680.813105M Pedestrian Signal Module - 300 mm, Bi-Modal Hand/Man Symbols, LED Each
680.813106M Pedestrian Signal Section - Polycarbonate, Type I, 300 mm Each
680.8132 M Pedestrian Signal Section - 76 mm Letters Each
680.8133 M Pedestrian Signal Section - Fiberoptic Each 5
680.8141 M Pedestrian Signal Bracket Mount Assembly Each
680.8142 M Pedestrian Signal Post Top Mount Assembly Each
680.82XX M Overhead Sign Assembly Each
XX = Type
680.8220 M Flashing Beacon Sign Assembly Each 10
680.8225 M Pedestrian Push Button and Sign - without Post Each
680.8226 M Pedestrian Push Button and Sign - with Post Each
680.8230 M Fire Pre-Emption Tell Tale Light Each

NOTE: SEE STANDARD CONTRACT PAY ITEM CATALOGUE FOR ITEM NUMBERS CONTAINING VARIABLES.

* Mast arm mounting heights, and span wire pole length and load, are as defined on the 'Standard Traffic Signal Poles' standard sheets and in §724-03, Traffic Signal Poles. The nominal luminaire mounting height and span shall be as indicated on the plans.

** The mast arm length and mounting height indicated by the item number is for only one of the mast arms. The other mast arm length and mounting height shall be as indicated on the plans.

SECTION 681 THRU SECTION 684 (VACANT)

SECTION 685 - EPOXY REFLECTORIZED PAVEMENT MARKINGS

685-1 DESCRIPTION. Under this work, the Contractor shall furnish and apply epoxy reflectorized pavement markings at the location and in accordance with patterns indicated on the plans or as ordered by the Engineer, and in conformance with the NYSMUTCD and these specifications.

The epoxy marking material should be hot–applied by spray methods onto bituminous and portland cement concrete pavement surfaces at the thickness and width shown on the Contract Documents. Following an application of glass beads, the cured epoxy marking shall be an adherent reflectorized stripe.

685-2 MATERIALS. Materials shall conform to the requirements of §727–03 White and Yellow Epoxy Reflectorized Pavement Markings.

685-3 CONSTRUCTION DETAILS

685-3.01 General. All pavement markings and patterns shall be placed as shown on the Contract Documents and in accordance with the New York State, Manual of Uniform Traffic Control Devices (MUTCD).

Before any pavement marking work is begun, a schedule of operations shall be submitted for the approval of the Regional Director and his/her authorized representative.

At least five (5) days prior to starting striping, the Contractor shall provide the Engineer with the epoxy manufacturer's written instructions for use. These instructions shall include, but not be limited to, material mixing ratios and application temperatures.

When pavement markings are applied under traffic, the Contractor shall provide all necessary flags, markers, signs, etc. in accordance with the MUTCD to maintain and protect traffic, and to protect marking operations and the markings until thoroughly set.
§685-3

The application of pavement markings shall be done in the general direction of traffic. Striping against the direction of traffic flow shall not be allowed.

The Contractor shall be responsible for removing, to the satisfaction of the Engineer, all tracking marks, spilled epoxy, and epoxy markings applied in unauthorized areas.

When necessary the Contractor shall establish marking line points at nine (9) meter intervals throughout the length of the pavement or as directed by the Engineer.

685-3.02 Atmospheric Conditions. Epoxy pavement markings shall only be applied during conditions of dry weather and on substantially dry pavement surfaces. At the time of installation the pavement surface temperature shall be minimum of 10°C and the ambient temperature shall be a minimum of 10°C and rising. The Engineer shall be the sole determiner as to when atmospheric conditions and pavement surface conditions are such to produce satisfactory results.

685-3.03 Surface Preparation. The Contractor shall clean the pavement and existing durable markings to the satisfaction of the Engineer.

Surface cleaning and preparation work shall be performed only in the area of the epoxy markings application.

At the time of application, all pavement surfaces and existing durable markings shall be free of oil, dirt, dust, grease and similar foreign materials. The cost of cleaning these contaminants shall be included in the bid price of this item.

In addition, concrete curing compounds on new portland cement concrete surfaces and existing painted pavement markings on both concrete and bituminous pavement surfaces shall be cleaned and paid for in accordance with Section 635, Cleaning and Preparation of Pavement Surfaces for Pavement Markings.

685-3.04 Epoxy Applicating Equipment. Mobile applicating equipment for the placement of epoxy reflectorized pavement markings shall be approved by the Director (Materials Bureau) prior to the start of work.

In general, a mobile applicator shall be a truck mounted, self-contained pavement marking machine, specifically designed to apply epoxy resin materials and reflective glass spheres in continuous and skip-line patterns. The applicating equipment shall be maneuverable to the extent that straight lines can be followed and normal curves can be made in true arc. In addition, the truck mounted unit shall be provided with accessories to allow for the marking of legends, symbols, crosswalks, and other special patterns.

At any time throughout the duration of the project, the Contractor shall provide free access to his epoxy applicating equipment for inspection by the Engineer or his authorized representative.

The Engineer may approve the use of a portable applicator in lieu of mobile truck mounted accessories for use in applying special markings only, provided such equipment can demonstrate satisfactory application of reflectorized epoxy markings in accordance with these specifications. The applicating equipment shall be capable of installing a minimum of 30 000 m of epoxy reflectorized pavement markings in an eight hour day and shall include the following features:

1. Individual tanks for the storage of Part A and Part B of the epoxy resin and for the storage of reflective glass spheres.
2. Heating equipment of sufficient capacity to maintain the individual epoxy resin components at the manufacturer's recommended temperature for spray application.
3. Glass bead dispensing equipment and the capacity of applying the spheres a minimum rate of 2.4 kg/L of epoxy resin composition.
4. Metering devices or pressure gauges on the proportioning pumps, positioned to be readily visible to the Engineer.
5. All necessary spray equipment, mixers, compressors, and other appurtenances for the placement
of epoxy reflectorized pavement markings in a simultaneous sequence of operations as described in §685-3.05 Application of Epoxy Reflectorized Pavement Markings.

685-3.05 Application of Epoxy Reflectorized Pavement Markings. Epoxy reflectorized pavement markings shall be placed at the width, thickness, and pattern designated by the Contract Documents.

Marking operations shall not begin until applicable surface preparation work is completed and approved by the Engineer, and the atmospheric conditions and pavement surface temperature are acceptable to the Engineer.

Pavement markings shall be applied by the following simultaneous operation:

1. The pavement surface is air-blasted to remove dirt and residues.
2. The epoxy resin, mixed and heated in accordance with the manufacturer's recommendations, is uniformly hot-sprayed onto the pavement surface at the minimum specified thickness.
3. Reflective glass spheres are injected into, or dropped onto, the liquid epoxy marking at a minimum rate of 2.4 kg/L of epoxy resin.

685-3.06 Defective Epoxy Pavement Markings. Epoxy reflectorized pavement markings, which after application and curing are determined by the Engineer to be defective and not in conformance with this specification, shall be repaired. Repair of defective markings shall be the responsibility of the Contractor and shall be performed to the satisfaction of the Engineer as follows:

1. Insufficient film thickness and line width; insufficient glass bead coverage or inadequate glass bead retention.

   Repair Method. Prepare the surface of the defective epoxy marking by grinding or blast cleaning. No other cleaning methods will be allowed. Surface preparation shall be performed to the extent that a substantial amount of the reflective glass spheres are removed and a roughened epoxy marking surface remains. Immediately after surface preparation remove loose particles and foreign debris by brooming or blasting with compressed air. Repair shall be made by restriping over the cleaned surface in accordance with the requirements of this specification and at the full thickness indicated on the Contract Documents.

