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EFFECTIVE 9/06/07

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New York State
Department of
Transportation
**ENGINEERING
INSTRUCTION**

EI
05-030

Title: SPECIAL SPECIFICATION 619.21XX-14, PORTABLE, VARIABLE-MESSAGE SIGNS (PVMSs)

Distribution:

☒ Manufacturers (18)

☒ Local Govt. (31)

☒ Agencies (32)

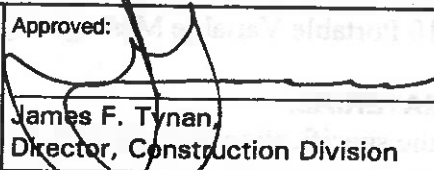
☐ Surveyors (33)

☒ Consultants (34)

☒ Contractors (39)

☐ _____ ()

Approved:


James F. Tynan,
Director, Construction Division

9-8-05
Date

ADMINISTRATIVE INFORMATION:

- Effective Date: This Engineering Instruction (EI) is effective beginning with projects submitted for the letting of 1/12/06.
- Superseded Issuances: No EIs or Engineering Bulletins are superseded by this EI.
- The attached specification will be incorporated into a future update of Section 619 of the Standard Specifications.

PURPOSE:

The purpose of EI is to issue this Special Specifications 619.21xx--14 Portable, Variable-Message Signs (PVMSs) – LED, and 619.22xx--14 Portable, Variable-Message Signs (PVMSs) – Hybrid, Flip-Disk.

TECHNICAL INFORMATION:

- The signs are intended for use as supplemental, temporary, work zone warning devices for lane and roadway closures and for temporarily conveying information to motorists. This issuance provides several common options within a single specification.
- Design Guidance to address unit use and selection is being issued concurrently with EI 05-031.

IMPLEMENTATION:

- This specification shall be used beginning with projects submitted for the letting of 1/12/06.
- The following special specifications are disapproved:
 - 619.21----01 Portable Variable Message Cellular Equipped Signs
 - 619.2101--01 Solar Portable Variable Message Sign LED Enhanced Disk Matrix
 - 619.2102--01 Solar Powered Cellular Equipped Portable PVMS Units (Hybrid or LED)
 - 619.2103--01 Maintenance & Relocation Portable Variable Message Signs (State Supplied)
 - 619.2104--01 Solar Powered Cellular Equipped Portable PVMS Units (Hybrid or LED) w/Radar
 - 619.2101--06 Solar Powered Portable PVMS (Hybrid Flip-Disk)
 - 619.2102--06 Solar Powered Portable PVMS (Hybrid Flip-Disk w/Cellular Comm)
 - 619.2103--06 Solar Powered Portable PVMS (Hybrid Flip-Disk w/Radar)
 - 619.2104--06 Solar Powered Portable PVMS (Hybrid Flip-Disk w/Cellular Comm & Radar)
 - 619.2105--06 Solar Powered Portable PVMS (LED)
 - 619.2106--06 Solar Powered Portable PVMS (LED w/Cellular Comm)

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619.2107--06 Solar Powered Portable PVMS (LED w/Radar)
619.2108--06 Solar Powered Portable PVMS (LED w/Cellular Comm & Radar)
619.21----15 Portable Variable Message Signs
619.2102--39 Temporary Solar Powered Cellular Equipped Portable PVMS Units (Hybrid or LED)
619.22----02 Portable Variable Message Signs
619.9499--03 Portable LED Variable Message Sign Assembly
634.1002--10 Portable Variable Message Sign – LED Enhanced Disk Matrix

TRANSMITTED MATERIAL:

This EI transmits the specification for Item 619.21xx--14.

CONTACT: Direct questions concerning this specification to Chuck Riedel criedel@dot.state.ny.us (518) 457-2185 or Dawn Arnold darnold@dot.state.ny.us at (518) 457-1673 of the Traffic Engineering and Highway Safety Division.

ITEM 619.21xx--14 – PORTABLE, VARIABLE-MESSAGE SIGNS (PVMS)

DESCRIPTION

This work shall consist of providing, programming, operating, maintaining, relocating and removing portable, variable-message signs (PVMSs) at locations indicated in the contract documents or as directed by the Engineer. The locations of PVMSs and duration of setup will be specified in the contract documents under special note "Requirements for Portable, Variable-Message Signs (PVMSs)." PVMSs are intended to supplement other traffic control devices by displaying symbolic or word messages, but are not to be used alone to replace conventional traffic control devices.

MATERIALS

PVMSs shall meet the requirements of Sections 201.3 and 294.6 of 17 NYCRR Chapter V a.k.a. the New York State Manual of Uniform Traffic Control Devices. The PVMS shall be trailer-mounted and equipped for use on public highways in accordance with NYS Vehicle and Traffic Law. The trailer shall have four (4) leveling jacks capable of leveling the trailer on grades up to 1 on 6 and stabilizing the trailer in winds up to 130 km/h.

The PVMS shall operate primarily from a solar-powered electrical system and shall be capable of displaying for at least 21 days without auxiliary charge. The electrical system shall consist of batteries and solar array panels and on-board auxiliary charging system to enable the batteries to be recharged via a 110V AC connection.

