ITEM 672
RAISED PAVEMENT MARKERS

672.1. Description. Furnish and install raised pavement markers.

672.2. Materials.
A. Markers. Furnish raised pavement markers meeting the requirements of the following Department Material Specifications:

   The following are descriptions for each type of raised pavement marker:
   - **Type I-A.** Type I-A must contain an approach face that retro-reflects amber light. The body, other than the retro-reflective face must be yellow.
   - **Type I-C.** Type I-C must contain an approach face that retro-reflects white light. The body, other than the retro-reflective face must be white or silver-white.
   - **Type I-R.** Type I-R must contain a trailing face that retro-reflects red light. The body, other than the retro-reflective face must be white or silver-white.
   - **Type II-A-A.** Type II-A-A must contain two retro-reflective faces (approach and trailing) each that retro-reflect amber light. The body, other than the retro-reflective faces must be white or silver-white.
   - **Type II-C-R.** Type II-C-R must contain two retro-reflective faces, an approach face that retro-reflects white light and a trailing face that retro-reflects red light. The body, other than the retro-reflective faces must be yellow.
   - **Type W.** Type W has a white body and no reflective faces.
   - **Type Y.** Type Y has a yellow body and no reflective faces.

B. Adhesives. Furnish adhesives that conform to the following requirements:
   - DMS-6100, “Epoxies and Adhesives.”
   - DMS-6130, “Bituminous Adhesive for Pavement Markers.”

C. Sampling. The Engineer will sample in accordance with Tex-729-I.

672.3. Construction. Remove existing raised pavement markers in accordance with Item 677, “Eliminating Existing Pavement Markings and Markers” (except for measurement and payment). Furnish raised pavement markers for each class from the same manufacturer. Place raised pavement markers on the new asphaltic concrete surface or surface treatment only after the new surface has aged at least 14 days.

   When shown on the plans, prepare all surfaces in accordance with Item 678, “Pavement Surface Preparation for Markings.” Ensure that the bond surfaces are free of dirt, curing compound, grease, oil, moisture, loose or unsound pavement markings, and any other material that would adversely affect the adhesive bond.
Establish pavement marking guides to mark the lateral location of raised pavement markers as shown on the plans and as directed. Do not make permanent marks on the roadway for the guides.

Place raised pavement markers in proper alignment with the guides. Acceptable placement deviations are shown on the plans.

Remove raised pavement markers placed out of alignment or sequence, as shown on the plans or stated in this specification, at Contractor’s expense, in accordance with Item 677, “Eliminating Existing Pavement Markings and Markers” (except for measurement and payment).

Use the following adhesive materials for placement of raised pavement markers unless otherwise shown on the plans:

- epoxy adhesive for plowable reflectorized pavement markers.
- bituminous adhesive for jiggle bar tile; reflectorized pavement markers described in DMS-4200, “Pavement Markers (Reflectorized)”; and traffic buttons on bituminous pavements.
- epoxy adhesive for jiggle bar tile, reflectorized pavement markers described in DMS-4200, and traffic buttons on hydraulic cement concrete pavements.

Apply adhesives in sufficient quantity to:

- ensure that 100% of the bonding area of raised pavement markers is in contact with the adhesive, and
- ensure that raised pavement markers, except for plowable markers, are seated on a continuous layer of adhesive and not in contact with the pavement surface.

Apply adhesives in accordance with manufacturer’s recommendations unless otherwise required by this Article. Apply bituminous adhesive only when pavement temperature and raised pavement marker temperature are 40°F or higher. Do not heat bituminous adhesive above 400°F. Agitate bituminous adhesive to ensure even heat distribution.

Machine-mix epoxy adhesive.

Furnish raised pavement markers free of rust, scale, dirt, oil, grease, moisture, and contaminants that might adversely affect the adhesive bond.

Place raised pavement markers immediately after the adhesive is applied and ensure proper bonding. Do not use adhesives or any other material that impairs the functional retro-reflectivity of the raised pavement markers.

672.4. Measurement. This Item will be measured by each raised pavement marker.

This is a plans quantity measurement Item. The quantity to be paid is the quantity shown in the proposal, unless modified by Article 9.2, “Plans Quantity Measurement.” Additional measurements or calculations will be made if adjustments are required.

672.5. Payment. The work performed and materials furnished in accordance with this Item and measured as provided under “Measurement” will be paid for at the unit price bid for “Jiggle Bar Tile,” “Reflectorized Pavement Marker,” “Traffic Button,” or “Plowable Reflectorized Pavement Marker” of the types specified. This price is full compensation for removing existing markers; furnishing and installing raised pavement markers; and equipment, materials, labor, tools, and incidentals.