2. Uncured or discolored epoxy'; insufficient bond (to pavement surface or existing durable marking).

   Repair Method. The defective epoxy marking shall be completely removed and cleaned to the underlying pavement surface in accordance with the requirements of Section 635 – Cleaning and Preparation of Pavement Surfaces, at the Contractor's expense. The extent of removal shall be the defective area plus any adjacent epoxy pavement marking material extending one meter in any direction. After surface preparation work is complete, repair shall be made by reapplying epoxy over the cleaned pavement surface in accordance with the requirements of this specification.

   *Uncured epoxy shall be defined as applied material that fails to cure (dry) in accordance with requirements of §727–03 MATERIAL REQUIREMENTS, A., 2.0 paragraph d. Drying Time (Field); or applied material that fails to cure (dry) within a reasonable time period under actual field conditions, as defined by the Engineer.

   *Discoloration shall be defined as localized areas or patches of brown, grayish or black colored epoxy marking material. These areas often occur in a cyclic pattern and often are not visible until several days or weeks after markings are applied.

Other defects not noted above, but determined by the Engineer to need repair, shall be repaired or replaced as directed by and to the satisfaction of the Engineer.

All work in conjunction with the repair or replacement of defective epoxy reflectorized pavement
§685-3

markings shall be performed by the Contractor at no additional cost to the State.

685-4 METHOD OF MEASUREMENT. Pavement striping will be measured in linear meters along the centerline of the pavement stripe and will be based on a 100 mm wide stripe. Measurement for striping with a plan width greater or less than the basic 100 mm as shown on the plans or directed by the Engineer, will be made by the following method:

Plan Width of Striping (millimeters) x Linear Meters
100 mm

Letters and symbols will be measured by each unit applied. A unit will consist of one letter or one symbol. Example: “SCHOOL” would be paid as six units. Double and triple headed arrows will be measured as a single unit, but the “X” in railroad grade crossing markings (M.U.T.C.D. figure 263-33) will be measured by linear meters of 100 mm stripe.

685-5 BASIS OF PAYMENT. The accepted quantities of markings will be paid for at the contract unit price, which shall include the cost of furnishing labor, materials and equipment to satisfactorily complete the work. The cost for maintaining and protecting traffic during the marking operations shall be included in the price bid. The cost of removal of concrete curing compounds and existing pavement markings will be paid under separate items and are not included in this item.

No payment will be made for the repair or replacement of defective epoxy reflectorized pavement markings.

No payment will be made for the number of linear meters of skips in the dashed line.

Payment will be made under:

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>685.01 M</td>
<td>White Epoxy Reflectorized Pavement Stripes – 0.38 mm</td>
<td>Meter</td>
</tr>
<tr>
<td>685.02 M</td>
<td>Yellow Epoxy Reflectorized Pavement Stripes – 0.38 mm</td>
<td>Meter</td>
</tr>
<tr>
<td>685.03 M</td>
<td>White Epoxy Reflectorized Pavement Letters – 0.38 mm</td>
<td>Each</td>
</tr>
<tr>
<td>685.04 M</td>
<td>White Epoxy Reflectorized Pavement Symbols – 0.38 mm</td>
<td>Each</td>
</tr>
<tr>
<td>685.11 M</td>
<td>White Epoxy Reflectorized Pavement Stripes – 0.51 mm</td>
<td>Meter</td>
</tr>
<tr>
<td>685.12 M</td>
<td>Yellow Epoxy Reflectorized Pavement Stripes – 0.51 mm</td>
<td>Meter</td>
</tr>
<tr>
<td>685.13 M</td>
<td>White Epoxy Reflectorized Pavement Letters – 0.51 mm</td>
<td>Each</td>
</tr>
<tr>
<td>685.14 M</td>
<td>White Epoxy Reflectorized Pavement Symbols – 0.51 mm</td>
<td>Each</td>
</tr>
</tbody>
</table>

SECTION 686 (VACANT)

SECTION 687 - THERMOPLASTIC REFLECTORIZED PAVEMENT MARKINGS

687-1 DESCRIPTION. Under this work, the Contractor shall furnish and apply thermoplastic reflectorized pavement markings at the location and in accordance with patterns indicated on the plans or as ordered by the Engineer, and in conformance with the NYSMUTCD and these specifications.

The thermoplastic pavement marking compound shall be extruded in a molten state onto the pavement surface. Following surface application of glass beads and upon cooling to normal pavement temperatures, the resultant marking shall be an adherent reflectorized stripe of the specified thickness and width that is capable of resisting deformation by traffic.

687-2 MATERIALS. Materials shall conform to the requirements of §727-01 White and Yellow Thermoplastic Reflectorized Pavement Markings.
687-3 CONSTRUCTION DETAILS

687-3.01 Equipment General. Thermoplastic applying equipment shall be approved by the Engineer prior to the start of work.

Unless otherwise approved by the D.C.E.C., all projects specifying quantities greater than 20 000 m of longitudinal pavement marking lines will be striped using only mobile applying equipment for the longitudinal lines, Longitudinal pavement marking lines are Broken Lines (skipline), Edge Lines, Barrier Lines, and Solid Lines as defined by the M.U.T.C.D. Portable applying equipment will be acceptable for placing all other markings on these projects.

Thermoplastic material shall be applied to the pavement surface by the extrusion method, wherein one side of the shaping die is the pavement and the other three sides are contained by, or are part of, suitable equipment for maintaining the temperature and controlling the flow of material (Note 1.)

Note 1. Alternate types of extrusion devices may be considered acceptable for use upon prior approval by the Materials Bureau. Requests for approval of alternate extrusion applying equipment shall be made to the Materials Bureau by the Contractor/Manufacturer at least 90 days prior to its date of intended use. Detailed requirements and procedures for the acceptance of alternate equipment are available from the Materials Bureau.

For heating the thermoplastic composition, the application equipment shall include a melting kettle(s) of such capacity as to allow for continuous marking operations. The melting kettle(s) may be mounted on a separate “supply” vehicle or included as part of the mobile applying equipment. The kettle(s) shall be capable of heating the thermoplastic composition temperatures greater than 204.5°C. The heating mechanism shall be by means of a thermostatically controlled heat transfer medium. Heating of the composition by direct flame will not be allowed. Material temperature gauges shall be visible at both ends of the kettle(s).

Application equipment shall be constructed to provide continuous mixing and agitation of the material. Conveying parts of the equipment between the main material reservoir and the extrusion shoe(s) shall be so constructed as to prevent accumulation and clogging. All parts of the equipment which come into contact with the material shall be so constructed as to be easily accessible and exposable for cleaning and maintenance. The equipment shall be constructed so that all mixing and conveying parts up to and including the extrusion shoe(s), maintain the material at the required plastic temperature.

The applying equipment shall be so constructed as to insure continuous uniformity in the dimensions of the stripe. The applicator shall provide a means for cleanly cutting off stripe ends squarely and shall provide a method of applying “skip” lines. The equipment shall be capable of applying varying widths of traffic markings.

The applicator shall be equipped with a drop-on type bead dispenser capable of uniformly dispensing reflective glass spheres at controlled rates of flow.

The bead dispenser shall be automatically operated in such a manner that it will only dispense beads while the composition is being applied.

