Illinois Department of Transportation
2300 South Dirksen Parkway / Springfield, Illinois / 62764

October 23, 2020

SUBJECT: Route FAU 6594 & FAP 671 (Western Ave. & IL 8)
Section 16-00368-01-PV (City of Peoria)
Peoria County
Contract No. 89766
Item 099
November 6, 2020 Letting
Addendum A

NOTICE TO PROSPECTIVE BIDDERS:

Attached is an addendum to the plans or proposal. This addendum involves revised and/or added material.

1. **Revised the Schedule of Prices.**
2. **Revised sheets 13, 14, 271, 273, 275 & 277 of the Plans.**
3. **Revised pages 77 – 81 of the Special Provisions.**

Prime contractors must utilize the enclosed material when preparing their bid and must include any changes to the Schedule of Prices in their bid.

Very truly yours,

Jack A. Elston, P.E.
Bureau Chief, Design and Environment

REMOVE PEDESTRIAN PUSH-BUTTON

Description. This work shall be completed in accordance with Section 895 of the Standard Specifications.

Method of Measurement. This work will be measured for payment as each pedestrian push-button removed.

Basis of Payment. This work will be paid for at the contract unit price per each for REMOVE PEDESTRIAN PUSH-BUTTON.

RECTANGULAR RAPID FLASHING BEACON ASSEMBLY (COMPLETE).

Description. This work shall consist of furnishing and installing AC-powered cabinet-based rectangular rapid flashing beacons (RRFBs) at the intersection of Western Avenue and Starr Street. This pay item includes all necessary work to furnish and install the traffic signal post-mounted and light pole mounted rapid rectangular flashing beacon system for crossing Western Avenue at Starr Street (2 crosswalks).

This work shall be in accordance with all applicable FHWA and MUTCD guidelines as well as Article 801 of the current Standard Specifications. This specification is for a hard-wired Rectangular Rapid Flashing Beacon (RRFB) assembly. This assembly shall consist of a two direction RRFB unit along with the associated controller, controls, pedestrian push button, and all electronics necessary to support up to 50 activations per day for up to three minutes flash time (180 seconds) per activation. This work shall include all necessary mounting brackets.

Overview

Each RRFB shall be cabinet-based and use AC power. The industry-standard cabinet will house the AC/DC power supply, circuit breaker, charge controller, flash controller, and on-board user interface. Each RRFB assembly shall include two light bars. The RRFB shall conform to all provisions of the MUTCD, Interim Approval IA-21 including flash pattern. The RRFB shall be pre-wired to the maximum extent possible. Solar-powered version of the RRFB shall also be available, including a smaller self-contained version that is fully compatible.

Mechanical Specifications

The control cabinet(s) shall be constructed from aluminum with a lockable industry standard #2 lock and tamper-proof hinged door. No other external control cabinet shall be required. The control cabinet(s) shall be vented to provide air circulation and cooling of the electronic system. The vents shall be screened to prevent ingress by insects and debris.

The overall weight of the control cabinet shall not exceed 90lbs (41 kg) and shall have the approximate dimensions: 24” H x 16” W x 8” D (61cm H x 41cm W x 21 cm D).
The control cabinet(s) shall be painted black. Fasteners shall be stainless steel.

Light Bars
The light bars shall be current-driven LED strings without active electronics. The LEDs shall be driven by pulse-width modulated fixed current.

The light bar housing shall be constructed from aluminum and shall have the approximate dimensions: 24” L x 1.5” D x 4.5” H (61.0 cm L x 3.8 cm D x 11.4 cm H).

Each light bar shall conform to all provisions of the MUTCD and FHWA requirements.

Each of the two modules in a light bar shall have 8 LEDs and shall be purpose-built by the manufacturer of the RRFB including the optics. The optics shall be premium, UV-resistant polycarbonate.

Each end of a light bar shall include a side-emitting pedestrian confirmation light composed of a single LED. Users shall have the option of using both confirmation lights for median applications and covering one confirmation light with an included sticker for side-of-road applications.

The light bar shall be mounted to the post or pole using a separate bracket assembly to facilitate mounting two light bars back-to-back (bi-directional) and to allow the light bar(s) to rotate horizontally for aiming.

The light bar bracket shall be constructed from galvanized or stainless steel and shall have both banding and bolting mounting options and shall be able to be mounted to all specified pole types. The light bar assembly shall open for access to the wiring connections for the LED modules. LED modules shall be rated to NEMA 3R.

Light bar wiring harnesses shall be included. Fasteners shall be stainless steel.

Mounting
Mounting adapter hardware for the RRFB cabinet shall be available for mounting to round light poles or square posts. Side-of-Pole mounting shall offer strapping as standard with an option for Z-bar and U-bolts.

Mounting configurations shall not require specialized tools.

Configuration
The RRFB cabinet shall house an auto-scrolling LED on-board user interface that provides on-site configuration adjustment, system status and fault notification.

The user interface shall provide a display of four (4) alphanumeric characters and three (3) control buttons to navigate and change settings and activate functions.

When editing the configuration, the user interface will flash the display indicating it is ready to accept editing and will flash the display rapidly 3 times to indicate the setting change has been accepted.

The flash duration shall be adjustable in-the-field from 5 to 60 seconds in one second increments, 60 to 1,200 seconds in 60-second steps, and 3,600 seconds. Default flash duration shall be 20 seconds.

