

**SECTION 265600 – EXTERIOR LIGHTING**

**PART 1 - GENERAL**

- 1.1 Any deviance from the following instructions must be approved during design by WVU Facilities Management.
- 1.2 All outdoor lighting shall be fed from an emergency power source.

**PART 2 - PRODUCTS**

- 2.1 All exterior lights will be LED, metal halide or compact fluorescent. Metal halide fixtures currently are WVU's preference. Use of LED's is encouraged but must be proven to be beneficial and approved by WVU Facilities Management.
- 2.2 Use glass lenses on wall pack fixtures.
- 2.4 Roadway, Parking and Walkway Lighting:
  - A. Roadway and Open Parking Area Lighting



- 1. Luminaire
  - a. Luminaire for Metal Halide: Type shall be Gardco GL18 fixture. Luminaires shall be finished dark bronze.
  - b. Luminaire for LED: Type shall be Gardco GL18 fixture. Luminaires shall be finished dark bronze. Lamp shall be Neutral White, 4300 K, with a CRI of 75.
- 2. Pole: Poles shall be dark bronze, 25 ft tall, 5"square, and fiberglass. Type shall

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be Shakespeare Composite Structures #SSA5-25-99-S5-BB-01.

3. Concrete Base: Concrete bases shall utilize rebar reinforcement and embedded anchor bolts, and shall be designed to support the pole and luminaire assembly utilizing local wind load parameters and assembly effective projected area (EPA). Above grade concrete shall be smooth rubbed finish per WVU cast-in-place concrete spec 033000. All above grade concrete shall be free of honeycombing, fins, exposed aggregates or other defects. If this style base doesn't fit into the architectural plan please discuss with facilities management. See Section 3.11.

B. Walkway Lighting:

1. Downtown Campus: For examples see Mountainlair front lighting



- a. Fixture Company: Philips Lumec  
Model: MPTR-80W48LED4K-ES-LE5-120DMG-APR4F-8-3/4 x 20-8  
1/2- DEC-BKT
- b. Lamp/Driver: 80W48LED4KES-DMG, 80 watt LED.
- c. Color: Black
- d. Pole: APR4, black, 10 ft. tall, round, straight aluminum.
- e. Light poles shall be capable of holding side mount banners.
- f. Concrete Base: Concrete bases shall utilize rebar reinforcement and embedded anchor bolts and shall be designed to support the pole and luminaire assembly utilizing local wind load parameters and assembly

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effective projected area (EPA). Above grade concrete shall be smooth rubbed finish per WVU cast-in-place concrete spec 033000. All above grade concrete shall be free of honeycombing, fins, exposed aggregates or other defects. If this style base doesn't fit into the architectural plan please discuss with Facilities Management. See Section 3.11.

2.      Evansdale Campus: For examples see Lincoln Hall or picture below.



- a.      Fixture Company: Sun Valley Lighting  
Model: DSARI
- b.      Lamp/ Ballast: 175 watt metal halide
- c.      Mount Style: XPK
- d.      Color: Black
- e.      Pole: Poles shall be black, 10 ft. tall, round, straight aluminum.
- f.      Light poles shall be capable of holding side mount banners.
- g.      Concrete Base: Concrete bases shall utilize rebar reinforcement and embedded anchor bolts and shall be designed to support the pole and luminaire assembly utilizing local wind load parameters and assembly effective projected area (EPA). Above grade concrete shall be smooth rubbed finish per WVU cast-in-place concrete spec 033000. All above grade concrete shall be free of honeycombing, fins, exposed aggregates

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or other defects. If this style base doesn't fit into the architectural plan please discuss with Facilities Management. See Section 3.11.

### PART 3 - EXECUTION

#### 3.1 Lighting Levels:

##### A. Roadway and Open Parking Area Lighting

1. Illumination Levels: Roadway and open parking area illumination levels shall comply with the following tables or the latest IES recommendations whichever is more stringent.

