



**SPECIAL PROVISIONS
FOR
NAVIGATIONAL LIGHTING**

**Scott County
IM-NHS-074-1(198)5--03-82**

**Effective Date
April 25, 2017**

THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

150214.01 DESCRIPTION.

This work is the furnishing, installing, and maintaining of a temporary navigation lighting system, during construction, as well as the furnishing and installing of a permanent navigation lighting system for the use on the I-74 Mississippi River bridge superstructure. This work also includes the furnishing, installing, maintaining, and removal of a temporary navigation lighting system for use during the construction of the new bridge over the river.

150214.02 MATERIALS.

- A.** The river span navigation lights shall be factory assembled units which are specifically designed for use in marking navigable channels in accordance with United States Coast Guard requirements Code of Federal Regulations (CFR) 33 § 118.65. Arrangement of components and general dimensions shall be as shown on the plans.
- B.** Provide all lighting fixtures, conduit, wire, cable, batteries, junction boxes and miscellaneous items required to maintain the permanent and temporary navigation lighting systems.
 - 1.** The lamp housing shall be constructed of cast aluminum. The casting alloys shall be suitable for use in marine environments.
 - 2.** The overall assembly shall be fully gasketed and rain-tight.
 - 3.** Lenses shall be tempered fresnel glass. Lens sections shall be 360 degrees green to mark the channel center, and 180 degrees red to mark the edge of the channel. Each lens shall have an outside diameter of 8 inches, and be at least 6 inches high.
 - 4.** Lamp socket shall consist of a porcelain enclosed socket with nickel plated grip screw shell.
 - 5.** Suspension stem shall be 1 1/2 inch diameter Schedule 40 steel pipe, stainless steel.

6. All wiring is to be completely contained inside the light assembly. Gaskets and o-rings shall be used to provide a weather-tight assembly. Light support shall be of heavy-duty construction, cast of the same material as the fixture head.
7. The mounting base shall be of the same material as the lamp housing, with holes for four 9/16 inch diameter mounting bolts.
8. A junction box, matching the mounting base footprint and bolt pattern, shall be provided.
9. Lamps shall consist of a 120 volt LED array which provides an output of approximately 840 candelas (similar to a 75 watt incandescent lamp). Beam viewing angle shall be not less than 20 degrees. Output wavelength shall be approximately 510 nanometers for green lamps and 630 nanometers for red lamps. Lamp array shall have a standard medium screw base. Rated mean-time-between-failure of 100,000 hours.

150214.03 CONSTRUCTION.

The navigation lighting system (both temporary and permanent) shall be coordinated with the U.S. Coast Guard.

- A. As soon as any obstruction is placed over the navigation channel, the contractor shall provide temporary navigation lighting, visible from both upstream and downstream, in accordance with U.S. Coast Guard requirements. The contractor is responsible for developing the details of such a system, installation, powering, monitoring, and removal.
- B. After the installation of the permanent navigation lighting over the river is completed and its operation is confirmed, all temporary navigation lighting details shall be removed.

150214.04 METHOD OF MEASUREMENT.

Lump sum. No method of measurement.

150214.05 BASIS OF PAYMENT.

Payment for Navigation Lighting includes all labor, equipment, and materials to furnish, erect, and support the permanent navigation lighting system for the new bridge according to this specification. The cost for furnishing, installation, maintaining and removal of the temporary navigation lighting system is also to be included in the pay item for Navigation Lighting.