DESIGN CRITERIA

DESIGN: AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORT FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, 1ST EDITION WITH INTERIM REVISIONS THROUGH 2022.

LOADING: BASIC WIND SPEED, V = 90 MPH

MATERIALS: STRUCTURAL STEEL:
ANCHOR BOLTS, F1554 GRADE 55
ANCHOR PLATE, A709 GRADE 36 OR 50
WELD FILLER METAL, F_u = 70,000 PSI

REINFORCED CONCRETE:
FOUNDATION, F'_c = 3,250 PSI, F_y = 60,000 PSI

CIDH FOUNDATION DESIGN (BROMS' METHOD):
COHESIONLESS SOIL METHOD:
SOIL UNIT WEIGHT, γ = 120 PSF
FRICTION ANGLE, ϕ = 30°
COHESIVE SOIL METHOD:
SHEAR STRENGTH, c = 1500 PSF

FOUNDATION INSTALLED IN NON-CORROSIVE SITE. A SITE IS CONSIDERED CORROSIVE IF THE pH IS 5.5 OR LESS, OR CHLORIDE CONCENTRATION IS 500 PARTS PER MILLION OR GREATER, OR SULFATE CONCENTRATION IS 1,500 PPM OR GREATER.

LIGHT POLE FOUNDATIONS INSTALLED IN LIQUEFIABLE SOIL MAY EXPERIENCE LIQUEFACTION-INDUCED SETTLEMENT RESULTING IN TILTED LIGHT POLE THAT MAY NOT BE ECONOMICALLY REPAIRABLE IN THE EVENT OF A MAJOR EARTHQUAKE.

GENERAL

WORK SHOWN ON THESE DRAWINGS ARE FOR THE FOUNDATION ONLY. DESIGN FOR THE LIGHT POLES AND BASE PLATE ARE THE RESPONSIBILITY OF OTHERS.

WORK SHALL CONFORM TO AMERICANS WITH DISABILITIES ACT STANDARDS AND REQUIREMENTS, WHERE APPLICABLE.

WORK SHALL CONFORM TO THE LINES, ELEVATIONS AND GRADES SHOWN ON THE PLANS OR ESTABLISHED BY THE ENGINEER. CONSTRUCTION OF CONCRETE FOUNDATIONS AND CAPS SHALL CONFORM TO STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2021 EDITION (GREENBOOK) SECTIONS 303-1, 303-5, AND 305-1.3.

FOUNDATIONS

FOUNDATIONS SHALL BE CAST-IN-PLACE PILES CONSTRUCTED IN A SINGLE PLACEMENT OF CONCRETE IN A DRILLED HOLE.

CONCRETE SHALL BE PER CITY STANDARD OR CLASS 560-C-3250 OR 532-CFW-3250 PER GREENBOOK SECTION 201. REINFORCING STEEL SHALL BE GRADE 60.

FOUNDATIONS SHALL CURE FOR 7 DAYS BEFORE ERECTING LIGHT POLES.

FOUNDATIONS CONSTRUCTED SHALL POSE NO HAZARD TO PEDESTRIAN TRAFFIC. THE ABOVE-GROUND PORTION OF A FOUNDATION, IF ANY, AND/OR ANCHOR BOLTS, CONDUITS ETC. SHALL BE PROTECTED WITH PROTECTION DEVICES APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL CONNECT THE PROTECTION DEVICES TO THE FOUNDATION. PROTECTION DEVICES SHALL PROTECT PEDESTRIANS FROM THE ABOVE GROUND PORTION OF THE FOUNDATION, AND/OR EXPOSED ANCHOR BOLTS, CONDUIT, ETC. PROTECTION DEVICES SHALL REMAIN AND BE MAINTAINED IN PLACE UNTIL THE RELATED EQUIPMENT IS INSTALLED ON THE FOUNDATION.

FOUNDATION CAPS SHALL BE THE SAME COLOR, FINISH, AND MATERIAL AS THE ADJACENT SIDEWALK. FOUNDATION CAPS SHALL BE PLACED AFTER THE LIGHT POLE IS SET IN ITS FINAL POSITION. THE LONGITUDINAL GRADE SHALL BE THE SAME AS THE GRADE FOR THE TOP OF THE EXISTING CURB. IF THERE IS NO CURB, THE LONGITUDINAL GRADE WILL BE ESTABLISHED BY THE ENGINEER. THE TRANSVERSE GRADE SHALL BE ESTABLISHED AS FOLLOWS:

A) EXISTING CURB AND NO SIDEWALK -BY SLOPING UPWARD FROM THE TOP OF THE BACK FACE OF CURB AT THE RATE OF ¼ INCH/FOOT.

