

**STREET LIGHTING POLES & FIXTURES**

Unless otherwise indicated on the Plans, street lighting fixtures shall be LED, with details as noted on the project plans.

The PEC (photoelectric cell) shall be an Acuity **Dark to Light #DLL127F-1.5** or approved equal (NEMA 7-pin twist-lock, Fail Off, 120-277V).

Unless otherwise indicated on the Plans, lighting standards shall be **galvanized Caltrans type 15** lighting standard, per most current Caltrans Standard Plans, and luminaire arm length shall be **8 feet for 2 lane roads and 12 feet for roads 4 lanes or more.**

Unless otherwise indicated on the Plans, lighting standards shall have **underground feed** and that **voltage shall be 240 VAC.**

**CONSTRUCTION DETAILS**

Construction and installation of street lighting pull boxes, conduits and conductors shall conform to the specific project Plans, to City of Campbell Details No. E-1, E-2, E-3, E-4, E-5, E-6 and to the following:

Unless otherwise indicated on the Plans or as directed by the Engineer, street lighting foundations shall be constructed per most current Caltrans Standard Plans and located at **30"** (thirty inches) from face of curb to pole foundation centerline.

The foundation anchor bolts shall be set at the appropriate height so that when the pole is set and plumbed on leveling nuts with washers, and secured with the top nuts with washers, at least 4 threads or 1/2", but no more than 1", of clear anchor bolt thread will be exposed above the top nut. The leveling nuts shall be above the cap and in the groud area and washers shall be placed between the pole flange and the nuts used to secure the pole. **There should remain a minimum of 1 inch and a maximum of 2 inches between the bottom of the pole flange and the top of the sidewalk or PCC cap.**

After the pole is erected and plumbed, the Contractor shall place grout between the sidewalk or PCC cap and the pole flange.

In unimproved or landscaped areas a PCC pad shall be placed around the base of the lighting standard. This pad shall also encompass the street lighting pull box located at the base of the standard and shall conform to City of Campbell Detail No. E-6.

Unless otherwise noted on the Plans, conduits placed between pull boxes shall be **1 1/2"** schedule 40 PVC. **Conduits into street light foundations shall be 1 1/2" rigid galvanized steel (RGS).** PVC conduits shall have bell ends and RGS conduits shall have grounding bushings.

Unless otherwise indicated on the Plans or where the street light will be sourced from a PG & E secondary box less than 10 (ten) feet from the street light pole, a pull box shall be placed within 3 feet of the base of the new lighting standard and it shall contain the 5/8" x 8" copper-clad or 1/2" x 10" galvanized steel ground rod and the fuse holder for the street light fixture. The lid for this box shall read "CAMPBELL STREET LIGHTING". Pull box installation shall conform to City of Campbell Details No. E-3 and E-4.

Unless otherwise indicated on the Plans, a service pull box shall be placed within 3 feet of the PG&E secondary pull box as depicted in City of Campbell Detail No. E-1. The lid for this pull box shall read "CAMPBELL SERVICE" and pull box installation shall conform to City of Campbell Detail No. E-5.

Unless otherwise indicated on the Plans, all street lighting pull boxes shall be Caltrans #3 1/2 (Christy N9 or equal).

Conduit placed in a trench in paved areas shall be placed at 18" depth, back-filled with 2-sack sand-cement slurry and capped with 1 1/2" A.C. as per Detail 9 of the City of Campbell Standard Specifications (CCSS). Conduit placed in a trench under future sidewalk or driveway shall be installed at a depth of 18" and back-filled with 6" of 2-sack sand-cement slurry and the remainder with compacted back-fill per Detail 10 of the CCSS. Conduit placed in a trench in unimproved or landscaped areas shall be placed at 18" depth, back-filled with 6" of 2-sack sand-cement slurry and 12" of compacted native material as per Detail 11 of the CCSS.

A bare, stranded #8 AWG copper bond wire shall be placed in all new conduits and shall be tied to the lighting standard's grounding bolt inside the hand hole area, the grounding bushings of the foundation's RGS conduit and to the ground rod in the pull box adjacent to the new lighting standard. Bonding and grounding of street lighting standards and the conduit system shall conform to City of Campbell Details No. E-3 and E-4.

Street lighting conductors between pull boxes shall be **#8 AWG stranded copper with type TW or THW insulation** for 240 volt street lighting (red and black or black and black). Conductors from lighting fixture down to fuse holder in pull box shall be **solid copper #10 AWG with type TW or THW insulation** for 240 volt street lighting (red and black or black and black). TWN, THHN or THWN (nylon jacketed) insulation is NOT acceptable for any street lighting conductors.

