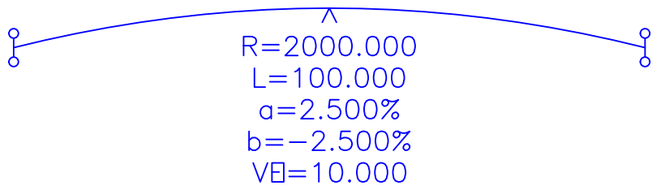
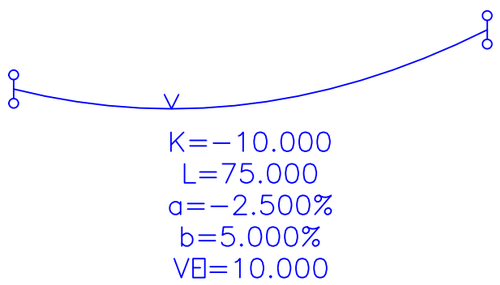
## VCURV Example 1: Typical vertical curves



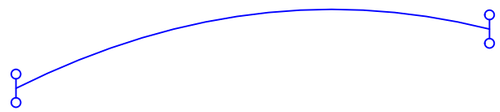

Typical crest curve created with default values (and text height of 3.0 units)

R = curve radius
L = curve length (along x axis)
a = start gradient (in %)
b = end gradient (in %)
VE = vertical exaggeration factor
K = curve 'K' value (=R/100)

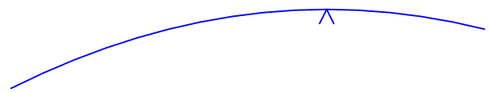



Typical sag curve with K value entered instead of radius value (K=−10 is equivalent to R=−1000)

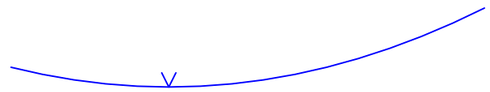
## VCURV Example 2: Showing Additional Information



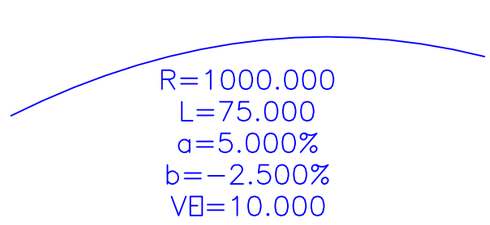
Crest curve with only TP (tangent point) markers shown



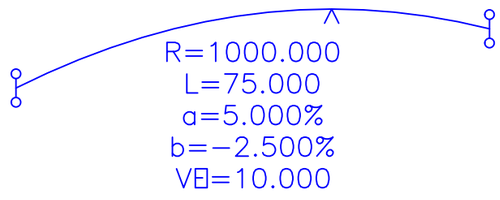
Crest curve with only maximum level marker shown



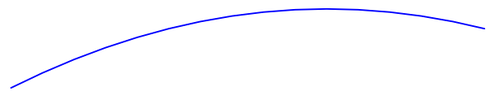
Sag curve with only minimum level marker shown