Applying equipment shall be mobile and maneuverable to the extent that straight lines can be followed and normal curves can be made in a true arc.

Applicators shall be equipped and constructed in such a manner as to satisfy the requirements of the National Board of Fire Underwriters and the appropriate agencies of the State of New York.

The equipment used for the placement of thermoplastic pavement markings shall be two general types: mobile applicator and portable applicator.

687-3.02 Mobile Applicating Equipment. The mobile applicator shall be defined as a truck mounted, self-contained pavement marking machine that is capable of hot applying thermoplastic by the extrusion method. The unit shall be equipped to apply the thermoplastic material at temperatures
§687-3

exceeding 204.5°C, and at the widths and thicknesses specified herein. The mobile unit shall be capable of operating continuously and of installing a minimum of 6000 m of longitudinal markings in an 8–hour day.

The mobile unit shall be equipped with a melting kettle(s) or materials storage reservoir(s) of such capacity as to allow for continuous marking operations. The kettle(s) or reservoirs shall be capable of heating or holding the thermoplastic composition at temperatures greater than 204.5°C.

The mobile unit shall be equipped with an extrusion shoe(s), and shall be capable of marking edgeline and centerline stripes. The extrusion shoe(s) shall be closed, heat jacketed or suitably insulated unit; shall hold the molten thermoplastic at a temperature greater than 204.5°C; and shall be capable of extruding a line between 75 to 200 mm in width; and at a thickness of not less than 3.2 mm nor more than 4.8 mm, and of generally uniform cross section. Material temperature gauges shall be affixed or incorporated in the extrusion shoe in such a manner as to be visible, and capable of monitoring the composition temperature throughout the marking operation.

The mobile unit shall be equipped with an electronic and programmable line pattern control system, or mechanical control system, so as to be capable of applying skip or solid lines in any sequence, and through any extrusion shoe in any cycle length.

687-3.03 Portable Applicating Equipment. The portable applicator shall be defined as hand operated equipment, specifically designed for placing thermoplastic installations such as crosswalks; stop bars; legends; arrows; and short lengths of lane, edge, and centerlines. The portable applicator shall be capable of applying thermoplastic pavement markings by the extrusion method. It is intended that the portable applicator will be loaded with hot thermoplastic composition from the melting kettle(s). The portable applicator shall be equipped with all the necessary components, including a materials storage reservoir, bead dispenser, extrusion shoe, and heating accessories, so as to be capable of holding the molten thermoplastic at temperatures greater than 204.5°C, of extruding a line of from 75 to 200 mm in width, and in thickness of not less than 3.2 mm nor more than 4.8 mm and of generally uniform cross-section. Material temperature gauges shall be affixed or incorporated in the extrusion shoe in such a manner as to be visible, and capable of monitoring the composition temperature throughout the marking operation.

687-3.04 Application General. All pavement markings shall be placed as shown on the plans and in accordance with the New York State Manual of Uniform Traffic Control Devices.

Before any pavement marking work is begun, a schedule of operations shall be submitted for the approval of the Regional Director or his authorized representative.

When pavement markings are applied under traffic the Contractor shall provide all necessary flags, markers, signs, etc. to maintain and protect traffic; and to protect marking operations and the markings until thoroughly set.

The application of pavement markings shall be done in the general direction of traffic. Striping against the direction of traffic flow shall not be allowed.

The Contractor shall be responsible for removing, to the satisfaction of the Engineer, tracking marks, spilled thermoplastic or thermoplastic applied in unauthorized areas.

When necessary, the Contractor shall establish marking line points at nine (9) meter intervals throughout the length of pavement or as directed by the Engineer.

687-3.05 Atmospheric Conditions. Thermoplastic pavement markings shall be placed upon dry pavement surfaces. At the time of installation the pavement surface temperature shall be a minimum of 12.5°C and the ambient temperatures shall be a minimum of 9.5°C and rising. The Engineer will determine when atmospheric conditions are such to produce satisfactory results (Note 2).

Note 2. To comply with the 12.5°C pavement surface temperature requirement, it will benefit the Contractor to schedule striping work for seasons of warm weather when possible. In cooler conditions, striping operations may be coordinated with bituminous paving work to take advantage
of residual heat, providing that the ambient temperature requirements of §687-3.05 are still met.

687-3.06 Materials Application Requirements

A. Thermoplastic Primer. All pavement surfaces shall be primed except that on new bituminous pavements, when the thermoplastic pavement markings are applied within the same calendar year as the completion of paving operations, primer shall not be required. The primer shall be either a one-component or a two-component, cold or hot applied material of the type recommended by the manufacturer of the thermoplastic pavement marking material. At least five working days prior to the start of thermoplastic application, the Contractor shall provide the Engineer with the manufacturer's written instructions for primer application. The application of the primer shall be performed in accordance with the manufacturer's written recommendations which shall include the method of application, the application rate, and the drying time.

B. Thermoplastic Composition.

1. Application Temperature - thermoplastic composition shall be applied at temperatures no lower than 204.5°C at the point of deposition. For purposes of these specifications, the point of deposition shall be defined as within the extrusion shoe.

2. Extruded Markings - all extruded markings shall be applied at the specified width, and at a thickness of not less than 3.2 mm nor more than 4.8 mm.

C. Reflective Glass Spheres (for Drop-On). Immediately following application, reflective glass spheres shall be dropped onto the molten thermoplastic marking at the rate of 1 kg per 4 m² of composition.

687-3.07 Surface Cleaning and Preparation of Pavement. The Contractor shall be responsible for cleaning the pavement surface to the satisfaction of the Engineer.

Surface cleaning and preparation work shall be performed only in the area of the thermoplastic markings application.

At the time of application all pavement surfaces shall be free of oil dirt, dust, grease and similar foreign materials. The cost of cleaning these contaminants shall be included in the bid price of this item.

In addition, concrete curing compounds on new Portland Cement concrete surfaces; and existing pavement markings on both concrete and bituminous pavement surfaces shall be cleaned and paid for under separate items.

687-3.08 Application of Thermoplastic Pavement Markings. All special markings, cross walks, stop bars, legends, arrows, and similar patterns shall be placed with a portable applicator. Unless otherwise specified in the contract documents all center line, skip line, edge line and other longitudinal type markings may be applied with either a portable or a mobile applicator.

When the surface preparation work has been completed, if applicable, the bituminous and/or concrete pavement surface shall be primed according to the manufacturer's written instructions. Primer shall not be required on new bituminous pavement surfaces that are completed within the same calendar year as the thermoplastic marking application. The primer shall be spray applied onto the pavement surface and allowed to dry according to the manufacturer's written instructions. Pavement surfaces that are primed and not stripped with thermoplastic within the required drying time or within the same work day shall be re-primed.

After the primer has dried, the thermoplastic shall be applied at composition temperatures no lower than 204°C at the point of deposition. Immediately after installation of the thermoplastic, drop-on reflective glass spheres shall be mechanically applied such that the spheres are held by and embedded in the surface of the molten composition.
§687-4

687-4 METHOD OF MEASUREMENT. Pavement striping will be measured by linear meter along the centerline of the pavement stripe, and will be based on a 100 mm wide stripe. Measurement for striping with a plan 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:

\[
\text{Plan Width of Striping (millimeters) x Linear Meters} \quad 100 \text{ mm}
\]

No payment will be made for the number of linear meters of skips in the dashed line.