Splicing of conductors shall be performed only in pull boxes and shall be made with crimped copper "C-taps". **Wire nuts shall NOT be used.** Splice insulation on conductor splices and on fuse holders shall be mastic-lined, heat-shrinkable, heavy wall polyolefin shrink tubing. **Self-fusing rubber tape, PVC electrical tape and/or brush-on waterproofing shall NOT be used as fuse holder or splice insulation.**

The fuse holders for 240 volt street lighting shall be Bussman "HEX" or Littelfuse "LEX" type. The fuses in the "CAMPBELL STREET LIGHTING" pull box shall be "ATDR3" or equal and the fuses in the "CAMPBELL SERVICE" pull box shall be "BAF-30", "OTM-30" or equal.

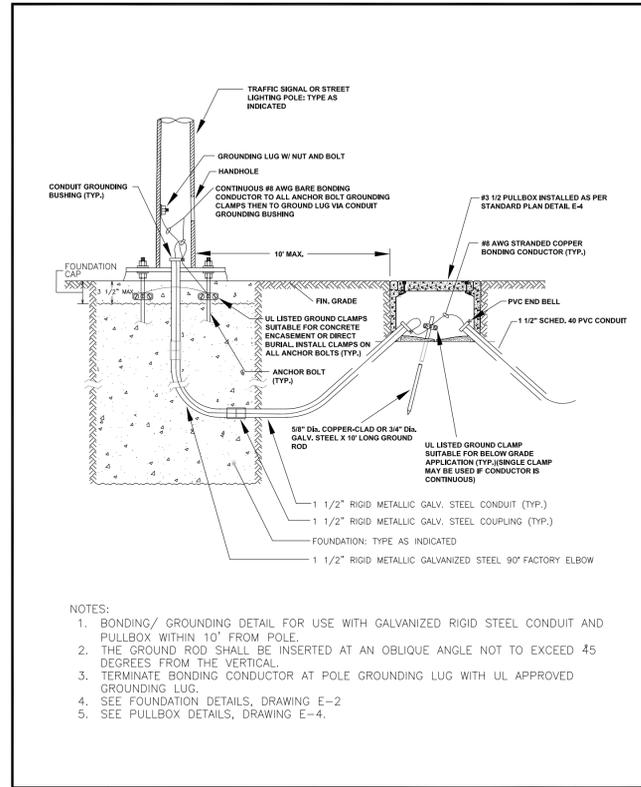
A 2" schedule 40 PVC conduit stub shall be placed from the "CAMPBELL SERVICE" pull box into the PG & E secondary box. The minimum radius for bends and sweeps used between the "CAMPBELL SERVICE" pull box and the PG & E secondary box shall be 18 inches for a 90 bend and 24 inches for a 45 bend.

The street lighting conductors shall be run in this stub from the "CAMPBELL SERVICE" pull box to the PG & E secondary box and the pigtail from the "LINE" side of the fuse holder shall be coiled in the PG&E secondary box left with 3 feet of slack and the loose ends of the conductors shall be waterproofed with PVC tape.

When the Contractor has completed all work as specified in the Plans regarding the street lighting installation and it is the opinion of the Contractor that said installation is in conformance with the applicable City of Campbell Specifications, the City of Campbell's Public Works Inspector shall be notified that the street light installation is ready to be inspected.

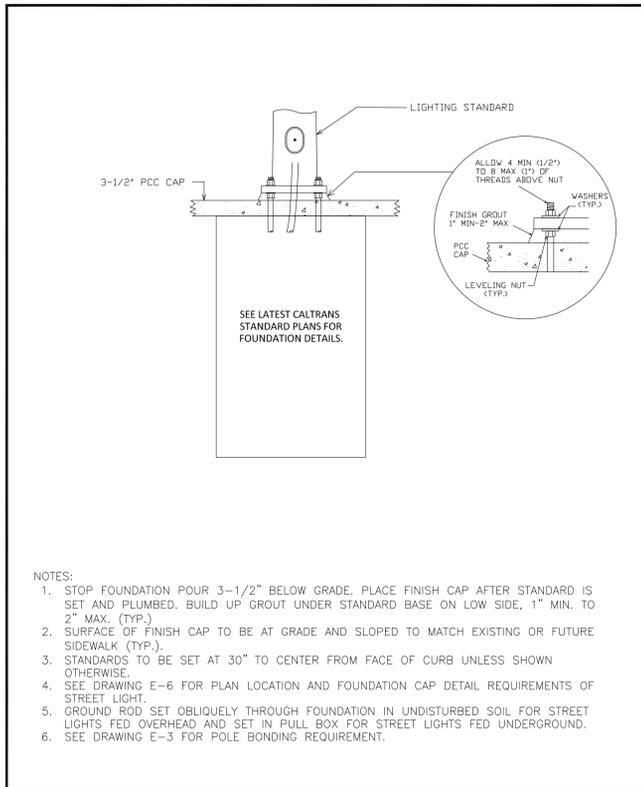
After the street light installation has been inspected and all deficiencies, if any, are corrected and the installation has been approved by the City of Campbell's Public Works Inspector and Lighting and Traffic Signal Supervisor, Campbell's Public Works Inspector will formally request of PG & E that the new street lighting standard(s) be connected. This is contingent upon the submittal of adequate proof to the City of payment to PG & E of the associated street lighting connection fee. A photocopy of the receipt for fees paid to the PG & E clerk, showing date and amount paid, is acceptable and preferred.

