



**SPECIAL PROVISIONS
FOR
RECTANGULAR RAPID FLASHING BEACON SYSTEM**

**Scott County
STP-U-0587(639)--70-82**

**Effective Date
April 19, 2022**

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.

156222.01 DESCRIPTION.

- A.** This section covers the furnishing of all labor, materials, tools, equipment and performances of all work and services necessary or incidental for the installation of the pedestrian-Activated rectangular rapid flash beacon (RRFB) assembly as indicated on the drawings or as specified herein. Assemblies shall be hardwired and shall be pedestrian activated.
- B.** This work shall consist of furnishing and installing an assembly complete with RRFBs, push buttons, control cabinets with flash controller, wireless communications equipment, and system power supplies attached to a traffic signal pedestal as shown in the plans and as specified by the Engineer.
- C.** When AC power is present, electrical installation and servicing shall be performed only by a qualified electrician.
- D.** Submit a completed list of materials and equipment for approval before any equipment or materials are ordered. Submit catalog cuts and manufacturer's specifications for all items on this list.

156222.02 MATERIALS.

A. General System Requirements.

- 1.** All materials furnished, assembled, fabricated, or installed shall be corrosion resistant. All mounting hardware shall be Type 304 stainless steel.
- 2.** All components shall be manufactured and assembled as a complete system rated for 24 hours/365 days a year operation.
- 3.** The entire system shall have a minimum 3 year warranty.

4. The RRFB manufacturer shall have a minimum of 10 years of relevant intelligent traffic product manufacturing experience, as well as a minimum of 3 years of RRFB light bar manufacturing experience.

B. Rectangular Rapid Flashing Beacons.

1. The Contractor shall furnish and install two direction RRFB units mounted to the post as indicated on the plans. The RRFB housing shall be a minimum 1/8 inch thick aluminum.
2. Each RRFB unit shall satisfy the FHWA *Interim Approval for Optional Use of Rectangular Rapid Flashing Beacons* (IA-21), dated March 20, 2018, and the 2009 edition of the MUTCD, including the unit size, mounting location, flash rate, and operational parameters.

C. Controller.

1. The power supply shall accept a universal AC input, 100-240VAC, 50/60 hz. have an output of 12 VDC regulated to +/- 1% and shall have an LED power on indicator.
2. At each crosswalk, all installed RRFB assemblies must communicate wirelessly using an unlicensed radio band so as to simultaneously commence operation of their alternating rapid flashing indications and cease operation simultaneously after a programmable timeout. The communication equipment shall comply with FCC requirements and the vendor representative shall field test the equipment prior to placing the units in operation to demonstrate the RRFBs ability to achieve proper operation under the requirements of FHWA IA-21. The wireless communications of one RRFB installation shall not interfere with, or cause unintended operation of, RRFBs at nearby intersections.
3. The controller shall be housed within the NEMA 3R type control cabinet and be vented with screening included on all vents and drains to prevent insects and other foreign matter from entering.
4. The controller shall include an integrated Real Time Clock (RTC) with on-board battery backup.
5. The system shall have push-button activation. Each flashing beacon assembly shall have one pedestrian pushbutton meeting ADA requirements.

D. Pole and Concrete Footing.

1. The pole used to support the flashing beacon assembly hardware shall be 13 foot to 15 foot length Schedule 40 pipe raw aluminum pedestal pole and the diameter shall be as recommended by the RRFB manufacturer.
2. The pole shall be supplied with one end threaded for easy installation into a pedestal base. The pedestal base shall be TP-358 cast aluminum that mounts on a concrete foundation. The pedestal base shall have a large 8.5 inch square hand hole cover allowing access to the interior.
3. RRFB assembly shall be installed and mounted as indicated in the plans, using a concrete footing meeting the requirements of Section 2525 of the Standard Specification and as detailed in the plans.

E. Pedestrian Pushbuttons.

The Accessible Pedestrian Signal (APS) pushbuttons shall be ADA compliant and meet the requirements of Section 2525 of the Standard Specifications. The push button shall be

provided with all necessary mounting hardware, wiring, and associated ADA signage.

F. Signage.

All signs shall meet MUTCD requirements. Each RRFB assembly shall include two crossing signs (W11-2), 36 inch by 36 inch dimension, two downward pointing arrow (W16-7P) plaques 24 inch by 12 inch dimension mounted back-to-back, and a R10-25 9 inch by 12 inch dimension mounted as part of or above the pedestrian push button. The W11-2 and W16-7P signs shall have a fluorescent yellow-green background.

156222.03 CONSTRUCTION.

A. Construction Requirements.

1. The RRFB assembly and system shall be installed in strict accordance with the manufacturer's recommendations, as shown on the plans, and as directed by the Engineer.
2. Prior to ordering and installation, confirm sidewalk configuration has not changed during construction such that elevations and locations need to be modified.

B. Inspection.

The Contractor shall inspect all the electrical equipment and shall notify the Engineer in writing before the equipment is installed if the equipment appears to be deficient in fit, form or function.

C. Coordination.

It shall be the sole responsibility of the Contractor to coordinate among suppliers and contractors providing equipment for the project.

156222.04 METHOD OF MEASUREMENT.

Rectangular Rapid Flashing Beacon System will be an each item, per crossing location and complete RRFB unity assembly (two units per crossing location).

156222.05 BASIS OF PAYMENT.

Payment will be at the contract unit price for each crossing location, as a complete Rectangular Rapid Flashing Beacon System. A system consists of two pole assemblies with power supply, traffic signal posts, foundations, pedestrian push buttons, warning signs and plaques, rectangular rapid flashing beacons, controllers, wireless communication equipment and mounting hardware. All labor, materials, and equipment necessary for installation of a functioning pedestrian-activated flashing beacon assembly will not be paid for separately but shall be considered incidental to this item.