

Special Specification 6013

Integration of LED Dynamic Message Signs



1. DESCRIPTION

This Item will govern for the integration of the Contractor installed LED Dynamic Message Signs (DMS) system with existing LED DMS equipment and communications network.

The existing LED DMSs manufactured by others have been installed and are currently in operation at locations as shown on the plans.

The materials and equipment to be furnished and installed and the work to be performed will be as detailed in these special specifications, and as directed.

2. MATERIALS

Unless otherwise shown, furnish all materials.

- 2.1. **General Requirements.** All materials furnished assembled, fabricated or installed under this item will be new, corrosion resistant and in strict accordance with the details on the plans and in the specifications.

The integration of the existing LED DMS equipment will include, but not be limited to, the following:

- Review of the design and operation of the existing LED DMS equipment. Available documentation for the existing LED DMS's will be supplied by the Department.
- Modification and addition of equipment to interface the new LED DMS equipment with the existing LED DMS equipment to produce one completely compatible LED DMS system.
- Integration of the Contractor furnished new LED DMS equipment with the existing LED DMS equipment to produce one fully operational LED DMS system.
- Any integration software required may be supplied by the Contractor, as approved, or by an approved third party developer.
- Conducting subsystem tests of the integrated LED DMS subsystem.
- Providing full documentation of the above work performed.

The Contractor will be responsible for correcting all problems with existing LED DMS equipment and software, and repairing any LED DMS equipment damage, arising from the integration of the proposed LED DMS equipment with the existing LED DMS system.

- 2.2. **Electrical and Mechanical Requirements.** The Contractor will furnish and install all cables necessary to interconnect the existing LED DMS equipment with the proposed LED DMS equipment.

All connectors, terminal blocks, panels and surge arrestors will be provided for the added wiring, as directed.

Any special interface equipment or software required to interface the new LED DMS equipment with the existing LED DMS's, at locations, and as directed, will be included in this bid item.

Any equipment added for this bid item will comply with Special Specification Item, "LED Dynamic Message Sign System."

- 2.3. **Environmental Design Requirements.** Any material used or equipment provided will meet the environmental requirements described in Special Specification Item, "LED Dynamic Message Sign System."

3. CONSTRUCTION METHODS

- 3.1. **General.** Any addition of equipment will employ design and construction utilizing the latest available techniques with a minimum of different parts, subassemblies, circuits, cards, and modules, to maximize standardization and commonality.

The equipment will be designed for ease of maintenance. All component parts will be readily accessible for inspection and maintenance. Test points will be provided for checking essential voltages and waveforms.

- 3.2. **Electronic Components.** All electronic components will comply with Special Specification Item, "Electronic Components."

- 3.3. **Mechanical Components.** All external screws, nuts, and locking washers will be stainless steel. No self-tapping screws will be used, unless approved.

All parts will be made of corrosion resistant material, such as plastic, stainless steel, anodized aluminum or brass.

All materials used in construction will be resistant to fungus growth and moisture deterioration.

Dissimilar metals apt to corrode through electrolysis under the environmental operating conditions specified will be separated by an inert dielectric material.

- 3.4. **Documentation Requirements.** Ten complete sets of operation and maintenance manuals will be provided. The manuals will, as a minimum, include the following:

- Complete modification details to the existing LED DMS equipment.
- Complete wiring and cabling details of the additions and modifications.
- For additional equipment provided under this bid item, complete schematic diagrams, installation procedures, complete performance specifications, complete parts list, pictorial of components layout on circuit board, and complete stage-by-stage explanation of theory and operation.

The documentation described above may be included in the DMS manuals, with approval.

- 3.5. **Testing.** The testing will be in accordance with the Special Specification "Testing, Training, Documentation and Warranty," Sections 2.4 through 2.7.

4. MEASUREMENT AND PAYMENT

No direct measurement or payment will be made for the work performed and materials and equipment furnished in order to provide the Integration of LED Dynamic Message Signs, made fully operational and tested in accordance with this specification, but all of the above will be considered subsidiary to Special Specification "LED Dynamic Message Sign System."