


TO: SUPERSEDED BY EI 92-031 EFFECTIVE 7/3/92	<h1>ENGINEERING INSTRUCTION</h1> <p>NEW YORK STATE DEPARTMENT OF TRANSPORTATION</p>	
	SUBJECT: PAVEMENT DELINEATION Subject Code: 7.27-2-619.1503	
Distribution: 30 Main Office 32 Regions 34 Special	Code: <u>92-007</u> Date: <u>2-19-92</u> Supersedes:	
APPROVED:  <hr/> J. R. LAMBERT, Deputy Chief Engineer (Fac. Des. Div.)		

Our Department has recently received an authorization from the FHWA to use 24 inch long skip lines at 40 foot centers for construction zone "pavement delineation" instead of the patterns required for "short-term pavement markings". This authorization is effective immediately, on an experimental basis for the 1992-1993 construction seasons, and will be allowed on the following kinds of projects:

1. All resurfacing projects, on any highway system, performed by maintenance forces.
2. All 100% State funded resurfacing projects on the State highway system.
3. On three (3) Federal-aid projects per region/year.

The regional offices should select the three (3) FA projects where this authorization will result in the most savings and submit that list to the Design Quality Assurance Bureau for processing. The greatest savings will usually occur on projects involving extensive no passing zones.

Attached is a new specification, similar to the NYSMUTCD requirements for pavement delineation, but slightly modified, which can be used to implement this authorization. Both the Construction Division and the Traffic Engineering and Safety Division have asked the Facilities Design Division to begin implementation of this authorization as soon as possible in order to optimize the cost savings and safety benefits for the striping crew.

Since the marking patterns prescribed for pavement delineation do not convey the amount of information as the final marking pattern, the pavement delineation must be supplemented with such temporary signs as "DO NOT PASS" and "PASS WITH CARE". Additional temporary signs such as "LANE CLOSED", "MERGE" chevrons or arrows may also be beneficial. The designer should consult the Regional Traffic Engineer to determine the need for additional signing or additional pavement markings (edge lines, stop bars, hatch lines) to be installed the same day as paving. These additional signs and markings should be shown on the plans and paid for under appropriate pay items.

Any question regarding these requirements may be addressed to Richard Stempel of the Design Quality Assurance Bureau at 518 - 457-4093.

PAVEMENT DELINEATION

Make the following changes to the Standard Specification of January 2, 1990.

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Under §619-2.03 Delineators, Temporary Box Beam Barrier, Temporary Concrete Barrier, Construction Barricades, Lighting for Construction Barricades and Pavement Delineation, *delete* the tenth paragraph and *replace* with the following:

"Pavement delineation shall consist of reflectorized pavement marking paints, removable reflectorized pavement marking tape, non-removable reflectorized pavement marking tape, or removable raised reflectorized pavement markers. Removable reflectorized pavement marking tape and raised reflectorized pavement markers shall be selected from the Department's Approved List of 'Removable Reflectorized Pavement Markings'. Pavement marking paints shall meet the material requirements of Section 640 - Reflectorized Pavement Marking Paints. Non-removable reflectorized pavement marking tape shall be specifically designed for use as a pavement marking material and shall be approved by the Engineer prior to application. All line segments shall not be less than four inches in width and the colors shall be as specified in the M.U.T.C.D."

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Under §619-3.06 Pavement Delineation, *delete* entire Subsection and *replace* with the following:

"619-3.06 Pavement Delineation. The Contractor shall furnish, apply, maintain, and when so ordered, remove pavement delineation where shown in the contract documents or where directed by the Engineer. Any pavement upon which traffic will be maintained shall be properly delineated before nightfall or the end of the working day, whichever comes sooner, in accordance with this subsection.

Pavement delineation shall consist of center line and lane line markings that will be used to delineate travel lanes prior to the installation of full pavement markings.

Unless otherwise indicated in the contract documents, pavement delineation will be considered acceptable as the only pavement markings in place for not longer than 14 days. The 14 day time may be extended if allowed by the Engineer.

The contractor shall provide pavement delineation with two-foot stripes, or a raised pavement marker(s) in accordance with the patterns and colors indicated below:

- A. Center line on two-lane, two-way roadways shall be delineated with a single yellow two-foot stripe, or a single yellow raised marker, spaced at 40 foot intervals.
- B. Center line on multi-lane roadways shall be delineated with two yellow two-foot stripes or two yellow raised markers placed side by side, 4 to 6 inches apart, spaced at 40 foot intervals.
- C. Lane line on multi-lane roadways shall be delineated with a single white two-foot stripe or a single white raised marker, spaced at 40 foot intervals.