Crest curve with only curve parameter text shown



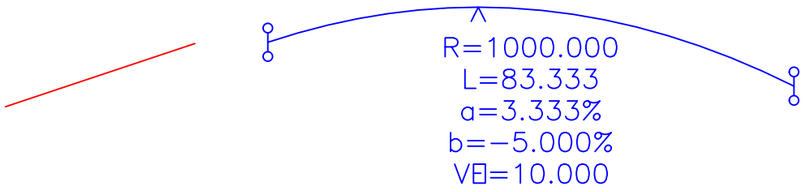

Crest curve with all additional information shown

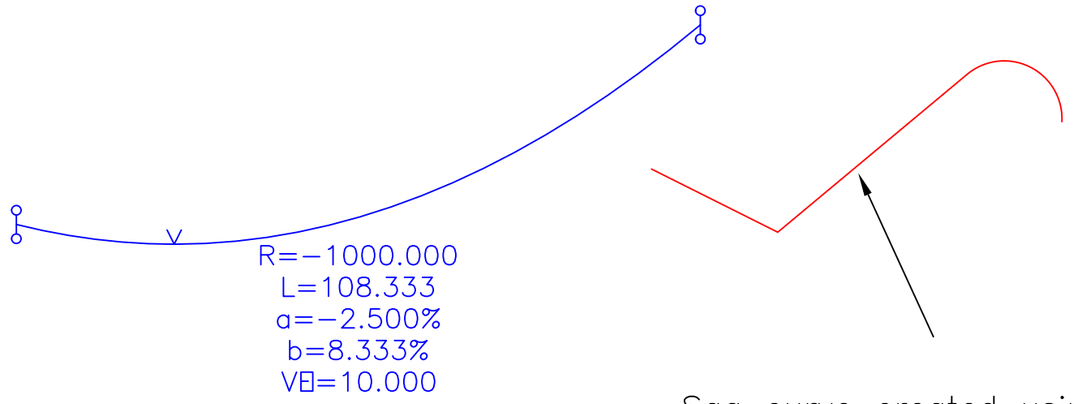


Crest curve with no additional information shown (note this curve is a polyline, while the other examples above are blocks)

# VCURV Example 3: Using lines and line segments of 2D polylines as references for gradients

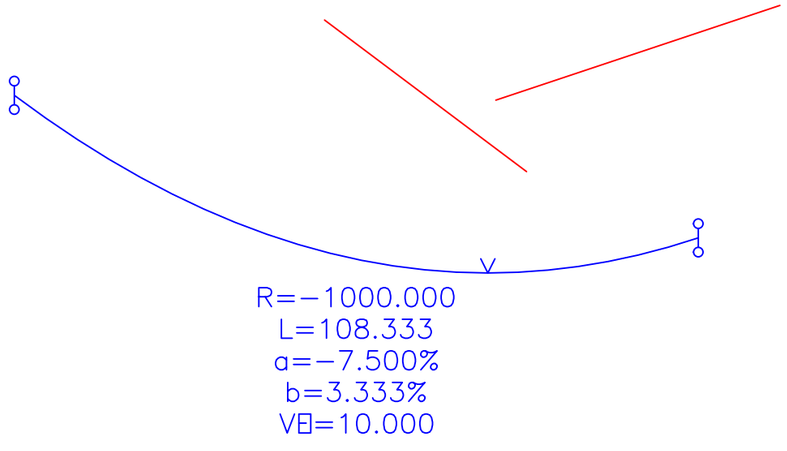
Crest curve created using line as reference for start gradient (3.333%)



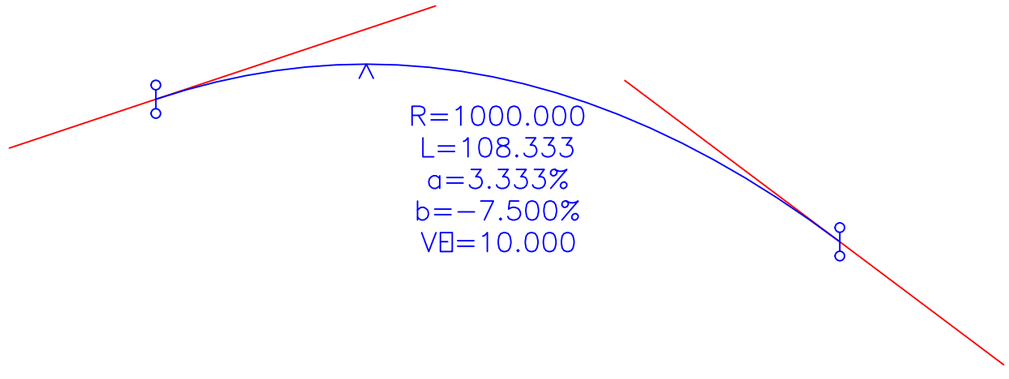




Sag curve created using middle segment (a line) of 2D polyline as reference for end gradient (8.333%)

Sag curve created using two lines as references for start (−7.500%) and end (3.333%) gradients