Unless otherwise indicated on the Plans or as directed by the Engineer, the City of Campbell will furnish and apply the appropriate street light number labels to the new street light standard(s).



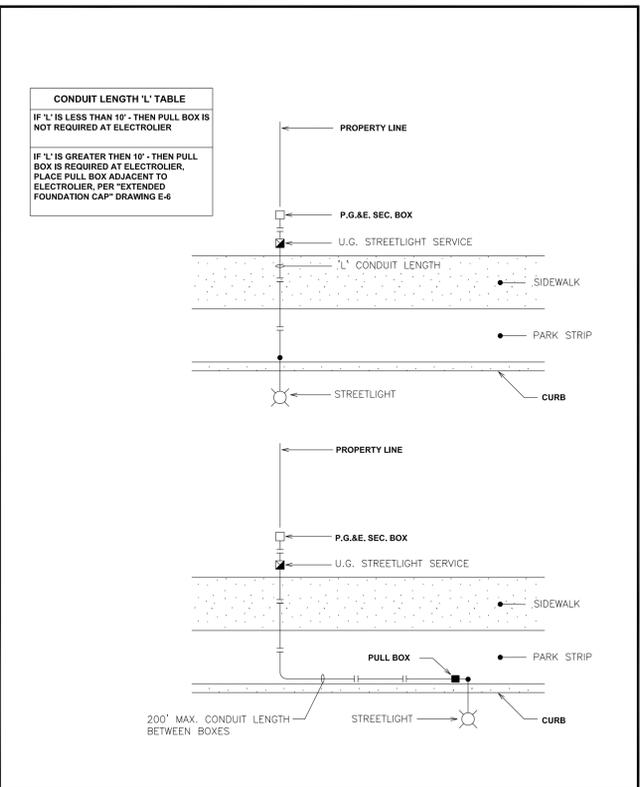
- NOTES:
- BONDING/ GROUNDING DETAIL FOR USE WITH GALVANIZED RIGID STEEL CONDUIT AND PULLBOX WITHIN 10' FROM POLE.
  - THE GROUND ROD SHALL BE INSERTED AT AN OBLIQUE ANGLE NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.
  - TERMINATE BONDING CONDUCTOR AT POLE GROUNDING LUG WITH UL APPROVED GROUNDING LUG.
  - SEE FOUNDATION DETAILS, DRAWING E-2
  - SEE PULLBOX DETAILS, DRAWING E-4.

CITY OF CAMPBELL THE ORCHARD CITY	CITY OF CAMPBELL PUBLIC WORKS DEPARTMENT		POLE BONDING	DETAIL NO. E-3
	DRAWN BY:	DATE		
	CHECKED BY:	DATE		
APPROVED BY:		AMY OLAY CITY ENGINEER	J:\Details\Light\E3	



- NOTES:
- STOP FOUNDATION POUR 3-1/2" BELOW GRADE. PLACE FINISH CAP AFTER STANDARD IS SET AND PLUMBED. BUILD UP GROUT UNDER STANDARD BASE ON LOW SIDE, 1" MIN. TO 2" MAX. (TYP.)
  - SURFACE OF FINISH CAP TO BE AT GRADE AND SLOPED TO MATCH EXISTING OR FUTURE SIDEWALK (TYP.)
  - STANDARDS TO BE SET AT 30" TO CENTER FROM FACE OF CURB UNLESS SHOWN OTHERWISE.
  - SEE DRAWING E-6 FOR PLAN LOCATION AND FOUNDATION CAP DETAIL REQUIREMENTS OF STREET LIGHT.
  - GROUND ROD SET OBLIQUELY THROUGH FOUNDATION IN UNDISTURBED SOIL FOR STREET LIGHTS FED OVERHEAD AND SET IN PULL BOX FOR STREET LIGHTS FED UNDERGROUND.
  - SEE DRAWING E-3 FOR POLE BONDING REQUIREMENT.