Letters and symbols will be measured by each unit applied. A unit will consist of one letter or symbol. Example: “SCHOOL” would be measured as six units. Double and triple headed arrows will be measured as a single unit, but the “X” in railroad grade crossing markings (M.U.T.C.D. figure 263-33) will be measured by linear meters of 100 mm stripe.

687-5 BASIS OF PAYMENT. The accepted quantities of markings 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 for maintaining and protecting traffic during the marking operations shall be included in the price bid. The cost of removal of concrete curing compounds and existing pavement markings will be paid under separate items and are not included in this item.

**Payment will be made under:**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>687.0101 M</td>
<td>White Thermoplastic ReflectORIZED Pavement Stripes</td>
<td>Meter</td>
</tr>
<tr>
<td>687.0201 M</td>
<td>Yellow Thermoplastic ReflectORIZED Pavement Stripes</td>
<td>Meter</td>
</tr>
<tr>
<td>687.0301 M</td>
<td>White Thermoplastic ReflectORIZED Pavement Letters</td>
<td>Each</td>
</tr>
<tr>
<td>687.0401 M</td>
<td>White Thermoplastic ReflectORIZED Pavement Symbols</td>
<td>Each</td>
</tr>
</tbody>
</table>

SECTION 688 - PREFORMED REFLECTORIZED PAVEMENT MARKINGS

688-1 DESCRIPTION. Under this work, the Contractor shall furnish and apply preformed reflectorized pavement markings at the location and in accordance with patterns indicated on the plans or as ordered by the Engineer, and in conformance with the NYSMUTCD and these specifications.

The preformed reflectorized pavement marking shall be applied on new and existing bituminous and portland cement concrete surfaces by hand and mechanical methods. The resultant marking shall be an adherent reflectorized stripe that is capable of molding itself to the contours of the pavement surface and of resisting deformation by traffic.

688-2 MATERIALS. Materials shall conform to the requirements of §727–04 White and Yellow ReflectORIZED Pavement Markings.

688-3 CONSTRUCTION DETAILS

688-3.01 General. All pavement markings and patterns shall be placed as shown on the plans and in accordance with the New York State Manual of Uniform Traffic Control Devices.

Before any pavement marking work is begun, a schedule of operations shall be submitted for the approval of the Regional Director or his authorized representative.

At least five (5) days prior to the start of work, the Contractor shall provide the Engineer with the manufacturer’s written instructions for the application of preformed marking and primer materials.

When pavement markings are applied under traffic, the Contractor shall supply all necessary flags, markers, signs, and other devices, to maintain traffic and to protect the markings until set.

The application of pavement markings shall be done in the general direction of traffic. Striping against the direction of traffic flow will not be allowed without prior approval of the Engineer.
The Contractor shall be responsible for removing, to the satisfaction of the Engineer, preformed markings applied in unauthorized areas.

When required by the Engineer, the Contractor shall establish marking line points at nine (9) meter intervals throughout the length of the pavement or as directed by the Engineer.

**688-3.02 Application Methods.** Preformed pavement markings shall be applied by the following methods. The installation of markings on the project may be performed simultaneously by more than one method.

**A. During Bituminous Paving Operations.** Preformed markings shall be applied on newly paved bituminous surfaces after finish rolling is complete.

**B. On Completed Pavements.** Preformed markings shall be applied on new and existing bituminous and portland cement concrete pavement surfaces as prescribed in §688–3.03 Weather and Seasonal Limitations.

**688-3.03 Weather and Seasonal Limitations.** The Engineer shall determine as to when temperature and pavement surface conditions are such as to produce satisfactory results.

Preformed pavement markings shall be placed upon dry pavement surfaces; pavements exposed to rain or wet conditions shall be allowed to thoroughly dry before marking application.

Preformed markings applied in conjunction with §688–3.02A, *During Bituminous Paving Operations*, shall only be placed within the seasonal limitations of Standard Specification §402-3.01. The bituminous pavement surface temperature shall, at all times, be the controlling temperature at which preformed markings are placed, and shall be between 37.5°C and 76.5°C.

Preformed markings applied in conjunction with §688–3.02B, *on completed pavements*, shall be applied within the seasonal limitations of Table 688-1, Temperature and Seasonal Requirements. The pavement surface and ambient air temperatures in Table 688-1 shall, in all cases, be the controlling temperatures at which preformed markings are placed. Marking application work shall be discontinued when temperatures fall below the specified requirements.

<table>
<thead>
<tr>
<th>Geographic Location</th>
<th>Pavement Surface Temperature</th>
<th>Ambient Air Temperature</th>
<th>Allowable Installation Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regions 1, 2, 3, 4, 5, 6, 7 &amp; 9 (All Counties) Region 8 (Ulster County only)</td>
<td>21°C, Min.</td>
<td>15.5°C, Min.</td>
<td>May 15 to September 1</td>
</tr>
<tr>
<td>Regions 8 &amp; 10 (except Ulster County)</td>
<td>21°C, Min.</td>
<td>15.5°C, Min.</td>
<td>May 15 to September 15</td>
</tr>
<tr>
<td>Region 11</td>
<td>21°C, Min.</td>
<td>15.5°C, Min.</td>
<td>May 1 to September 30</td>
</tr>
</tbody>
</table>

Notes:
1. Surface temperatures shall be measured on the pavement surface where the preformed markings are to be placed. The controlling temperature shall be the average of three temperature readings taken at locations 30± meter apart.
2. Ambient air temperatures shall be measured in the shade.
§688-3

688-3.04 Mechanical Applicating Equipment. Mechanical applicating equipment for the placement of preformed pavement marking stripes shall be of the type recommended by the manufacturer of the preformed material. All applicating equipment shall be approved by the Engineer prior to the start of work.

688-3.05 Rollers. Preformed markings applied in conjunction with §688–3.02a, during bituminous paving operations, shall be rolled into place with compaction equipment meeting the requirements of Standard Specification §402-3.04. Vibratory roller models shall operate in a 'static' mode.

Preformed markings applied in conjunction with §688–3.02B., On Completed Pavements, shall be rolled into place using steel shell or pneumatic rubber–tired roller equipment approved by the Engineer. Steel wheel rollers shall weigh a minimum of 90 kg on each axle. Pneumatic rubber–tired rollers shall exert a minimum tire compression on the pavement of 195 Kpa. Hand rollers or rubber tired vehicles (e.g. pick–up truck) meeting the above requirements may be suitable for use.

688-3.06 Primer Requirements. When required, primer or adhesive shall be used for marking applications in accordance with the written recommendations of the manufacturer of the preformed marking material.

Primer materials shall be placed at the application rate and by the application methods recommended by the manufacturer.

When primer is applied, the area of application shall be at least the width or dimension, of the new preformed marking, plus twenty-five (25) millimeter on each side.

688-3.07 Surface Cleaning and Preparation of Pavement Surfaces. The Contractor shall be responsible for cleaning the pavement surface to the satisfaction of the Engineer.

Surface cleaning and preparation work shall be performed only in the area of the preformed markings application.

At the time of application, all pavement surfaces shall be free of oil, dirt, dust, grease and similar foreign materials. The cost of cleaning these contaminants shall be included in the bid price of this item.

In addition, concrete curing compounds on new portland cement concrete surfaces and existing pavement markings on both concrete and bituminous pavement surfaces shall be removed and paid for under separate items.

688-3.08 Application of Preformed Reflectorized Pavement Markings. Unless otherwise approved by the Engineer, all longitudinal lines shall be applied using mechanical applicating equipment. Transverse and special marking patterns may be applied by hand or mechanical methods.

