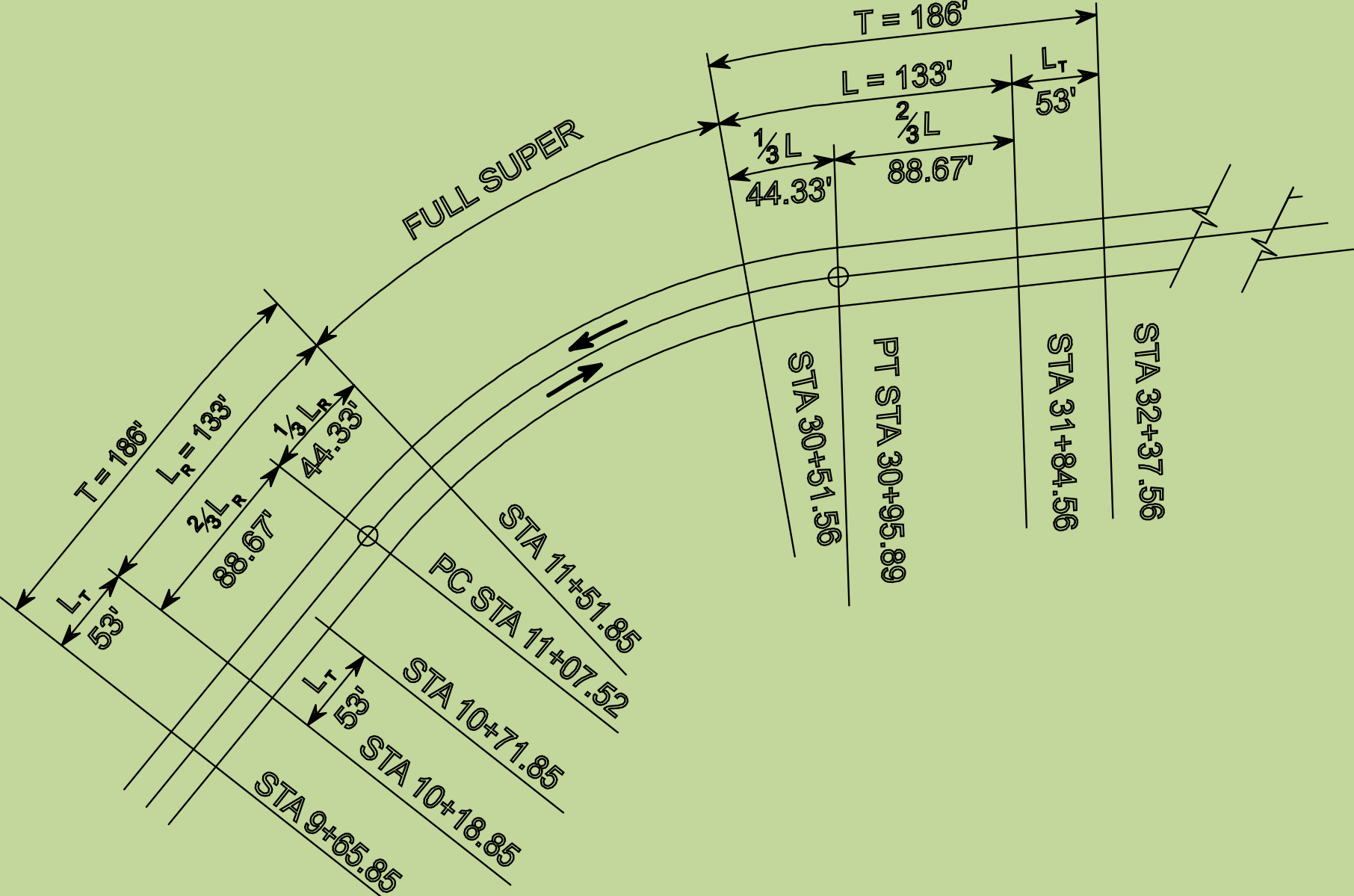


Example 3 (Solution)

Use the superelevation data tabulated above and curve data tabulated below to find the information required by parts a) through d).

CURVE DATA		
Description	R1	R2
Δ	45°-41'-11" =45.753°	41°-54'-0" =41.903°
Radius (R)	2490 ft	1640 ft
Tangent Length (T)	1050.61 ft	627.94 ft
Curve Length (L)	1988.37 ft	1199.41 ft
PC Station	11+07.52	34+89.34
PT Station	30+95.89	46+88.75

Example 3 (Solution)



Example 3 (Solution)

a) Station where tangent runout begins entering Curve R1.

This is a two-lane (non-spiralled) roadway. Full superelevation is reached at a point $\frac{1}{3} L_r$ after the PC of the curve. The Begin Tangent Runout is located a distance T before the beginning of full superelevation.

∴ Begin Tangent Runout STA.

$$\begin{aligned} &= PC\ STA. + \frac{1}{3} L_r - T \\ &= 11+07.52 + \frac{1}{3}(133) - 186 = \underline{\underline{9+65.85}} \end{aligned}$$

b) Station where cross slope removal is completed entering Curve R1.

As shown in Figure 8.5, the distance between the Begin Tangent Runout Station and the Cross Slope Removal station is equal to $2(L_t)$.

∴ Cross Slope Removal STA.

$$\begin{aligned} &= \text{BeginTangent Runout STA.} + 2(L_t) \\ &= 9+65.85 + 2(53) = \underline{\underline{10+71.85}} \end{aligned}$$

Example 3 (Solution)

- c) **Station where tangent runout ends prior entering Curve R2.** The station where tangent runout ends is equal to the station at the beginning of the superelevation runoff (L_r). This point is located a distance $2/3L_r$ before the PC for R2.

$$\begin{aligned}\therefore \text{End Tangent Runout STA.} &= PC \text{ STA.} - \frac{2}{3} L_r \\ &= 34+89.34 - \frac{2}{3} (160) = \underline{\underline{33+82.67}}\end{aligned}$$

- d) **Station where normal cross slope is reached exiting Curve R2.** The highway returns to NC at the end of the superelevation transition (T) for R2, which is located a distance $2/3L_r + L_t$ beyond the PT of the curve.

$$\begin{aligned}\therefore NC \text{ STA.} &= PT \text{ STA.} + \frac{2}{3} L_r + L_t \\ &= 46+88.75 + \frac{2}{3} (160) + 53 = \underline{\underline{48+48.42}}\end{aligned}$$

Example 3 (Solution)

