT SHALL BE PREPACKAGED, NON-METALLIC, AND NON-GASEOUS. IT SHALL BE NON-SHRINK ACCORDING TO ASTM C-1107 OR CRD-C-621. GROUT SHALL OBTAIN A MINIMUM COMPRESSIVE STRENGTH OF 7,000 PSI IN 28 DAYS AND SHALL NOT BLEED. GROUT SHALL BE MOIST CURED FOR A MINIMUM OF 24 HOURS AFTER PLACEMENT. SUBMIT CERTIFIED, INDEPENDENT TEST DATA FOR APPROVAL.

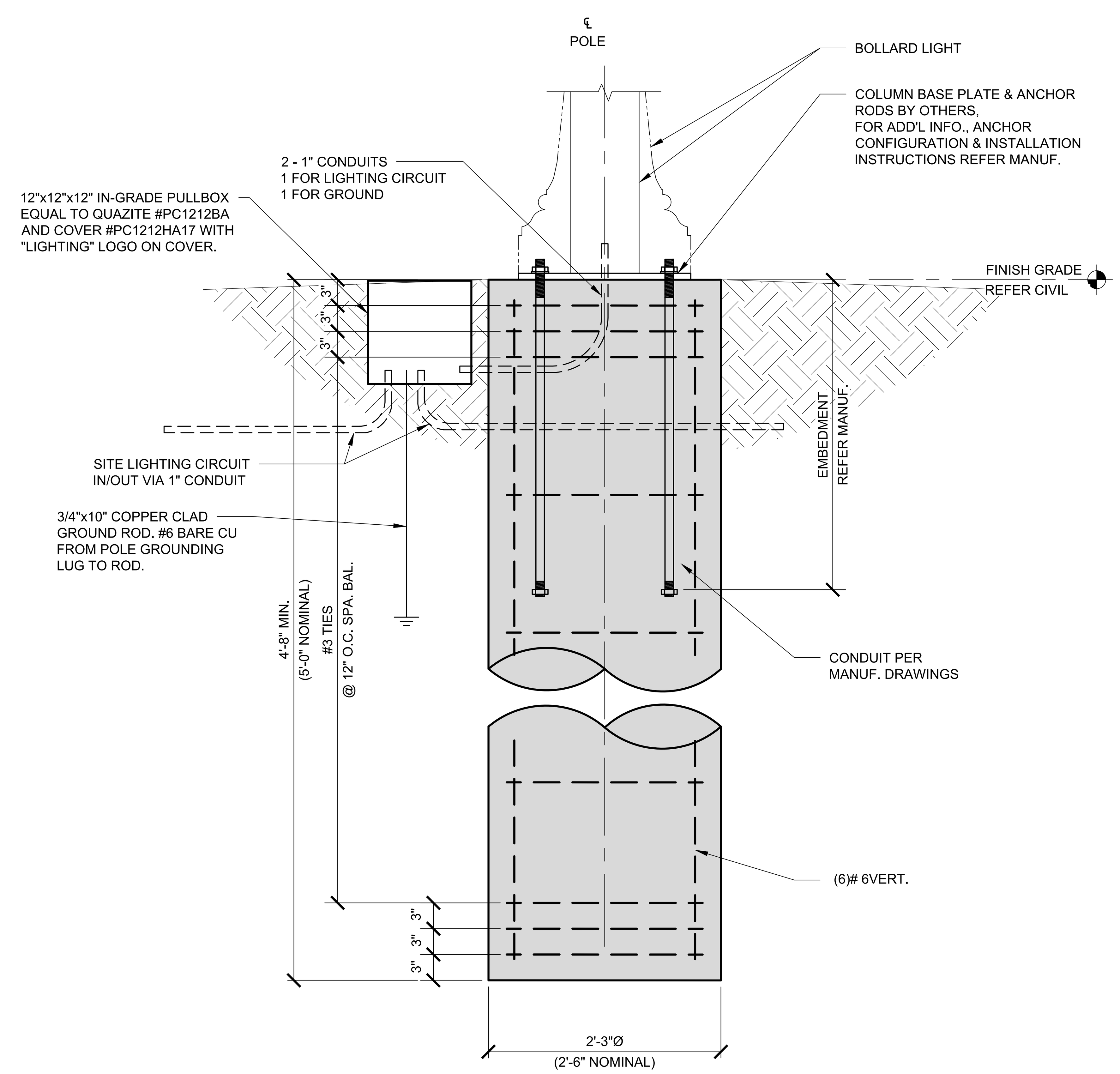
LIGHT POLE REACTIONS AT T.O. FOUNDATION BASIS OF DESIGN