Preformed marking operations shall not begin until after the pavement surface has been cleaned and prepared.

Preformed stripes shall not be applied over longitudinal paving joints or over the point of transition between the pavement surface and adjoining shoulder. The placement of stripes in the area of transition shall be either on the pavement or on the shoulder, as directed by the Engineer.

No roller shall operate in excess of 4.5 km/h. One roller pass shall be defined as one movement of the roller over any point of the preformed marking, in the direction of the marking application.

A. Application During Bituminous Paving Operations. The application of preformed markings shall not begin until finish rolling of the new bituminous pavement is complete.

At the time of marking application, the surface temperature of the new bituminous pavement shall be between 37.5°C and 76.5°C. The Contractor shall coordinate paving and preformed marking operations to conform with surface temperature requirements.

Immediately after finish rolling is complete, the preformed marking shall be applied on the new bituminous surface. Traces of water or other residue from finish rolling operations shall first be removed. Immediately after its placement, the preformed marking shall be adhered to the warm pavement surface by rolling. Rollers shall make a minimum one pass, and operate in the same
direction that the marking was applied. Diagonal, reverse or crosswise rolling will not be allowed. The minimum one pass may be increased by the Engineer if, in his opinion, the desired adherence is not obtained.

B. Application on Completed Pavements. The application of preformed markings shall only be performed within the limitations of §688–3.03 Weather and Seasonal Limitations.

If required by the manufacturer, primer and adhesive activators shall be applied and allowed to dry in accordance with the instructions of the manufacturer of the preformed material.

The preformed marking shall be placed on the pavement surface and adhered by rolling. Rollers shall make a minimum of one pass, and operate in the same direction that the marking was applied. Diagonal, reverse or crosswise rolling will not be allowed. The minimum one pass may be increased by the Engineer if, in his opinion, the desired adherence is not obtained.

688-4 METHOD OF MEASUREMENT. Pavement striping will be measured by meters along the centerline of the pavement stripe and will be based on a 100 mm wide stripe.

The preformed pavement markings will be inspected during and following installation to determine conformance with this specification. In addition, they will be inspected following a performance period that will extend for 180 calendar days following both their installation and opening of the roadway to traffic.

Within 15 consecutive calendar days after the end of the 180 day performance period, a final performance inspection will be made by the Engineer. If this inspection discloses any work, in whole or in part, as not being visibly intact and serviceable to the following extent, the Contractor shall completely repair or replace such work:

A. Broken Line. 90 percent measured longitudinally of the total length of all broken lines in any 150 meter long pavement section.

B. Dotted Line. 50 percent measured longitudinally of the total length of all dotted lines in any 30 meter long pavement section.

C. Solid Line and Edge Line. 90 percent measured longitudinally of the total length of solid line or edge line in any 150 meter long pavement section.

D. Channelizing Line, Stop Line, Crosswalk Lines, Clearance Line and Crossbars, Hatch Lines, Letters and Symbols. 90 percent by area of any individual line, letter or symbol.

When required all repair or replacement work shall be performed in accordance with this specification and completed within 60 calendar days of the earliest allowable installation date as specified in Table 1, for that location. The Engineer shall determine the limits or quantity of preformed to be repaired or replaced.

Upon completion of the final performance inspection, or after satisfactory completion of any necessary corrections, the Engineer will, within 10 calendar days, notify the Contractor in writing of the date of such final performance inspection and release the Contractor from further performance responsibility.

This delay in performance inspection and performance acceptance of preformed markings shall not delay acceptance of the entire project and final payment due if the Contractor provides the Department with a “Faithful Performance Bond,” and a “Labor and Material Bond” in the full amount of all preformed pavement marking items. These bonds shall conform to the requirements of §103–04 and shall be in full force and effect until final performance inspection and performance acceptance of the pavement markings. In addition the Contractor shall keep in force the various types of insurance as required by §107–06.

Pavement striping on-going projects will be measured as the total of the striping applied, if after the final 180 day performance period, damage to the striping is not in excess of that specified (e.g. If 95%
§688-4

of the edgeline striping is intact in a 150 meter pavement section, the edgeline will be measured as the full 150 meters of applied marking. No deduction will be made for the damaged 5% (7.5 m) of striping.

Measurement for striping with a plan 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:

\[
\text{Plan Width of Striping (millimeters) x Meters} \\
\text{100 (millimeters)}
\]

No payment will be made for the number of meters of gaps between broken or dotted line segments. Letters and symbols will be measured by each unit applied. A unit will consist of one letter or one symbol. Example: "SCHOOL" would be measured as six units.

Double and triple headed arrows will be measured as a single unit, but the "X" in railroad grade crossing markings (M.U.T.C.D. figure 263-33) will be measured by linear meter of 100 mm stripe.

688-5 BASIS OF PAYMENT. The accepted quantities of markings 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 cleaning pavement surfaces of oil, dirt, dust, grease and similar foreign materials shall be included in the price bid. The cost of removal of concrete curing compounds and existing pavement markings will be paid under separate items and are not included in this item.

Payment will be made under:

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>688.01 M</td>
<td>White Preformed Reflectored Pavement Stripes</td>
<td>Meter</td>
</tr>
<tr>
<td>688.02 M</td>
<td>Yellow Preformed Reflectored Pavement Stripes</td>
<td>Meter</td>
</tr>
<tr>
<td>688.03 M</td>
<td>White Preformed Reflectored Pavement Letters</td>
<td>Each</td>
</tr>
<tr>
<td>688.04 M</td>
<td>White Preformed Reflectored Pavement Symbols</td>
<td>Each</td>
</tr>
</tbody>
</table>

SECTION 689 (VACANT)

SECTION 690 (VACANT)

SECTION 691 - EEO TRAINING REQUIREMENTS

691-1 DESCRIPTION.

691-1.01 General. This item of work shall consist of the meaningful and effective training of one or more minorities, women and disadvantaged persons leading to their qualification as journey-workers in one or more of the trades required in highway construction work.

Disadvantaged means a person who is either a) a member of a family that receives public assistance, or b) a member of a family whose income during the previous six (6) months, on an annualized basis, was such that 1) the family would have qualified for public assistance, if it had applied for such assistance, or 2) it does not exceed the poverty level.

The objective of these requirements is to provide training opportunities to minorities, women and disadvantaged persons for the following reasons:

1. To address the current under-representation of minorities, women and disadvantaged persons in the skilled trades of the highway construction industry, and;

2. To maintain a pool of qualified minorities, women and disadvantaged persons to compete for those journey-worker positions which are created in the natural course of events, as others leave the workforce.

Accordingly, the contractor shall make every effort to hire and recruit minority, women and disadvantaged trainees/apprentices to the extent that such persons are available within a reasonable area...
of recruitment. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

691-1.02 Authority. The statutory authority for the EEO and Training programs is contained in 23 U.S.C. 140(a), 23 CFR 230, 41 CFR 60-1 and 60-4, Executive Order 11246, New York State Executive Law Article 15-A and the rules promulgated thereunder.

691-2 MATERIALS - Not applicable.

691-3 CONSTRUCTION DETAILS.

691-3.01 General. Trainees and apprentices will be employed and offered meaningful and effective training opportunities on the contract. An apprentice is defined as an individual who is enrolled in an apprenticeship training program that is registered with the New York State Department of Labor. A trainee is defined as an individual who is enrolled in an On-the-Job Training (OJT) program that is approved by the New York State Department of Transportation. A list of such approved programs can be found in the On-the-Job Training and Apprenticeship Program Construction Catalogue which is available through the Department's Office of Equal Opportunity Development and Compliance. Meaningful and effective training is defined as occurring when the work of the contract provides a realistic and practical opportunity for the trainee/apprentice to complete elements of the OJT/apprenticeship training program in order to achieve journey-level status.

