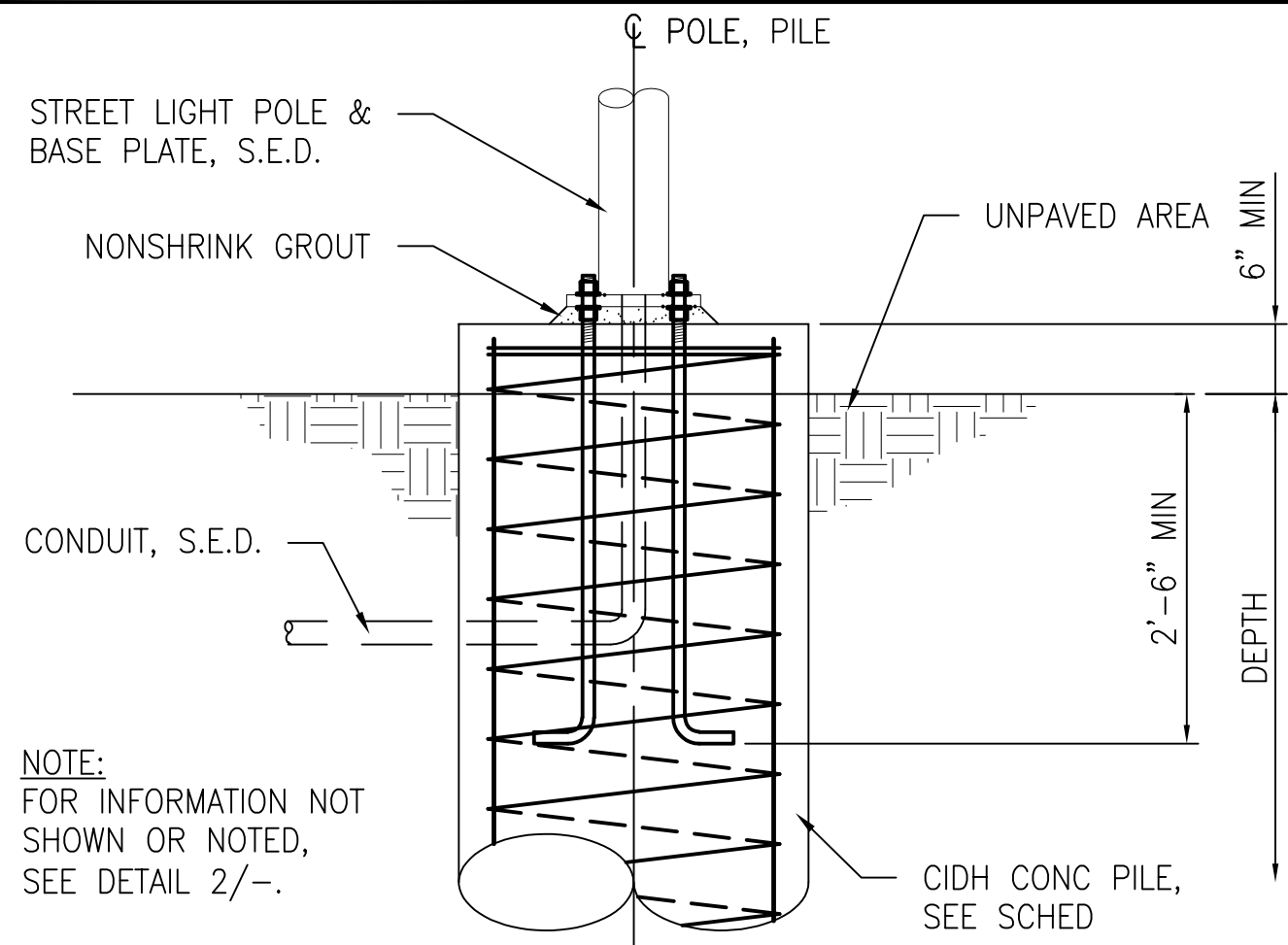
