


TO:  <b>SUPERSEDED BY EI 93-007</b> <b>EFFECTIVE 11/18/93</b>	<h1 style="margin: 0;">ENGINEERING INSTRUCTION</h1> <p style="margin: 0;">NEW YORK STATE DEPARTMENT OF TRANSPORTATION</p> <p style="margin: 0;">CLEANING AND PREPARATION OF PAVEMENT SURFACES FOR PAVEMENT MARKINGS</p> <p style="margin: 0;">Subject Code: 7.27-1-635</p>
Distribution:      30      Main Office      32      Regions      34      Special	Code: <u>     EI 88-9      </u> Date: <u>     2-22-88      </u> Supersedes:
APPROVED: <div style="text-align: center; margin-top: 10px;">   <u>J. M. YORHO, Acting Deputy Chief Engr., Fac. Design Div.</u> </div>	

On the new region wide durable pavement marking contracts there is a potential for many miles of highway being left without any type of pavement delineation overnight or longer. This may occur because the work of removing existing markings proceeds slower than the application of new markings. The attached, revised specification will provide for the removal of pavement markings and their timely replacement by either new permanent markings, immediately placed, or by pavement delineation placed in accordance with §291.3 of the NYS MUTCD. Since the cost of the NYS MUTCD optionally allowed pavement delineation is included in the revised cleaning item (635.0101), the designer should not estimate any quantity of the pay item for delineation (619.15) for this purpose.

When estimating cleaning quantities the designer should consider that epoxy markings may be applied directly over worn epoxy and worn thermoplastic provided that these markings have not been painted over with traffic paint. However, epoxy is not recommended for striping over worn tape.

This EI replaces the following item numbers 635.01, 635.02, and 635.03 with:

Item No.	Item	Pay Unit
635.0101	Cleaning and Preparation of Pavement Surface-Lines	Linear Foot
635.0201	Cleaning and Preparation of Pavement Letters	Each
635.0301	Cleaning and Preparation of Pavement Symbols	Each

It takes effect with the letting of 4-28-88 but will be inserted into selected contracts by amendment as early as 3-31-88.

## CLEANING AND PREPARATION OF PAVEMENT SURFACES

Make the following *changes* to the Standard Specifications of January 2, 1985.

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Under **SECTION 635 CLEANING AND PREPARATION OF PAVEMENT SURFACES**, *delete* the section in its entirety and *replace* with the following:

### **"SECTION 635 — CLEANING AND PREPARATION OF PAVEMENT SURFACES FOR PAVEMENT MARKINGS**

**635-1 DESCRIPTION.** This work shall consist of cleaning and preparing portland cement and bituminous pavement surfaces for the application of reflectorized pavement marking materials. Examples of pavement markings requiring this item include, but are not limited to, reflectorized thermoplastic, preformed, and epoxy type marking materials.

**635-2 MATERIALS.** Materials and equipment for cleaning and preparing pavement surfaces may be selected by the Contractor, except that they will be approved by the Engineer and must conform to all applicable Local, State or Federal law, regulation or codes.

#### **635-3 CONSTRUCTION DETAILS**

**635-3.01 General.** The work required to clean and prepare pavement surfaces shall be performed in accordance with these specifications, the contract documents and to the satisfaction of the Engineer. Before any work is begun, a schedule of operations shall be submitted for the approval of the Engineer. When the work is conducted under traffic, the Contractor shall supply all necessary flags, markers, signs, and other devices to maintain and protect traffic.

Whenever grinding, waterblasting, dry sandblasting or other operations are performed, the work shall be conducted in such a manner that the finished pavement surface is not damaged or left in a pattern that will mislead or misdirect the motorist. When these operations are completed the pavement surface shall first be power broomed and then blown off with compressed air to remove residue and debris resulting from the cleaning work.

Care shall be taken on portland cement concrete surfaces when performing removal and cleaning work to prevent damage to transverse and longitudinal joint sealers.

Unless otherwise specified in the contract documents the area(s) and quantity of cleaning work will be determined by the Engineer at the job site when the contract is in progress. In addition the Engineer will have the authority of increasing the work area as the project continues.

**635-3.02 Limits of Work.** Cleaning and surface preparation work shall be confined to the surface area specified for the application of pavement marking materials; or the surface area of existing pavement markings that are specified for removal on the plans, or as directed by the Engineer.

Surface preparation work includes cleaning for lines or cleaning for letters and symbols. Lines will be meant to include: broken line; dotted line; channelizing line; barrier lines; stop lines; crosswalk line and crossbars.

When lines are cleaned, the area of preparation will be the width of the new pavement marking, or existing line, plus one (1) inch on each side. When letters and symbols are cleaned the area of preparation will be sufficiently large to accommodate the new marking, or to remove the existing marking.

**635-3.03 Cleaning Concrete Curing Compounds.** On new portland cement concrete pavements, cleaning operations shall not begin until a minimum of 30 days after the placement of concrete. All new concrete pavements shall be cleaned by either sandblasting or water blasting. When water blasting is performed, pavement markings shall be applied no sooner than 24 hours after the blasting has been completed.

The extent of the blasting work shall be to clean and prepare the concrete surface such that:

- A. There is no visible evidence of curing compound on the peaks of the textured concrete surface.
- B. There are no heavy puddled deposits of curing compound in the valleys of the textured concrete surface.
- C. All remaining curing compound is intact; all loose and flaking material is removed.

