



# Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

May 31, 2024

SUBJECT: FAP Route 17 (IL 64)  
Section D2 PP 2023-02  
Ogle County  
Contract No. 64R99  
Item No. 17, June 14, 2024 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 page ii of the Table of Contents to the Special Provisions.
3. Added pages 75 and 76 to the Special Provisions.
4. Revised sheets 3 and 9 of the Plans.

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,

A handwritten signature in black ink, appearing to read "Jack A. Elston".

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

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## **SOLAR POWERED FLASHING BEACON ASSEMBLY (COMPLETE)**

This pay item includes all necessary work to install the Post Mounted Solar Powered Flashing Beacon Assembly (Complete) as follows:

This work will consist of the installation of solar-powered flashing beacon assemblies (complete), at locations shown in the plans and approved by Kristie Nyderek (815/284-5469) of the Illinois Department of Transportation, two weeks prior to installation.

Overview: This specification is for a solar powered 24-hour flashing beacon. The system shall consist of a self-contained light engine containing all electronics, batteries & solar panels. No additional cabinet is required. The light engine shall connect to an ITE compliant 12" lens, and mount with the included bracket set to a wood. Flashers mounted above yellow warning signs shall consist of a yellow lens beacon and the flashers mounted above red regulatory signs shall consist of a red lens beacon. The flashers shall be installed one (1) foot above the sign.

### 1.0 Mechanical Specifications

The light engine shall be constructed from aluminum, with a yellow power-coated finish, and shall be no greater in size than 6" x 17" x 26". Solar panels shall be integrated to the light engine, and all batteries and electronics shall be located internally, with no external control cabinet required. The weight of the light engine shall not exceed 52 pounds. The light engine must be able to rotate 360 degrees and tilt 60 degrees for maximum solar energy collection. Batteries shall be field replaceable.

Enclosure. The controller shall be housed in a vandal-resistant, aluminum, NEMA 3R pole mounted cabinet with a lockable, hinged door.

Power. The controller unit shall be available in solar 12 VDC, 35 AHr versions, each equipped with a 40W solar panel. Solar-powered systems shall provide a minimum of 15 days of back-up batter power in the absence of sunlight while operating at full brightness and at standard usage levels. The battery shall have a life span of a minimum of 5 years and be field replaceable.

The signal housing shall be constructed of yellow polycarbonate material, and must be adjustable independently from the bracket for lens alignment. The signal housings shall meet the equipment standard of the Institute of Transportation Engineers Vehicle Traffic Control Signal Heads (VTCSH) Chapter 2 and Sections 880 and 882 of the Standard Specifications for Road and Bridge Construction. The lens shall be an ITE complaint 12" yellow or red lens.

The bracket kit must be constructed of cast aluminum or steel, and shall be designed according to NCHRP 350 safety standards. The bracket shall be designed to fit new or existing square post or 4" OD pole supports, such that existing signs shall not be affected.

Added May 31, 2024

## 2.0 Operation Profile

The flash pattern and flash sequence shall comply with the Manual of Uniform Traffic Control Devices (MUTCD), Chapter 4K.

The light shall flash at a rate of 56.6 flashes per minute, 24 hours per day. The light shall flash with a 50% duty cycle (0.53s on time/ 0.53s off time). The light shall operate at 124, 250 or 400 candela (user configurable).

When set at 124 candela by day, and 35 by night, the light shall have a minimum operating autonomy of 40 days. The light shall automatically reduce light output in case of low battery situations, reducing risk that the light will fail entirely under conditions of poor solar insulation.

If shown in the plans, when two (2) flashers are for the same direction of travel, at the same location, the flashers must communicate and flash in a wig-wag pattern. The communication must be wireless.

## 3.0 Environmental Specifications

The light should be able to withstand and operate at temperature extremes of -40° F to +122° F. The system shall be designed and constructed to withstand 178 KMH (110 mph) wind loads in conformance with the requirements of the AASHTO publication, "Standard Specifications for Structural Supports of Highway Signs, Luminaries and Traffic Signals", 4<sup>th</sup> Edition 2001.

## 4.0 Quality Assurance

The light, including batteries, panels and all components, shall be guaranteed for a minimum of three years.

If radio components are shown in the design plans the product must be FCC certified to comply with all 47 CFR FCC Part 15 Subpart B Emission requirements.

## 5.0 Existing Equipment

When indicated in the plans, existing solar flashers shall be carefully removed and stored for the Department. They shall remain the property of the Department. Traffic Operations shall be contacted to schedule pickup of the existing electrical equipment.

## 6.0 Basis of Payment

This work will be paid for at the contract unit price Each for SOLAR POWERED FLASHING BEACON ASSEMBLY (COMPLETE), which price shall be payment in full for furnishing all parts and labor for the installation of the solar unit. No additional compensation will be allowed.

Added May 31, 2024