ITEM 680.82220108 – FURNISH AND INSTALL LIGHT EMITTING DIODE (LED) BLANKOUT TRAFFIC SIGN ASSEMBLY

DESCRIPTION:

Furnish and install light emitting diode (LED) blankout traffic sign assembly in accordance with the contract documents and as directed by the Engineer.

MATERIALS:

The traffic sign assembly shall consist of a weatherproof housing, light emitting diodes and associated wiring, a clear polycarbonate lens on the sign face and a black high density polyethylene (HDPE) panel on the assembly back.

Sign Frame

The sign frame shall be made of extruded 6105-T5 aluminum with a finished part thickness no greater than 2 in. high x 4 in. wide. The frame shall consist of four aluminum T-slot extrusions which will be attached at each corner by .25 in. thick x 6.5 in. x 6.5 in., 90 degree brackets made of 6105-T5 clear anodized aluminum. The front and rear panels shall float in an aluminum frame track filled with a .25 inch bead of EDPM foam rubber cord to allow expansion and contraction of dissimilar materials, and to provide a weather-tight seal. Breather holes shall be strategically located to prevent condensation. All hardware, nuts and bolts shall be stainless steel.

A standard liquid-tight strain relief cable fitting shall be provided with a neoprene sealing sleeve to provide a water-tight seal where the power cable exits the sign. A 6 ft. long, 2 conductor, 16 AWG color coded cable will be provided for each sign.

The exterior of the housing shall be powder coated black. The top and bottom shall be provided and preloaded with four 5/16 inch x 18 (8 mm dia) T-slot nuts. The entire assembly shall be attached to aluminum z-bars with 5/16 x 18 size bolts.

Sign Face

The face of the sign shall be protected by a sheet of uv protected polycarbonate. This material shall be a minimum of 0.375 in. thick, clear and non-glare.

Light Emitting Diodes

The LED sign module shall conform to the institute of traffic engineers (ITE) proposed specification for led vehicle traffic signal modules. LED color(s) shall be as indicated on the plans and as directed by the manual of uniform traffic control devices. The individual LED light sources shall be wired such that the failure of one LED light source will not result in the loss of illumination of any additional led light sources.

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CONSTRUCTION DETAILS:

The LED blankout sign assembly shall be built in accordance with the details shown on the plans/Standard Specifications/standard construction sheets/Manual of Uniform Traffic Control Devices and as directed by the engineer.

The blankout sign shall be completely blank when not energized.

Overhead and/or ground mount z-bar attachments to support poles, mast arms and/or span wires/tether cables shall be made with square galvanized steel tubing, stainless steel bolts, u-bolts, nuts and washers, as directed by the engineer.

The blankout sign shall automatically dim at night, to reduce the blinding effect on drivers. Dimming shall be controlled by a photocell. The sensitivity of the photocell shall be adjustable. The direction of the photocell detection shall be adjustable, to reduce influence from roadway lighting or headlights.

The blankout sign shall operate from 120VAC on/off power provided by a load switch output from a traffic signal controller. Traffic signal controller will be provided under a separate pay item.

The blankout sign shall be attached to a Type-B support structure. The support structure and foundation will be provided under a separate pay item.

METHOD OF MEASUREMENT:

This work will be measured as the number of LED blankout traffic sign assemblies satisfactorily furnished and installed.

BASIS OF PAYMENT:

The unit price bid shall include the cost of furnishing all labor, materials, and equipment necessary to satisfactorily complete the work in the sign final working, overhead or ground mounted, position.