

Design Speed (km/h)	Calculated K Value (K = V ² /395)	K Value Rounded For Design
30	2.3	3
40	4.1	5
50	6.3	7
60	9.1	10
70	12.4	13
80	16.2	17
90	20.5	21
100	25.3	26
110	30.6	31
120	36.5	37

$$L = \frac{AV^2}{395} = KA$$

Where:

L = Length of vertical curve, m

A = Algebraic difference between grades, %

K = Horizontal distance required to effect a 1% change in gradient

V = Design speed, km/h

**K-VALUE FOR SAG VERTICAL CURVE
(Comfort Criteria — 3R Project)**

Figure 55-4A