CITY OF CAMPBELL THE ORCHARD CITY	CITY OF CAMPBELL PUBLIC WORKS DEPARTMENT		LIGHTING STANDARD - GALVANIZED TYPE 15 FOUNDATION DETAIL	DETAIL NO. E-2
	DRAWN BY:	DATE		
	CHECKED BY:	DATE		
APPROVED BY:		AMY OLAY CITY ENGINEER	J:\Details\Light\E2	

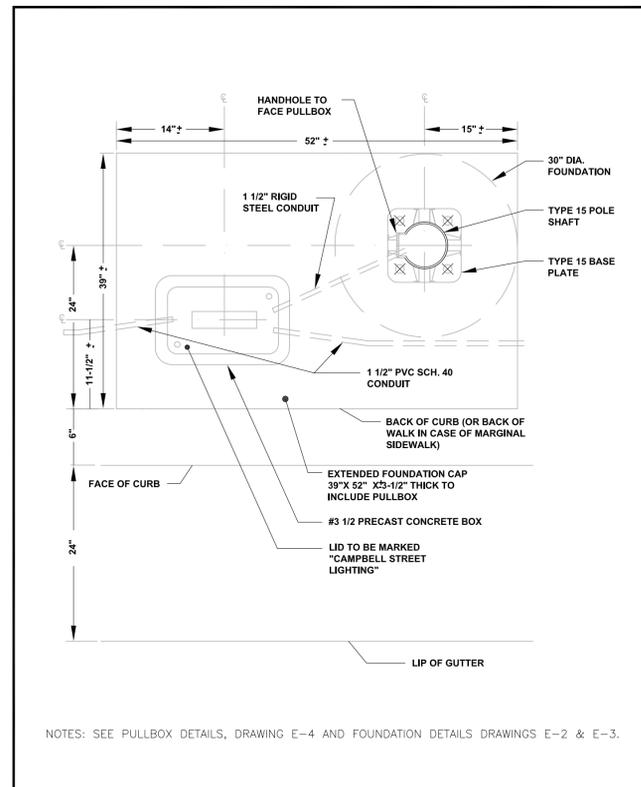


**CONDUIT LENGTH 'L' TABLE**

IF 'L' IS LESS THAN 10' - THEN PULL BOX IS NOT REQUIRED AT ELECTROLIER

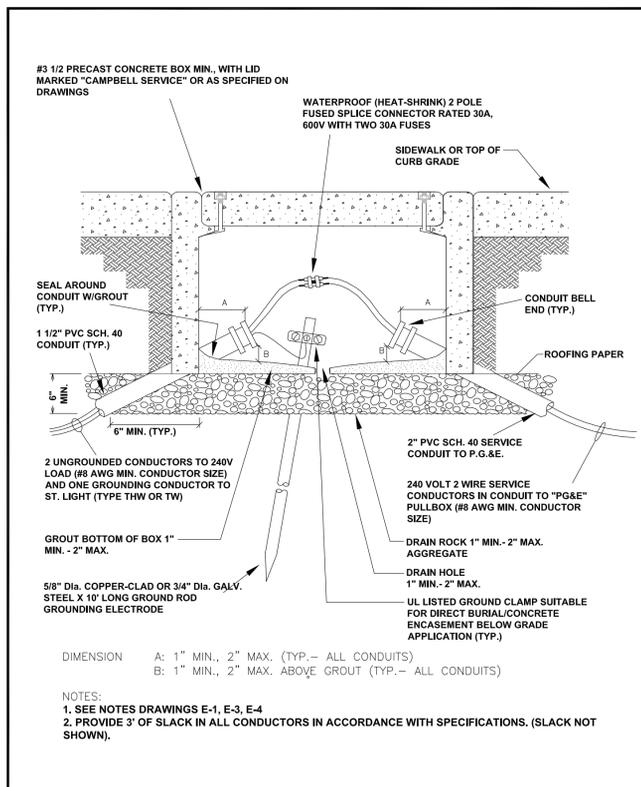
IF 'L' IS GREATER THEN 10' - THEN PULL BOX IS REQUIRED AT ELECTROLIER. PLACE PULL BOX ADJACENT TO ELECTROLIER, PER "EXTENDED FOUNDATION CAP" DRAWING E-6.