1. THE FOUNDATIONS FOR THE PEDESTRIAN WALKWAY LIGHT POLE FOUNDATIONS HAVE BEEN DESIGNED FOR AN IMPACT LOAD OF 1,000 LBS AT A HEIGHT OF 18" ABOVE GRADE. SHOULD ANTICIPATED OR PROBABLE IMPACT FORCES EXCEED THE DESIGN FORCES, THE FOUNDATION SHALL BE REVISITED.

NOTES:

1. REFER TO PAGE 1 AND 2 OF OSU'S "OUTDOOR LIGHTING STANDARDS" FOR DESCRIPTIONS OF PRODUCTS.

BOLLARD LIGHT FOUNDATIONS



(WITHOUT BOLLARD)

CEC

CEC CORPORATION
4555 W. MEMORIAL ROAD
OKLAHOMA CITY, OKLAHOMA 73142
P: 405.753.4200
WWW.CONNECTCEC.COM

STATE OF OK CERTIFICATE OF AUTHORIZATION
CA#: 32 EXPIRES: 2022-06-30

LICENSED PROFESSIONAL ENGINEER
CHRISTOPHER L. SNIDER
11-02-2020
23089
OKLAHOMA

REVISION HISTORY

NO.	DESCRIPTION	DATE

SUBMITTAL:	
DATE:	10/16/20
PROJECT NO:	190071.23
DESIGNED BY:	C.L.S.
DRAWN BY:	J.F.R.
APPROVED BY:	C.L.S.
SCALE:	AS SHOWN

OSU BOLLARD LIGHT FOUNDATIONS

STILLWATER, OKLAHOMA

SHEET NAME

FOUNDATION DETAILS

SHEET

S4

PLOT DATE:

GENERAL NOTES

I. OVERALL NOTES

1. PRIOR TO BEGINNING ANY WORK OR ORDERING ANY MATERIALS, THE CONTRACTOR SHALL COORDINATE THE STRUCTURAL DRAWINGS WITH ALL OTHER TRADES. NOTIFY THE OWNER AND THE ENGINEER OF RECORD OF ANY DISCREPANCIES OR POSSIBLE DEFICIENCIES.
2. PRIOR TO STARTING WORK, THE CONTRACTOR SHALL VERIFY THE EXISTING SITE CONDITIONS AND CONSTRAINTS AS WELL AS EXISTING BUILDING LOCATION, DIMENSIONS, AND ELEVATIONS, IF ANY.
3. NO FIELD REVISIONS OR MODIFICATIONS TO ANY STRUCTURAL COMPONENT SHALL BE PERFORMED WITHOUT PRIOR APPROVAL BY THE ENGINEER OF RECORD.
4. PLANS AND DETAILS SHALL NOT BE SCALED FOR DETERMINATION OF LENGTHS, QUANTITIES, OR CONFIGURATION OF MATERIALS.

II. COORDINATION WITH OTHER TRADES

1. THE CONTRACTOR SHALL SUPPLY ALL ITEMS FOR ATTACHING MECHANICAL AND ELECTRICAL EQUIPMENT TO THE STRUCTURE TO RESIST ALL LOADS, INCLUDING SEISMIC FORCES. COORDINATE THE LOCATION(S) AND REQUIRED ATTACHMENT(S) WITH THE STRUCTURE. REFER TO THE ELECTRICAL AND MECHANICAL DOCUMENTS FOR ADDITIONAL REQUIREMENTS.
2. COORDINATE AND PROVIDE SLEEVE LAYOUTS FOR ALL PIPES, CONDUITS, OR ANY OTHER ITEMS PENETRATING THROUGH STRUCTURAL MEMBERS. LAYOUTS ARE TO BE SUBMITTED TO AND APPROVED BY THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION.

