**EXPANSION JOINT DETAIL**

(Spread Footing expansion joints are required at ½ open joints in Traffic Railing/Sound Barrier.)

**NOTES:**

1. **CONSTRUCTION REQUIREMENTS:** Construct the spread footing level transversely and expansion joints plumb do not construct the spread footing perpendicular to the roadway surface. Slip forming is not permitted.

2. **CONCRETE:** Use Class II concrete for moderately or extremely aggressive environments. Use Class IVA concrete for less severe environmental conditions. See Section 54.6.6 for details on Class IVA concrete.

3. **REINFORCING STEEL:** Provide Grade 60 reinforcing steel in accordance with Specification Section 9.12, Dowel Transfer Devices will be ASTM A 36 smooth round bar and hot dip galvanized in accordance with Specification Section 9.12. Install Dowel Transfer Devices in accordance with Specification Section 9.12.

4. **Concrete Expansion Joints:** Construct ½" Expansion Joints transversely and perpendicular to the Gutter Liner. Provide at 90° maximum intervals as shown.

5. **Provide and Install Reinforced Expansion Joint Filler in accordance with Specification Section 9.12.**

6. **Concrete Expansion Joints and/or Expansion Joints:** Provide between Expansion Joints transversely and perpendicular to the Gutter Liner as required.

7. **FPD REQUIREMENT:** Shoulder or roadway pavement or FP is required on top (90°) maximum intervals for the entire length of the spread footing on both sides of the Traffic Railing/Sound Barrier. See Section B-B for details.

8. **See Index No. 5210 for Bars 5V and 5SL.**

9. **Place 6 - Bars 5V inside Shrub Bar 5V as shown.**

10. **Spacing shown is along the Gutter Line.
REINFORCING STEEL BENDING DIAGRAMS

BILL OF REINFORCING STEEL

<table>
<thead>
<tr>
<th>MARK</th>
<th>SIZE</th>
<th>LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>5</td>
<td>6'-6&quot;</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>4'-0&quot;</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>3'-0&quot;</td>
</tr>
</tbody>
</table>

DOWEL 1" Ø Smooth Bar 2'-0"

BAR 5A & 5B

1" Ø DOWEL

5'-8"

BAR 5U

REINFORCING STEEL NOTES:
1. All bar dimensions in the bending diagrams are cut to cut.
2. Lap splices for Bars 5B while a minimum of 2'-2".
3. The Contractor may use Welded Wire Fabric when approved by the Engineer.

SECTION B-B

TYPICAL SECTION THRU SPREAD FOOTING
(Bars 5P, 5R and 5S1 in Traffic Railing/Sound Barrier not shown for clarity)

NOTES:
1. Match Cross Slope of Travel Lane or Shoulder.
2. Place 6"-4" Bar 5S1 inside Shirrup Bars 5S above.
3. See Index No. 5210 for Bars 5V and Bars 5S1.

ESTIMATED T-SHAPED SPREAD FOOTING QUANTITIES

<table>
<thead>
<tr>
<th>ITEM</th>
<th>UNIT</th>
<th>QUANTITY</th>
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<tbody>
<tr>
<td>Concrete (Footing)</td>
<td>CY/FL</td>
<td>0.31</td>
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<tr>
<td>Reinforcing Steel (Typical)</td>
<td>LBF</td>
<td>53.80</td>
</tr>
<tr>
<td>Additional Rein. Ø Expansion Joint</td>
<td>LBF</td>
<td>37.38</td>
</tr>
</tbody>
</table>

Note: The reinforcing steel quantity accounts for the difference between the shorter Shirrup Bars 5V for junction slabs or bridges and the longer Shirrup Bars 5V for spread footings.

CROSS REFERENCE:
For location of Section B-B, see Sheet 1.