1. Install tangent terminal according to the manufacturer's recommendations. See manufacturer's drawings for other details.

2. Construct the terminal grading layout as shown in the staking notes or model. If no staking notes or model are provided, use the preferred grading layout as much as practical within site constraints. If necessary because of site limitations, use the alternative grading layout.

3. For design purposes, the length of need is assumed to begin at post 3. Verify the length of need with the manufacturer for a specific product. Adjust grading as necessary to install the tangent terminal according to the manufacturer's recommendations.

4. Install terminal at a 1:25 taper or flatter, to position the end farther away from the edge of the shoulder, or use a taper according to manufacturer's recommendations.

5. Install a reflectorized object marker on the end of the terminal.

6. Construct a 1V:4H slope outside of the guardrail terminal grading extents where practical.

### Preferred Grading

**Plan**

**Preferred Grading**

- Pay limits: terminal section type tangent or type MGS tangent
- Length of Need: 12'-6"
- Hinge point line
- Rear of post

**Details**

- Terminal posts and end of terminal not shown. Varies by manufacturer
- Tangent line projected from the face of the rail in the standard post section. See Note 4

### Alternative Grading

**Plan**

**Alternative Grading**

- Pay limits: terminal section type tangent or type MGS tangent
- Length of Need: 12'-6"
- Hinge point line
- Rear of post

**Details**

- Terminal posts and end of terminal not shown. Varies by manufacturer
- Tangent line projected from the face of the rail in the standard post section. See Note 4

### Notes

- Back of post
- Front of rail face

### Test Level

<table>
<thead>
<tr>
<th>Test Level</th>
<th>(ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 (&lt; 45 mph)</td>
<td>25</td>
</tr>
<tr>
<td>3 (&gt; 45 mph)</td>
<td>37.5 or 50 (for G4)</td>
</tr>
</tbody>
</table>

**Reference**

- MGS and G4
- W-Beam Guardrail Type Tangent Terminal and Grading

**Date Approve For Use**

- 04/2020

**User**

- Central Federal Lands Highway Division
- Federal Highway Administration
- U.S. Department of Transportation
G4 and MGS W-Beam Guardrail, Type Tangent Terminal and Grading

General Information

**Appropriate Applications.**
- Tangent terminals are proprietary systems. Manufacturers of common tangent terminal systems include Trinity Highway LLC, Road Systems, Inc., and Barrier Systems, Inc. Refer to the manufacturer’s recommendations for information on specific flared terminals.

**Limitations.**
- Site grading in the area of the terminal is an important consideration. Verify that the required grading is included in the project design.

**Layout Guidance.**
- See AASHTO *Roadside Design Guide*, Section 8.3.3.
- The drawing shows 2 options for grading that are based on Figure 8-3 in the AASHTO *Roadside Design Guide*. Use the preferred grading as much as practical; use the alternative grading in constrained locations.
- See the FLH *Midwest Guardrail System FAQ* document for more information.

**Applicable SCRs**
- Section 563 (if weathering agent applied to galvanized elements)
- Section 617
- Section 710
- Section 725 (if weathering agent applied to galvanized elements)

**Typical Pay Item Used**
- 61702-0800 Terminal section, type tangent [EA] *for G4*
- 61702-1500 Terminal section, type MGS tangent [EA] *for MGS*

**Updates**
February 2019
- New Detail drawing
April 2020
- Updated Note 5