B) EXISTING CURB AND SIDEWALK -BY STRAIGHT GRADE FROM THE TOP OF THE BACK FACE OF CURB TO THE TOP OF THE NEAR EDGE OF SIDEWALK, AND SHALL JOIN FLUSH ALL AROUND IN FULL-WIDTH SIDEWALK OR SIDEWALK CONSTRUCTED ADJACENT TO THE CURB.

C) SERVICE ROAD PARKWAYS -BY A STRAIGHT LINE BETWEEN THE TOP OF THE BACK FACE OF ONE CURB TO THE TOP OF THE BACK FACE OF THE OTHER CURB.

D) IF THE LATERAL GRADE OF THE EXISTING PARKWAY EXCEEDS A SLOPE OF ±1 INCH/FOOT, THE CONTRACTOR SHALL CONSTRUCT RETAINING CURBS AND SIDEWALK AS DIRECTED BY THE ENGINEER.

ANCHOR BOLTS, NUTS, AND WASHERS

ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE FURNISHED BY THE CONTRACTOR AND SHALL BE OF THE TYPE AND SIZE SHOWN HEREON STANDARD DRAWING SM 22. FOR LIGHT POLE FOUNDATION STANDARD C-1 AND C-2, SEE ANCHORAGE DETAIL SHOWN ON SHEET 5 OF 5. FOR LIGHT POLE FOUNDATION STANDARD C-3, SEE FOUNDATION DETAIL SHOWN ON SHEET 4 OF 5.

LIGHT POLES, MAST ARMS AND LUMINAIRES

LIGHT POLES, MAST ARMS, AND LUMINAIRES SHALL BE FURNISHED BY THE CONTRACTOR AND SHALL BE OF THE TYPE AND SIZE SHOWN ON THE PROJECT SPECIFIC PLANS.

VERTICAL ALIGNMENT SHALL BE PERFORMED BY ADJUSTING THE NUTS ON THE ANCHOR BOLTS BEFORE THE FOUNDATION CAP IS PLACED. SHIMS OR OTHER SIMILAR DEVICES SHALL NOT BE USED. PLUMBNESS TOLERANCE SHALL BE 1/16 INCH PER 10 FEET OF POST.

MAST ARMS SHALL CONFORM TO THE DIMENSIONS SHOWN ON THE PROJECT SPECIFIC PLANS. THE JOINT BETWEEN THE LIGHT POLE AND MAST ARM SHALL BE RAIN-TIGHT.

INSPECTIONS

THE FOLLOWING INSPECTIONS ARE REQUIRED:

A. DRILLING OF HOLE

B. REINFORCING STEEL PLACEMENT

C. ANCHOR BOLT PLACEMENT

D. CONCRETE PLACEMENT

INSPECTIONS SHALL BE PERFORMED BY A RESIDENT ENGINEER, CITY REPRESENTATIVE, AND/OR REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. CONTRACTOR SHALL NOTIFY THE CITY A MINIMUM OF 3 DAYS PRIOR TO WHEN INSPECTION IS REQUIRED.

City of **Santa Monica**
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1685 Main Street, Mail Stop 15, Santa Monica, CA 90401
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LIGHT POLE FOUNDATION STANDARD NOTES