The PVMS shall have a three-line display with a minimum of eight, 450-mm high characters per line and shall be capable of displaying three (3) separate messages in a cyclical sequence. Messages shall be clearly legible from a distance of 275 m and illumination intensity shall automatically adjust for all daytime and nighttime ambient conditions.

The PVMS shall be equipped with a sign control console mounted in a lockable, weather-resistant compartment. The sign controller shall have a programmable memory capable of storing messages pertinent to planned construction activities, including emergency messages. The controller shall be equipped with 14-day-calendar programming capability, providing the ability to start and stop the display of a minimum of three (3) different messages on a repeating schedule without an operator present. The controller shall have programmable messages, display rate, and display interval settings. The controller shall blank the sign if the output voltage drops below the manufacturer's recommended output level.

The PVMS shall be equipped with a modem and control software using a Microsoft Windows operating system, Windows 98 or later. The Contractor shall supply the Engineer with two (2) copies of operating instructions for the PVMS and the control software. Electronic copies of software instructions are acceptable.

Light-Emitting Diode (LED) Type

The LED-type PVMS unit shall have light-emitting diodes arrayed in a matrix for each character to be 7 pixels high by 5 pixels wide with 3 LEDs per pixel. The LED display shall have the ability to display characters at a minimum height of 450 mm in double-stroke font. The controller shall provide a means of dimming the pixels.

Hybrid, Flip-Disk Type

The hybrid, flip-disk type PVMS, shall have pixels consisting of individual electromagnetic disks with a minimum of two (2) high-output amber LEDs. The disk face shall be covered with yellow, prismatic, retroreflective sheeting, or an approved equal. The PVMS shall operate using both flip-disk and light-emitting diode (LED) during nighttime and low-light periods. The hybrid, flip-disk type pixels shall be arranged in a matrix, 7 disks high by 5 disks wide for each character.

Cellular Communications Option

The PVMSs with cellular communications shall be equipped with a cellular telephone and a modem capable of remotely operating the control software. The phone numbers for PVMSs on a contract shall be sequential, whenever possible, to facilitate remote control of multiple units. The unit shall accept a landline telephone connection without rewiring or modification.

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Radar Option

The PVMS with radar shall be equipped with a radar speed-detection option. This feature provides the system with the ability to determine the speed of an approaching vehicle and interrupt the programmed sequence with a special default message displaying the vehicle's speed.

CONSTRUCTION DETAILS

The Contractor shall provide, operate, and maintain PVMSs at the locations shown and for the time periods indicated in the contract documents until the progress of work no longer requires their use. PVMS shall remain the property of the Contractor. When in use, the units shall be placed so that the base of the message panel is at least 2.1 m above the adjacent pavement surface and aligned to provide optimum viewing by approaching motorists. The Contractor shall relocate or reorient PVMSs on a daily basis or more frequently, if necessary, as maintenance and protection of traffic requirements dictate at no additional cost to the State. The Contractor shall supply the Engineer with an accurate log of all messages and times messages that were displayed monthly, not later than the 15th of the following month. The log of messages may be either a listing in a manual register or printouts from the control software. The Contractor shall inform the Engineer of PVMS locations and update as they are relocated and removed.

Cellular Communications Option

Cellular service shall be provided by the Contractor. The Contractor shall supply the Engineer with a copy of the control software a minimum of 10 work days prior to the installation of the first unit. PVMSs shall be available to the Regional Transportation Management Center (TMC) for emergency incident management in the contract limits.

METHOD OF MEASUREMENT

Portable, variable-message signs (PVMSs) with a pay unit of each will be measured as the number of signs installed.

Portable, variable-message signs (PVMSs) with a pay unit of week will be measured as the total number of weeks provided.

BASIS OF PAYMENT

The unit price bid shall include the cost of all labor, materials, and equipment necessary to complete the work, including cellular-telephone-service initial start-up and monthly charges when the cellular communications option is selected.

Progress payments for PVMSs with a pay unit of each will be made for seventy percent (70%) of the unit price when each unit has been satisfactorily installed and is operational at the first location. The balance will be paid upon removal.

Payment will be made under:

Item No.	Item	Pay Unit
619.2101-14	PVMS (LED)	Each
619.2102-14	PVMS (LED w/Cellular Communications)	Each
619.2103-14	PVMS (LED w/Radar)	Each
619.2104-14	PVMS (LED w/Cellular Communications& Radar)	Each
619.2111-14	PVMS (LED)	Week
619.2112-14	PVMS (LED w/Cellular Communications)	Week
619.2113-14	PVMS (LED w/Radar)	Week
619.2114-14	PVMS (LED w/Cellular Communications& Radar)	Week

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619.2201--14	PVMS (Hybrid Flip Disk)	Each
619.2202--14	PVMS (Hybrid, Flip-Disk w/Cellular Communications)	Each
619.2203--14	PVMS (Hybrid, Flip-Disk w/Radar)	Each
619.2204--14	PVMS (Hybrid, Flip-Disk w/Cellular Communication & Radar)	Each
619.2211--14	PVMS (Hybrid Flip Disk)	Week
619.2212--14	PVMS (Hybrid, Flip-Disk w/Cellular Communications)	Week
619.2213--14	PVMS (Hybrid, Flip-Disk w/Radar)	Week
619.2214--14	PVMS (Hybrid, Flip-Disk w/Cellular Communication & Radar)	Week