CITY OF PETALUMA

STREET LIGHT DESIGN AND CONSTRUCTION STANDARDS

600 SERIES

JUNE 1999
GENERAL NOTES

1. All wiring methods and equipment construction shall conform to the current edition of the National Electrical Code, California Standard Specifications and the Standard Plans.

2. All conduit to be used shall be a minimum of 2" diameter, except from each street light to the adjacent pull box which may be 1" diameter PVC or metal, and shall have the following cover from top of conduit. 
   A. Within sidewalk of parkway areas: 2" - 0" min. Schedule 40 PVC.
   B. Within roadway areas: 3" - 0" min. Schedule 80 PVC.

3. All metal conduit and other metal parts shall be continuously bonded and grounded.

4. All bends and/or offsets shall be made with factory sections.

5. Unless otherwise approved by the City Engineer, a No. 5 pull box (State Standard ES-8) shall be used at all street light standards.

6. All pull boxes shall be installed per State Standard ES-8 and Standard Specification Section 86. The bottoms of pull boxes installed in the ground or in sidewalk areas, shall be bedded in 12" of clean drain rock.

7. Junction boxes to be not more than 200'-0" apart on long runs.

8. When pull boxes are subject to vehicular traffic, they shall be set on concrete footings and cast iron traffic covers shall be installed.

9. All splices to be approved solderless waterproof connectors of proper size. (Example: split bolt plus tape plus coating).

10. All empty conduits shall have a 1/4" nylon pull rope provided inside.

11. All conduits shall be sealed with an approved duct seal. Conduits stubbed for future extensions shall be capped.

12. All street lighting projects are subject to approval by the City Traffic Engineer.

13. All pull box covers shall be secured with brass hold down bolts and inscribed, "Street Lighting".
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## STREET LIGHTS

### 600 SERIES

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14. Street light spacing shall be maintained per design criteria. Street light spacing shall be located at property lines when possible.

15. The minimum-average maintained foot-candles and uniformity ratio of all street lighting shall comply with design criteria.

16. All street lights equipped with a photocell control shall have the photocell oriented to the north.

17. All wire shall be THHN A.W.G. with the minimum size to be No.8 except within Street Lighting Standards, shall be No.10.

18. The developer/engineer shall make arrangements for service points with P.G.&E. The developer shall be responsible for all costs associated therewith which shall be paid directly to P.G.&E. The contractor shall verify the street light service point location(s) with P.G.&E. prior to installation.

19. New developments within an existing developed area shall install the entire lighting system, including luminaires.

20. All street light systems shall be designed for 120 volt service.

21. The current to be used to determine conductor sizes shall be determined as follows: 
   \[ \text{Total Wattage of Fixtures Served} \times 3.5 \div \text{Service Voltage} \]

22. Pole identification numbers shall be located on the street side of each luminaire. Minimum finished height 10'-0" from top of curb. Numbers for medal poles shall be a minimum of 4" x 2" reflective white on black with adhesive backs. Numbers for wood poles shall be a minimum of 3" x 2" stamped aluminum.

23. Project applicant shall provide as built to the City prior to the request for Street Light turn on. Street Light as built shall provide the following: Service connection points, conduit locations including distance from face of curb and depth.
Mastarm to extend 2.00' Minimum beyond curb face.

Photo cell control

70-watt, Clear High Pressure Sodium luminaire with 120-volt built-in ballast and individual photo cell control

* POST: STEEL
- *Ameron Series PL*
- *Pacific Union Metal LA-10120*
- *Landmark Lighting S3004*

All steel poles shall be galvanized

2 No. 10 THHN Copper conductors
In New Subdivisions, conductors to be of sufficient length to extend 2.00' out of end of Mastarm.

\[ Q \text{ of Street Light Standard} \]
- Inspection plate with inline fuses See Standard Pages 600 and 605.
- Within sidewalk area: 1.50'
- Within island median: \( Q \text{ of median} \)

Top of Sidewalk, median or planting strip.

Face of Curb

Top of traveled way

Install Concrete Pull Box
(See Page 600, Note No.5)

Concrete Footing
(See Page 605)

* Alternates to be specifically approved by the City Engineer

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<td>22 Hansen Street - Petaluma California 94952</td>
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Approved By:

Thomas S. Hargis - R.C.E 22566

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Mastarm to extend 4.50' minimum beyond curb face.

Photo cell control

100-watt clear high pressure sodium luminaire with 120-volt built-in ballast and individual photo cell control

STEEL
Ameron Series PL
Pacific Union Metal LA10120
Landmark Lighting S3006

All steel poles shall be galvanized

2 No.10 THHN Copper conductors in new subdivisions, conductors to be of sufficient length to extend 2.00' out of end of mastarm.

Top of sidewalk, median or planting strip

Install concrete pullbox
(See Page 600, Note 5)

Concrete Footing
(See Page 605)

Face of Curb

Within sidewalk area: 1.50'
Within island median: C of median.

% of Street Light Standard Inspection
Plate with inline fuses (See Page 600 and 605)

Top of traveled way

Alternates to be specifically approved by the City Engineer
Mast arm to extend 0.50' minimum beyond curb face.