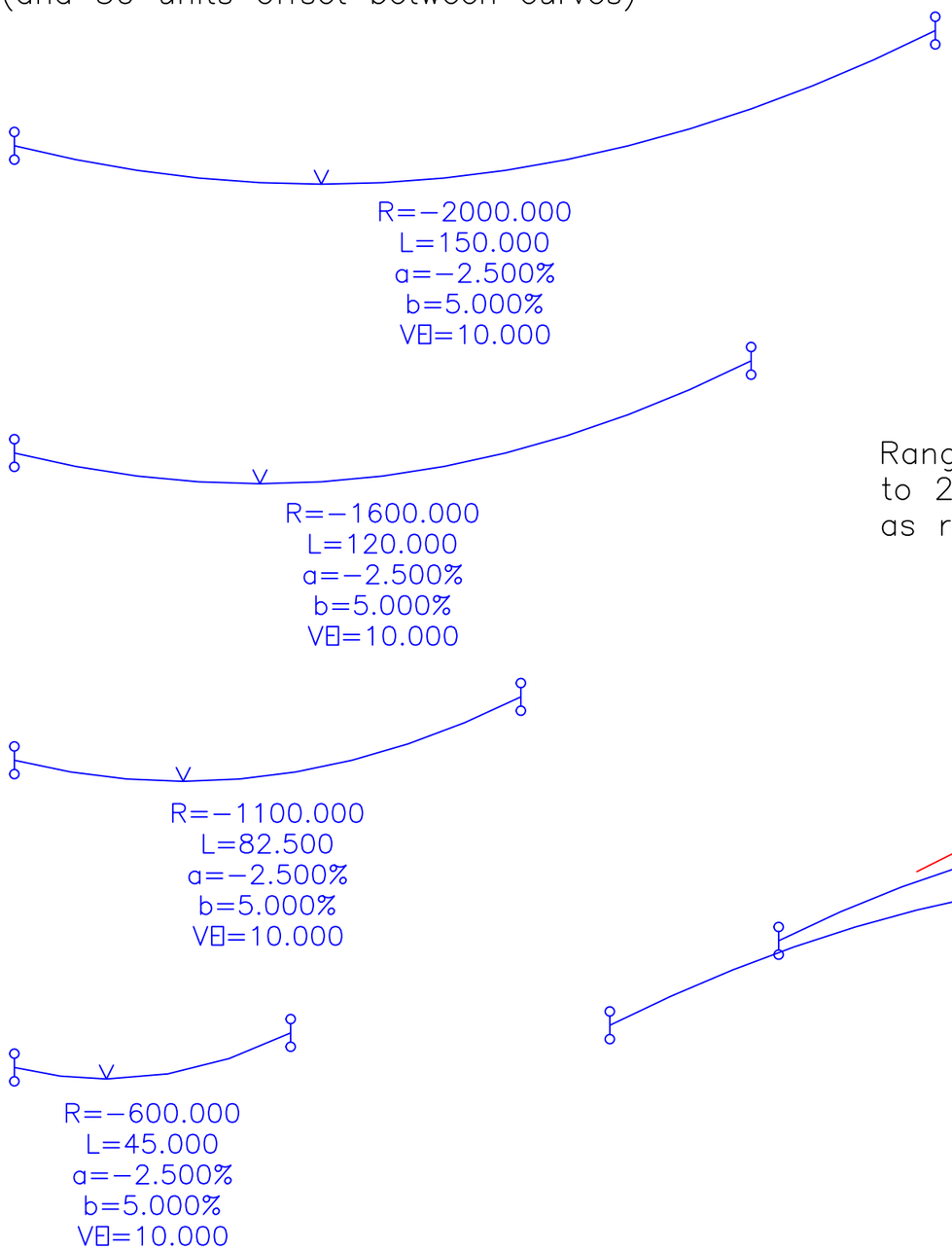



Crest curve fitted to two lines used as references for start and end gradients



# VCURV Example 4: Ranges of radii (or K values)

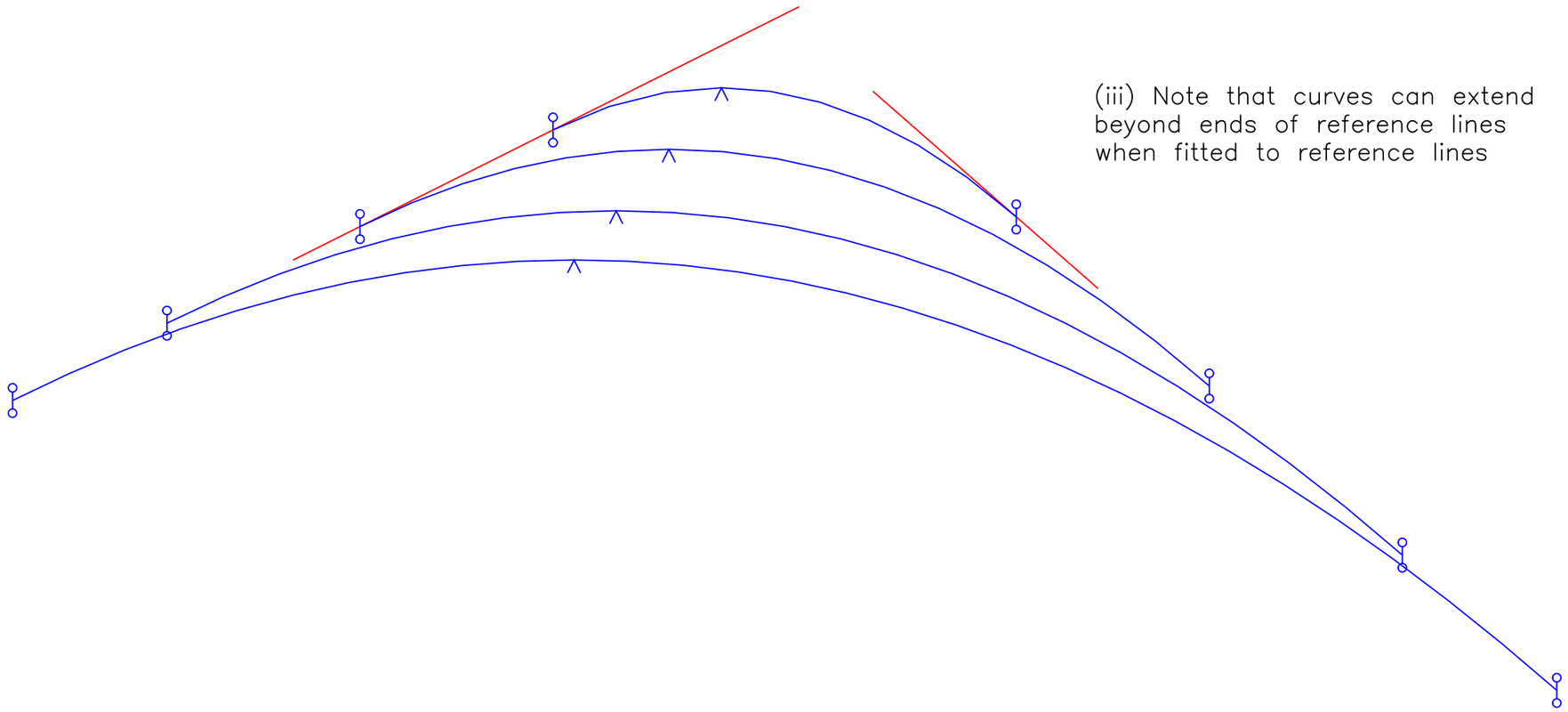
Range of multiple sag curves from R value of 600 to 2000 with 500 step size (and 50 units offset between curves)




(i) Note that the step size does not need to fit the from−to range and the 'to' range curve is always drawn even if it is not equal to the step size

