

# MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-410-7

CODE: (SP)

DATE: 03/27/2013

SUBJECT: Bituminous Surface Treatments

Section 410, Bituminous Surface Treatment, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

**907-410.03-Construction Requirements.** Add the following before Subsection 410.03.1 on Page 286.

The attached sign drawings shall be used during sealing operations. Prior to any sealing operation, the rectangular “Loose Rock” signs shall be installed and remain in place until all sealing operations are complete. Prior to any daily sealing operation, the portable “Loose Rock” signs shall be installed in accordance with the attached drawings. Portable signs shall be installed and remain in place on a daily basis in the active sealing area. Payment for signs shown on the sign detail drawings shall be made under 618-A, Maintenance of Traffic.

**907-410.03.2--Seasonal and Weather Limitations.** Delete the first sentence of the first paragraph of Subsection 410.03.2 on page 287, and substitute the following.

Emulsified asphalt and cut-back asphalt shall be applied only when both the air and pavement temperatures are above 70°F.

Delete subparagraph (a) of Subsection 410.03.2 on page 287, and substitute the following.

- (a) The air and pavement temperature is 70°F or higher

**907-410.03.3.4--Power Rollers.** Delete the first paragraph of Subsection 410.03.3.4 on page 288 and substitute the following.

Steel-wheel rollers will not be allowed.

**907-410.03.5--Application of Bituminous Material.** Delete the third paragraph of Subsection 410.03.5 on page 289, add the following.

Emulsified asphalt material shall be applied with a pressure distributor at the specified rate, and at a temperature of 120° to 150°F. All other bituminous material shall be applied with a pressure distributor at the temperature range set out in Subsection 702.11. It shall be uniformly applied full width in one operation unless the Engineer permits it to be applied in narrower widths.

The application rate of the bituminous material shall result in complete and uniform coverage of

the pavement receiving the bituminous surface treatment. If the application of the bituminous material does not result in complete coverage, the Contractor shall cease operations and adjust the distributor bar height and/or nozzle(s) such that complete coverage is attained. At a minimum, the application rate of the Bituminous Material should be verified daily by the Department.

The optimum application rate of bituminous material is dependent on the chosen seal aggregate gradation as well as the condition of the pavement in which the bituminous surface treatment is to be applied. The application rate of the bituminous material may be adjusted by the Engineer based on field conditions at the time of construction. Following are target application rates for bituminous material.

Seal Aggregate Gradation	Bituminous Material	Target Application Rate (gal/yd <sup>2</sup> )	Tolerance
Size No. 7	AC	0.28	±0.03
Size No. 8 or 89	AC	0.23	±0.03
Size No. 7	Emulsified Asphalt	0.38	±0.03
Size No. 8 or 89	Emulsified Asphalt	0.35	±0.03

Note: Emulsified Asphalt shall not be diluted. A sample of emulsified asphalt should be obtained from the Contractor's distributor on the first day of production and thereafter at a frequency not to exceed 1 sample per 50,000 gallons. Because the time between sampling of the emulsified asphalt and the testing of the material can affect the test results, samples should be sent to the MDOT Central Lab for testing as soon as possible.

**907-410.03.6--Application of Cover Coat Material.**

**907-410.03.6.1--General.** Delete the third paragraph of Subsection 410.03.6.1 on page 290 and substitute the following.

The application rate of cover aggregate shall be within the following range.

