

To:	GUIDANCE ONLY SUPERSEDED BY <u>EB 06-004</u> EFFECTIVE 9/7/06	SUPERSEDED BY <u>EI 07-006</u> EFFECTIVE 9/06/07	New York State Department of Transportation ENGINEERING INSTRUCTION EI 99-034
Title: Short-Term Pavement Markings			
Distribution: ☐ Manufacturers (18) ☐ Surveyors (33) ☒ Main Office (30) ☒ Consultants (34) ☒ Local Govt. (31) ☒ Contractors (39) ☒ Regions/Agencies (32) ☐ ()		Approved: P. J. Clark, Deputy Chief Engineer (Design) <u>10/25/99</u> Date	

Superseded Issuances.

This Engineering Instruction supersedes EI99-029.

Administrative.

This Engineering Instruction issues a special specification and new Items 15619.1503M Short-Term Pavement Markings (Underlying Course) and 15619.1504M Short-Term Pavement Markings (Top Course).

This Engineering Instruction is effective for projects submitted for Letting on or after January 13, 2000 and will be incorporated into future versions of the NYSDOT Standard Specifications. The attached specifications will be a Shelf Note and inserted by the Main Office.

Attachments.

Special Specification, Short-Term Pavement Markings (Underlying Course); Short-Term Pavement Markings (Top Course).

Background.

Payment for Short-Term Pavement Markings on the top paving course before placement of the Final Pavement Markings has been identified as a problem in construction. Final Pavement Markings are usually durables. Due to scheduling peaks late in the construction season, they are difficult to place immediately after paving as required by the specifications. Removable pavement markings, costing considerably more than the pavement markings used on the underlying courses, are often used on the top course during this waiting period. Contractors have requested a separate payment item for short term pavement marking on the top course. Having a separate item is also to the Department's advantage to simplify changes in top course quantities. This prompted a review of previous EI's and specifications, and the issuance of this EI.

The existing policy for placement of permanent pavement markings on top course is based on the assumption epoxy markings do not adhere to traffic paint. Recently the Materials Bureau has surveyed trial applications of epoxy pavement markings applied over paint. This evaluation indicates epoxy will adhere satisfactorily to traffic paint, providing there is no more than one layer of paint remaining on the pavement surface. This enables changes to the specifications to allow the use of traffic paint for Short-

Term Pavement Markings on the top course, provided the painted markings are placed in the same location that the project's final epoxy pavement markings will be placed. The Materials Bureau has also recently determined polyester markings may also be applied over paint. In fact, most manufacturers recommend their polyester marking material be applied over worn paint, rather than bare pavement. For this reason, these specifications permit the application of both epoxy and polyester final pavement markings directly over a single layer of traffic paint.

Guidance.

Whenever there is paving, repaving or resurfacing in a Contract, new Item 15619.1503M Short-Term Pavement Markings (Underlying Course) and/or new Item 15619.1504M Short-Term Pavement Markings (Top Course), should be included in the Contract. Sufficient quantities are to be provided for each of the pavement courses to be milled or paved.

Contact.

Chuck Torre, Design Quality Assurance Bureau, (518) 485-5632.

15619.1503M SHORT-TERM PAVEMENT MARKINGS (UNDERLYING COURSE)
15619.1504M SHORT-TERM PAVEMENT MARKINGS (TOP COURSE)

DESCRIPTION

Short term pavement markings are intended as the initial marking to be placed on new pavement course or a milled surface when traffic will be maintained on that surface, if the project's final pavement markings cannot be installed before being open to traffic. Short term pavement markings are used until the subsequent pavement course is placed, or final pavement markings are installed.

This work shall consist of furnishing and installing short-term pavement markings of the types and locations shown in the Contract Documents and directed by the Engineer in accordance with these specifications.

MATERIALS

Materials for short-term pavement markings shall conform to the following:

Traffic Paint - §640, Reflectorized Pavement Marking Paints

Removable Tape and Markers - §727-02, White and Yellow Removable Reflectorized Pavement Markings

Non-Removable Tape - Non-removable tape shall be reflectorized and specifically designed for use as a pavement marking. Non-removable tape shall be approved by the Engineer prior to application.

