Iowa Department of Transportation

SPECIAL PROVISIONS
FOR
PORTABLE DYNAMIC MESSAGE SIGN

Black Hawk County
NHSX-063-6(88)--3H-07

Effective Date
February 19, 2013

THE STANDARD SPECIFICATIONS, SERIES 2012, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

120015.01 DESCRIPTION.
Furnish, place, operate, and maintain a Portable Dynamic Message Sign (PDMS) at the locations specified on the project plans. The Contractor maintains possession of the PDMS upon completion of the project.

120015.02 MATERIALS.

A. Sign Design.

1. A PDMS is defined as all components working together to accomplish the requirements of the specification. These components include, but are not limited to, the LED pixel boards, on-board computer, cellular modem, trailer, mounting equipment, solar panels, batteries, charge controller, etc.

2. The message panel shall be trailer mounted for mobility. Message panel mounted at a height of at least 7 feet (2.2 m), measured from the bottom of the sign to the ground directly below. Sign presents a level appearance. Sign is capable of displaying three lines of up to eight characters at one time. Character height is 18 inches (450 mm) and configured using a 7 pixel tall by 5 pixel wide font.

3. Message panel visible from 1/2 mile (800 m) under both day and night conditions. Letters legible from 750 feet (225 m). Message sign shall include automatic dimming for nighttime operation and a power supply capable of providing continuous service for 7 days without recharging.

4. Message panel controlled by an onboard computer capable of:
- Storing a minimum of 99 programmed messages for instant recall.
- Being programmed to accept messages created by the operator via an alpha-numeric keyboard.

- Being programmed remotely by Department's National Transportation Communication for Intelligent Transportation Systems Protocols (NTCIP) DMS software.

5. Physical access to the onboard computer protected by a padlock (using a key). Electronic access to the onboard computer protected by a username and password.

B. Cellular Communications.

1. PDMS will be equipped with a cellular modem for remote communications. The cellular service provider must have data coverage within the project limits. The IP address, communications port, software and any username/password for web interface will be supplied to the Engineer for integration into a statewide ITS control software.

2. The cellular modem must be capable of obtaining its location by global positioning system (GPS) of satellites. Current location from GPS coordinates will be stored in the cellular modem's memory for retrieval by ITS control software. Modem must have firewall security protections that limit who and what can communicate to it.

3. Typical monthly data usage by the Department is 5 Mb when PDMS is in good working condition. Additional data usage is possible if PDMS requires remote troubleshooting or maintenance.

C. NTCIP Compliance.
PDMS onboard computer and operating firmware will be compliant with the latest version of approved National Transportation Communication for Intelligent Transportation Systems Protocols (NTCIP) 1203 for the following commands:
- Read configuration data from the sign,
- Send configuration data to the sign,
- Poll the sign (retrieve sign status) both manual and automated with software,
- Activate a message,
- Blank or remove a message,
- Upload fonts, and
- Reset the controller/onboard computer.

120015.03 CONSTRUCTION.

A. Testing and Configuration.

1. A least one week before the PDMS is deployed to a project for use, a testing and configuration meeting with the Engineer shall be held. Coordination of this meeting will be with the Department's ITS Engineer.

2. Physical and electronic access to PDMS shall be granted to the Engineer, or their representative.

3. The Engineer, or their representative, in conjunction with the contractor, will perform necessary configuration adjustments in the PDMS and cellular modem to allow remote control by the Engineer's NTCIP software.

B. Operation of Signs by Contractor.

1. The Engineer may request the Contractor to operate PDMS for advance traffic notification and warning. Authority to operate PDMS will be under the direction of the Engineer. The Contractor may only operate the PDMS to display messages authorized by the Engineer.

    2. Promptly program and/or reprogram the computer to provide the messages as directed by the Engineer.

C. Operation of Signs by the Engineer.

    1. The Department will use their own NTCIP compliant software to activate messages, check the sign's status and perform diagnostic tests.

    2. At anytime during the project, the Engineer may remotely activate a message on the PDMS. Any message placed on the PDMS will not be removed or replaced by the contractor unless requested by the Engineer.

D. Maintenance of Signs.

    1. Provide preventive maintenance efforts necessary to achieve uninterrupted service.

    2. The Department or their representative will perform remote diagnostic tests of the sign's operational status each morning and notify the contractor when a problem is detected.

    3. Provide unscheduled maintenance or total replacement of sign when sign is unable to display a message adequately within 24 hours of notification.

    4. If service is not restored within 24 hours, the Engineer will cause such work to be performed as may be necessary to provide this service. The associated cost for this restoration shall be borne by the contractor.

120015.04 METHOD OF MEASUREMENT.
The Engineer will count the number of days each PDMS is required to be in place along a road and capable of displaying messages to the traveling public by remotely using the Department's NTCIP software.

120015.05 BASIS OF PAYMENT.

A. Payment will be the contract unit price per calendar day for each PDMS that is required to be in place along a road and capable of displaying messages to the traveling public by remotely using the Department's NTCIP software.

B. Payment is full compensation for furnishing, placing, operation, and maintenance of PDMS. Payment includes the cost of preventative and unscheduled maintenance, cellular communication, hardware, and power supply.