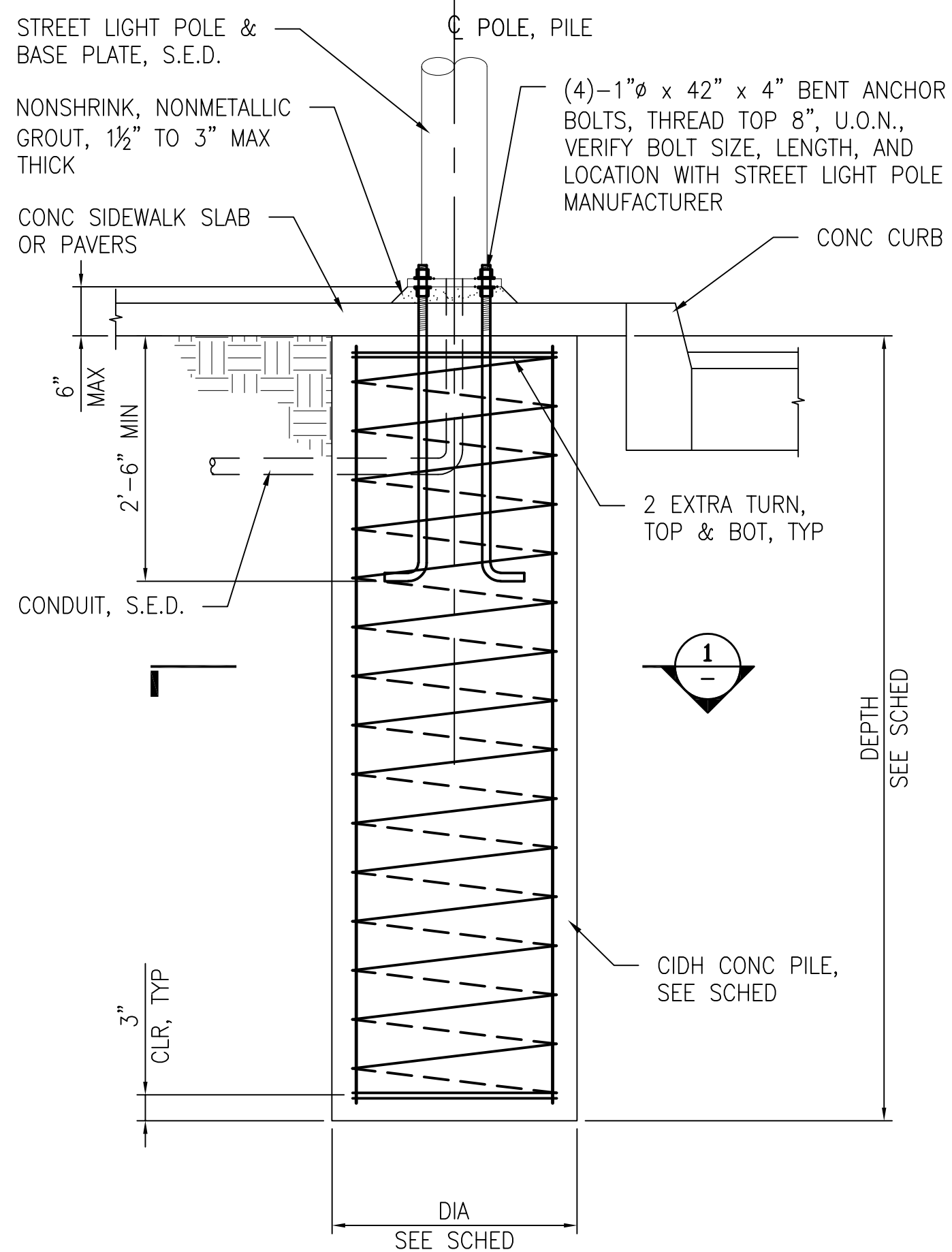