691-3.02 Required Training Effort. The estimated number of trainees/apprentices that the contractor will be required to train is outlined in the Table 691-1, below. The contractor may propose a different number of trainees/apprentices and a different duration of their training activity, subject to the approval of the Department. The Contractor shall propose, subject to the Department’s approval, the crafts or trades to be included in the program conditioned, generally, that only one trainee/apprentice will be approved under this item to be trained in each trade or craft.

691-3.03 Workforce and Training Utilization Schedule (Form AAP 35). At the time of the pre-construction conference, the contractor shall submit a Workforce and Training Utilization Schedule (Form AAP 35) covering the contractor’s workforce and the workforce of all his/her subcontractors, together with his/her construction work schedule with which the AAP 35 has been coordinated.

| Table 691-1 Estimated Number of Trainees/Apprentices |
|-----------------------------------------------|----------|----------|----------|
| Project Size (Total Amount Bid)               | Regions 1-6, 8, 9 | Region 7 | Regions 10 & 11 |
| $500,000 to < $10 Million                      | 1         |          |          |
| $1 Million to < $10 Million                    | 1         |          |          |
| ≥$10 Million to < $20 Million                  | 2         | 2        |          |
| ≥$20 Million                                  | 3         | 3        |          |
| $2.5 Million to < $10 Million                  |           |          | 1        |
| ≥$10 Million to < $30 Million                  |           |          | 2        |
| ≥$30 Million                                  |           |          | 3        |
§691-3

At a minimum, the AAP 35 must include the following:

1. A listing of the approved OJT/apprenticeship program(s) the contractor proposes to use;
2. The name of any individual proposed by the contractor to be trained as soon as it is possible to provide the name, and in any case, prior to when any individual is allowed to start an OJT/apprenticeship program under this item. If that person is a registered apprentice, evidence of registration of the apprentice and the approved apprenticeship program must be included;
3. The proposed starting dates for training of each individual in each trade and/or work classification, the operation(s) in which the individual is to begin his/her training and the proposed duration of the training; and
4. The AAP 35 shall be accompanied by an estimate of the cost of the proposed training effort. The cost estimate shall include an hourly rate for each proposed trainee/apprentice with a detailed breakdown of direct labor, supplemental benefits, payroll taxes, insurance, overhead and profit and other charges as allowed in Section 691-4, Method of Measurement. The estimate shall also include the monthly estimate of training hours to be paid under this item and the total cost for the training effort for the contract.

The contractor must use on-the-job training programs which have been approved by the Department, or in the case of apprenticeship programs, registered with the New York State Department of Labor. A list of such approved programs can be found in the On-the-Job Training and Apprenticeship Program Construction Catalogue which is available through the Department's Office of Equal Opportunity Development and Compliance.

No work shall be started until the Department and the contractor have agreed upon the AAP 35. The contractor shall submit a revised AAP 35 at any time a significant work force build up or reduction will substantially affect the agreed upon level of training efforts, or at any time a revised AAP 35 is requested by the Department. Such revised AAP 35 must be agreed upon by the Department or the original AAP 35 will remain in effect.

691-3.04 Recruitment. The contractor shall decide who is hired as an apprentice or trainee. However, to satisfy the training requirements and to receive payment under this item, such apprentice or trainee must:

1. be a minority, woman or disadvantaged person; and
2. be enrolled in an on-the-job training or registered apprenticeship program approved by the Department; and
3. satisfy requirements under Section 691-3.05 Work History.

In connection with the approval of the contractor's AAP 35, the contractor may request the assistance of the Department in recruiting and hiring acceptable persons under this item on Form AAP 17, Request for Personnel. The inability of the Department to assist the contractor will not diminish the contractor's obligation to comply with the requirements of this item.

Prior to engaging in the recruitment of new trainees/apprentices, the contractor shall employ trainees/apprentices that are partially trained, if available, in order to facilitate completion of their on-the-job training/apprenticeship program.

691-3.05 Work History. The contractor shall not propose or use any person under this item if such person has successfully completed a training program providing journeyworker status in the same trade or work classification as will be used for training under this contract. Nor shall the contractor use or propose to use a person who has been gainfully employed, except under the special condition described in §691-4, as a journeyworker in that trade or work classification by virtue of informal on-the-job training or otherwise. The contractor must ascertain, before training a person and before requesting
payment therefor under this item, whether the person qualifies under this item. The contractor must include appropriate questions on employee application forms and must check the personal references of an applicant for a position in order to ensure that the person is qualified for training under this item. The contractor's findings shall be maintained by the contractor, and shall be given to the Department upon request. No payment shall be made under this item for persons whose work history makes them ineligible for training in the trade or work classification.

691-3.06 Designated Training Coordinator and Trainer. The contractor will designate and identify to the Department a person (or persons) from his/her existing workforce as the Trainer and Training Coordinator for persons to be trained under this item. The Trainer and Training Coordinator shall be identified at the time of the preconstruction meeting. The designated Trainer shall:

1. be located on the job site generally on a daily basis; and
2. be responsible for the day-to-day supervision and training of persons under this item on the contract; and
3. be responsible for the preparation and submission of Form AAP 26, Monthly Training Progress Report, after consultation with designated trainees or apprentices.

The designated Training Coordinator shall:

1. be knowledgeable about the contract and the OJT/apprenticeship programs to be used under this item; and
2. be responsible for ensuring on-the-job orientation for trainees or apprentices within their first days of employment; and
3. be responsible for ensuring meaningful and effective training for the duration of training.

691-3.07 Duration of Training. At the time a person reports to the contractor for training under this item, the Training Coordinator shall notify the EIC of this fact, and the EIC must be introduced to the trainee or apprentice at the earliest opportunity.

After approval of a person to be trained under this item, the individual shall be employed as a trainee/apprentice in the designated trade in accordance with the currently approved AAP 35 to the extent that opportunities for training exist in the work of the contract in order to complete as much as possible of the approved OJT/apprenticeship program.

The contractor is expected to provide maximum opportunity to the trainee/apprentice to progress him/her to the completion of his/her program. In order to accomplish this, the contractor will monitor the trainee's/apprentice's progress, paying particular attention to completion of work processes or phases within the training program. When a work process or a phase of training is completed, the contractor is expected to rotate the trainee/apprentice to other work processes or phases of the OJT/apprenticeship program to the extent that such opportunities for such training exist. Should no such training opportunities exist, the trainee/apprentice can continue to work as long as there is work, provided, however, that no payments will be made under the Training Requirements item as a result of this work.

Should a trainee/apprentice complete his/her training program during the life of the contract, the contractor is expected to retain the individual as a journey-level employee, provided there is work remaining on the project. Once the trainee/apprentice obtains journey-level status, the contractor will no longer be reimbursed for that individual under this item.

691-3.08 Trainee/Apprentice Termination. A trainee/apprentice may be terminated at any time during training for: excessive absenteeism; lack of punctuality; accident-proneness; lack of interest; poor attitude; and continued failure to conduct him/herself in a business-like manner. However, termination will not occur without:
§691-3

1. documentation of counseling by the contractor's designated Trainer about the foregoing reason(s) for termination; and
2. documentation by the contractor's designated Trainer of efforts to resolve the foregoing problem; and
3. documentation of notification to the Engineer-in-Charge and Regional Compliance Specialist about the foregoing problem; and
4. written notification of intent to terminate to the Engineer-in-Charge and the Regional Compliance Specialist stating the reason(s) therefor; and
5. The Department will be afforded an opportunity to discuss the impending termination with the contractor in order to ensure that the contractor has complied with Steps 1 through 4 of this Subsection.