- Size 7 Slag, Stone, Gravel or Expanded Clay = 0.30 ±0.02 ft<sup>3</sup> / yd<sup>2</sup>
- Size 8 Expanded Clay = 0.25 ±0.02 ft<sup>3</sup> / yd<sup>2</sup>
- Size 89 Slag, Stone, or Gravel = 0.25 ±0.02 ft<sup>3</sup> / yd<sup>2</sup>

During the first day of production and at least once a week thereafter, the application rate of the seal aggregate shall be verified by the Department to assure that the appropriate application rate of the seal aggregate is applied. The rate can be verified by placing a tarp of at least 1.0 yd<sup>2</sup> area on the roadway surface. After allowing the seal aggregate spreader to pass over the tarp, the aggregate on the tarp should be collected and weighed to determine the weight of aggregate. The measured weight should then be compared to the target weight calculated using the following formula.

$$W = (G_{sb})(U_w)(R)(A)$$

Where:

- W = target weight of aggregate in lbs.
- G<sub>sb</sub> = bulk specific gravity of aggregate
- U<sub>w</sub> = Unit weight of water at 70°F = 62.3 lbs./ft<sup>3</sup>
- R = target application rate in ft<sup>3</sup>/yd<sup>2</sup>
- A = area of tarp in yd<sup>2</sup>

- G<sub>sb</sub> for gravel = 2.650
- G<sub>sb</sub> for limestone = 2.750

Note: Bulk specific gravities of expanded clay and steel slag should be obtained from the seal aggregate supplier.

Upon determining the target weight, it should be compared to the actual measured weight. If the difference in the target weight and the actual measured weight is over 3.5 pounds, the seal aggregate distributor should be adjusted such that the spread rate is within the above tolerance. The above procedure shall be repeated until the spread rate is within the allowable tolerance.

If at any point during production, excessive seal aggregate is noted, the seal aggregate application rate should be verified and the spread rate adjusted. The intent is to minimize the amount of excess seal aggregate. Excess seal aggregate removed from the roadway surface after brooming shall be removed from the job site and should not be reused in the seal aggregate operation.

The dry aggregate shall be spread uniformly to cover the bituminous material with the quantity of mineral aggregate specified by the Engineer. All deficient areas shall be covered by additional material. All excess cover material shall be removed from the surface and stockpiled or used as directed.

Delete Subsection 410.03.7 on page 291 and substitute the following.

**907-410.03.7--Opening to Traffic.** Unless otherwise advised, the Contractor's operations shall be schedule such that all lanes of traffic are open to the traveling public at the end of each day. Considering time needed for curing and preparation prior to opening traffic, the Contractor should not apply bituminous material two (2) hours before dusk, or longer, to allow sufficient time for bonding of the aggregates.

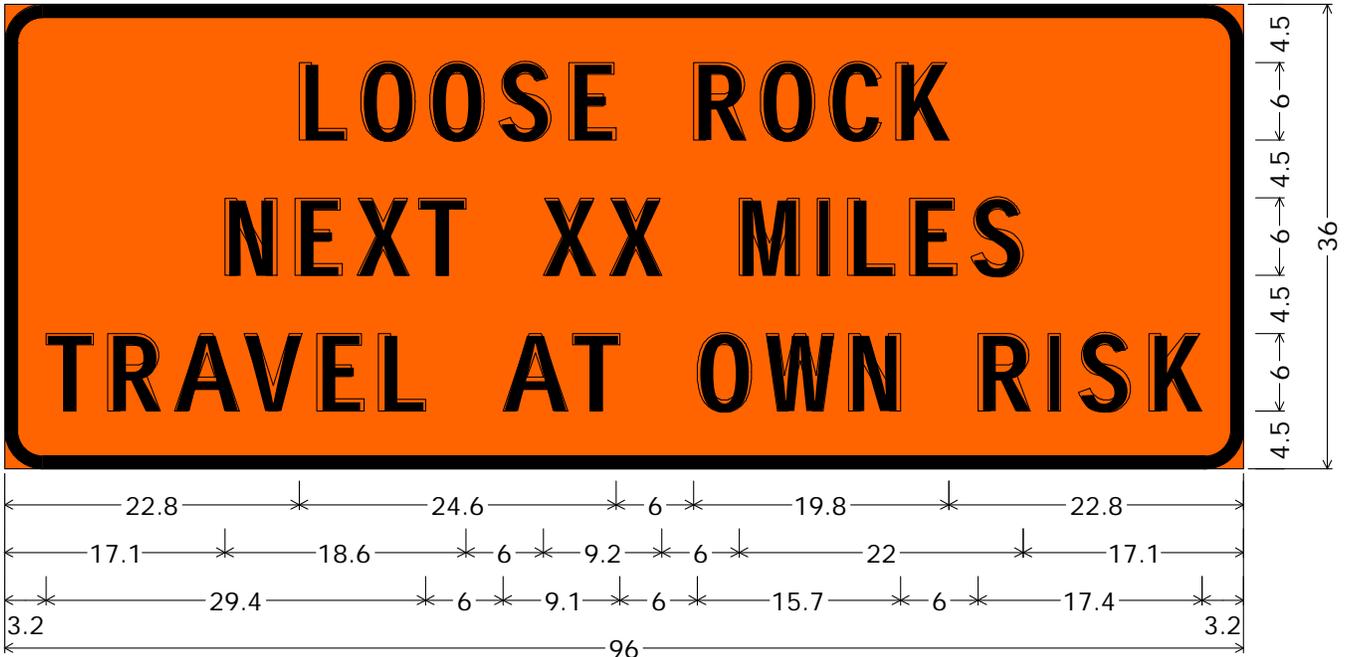
After the surface treatment has been rolled and the bituminous material has cured a minimum of one (1) hour, or longer if necessary to sufficiently hold the aggregate in place, the Contractor shall perform an initial brooming operation consisting of lightly sweeping excess aggregate material from the surface. After the roadway has been swept, public traffic will be allowed on the roadway. Immediately the next morning, a final brooming shall be performed to remove any remaining excess aggregate material from the previous day's seal operation.