(ii) Note that the sign of radius and K values entered is ignored by VCURV. Instead the sign is calculated by the start and end gradients. Crest curves are positive. Sag curves are negative

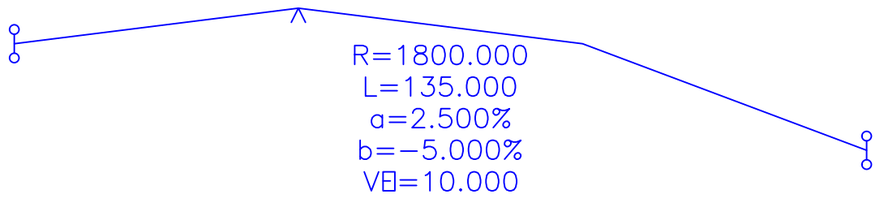
Range of multiple crest curves from R value of 600 to 2000 with 500 step size fitted to two lines used as references for start and end gradients



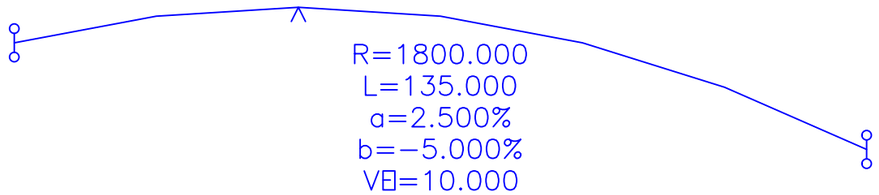
(iii) Note that curves can extend beyond ends of reference lines when fitted to reference lines

