



GIVEN

SOLUTION

LEGEND

$\Delta_L, \Delta_S, T_S, R_S$

$$R_L = \frac{T_S \sin \Delta - R_S \text{Vers } \Delta}{\text{Vers } \Delta_L} + R_S$$

P. C. - Point of Curvature

$\Delta_L, \Delta_S, T_L, R_L$

$$R_S = \frac{T_L \sin \Delta - R_L \text{Vers } \Delta}{\text{Vers } \Delta_S} + R_L$$

P. C. C. - Point of Compound Curvature

$\Delta_L, \Delta_S, R_L, R_S$

$$T_L = \frac{R_L \text{Vers } \Delta - \sin \Delta}{(R_L - R_S) \text{Vers } \Delta_S}$$

P. T. - Point of Tangency

$\Delta_L, \Delta_S, T_S, R_L$

$$R_S = \frac{T_S \sin \Delta - R_L \text{Vers } \Delta_L}{\text{Vers } \Delta - \text{Vers } \Delta_L}$$

R_L - Radius of Major Curve

$\Delta_L, \Delta_S, T_L, R_S$

$$R_L = \frac{R_S \text{Vers } \Delta_S - T_S \sin \Delta}{\text{Vers } \Delta_S - \text{Vers } \Delta}$$

R_S - Radius of Minor Curve

$\Delta_L, \Delta_S, T_L, T_S$

$$R_S = \frac{T_S \sin \Delta - \tan \frac{1}{2} \Delta_L (T_L + T_S \cos \Delta)}{\text{Vers } \Delta - \sin \Delta \tan \frac{1}{2} \Delta_L}$$

T_L - Long Tangent

T_S - Short Tangent

Δ, T_L, T_S, R_S

$$\tan \frac{1}{2} \Delta_L = \frac{T_S \sin \Delta - R_S \text{Vers } \Delta}{T_L + T_S \cos \Delta - R_S \sin \Delta}$$

Δ - Total deflection Angle of the Compound Curve = $\Delta_L + \Delta_S$

Δ, T_L, T_S, R_L

$$\tan \frac{1}{2} \Delta_S = \frac{R_L \text{Vers } \Delta - T_L \sin \Delta}{R_L \sin \Delta - T_L \cos \Delta - T_S}$$

Δ_L - Deflection Angle of Major Curve

Δ, T_S, R_L, R_S

$$\cos \Delta_L = \frac{R_L - T_S \sin \Delta - R_S \cos \Delta}{R_L - R_S}$$

Δ_S - Deflection Angle of Minor Curve

Δ, T_L, R_L, R_S

$$\text{Vers } \Delta_S = \frac{R_L \text{Vers } \Delta - T_L \sin \Delta}{R_L - R_S}$$

Vers = $1 - \cos$

FIGURE C-7-5 COMPOUND CURVE COMPUTATIONS*

* Rev. 7/12