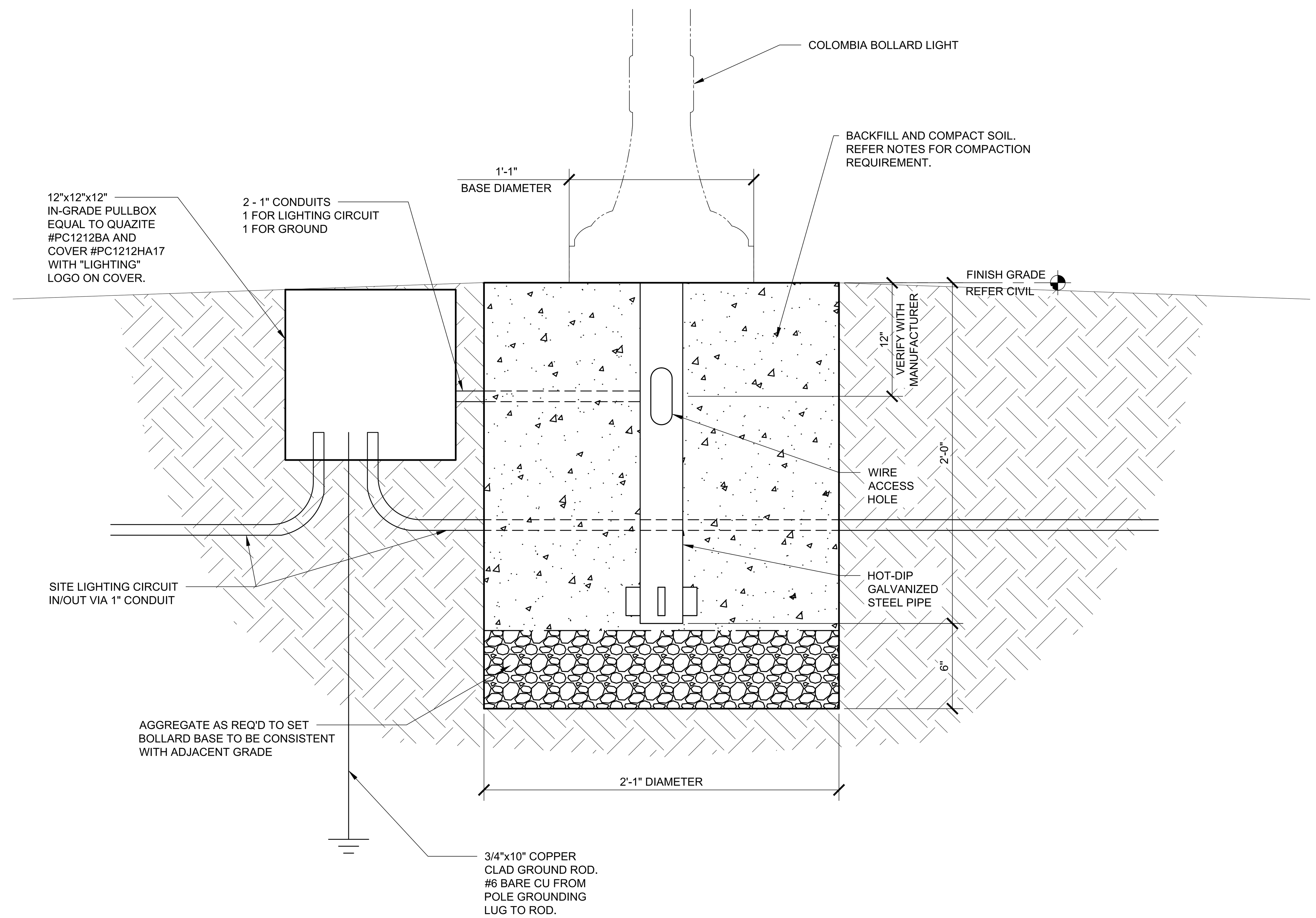
III. GEOTECHNICAL NOTES

1. THE FOUNDATIONS FOR THIS STRUCTURE WE REDESIGNED BASED UPON THE PRESUMPTIVE ALLOWABLE VALUES AS DESCRIBED IN THE 2015 INTERNATIONAL BUILDING CODE, TABLE 1806.2 "PRESUMPTIVE LOAD-BEARING VALUES" FOR CLAY, SANDY CLAY, SILTY CLAY, CLAYEY SILT, SILT, AND SANDY SILT. SHOULD ACTUAL SITE CONDITIONS VARY FROM THIS, THE FOUNDATION SHALL BE REDESIGNED.