PAVEMENT DELINEATION

If directed by the Engineer, center line and lane line stripes and markers on roadways with severe curvature shall be spaced at 20 foot intervals.

Materials for the installation of pavement delineation shall conform to subsection 619-2.03 and Table 619-2.

At the end of 14 days, or the time period indicated in the contract documents or extended by the Engineer, and the installation of the succeeding course of bituminous concrete overlay has not occurred, full pavement markings shall be installed. These markings shall be designated as 'interim markings' and shall be applied and maintained in accordance with the patterns indicated for the permanent pavement marking to be installed under the contract, the M.U.T.C.D., or in accordance with other patterns as directed by the Engineer.

The 14 day time period, or the period indicated in the contract documents or extended by the Engineer, shall also apply to the installation of permanent contract-applied pavement markings following top course paving. Permanent contract-applied pavement markings shall mean reflectorized pavement marking paint or durable type pavement marks which include reflectorized epoxy, thermoplastic and preformed tape.

If after top course paving, the permanent markings have not been installed within 14 days or the time period indicated in the contract documents or extended by the Engineer, the Contractor shall apply interim markings. All interim markings shall be offset from the location of the permanent contract-applied markings, and all interim markings shall be cleaned (removed) from the pavement, as described in §635-3 Cleaning and Preparation of Pavement Surfaces, before the installation of the permanent contract markings. The work of furnishing, applying, maintaining and removing interim marks shall be considered to be other work as described in §619-5.12 Other Work, and shall be performed at no additional expense to the State.

Materials for the installation of interim markings shall conform to §619-2.03 and Table 619-2.

**TABLE 619-2
PAVEMENT DELINEATION AND INTERIM MARKINGS**

KEY		DURABLE (2) MARKS IN CONTRACT AT THAT LOCATION	DURABLE (2) MARKS NOT IN CONTRACT AT THAT LOCATION
P=Paint R=Removable Tape or <b style="padding-left: 20px;">Raised Pav't Markers(1) N=Nonremovable Tape *=Offset From Final Loc			
TOP COURSE	Interim Markings	R*	R*
	Pavement Delineation	P*, R*, N*	P, R*, N*
UNDER- LYING COURSE	Interim Markings	P, R	P, R
	Pavement Delineation	P, R, N	P, R, N

- (1) Raised Pav't Markers Disallowed If Snow Is Possible
(2) Durable Marks=Epoxy, Thermoplastic or Preformed Tape

PAVEMENT DELINEATION

If paint is used for pavement delineation or interim markings, it shall be applied in accordance with the requirements of Section 640, ReflectORIZED Pavement Marking Paints. If tape or raised marker units are used, they shall be applied to a clean, dry pavement in accordance with the manufacturer's recommendations. For interim marking patterns, a raised marker unit spaced every five feet may be used as a substitute for a solid line. Four raised marker units, evenly spaced 40 inches apart, may be used as a substitute for a ten-foot long broken line.

Any markings, including raised markers, that fail to adhere to the pavement, become abraded, dislodged by snowplowing, or in the opinion of the Engineer become ineffective in any manner shall be replaced by the Contractor at no additional expense to the State.

If directed by the Engineer, pavement delineation and interim markings shall be removed from the pavement as described in Section 635 Cleaning and Preparation of Pavement Surfaces."

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Under §619-4.08 Pavement Delineation, *add* the following to the end of this subsection;

"If raised marker units are used, payment will be made as if the substituted line were in place. For example, for a raised marker unit substituting for a two foot long broken line, payment will be made for two linear feet."

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Under §619-5.08 Pavement Delineation. *Delete* the subsection and *replace* with the following:

"619-5.08 Pavement Delineation. The unit price bid shall include the cost of furnishing all labor, material and equipment necessary to apply, maintain and remove pavement delineation when so ordered. A separate payment will be made each time pavement delineation is first applied on a pavement course in accordance with the contract requirements. No payment will be made for the application, maintenance and removal of 'interim markings'."

Under Payment will be made under: *delete*

Item No.	Item	Pay Unit
"619.15	Pavement Delineation	Linear Foot"

and *replace* with:

Item No.	Item	Pay Unit
"619.1503	Pavement Delineation	Linear Foot"