ROADWAYS		
	AVG MAINTAINED MINIMUM OVER TIME, (FOOT CANDLES) FC	Area AVG : Area MIN
ROADWAY ILLUMINATION @ GRADE	1.50	3 : 1

BUS PULL-OFF AREAS		
	AVG MAINTAINED MINIMUM OVER TIME, FC	AVG / MIN
* BUS PULL-OFF AREA ILLUMINATION @ GRADE	2.50	3 : 1

\*Bus pull-off area shall include the area of roadway traversing the length of the bus pull-off and all roadway pedestrian crosswalks within the area of the pull-off.

EXTERIOR OPEN PARKING FACILITIES			
	AVG MAINTAINED MINIMUM OVER TIME, FC	AVG / MIN	MAX / MIN
GENERAL PARKING AND PEDESTRIAN AREAS	1.0	4 : 1	7 : 1

##### B. Walkway Lighting:

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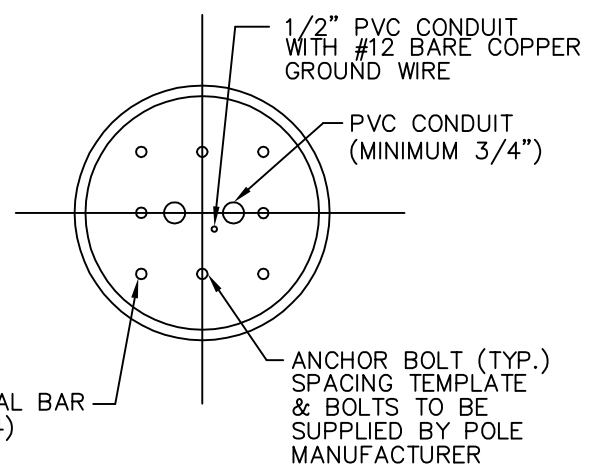
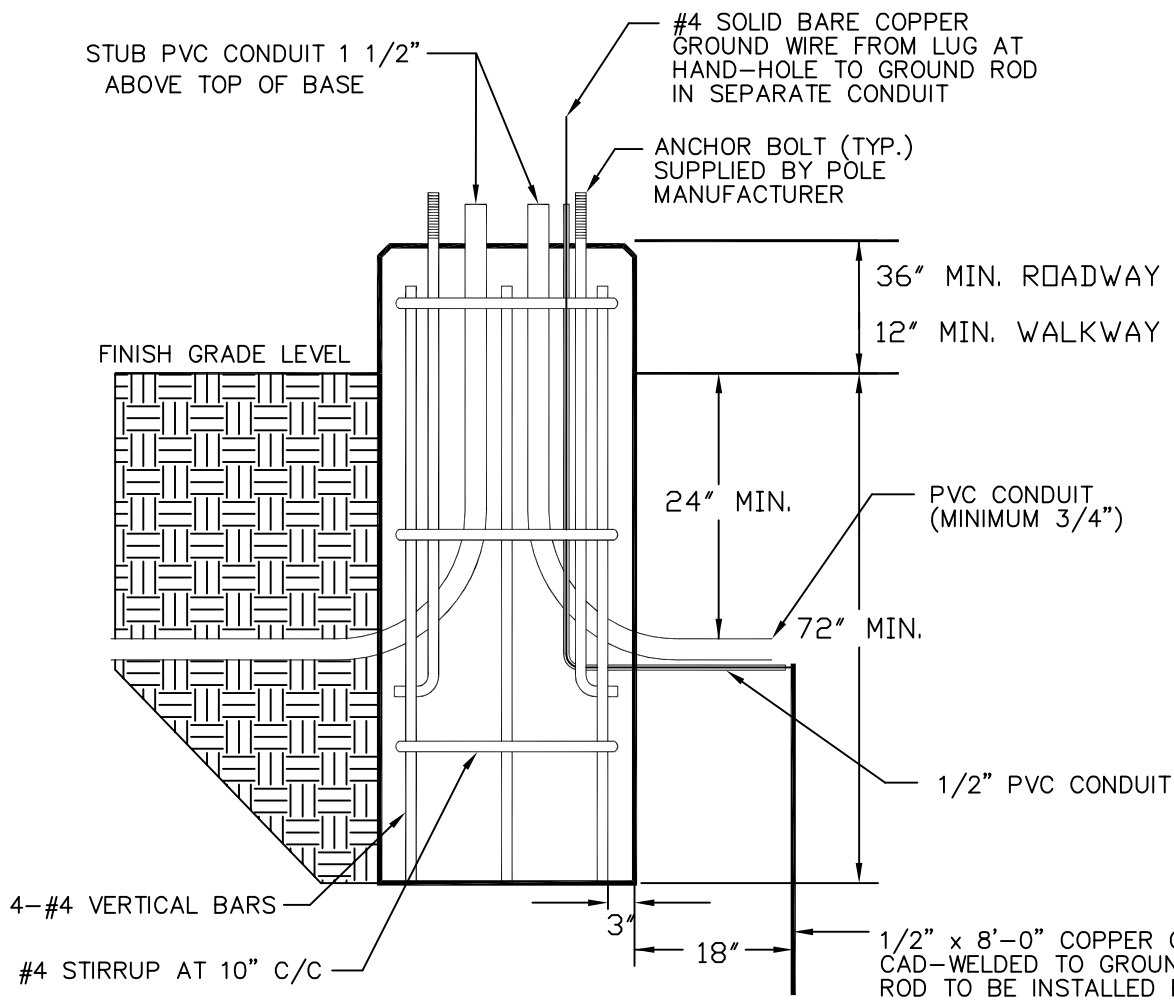
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1. Illumination Levels: Walkway area illumination levels shall comply with the following table or the latest IES recommendations whichever is more stringent. Walkway calculation areas (distant from roadways) shall include a 6 ft area bordering the walk on each side, illuminated to a level of one-third the levels suggested for walkways for additional pedestrian safety.

