PART 1 - GENERAL

1.01 DESCRIPTION OF WORK:

A. Extent of exterior lighting fixture work is indicated by drawings and schedules.

B. Types of exterior lighting fixtures in this section include the following:
   
   High-intensity-discharge (HID).
   Metal halide.

C. Applications of exterior lighting fixtures required for project include the following:
   
   Outdoor area lighting.
   Outdoor supplementary lighting.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS:

A. Manufacturer: Subject to compliance with requirements, provide products of manufacturers listed on the drawings within the lighting fixture schedule.

2.02 EXTERIOR LIGHTING FIXTURES:

A. General: Provide lighting fixtures, of sizes, types and ratings indicated; complete with, but not necessarily limited to, housings, lamps, lamp holders, reflectors, ballasts, starters and wiring.

B. Fluorescent-Lamp Ballasts: Provide fluorescent-lamp ballasts, capable of operating lamp types indicated; with high power factor, rapid-start, and low-noise features; Type 1, sound rated A, and with internal thermal protection.

C. High-Intensity-Discharge-Lamp Ballasts: Provide HID lamp ballasts, capable of operating lamp types and ratings indicated; reactor type, high power factor, core and coil assembly encapsulated in non-melt resin; install capacitor outside ballast
encapsulation for easy field replacement; and enclose assembly in drawn aluminum alloy housing(s) unless otherwise specified.

D. High-Intensity-Discharge-Lamp Ballasts: Provide HID lamp ballasts, of ratings, types and makes as recommended by lamp manufacturer, which properly matches lamps to power line by providing appropriate voltages and impedances for which lamps are designed.

E. Comply with additional fixture requirements contained in Lighting Fixture Schedule shown on drawings.

2.03 LUMINAIRES:

A. Provide corrosion-resistant, aluminum luminaires, of sizes, types and styles indicated on the drawings.

2.04 EXTERIOR LIGHTING CONTROL

A. Provide photocell, timeclock and contactors as indicated on plans. Time clock shall be digital microprocessor-based with battery backup. All contactors shall be full size standard NEMA. Miniature size contactors will not be allowed.

PART 3 - EXECUTION

3.01 INSTALLATION OF EXTERIOR LIGHTING FIXTURES:

A. Install exterior lighting fixtures at locations and heights as indicated, in accordance with fixture manufacturer's written instructions, applicable requirements of NEC, NECA's "Standard of Installation", NEMA standards, and with recognized industry practices to ensure that lighting fixtures fulfill requirements.

B. Coordinate with other electrical work as appropriate to properly interface installation of exterior lighting fixtures with other work.

C. Fasten fixtures securely to indicated structural supports; and check to ensure that solid pendant fixtures are plumb.

D. Install roadway and parking area lighting units as indicated, in accordance with manufacturer's written instructions, applicable requirements of NEC, NESC and
SPECIFICATIONS FOR EXTERIOR LIGHTING
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KNOXVILLE, TENNESSEE

NEMA standards, and with recognized industry practices to ensure that lighting units fulfill requirements.

E. Coordinate with other electrical work as necessary to properly interface installation of roadway and parking area lighting with other work.

F. Use belt slings or rope (not chain or cable) to raise and set finished poles and standards to protect finishes.

G. Set poles and standards plumb. Support adequately during backfilling, or anchoring to foundations.

H. Provide sufficient space encompassing hand access and cable entrance holes for installation of underground cabling where indicated.

3.02 ADJUST AND CLEAN:

A. Clean exterior lighting fixtures of dirt and debris upon completion of installation.

B. Protect installed fixtures from damage during remainder of construction period.

3.03 GROUNDING:

A. Provide tight equipment grounding connections for each roadway and parking area lighting unit installation.

B. Provide tight equipment grounding connections for each exterior lighting fixture installation.

C. Exterior lighting branch circuits shall be equipped with a code size equipment grounding conductor. The equipment grounding conductor shall bond to the pole base, pole, luminaire housing, and ballast frame to insure a complete ground return path for all outdoor lighting system components.

3.04 FIELD QUALITY CONTROL:

A. Upon completion of installation of exterior lighting fixtures, and after energizing branch supply circuitry, apply electrical energy to lighting fixtures to demonstrate capability and compliance with requirements. Where possible, correct
malfunctioning units at site, then retest to demonstrate compliance; otherwise, remove and replace with new units, and proceed with retesting.

B. Replace defective and burned-out lamps at the time of Substantial Completion.

C. Furnish stock or replacement lamps amounting to 10% (but not less than one lamp in each case) of each type and size lamp used in each type fixture. Deliver replacement stock as directed to Owner's storage space.

END OF SECTION 26 51 20