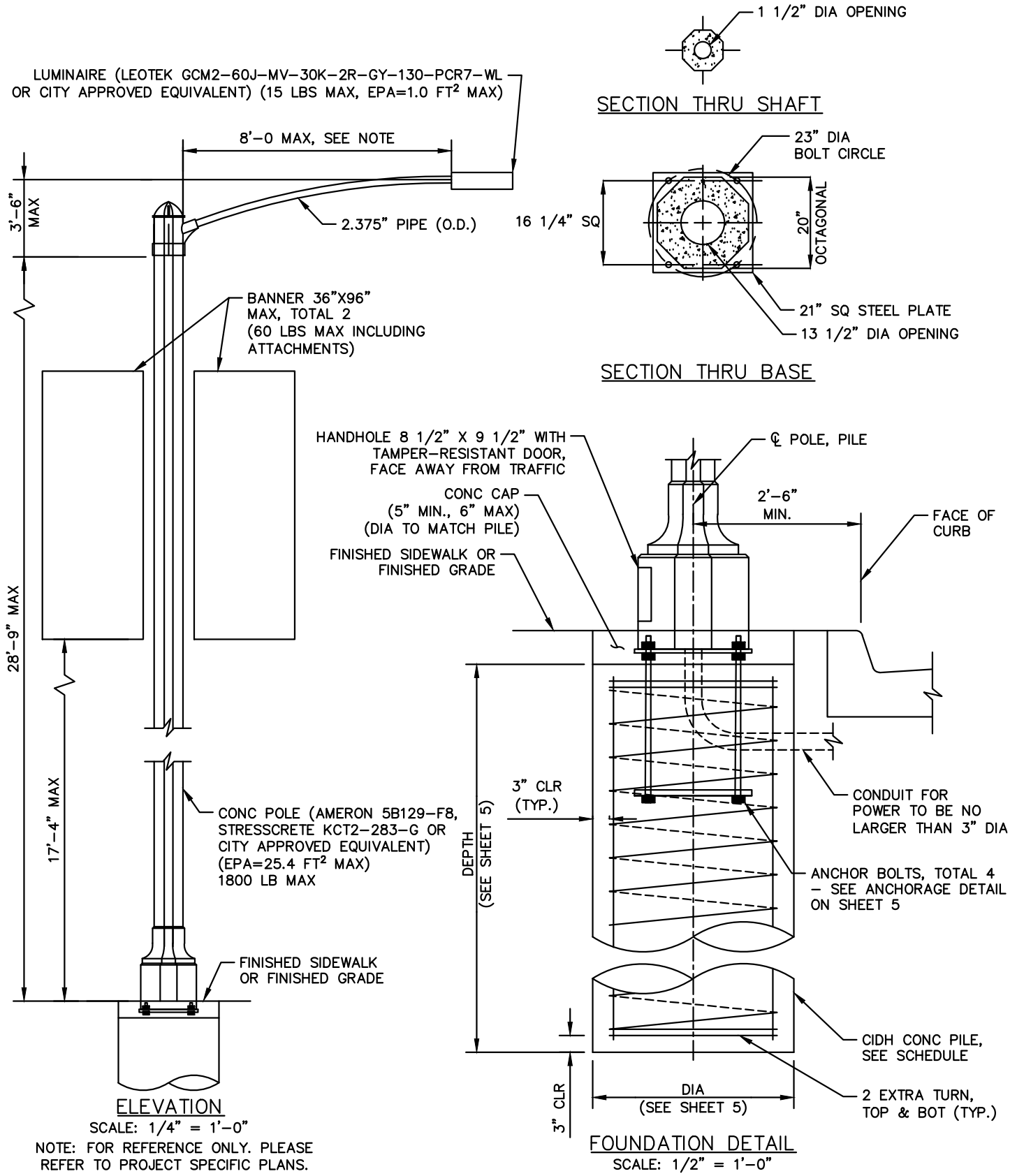
SUBMITTED BY : Conner Doolan, P.E.

APPROVED BY : DATE : 10/22/2024

Alex Nazarchuk, P.E., City Engineer

DRAWING NO. SM 22

SHEET NO. 1 of 5



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LIGHT POLE FOUNDATION STANDARD TYPE C-1 (CONCRETE POLE)