The system shall provide configurable nighttime intensity settings ranging from 10% to 100% of daytime intensity.

The system shall be capable of enabling or disabling ambient brightness auto-adjustment. This feature allows the system to provide optimal output brightness in relation to ambient light levels while always maintaining adherence to SAE J595 Class I specifications. If enabled, the ambient brightness auto-adjustment shall adjust output to a range between 50% and 100% of daytime intensity.

The User Interface shall provide viewing and/or programming access for the following:
Activation Duration (5 to 60, 60 to 1200, or 3600 seconds)

Digital output that is active during the flashing cycle that allows the control of external devices such as crosswalk illumination. Digital output shall be configurable for night operation only or operation day or night.

Night Intensity Setting

Adjustment for Ambient Daytime Brightness

Self-Test / BIST (Built-In Self-Test) including the detection of shorts or open circuits in the fixture outputs

Battery Status – General description and actual battery voltage (not applicable for AC model)

Day or Night Status (as determined by dedicated photosensor)

Solar Panel Voltage (not applicable for AC model)

Automatic Light Control. If this safety feature is enabled, it allows the RRFB to temporarily reduce the intensity of the light bars to maintain energy equilibrium. The user interface shall report the amount of dimming being applied in the range of 10% to 100%

Daily activations averaged over 90 days

Pushbutton detection

Firmware Version number

Activation duration, Night intensity setting and adjustment for ambient daytime brightness shall be automatically broadcast to all RRFBs in the system when changed in one RRFB.

AC/DC Power Supply
The RRFB shall include a universal AC/DC power supply that accepts conventional AC power input and outputs 15 volts DC. It shall be rated for at least 50 watts. AC wiring input shall terminate on a DIN-rail circuit breaker rated for 4 amps.

Operational Specification
The RRFB shall meet the minimum photometric specifications of the Society of Automotive Engineers (SAE) standard J595 Class I dated January 2005. A photometric report by a certified third-party testing laboratory shall be provided to demonstrate compliance with J595.

The color of the yellow light bar indications shall meet the specifications of SAE standard J578 (Color Specification) dated December 2006.

The controller shall be able to support up to 1.4 amps combined current through the RRFB fixtures simultaneously.

The system shall use a dedicated light sensor to detect night and day states and apply any optionally enabled intensity adjustments.

The system shall operate normally within the temperature range of -40 to +161˚F (-40 to +72˚C)

Radio System

No radio system is required for the RRFB system. The system components are to be hard wired.

Activations
The system shall be capable of activation by pushbutton.

The pedestrian push buttons that shall have an LED indicator with audible tone with Piezo control and shall be ADA compliant and MUTCD-2009 4E compliant for momentary operation. The RRFB shall be capable of operating with either 1 or 2 pushbuttons.

All RRFBs in the system shall initiate activation simultaneously within 150ms of activation.

If an additional activation occurs while the system is activated, the flash duration shall reset. For example, with the flash duration set to 20 seconds, if an additional activation occurs after the RRFB has been activated for 15 seconds the RRFB will continue for an additional 20 seconds, or 35 seconds in total.

If the RRFB has ceased operation, any subsequent activation shall activate the RRFB without delay regardless of how recently the RRFB ceased operation.

Pushbutton wiring harnesses shall be included.

This work shall include the installation of push buttons mounted to a traffic signal post or on push buttons posts, in accordance with the information shown on the plans. Push button posts shall be installed in accordance with the information provided in the Standards Specifications and Highway Standards for “Pedestrian Push-Button Post.”

Environmental Testing
The RRFB cabinet and light bars shall be rated to a minimum of NEMA 3R.

Packaging
Packaging shall consist of only recyclable corrugated cardboard and soft plastic bags.

Qualifications
The RRFB shall be FCC certified to comply with all 47 CFR FCC Part 15 Subpart B Emission requirements.

The RRFB shall be manufactured in the USA and shall be Buy American compliant. The Manufacturer shall provide a 5-Year Limited Warranty.

The Manufacturer shall be ISO 9001 certified.

Pushbuttons
Each RRFB assembly shall include one pedestrian pushbutton for activation of the flashing beacon. The pushbuttons shall comply with the specification for PEDESTRIAN PUSHBUTTON in this contract. The pushbutton shall be installed on a proposed pedestrian pushbutton post (paid separately) or on a traffic signal post (paid separately) as indicated on the plans.

Signs
The contractor shall provide and install the regulatory pedestrian instruction sign according to MUTCD, sign series R10-25 (9”x12” sign), two (2) pedestrian signs W11-2 (30”x30”), and two (2) arrow plaques W16-7P (24”x12”). The signs shall be diamond grade sheeting. Pedestrian pushbuttons shall be fully accessible from a paved surface.

Method of Measurement. This work will be measured for payment per each assembly installed. An assembly includes furnishing all parts and labor for the installation of light bars facing both directions, associated controller, a pedestrian push button, two (2) pedestrian signs W11-2 (30”x30”), two (2) arrow plaques W16-7P (24”x12”) and one (1) crosswalk sign R10-25 (9”x12”).

Basis of Payment. This work will be paid for at the contract unit price per each for RECTANGULAR RAPID FLASHING BEACON ASSEMBLY (COMPLETE).