



SPECIAL PROVISIONS  
FOR  
LIGHTING POLES AND FIXTURES

Scott County

TCSP-0865(004)--9S-82

Effective Date  
April 20, 2010

THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, SERIES 2009, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

## **PART 1 GENERAL**

### **1.01 SUMMARY**

- A. Section Includes:
  - 1. Exterior lighting fixtures, lamps, ballasts and accessories.

### **1.02 DEFINITIONS**

- A. Fixture: A complete lighting unit. Fixtures include lamps and parts required to distribute light, position and protect lamps, and connect lamps to power supply. Contractor shall provide all necessary components for a complete installation according to applicable NEC.

### **1.03 SUBMITTALS.**

- A. Product Data describing fixtures, lamps, ballasts, and emergency lighting units.
- B. Shop Drawings: Submit legible, dimensioned drawings of lighting fixtures. Submit light fixture shop drawings, lamp shop drawings, and ballast shop drawings in booklet form organized with a separate sheet for each light fixture, lamp, and ballast, assembled in order of luminaire "Type" designation. Light fixture shop drawings shall clearly indicate proposed fixture and accessories on each sheet. A "Lamp Schedule" spreadsheet shall be submitted noting light fixture types and the lamp designation/lamp manufacturer which will be provided in each fixture type.
- C. Maintenance data for fixtures to include in the operation and maintenance manual specified in **Division 1**.
- D. Contractor shall submit a complete "lead time" list demonstrating the anticipated lead time for every fixture type on the project based upon the available data supplied by the manufacturer at the time of submittal. All lead times shall be based on "release for order" and be provided in weeks- assuming normal ground transportation methods or other standard delivery process.

### **1.04 SUBSTITUTIONS**

- A. No substitutions will be accepted after bids are received. The lighting equipment specified herein has been carefully chosen for its ability to meet the luminous performance requirements of this project. Substitutions in all likelihood will be unable to meet all of the same criteria as specified equipment. No exceptions.
- B. When only one manufacturer is listed for a specific fixture type on the Lighting Fixture Schedule, the design engineering or architectural aesthetics will not allow substitution of other manufacturer. "Owner price" from one manufacturer is on record with the project Architect.
- C. When more than one manufacturer is listed for a specific fixture type on the Lighting Fixture Schedule, the design engineering or architectural aesthetics will allow the CONTRACTOR to choose one of the manufacturers listed but no other substitution will be acceptable.
- D. When one or more manufacturers are listed for a specific fixture type on the Lighting Fixture Schedule, the CONTRACTOR may elect to submit to **ARCHITECT** a substitute for review. All submittals must be made within 14 days prior to the bid date to provide ample time for review and to issue an addendum incorporating the substitution.
- E. Substitution submittals shall consist of a physical description, dimensioned drawing and complete photometric and electric data of the proposed lamp and luminaire. As requested by the Project Lighting Designer, working samples of lamp and luminaire substitutions must also be supplied for visual check of finish and operating characteristics. Photometric reports must list the actual candela values for the luminaire's distribution in at least three planes. Candela curves, foot-candle and lumen tables and iso-footcandle contours are not acceptable. CONTRACTOR will be responsible for all costs (architecture time, lighting designer time, engineering time, manufacturer's costs, distributor costs, etc.) incurred to replace equipment not approved if substitutions are made by the distributor, manufacturer's representative, or subcon-

tractor. No substitutions will be considered without compliance with this paragraph.

- F. Once Shop Drawings, are approved by the Project Lighting Designer, all lighting equipment shall be ordered in a timely manner. The contractor is then to inform the Project Lighting Designer immediately, in writing, the date when equipment orders are completed and delivery scheduled.
- G. No substitutions will be allowed due to delays in receiving fixtures for the project due to negligence by the Contractor in delaying the release of a full or partial order including lighting fixtures, components or lamps. Contractor shall assume all responsibility for "express" shipping or other non-standard shipping means if product is required in order to avoid delays in the project.