691-3.09 Monthly Training Progress Report. The contractor shall submit Form AAP 26, Monthly Training Progress Report, whenever a trainee or apprentice begins work on a contract and monthly thereafter as agreed upon at the pre-construction conference. Payment will be made under this item only for those trainees and apprentices and time periods for which a signed AAP 26 is received by the Department.

691-4 METHOD OF MEASUREMENT. The lump sum of money shown in the itemized proposal for this work is a nominal amount, but will be considered the price bid for the purpose of determining total amount bid, even though payment will be made for actual work performed. (At the time of the preconstruction conference, the Contractor will propose a training program for the Department's approval, and a negotiated amount will be added to the contract by order-on-contract for the proposed training program.) The lump sum figure shown in the proposal is not to be altered in any manner by the bidder. Should the bidder alter the amount shown, the altered figure will be disregarded, and the original price will be used to determine the total amount bid for the contract.

Payment will be made under this item for qualified trainees or apprentices required under this item not to exceed the lump sum amount in the contract as established through the order-on-contract mentioned above. Payment will be made only for those hours the trainee/apprentice is actually receiving training in the work elements included in his/her approved OJT/apprenticeship program.

The amount of the actual payments will include:

1. Direct labor costs (actual hours worked multiplied by the basic hourly wage rate) plus supplemental benefit payments. Each class of labor shall be billed separately at actual payroll rates.
2. Payroll taxes, insurance payments and other such reasonable charges that are paid by the contractor pursuant to existing written agreements with employees and/or labor organizations.
3. Profit and Overhead. Profit and overhead shall be computed at 20% of items 1 plus 2 above. Profit and overhead will not be paid on the premium portion of overtime. If the trainee/apprentice is employed by a subcontractor, the contractor shall be paid the actual and reasonable cost of such subcontracted work as outlined in items 1 and 2 above, but profit and overhead shall be figured at 25% unless some other basis is approved by the Commissioner.

Should a trainee/apprentice complete his/her training program during the life of the contract, the employee will be considered as having graduated to journey-level status. The contractor is expected to retain such graduated individuals as journey-level employees, provided there is work remaining on the project, however, once the trainee/apprentice obtains journey-level status, the contractor will no longer be reimbursed for that individual under this item.

Should a work process or a phase of training be completed, and there are no other training phases or training work processes available that the trainee/apprentice may be rotated into, the trainee/apprentice can continue to work on the project, however, no payments will be made under the Training Requirements item for this work. Notwithstanding the provisions of §691-3.05, Work History, the
trainee/apprentice’s continued employment under the circumstances just described will not make the trainee/apprentice ineligible for continued future training in the trade or work classification.

One of the following methods, as determined by the Engineer, shall be used to determine the amount due the Contractor under this item:

Method 1. Attached to each Monthly Training Progress Report, AAP 26, the Contractor shall attach a daily summary of hours of qualifying training (number of hours trained each day of the progress period). The total verified hours of training provided during the month will be multiplied by the agreed upon hourly rate submitted with the AAP 35 to determine the monthly payment due.

Method 2. Attached to each Monthly Training Progress Report, AAP 26, the Contractor shall attach a daily summary of hours of qualifying training (number of hours trained each day of the progress period) and a Force Account Summation, MURK 13d, showing the actual cost of the training effort for the progress period. The amount shown on the force account summation will be used as the basis of payment for the progress period, subject to review and verification by the Engineer.

If, after work has begun on the contract, the contractor is not meeting his/her equal employment opportunity goals (set elsewhere in the contract) and the contractor has demonstrated that good faith efforts were made to meet the goals with journey-workers, the contractor may be required to hire additional apprentices or trainees in order to meet the equal opportunity employment goals, but no payment will be made under this item for costs associated with those additional apprentices or trainees.

In addition, materials and equipment costs, having been included in the other contract pay items of work, will not be included in the amount of actual payments made under this item.

691-5 BASIS OF PAYMENT. The lump sum for this work shown in the itemized proposal is a nominal sum only. It is recognized that it will not be sufficient for the intended purpose. Accordingly, a lump sum price is to be negotiated at the time of the preconstruction conference which will be sufficient to include the cost of labor trained as defined under this item. Off-site or related classroom training is not to be included in the lump sum amount negotiated for this item. Materials and equipment costs are to be included in the relevant contract items.

Payment will be made for training properly completed and accounted for during the estimate period.

**Payment will be made under:**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>691.0101</td>
<td>Training Requirements</td>
<td>Fixed Price Lump Sum</td>
</tr>
</tbody>
</table>

**SECTIONS 692 THRU 696 (VACANT)**

**SECTION 697 - INTERIM PAYMENT**

697-1 DESCRIPTION

697-1.01 General. This section will provide for payment of work which has been authorized, and is pending addition to the Departments contract estimates payment system. Payments made under this section shall be reconciled through formal change orders, such that the final payment quantity of this section shall be a quantity of zero.

697-1.02 Eligible Work. Interim payments made under this section shall be limited to work which is within the scope of the contract. Such work shall be quantity variations of existing contract pay items or new contract pay items introduced as a result of minor adjustments in the details of the project. To be eligible, all work must be authorized in conformance with written procedures of the Department. This
§697-1

section shall not be used to make interim payment for work which is being progressed as disputed work or force account work.

697-1.03 Payment Computation and Reconciliation. Payments under this section shall be determined from the actual quantities and unit prices of eligible work which has been completed in conformance with applicable sections of the Specifications. The dollar value of payments shall be converted to a percentage payment of the fixed price lump sum shown in the proposal. The fixed price lump sum value shown in the proposal shall be the maximum eligible value of payment under this section, and shall not be altered by Order-on-contract.

Once the contract has been amended to provide payment quantities under other pay items, payments shall be made under those items and payments made under this section shall be deleted. This section may again be used to make payment for further work, but at no time shall the total payments exceed the fixed price lump sum shown in the proposal. Prior to, or as part of the final payment submission, all payments made under this section must be transferred to appropriate contract work items, and payments provided under this section shall be deleted from the final contract payment submission.

697-2 MATERIALS. Materials shall meet the requirements of the Specification sections governing the work for which interim payment is being made under this section.

697-3 CONSTRUCTION DETAILS. Construction details shall conform with the requirements of the Specification sections governing the work for which interim payment is being made under this section.

697-4 METHOD OF MEASUREMENT. The fixed price lump sum shown in the proposal for this item shall be considered as the price bid, and shall not be altered in any manner. Should the amount shown be altered, the new figure shall be disregarded and the original price will be used to determine the total amount bid for the contract.

Actual payments made under this section shall be computed as indicated in §697-1.03 Payment Computation and Reconciliation. Work for which interim payments are processed shall be measured in accordance with the Specification sections governing the actual work.

697-5 BASIS OF PAYMENT. Payments made under this section will be computed as indicated in §697-1.03 Payment Computation and Reconciliation, and shall not be altered in any manner as per §697-4. Work for which interim payments are processed shall be paid in accordance with the Specification sections governing the actual work.