**SECTION 1**  
SCALE: NONE

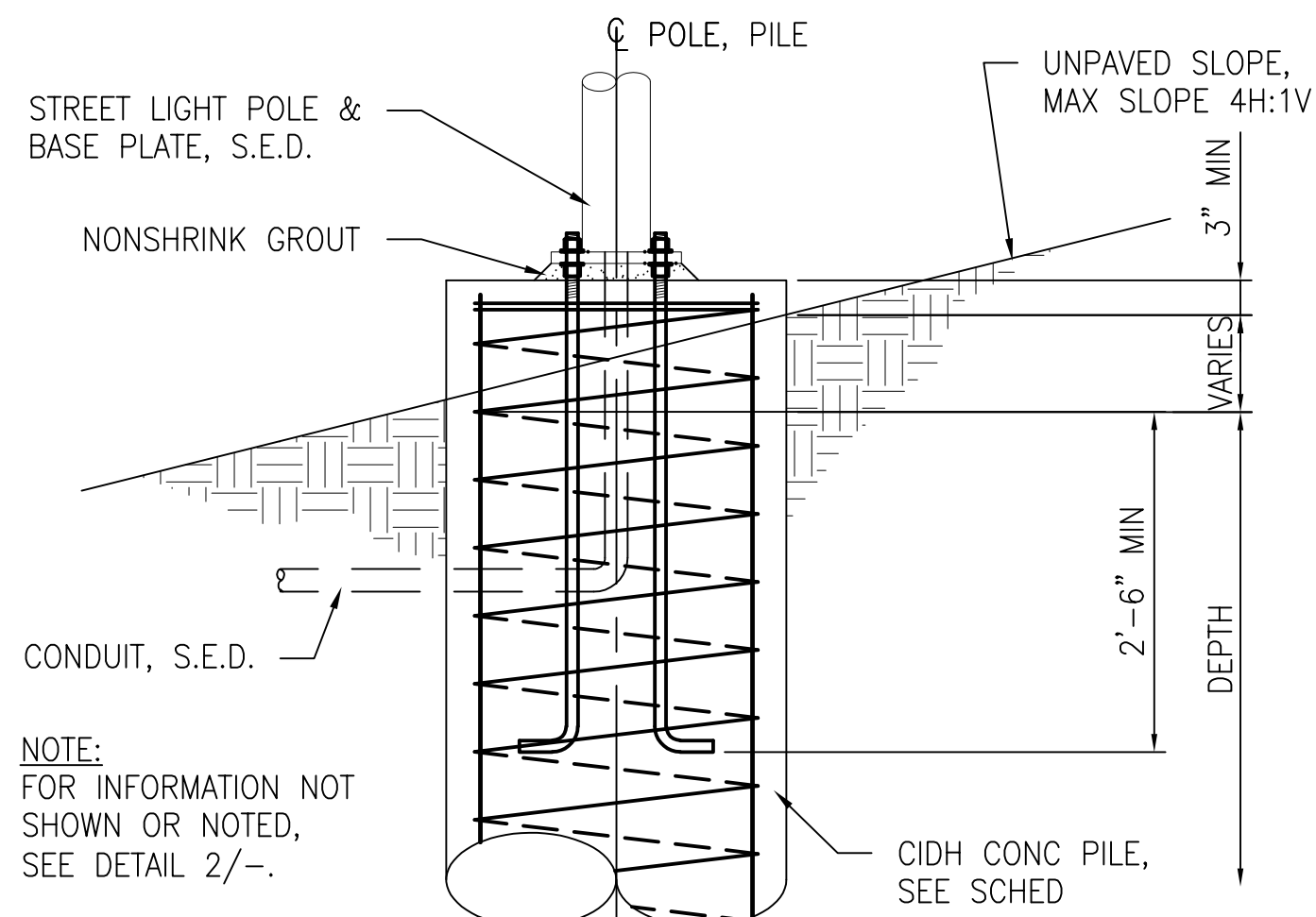


**SECTION 3**  
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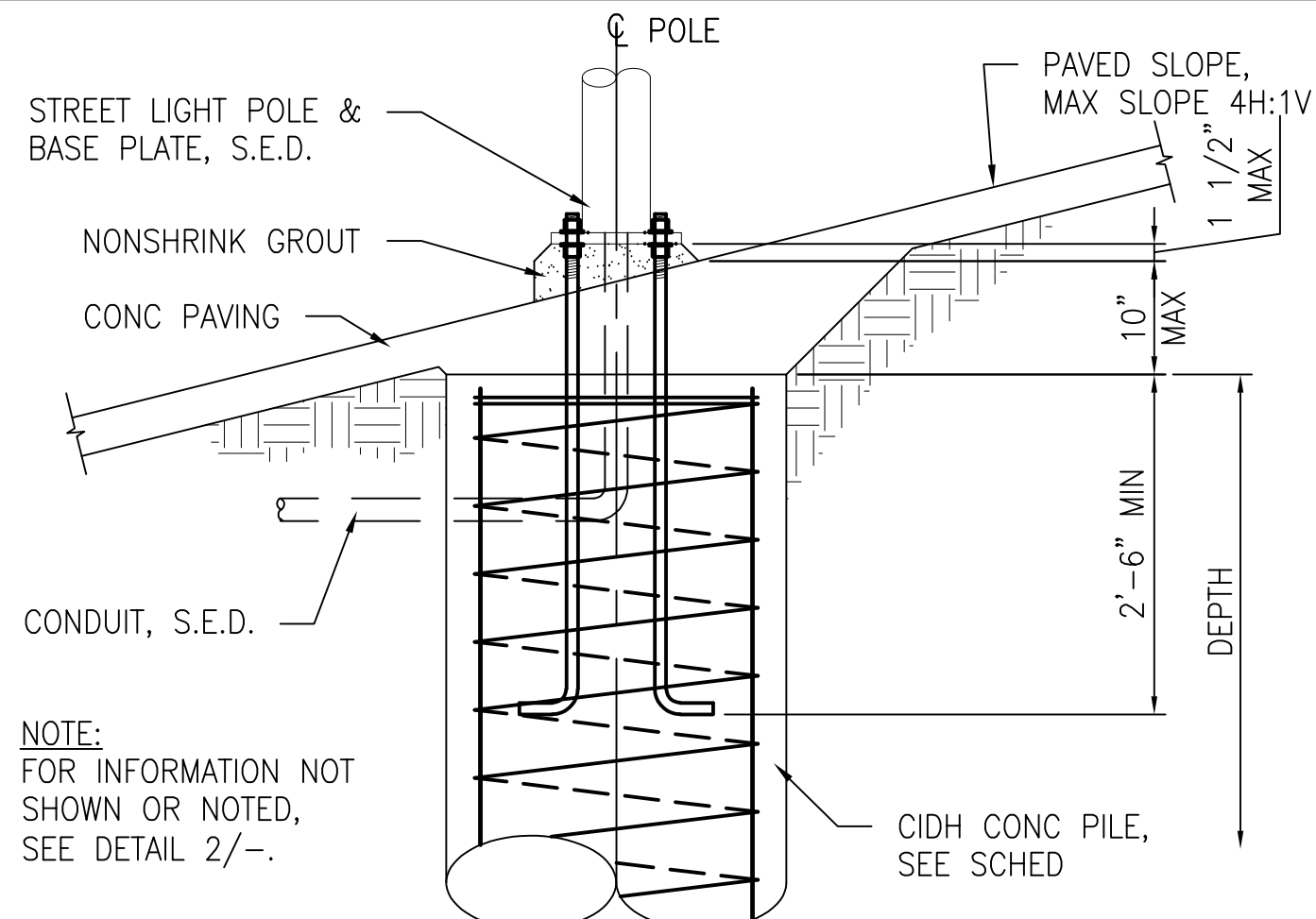
CIDH PILE FOUNDATION SCHEDULE				
TYPE	DIA	DEPTH	VERTICAL REINF	SPIRAL REINF
A	2'-6"	9'-0"	(10)-#6	#4 AT 6" PITCH
B	2'-6"	8'-0"	(10)-#6	#4 AT 6" PITCH
C	3'-0"	8'-0"	(12)-#7	#5 AT 6" PITCH