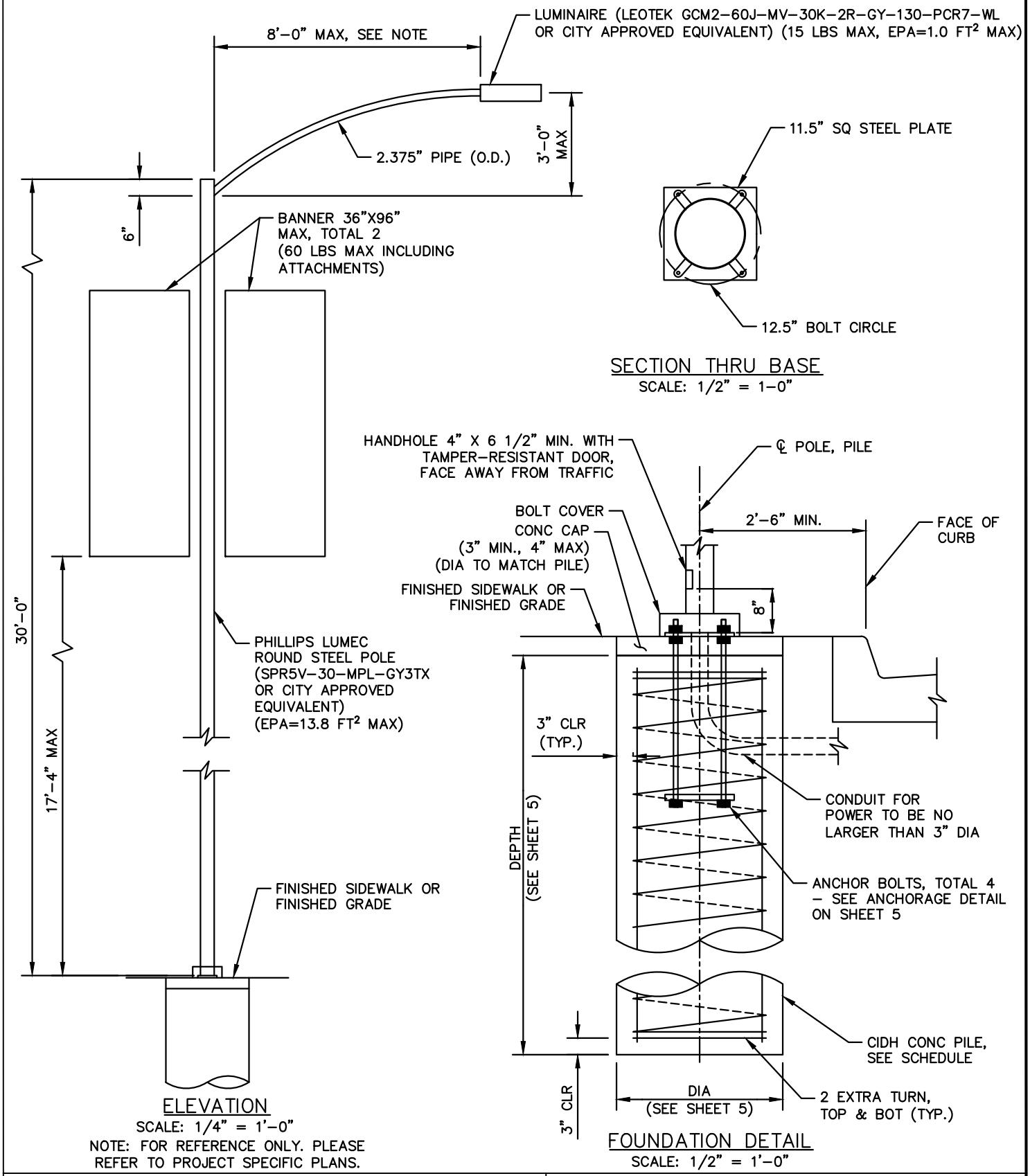
SUBMITTED BY : Conner Doolan, P.E.

APPROVED BY : DATE : 10/22/2024

Alex Nazarchuk, P.E., City Engineer

DRAWING NO. SM 22

SHEET NO. 2 of 5



SECTION THRU BASE
SCALE: 1/2" = 1-0"

ELEVATION
SCALE: 1/4" = 1'-0"
NOTE: FOR REFERENCE ONLY. PLEASE REFER TO PROJECT SPECIFIC PLANS.

FOUNDATION DETAIL
SCALE: 1/2" = 1'-0"

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LIGHT POLE FOUNDATION STANDARD TYPE C-2 (METAL POLE)

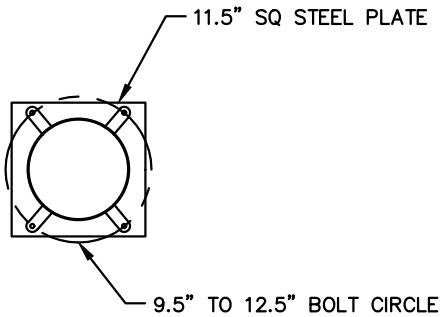
SUBMITTED BY : Conner Doolan, P.E.

