I. Curved TSV trim instructions

Use table 1 to determine the trim amount for the track radius and joint length at each joint. Then use table 2 to determine whether to trim by the full trim amount or half the trim amount and which girder(s) to trim based on the joint type at each joint.

1. Choose a radius for the curve.
2. At each joint (where two spans meet), use table 1 to look up the trim amount for the radius and joint lengths. Table 1 lists the full trim amount for various radii curves and also lists the span angle and tie overhang amount for reference.
3. At each joint, determine its joint type; tower joint, bent joint or abutment joint.
4. At each joint, use table 2 to look up how much to trim and which girder(s) to trim based on the joint type.

II. Construction

To build a Micro Engineering curved Tall Steel Viaduct the spans are assembled at an angle to one another. To do this, some or all of the girders on the inside of the curve will need to be shortened before assembling the spans. Only the inside girders are trimmed, the girders on the outside of the curve are not trimmed. Which inside girders to trim and how much to trim are determined by the radius of the curve, by the joint lengths at each joint (where two spans meet) and by the joint type. See Fig. 1.

II. Configurations

Tall Steel Viaduct bridges can be built in several different configurations utilizing various components. See Fig. 1.

Span types: spans on top of towers are tower spans, spans between towers or bents are connecting spans.

Joint lengths: can be a 50 ft. span joining a 50 ft. span, a 50 ft. to 30 ft. or a 30 ft. to 30 ft.

Joint types: joints supported by towers are tower joints, by bents are bent joints, by abutments (at the ends of the bridge) are abutment joints.
IV. Radius determination

The **radius** used for a curved TSV is usually a matter of layout design or choice by the modeler. However, there is a minimum radius that should be used on TSV bridges as determined by the tie overhang of the girder edge, as shown in table 1. The curve causes the ties to be displaced from their straight track positions with less overhang at the center and ends of the span. See fig. 2. The sharper the curve, the less the bridge ties overhang the girders. If the curve is too sharp, the ties will not overhang the edge of the girders enough for prototypical appearance. The tie overhang amount is based on Micro Engineering HO Code 83 Bridge Flex-Trak which has 1.37" (10 ft.) long ties. Note also, that the **radius** of the curve determines the angle at the joints which is the same at each joint for a given radius.

**Table 2 Amount to trim and girders to trim**

How much to trim, full or half, & which girder ends to trim are determined by the joint type.

<table>
<thead>
<tr>
<th>Joint type</th>
<th>Amount to trim</th>
<th>Girder(s) to trim</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tower joints</td>
<td>Full trim amount</td>
<td>Connecting span girder only. The tower span girder is not trimmed, it must remain full length to fit the towers properly.</td>
</tr>
<tr>
<td>Bent joints</td>
<td>Half trim amount</td>
<td>Both connecting span girders.</td>
</tr>
<tr>
<td>Abutment joints</td>
<td>Half trim amount</td>
<td>Connecting span girder, at the abutment end.</td>
</tr>
</tbody>
</table>