

TO:

Director,
Preliminary Plan Review Bureau

ENGINEERING INSTRUCTION

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

SUBJECT: FLASHING ARROW BOARDS

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Flashing Arrow Boards have been specified under Pay Item 15619.0301 on a board calendar day basis and in many instances the Contractor had virtual control over the actual quantity used. Because of some recent bidding experiences it has been determined to be in the Department's best interest to change the Method of Measurement and Basis of Payment from board calendar day to Lump Sum.

The attached 15619.0303 specification has a lump sum payment provision and is so written that the number of arrow boards required will depend on the Contractor's sequence of operations. The ground rules for where and under what conditions flashing arrow boards are required have been laid down in the specification. Designers will have the opportunity to handle any special situation by specifying their intentions in the plans and proposal.

A review of the Work Zone Traffic Control Examples in the Manual of Uniform Traffic Control Devices in conjunction with the Construction Details of this specification should solve the majority of situations of where Flashing Arrow Boards are necessary. In the forthcoming 1982 Manual, the flashing arrow board's location is noted on the various maintenance of traffic figures. In the present Manual, the boards should be located near, and may replace, the W7 or W7A arrows located near the beginning of the taper.

The new specification has been added to the system replacing all previously used Flashing Arrow Board specifications. Designers should start using the new pay item numbers with the letting of August 26, 1982 whenever flashing arrow boards are required.

PREL.	FINAL
DESIGN	LANDSCAPE
RECEIVED	
FACILITIES DESIGN DIVISION	
MAY 11 1982	
CIRC.	FILE

ITEM 15619.0303 FLASHING ARROW BOARDS

Description

Under this item the Contractor shall furnish, install, maintain and remove Flashing Arrow Board warning devices made necessary by his operations in accordance with plans, this specification, NYS Manual of Uniform Traffic Control Devices and the directions of the Engineer. Flashing arrow boards are intended for use as temporary traffic warning devices during construction and obstruction periods. The number required shall be the number necessary in accordance with criteria given below, to satisfactorily guide traffic through the construction. The actual number will depend upon the contractor's sequence of operation.

Materials

The Flashing Arrow Board shall be transportable self-contained units with a flashing symbol consisting of flashing amber lights arranged on a panel to form an arrow. The arrow panel shall consist of a 4' X 8' rectangular solid panel finished in non-reflective black. The arrow indication shall cover the entire area of the panel and be composed of lamp units with 5 lamps in the arrowhead and 5 lamps in the shaft. Lamps shall be arranged and controlled to provide the following mode selections. Left Arrow, Right Arrow, Left and Right Arrow, and Caution. In the three directional modes, the lamps in the shaft next to the arrow point shall not illuminate. The caution mode shall consist of four or more lamps arranged in a pattern which will not indicate direction. The rear face of the arrow panel shall contain one or more clear lamps to indicate that the arrow board is operating properly. Arrow panel operating controls shall be mounted in a lockable enclosure.

The arrows shall be visible at a minimum distance of one mile on a bright sunny day or a clear night. The lamps shall flash at a rate of 40 to 60 flashes per minute with the period of flash at least 40 percent of the cycle.

The lamps shall be equipped with an automatic solar cell controlled dimming switch. Activation will be at a level of approximately 5 candellas. The solar cell shall be located and equipped with a delay to prevent undesirable actuation from car lights. The dimming voltage to the lamps shall be manually controllable over a 5 to 12 volts effective range.

The arrow panel shall be trailer mounted, or with the permission of the Engineer, truck mounted. All Flashing Arrow Boards shall be powered by self contained engine driven generator systems capable of energizing the board for 72 hours, unattended. Flashing Arrow Boards also may be energized from utility company service, in addition to the self-contained generators.

Construction Details

The Contractor shall provide Flashing Arrow Boards on multilane highways with legal speed limits of 45 MPH and higher whenever a lane is closed to traffic and vehicles are required to merge with traffic in adjacent lanes. One Flashing Arrow Board will be required for each lane closed to traffic regardless of the duration. Flashing Arrow Boards shall also be provided where shown on the plans.

Flashing Arrow Boards will not be required where they would interfere with the operation of a 3 color signal or flasher or where there is an operation controlled by a signal or flagman. Flashing Arrow Boards will not be required for detours where the number of through traffic lanes is not reduced unless specifically indicated on the plans.

Flashing Arrow Boards shall be placed in accordance with the Manual of Uniform Traffic Control Devices. They shall be used as a substitute for the W7 or W7A large arrow sign located nearest the beginning of the taper. The arrow boards shall be mounted so that the base of the panel is at least seven feet above the pavement surface and properly aligned to provide optimum viewing by approaching motorists. Flashing Arrow Boards may be relocated or reoriented on a daily basis or more frequently as ordered by the Engineer.

The Contractor shall be responsible for maintenance, repair and continuous operation of the Flashing Arrow Board until progress of work no longer requires its use, as directed by the Engineer.

Method of Measurement

The work under this item will be measured for payment on a lump sum basis.

Basis of Payment

The Lump Sum bid shall include the cost of all material, equipment and labor necessary to complete the work as required in a manner approved by the Engineer.

Progress payments will be made for this item in proportion to the total amount of contract work completed.