

# CHAPTER 8 STREETLIGHT SPECIFICATIONS

(Updated 2-21-13)

## SECTION 8.1 STREET LIGHT CATEGORIES

### 8.1.1 CATEGORY 1, 2, 3, & 4 STREET LIGHT INSTALLATIONS

Street Light		Streets
Category	Type	
1	Six-sided Utility Arlington double head fixture with Cincinnati cross arms and Charleston Pole; fitted with In-use Receptacle Cover and GFCI outlet energized by photo cell	Redwood Road, South Jordan Parkway (10400 S & 10600 S); 11400 South; and Jordan Gateway.
2	Six-sided Utility Arlington single fixture with Charleston Pole; fitted with In-use Receptacle Cover and GFCI outlet energized by photo cell	1300 West; 2700 West; 4000 West; 4800 West; 9800 South; 11800 South; and River Heights Drive.
3	Utility Granville with trim tabs and North Yorkshire Pole; fitted with In-use Receptacle Cover and GFCI outlet energized by photo cell	1000 West; 2200 West; 3200 West; 3600 West; 10200 South; and Riverfront Parkway (south of 11400 S).
4	Utility Post Top with Wadsworth Pole	Residential Streets. Residential developments at the developer's expense may upgrade streetlight fixtures to Category 3 type. All fixtures within the development shall be the same type.

<p><b>** NOTE:</b> All streetlight wiring shall be suitable for wet conditions placed within PVC conduit.</p>
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**\*\* NOTE:** The following specifications apply to both SINGLE POLE and MULTIPLE POLE INSTALLATION (Daisy Chain, etc.). In addition, the MULTIPLE POLE INSTALLATION shall comply with those items identified specifically below in these specifications.

## **SECTION 8.2 INSTALLATION**

### **8.2.1 VOLTAGE**

All street lights shall have 120 volt input Voltage (nominal).

### **8.2.2 WIRE / CONDUCTORS**

- A. Wire size shall be designed by an electrical engineer with no more than a 3% drop in the nominal voltage at the base of each pole. The minimum wire size shall be #6 AWG THHN copper lines from power source to the base of pole.
- B. Category #1, #2, and #3 lights shall have the wire sized for an additional 3-AMP's per light pole and shall be included in the design.
- C. From pole base or (hand hole) to the fixture head #10 or #12 THHN copper will be allowed.
- D. No aluminum wire allowed.
- E. Wire to be black, white, green or phased taped at both ends.
- F. Run conduit to the lock side of transformer. Leave 8 feet excess wire to transformer or 6 feet excess wire to secondary box as per Rocky Mountain Power (RMP) requirements, so that (RMP) will make the connection. Contractor is able to use HDPE conduit so long as it is schedule 40, grey in color, the wire is the correct size and listed for this use. All installations of HDPE shall be installed according to the current edition of the NEC Section 353 and UL labeled and listed.
- G. Multiple Pole Installation:  
Wire size shall be designed by an electrical engineer with no more than a 3% of a drop in the nominal voltage at the base of each pole. The minimum wire size shall be a #6 copper wire suitable for wet conditions. Electrical engineer to submit design drawings to the City for review.

### 8.2.3 CONDUIT

- A. All conduits shall be a minimum of 1-1/2 inch PVC, Schedule 40 and grey in color.
- B. 90° sweeps/bends shall have a maximum of 24 inch radius and a minimum of 18 inch radius.
- C. Conduit shall have a minimum of 24 inches of cover in a utility trench and a maximum of 30 inches of cover (refer to details - diagram sheet). \*
- D. All conduits shall have an approved cap or duct seal on ends to prevent debris from entering conduit.
- E. All conduits shall have pull string.
- F. Conduit shall extend a maximum of 3 inches and a minimum of 1 inch above the finished streetlight concrete base. Contractor is able to use HDPE conduit so long as it is schedule 40, grey in color, the wire is the correct size and listed for this use. All installations of HDPE shall be installed according to the current edition of the NEC Section 353 and UL labeled and listed.
- G. Multiple Pole Installation:  
Conduits will be allowed to be of a larger size as required to accommodate the larger wire sizes. Contractor is able to use HDPE conduit so long as it is schedule 40, grey in color, the wire is the correct size and listed for this use. All installations of HDPE shall be installed according to the current edition of the NEC Section 353 and UL labeled and listed.

\* Need to have copy of utility trenching drawing.

### 8.2.4 GROUND BOX

- A. Known as box, vault, flush mount, pull box, enclosure, and junction box.
- B. All plastic boxes shall be grey in color with the words "South Jordan City Electric". See detail sheet for drawing of plastic box lid. Any installations in concrete will require the ground box to be designed and listed for use in concrete and labeled for street lighting.
- C. Lid must be secured with the proper stainless steel bolts.
- D. 6" of gravel (3/4 minus) shall be placed prior to setting the ground box.
- E. Top of ground box shall be placed at finished grade.
- F. Conduit shall extend a maximum of 3 inches above the gravel in the base of the ground box and a minimum of 2 inches above gravel in the base of ground box.

- G. One ground box shall be installed within 4 feet of the power source (as per Rocky Mountain Power specifications).
- H. One ground box shall be installed within 2 feet of street light pole base. This item may be modified or deleted as determined by the Engineering Inspector in the field during construction, with input from the City Streets Superintendent.
- I. Wire must extend 18 inches above grade to splice in ground box.

### **8.2.5 CONNECTIONS**

- A. Wire nuts shall meet the specifications of a "Wet Location Installation" with silicone inside and will be allowed in the pole base only.
- B. Mechanical lugs NSi ESSLK – 2/0 or equivalent may only be used in the ground box and shall meet NEC specifications, be UL labeled & listed and be designed for this purpose.
- C. A Littelfuse LEBJJ fuse holder (or equivalent) with weatherproof rubber boots, mechanical connection, 600 volt rated and 30 AMP rated shall be used.
- D. Fuse shall be 10 AMP time delay F.N.Q.
- E. Fuse holder shall be placed on all hot leads.
- F. Fuse holder shall be installed only in pole bases.
- G. No crimp connections will be allowed.

### **8.2.6 GROUNDING**

- A. All grounding shall be installed according to the current Edition of the NEC Section 250 and UL labeled and listed.
- B. When non-metered street lights are installed, article 250.24 shall be applied for bonding & grounding applications for service supplied AC systems.
- C. Conductor: Solid, cu, bare, soft drawn.
- D. Ground Rod or Ground Ring:
  - 1. Ground Rod - 8 feet x 5/8 inch diameter Copper weld/ bonded, cu.
  - 2. At anytime the City may require third party testing at the expense of contractor in addition to any costs to remedy deficiency.
- E. Clamp: 5/8 inch cu clad.
- F. Burndy KA25U 14 – 1/0 AWG AL/CU mechanical lugs or equivalent shall be used to connect the ground wire to the group clip inside the street light pole.

- G. Ground rod shall be a minimum of 2 inches above finished concrete grade for the street light base and a maximum of 3 inches above finished concrete grade for street light bases. See detail sheet.

#### **8.2.6 STREET LIGHT LOCATION**

- A. Street lights shall be provided at ends of cul-de-sacs, all street intersections, at 200' spacing (250' max) on local residential, 300' spacing (350' max) on collectors (150' staggered), and where otherwise determined by the City Engineer or designee.
- B. A street light is required at the entrance to any pedestrian pass-through. If the pass-through is longer than 75 feet, another street light is required at the far end. Walkways longer than 150 feet will require additional lights. Vandal resistant bollard lighting may also be required on long walkways.
- C. Street lights shall be located on lot lines wherever possible.