

<b>MAINTENANCE PLANNING GUIDELINES</b>		2006																																																
<b>ACTIVITY:</b> Pipe Culvert Repairs (R319)  <b>MAJOR &amp; MINOR</b>	<b>ACTION:</b> Replace Pipe & Box Culverts (LF)																																																	
<b>DEFINITION:</b> The time and expenses incurred from removing and replacing pipe culverts. Includes time and expenses incurred for installing a new lining in an existing culvert.																																																		
<b>PURPOSE:</b> To replace deteriorated pipe and box culverts, which have caused the roadway or entrance to settle.																																																		
<b>SCHEDULING:</b> As needed.	<table border="1" style="width: 100%; text-align: center;"> <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 style="background-color: black;"> <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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<b>RECOMMENDED EQUIPMENT:</b> <ul style="list-style-type: none"> <li>• Trucks</li> <li>• Backhoe, Excavator, Loader, or Motorgrader</li> <li>• Mechanical Compactor</li> <li>• Dragline</li> <li>• Crane</li> <li>• Breaker</li> <li>• Trenching Protective System/Sheeting</li> <li>• Traffic Control Equipment, (See EPG 616.23 Traffic Control for Field Operations)</li> </ul>	<b>RECOMMENDED PROCEDURE:</b> <ol style="list-style-type: none"> <li>1. Call Dig Rite and MoDOT to check for utilities.</li> <li>2. Develop trenching safety plan with competent person and supervisor.</li> <li>3. Place traffic control devices as needed.</li> <li>4. Remove existing pipe or box.</li> <li>5. Install protective system in trench, if necessary.</li> <li>6. Prepare subgrade.</li> <li>7. Place new pipe or box and seal joints.</li> <li>8. Remove protective system.</li> <li>9. Compact material in lifts around and over pipe or box.</li> <li>10. Place and compact surfacing material.</li> <li>11. Clean work area.</li> <li>12. Remove traffic control devices.</li> </ol>																																																	
<b>RECOMMENDED MATERIAL:</b> <ul style="list-style-type: none"> <li>• Pipe &amp; Accessories</li> <li>• Joint Compound</li> <li>• Roadway Surface Material</li> <li>• Precast Box Culvert</li> <li>• Backfill Material</li> </ul>																																																		
<b>SAFETY:</b> Call before you dig to locate utilities (1-800-DIG-RITE). Hard hats are required. Watch for sharp edges and “pinch points.” Wear all appropriate PPE. Refer to Risk Management On Line Manual Section 2.4. Refer to the Safety Policies, Rules & Regulations – Employee Handbook.																																																		
<b>OTHER CONSIDERATIONS:</b> If entire roadway is to be closed, local news media, schools, emergency services, and law enforcement agencies should be informed in advance.																																																		
<b>REFERENCES:</b> Missouri Standard Specifications for Highway Construction Sections 725, 726, 733.																																																		

**R319 – Replace Pipe & Box Culverts**



(1) Sawcut Pavement for Culvert Replacement



(2) Open Trench for Culvert Replacement



(3) Setting Grade for Culvert Bedding



(4) Fine Grading Culvert Bed



(5) Laying Culvert Pipe



(6) Installing Pipe Connecting Band

*Missouri Department of Transportation  
Maintenance Activity Planning Guidelines*



(7) Backfilling around Culvert Pipe



(8) Spreading and Compacting Pipe Fill



(9) Laying Hot Mix Asphalt



(10) Finished Product