

## Miscellaneous Contract Requirements and Specifications

### A. Work Location

I-70, Eastbound Lanes  
St. Charles County  
East of Route 94 interchange to West of Fifth Street  
From Near Mile Marker 228.5 to 229.0  
Work location is shown in Exhibit A of the contract documents



### B. Work Description

This work shall consist of transverse grooving of asphalt and concrete pavement. The asphalt pavement is a 3 year old Superpave SMA mix consisting of a 50% limestone / 50% porphyry aggregate mixture. The Portland cement concrete pavement is 3 year old limestone aggregate mixture. The purpose of the work is to provide improved cross-drainage along a downhill curving segment of I-70.

### C. Tabulation of Quantities

Width varies from 3 lanes to 6 lanes wide – 36 feet to 72 feet  
Length is 2725 feet

3 lanes wide >>>	36 ft W x 425 ft L	3 asphalt lanes
6 lanes wide >>>	72 ft W x 1000 ft L	5 asphalt lanes + 1 concrete lane (surface varies)
5 lanes wide >>>	60 ft W x 1300 ft L	5 asphalt lanes
Left shoulder >>>	1 ft W x 2725 ft L	Asphalt shoulder
Right shoulder >>>	1 ft W x 2725 ft L	Part concrete & part asphalt shoulder
Ramp gore area >>>	Avg 6 ft W x 100 ft L	Concrete gore – triangular area

Total Area to be Grooved = 19,039 Square Yards

Limits of work are shown in Exhibit A of the contract documents.

### D. Traffic Control

All traffic control will be provided by MoDOT forces. Standard MUTCD compliant signs, channelizers, arrow boards, truck mounted attenuators, etc. will be used. At least one through traffic lane and one ramp lane shall be open at all times to maintain traffic flow.

### E. Working Hours

Sunday thru Thursday nights allowed.

Single Lane Closure: 7:30 PM to 4:30 AM

Double Lane Closure: 10:00 PM to 4:30 AM

Double Ramp Lane Closure: 7:30 PM to 4:30 AM and 9:00 AM to 3:00 PM

Weekend and holiday work hours require prior approval by the engineer and may not be allowed.

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All equipment shall be removed from the pavement and all pavement shall be clean by 4:30 AM to allow for MoDOT forces to remove traffic control devices and reopen all lanes to traffic by 5:00 AM. NO EXCEPTIONS ALLOWED.

**F. Completion Date and Working Days**

**1.0 Description.** Completion of the work will be administered on both a calendar date completion basis and on a working days completion basis.

**1.1** Regardless of when the contractor begins the work, all work shall be completed on or before the calendar date of March 31, 2010.

**1.2** Regardless of when the contractor begins the work, all work shall be completed within 12 working days.

**2.0 Administration of Calendar Completion Date and Working Days Completion.**

**2.1 Calendar Day** A calendar day will be defined as any day of the year including holidays, Saturdays, and Sundays.

**2.1.1** The contractor will not be entitled to any extension of calendar days because of unsuitable weather conditions or the effects of weather conditions unless authorized in writing by the engineer. Calendar days allowed for the performance of the work may be extended for delays caused by acts of God, acts of the public enemy, fires, floods, earthquakes, epidemics, quarantine restrictions, strikes, freight embargoes, unusually severe weather, or other delays not caused by the contractor's fault or negligence. An extension of the calendar completion date will only be granted to the contractor provided documentation has been given to the engineer.

**2.2 Working Day.** A working day will be defined as any day when, in the judgment of the engineer, weather conditions would permit the major operation of the project for five hours or more, unless other unavoidable conditions prevent the contractor's operations. If conditions require the contractor to stop work in less than five hours, the day will not be counted as a working day. Saturdays, Sundays, and holidays established by law will not be counted as working days.

**2.2.1** The count of working days will start on the date the contractor starts construction operations. The engineer will determine when a working day is to be charged. The engineer may make allowance for working days lost due to causes justifying their elimination from the count of working days. No allowance will be made for delay or suspension of the work due to fault of the contractor.

**G. Liquidated Damages for Failure to Remove Equipment By End of Daily Working Hours**

If the contractor fails to remove all equipment and clean the pavement such that all lanes can be reopened to traffic by the time specified in Section E above then liquidated damages in the amount of \$1000.00 per 15 minutes in excess of the specified equipment removal time will apply.