IV. REINFORCED CONCRETE NOTES

1. ALL REINFORCED CONCRETE SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", LATEST EDITION INCLUDING AMENDMENTS, AND ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", EDITION REFERENCED IN THE 2009 INTERNATIONAL BUILDING CODE.
2. TOLERANCES FOR CONCRETE MEMBERS AND COMPONENTS SHALL CONFORM TO ACI 117 "SPECIFICATION FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS."
3. DETAILING OF CONCRETE REINFORCEMENT AND ACCESSORIES SHALL CONFORM TO ACI 315 "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT."
4. U.N.O., CONCRETE SHALL HAVE SAND AND CRUSHED STONE OR GRAVEL AGGREGATE AND TYPE I, II, OR I/II PORTLAND CEMENT. THE CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,500 PSI AND A MAXIMUM WATER/CEMENTITIOUS MATERIALS RATIO OF 0.50, AND SHALL BE AIR ENTRAINED WITH AIR CONTENT OF 6% ±1.5%.
5. NORMAL WEIGHT AGGREGATE SHALL CONFORM TO ASTM C33.
6. SLUMP OF CONCRETE SHALL NOT EXCEED 3" AT THE END OF THE TRUCK OR PUMP HOSE (PER ACI 211.1 TABLE 6.3.1). SLUMP LOSS DUE TO PUMPING SHALL BE ACCOMMODATED. IF A SUPERPLASTICIZER OR MID-RANGE WATER REDUCING ADMIXTURE IS USED IN THE MIX DESIGN, THE SLUMP SHALL NOT EXCEED 8" AFTER ADDITION OF THE ADMIXTURE. DO NOT ADD WATER TO CONCRETE AFTER ADDING WATER-REDUCING ADMIXTURES TO THE MIX.
7. U.N.O., ALL CONCRETE REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60 AND BE OF DOMESTIC MANUFACTURE. REINFORCING BARS TO BE WELDED SHALL CONFORM TO THE REQUIREMENTS OF ASTM A706, GRADE 60. WELDING TO REINFORCING BARS NOT SHOWN ON THE DRAWINGS, SHALL NOT BE PERMITTED. ELECTRICAL GROUNDING AND OTHER REQUIRED CONNECTIONS TO REINFORCING BARS SHALL BE ATTAINED VIA CLAMPS OR OTHER MANUFACTURED CONNECTIONS.
8. REINFORCING SHALL BE SUPPORTED AND SECURED IN ITS PROPER LOCATION TO PREVENT DISPLACEMENT DURING PLACEMENT OF CONCRETE.
9. THE CONTRACTOR SHALL VERIFY WITH ALL DISCIPLINES THE LOCATIONS OF ALL REQUIRED OPENINGS, SLEEVES, CAST-IN-PLACE ANCHORS OR HANGERS, SLAB DEPRESSIONS, INSERTS AND ANY OTHER ITEM TO BE CAST INTO THE CONCRETE.
10. ALL HIGH-STRENGTH GROUT SHALL BE PREPACKAGED, NON-METALLIC, AND NON-GASEOUS. IT SHALL BE NON-SHRINK ACCORDING TO ASTM C-1107 OR CRD-C-621. GROUT SHALL OBTAIN A MINIMUM COMPRESSIVE STRENGTH OF 7,000 PSI IN 28 DAYS AND SHALL NOT BLEED. GROUT SHALL BE MOIST CURED FOR A MINIMUM OF 24 HOURS AFTER PLACEMENT. SUBMIT CERTIFIED, INDEPENDENT TEST DATA FOR APPROVAL.

COLOMBIA BOLLARD DIRECT BURIAL BASE DETAIL



NOTES:
1. REFER TO PAGE 1 AND 2 OF OSU'S "OUTDOOR LIGHTING STANDARDS" FOR DESCRIPTIONS OF PRODUCTS.
2. BACKFILL AND COMPACTION REQUIREMENTS: UNLESS NOTED OTHERWISE BY A GEOTECHNICAL REPORT.
   a. ALL FILL MATERIALS SHALL BE FREE OF ORGANIC OR OTHER DELETERIOUS MATERIAL, HAVE A MAXIMUM PARTICLE SIZE LESS THAN 3 INCHES, HAVE A LIQUID LIMIT NOT MORE THAN 35 AND PLASTICITY INDEX IN THE RANGE OF 5 TO 18 AND PERCENT OF FINES PASSING THE #200 SIEVE NOTE LESS THAN 60 PERCENT.
   b. FILL SHALL BE PLACED IN MAXIMUM LIFTS OF 8" OF LOOSE MATERIAL AND SHALL BE COMPACTED TO A MOISTURE CONTENT RANGING TO -2 TO +3% OF OPTIMUM.
   c. ENSURE BOLLARD REMAINS PLUMB AND LEVEL DURING COMPACTION AND BACKFILL OPERATIONS.
3. REFER TO MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS FOR ADDITIONAL INFORMATION.

