

**Modify per the following instructions:**

1. Changes are shown in **red**, using “Track Changes” function
2. Deletions are shown **struck through**
3. Additions are **double-underlined**
4. The remainder of section is unchanged.

**Section affected:**

**26 56 00 EXTERIOR LIGHTING**

.01 General

A. Roadway and Open Parking Area Lighting

1. Light Source: Light sources for roadway and open parking area lighting shall be 4100K LED.
2. Luminaire: Luminaire shall utilize a cut-off optical assembly, LED source, and IES distribution as required to maintain recommended lighting and uniformity levels. Luminaires shall be rectangular in shape and conform to a “shoebox” design. Integral driver shall be 0-10v dimming, multi-voltage or as directed by Engineering Services. Luminaires shall be similar to Lumark Ridgeview LED series, finished dark bronze with a 10 inch arm for connection to square pole. Any exception to this luminaire must be approved by Engineering Services Architect prior to the final design submission.
3. Pole: Poles shall be 25 ft, 5” square, non-tapered fiberglass with handhole at base, finished dark bronze. Professional shall coordinate final height of poles with local ordinance stipulations and other University requirements. ~~Suggested manufacturer~~Basis of design for pole is Shakespeare, Series AR (heavy duty with metal sleeve inside pole base). allow equal by CMT or as approved by PSU Engineering Services. Use of poles lower than 25 ft is discouraged and must be approved by Engineering Services.

~~3-a.~~ For aesthetic reasons, a 4” square pole may be considered for the Lumark Ridgeview or other luminaires of similar size. Pole manufacturer must approve in writing that the smaller pole meets appropriate wind loading for the application. Use caution in applying this pole size to a competitive bid as many shoebox luminaires would be inappropriate on a 4” pole (both in size and wind loading).

4. Controls: Contact Engineering Services to discuss the use of automatic controls to reduce illumination levels in parking areas to 35% based upon activity in the area. Discuss the use of individual versus group control.

a. Typically apply pole-mount directional sensor(s) to provide adequate coverage.

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b. Luminaire-mount sensors are not acceptable unless the coverage is a minimum of 90' diameter (45' any direction).

4.5 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). Bases shall protrude above grade 6" with a top beveled edge. Bases shall protrude 36" above grade where damage from vehicles is possible. Above grade concrete shall be finished smooth.

5.6 Refer to Guideline Details list at the end of this section for PSU installation requirements.

6.7 Illumination Levels:

- a. Roadway and open parking area maintained illumination levels shall comply with the following tables (Ratios listed are maximum values). Areas not covered herein shall comply with the latest IES recommendations. Roadway illumination levels outside of core campus shall be reviewed with Engineering Services. Lower average levels may be acceptable.

#### ROADWAYS

	Avg Maintained FC (Min)	Avg/Min Ratio (Max)
Roadway Illumination @ Grade	1.50	3 : 1

#### BUS PULL-OFF AREAS

	Avg Maintained FC (Min)	Avg/Min Ratio (Max)
* 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

	General Parking & Pedestrian Areas		Vehicle Use Only	
Activity Level	Min FC @ Grade	Avg/Min Ratio (Max)	Avg FC @ Grade	Avg/Min Ratio (Max)
*High	0.9	4 : 1	2.0	3 : 1
Medium	0.6	4 : 1	1.0	3 : 1

\* Beaver Stadium and Jordan Center are considered areas of high activity levels.

7-8. Calculations – The professional shall submit two (2) copies of computer generated point-by-point calculations to Engineering Services for review. Point levels shall be legible and plan to scale. All pertinent calculation parameters shall be indicated and highlighted where non-compliant. Engineering Services will provide direction and variance where deemed adequate.

8-9. Sub-metering of Parking Lots – Provide provisions for Square D power meter (actual meter by PSU) for all parking lots. Provisions shall match those as noted in ["Electricity Metering"](#) section. Confirm requirements with Engineering Services.

**END of revision**

**Update Commentary:**

Section was updated primarily for the following reasons:

- 1) Updated acceptable pole manufacturers based upon feedback from the UP crew that maintains campus exterior luminaires.
- 2) Added requirement to consider sensor control of parking lot luminaires.