

Vertical Curves

Civil Engineering

K values for crests and for sags.

A vertical curve is sized by K, the length of curve needed for each one per cent change of grade.

$$L = K \times A \cdot A = \text{difference in grade, \%}$$

K 55, A 4%

Crest curve.

L = 220 m

Crest curve

You cannot see over.

Sight distance governs

Sag curve

The night case.

Headlights or comfort

THE COMMON MISTAKE

✗ **Sizing a sag for daylight sight distance**

✓ **Sag is headlight or comfort**

On a sag the road ahead stays visible by day. What binds is the headlight beam reaching far enough at night, and vertical acceleration.

Educational reference. K values come from the governing geometric standard for the road class and design speed.