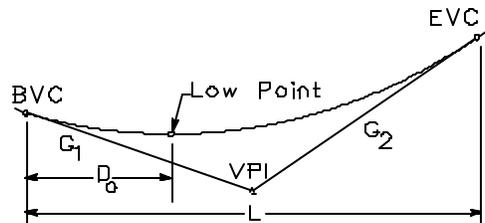


## Symmetrical Vertical Curve Equations



$$A = (G_2) - (G_1)$$

$$E = \frac{AL}{800}$$

$$E = \frac{1}{200} \frac{\text{Elev. BVC} + \text{Elev. EVC}}{2} - \text{Elev. VPI}$$

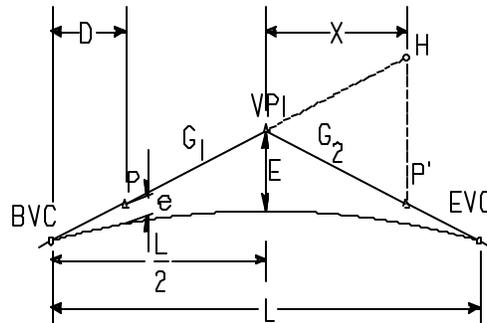
$$e = \frac{4ED^2}{L^2}$$

Notes: All equations use units of length (not stations or increments)

The variable **A** is expressed as an absolute in percent (%)

Example: If  $G_1 = +4\%$  and  $G_2 = -2\%$   
Then **A** = 6

## Symmetrical Vertical Curve Equations (cont.)



$$e = \frac{AD^2}{200L}$$

$$L_1 = \frac{2(AX + 200e + 20\sqrt{AXe + 100e^2})}{A}$$

$$D_0 = |G_1| \frac{L}{A}$$

$$X = \frac{100(\text{Elev}H - \text{Elev}P')}{A}$$

$$K = \frac{L}{A}$$