**907-410.05--Basis of Payment.** Add the "907" prefix to the pay items listed on page 292.

In Table 410-A at the end of Section 410 on page 293, delete the bituminous material application rates for Single Surface Treatments using Size 7, 8, or 89 seal aggregates.

Also in Table 410-A at the end of Section 410 on page 293, delete the seal aggregate application rate for Single Surface Treatment using Size 7, 8, or 89 seal aggregates.



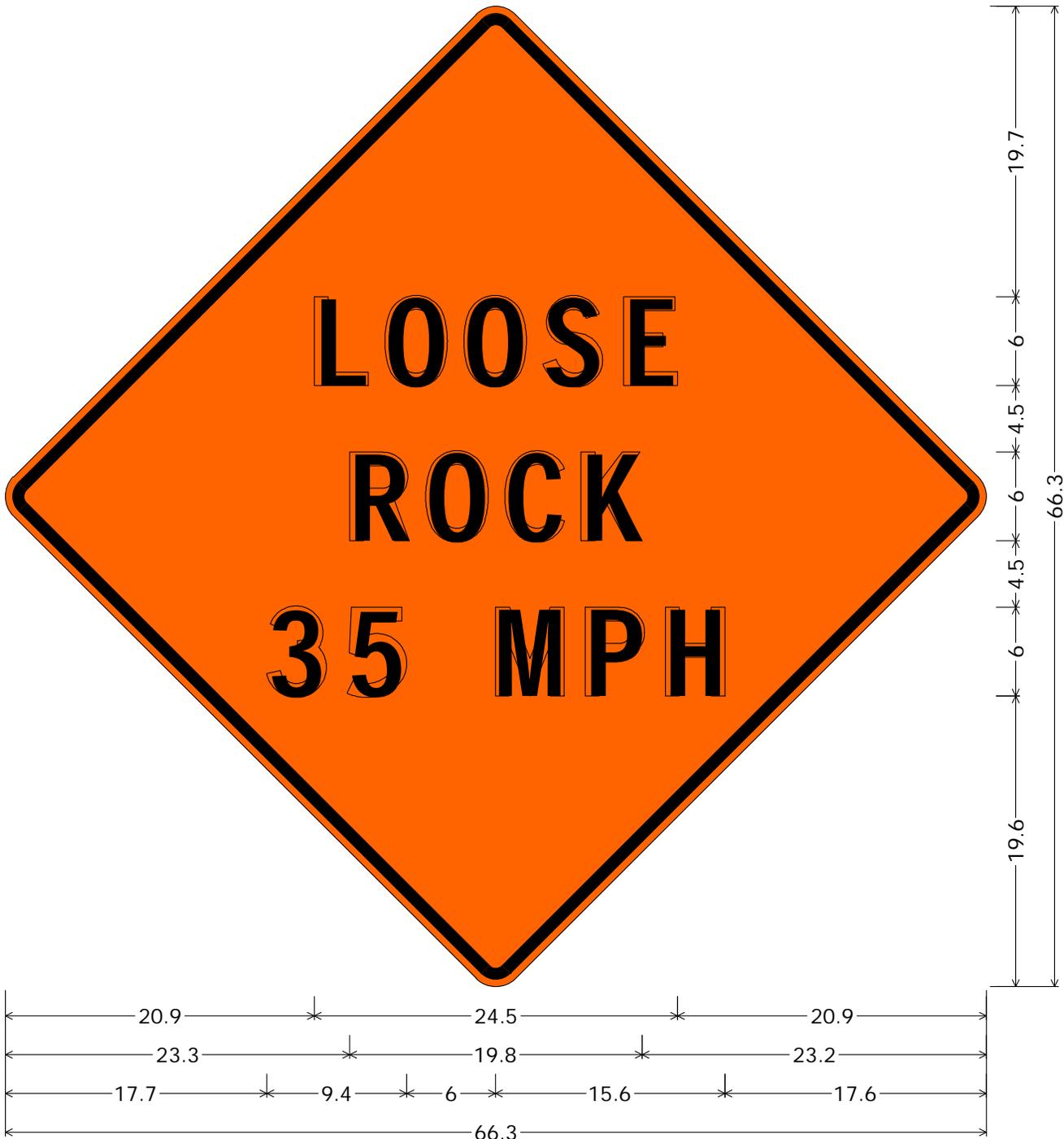


3.0" Radius, 1.0" Border, Black on Orange;

"LOOSE ROCK" D; "NEXT XX MILES" D; "TRAVEL AT OWN RISK" D;

Table of letter and object lefts.

<b>L</b>	<b>O</b>	<b>O</b>	<b>S</b>	<b>E</b>	<b>R</b>	<b>O</b>	<b>C</b>	<b>K</b>						
22.8	27.6	33.0	38.3	43.7	53.4	58.5	63.9	69.0						
