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ENGINEERING INSTRUCTION

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

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SUBJECT: PAVEMENT MARKING MATERIALS AND
SURFACE TEXTURE AND COLOR CONTRAST

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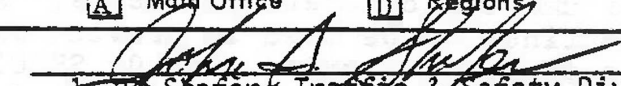
Regions



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APPROVED:


J. H. Shafer, Traffic & Safety Division


R. H. Edwards, Facilities Design Subdivision

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Supersedes:

BACKGROUND

The Department has established the following policy on the use of pavement marking materials, and surface texture and color contrast. The policy is based on the following:

1. Pavement markings should be visible and effective throughout the year to regulate traffic and delineate the roadway.
2. Hot extruded thermoplastic reflectorized pavement markings have performed well on bituminous concrete pavements throughout the State. They can be expected to have an average service life of 5 years on bituminous concrete. The actual service life will vary with traffic volume and use of abrasives (de-icing materials, etc.).
3. Preformed reflectorized pavement markings have performed well on both bituminous and portland cement concrete pavements except for some extensive losses when applied in cooler weather during the Fall. The specifications for these materials have been changed to restrict their placement to warm weather.
4. Surface texture and color contrast has not been effective in delineating the shoulder adjacent to bituminous concrete.

POLICY ON THE USE OF PAVEMENT MARKING MATERIALS
AND SURFACE TEXTURE AND COLOR CONTRAST

- I. SURFACE TEXTURE AND COLOR CONTRAST. Surface Texture and Color Contrast, Item 410.0401, shall no longer be used to delineate the shoulder adjacent to bituminous concrete pavements. A four-inch wide edgeline shall continue to be used to provide shoulder delineation. This policy supersedes Section 3.03.02 SHOULDERS, A.STRUCTURE SURFACE TYPE of the Highway Design Manual and all previous Engineering Instructions relating to the use of surface texture and color contrast.

- II. PAVEMENT MARKING DEMONSTRATION PROGRAM. The Traffic and Safety Division has complete discretion in the selection of pavement marking material for all projects included in this program (PMS, Section 151, Title 23, USC). The major project number of the PIN for all of these projects is 799.

- III. STATE HIGHWAY SYSTEM AND OTHER CAPITAL PROJECTS NOT INCLUDED IN THE PAVEMENT MARKING DEMONSTRATION PROGRAM. Whenever pavement markings are required on a project they are to be included as pay items in the contract plans and specifications. Projects less than one-half mile long with no significant special markings may be excepted. The pavement marking materials used in the design of the project shall be as shown in Table 1 with the exception that projects not on the State system may be exempted from this policy if the maintaining agency does not agree to the use of the specified material. Only one type of pavement marking material shall be used on an individual project for longitudinal lines. The appropriate material shall be selected based on the predominant type of pavement included in the project. However, thermoplastic and preformed reflectorized pavement markings shall not be applied to deteriorated pavement surfaces.

TABLE 1
USE OF PAVEMENT MARKING MATERIALS

PAVEMENT	MARKING MATERIAL
Newly placed bituminous concrete top courses and existing bituminous concrete top courses in good condition (1)	Thermoplastic reflectorized pavement markings (2)
Bituminous surface treatments	Reflectorized pavement marking paints (3)
New and existing portland cement concrete in good condition	Preformed reflectorized pavement markings (4)

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- (1) Preformed reflectorized pavement markings are currently more expensive for large quantities than hot extruded thermoplastic, and they have exhibited a severe loss of retroreflectivity with traffic wear. However, for small quantities of markings with a high percentage of legends and arrows, the preformed markings may be less expensive. Therefore, the designer has the option of using the preformed markings on projects on lighted highways where the retroreflectivity of the marking is not as important and their use is expected to result in a lower cost.
- (2) Thermoplastic reflectorized pavement markings are specified under Items 687.01, 687.02, 687.03, and 687.04.
- (3) Reflectorized pavement marking paints are specified under Items 640.0101, 640.0201, 640.03 and 640.04.
- (4) Preformed reflectorized pavement markings are specified under Items 18688.01, 18688.02, 18688.03, and 18688.04.

IMPLEMENTATION

This policy will take effect on all contracts let on or after November 15, 1979. Existing projects with large quantities of pavement markings which do not conform to this policy should be changed by order on contract whenever possible except that the surface texture and color contrast should not be deleted from any existing contracts. Copies of the special specifications for preformed reflectorized pavement markings, thermoplastic reflectorized pavement markings, and cleaning and preparation of pavement surfaces are available through the Region's specification coordinator.

PAVEMENT SURFACE PREPARATION

A general cleaning of all pavement surfaces prior to the application of the preformed and thermoplastic pavement markings is required by the special specifications for these materials. However, due to the additional work required to remove curing compounds from new portland cement concrete pavements and existing pavement markings which may conflict or interfere with the new markings, the use of separate pay items for cleaning is necessary in these cases. Item numbers 18635.01, 02, and 03 are to be included in all contracts which call for the application of preformed or thermoplastic pavement markings as shown in Table 2, Use of Pavement Surface Cleaning Items.

Although no special cleaning may be expected in the design of a project, experience has shown that field conditions may change before the pavement markings are to be applied, e.g. the pavement may be re-stripped by maintenance forces between the time of contract letting and the start of work. Therefore, a minimum quantity of 1000 linear feet of cleaning is to be included in all projects calling for preformed or thermoplastic pavement markings to account for such changes and to provide for balanced bidding by Contractors. The cleaning items allow the

Engineer to adjust the proposal quantities as required to meet field conditions. These items are not to be used for the removal of temporary pavement markings applied by the Contractor under Item 619.15 Pavement Delineation; their removal is included in that item.

TABLE 2
USE OF PAVEMENT SURFACE CLEANING ITEMS

PAVEMENT	EXISTING PAVEMENT MARKINGS	ESTIMATED QUANTITIES FOR CLEANING AND PREPARATION OF PAVEMENT SURFACE
New bituminous or bituminous overlay	None	Item 18635.01 included in proposal with a quantity of 1000 linear feet or a quantity equal to the quantity of interim pavement markings to be removed if interim markings are required due to seasonal limitations.
New portland cement	None	Items 18635.01, 02 and 03 included in the proposal with quantities equal to the quantities of new pavement markings.
Existing bituminous or portland cement	Good condition	Items 18635.01, 02 and 03 included in the proposal with quantities equal to the quantities of existing pavement markings.
Existing bituminous or portland cement	Obliterated	Item 18635.01 included in proposal with a quantity of 1000 linear feet.

SEASONAL LIMITATIONS

Due to the seasonal limitations on the placement of the preformed pavement markings, the designer should include Items 640.0101 and 640.0201 as necessary for the application of interim pavement markings on contracts when there is a possibility that the pavement may be opened to traffic in a season when the preformed markings may not be applied. In this case the designer must include removal of these painted markings under Item 18635.01. Item 619.15 Pavement Delineation should not be used for this purpose because of the duplication of line removal and pavement cleaning which would occur.