**H. Liquidated Damages for Failure to Complete Work On Time**

If the contractor fails to complete the work by the calendar date or working days specified in Section F above then liquidated damages in the amount of \$1000.00 per day will apply. Days that the Department has suspended the contractor's work will not be assessed liquidated damages.

**I. Specifications for Transverse Pavement Grooving**

**1.0 Description.** This work shall consist of transverse grooving the surface of asphaltic concrete or Portland cement concrete in accordance with these specifications and at the locations shown on the plans or as approved by the engineer.

**2.0 Equipment** Transverse grooving shall be done using diamond blades mounted on a multiblade arbor on a self-propelled machine which has been specifically designed and built for transverse grooving of pavement. The grooving machine shall have a depth control device that can adjust the cutting head height to maintain the depth of groove specified. The grooving machine shall also have devices to control groove alignment.

**3.0 Construction Requirements.**

**3.1 Temperatures.** Grooving shall only be performed when pavement temperatures are above 32 F. The contractor shall monitor pavement temperatures during the work and shall suspend grooving operations when pavement temperatures are falling and temperatures below 32 F are likely during working hours.

**3.2 Transverse Grooving.** Transverse grooves shall be perpendicular to the pavement centerline and shall extend across the entire lane width. When adjacent lanes are grooved in one operation the grooves shall extend across longitudinal joints and striping. When adjacent lanes are grooved in separate operations the grooves shall terminate 3 inches from the adjacent grooved lane to prevent overlapping of grooves. Grooves shall not be closer than 6 inches to joints parallel to the grooves. Grooves that cross a joint shall be perpendicular to that joint, except through areas of lane width transitions. Grooves shall be terminated no more than 6 inches from any device embedded in the pavement, such as raised pavement markers, drop inlets, and pull boxes.

**3.3 Groove Dimensions.** Transverse grooves shall be cut by a blade 0.125 inch wide and shall be spaced in a random pattern from 0.500 inch to 1.250 inches apart to minimize tire noise. Grooves shall have a minimum depth of 0.250 inch and a maximum depth of 0.375 inch. Grooves shall be deemed acceptable if the width of the grooves is within +/- 0.015 inch, the depth of grooves is within +/- 0.062 inch, and the spacing is within +/- 0.125 inch.

**3.4 Grooving Residue and Pavement Cleaning.**

**3.4.1** All slurry and residue from the grooving operation shall be removed from the pavement and shall not encroach on open lanes. Solid residue shall be removed from the pavement surface before any residue is blown by traffic action or wind. Slurry and residue shall not enter into gutters or closed drainage systems. Suitable means to restrict the infiltration of the residue into a closed drainage system shall be provided.

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**3.4.2** The contractor shall collect, haul, and dispose of all slurry and residue from the grooving in a manner and at a location to satisfy environmental regulations. The contractor shall have the engineer's approval for the method of collecting and disposal of the residue prior to beginning any grooving operations.

**3.4.3** The contractor may dispose of the collected and hauled residue onto MoDOT roadside embankment locations or within interchange locations where the residue runoff can percolate into the soil. The spread rate shall not generate surface runoff from MoDOT right of way. If no satisfactory disposal locations on MoDOT right of way are available near the project the contractor shall haul the slurry and residue to an approved location off the right of way at the contractor's expense.

**3.4.4** Discharge of any residue runoff shall not flow into adjacent rivers, streams, lakes, ponds or other open bodies of water. Residue shall not be spread within 500 feet of any streams, lakes or other open bodies of water, or within 100 feet of a water filled ditch.

**4.0 Method of Measurement.** Transverse pavement grooving will be measured to the nearest square yard. Measurement will be based upon the full pavement width. No deduction will be made for gaps within the pavement lane to avoid embedded pavement devices, joints, or overlaps between lanes.

**5.0 Basis of Payment.** The accepted quantity of transverse grooved pavement will be paid at the contract unit price. Payment will be considered full compensation for all labor, equipment, material, and incidentals to complete this work, including hauling and disposing of grooving residue. Costs for mobilization to the project site will be considered incidental to the work. No direct payment will be made for mobilization.