**SECTION 2**  
SCALE: NONE



**SECTION 4**  
SCALE: NONE



**SECTION 5**  
SCALE: NONE

**GENERAL NOTES**

1. THE STRUCTURAL WORK SHOWN ON THESE DRAWINGS COMPRISES CAST-IN-DRILLED-HOLE (CIDH) CONCRETE PILE FOUNDATIONS FOR STREET LIGHT POLES.
2. STANDARD STREET LIGHT POLE FOUNDATIONS SHOWN HEREIN ARE INTENDED TO SUPPORT STEEL STREET LIGHT POLES WITH BASE PLATES HAVING ANCHOR BOLT CIRCLE OF 20" OR LESS, U.O.N.
3. ALTERNATE STREET LIGHT POLE FOUNDATIONS MAY BE USED FOR SITE AND PROJECT SPECIFIC CONDITIONS. SUCH PLANS SHALL BE SEALED AND SIGNED BY A REGISTERED DESIGN PROFESSIONAL IN THE STATE OF CALIFORNIA.
4. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO THE START OF CONSTRUCTION OR FABRICATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS AND SPECIFICATIONS PRIOR TO THE START OF CONSTRUCTION OR FABRICATION. ANY DISCREPANCIES, INCONSISTENCIES, OR UNSOUND CONDITIONS SHALL BE REPORTED TO THE ENGINEER FOR RESOLUTION PRIOR TO THE START OF ANY CONSTRUCTION OR FABRICATION SO THAT A CLARIFICATION CAN BE ISSUED.
5. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTION OF ADJACENT STRUCTURES DURING CONSTRUCTION. THE CONTRACTOR SHALL BEAR ALL EXPENSE FOR REPAIR OR REPLACEMENT.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING PIPES, DUCTS, AND UTILITIES, WHETHER SHOWN HEREIN OR NOT, AND TO PROTECT THEM FROM DAMAGE. THE CONTRACTOR SHALL BEAR ALL EXPENSE FOR REPAIR OR REPLACEMENT.
7. WORK SHOWN ON THESE DRAWINGS ARE FOR THE FOUNDATION ONLY. STRENGTH DESIGN AND FATIGUE ANALYSIS FOR STREET LIGHT POLES AND ANCHORAGE ARE THE RESPONSIBILITY OF OTHERS. CONSTRUCTION QUALITY IS THE RESPONSIBILITY OF THE CONSTRUCTION CONTRACTOR AND POLE MANUFACTURER.

**BASIS OF DESIGN**

1. DESIGN OF LUMINAIRE SUPPORT IS IN CONFORMANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) "LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS", FIRST EDITION 2015 WITH 2018 AMENDMENTS.
2. WIND DESIGN CRITERIA:  
  
STRENGTH LIMIT STATE: BASIC WIND SPEED = 115 MPH (3-SECOND GUST) FOR 1700-YEAR MEAN RECURRENCE INTERVAL, TYPICAL RISK CATEGORY WITH AVERAGE DAILY TRAFFIC VOLUME > 10,000.  
  
SERVICEABILITY LIMIT STATE: BASIC WIND SPEED = 100 MPH (3-SECOND GUST) FOR LATERAL DISPLACEMENT LIMITED TO 1/2" AT TOP OF FOUNDATION.
3. STANDARD STREET LIGHT POLE FOUNDATION IS BASED ON PREDOMINATELY SANDY DEPOSIT IN THE CITY OF SAN FRANCISCO WITH SOIL INTERNAL FRICTION ANGLE OF 30 DEGREES OR MORE AND EFFECTIVE UNIT WEIGHT OF 120 PCF. FOR STREET LIGHT POLES INSTALLED IN SOIL WITH SOIL INTERNAL FRICTION ANGLE LESS THAN 30 DEGREES, SUCH AS CLAY DEPOSITS, FOUNDATIONS SHALL BE DESIGNED BY A REGISTERED DESIGN PROFESSIONAL IN THE STATE OF CALIFORNIA.
4. STREET LIGHT POLE CIDH PILE 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.