CEC

CEC CORPORATION
4555 W. MEMORIAL ROAD
OKLAHOMA CITY, OKLAHOMA 73142
P: 405.753.4200
WWW.CONNECTCEC.COM

STATE OF OK CERTIFICATE OF AUTHORIZATION
CA#: 32 EXPIRES: 2022-06-30

LICENSED PROFESSIONAL ENGINEER
CHRISTOPHER L. SNIDER
11-02-2020
23089
OKLAHOMA

REVISION HISTORY

NO.	DESCRIPTION	DATE

SUBMITTAL:

DATE:	10/16/20
PROJECT NO:	190071.23
DESIGNED BY:	C.L.S.
DRAWN BY:	J.F.R.
APPROVED BY:	C.L.S.
SCALE:	AS SHOWN

OSU BOLLARD LIGHT FOUNDATIONS

STILLWATER, OKLAHOMA

SHEET NAME
FOUNDATION DETAILS

SHEET
S5

PLOT DATE:

GENERAL NOTES

I. OVERALL NOTES

1. PRIOR TO BEGINNING ANY WORK OR ORDERING ANY MATERIALS, THE CONTRACTOR SHALL COORDINATE THE STRUCTURAL DRAWINGS WITH ALL OTHER TRADES. NOTIFY THE OWNER AND THE ENGINEER OF RECORD OF ANY DISCREPANCIES OR POSSIBLE DEFICIENCIES.
2. PRIOR TO STARTING WORK, THE CONTRACTOR SHALL VERIFY THE EXISTING SITE CONDITIONS AND CONSTRAINTS AS WELL AS EXISTING BUILDING LOCATION, DIMENSIONS, AND ELEVATIONS, IF ANY.
3. NO FIELD REVISIONS OR MODIFICATIONS TO ANY STRUCTURAL COMPONENT SHALL BE PERFORMED WITHOUT PRIOR APPROVAL BY THE ENGINEER OF RECORD.
4. PLANS AND DETAILS SHALL NOT BE SCALED FOR DETERMINATION OF LENGTHS, QUANTITIES, OR CONFIGURATION OF MATERIALS.

II. COORDINATION WITH OTHER TRADES

1. THE CONTRACTOR SHALL SUPPLY ALL ITEMS FOR ATTACHING MECHANICAL AND ELECTRICAL EQUIPMENT TO THE STRUCTURE TO RESIST ALL LOADS, INCLUDING SEISMIC FORCES. COORDINATE THE LOCATION(S) AND REQUIRED ATTACHMENT(S) WITH THE STRUCTURE. REFER TO THE ELECTRICAL AND MECHANICAL DOCUMENTS FOR ADDITIONAL REQUIREMENTS.
2. COORDINATE AND PROVIDE SLEEVE LAYOUTS FOR ALL PIPES, CONDUITS, OR ANY OTHER ITEMS PENETRATING THROUGH STRUCTURAL MEMBERS. LAYOUTS ARE TO BE SUBMITTED TO AND APPROVED BY THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION.

III. GEOTECHNICAL NOTES

1. THE FOUNDATIONS FOR THIS STRUCTURE WE REDESIGNED BASED UPON THE PRESUMPTIVE ALLOWABLE VALUES AS DESCRIBED IN THE 2015 INTERNATIONAL BUILDING CODE, TABLE 1806.2 “PRESUMPTIVE LOAD-BEARING VALUES” FOR CLAY, SANDY CLAY, SILTY CLAY, CLAYEY SILT, SILT, AND SANDY SILT. SHOULD ACTUAL SITE CONDITIONS VARY FROM THIS, THE FOUNDATION SHALL BE REDESIGNED.