CONSTRUCTION DETAILS

Short-Term Pavement Markings, General. The Contractor shall furnish, apply, maintain, and, when so ordered, remove short-term pavement markings of the kind and pattern indicated, where shown in the Contract Documents, or where directed by the Engineer. Any pavement upon which traffic will be maintained shall be properly marked before being open to traffic in accordance with these specifications.

Short-Term Pavement Markings shall be either Short-Term Pavement Markings (Top Course), or Short-Term Pavement Markings (Underlying Course), as designated in the Contract Documents or as directed by the Engineer. The following pavement marking patterns shall be installed as short-term pavement markings:

1. Yellow broken lines, partial barrier lines and full barrier lines used to separate opposing traffic flows on two-way roadways.
2. White solid or broken lines to define traffic lanes in the same direction on multi-lane highways.
3. Other markings as indicated in the Contract Documents.

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SHORT-TERM PAVEMENT MARKINGS (UNDERLYING COURSE)
SHORT-TERM PAVEMENT MARKINGS (TOP COURSE)

Short-term pavement markings shall be installed and maintained in accordance with the patterns and the colors indicated for pavement marking, Parts 260 to 263 in the M.U.T.C.D., or as directed by the Engineer. For determination of the limits of passing and no-passing zones, refer to §110-09 Pavement Coding.

Stop bars and hatch lines will not be required under short-term pavement markings except as required by the Contract Documents or ordered by the Engineer. Broken lines may be as short as 1200 mm with a 12.2 meter cycle length or under special conditions, such as sharp curves, as determined by the Engineer as short as 600 mm with a 6.1 meter cycle length. Short term pavement markings, as described in these specifications, will not be permitted as the sole pavement markings for periods longer than fourteen (14) days.

Within this 14 days, the Contractor shall either (1) install the succeeding pavement course or (2) install the final pavement markings or (3) supplement the short term pavement markings with cross walk markings, arrow markings and edge lines.

If paint is used for short-term pavement markings, it shall be applied in accordance with the requirements of §640, except the applied wet film thickness shall be a minimum of 0.51 mm. If removable tapes or removable markers or non-removable tapes are used, they shall be applied to a clean, dry pavement in accordance with the manufacturer's recommendations. Removable markers, evenly spaced every 1500 mm in a single line, may be used as a substitute for a solid line. Two removable marker units, evenly spaced 600 mm apart in a single line, may be used as a substitute for a 600 mm long broken line. Three removable marker units, evenly spaced 600 mm apart in a single line, may be used as a substitute for a 1200 mm long broken line. Four removable marker units, evenly spaced one meter apart in a single line, may be used as a substitute for a three meter long broken line.

Any markings that fail to adhere to the pavement, become abraded, dislodged by snow plowing, or in the opinion of the Engineer become ineffective in any manner during the period of use, shall be replaced by the Contractor at no additional expense to the State. The period of use is defined as the time from when traffic is permitted to use the pavement to the time when the markings are either paved over, the project's final pavement markings are applied, or contract acceptance, whichever is first. When short-term pavement markings must be removed from the pavement by the Contractor, as ordered by the Engineer, they shall be removed as described in §619-3.01 I Existing Pavement Markings or §619-3.12 Removable Reflectorized Pavement Markings or §635 Cleaning and Preparation of Pavement Surfaces, as applicable.

In the event of sudden precipitation or other extraordinary situations, Do Not Pass signs and channeling devices shall be used, as directed by the Engineer, in lieu of short-term pavement markings for up to three consecutive calendar days on two or three lane, two-way, roadways under the following conditions:

1. The signs meet the requirements of §214.2 of the NYSDOT MUTCD spaced not more than 300 meters apart.
2. The channelizing devices shall be spaced as directed by the Engineer, but not more than 60 meters apart and meeting the requirements of §291.2 of the NYSDOT MUTCD and §619-3.01G. of the Standard Specifications, respectively.
3. No additional payment shall be provided for the installation of Do Not Pass signs and channelizing devices.

15619.1503M SHORT-TERM PAVEMENT MARKINGS (UNDERLYING COURSE)
15619.1504M SHORT-TERM PAVEMENT MARKINGS (TOP COURSE)

A. Short-Term Pavement Markings (Underlying Course). Short-Term Pavement Markings (Underlying Course), shall be installed using traffic paint, non-removable tape, removable tape, or removable markers. Traffic paint may be used for solid and broken lines on any underlying pavement course and need not be removed before placing a subsequent course. Removable tape and removable markers may be used on any underlying pavement course, but these materials must be removed before placing a subsequent course. Non-removable tape may only be used for 1200 mm or shorter broken line segments, as allowed by these specifications, on any underlying pavement course and need not be removed before placing a subsequent course. Non-removable tape will not be allowed to mark solid lines on any underlying pavement course.