**INSPECTIONS**

1. THE FOLLOWING INSPECTIONS ARE REQUIRED:
  - a. DRILLING OF HOLE
  - b. REINFORCING STEEL PLACEMENT
  - c. ANCHOR BOLT PLACEMENT
  - d. CONCRETE PLACEMENT
2. INSPECTIONS SHALL BE PERFORMED BY A SPECIAL INSPECTION AGENCY, RESIDENT ENGINEER, CITY REPRESENTATIVE, AND/OR REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE.
3. CONTRACTOR SHALL NOTIFY THE INSPECTOR A MINIMUM OF 3 DAYS PRIOR TO WHEN INSPECTION IS REQUIRED.

**CAST-IN-DRILLED-HOLE (CIDH) CONCRETE PILE FOUNDATIONS**

1. STREET LIGHT POLE PILE FOUNDATIONS SHALL BE LOCATED A MINIMUM OF 7'-6" FROM ANY NEARBY BELOW GRADE FOUNDATION, BASEMENT, OR VAULT AS MEASURED FROM CENTERLINE OF PILE TO FACE OF NEARBY STRUCTURE.
2. STREET LIGHT POLE PILE FOUNDATIONS SHALL BE INSTALLED ON SLOPES NOT EXCEEDING 4:1 (HORIZONTAL:VERTICAL) UNLESS APPROVED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE.
3. STREET LIGHT POLE PILE FOUNDATIONS THAT ENCOUNTER GROUNDWATER IN BOTTOM 4 FEET DURING DRILLING SHALL BE INCREASED IN DEPTH BY 1 FOOT. IF GROUNDWATER IS ENCOUNTERED IN UPPER 4 FEET OF THE FOUNDATION DRILLING, FINAL DEPTHS SHALL BE DETERMINED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE.
4. NOTIFY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IF SOFT CLAY, ORGANIC SILTS, PEAT, LARGE AMOUNT OF ROOTS AND VEGETATION, OR OTHER UNSUITABLE MATERIAL IS ENCOUNTERED DURING DRILLING FOR ADDITIONAL REQUIREMENTS.
5. SHALLOW COMPETENT BEDROCK UNDER A THIN LAYER OF FILL AND/OR WEATHERED BEDROCK (RESIDUAL SOIL) MAY BE ENCOUNTERED IN THE CITY OF SAN FRANCISCO. UPON FIELD INSPECTION, LIGHT POLE FOUNDATIONS MAY BE TERMINATED AT SHALLOWER DEPTHS WITH MINIMUM 5 FEET INTO COMPETENT BEDROCK IF APPROVED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE.
6. THE CONTRACTOR SHALL PROVIDE TEMPORARY CASINGS OR LINERS WHEN DRILLING IN SAND AND SILTY SAND, AND AS REQUIRED, TO STABILIZE THE DRILLED SHAFT EXCAVATION, AND TO FORM THE UPPER 2 FEET OF THE LIGHT POLE FOUNDATION. THE TEMPORARY CASING OR LINER SHALL BE REMOVED AFTER CONCRETE PLACEMENT EXCEPT THAT CORRUGATED STEEL METAL CASING IS ALLOWED TO REMAIN IN PLACE.

