**SECTION 26 56 29**

**EXTERIOR LIGHTING**

**PART 1 GENERAL**

1. SECTION INCLUDES
   1. Exterior luminaries and accessories
   2. Poles
2. REFERENCES
   1. ANSI C78.379 ‑ ‑ Classification of Beam Patterns of Reflector Lamps
   2. ANSI C82.1 – For Lamp Ballasts – Line Frequency Fluorescent Lamps Ballast
   3. ANSI C82.4 ‑ Ballasts for High – Intensity ‑ Discharge and Low ‑ Pressure Sodium Lamps (Multiple‑Supply Type)
   4. ANSI O5.1 – Wood Poles - Specifications and Dimensions
   5. NFPA 70 ‑ National Electrical Code
   6. IES RP‑8 ‑ Roadway Lighting
   7. IES RP‑20 ‑ Lighting for Parking Facilities
   8. ASCE 7 – Minimum Design Loads for Buildings and Other Structures
3. DESIGN REQUIREMENTS
   1. Roadway: IES RP‑8, classification as indicated on Drawings
   2. Parking Lot: IES RP‑20, [low] [medium] [high] activity level
4. SUBMITTALS
   1. Submit under provisions of Section 01 33 00.
   2. Shop Drawings: Indicate dimensions and components for each luminary, which is not a standard product of the manufacturer.
   3. Product Data: Provide dimensions, ratings, and performance data.
   4. Test Reports: Indicate measured illumination levels.
   5. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product-testing agency specified under "Regulatory Requirements".
5. PROJECT RECORD DOCUMENTS
   1. Submit under provisions of Section 01 77 00.
   2. Accurately record the actual locations of each luminary.
6. OPERATION AND MAINTENANCE DATA
   1. Submit under provisions of Section 01 77 00.
   2. Maintenance Data: Include instructions for maintaining luminaries.
7. QUALIFICATIONS
   1. Manufacturing company specializing in manufacturing products specified in this Section with minimum 3-years of experience.
8. DELIVERY, STORAGE, AND HANDLING
   1. Deliver, store, protect, and handle products to site under provisions of Section 01 60 00.
   2. Accept products on site and inspect for damage.
   3. Protect poles from finish damage by handling carefully.
   4. Store and handle solid wood poles in accordance with ANSI O5.1.
9. COORDINATION
   1. Furnish bolt templates and pole mounting accessories to installer of pole foundations.

**PART 2 PRODUCTS**

1. LUMINAIRES
   1. Furnish products as specified on Drawings.
   2. Substitutions: Under provisions of Section 01 60 00
2. POLES
   1. Height: As indicated on Drawings .
   2. Hand hole: Removable weatherproof cover installed 18"-36” above finish grade.
   3. Other Requirements
      1. Provide poles designed for wind loading based on ASCE 7 for velocity of 170 mph (embedment of pole shall be in accordance with actual soil condition) while supporting luminaries having effective project areas indicated.
         1. Poles shall be direct burial type designed for use with underground supply conductors.
      2. All poles shall have two conduits concealed within the pole extended down from handhole for incoming and outgoing branch circuit wiring.
      3. Install a 5/8" x 10' ground rod at each pole and exothermic weld grounding conductor to pole.
      4. Contractor shall submit certified wind load calculation signed and sealed by a Florida Professional Engineer with pole submittal.

**PART 3 EXECUTION**

1. EXAMINATION
   1. Examine excavation and concrete foundation for lighting poles.
   2. Examine each luminary to determine suitability for lamps specified.
2. INSTALLATION
   1. Install in accordance with manufacturer's instructions.
   2. Install lighting poles at locations indicated.
   3. Embedded Luminary Poles to the depth as indicated, and install plumb.
   4. Install lamps in each luminary.
   5. Bond luminaries, metal accessories, and metal poles to branch circuit equipment grounding conductor.
      1. Provide supplementary ground rod at each pole.
   6. Luminary Pole Bases:
      1. Size and constructed as indicated on Drawings.
      2. Project anchor bolts 3" minimum above base.
      3. Install poles on bases plumb; provide double nuts for adjustment, and grout around pole base.
      4. Provide manufacturer's covers for bolts at base.
   7. Use belt slings or non-chafing ropes to raise and set pre-finished luminary poles.
   8. Provide one weatherproof fuse per phase.
      1. Install fuse(s) in the cast-in hand hole.
      2. Fuses not permitted in the fixture head.
      3. Fuse holder shall incorporate a rubber boot assembly.
   9. Install all conductor splices in the cast-in hand hole.
      1. If required, the contractor may extend the hand hole outward using a weatherproof junction box.
   10. Coat the attachment bolts or set screws with an anti-seizing / lubricating compound.
3. FIELD QUALITY CONTROL
   1. Operate each luminary after installation and connection.
      1. Inspect for improper connections and operation.
   2. Measure illumination levels to verify conformance with performance requirements.
   3. Take measurements during night sky, without moon or with heavy overcast clouds effectively obscuring moon.
4. ADJUSTING
   1. Adjust work under provisions of Section 01 77 00.
   2. Aim and adjust luminaries to provide illumination levels and distribution as directed.
   3. Re-lamp luminaries that have failed lamps at Date of Substantial Completion.
5. CLEANING
   1. Clean work under provisions of Section 01 77 00.
   2. Clean electrical parts to remove conductive and deleterious materials.
   3. Remove dirt and debris from enclosure.
   4. Clean photometric control surfaces as recommended by manufacturer.
   5. Clean finishes and touch up damage.

END OF SECTION