Comply with AASHTO M 206 for Apron Reinforcement.

Dimension "E" shown is minimum and is considered the design length. Appropriately adjust for any difference between the actual length of concrete apron installed and the length indicated hereon for the length of concrete culvert pipe furnished.

Install connected pipe joints as shown on DR-121.

Alternate Design

Possible Tabulations:
- Low Clearance Concrete Pipe Aprons

Possible Contract Item:
- Arch Pipe

ARCH PIPE
**ARCH PIPE (MULTI-SECTION APRON)**

**PLAN**

- Section 1
- Section 2
- Section 3

**ELEVATION**

- Span: 6'-0"
- Rise: 1'-0"

**SECTION B-B**

- Tongue end on inlet end section. Groove end on outlet end section. Inlet end section is shown.
- 132 inch size is a three piece end section.

<table>
<thead>
<tr>
<th>NOMINAL DIMENSIONS</th>
<th>EQUIVALENT SPAN X RISE</th>
<th>SPAN</th>
<th>RISE</th>
<th>APPROXIMATE DIMENSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inches</td>
<td>Inches</td>
<td>Inches</td>
<td>Inches</td>
</tr>
<tr>
<td>115 X 72</td>
<td>90</td>
<td>115</td>
<td>72</td>
<td>8  1/2</td>
</tr>
<tr>
<td>122 X 78</td>
<td>96</td>
<td>122</td>
<td>72</td>
<td>9</td>
</tr>
<tr>
<td>138 X 88</td>
<td>108</td>
<td>138</td>
<td>87  1/2</td>
<td>10</td>
</tr>
<tr>
<td>154 X 97</td>
<td>120</td>
<td>154</td>
<td>95  1/4</td>
<td>11</td>
</tr>
<tr>
<td>169 X 107</td>
<td>132</td>
<td>169  1/2</td>
<td>105  1/4</td>
<td>10</td>
</tr>
</tbody>
</table>

**DETAIL 'A'**

- See Detail 'A'

**ARCH PIPE (MULTI-SECTION APRON)**

- Tongue end on inlet end section. Groove end on outlet end section. Inlet end section is shown.
- 132 inch size is a three piece end section.
### APPROXIMATE DIMENSIONS

<table>
<thead>
<tr>
<th>EQUIVALENT DIAMETER</th>
<th>SPAN</th>
<th>RISE</th>
<th>SLOPE</th>
<th>APPROXIMATE DIMENSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inches</td>
<td>Inches</td>
<td>1</td>
<td>A</td>
</tr>
<tr>
<td>18</td>
<td>23</td>
<td>14</td>
<td>3:1</td>
<td>22</td>
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<td>30</td>
<td>19</td>
<td>3:1</td>
<td>35</td>
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<td>30</td>
<td>38</td>
<td>24</td>
<td>3:1</td>
<td>39</td>
</tr>
<tr>
<td>36</td>
<td>45</td>
<td>29</td>
<td>2.5 to 1</td>
<td>42</td>
</tr>
<tr>
<td>42</td>
<td>53</td>
<td>34</td>
<td>2.5 to 1</td>
<td>51</td>
</tr>
<tr>
<td>48</td>
<td>60</td>
<td>38</td>
<td>2.5 to 1</td>
<td>62</td>
</tr>
<tr>
<td>54</td>
<td>68</td>
<td>43</td>
<td>2.5 to 1</td>
<td>70</td>
</tr>
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<td>72</td>
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<tr>
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<td>2.5 to 1</td>
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<tr>
<td>90</td>
<td>113</td>
<td>72</td>
<td>1.6 to 1</td>
<td>93</td>
</tr>
</tbody>
</table>

**Note:**
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- Dimension "E" shown is minimum and is considered the design length. Appropriately adjust for any difference between the actual length of concrete apron installed and the length indicated hereon for the length of concrete culvert pipe furnished.
- Install connected pipe joints as shown on DR-121.

**Details:**
- Tongue end on inlet end section. Groove end on outlet end and section. Inlet end section shown.

**Diagram:**
- PLAN
- END
- Alternate Design

**Legend:**
- **A**: RISE
- **B**: SPAN
- **C**: DIAMETER EQUIVALENT
- **D**: APPROXIMATE LENGTH
- **E**: SLOPE
- **F**: DR-121

**Design Methods Engineer:**
- Approved by

**IOWA DOT:**
- STANDARD ROAD PLAN

**DR-202**
- SHEET 3 of 3
- REVISIONS: Added Designer Information.

**Approval:**
- Approved by Project Engineer.