IV. REINFORCED CONCRETE NOTES

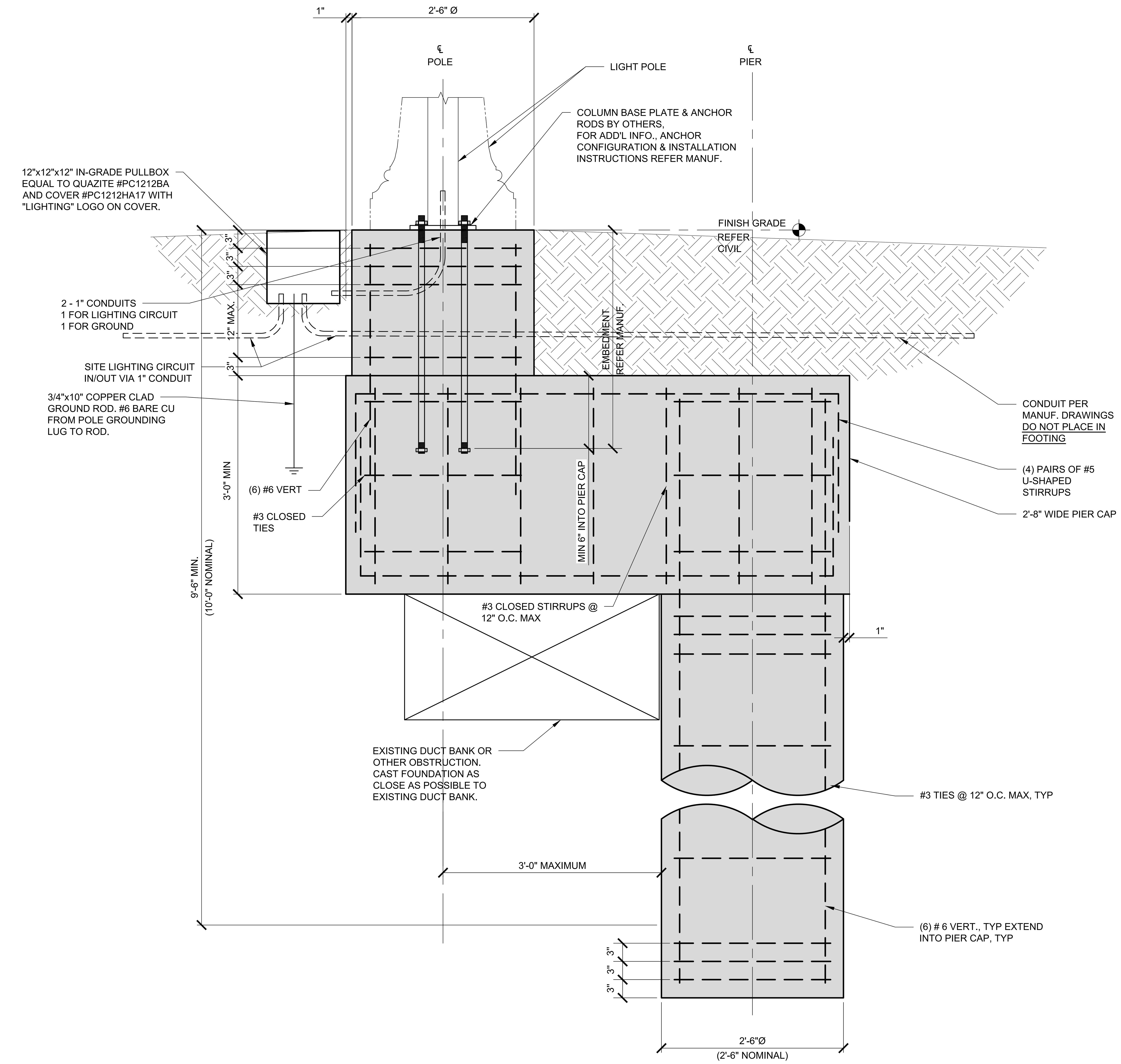
1. ALL REINFORCED CONCRETE SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301 “SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS”, LATEST EDITION INCLUDING AMENDMENTS, AND ACI 318 “BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE”, EDITION REFERENCED IN THE 2009 INTERNATIONAL BUILDING CODE.
2. TOLERANCES FOR CONCRETE MEMBERS AND COMPONENTS SHALL CONFORM TO ACI 117 “SPECIFICATION FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS.”
3. DETAILING OF CONCRETE REINFORCEMENT AND ACCESSORIES SHALL CONFORM TO ACI 315 “DETAILS AND DETAILING OF CONCRETE REINFORCEMENT.”
4. U.N.O., CONCRETE SHALL HAVE SAND AND CRUSHED STONE OR GRAVEL AGGREGATE AND TYPE I, II, OR I/II PORTLAND CEMENT. THE CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,500 PSI AND A MAXIMUM WATER/CEMENTITIOUS MATERIALS RATIO OF 0.50, AND SHALL BE AIR ENTRAINED WITH AIR CONTENT OF 6% ±1.5%.
5. NORMAL WEIGHT AGGREGATE SHALL CONFORM TO ASTM C33.
6. SLUMP OF CONCRETE SHALL NOT EXCEED 3” AT THE END OF THE TRUCK OR PUMP HOSE (PER ACI 211.1 TABLE 6.3.1). SLUMP LOSS DUE TO PUMPING SHALL BE ACCOMMODATED. IF A SUPERPLASTICIZER OR MID-RANGE WATER REDUCING ADMIXTURE IS USED IN THE MIX DESIGN, THE SLUMP SHALL NOT EXCEED 8” AFTER ADDITION OF THE ADMIXTURE. DO NOT ADD WATER TO CONCRETE AFTER ADDING WATER-REDUCING ADMIXTURES TO THE MIX.
7. U.N.O., ALL CONCRETE REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60 AND BE OF DOMESTIC MANUFACTURE. REINFORCING BARS TO BE WELDED SHALL CONFORM TO THE REQUIREMENTS OF ASTM A706, GRADE 60. WELDING TO REINFORCING BARS NOT SHOWN ON THE DRAWINGS, SHALL NOT BE PERMITTED. ELECTRICAL GROUNDING AND OTHER REQUIRED CONNECTIONS TO REINFORCING BARS SHALL BE ATTAINED VIA CLAMPS OR OTHER MANUFACTURED CONNECTIONS.
8. REINFORCING SHALL BE SUPPORTED AND SECURED IN ITS PROPER LOCATION TO PREVENT DISPLACEMENT DURING PLACEMENT OF CONCRETE.
9. THE CONTRACTOR SHALL VERIFY WITH ALL DISCIPLINES THE LOCATIONS OF ALL REQUIRED OPENINGS, SLEEVES, CAST-IN-PLACE ANCHORS OR HANGERS, SLAB DEPRESSIONS, INSERTS AND ANY OTHER ITEM TO BE CAST INTO THE CONCRETE.
10. ALL HIGH-STRENGTH GROUT SHALL BE PREPACKAGED, NON-METALLIC, AND NON-GASEOUS. IT SHALL BE NON-SHRINK ACCORDING TO ASTM C-1107 OR CRD-C-621. GROUT SHALL OBTAIN A MINIMUM COMPRESSIVE STRENGTH OF 7,000 PSI IN 28 DAYS AND SHALL NOT BLEED. GROUT SHALL BE MOIST CURED FOR A MINIMUM OF 24 HOURS AFTER PLACEMENT. SUBMIT CERTIFIED, INDEPENDENT TEST DATA FOR APPROVAL.