APPROVED BY : DATE : 10/22/2024

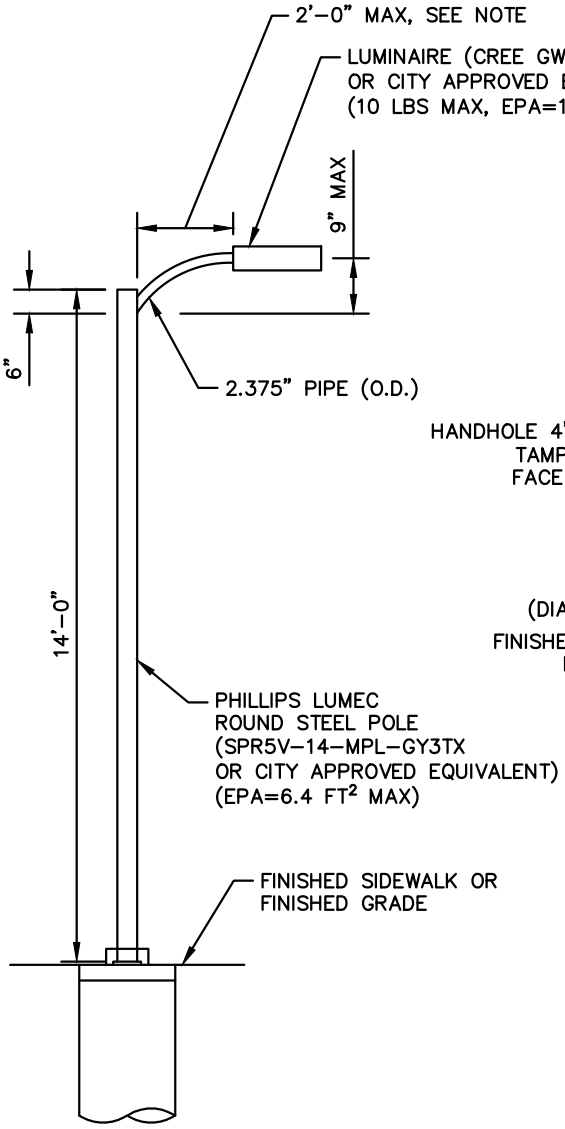
Alex Nazarchuk, P.E., City Engineer

DRAWING NO. SM 22

SHEET NO. 3 of 5

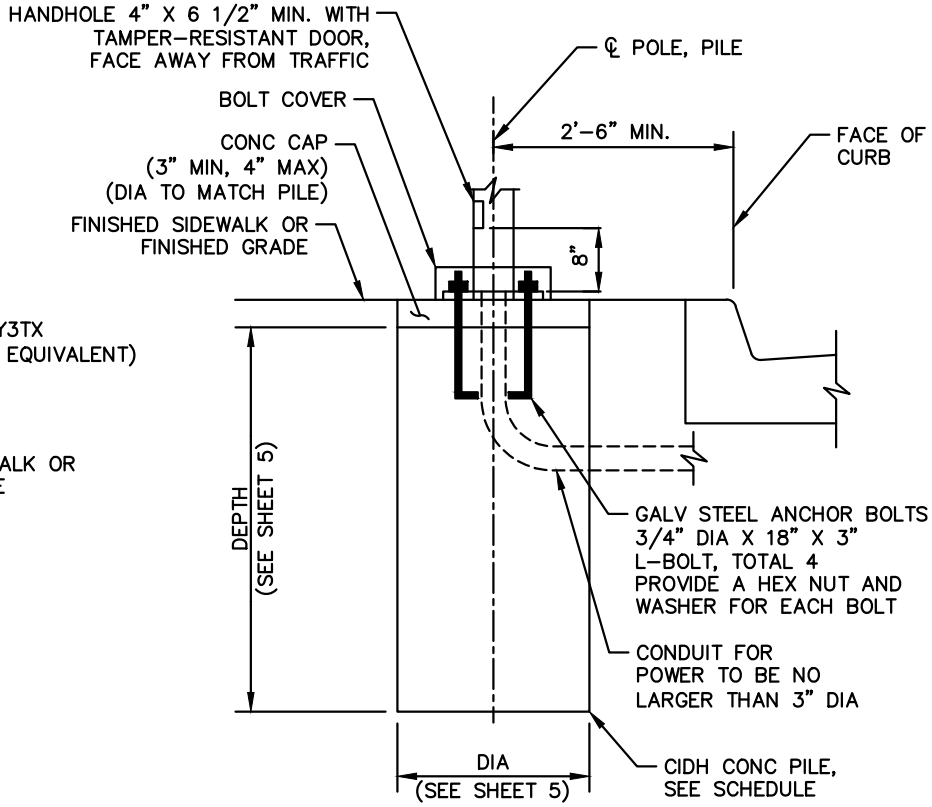


SECTION THRU BASE
SCALE: 1/2" = 1-0"



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

NOTE: FOR REFERENCE ONLY. PLEASE
REFER TO PROJECT SPECIFIC PLANS.



