Appendix D

Data Collection
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<td>0.15</td>
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<td>300,000</td>
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<td>unbonded</td>
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<td>30,000</td>
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<td>6.0x10^-6</td>
<td>3.0x10^-6</td>
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<td>0.070</td>
<td>0.061</td>
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<td>Subbase Poisson's ratio</td>
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<td>0.45</td>
<td>0.35</td>
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<td>1,000,000 (AC shoulder)</td>
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Table D-5: Summary of inputs used in ISLAB2000 analysis

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<td>142</td>
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<td>Outer shoulder width (if PCC), in</td>
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<td>0</td>
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<td>118</td>
<td>118</td>
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<td>315</td>
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<td>PCC thickness, in</td>
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<tr>
<td>PCC elastic modulus, psi</td>
<td>4.2x10^6</td>
<td>4.2x10^6</td>
<td>4.2x10^6</td>
<td>4.2x10^6</td>
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<td>PCC CTE, in./in./°F</td>
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<td>5.0x10^-6</td>
<td>5.0x10^-6</td>
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<td>5.0x10^-6</td>
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<td>0.087</td>
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<td>0.087</td>
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<td>AC elastic modulus (for AC shoulder), psi</td>
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<td>300,000</td>
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<td>300,000</td>
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<th>unbonded</th>
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<th>unbonded</th>
<th>unbonded</th>
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| Most realistic simulation | | | | | | | |
| Base thickness, in | 15.75 | 3.94 | 3.94 | 3.94 | 3.94 | 3.94 | 3.94 |
| Base elastic modulus, psi | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| Base CTE, in./in./°F | 2.0x10^-6 | 2.0x10^-6 | 2.0x10^-6 | 2.0x10^-6 | 2.0x10^-6 | 2.0x10^-6 | 2.0x10^-6 |
| Base unit weight, lb/ft^3 | 0.061 | 0.061 | 0.061 | 0.061 | 0.061 | 0.061 | 0.061 |
| Base Poisson's ratio | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 |
| Subbase thickness, in | 0 | 11.8 | 11.8 | 11.8 | 11.8 | 12.0 | 19.2 |
| Subbase elastic modulus, psi | 15.000 | 15.000 | 15.000 | 15.000 | 15.000 | 15.000 | 15.000 |
| Subbase CTE, in./in./°F | 2.0x10^-6 | 2.0x10^-6 | 2.0x10^-6 | 2.0x10^-6 | 2.0x10^-6 | 2.0x10^-6 | 2.0x10^-6 |
| Subbase unit weight, lb/ft^3 | 0.061 | 0.061 | 0.061 | 0.061 | 0.061 | 0.061 | 0.061 |
| Subbase Poisson's ratio | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 |

| Combined base/subbase | | | | | | | |
| Base thickness, in | 15.75 | 9.60 | 9.60 | 9.60 | 9.60 | 9.75 | 15.31 |
| Base elastic modulus, psi | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| Base CTE, in./in./°F | 2.0x10^-6 | 2.0x10^-6 | 2.0x10^-6 | 2.0x10^-6 | 2.0x10^-6 | 2.0x10^-6 | 2.0x10^-6 |
| Base/subbase unit weight, lb/ft^3 | 0.061 | 0.061 | 0.061 | 0.061 | 0.061 | 0.061 | 0.061 |
| Base/subbase Poisson's ratio | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 |

<p>| Simplified simulation | | | | | | | |
| No subbase layer | | | | | | | |
| Base thickness, in | 15.75 | 3.94 | 3.94 | 3.94 | 3.94 | 3.94 | 3.94 |
| Base elastic modulus, psi | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| Base CTE, in./in./°F | 2.0x10^-6 | 2.0x10^-6 | 2.0x10^-6 | 2.0x10^-6 | 2.0x10^-6 | 2.0x10^-6 | 2.0x10^-6 |
| Base unit weight, lb/ft^3 | 0.061 | 0.061 | 0.061 | 0.061 | 0.061 | 0.061 | 0.061 |
| Base Poisson's ratio | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 |
| Subbase layer | No | No | No | No | No | No | No |
| k-value, psi/ft | 99.5 | 128.9 | 128.9 | 128.9 | 169.5 | 158.4 | 158.4 |
| Dowel bar diameter, in. | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 |
| Dowel bar spacing, in. | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Dowel bar in shoulder | No | No | No | No | No | No | No |
| LTE lane/lane (AGG), psi | 1x10^6 | 1x10^6 | 1x10^6 | 1x10^6 | 1x10^6 | 1x10^6 | 1x10^6 |
| LTE lane/shoulder (AGG), psi | 1x10^6 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |</p>
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<th>8/2</th>
<th>9/2</th>
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<td>142</td>
<td>142</td>
<td>144</td>
<td>142</td>
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<td>Slab width (next to outer), in</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>144</td>
<td>142</td>
<td>142</td>
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<td>Outer shoulder width (if PCC), in</td>
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<td>12</td>
<td>18</td>
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<td>118</td>
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<td>Outer shoulder width (if AC), in</td>
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<td>177</td>
<td>315</td>
<td>135</td>
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<td>PCC thickness, in</td>
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<td>PCC elastic modulus, psi</td>
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<td>4.2x10^6</td>
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<td>4.2x10^6</td>
<td>4.2x10^6</td>
<td>4.2x10^6</td>
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<td>5.0x10^-6</td>
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<td>5.0x10^-6</td>
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<td>unbonded</td>
<td>unbonded</td>
<td>unbonded</td>
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<td>0.061</td>
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<td>0.061</td>
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</tr>
<tr>
<td>Subbase thickness, in</td>
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<td>No</td>
<td>No</td>
<td>No</td>
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<tr>
<td>Subbase thickness, in</td>
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<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
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<tr>
<td>Slab width (outer), in</td>
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<td>1.25</td>
<td>1.25</td>
<td>1.25</td>
<td>1.25</td>
<td>1.25</td>
</tr>
<tr>
<td>Dowel bar spacing, in</td>
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<td>12</td>
<td>12</td>
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<tr>
<td>Dowel bar in shoulder</td>
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<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>LTE lane/lane (AGG), psi</td>
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<td>1x10^6</td>
<td>1x10^6</td>
<td>1x10^6</td>
<td>1x10^6</td>
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<td>1x10^6</td>
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Figure D-1: Example of truck configuration (M1-9)

Figure D-2: Example of pavement feature with PCC/AC shoulder in ISLAB2000 analysis
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Figure D-3: Example of pavement feature with widened lane in ISLAB2000 analysis

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Figure D-4: Example of pavement feature with valley gutter in ISLAB2000 analysis