## VCURV Example 5: Horizontal step size

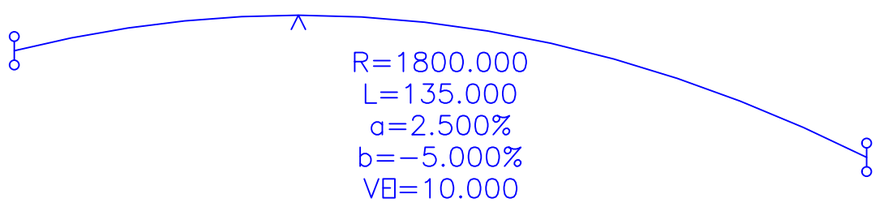
Crest curve created with maximum horizontal step size of 50, resulting in a non-smooth curve




Crest curve created with maximum horizontal step size of 25, resulting in a smoother curve than above



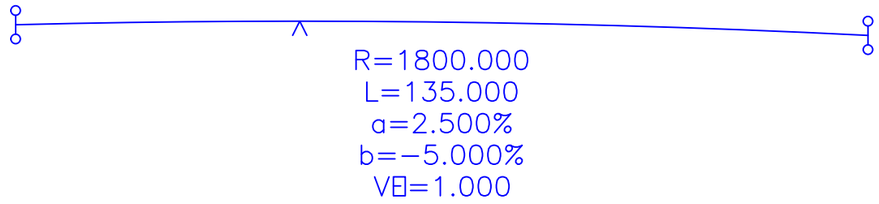

Crest curve created with maximum horizontal step size of 10, resulting in a smooth curve




Note that the horizontal step size drawn will be rounded down to fit the overall curve length and also to ensure the minimum or maximum level is drawn in the curve. This can result in slightly different steps sizes either side of the minimum or maximum level point

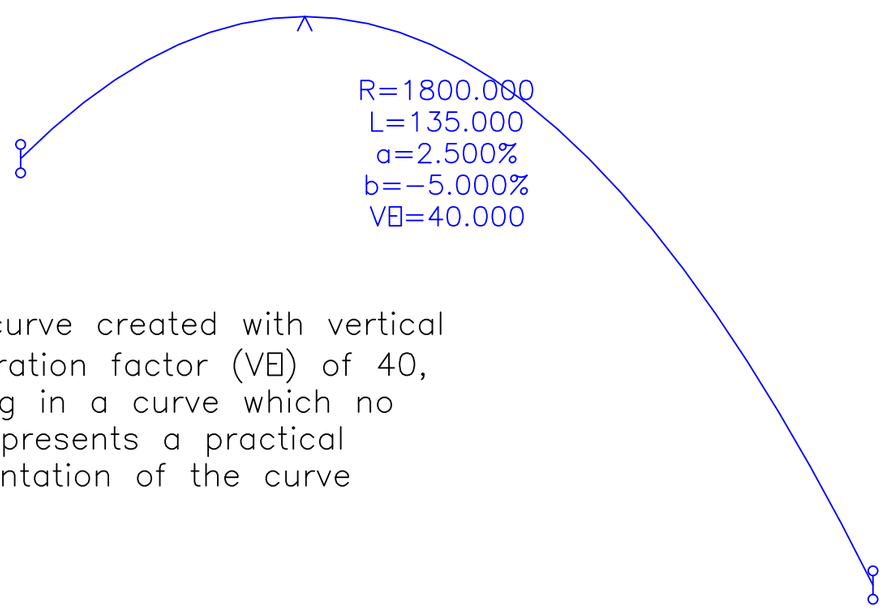
## VCURV Example 6: Vertical exaggeration

Crest curve created with vertical exaggeration factor (VE) of 1, resulting in an almost flat curve which can be hard to interpret for larger radii




Crest curve created with vertical exaggeration factor (VE) of 10, resulting in a curve which is easier to visualise




Crest curve created with vertical exaggeration factor (VE) of 40, resulting in a curve which no longer presents a practical representation of the curve