SP- 156103
(New)

SPECIAL PROVISIONS
FOR
LED FIRE STATION WARNING SIGN

Dubuque County
STP-A-2100(689)--86-31

Effective Date
April 17, 2018

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.

156103.01 GENERAL.

This specification includes the furnishing and installation of wirelessly controlled solar powered LED W11-8 Fire Station Warning Signs. It also includes installing a base station control unit in the fire station at a location identified by the Fire Station with eight wireless transmitter fobs supplied for use in fire trucks.

156103.02 MATERIALS AND CONSTRUCTION.

Furnish solar powered and wirelessly controlled LED enhanced sign assemblies.

A. Signs.

1. All sign blanks shall be 0.080-gauge aluminum.

2. Sheeting used shall be 3M DG3 diamond grade, with anti-graffiti overlay.

3. All sign assemblies shall use anti-vandal fasteners to mount components to sign and sign to fixture.

4. All sign assemblies shall be MUTCD code 30 inch W11-8 fire warning signs.

B. LEDs.

1. Each sign assembly shall consist of eight high power 1 watt Luxeon LEDs that provide a maximum light intensity of up to 600,000 mcd (millicandelas) with a viewing angle of 15 degrees.

2. All LEDs shall match the color of the sign amber.

3. Each LED shall be sealed in 7/8 inch diameter, heat dissipating plastic enclosure to provide resistance to weather and vibration.

4. All LED enclosures shall be mounted in a 1 inch hole and ultrasonically welded to the sign assembly to provide maximum strength and rigidity.

5. All LEDs shall be wired in strings to activate simultaneously as per MUTCD standards.

6. All wire used shall conform to military specifications, MIL-W-16878D, Type D, vinyl nylon jacket.

C. Control Circuit.

1. The control circuit shall have the capability of independently flashing up to two independent outputs. The LED light output and duty cycle shall be programmable.

2. The flashing output shall be 50 to 60 flashes per minute with a 100 to 500 millisecond duration on time. The output shall reach the output current as programmed for the duration of the pulse.

3. The control circuit shall automatically adjust LED output for maximum visibility for both day and night time operations. The day and nighttime mode will automatically be determined by solar panel charge input.

4. The control circuit shall be enclosed in a plastic housing to be waterproof and housed in a NEMA rated enclosure.

5. All circuit connectors shall conform to Ingress Protection, IP-67 rating, dust proof, and protected from temporary immersion in water up to 3 feet deep for 30 minutes. Connectors shall be Deutsch DTM series.

D. Battery.

1. Battery packs shall be 4.8 volt 14000mAH Nickel Metal Hydride (NiMH) or equivalent.

2. All batteries shall be sealed in a plastic film to provide moisture and corrosion resistance. Battery dimensions shall be 10.5 inches by 1.5 inches to be housed in 2 3/8 inch aluminum tube.

3. All batteries shall operate between the temperatures of -40ºC and +80ºC.

4. All battery connectors shall conform to Ingress Protection, IP-67 rating, dust proof, and protected from temporary immersion in water up to 3 feet deep for 30 minutes. Connectors shall be Deutsch DTM series.

E. Solar Panel.

1. All solar panels shall be up to 13.5 inches by 15 inches in size and provide up to 13.5 watts peak total output sized for all climate and geographical locations.

2. All panels shall be mounted to an aluminum plate and bracket at an angle of 45 degrees to 6 degrees to provide maximum output. Bracket shall be secured to a 2 3/8 inch aluminum tube. (Note: Collector must face south)

3. All fasteners used shall be anti-vandal.

4. Wire used shall conform to military specifications, MIL-W-16878D, Type D, vinyl nylon jacket.

5. The solar panel assembly shall be mounted directly to the back of the sign assembly and be a fully self-contained onto a 2 3/8 inch round aluminum housing.

F. Wireless Radio.

1. Radio control shall operate on 900 mhz frequency hopping spread spectrum network.

2. Radio shall integrate with communication of LED sign control circuit to activate sign from pushbutton input.

3. All radio systems shall operate from 3.6 vdc to 15 vdc

4. Up to 1000 feet line of sight communication with existing antenna.

G. Base Station Control Unit.

1. The base station control unit shall be made of aluminum with the ability to be wall mounted or desktop mounted.

2. The power source shall be a 6vdc power supply protected by fusing.

3. Two separate LED indicators shall be installed on the face of the unit to provide power indicators and activation status.

4. Activation shall be performed with an ADA compliant pushbutton mounted to the face of the station.

5. The housing will accommodate connections for external antennas for controlling LED BlinkerSigns™.

6. Unit shall include Omni Style Antenna to mount on the front of the building. The chief of the Pleasant Prairie Fire Department shall determine the location of the equipment prior to installation.

H. Wireless Transmitters.

The wireless transmitter must meet the following requirements:

- 418 MHz, FCC certified transmitter.
- Line of sight range up to 1000 feet.
- Four independent systems can be controlled with one transmitter.
- Multiple transmitters can be paired with a single receiver.
- Replaceable lithium button cell battery (3V CR2032).
- 3V DC Operating voltage.
- Operating temp -40°C to 85°C.
- Supply current is 3.4 mA.
- Dip Switch addressing.

156103.03 METHOD OF MEASUREMENT AND BASIS OF PAYMENT.

A. The LED Fire Station Warning Sign will be measured by the Engineer by Each for furnishing and installing the signs satisfactory to the Engineer.

B. The base station control unit and eight wireless transmitters are incidental to the LED Fire Station Warning Signs.

C. Contract unit prices of Each shall include all costs for furnishing all labor, tools, equipment, and incidentals necessary to complete the installations of LED Fire Station Warning Signs at the locations identified in the construction documents.