*POST

Nominal mounting height

32.50'

2 No. 10 THHN Copper conductors in New Subdivisions, conductors to be of sufficient length to extend 2.00' out of end of mast arm.

Installation of street light Standard Inspection Plate with inline fuse.

(See Page 600 and 605)

Within sidewalk area: 1.50'
Within island median: C of median

Face of Curb

Top of traveled way

Install concrete pullbox
(See Page 600, Note 5)

Concrete Footing
(See Page 605)

* Alternates to be specifically approved by the City Engineer.
SECTION

Finished sidewalk, median, or planting strip.

PVC or metal conduit

Coupling

Minimum 100' diameter spiral coil.

Concrete shall be Class “A” P.C.C. poured against undisturbed soil.

PLAN

Optional square or round footing

8-No. 4 Vertical
No. 3 hoops at 1.00' O.C.

R = Anchor bolt diameter dimension radius and bolt pattern to suit pole base furnished.

NOTES:
A. In undeveloped areas, construct a 2.00' x 2.00' concrete pad (0.33' thick). If round footing is poured, stop at the elevation of bottom of the sidewalk.
TYPE 1
CENTER OF STREET

TYPE 2
SIDE MOUNTING
Standard for Local Street
unless noted otherwise

TYPE 3
SIDE MOUNTING
Standard for Collector and Arterial Streets
unless noted otherwise

TYPE 4
SIDE MOUNTING

TYPE 5

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Standard I. E. S.
Light Patterns

Drawn by: Butch Smith
Scale: N. T. S.
Date: March 31st 1995
File Number: Std. D. S. SLS0000.606
Page: 606
SCHEMATIC STREET LIGHT WIRING DIAGRAM

- Pole
- No.10 THHN Copper
- Photo cell control
- Fuse only hot line 20 amp fuse. Fuse to be located in base of pole
- No.8 THHN copper
- 1" metal conduit
- No.5 concrete pullbox
- THHN copper wire inside conduit. 120-volt service. See Page 2 for wire sizing criteria.
- 2" minimum PVC conduit

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Standard
STREET LIGHT WIRING
Light Patterns

Drawn by
Butch Smith

N T S

March 31st 1995

Std Det SLS0000.607

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AVERAGE MAINTAINED F.C. IS: \( F.C. = \frac{(LL) (MF) (CU)}{(W) (S)} \)

- **FC** = Illumination in footcandles
- **LL** = Rated initial lamp lumens
- **MF** = Maintenance factor
- **CU** = Coefficient of utilization
- **W** = Street width (curb to curb)
- **S** = Spacing of luminaires

MINIMUM F.C. IS: \( FC = (fc) (LF) (MF) (CF) \)

- **FC** = Minimum point footcandles
- **fc** = Raw total footcandles (at darkest point)
- **LF** = Lamp factor
- **MF** = Maintenance factor
- **CF** = Mounting height correction factor

UNIFORMITY RATIO = \( \frac{AVERAGE\ FOOTCANDLES}{MINIMUM\ FOOTCANDLES} \)
NOTES:
1. Design shall conform to these requirements except as otherwise approved by the City Engineer by variance.
2. Ground surface at base must be level.
3. (4) 0.08' x 2.50' Anchor Bolts shall be used on the 1.00' base coupling.

"G" Style Luminaire 100w 120v. HPS, Type III Dist.

Union Metal Design No. N8017
No. 20-16-G4-P or Approved Equal

11 Gauge Steel 16 FL. "Monorube"
0.625' x 0.500' x 11.000'

Face of Curb

Top of Traveled Way
1. Design shall conform to these requirements except as otherwise approved by the City Engineer by variance.
2. Ground surface at base must be level.
3. (4) 0.16' x 2.50' Large Anchor Bolts (0.33' Proj.) with (2) Hex Nuts shall be used on the 0.83' Base Coupling.
ALTERNATES:
Quickset Model No. LF-54
Brooks Products Inc. Model No. 85G-109

SECTION

Base Detail

- 0.06' 
- 1.50' 
- Face of Curb 
- Inspection Plate 
- Full pole flange cover 
- Connect ground rod to anchor bolts and conduit. 
(See Note "A") 
- 0.16' sand cushion 
- 0.08' Rigid Metal Conduit in concrete 
- No.4 Copper Wire for grounding 22.00' to 25.00' required. Bond to light pole base with approved clamp. 
- 0.33' sand cushion 

Concrete shall be Class "A" P.C.C. poured against undisturbed soil.

PLAN

- Minimum 1.00' diameter spiral coil 
- 2.00' 
- 1.33' 
- Optional square or round footing 
- 8-No.4 Vertical 
- No.3 hoops at 1.00' o.c.

NOTES:

A. In undeveloped areas, construct a 2.00' x 2.00' Concrete Pad (0.33' thick). If round footing is poured, stop at the elevation of bottom of the sidewalk.

R = Anchor bolt diameter dimension radius and bolt pattern to suit pole base furnished.