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D. The peaks of the textured pavement surface are rounded in profile and free of sharp edges and irregularities.

**635-3.04 Cleaning Existing Pavement Markings.** Existing pavement markings shall be cleaned for the purpose of:

A. Preparing the pavement surface for the application of new pavement markings in the same location as the existing markings.

B. To remove existing markings that are in good condition which, if allowed to remain, will interfere with or otherwise conflict with newly applied marking patterns.

It shall be understood that in this context cleaning means the removal of an existing marking. It is not intended that all deteriorated existing pavement markings be removed. Example: If a new marking is applied to an unmarked "gap" in a broken line and the existing broken line pattern is worn or deteriorated, as determined by the Engineer, to the extent that it is not misleading or confusing to the motorist, the existing markings do not require removal.

Pavement markings shall be cleaned to the extent that 95% to 100% of the existing marking is removed. Removal operations shall be conducted in such a manner that no more than moderate color and/or surface texture change results on the surrounding pavement surface. When waterblasting is performed, pavement markings shall be applied no sooner than 24 hours after the blasting has been completed. Waterblasting shall not be allowed for cleaning markings requiring replacement within the same day as removal as specified under §635-3.05.

The determination of acceptable removal will be made by judgement of the Engineer and will be guided by the Department's pictorial standards of acceptable marking removal. Pictorial standards are available from the Materials Bureau.

**635-3.05 Replacement of Pavement Markings.** The Contractor shall not remove existing pavement markings and leave the highway unmarked or undelineated for an extended period of time.

If traffic is to be maintained overnight on highways where the existing markings have been removed either pavement delineation or permanent type pavement markings as called for in the contract documents shall be applied before the end of the working day of the original pavement marking removal for the following conditions:

1. Yellow broken line, solid line and full and partial barrier lines used to delineate the separation of traffic flows in opposing directions on two-way roadways.

2. White broken line on multi-lane highways. (Note 1)

If pavement delineation is applied in lieu of permanent pavement markings, the normal two foot "skip marks" or their equal will be considered acceptable only for limited periods of time in accordance with the following: (1) for 28 or fewer calendar days on roadway segments longer than 1200 feet between interchanges and/or intersections; (2) for 28 or fewer calendar days at one and two lane approaches to intersections, and on one way ramps; (3) for seven or fewer calendar days at all other locations.

*NOTE 1:* In order to provide continuous pavement delineation the Contractor may apply the permanent white or yellow broken line in the gaps between the existing broken line before the removal of the existing broken line when the Engineer determines that the existing broken line will not be misleading to traffic.

All other pavement marking patterns on both two-way and multi-lane highways shall be replaced within seven (7) or twenty-eight (28) calendar days of the removal of the existing markings in accordance with the preceding paragraph.

If the Contractor fails to replace removed markings or pavement delineation within the specified time periods, "interim markings" shall be installed and maintained in accordance with the patterns indicated for the permanent pavement markings, or in accordance with other patterns as directed by the Engineer.

Materials for the installation of "interim markings" or pavement delineation may be either paint, tape or approved raised (2) pavement markings, and shall be approved by the Engineer prior to use. All interim markings and pavement delineation shall be cleaned from the pavement in accordance with this specification, at the time that the permanent contract markings are installed or as directed by the Engineer.

The work of furnishing, applying, maintaining and removing interim pavement markings or pavement delineation shall be performed by the Contractor at no additional expense to the State.

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**635-4 METHOD OF MEASUREMENT.** Surface cleaning and preparation of pavement surfaces for lines will be measured in linear feet along the centerline of the prepared surface and will be based on a nominal 4-inch wide line. Measurement for cleaning surfaces for line widths greater than the nominal 4-inches will be made by the following method:

$$\frac{\text{Nominal Existing Width of Line (inches)} \times \text{Linear Feet}}{4 \text{ (inches)}}$$

No payment will be made for the additional 1 inch of cleaning on each side of the line required by §635-3.02.

No payment will be made for cleaning the number of linear feet of unmarked gaps between broken or dotted line segments.

Cleaning and preparation of letters and symbols on pavement surfaces will be measured by each unit cleaned. A unit will consist of one letter or one symbol. Example: "STOP" would be measured as four units.

The Engineer will adjust the quantities of these items as required to meet field conditions. This may result in substantial increases or decreases of the proposal quantities.

*NOTE 2:* If raised pavement markers are used the marker shall be one appearing on the Department's Approved List for "Removable Reflectorized Pavement Markings".

**635-5 BASIS OF PAYMENT.** The accepted quantities of cleaned pavement surface will be paid for at the contract unit price, which shall include the cost of furnishing all labor, materials and equipment to satisfactorily complete the work. The cost of maintaining and protecting traffic during the cleaning work will be included in the price bid. No payment will be made under this item for the removal of pavement markings applied under §619 - Maintenance and Protection of Traffic.

*Payment will be made under:*

Item No.	Item	Pay Unit
635.0101	Cleaning and Preparation of Pavement Surface-Lines	Linear Foot
635.0201	Cleaning and Preparation of Pavement Letters	Each
635.0301	Cleaning and Preparation of Pavement Symbols	Each"