FOUNDATION DETAIL
SCALE: 1/2" = 1'-0"

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LIGHT POLE FOUNDATION STANDARD TYPE C-3 (PEDESTRIAN METAL POLE)

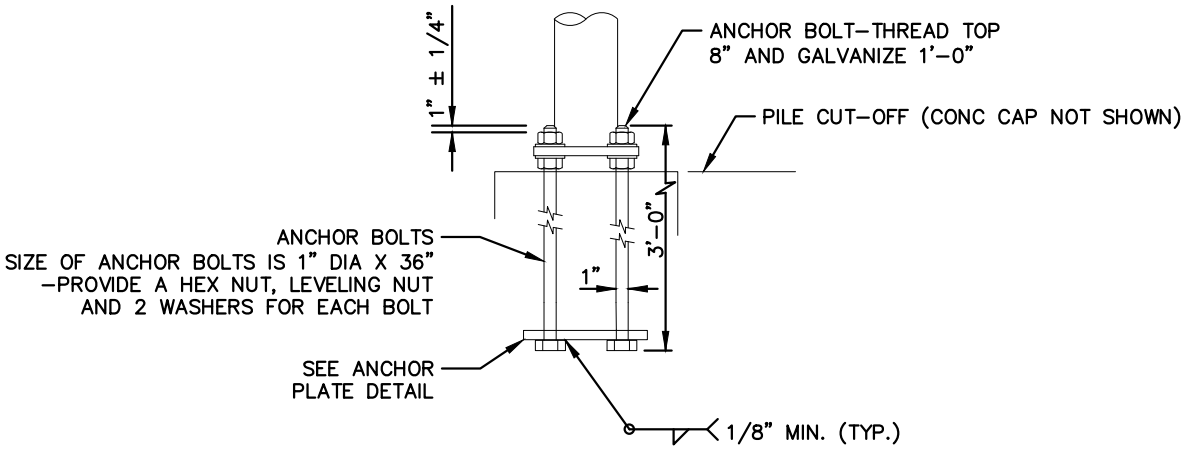
SUBMITTED BY : Conner Doolan, P.E.

APPROVED BY : DATE : 10/22/2024

Alex Nazarchuk, P.E., City Engineer

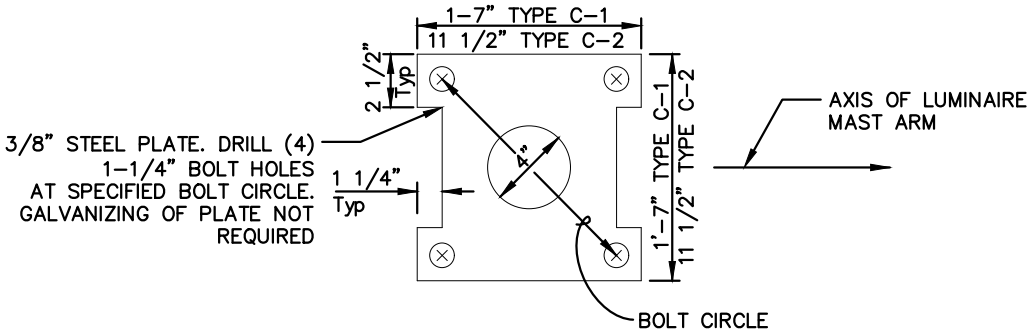
DRAWING NO.
SM 22
SHEET NO.
4 of 5

CIDH PILE FOUNDATION SCHEDULE				
TYPE	DIA	DEPTH	VERTICAL REINF	SPIRAL REINF
C-1	3'-0"	7'-0"	(12)-#6	#5 AT 6" PITCH
C-2	2'-6"	6'-0"	(9)-#6	#4 AT 6" PITCH
C-3	2'-0"	4'-0"	NO REINF	NO REINF



NOTE: APPLIES TO STANDARD TYPES C-1 AND C-2 ONLY.

ANCHORAGE DETAIL
NOT TO SCALE



ANCHOR PLATE DETAIL
NOT TO SCALE

NOTE:
1. ANCHOR BOLTS SHALL BE HELD IN POSITION FOR POURING BY MEANS OF ANCHOR PLATES AND SUITABLE TEMPLATES. DEVIATION FROM THE HORIZONTAL POSITION SHALL NOT EXCEED 1/16".

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LIGHT POLE FOUNDATION STANDARD DETAILS

SUBMITTED BY : Conner Doolan, P.E.

APPROVED BY : DATE : 10/22/2024

Alex Nazarchuk, P.E., City Engineer

DRAWING NO. SM 22

SHEET NO. 5 of 5