**GENERAL NOTES**

1. LENGTH OF NEED IS THE TOTAL LENGTH OF A LONGITUDINAL BARREL DEPTHS TO SHIELD AN AREA OF CONCERN. TO DETERMINE THE LENGTH OF NEED, REFER TO THE ROADSIDE DESIGN GUIDE - ASHTO, 1999.

2. DESIGNATIONS PROVIDED IN BRACKETS [ ] REFERENCE STANDARD ELEMENTS DETAILED IN A GUIDE TO STANDARDIZED MOTORWAY BARRIER HARDWARE, 1999, ASH/MAAG-AARBA/JCOC COMMITTEE.

3. THE RECTANGULAR PLATE WASHER (FW90-6) IS USE ONLY FOR 1.43 m OR STANDARD SECTION TYPE G-2 AT A TERMINAL UNIT TYPE G-2 (SEE STANDARD NO. 8-8).

4. USE 41.50 mm RAIL EMBLEM IN CURVES OF LESS THAN 180 m RAIL RADIUS.

5. ALL DIMENSIONS SUBJECT TO MANUFACTURER’S TOUGHERS.

6. USE (FW90-6) 1830 mm LONG POSTS WHEN FULL SLOPE IS 4:1 OR FLatter AND/OF WHEN FIELD CONDITIONS CIRCUMTATE (E.G., LEDGE, ROCK), AS DETERMINED BY THE ENGINEER.

7. WHEN GUARDRAIL IS INSTALLED BEHIND CURB, EITHER 1.8 m BEHIND CURB OR ON A CURBED RAMP OR AT THE BACK OF TERRACE WITH CURB CURB, THE RAIL HEIGHT SHALL BE 1.2 m THE END OF THE CURVE AT THE FACE OF THE RAIL.

**GUARDRAIL STANDARD**

**BEAM GUARDRAIL STANDARD SECTION-WOOD POSTS & HARDWARE DETAILS**

**SECTION THRU RAIL ELEMENT**

**TABLE: DIMENSIONS**

<table>
<thead>
<tr>
<th>DESIGNATOR</th>
<th>L</th>
<th>T</th>
<th>INTENDED USE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FW90-1</td>
<td>35</td>
<td>122</td>
<td>RAIL SPINDLE BOLTS</td>
</tr>
<tr>
<td>FW90-2</td>
<td>50</td>
<td>122</td>
<td>POST BOLT (STELL POSTS)</td>
</tr>
<tr>
<td>FW90-3</td>
<td>255</td>
<td>100</td>
<td>POST BOLT</td>
</tr>
<tr>
<td>FW90-4</td>
<td>460</td>
<td>100</td>
<td>POST BOLT (WOOD POSTS)</td>
</tr>
<tr>
<td>FW90-5</td>
<td>620</td>
<td>100</td>
<td>POST BOLT (DOUBLE-FASTED)</td>
</tr>
</tbody>
</table>

**DIMENSIONS**

- 16 mm BUTTON HEAD BOLT AND RECESSED NUT (FW90-5)

**ELEVATION**

**SAMPLE GUARDRAIL INSTALLATION LAYOUT**

**NOTE**: LAY RAIL IN DIRECTION OF TRAFFIC

**TYPICAL SIDE VIEW**

**SHOULD WASH**: RECESS BOTH SIDES

**FACE OF RAIL**: 180 mm WOOD POST & OFFSET BLOCK

**REFERENCE**: SEE NOTE NO. 8

**ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE WHOLE MILLIMETERS; DECIMAL NUMBERS INDICATE METERS (UNLESS OTHERWISE NOTED).**