### TYPICAL WINGWALL ELEVATION

(Cross section not shown for clarity.)

### ISOMETRIC VIEW OF TYPICAL INSTALLATION

(Showing bolted anchor option.)

### TABLE OF REINFORCING BARS SIZES AND SPACING

<table>
<thead>
<tr>
<th>Bar</th>
<th>Size</th>
<th>Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>BARS I</td>
<td>3/16&quot;</td>
<td>1&quot; - 10&quot;</td>
</tr>
<tr>
<td>BARS K</td>
<td>1/8&quot;</td>
<td>1&quot; - 10&quot;</td>
</tr>
<tr>
<td>BARS R</td>
<td>3/16&quot;</td>
<td>1&quot; - 10&quot;</td>
</tr>
</tbody>
</table>

### GENERAL NOTES:

- Design according to AASHTO LRFD Bridge Design Specifications.
- The safety end treatments shown herein are intended for use in these installations where out-of-control vehicles are likely to traverse the openings approximately perpendicular to the cross pipes.
- Cross pipes are designed for a traversing load of 10,000 pounds at openings approximately perpendicular to the cross pipes.
- The safety end treatments shown herein are intended for use in those installations where out-of-control vehicles are likely to traverse the openings approximately perpendicular to the cross pipes.
- Designed according to AASHTO LRFD Bridge Design Specifications.
- The quantities for concrete, reinforcing steel, and cross pipes are designed for a traversing load of 10,000 pounds at openings approximately perpendicular to the cross pipes.
- Provide galvanized reinforcing steel if required elsewhere in the plans.
- Provide pipe runners, cross pipes, and anchor pipes meeting the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 Gr B, or AASHTO A247 bolts.
- Galvanize all steel components, except the concrete reinforcing, unless otherwise specified in the plans.
- Provide ASTM A307 bolts.
- The quantities for concrete, reinforcing steel, and cross pipes shall be determined by the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 Gr B, or AASHTO A247 bolts.
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Sleeve pipe details

TYPICAL WINGWALL INSIDE ELEVATION

(Two pipes to accept the anchor bolt at the centerline of each pipe and make a 15#16" diameter throughhole in the cross pipe to accept the anchor bolt at the centerline of each pipe.)

OPTIONAL ANCHOR BAR DETAILS

OUTSIDE CULVERT BARREL WITH
OPTIONAL ANCHOR BARS & RIPRAP

INSIDE CULVERT BARREL

PART PLAN

SECTION B-B

SECTION THROUGH INSTALLATION OF 3 1/2" FIRST CROSS PIPE

This drawing is included in the bid price for Safety End Treatment. Provide riprap in accordance with Item 432, "Riprap."