Bridge Design Details 2.4 June 2025

Horizontal Curves

Roadway Designers use simple arcs for the design of roadway horizontal curves. The horizontal curve length is the distance between two tangent lengths that provides a safe sight distance for traffic moving at a specified design speed.

It is recommended that horizontal curves extend beyond the bridge length, if possible, to minimize the design and construction complexity of the bridge structure. Horizontal curve data includes:

- Beginning of Curve (BC) station
- End of Curve (EC) station
- Point on Curve (POC) station
- Point of Intersection (PI) station
- Bearings of Tangents (Brg)
- Radius (R) feet
- Central Angle (∆) degrees
- Tangent Distance (T) feet
- Length of Curve (L) feet
- Point of Compound Curve (PCC) station
- Point of Reverse Curve (PRC) station

If the tangents coming in or out of the horizontal curves are not tangential to the radius, you may need to label angle points and identify subtangent bearings.

Examples:

Coming into curve…

Angle Point @ (BC or PRC):

Back Subtangent Brg = NXX°XX'XX"W, Forward Subtangent Bearing = NXX°XX'XX"W

Coming out of curve…

Angle Point @ (EC or PRC):

Curve Subtangent Bearing = N XX°XX'XX" W