



Iowa Department of Transportation

SPECIAL PROVISIONS FOR HIGHWAY LIGHTING MATERIALS

Pottawattamie County
BRF-006-1(113)—38-78

Effective Date
February 16, 2010

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

090039.01 DESCRIPTION

Materials for bridge roadway lighting, frontage road lighting, and under deck lighting shall be the size and type specified.

090039.02 POLES AND SUPPORTS

Poles and Supports shall be specified in the plans.

090039.03 LUMINAIRES

The contractor shall submit to the Engineer product data, plans, working drawings, and specifications as indicated below.

A. Bridge Roadway Luminaire and Frontage Road Luminaire, Type A.

- 1. Housing:** One-piece die-cast, low copper (<0.6% Cu) aluminum in a cylindrical shape with integral cooling fins over the entire length, and 1/8 inch minimum wall thickness. One-piece silicone gasket between housing and door frame concealed when fixture is closed. Concealed integral cast slip hinges with stainless steel pins.
- 2. Door Frame:** One-piece die-cast, low copper (<0.6% Cu) aluminum with integral cooling fins, 1/8 inch minimum wall thickness, mates with housing to create a continuous cylindrical shape. Concealed integral cast slip hinges allow removal without tools. Stop-arm provided to limit door frame opening. 3/16 inch thick clear tempered glass lens is sealed to the lens frame by a one-piece silicone gasket. Door frame secures to housing by four stainless steel recessed captive allen-head screws. Four tapped and plugged holes provided for attachment of options.
- 3. Heavy Duty Swivel:** Cast low copper (<0.6% Cu) aluminum with locking teeth providing 5 degree adjustment intervals. 3/8 inch stainless steel locking bolt. Two 3/8 inch stainless steel

set point screws secure swivel to any 2 inch pipe-size tenon (2 3/8 inch O.D. by 3.5 inch min. length). Clear anodized prior to chromate conversion coating for added corrosion resistance.

4. **Full Shield:** Formed 1/8 inch thick aluminum. Mounts to predrilled door frame holes.
- 5.
6. **Reflector Assemblies:** Specular Alzak aluminum optical components mounted to aluminum frame. Reflector assembly snaps into fixture housing with spring clips. Sockets are 4KV porcelain medium base.
7. **Electrical Components:** All electrical components are UL and CSA recognized with leads extending out of the swivel. High power factor ballast rated -40°F starting for HPS and -20°F for PMH lamp modes.
8. **Finish:** Super TGIC thermoset polyester powder coat paint, 2.5 mil nominal thickness, applied over a titanated zirconium conversion coating; 2500 hour salt spray test endurance rating. Luminaire assemblies shall be finished in Federal Standard No. 595B color number 22197 on the north side of the project and Federal Standard No. 595B color number 23655 on the south side of the project.

B. Under Deck Luminaire, Type B.

1. **Housing:** One-piece, seam welded 3003 aluminum alloy construction – 0.063 inch housing wrapper with 0.125 inch end caps. Light grey TGIC polyester powder coat finish – 5-step pre-treatment. Salt spray test: 1,000 hours.
2. **Lens:** Thermal formed 0.125 inch polycarbonate deep dish lens – internal prisms with smooth exterior. Lens silicone caulk sealed to lens frame and secured with continuous lens retention angles.
3. **Lens Frame:** One-piece, 3003 aluminum alloy construction – 0.063 inch. Two aluminum slide pin hinges allow hinging and removal of lens frame. Hinges mounted to housing with stainless steel hardware and spot welded to lens frame. Lens frame sealed to housing with closed cell neoprene gasketing.
4. **Reflector:** 0.025 inch aluminum with random embossed pattern. Tension retained reflector removable without tools. Mounting Brackets: Two die-formed 5052 aluminum alloy mounting brackets – 0.125 inch. Mounting brackets allow 90 degree adjustment in either direction from horizontal. Positive positioning accomplished by eight (4 per side) 1/4 inch .20 stainless steel hex head bolts secured in end cap plates.
5. **Electrical:** All HID ballasts UL listed HPF type. Mogul base lamps only. All electrical components mounted to aluminum power tray. Power tray hinged one side and secured opposite side with spring loaded, wing head quarter turn fastener. Power tray is removable without tools. Optional fuse holder mounted to front panel of power tray.
6. **Hardware:** Two stainless steel cam latches secure lens frame to housing. Installation: End caps provided with threaded entrances to accept standard 3/4 inch conduit fittings. Mounting bracket flanges contain two 0.437 inch diameter mounting holes.
7. **Listings:** UL and CUL Listed for Wet Location.

090039.04 CONTROL CABINETS

Article 4185.07 of the Standard Specifications shall have the terminology changed to “Control Panel”.

090039.05 CONTROL PANEL COMMUNICATIONS CABLE

Communications Cable shall include all cabling, connecting devices, installation, and testing for wiring systems to be used as a signal pathway for data transmission between Control Panels. Data horizontal cabling shall rated for Category 5 minimum. All UTP cable and connecting hardware shall be EIA/TIA compliant for the application served. All cabling shall be tested, certified, bandwidth warranted as required by the Control Panel manufacturer.