WALKWAY CLASSIFICATION	AVG MAINTAINED OVER TIME, FC (MIN) @ GRADE	AVG VERTICAL FC @ 6FT ABOVE GRADE	AVG / MIN
WALKWAYS	1.0	1.5	4 : 1

- 3.2 Where two or more poles are installed supporting metal halide lights, they will be controlled by an electrically held contactor. The contactor will be controlled by a single photo eye. The control circuit for the contactor will have a bypass switch located adjacent to the contactor.
- 3.3 Bollard lights shall be considered for areas where low lighting is needed.
- 3.4 Landscape lighting shall be considered around buildings.
- 3.5 Flood lights are discouraged because the light output is overpowering and washout any landscape lighting.
- 3.6 Light Pollution:
  - A. The maximum lighting level 20 foot past the edge of WVU property shall be 0.1 FC.
  - B. All luminaires shall have full cut-off.
- 3.7 Altering of the bases by drilling or any other method for the purpose of enlarging the holes is not permitted.
- 3.8 Every end of line light base will have an extra conduit stubbed out and capped.
- 3.9 Junction boxes will not be placed in the ground.
- 3.10 All conduits in the base will be PVC.
- 3.11 See Concrete Base Detail on next page.

END OF SECTION 265600



- RUN #12 GROUND WIRE AND BOND FROM LUMINAIRE TO LUG AT HAND HOLE
- USE "ArtFORMS" CONCRETE MOLD TO FORM ABOVE GROUND BASE. USE MODEL KELLAMY 610R FOR ROADWAY. SEE WVU DESIGN STANDARD 265600.
- USE "ArtFORMS" CONCRETE MOLD TO FORM ABOVE GROUND BASE. USE MODEL NEWAVEA 510R FOR WALKWAY. SEE WVU DESIGN STANDARD 265600.

<b>WEST VIRGINIA UNIVERSITY</b>	
<b>TYPICAL POLE BASE DETAIL</b>	
<b>Drawing #:</b> ELEC-D02	<b>SECTION</b> 265600
<b>DRAWN</b> _____	<b>DATE</b> 04/01/10
<b>REVISIONS :</b> 1	