### **1.05 QUALITY ASSURANCE**

- A. Perform work in accordance with National Electrical Code and/ or other applicable local codes enforced upon time of bid.
- B. Electrical Component Standard: Provide components that comply with NFPA 70 and that are listed and labeled by UL where available.
- C. Listing and Labeling: Provide fixtures and accessory components specified in this section that are listed and labeled for exterior use, UL wet label and installation conditions on Project.
- D. The Terms "Listed" and "Labeled": As defined in the National Electrical Code, Article 100.
- F. Coordinate fixtures, mounting hardware, and site conditions and other items, including work of other trades, required to be mounted on in-grade or on footings installed by the Contractor. Confirm compatibility on light fixture mounting hardware with the proposed foundations/ footings prior to ordering all light fixtures.

### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Section 01600 - Product Requirements: Product storage and handling requirements.
  - 1. Protect work from moisture damage.

### **1.07 WARRANTY**

- A. General Warranty: Any special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.

### **1.08 FIELD MEASUREMENTS**

- A. Verify field measurements prior to ordering and installing fixtures.

### **1.09 COORDINATION**

- A. Coordinate work with installation of associated and adjacent components including work by other trades.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Products: Subject to compliance with requirements, provide one of the products specified in the Lighting Fixture Schedule included in this section.

### **2.02 FIXTURES AND FIXTURE COMPONENTS, GENERAL**

- A. Metal Parts: Free from burrs, sharp corners, and edges.
- B. Sheet Metal Components: Steel, except as indicated. Form and support to prevent warping and sagging.

- C. Fixture Support Components: Comply with Division 16 section "Basic Electrical Materials and Methods."
  - 1. Provide anchor bolts to comply with "breakaway" DOT standard details where required.

### **2.03 High-Intensity-Discharge (HID) Fixtures:**

- A. Conform to UL 1572.
- B. HID Ballasts: Conform to UL 1029 and ANSI C82.4. Include the following features, except as otherwise indicated.
- C. Constant wattage autotransformer (CWA) or regulating high-power-factor type, unless otherwise indicated.
- D. Operating Voltage: Match system voltage.
- E. Single-Lamp Ballasts: Minimum starting temperature of minus 30 deg C.
- F. Normal Ambient Operating Temperature: 40 deg C.
- G. Open circuit operation will not reduce average life.
- H. Encapsulation: Manufacturer's standard epoxy-encapsulated model designed to minimize audible fixture noise.

### **2.04 LAMPS**

- A. All lamps in a source group shall be manufactured by the same manufacturer. A different manufacturer may be provided for each source group. Source groups shall be classified as follows:
  - 1. Fluorescent (Linear T5)
  - 2. Metal Halide (T6, ED17, ED28, BT57)
  - 3. LED (provided by the manufacturer as part of the light fixture)
- B. Approved manufacturers for all lamp source groups are:
  - 1. General Electric
  - 2. North American Philips
  - 3. Osram/Sylvania
  - 4. Venture (metal halide only)
- C. Where available, Contractor shall select and supply lamps which are TCLP compliant based on manufacturer's published literature at the time of bidding. TCLP compliant lamps shall have been tested in accordance with EPA SW846 and prepared in accordance with NEMA LL Series Standards.
- D. Replacement Lamps: At the time of substantial completion and prior to field tests, replace lamps in lighting fixtures which are observed to be noticeably dimmed or extinguished after Contractor's use and testing. Furnish stock of replacement lamps amounting to 10 percent (but not less than one lamp in each case) of each type and size lamp used in each type fixture. Deliver replacement stock to Owner as directed.
- E. Provide lamps to match existing inventories of the owner and/ or existing purchase agreements. All new lamps on this project shall be provided based on the lamp table included in the drawings.

