**ELEVATION**

- 4 #6 bent bars horizontal
- 2 each face
- #4 straight bars vertical
- #1'-6" min. to 2'-0" max.
- In front face

**SECTION A-A**

- 3/4" # hook bolts @ 1'-6"
- C/C around pipe arch
- When metal pipe is used
- #4 bent bars @ 1'-0" C/C below opening

**PLAN**

- B-66
- #4 long bent bars horizontal
- Alt. 1 with 1 @ 6"/C/C
- B-72
- #4 short bent bars horizontal
- Alt. 1 with 2 resp. 4"/C/C
- B-78
- #4 long bent bars horizontal
- B-84
- #4 short bent bars horizontal
- Alt. 1 with 2 resp. 4"/C/C

**ISOMETRIC VIEW**

- #4 bent bars horizontal @ 1'-2" max.
- C/C both faces bottom bars bent along endwall
- Others straight

**NOTES**

- Specifications: Latest S.H.A.
- Concrete shall be mix No. 2
- Reinforcing: deformed steel bars #4 & #6
- Chamfer: all exposed edges 1"x1" or as directed

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**DISPOSITION OF BARS DETAIL**

<table>
<thead>
<tr>
<th>OPENING</th>
<th>D INCHES</th>
<th>AREA SQ. FT.</th>
<th>B</th>
<th>C</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>M</th>
<th>N</th>
<th>O</th>
<th>VOLUME CONC. C.Y.</th>
<th>STEEL LBLS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>66</td>
<td>2'-6&quot;</td>
<td>21'-0&quot;</td>
<td>1'-3&quot;</td>
<td>4'-9&quot;</td>
<td>3'-0&quot;</td>
<td>11'-2&quot;</td>
<td>6'-0&quot;</td>
<td>6'-4&quot;</td>
<td>10'-3&quot;</td>
<td>10'-8&quot;</td>
<td>9'-3&quot;</td>
<td>3'-5&quot;</td>
<td>7'-4&quot;</td>
<td>2'-0&quot;</td>
<td>9.1</td>
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<tr>
<td>72</td>
<td>2'-6&quot;</td>
<td>21'-0&quot;</td>
<td>1'-3&quot;</td>
<td>4'-9&quot;</td>
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<td>12'-1&quot;</td>
<td>7'-3&quot;</td>
<td>6'-10&quot;</td>
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<td>3'-11&quot;</td>
<td>7'-10&quot;</td>
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<td>10.9</td>
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<tr>
<td>78</td>
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<td>21'-0&quot;</td>
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<td>5'-6&quot;</td>
<td>3'-6&quot;</td>
<td>13'-0&quot;</td>
<td>7'-9&quot;</td>
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<td>4'-0&quot;</td>
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<td>2'-6&quot;</td>
<td>13.3</td>
<td>865</td>
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<tr>
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<td>5'-6&quot;</td>
<td>3'-9&quot;</td>
<td>13'-10&quot;</td>
<td>8'-4&quot;</td>
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<td>12'-9&quot;</td>
<td>11'-6&quot;</td>
<td>4'-6&quot;</td>
<td>9'-0&quot;</td>
<td>2'-6&quot;</td>
<td>14.7</td>
<td>984</td>
</tr>
</tbody>
</table>

**QUANTITIES IN TABLE TO BE USED FOR ESTIMATING ONLY**

**MARYLAND DEPARTMENT OF TRANSPORTATION**

**STATE HIGHWAY ADMINISTRATION**

**STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES**

**STANDARD HEADWALLS**

B-66 B-72 B-78 B-84

**STANDARD NO. MD 352.02**