B. Short-Term Pavement Markings (Top Course). Short-Term Pavement Markings (Top Course), shall be installed using traffic paint or removable tape or removable markers. When traffic paint is used on the top or final pavement course, it shall be installed in the exact location as the project's final pavement markings, provided the final pavement markings are not thermoplastic or non-removable tape. When the project's final pavement markings are specified to be thermoplastic or non-removable tape, traffic paint may not be used. In this instance a removable pavement marking material shall be selected for use and applied in accordance with these specifications. When the project's final pavement markings are specified to be epoxy or polyester, these materials shall be applied directly over the traffic paint short-term markings, provided the short term pavement markings consist of only a single layer of paint. If the short term pavement markings are more than a single layer of paint, the pavement surface shall be cleaned and prepared according to the requirements of §635. No additional payment shall be provided for this cleaning and preparation. Removable tape and markers shall be off-set from the location of the project's final pavement markings.

NOTE: Traffic paint may be used to install short-term pavement markings on any pavement course in accordance with these specifications, except on top course when the final pavement markings will be thermoplastic or non-removable tape:

1. All painted markings shall be applied in accordance with §640, except the minimum wet film thickness shall be 0.51 mm.
2. When traffic paint is used on the top or final pavement course, it shall be installed in the exact location as the project's final pavement markings.
3. When the project's final pavement markings are specified to be thermoplastic or non-removable tape, traffic paint shall not be used on the top course. In this instance a removable pavement marking material shall be selected for use and applied in accordance with these specifications.
4. When the project's final pavement markings are specified to be epoxy or polyester, these materials shall be applied directly over the painted short-term markings, provided the short term pavement markings consist of only a single layer of paint. If the short term pavement markings are more than a single layer of paint, the pavement surface shall be cleaned and prepared according to the requirements of §635. No additional payment shall be provided for this cleaning and preparation.

15619.1503M	SHORT-TERM PAVEMENT MARKINGS (UNDERLYING COURSE)
15619.1504M	SHORT-TERM PAVEMENT MARKINGS (TOP COURSE)

METHOD OF MEASUREMENT

Short Term Pavement Markings will be measured in meters to the nearest 0.1 meter along the center line of the pavement stripe and shall be based on a 100 mm wide stripe. Measurement for striping, stop bars, hatch lines, edge lines, cross walks, arrows, etc. with a placed nominal width greater or less than the basic 100 mm, as shown on the plans or as directed by the Engineer, will be made by the following method:

$$\frac{\text{Placed Nominal Width of Striping (millimeters)} \times \text{Number of Meters}}{100 \text{ millimeters}}$$

No payment shall be provided for the gaps between lines.

If removable marker units are used, payment shall be provided as if the substituted line were in place. For example, if one line of three removable marker units is substituted for a 1200 mm long broken line, payment shall be provided for 1.2 meters.

BASIS OF PAYMENT

The unit price bid shall include the cost of furnishing all labor, material and equipment necessary to apply, maintain and remove short-term pavement markings in compliance with the requirements of these specifications. Payment shall be provided each time short-term pavement markings are first applied on a pavement course in accordance with the contract requirements.

No additional payment shall be provided for the installation of Do Not Pass signs, delineators and plastic drums when necessitated by the Contractor's failure to place short-term pavement markings before the pavement is opened to traffic.

No additional payment shall be provided for supplemental markings required because the Contractor failed to place the next pavement course or the final pavement markings within 14 days.

No additional payment shall be provided for repainting or replacement of short term pavement markings required to maintain the markings in acceptable condition during the period of use.

No payment shall be provided under Short Term Pavement Markings (Top Course) when the project's final pavement markings are installed as the initial marking on the top course in their exact final location.

Payment shall be provided under:

Item No.	Item	Pay Unit
15619.1503M	Short-Term Pavement Markings (Underlying Course)	Meter
15619.1504M	Short-Term Pavement Markings (Top Course)	Meter