### **2.05 FINISHES**

- A. Manufacturer's standard, except as otherwise indicated, applied over corrosion-resistant treatment or primer, free of streaks, runs, holidays, stains, blisters, and similar defects.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. Section 01 3 - Administrative Requirements: Coordination and project conditions.
- B. Set units plumb, square, and level with grade, and secure according to manufacturer's written instructions and approved Shop Drawings. Support fixtures according to requirements of Division 16 section "Basic Electrical Materials and Methods."
- C. Lamping: Where specific lamp designations are not indicated on the Lighting Fixture Schedule, lamp units according to Lighting Designer's recommendations.
- H. Verify adequacy of EPA wind loading and footing depths.
- I. Verify mechanical, electrical, and building items affecting work of this section are placed and ready to receive this work.

### **3.02 CONNECTIONS**

- A. Ground lighting units. Tighten electrical connectors and terminals, including grounding connections, according to manufacturer's published torque-tightening values. Where manufacturer's torque values are not indicated, use those specified in UL 486A.
- B. Disconnecting Means: All applicable luminaires must be provided with means to comply with luminaire disconnect requirements specified in NEC 410.73(G), 2005 Edition.

### **3.03 FIELD QUALITY CONTROL**

- A. Section 01 4 - Quality Requirements: Tolerances.
- B. Inspect each installed fixture for damage. Replaced damaged fixtures and components.
- C. Tests: Verify normal operation of each fixture after fixtures have been installed and circuits have been energized with normal power source.

### **3.04 ADJUSTING AND CLEANING**

- A. Clean lighting fixtures of dirt and debris upon completion of installation.
- B. All adjustable lighting fixtures shall be aimed straight up during initial installation. Lighting Designer shall supervise and direct Contractor in the field for final, proper aiming of each adjustable fixture once fixture and necessary architectural elements have been fully installed. Lighting Designer and Contractor shall come to a mutual agreement on a specific date and time- after sunset, at which all of the adjustable fixtures shall be aimed. All materials and labor necessary for the final aiming and adjusting of these fixtures shall be included in the Contractor's base bid and shall not warrant a change order or additional expense to the owner.

**PART 4 LIGHTING FIXTURE SCHEDULE**

**4.00 LIGHTING FIXTURE SCHEDULE**

TYPE	DESCRIPTION	MANUFACTURER	MODEL#	LAMP	WATTAGE
SA	250w HPS AREA LIGHT w/ IES TYPE II DISTRIBUTION. SEGMENTED OPTICAL REFLECTOR. MANUFACTURER STANDARD DARK BROWN FINISH. DROPPED GLASS LENS. INTERNAL HOUSE SIDE SHIELD. MOUNT TO 8' LONG CROSS-ARM OFF OF 30' TALL ROUND ALUMINUM POLE w/ BREAKAWAY PLATE. ANCHOR BOLT MOUNTING TO POURED POLE BASE. PROVIDE THREADED INSERTS IN POLE FOR BREAK-AWAY BANNER ARMS TO BE PROVIDED BY OWNER. PROVIDE MULTI-TAP HPF BALLAST WIRED TO 208V. PROVIDE FUSE HOLDER AND FUSE IN BASE OF FIXTURE (HANDHOLE). PROVIDE "BREAK AWAY" SUPPORT SYSTEM FOR LIGHT POLES,  INCLUSIVE OF "SKIRTS"  NOTE: CAMPUS STANDARD FIXTURE- NO SUBSTITUTIONS	KIM LIGHTING   POLE:  GENERAL STRUCTURES  or  HAPCO   BREAK AWAY SYSTEM:  TRANSPO INDUSTRIES, INC. NEW ROCHELLE, NY 10801 914-636-1000	1A-AR2-250HPS-120-DB-P/HSC   CPA-2-8018-T4-XX-TEA-8A-MOD-XX   SKPS122707A   5000 SERIES TYPE B FERRULED ANCHOR AND THE SPM 5100 (1") COUPLING	250/ED17/HPS	285

**END OF SECTION**