CITY OF CAMPBELL THE ORCHARD CITY	CITY OF CAMPBELL PUBLIC WORKS DEPARTMENT		P.G.&E. SECONDARY/U.G. STREETLIGHT SERVICE PULL BOX LOCATION FOR NEW U.G. RESIDENTIAL DEVELOPMENT	DETAIL NO. E-1
	DRAWN BY:	DATE		
	CHECKED BY:	DATE		
APPROVED BY:		AMY OLAY CITY ENGINEER	J:\Details\Light\E1	



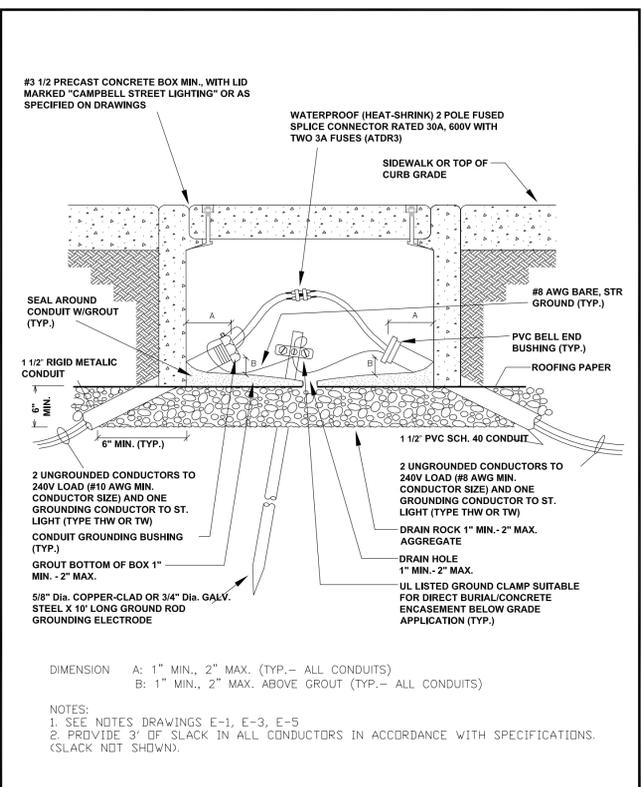
NOTES: SEE PULLBOX DETAILS, DRAWING E-4 AND FOUNDATION DETAILS DRAWINGS E-2 & E-3.

CITY OF CAMPBELL THE ORCHARD CITY	CITY OF CAMPBELL PUBLIC WORKS DEPARTMENT		ELECTROLIER / PULLBOX & FOUNDATION CAP DETAIL	DETAIL NO. E-6
	DRAWN BY:	DATE		
	CHECKED BY:	DATE		
APPROVED BY:		AMY OLAY CITY ENGINEER	J:\Details\Light\E6	



- NOTES:
- SEE NOTES DRAWINGS E-1, E-3, E-4
  - PROVIDE 3' OF SLACK IN ALL CONDUCTORS IN ACCORDANCE WITH SPECIFICATIONS. (SLACK NOT SHOWN).

CITY OF CAMPBELL THE ORCHARD CITY	CITY OF CAMPBELL PUBLIC WORKS DEPARTMENT		UNDERGROUND STREETLIGHT SERVICE PULLBOX, 240V	DETAIL NO. E-5
	DRAWN BY:	DATE		
	CHECKED BY:	DATE		
APPROVED BY:		AMY OLAY CITY ENGINEER	J:\Details\Light\E5	



- NOTES:
- SEE NOTES DRAWINGS E-1, E-3, E-5
  - PROVIDE 3' OF SLACK IN ALL CONDUCTORS IN ACCORDANCE WITH SPECIFICATIONS. (SLACK NOT SHOWN).

CITY OF CAMPBELL THE ORCHARD CITY	CITY OF CAMPBELL PUBLIC WORKS DEPARTMENT		UNDERGROUND STREETLIGHT PULLBOX, 240V	DETAIL NO. E-4
	DRAWN BY:	DATE		
	CHECKED BY:	DATE		
APPROVED BY:		AMY OLAY CITY ENGINEER	J:\Details\Light\E4	

By	Chkd
Date	
Revision	
No.	
Date:	Drawn By:
	Designed By:
CONSULTANT INFO	
ELECTRICAL DETAILS FOR STEELIGHTING	
PROJECT ADDRESS	
ENCROACHMENT PERMIT NO. _____	
CITY OF CAMPBELL CAMPBELL, CALIFORNIA	
SCALE:	N.T.S.
SHEET:	XX OF XX