<b>N</b>	<b>E</b>	<b>X</b>	<b>T</b>	<b>X</b>	<b>X</b>	<b>M</b>	<b>I</b>	<b>L</b>	<b>E</b>	<b>S</b>				
17.1	22.5	27.3	32.1	41.7	46.9	56.9	63.0	65.3	70.1	74.9				
<b>T</b>	<b>R</b>	<b>A</b>	<b>V</b>	<b>E</b>	<b>L</b>	<b>A</b>	<b>T</b>	<b>O</b>	<b>W</b>	<b>N</b>	<b>R</b>	<b>I</b>	<b>S</b>	<b>K</b>
3.2	8.0	13.2	18.6	24.2	29.0	38.6	44.0	53.7	59.0	65.4	75.4	80.9	83.2	88.6



48.0" across sides 1.9" Radius, 0.8" Border, 0.5" Indent, Black on Orange;

"LOOSE" D; "ROCK" D; "35 MPH" D;

Table of letter and object lefts.

<b>L</b>	<b>O</b>	<b>O</b>	<b>S</b>	<b>E</b>
20.9	25.7	31.0	36.4	41.8
<b>R</b>	<b>O</b>	<b>C</b>	<b>K</b>	
23.3	28.4	33.8	38.9	
<b>3</b>	<b>5</b>	<b>M</b>	<b>P</b>	<b>H</b>
17.7	23.1	33.1	39.2	44.6