LIGHT POLE REACTIONS AT T.O. FOUNDATION BASIS OF DESIGN

POLE SIZE	BENDING MOMENT (FT/LBS)	TORSION (FT/LBS)	SHEAR FORCE (LBS)	AXIAL FORCE (LBS)
REFER LIGHT POLE DESCRIPTIONS	17,596	1149	1089	1055

1. SHOULD FOUNDATION REACTIONS FROM SELECTED FIXTURE(S) EXCEED THE BASIS OF DESIGN, THE FOUNDATIONS SHALL BE RE-EVALUATED.
2. REFER TO PAGE 1 AND 2 OF OSU'S "OUTDOOR LIGHTING STANDARDS" FOR DESCRIPTIONS OF PRODUCTS.

ROADWAY LIGHT POLE FOUNDATION WITH OBSTRUCTION AT DRILLED PIER (WITH CLAMSHELL BASE)



(WITHOUT BOLLARD)

CEC

CEC CORPORATION · WWW.CONNECTCEC.COM · STILLWATER, OKLAHOMA

CHRISTOPHER L. SNIDER · 11-02-2020 · 23089 · LICENSED PROFESSIONAL ENGINEER · OKLAHOMA

REVISION HISTORY

NO.	DESCRIPTION	DATE

SUBMITTAL:	
DATE:	10/16/20
PROJECT NO:	190071.23
DESIGNED BY:	C.L.S.
DRAWN BY:	J.F.R.
APPROVED BY:	C.L.S.
SCALE:	AS SHOWN

OSU BOLLARD LIGHT FOUNDATIONS

STILLWATER, OKLAHOMA

SHEET NAME: FOUNDATION DETAILS

SHEET: S6

PLOT DATE: