

## **X78300XX GROOVING FOR RECESSED PAVEMENT MARKING (LCDOT)**

**This Special provision should be included on all LCDOT contracts with grooved pavement markings. Delete this note from the Contract Specifications.**

Effective: May 21, 2018

Revised: April 29, 2020

**Description:** This work shall consist of grooving the pavement surface in preparation for the application of recessed pavement markings.

**Equipment:** The equipment shall be according to the following:

### Thermoplastic Pavement Marking:

Equipment: The grooving equipment shall be equipped with either a free-floating saw blade cutting head or a free-floating grinder cutting head configuration with diamond or carbide tipped cutters and shall produce an irregular textured surface.

### Preformed Thermoplastic & Preformed Plastic, Type D Pavement Marking:

Equipment: Use grooving equipment with a free-floating, independent cutting head equipped with gang-stacked diamond saw blades. The diamond saw blades shall be of uniform wear and shall produce a smooth textured surface.

**General:** The Contractor shall supply the Engineer with a copy of the pavement marking material manufacturer's recommendations for constructing a groove. The work shall be according to Section 780 of the "Standard Specifications" and the following:

Pavement Grooving Methods: Plane the grooved lines according to details shown on the plans and per manufacturer's recommendations. The grooves for recessed pavement markings shall be constructed using the following methods:

- (a) **Wet Cutting Head Operation:** When water is required or used to cool the cutting head, the groove shall be flushed with high pressure water immediately following the cut to avoid build up and hardening of slurry in the groove. The pavement surface shall be allowed to dry for a minimum of 24 hours prior to the final cleaning of the groove and application of the pavement marking material.
- (b) **Dry Cutting Head Operation:** When used on HMA pavements, the groove shall be vacuumed or cleaned by blasting with a high-pressure air blower with at least 185 ft<sup>3</sup>/min air flow and 120 psi air pressure to remove loose aggregate, debris, and dust generated during the cutting operation. When used on PCC pavements, the groove shall be flushed with high pressure water or shot blasted to remove any PCC particles that may have become destabilized during the grooving process. If high pressure water is used, the pavement surface shall be

allowed to dry for a minimum of 24 hours prior to the final cleaning of the groove and application of the pavement marking material.

Pavement Grooving: Grooving shall not cause ravel, aggregate fractures, spalling or disturbance of the joints to the underlying surface of the pavement. Grooves shall be cut into the pavement prior to the application of the pavement marking material. Grooves shall be cut such that the width is 1 inch greater than the width of the pavement marking line as specified on the plans. Grooves for letters and symbols shall be cut in the shape of the symbol and such that all dimensions are 1 inch greater than the corresponding dimensions of the symbol.

The position of the edge of the grooves shall be a minimum of 2 inches from the edge of all longitudinal joints. The Contractor shall achieve straight alignment with the grooving equipment.

The depth of the groove shall not be less than the manufacturer's recommendations for the pavement marking material specified, but shall be installed to a minimum depth of 120 mils  $\pm$  10 mils from the pavement surface or, if tined, from the high point of the tined surface. To measure the depth, the contractor may use a depth plate placed in the groove and a straightedge placed across the plate and groove, or the contractor may use a straightedge placed perpendicular to the groove. The Engineer may periodically check groove depths. The cutting head shall be operated at the appropriate speed in order to prevent undulation of the cutting head and grooving at an inconsistent depth.

At the start of grooving operations, a 50 ft test section shall be installed and depth measurements shall be made at 10 ft intervals within the test section. The individual depth measurements shall be within the allowable ranges according to this Special Provision. If it is determined the test section has not been grooved at the appropriate depth or texture, adjustments shall be made to the cutting head and another 50 ft test section shall be installed and checked. This process shall continue until the test section meets the requirements of this Special Provision.

For new HMA pavements, grooves shall not be installed within 5 days of the placement of the final course of pavement.

#### Final Cleaning:

Concrete – If water is used in the grooving process, allow the groove to dry a minimum of 24 hours after groove cleaning, and prior to pavement marking application. The groove surface shall be clean and dry before applying the adhesive, and pavement marking tape. Immediately prior to the application of the pavement marking material or primer sealer, the groove shall be cleaned with a high-pressure air blower with at least 185 ft<sup>3</sup>/min air flow and 120 psi air pressure. Use of the air blower does not decrease the amount of time required for the groove to dry.

New HMA - Use a high-pressure air blower with at least 185 ft<sup>3</sup>/min air flow and 120 psi air pressure to clean the groove.

When a vacuum is used for cleaning it shall collect the loose material and dust for disposal outside the limits of the right-of-way according to Article 202.03 of the "Standard Specifications" and/or as directed by the Engineer. The collected material shall not be exhausted into the air.

**Method of Measurement:** Grooves for lines will be measured for payment in place in feet. Grooves for double yellow lines will be measured as two separate lines.

Grooves for letter, numbers and symbols shall be measured for payment in place and the area computed in square feet.

Grooves for markings with contrast will be 1" wider than the minimum contrast width. Contractors electing to include wider contrast with the Engineer's approval, will require a wider groove. No additional payment will be allowed for the wider groove.

**Basis of Payment:** This work will be paid for at the contract unit price per foot for GROOVING FOR RECESSED PAVEMENT MARKING of the groove width specified; and per square foot for GROOVING FOR RECESSED PAVEMENT MARKING, LETTERS AND SYMBOLS. *The unit price shall include all equipment, materials and labor required to groove and clean the pavement in preparation for the installation of recessed pavement markings. No additional payment will be allowed for a wider groove to accommodate any extra contrast width.*