**CONCRETE**

1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS.
2. CONCRETE SHALL BE READY-MIXED CONFORMING TO ASTM C94. CEMENT SHALL BE PORTLAND CEMENT TYPE II, CONFORMING TO ASTM C150. MAXIMUM AGGREGATE SIZE SHALL BE 1". MAXIMUM WATER/CEMENT RATIO SHALL BE 0.50.
3. SUPPLEMENTARY CEMENTITIOUS MATERIALS (SCM), SUCH AS SLAG, FLY ASH, SILICA FUME, AND CALCINED CLAY, AS A PERCENTAGE OF TOTAL WEIGHT OF CEMENTITIOUS MATERIAL SHALL BE A MINIMUM OF 25 PERCENT AND A MAXIMUM OF 50 PERCENT. COAL FLY ASH, AS A PERCENTAGE OF TOTAL WEIGHT OF CEMENTITIOUS MATERIAL, SHALL BE A MAXIMUM OF 20 PERCENT. COAL FLY ASH SHALL BE CLASS F, MEETING ASTM C618 REQUIREMENTS. FINELY GROUND GRANULATED BLAST-FURNACE SLAG SHALL CONFORM TO ASTM C989. WATER/CEMENT RATIO SHALL BE BASED ON TOTAL CEMENTITIOUS MATERIAL, INCLUDING SUPPLEMENTARY CEMENTITIOUS MATERIALS.
4. CONCRETE MIX DESIGNS, INCLUDING MATERIAL CERTIFICATES, SHALL BE SUBMITTED TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE FOR REVIEW AND APPROVAL PRIOR TO PLACEMENT.
5. FOUR TEST CYLINDERS FROM EACH 150 CUBIC YARDS PLACED IN ANY ONE DAY, SHALL BE SECURED AND TESTED BY AN APPROVED SPECIAL INSPECTION AND TESTING AGENCY - ONE TO BE TESTED AT 7 DAYS, TWO AT 28 DAYS, AND THE FOURTH HELD IN RESERVE.
6. CONTRACTOR SHALL REMOVE AND REPLACE ANY CONCRETE WHICH FAILS TO ATTAIN SPECIFIED STRENGTH IN 28 DAYS IF SO DIRECTED BY THE ENGINEER. ANY DEFECTS IN THE HARDENED CONCRETE SHALL BE SATISFACTORILY REPAIRED OR THE HARDENED CONCRETE SHALL BE REPLACED.

**REINFORCING STEEL**

1. REINFORCING STEEL SHALL CONFORM TO THE FOLLOWING STANDARDS:
  - a. DEFORMED BARS ASTM A615 OR ASTM A706, GRADE 60
  - b. SPIRAL REINFORCEMENT ASTM A615
2. ALL STEEL REINFORCING BAR BENDS SHALL BE MADE COLD.
3. REINFORCEMENT, ANCHORS, AND CONDUITS SHALL BE ACCURATELY POSITIONED AND SECURED AGAINST DISPLACEMENT BEFORE AND DURING CONCRETE PLACEMENT.
4. CONTRACTOR SHALL SUBMIT REINFORCING STEEL SHOP DRAWINGS AND MILL CERTIFICATES TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.

This Standard Plan was developed for use on Public Works projects in the City and County of San Francisco, and shall not be used without consulting a Registered Professional Engineer. San Francisco Public Works reserves the right to make revisions to this Standard Plan at any time.

NO.	DATE	DESCRIPTION	BY	APP.
TABLE OF REVISIONS				
THIS DRAWING WAS LAST MODIFIED: 01/19/24 15:54, BY: RLui				

REFERENCE INFORMATION & FILE NO. OF SURVEYS



Section Mgr:	RAYMOND LUI
Deputy Bureau Mgr:	FERNANDO CISNEROS
Acting Bureau Mgr:	IQBAL DHAPA

DESIGNED:	RL	DATE:	1/2023
DRAWN:	RL	DATE:	1/2023
CHECKED:	JS	DATE:	1/2023

SCALE:  
AS SHOWN  
SHEET OF SHEETS

STANDARD PLAN  
**STREETLIGHT POLE FOUNDATIONS**  
SHEET OF 1 OF 3

CONTRACT NO.	
DRAWING NO.	S-101
FILE NO.	122,382
REV. NO.	

Drawing Path: S:\SFA\Structural Standards\Drafting Standards\light pole foundation\BOE\_TB\_22.34.dwg  
 Model Units: Inches  
 Login: RLui  
 Plot Time: Mon, 12 Feb 2024 4:41 pm