Payment will be made under:

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>697.01 M</td>
<td>Interim Payment</td>
<td>Fixed Price Lump Sum</td>
</tr>
</tbody>
</table>

SECTION 698 - PRICE ADJUSTMENTS

698-1 DESCRIPTION

698-1.01 General. This section will provide for additional compensation to, or repayment by, the Contractor for increases or decreases in the price of asphalt or fuel throughout the life of the Contract. This adjustment will be computed within the prescribed conditions and in conformance with the written procedures of the Department.

698-1.02 Eligible Work. Price adjustments will be determined for eligible work listed in the proposal. No adjustment will be provided for any new work incorporated into the work by orders-on-contract or those items paid for under force account or agreed unit prices. In addition, work ordered by the Engineer and performed by the Contractor at its own expense will not be eligible for price adjustment.
§698-1.03 Method of Computation. The method of computations is given below:

A. Asphalt Price Adjustment

1. The quantity of asphalt (metric tons) considered for adjustment will be determined by multiplying the quantity of eligible work placed by their conversion factors which are indicated in the Proposal asphalt price adjustment note.

2. Asphalt price adjustment will be based on the following formulae:

   a. When price increases:
      \[ \text{Price Adjustment} = \text{Quantity of Asphalt} \times (\text{Average Posted Price} - \text{PGB Index Price} - $10.00) \]

   b. When price decreases:
      \[ \text{Price Adjustment} = \text{Quantity of Asphalt} \times (\text{Average Posted Price} - \text{PGB Index Price} + $10.00) \]

3. The PGB Index Price and the Average Posted Price are defined as follows:

   a. Performance Graded Binder (PGB) Index Price. A fixed price per metric ton of asphalt. This price is used solely as a base from which to compute asphalt price adjustments. Its dollar amount is specified in the Proposal asphalt price adjustment note.

   b. Average Posted Price. The average FOB terminal price for unmodified PG 64-22 binder, without anti-stripping agent, will be determined by the Department monthly, based on prices of approved primary sources of performance graded binder.

The asphalt price adjustment will be based solely on the price changes for asphalt as determined by the above formulas. No consideration will be given to the situation where an individual supplier's price exceeds the Average Posted Price, nor will any adjustment be made unless the Average Posted Price is either $10.00 greater than or less than the PGB Index Price.

B. Fuel Price Adjustment. The fuel price adjustment shall be determined in accordance with the following prescribed conditions and methods of computation:

1. The quantity of fuel (Liters) considered for adjustment will be determined by multiplying the quantity of eligible work placed by their fuel usage factor (from the proposal fuel price adjustment note).

2. Fuel price adjustment will be based on the following formulae:

   a. When price increases:
      \[ \text{Fuel Adjustment} = (\text{Quantity of Fuel}) \times (\text{Average Posted Price} - \text{Fuel Index Price} - $0.03) \]

   b. When price decreases:
      \[ \text{Fuel Adjustment} = (\text{Quantity of Fuel}) \times (\text{Average Posted Price} - \text{Fuel Index Price} + $0.03) \]

3. The Fuel Index Price and the Average Posted Price are defined as follows:

   a. Fuel Index Price. A fixed price per Liter of fuel. This price is used solely as a base from which to compute fuel price adjustments. Its dollar amount is specified in the Proposal fuel price adjustment note.

   b. Average Posted Price. The combined average FOB refinery or terminal price per Liter published for No. 2 fuel oil and unleaded gasoline in the cities of New York, Philadelphia,
§698-1

Detroit and Boston as determined by the Department on a monthly basis.

The fuel adjustment will be based solely on the price changes for fuel as determined by the above formulae. No consideration will be given to the situation where an individual supplier's price exceeds the Average Posted Price, nor shall any adjustment be made unless the Average Posted Price is either $0.03 greater than or less than the Fuel Index Price.

698-2 MATERIALS. None specified.

698-3 CONSTRUCTION DETAILS. None specified.

698-4 METHOD OF MEASUREMENT. The lump sum shown in the proposal for these items shall be considered the price bid, although actual payment will be based on the work performed. The lump sum is not to be altered in any manner by the bidder. Should the amount shown be altered, the new figures will be disregarded and the original price will be used to determine the total amount bid for the contract.

698-5 BASIS OF PAYMENT. The actual price adjustments will be based on the methods of computation previously described in this specification. No adjustments, either positive or negative, will be made until payment of the final estimate, except that if the accumulated adjustment amount exceeds $5,000, adjustments will be included in progress estimates.

The adjustment will be based on the quantity of eligible work placed and the Average Posted Price in effect at the time of placement. For the purpose of calculating price adjustments, the Average Posted Price will be updated about the twentieth of each month and will apply to eligible work performed on and after the first of the following month.

If eligible fuel or asphalt calculated for an item is based on estimated quantities for that time, and an adjustment to the total item quantity is made in a subsequent or final estimate, an appropriate addition or deduction shall be made to the price adjustment previously calculated. The addition or deduction shall be based on the same Average Posted Price as was used to calculate the estimated item quantity which is being revised. If the placement dates of the adjusted quantity cannot be determined, the addition or deduction shall be based on the Average Posted Price in effect during the last month in which any portion of the estimated item quantity was placed.

If the contract completion date is extended without the assessment of engineering charges, price adjustments for items incorporated during such extensions shall be based on the appropriate updated Average Posted Price.

If eligible items are placed after the scheduled contract completion date specified in the proposal and during which time there are assessed engineering charges and/or liquidated damages, the Average Posted Price used to compute price adjustments shall not exceed, but may be less than the Average Posted Price in effect on the last contract completion date without assessed engineering charges, or on the completion date of the last extension without assessed engineering charges, whichever is later.

Payment will be made under:

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>698.01 M</td>
<td>Asphalt Price Adjustment</td>
<td>Fixed Price Lump Sum</td>
</tr>
<tr>
<td>698.02 M</td>
<td>Fuel Price Adjustment</td>
<td>Fixed Price Lump Sum</td>
</tr>
</tbody>
</table>

SECTION 699 - MOBILIZATION

699-1 DESCRIPTION. Under this work the Contractor shall provide necessary bonds, insurance, and prefunding and shall set up his necessary general plant, including shops, storage areas, office and such sanitary and other facilities as are required by local or state law or regulation.
699-2 MATERIALS. Such materials as required for mobilization and that are not to be part of the completed contract shall be as determined by the Contractor, except that they shall conform to any pertinent local or State Law, regulation or code.

699-3 CONSTRUCTION DETAILS. The work required to provide the above facilities and service for mobilization shall be done in a safe and workmanlike manner and shall conform with any pertinent local or State Law, regulation or code. Good housekeeping consistent with safety shall be maintained.

699-4 METHOD OF MEASUREMENT. Payment for mobilization will be made on a lump sum basis.

699-5 BASIS OF PAYMENT. The amount bid for mobilization shall not exceed four percent (4%) of the total contract bid price excluding the bid price for mobilization. Should the bidder exceed the foregoing four percent (4%), the Department will make the necessary adjustment to determine the total amount bid based on the arithmetically correct proposal.

The amount bid shall include the furnishing and maintaining of services and facilities noted under §699-1 DESCRIPTION, to the extent and at the time the Contractor deems them necessary for his operations, consistent with the requirements of this work and the respective contract.

The amount bid shall be payable to the Contractor with the first progress estimate made for other contract work, as set forth in §109-07, Payment of Estimates.

Payment will be made under:

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>699.040001M</td>
<td>Mobilization</td>
<td>Lump Sum</td>
</tr>
</tbody>
</table>