

<b>MAINTENANCE PLANNING GUIDELINES</b>		2006																																																
<p><b>ACTIVITY:</b> Concrete Replacement (R313) <b>MAJOR &amp; MINOR</b></p>	<p><b>ACTION:</b> Concrete Replacement - Full Depth (SY)</p>																																																	
<p><b>DEFINITION:</b> The time and expenses incurred for repair or replacement of concrete pavement, except patches for scaling or spalling areas less than full depth. Includes full depth replacement of concrete pavement or concrete pavement with an asphalt overlay.</p>																																																		
<p><b>PURPOSE:</b> Repair full depth failures in portland cement concrete pavement.</p>																																																		
<p><b>SCHEDULING:</b> When possible, work should be scheduled when the temperature is 50°F and above. Reference the Incident Response Plan for Priorities.</p>	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td> </tr> <tr> <td>A</td><td>E</td><td>A</td><td>P</td><td>A</td><td>U</td><td>U</td><td>U</td><td>E</td><td>C</td><td>O</td><td>E</td> </tr> <tr> <td>N</td><td>B</td><td>R</td><td>R</td><td>Y</td><td>N</td><td>L</td><td>G</td><td>P</td><td>T</td><td>V</td><td>C</td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>		J	F	M	A	M	J	J	A	S	O	N	D	A	E	A	P	A	U	U	U	E	C	O	E	N	B	R	R	Y	N	L	G	P	T	V	C												
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<p><b>RECOMMENDED EQUIPMENT:</b></p> <ul style="list-style-type: none"> <li>• Trucks</li> <li>• Dowel Hole Drilling Unit</li> <li>• Chloride Tank w/Meter</li> <li>• Wheel Saw</li> <li>• Backhoe or Hydraulic Excavator</li> <li>• Concrete Saw</li> <li>• Concrete Vibrator</li> <li>• Loader</li> <li>• Concrete Blankets as needed</li> <li>• Traffic Control Equipment; (See EPG 616.23 Traffic Control for Field Operations)</li> </ul>	<p><b>RECOMMENDED PROCEDURE:</b></p> <ol style="list-style-type: none"> <li>1. Place traffic control devices as required.</li> <li>2. Use wheel saw in middle of repair to relieve stress or make the piece smaller to aid removal.</li> <li>3. Saw patch perimeter with diamond blade concrete saw.</li> <li>4. Remove concrete.</li> <li>5. Prepare subgrade.</li> <li>6. Form shoulder.</li> <li>7. Align, drill, and install greased dowels.</li> <li>8. Dampen subgrade and forms.</li> <li>9. Place and vibrate concrete.</li> <li>10. Screed and finish surface.</li> <li>11. Edge, texture, and date patch. If station number is removed, put number back in.</li> <li>12. Spray repair with curing compound.</li> <li>13. Cure to strength.</li> <li>14. Remove forms and repair shoulder.</li> <li>15. Remove loose material and clean joints.</li> <li>16. Pour liquid asphalt around joints.</li> <li>17. Remove traffic control devices.</li> </ol>																																																	
<p><b>RECOMMENDED MATERIAL:</b></p> <ul style="list-style-type: none"> <li>• 8.5 Sack Ready-Mix Concrete</li> <li>• Calcium Chloride</li> <li>• 1” Epoxy Coated greased Dowel Bars Spaced 5 Per Wheel Path on 12”ctrs</li> <li>• Liquid Emulsified Asphalt</li> </ul>																																																		
<p><b>SAFETY:</b> Extreme care should be exercised when working adjacent to traffic. Reference the Safety Policies, Rules &amp; Regulations – Employee Handbook.</p>																																																		
<p><b>OTHER CONSIDERATIONS:</b> Concrete shall be from a calibrated ready-mix plant.</p>																																																		
<p><b>REFERENCES:</b> Missouri Standard Specifications for Highway Construction Section 613.00. Missouri Standard Plan 613.00</p>																																																		

**R313 – Concrete Replacement**



(1) Concrete Pavement Sawing



(2) Concrete Pavement Sawing



(3) Concrete Slab Replacement Drill Prep



(4) Concrete Slab Removal Set Up



(5) Concrete Slab Removal Set Up



(6) Concrete Slab Removal

*Missouri Department of Transportation  
Maintenance Activity Planning Guidelines*



(7) Dowel Installation



(8) Completed Dowel Installation



(9) Concrete Pour



(10) Machine Finish Concrete with Bunion Tube



(11) Concrete Hand Finish