

SOLAR-POWERED FLASHING BEACON ASSEMBLY

****From Guilford-Rockingham IMG SIGN(44)**

- xx. DESCRIPTION. This work shall consist of installing a solar-powered flashing beacon assembly consisting of two 12 inch amber beacons, a solar power source, and related items on a Type B Sign at the location indicated in the Plans and as directed by the Engineer.

The work under this Section shall be performed in accordance with these provisions, the Plans, and Section 678 of the Standard Specifications.

- xx. MATERIALS. Materials shall meet the requirements as shown on the Plans. Materials shall be approved by the Engineer prior to use.

- xx. SUBMITTALS.

(a) Fabrications Drawings. The Contractor shall submit Fabrication Drawings in accordance with Sections 105 and 678. Drawings shall show how the beacons will be attached to a Type B sign.

(b) Documentation Requirements. Three (3) advance copies of equipment manuals furnished by the manufacturer shall be submitted to the Engineer for review a minimum of ten days prior to the scheduled start of the first Operations Stand-alone Test. The Engineer will verify the manufacturer's equipment manual as part of the test and integration process. The equipment manual incorporating the Engineer's corrections and comments shall be integrated by the Contractor into the operations and maintenance manual. The manual shall, as a minimum, include the following:

- (1) Complete and accurate schematic diagrams.
- (2) Complete installation and operation procedures.
- (3) Complete performance specifications (functions, electrical, mechanical, and environmental) of the unit
- (4) Complete accurate troubleshooting, diagnostic, and maintenance procedures.

- xx. CONSTRUCTION REQUIREMENTS. Installation of the solar-powered flashing beacons, support assembly, power switch inside a secured box, solar power supply, and testing shall be performed in accordance with the Contract Documents, manufacturer's recommendations, and as directed by the Engineer.

As the flashing beacons will be installed on a Type B Sign structure, installation methods shall be compatible with the methods for installing Type B Signs.

The flashing beacons shall be 12 inches in diameter and flash in an alternating "bouncing" sequence.

Contractor shall coordinate with Vtrans to determine specific requirements for securing the power switch.

- xx. METHOD OF MEASUREMENT. The quantity of Special Provision (Solar-Powered Flashing Beacon Assembly, Weigh Station) will be for each beacon assembly installed at the specified location in the complete and accepted work.
- xx. BASIS OF PAYMENT. The accepted quantity of Special Provision (Solar-Powered Flashing Beacon Assembly, Weigh Station) will be paid for at the Contract unit price per each at each designated location. Payment will be full compensation for installing the grounding electrode with conduit, solar panel and associated pedestal post and reinforced concrete base (if necessary), flashing beacon assembly, flasher cabinet, and any required attachment hardware; testing the beacon; and for furnishing all materials, labor, tools, equipment, and incidentals necessary to complete the work.

Payment for sign post(s) and traffic sign(s) installed will be made under the appropriate Contract items.

Payment for Special Provision (Solar-Powered Flashing Beacon Assembly, Weigh Station) will be made as follows:

- (a) When applicable, 10 percent of the Contract unit price will be paid for installation of the pedestal post.
- (b) Upon installation of a functioning system as indicated by a successful continuous 24-hour operation test period, 20 percent of the Contract unit price will be paid.
- (c) An additional 30 percent of the Contract unit price will be paid upon receipt by the Engineer of notice from all responsible Agency parties that all paperwork related to the beacon installation has been completed to the satisfaction of the Agency.
- (d) The remainder, less 20 percent of the Contract unit price, will be paid after successful completion of the 30-day test control period.
- (e) The final 20 percent of the Contract unit price will be paid upon acceptance of the project.

The Contractor will not be paid more than 50 percent of the Contract unit price for Special Provision (Solar-Powered Flashing Beacon Assembly, Weigh Station) at the location indicated, whether directly, through stockpile, or any other means until the Engineer has been notified that all related paperwork has been completed to the satisfaction of the Agency.

Payment will be made under:

| <u>Pay Item</u> | <u>Pay Unit</u> |
|---|-----------------|
| 900.620 Special Provision (Solar-Powered Flashing Beacon Assembly, Weigh Station) | Each |