



# Bridge Design Details 2.2 October 2019

## Vertical Curves

A vertical curve is used to change the profile of a highway to provide a smooth transition between two sloped grades. The design of a vertical curve is dependent on the intended design speed for the roadway, required drainage, slope, friction, sight distance, and acceptable rate of change.

It is recommended that the vertical curves extend beyond the bridge length, where possible, to minimize the design, drainage issues, and construction complexity of the bridge structure.

There are two types of vertical curves, sag curves and crest curves.

Vertical curve data is shown with a PROFILE GRADE detail on the GENERAL PLAN sheet. Vertical curve data includes:

- Begin Vertical Curve (BVC) station
- End Vertical Curve (EVC) station
- Point of Reversing Vertical Curve (PRVC) station
- Profile Grade approaching the vertical curve (G1%)
- Profile Grade departing the vertical curve (G2%)
- Length of curve (L) feet
- Rate of Change ( $R/c$  %) per station