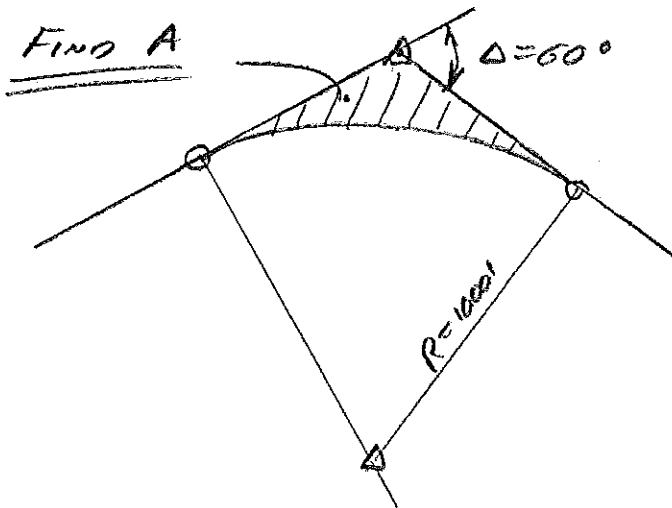




Title <i>CONST. GRAPHICS</i>		Sheet No. of
<i>HORIZ. CURVES</i>		<i>1 1</i>
By <i>NC</i>	<i>10129108</i>	Chk. <i>1 1</i>
		Job No. <i>CET-2030</i>

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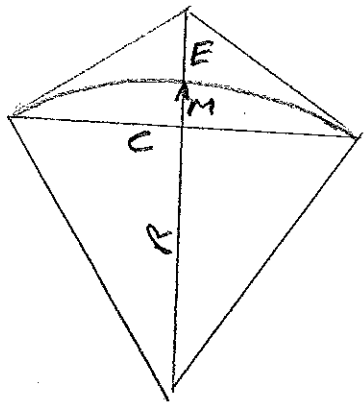


$$T = 1000 \tan \frac{60}{2} = 577.35'$$

$$M = 1000 \left(1 - \cos \frac{60}{2} \right) = 133.97'$$

$$C = 2 \cdot 577.35 \left(\cos \frac{60}{2} \right) = 1000'$$

$$E = 577.35 \left(\tan \frac{60}{4} \right) = 154.70$$



AREA OF SMALL Δ

$$\frac{1}{2} C \cdot (M+E) = \frac{1}{2} 1000 \cdot (133.97 + 154.70) = 144,335 \text{ SF}$$

AREA OF LARGE Δ

$$\frac{1}{2} C \cdot (R-M) = \frac{1}{2} 1000 (1000 - 133.97) = 433,015 \text{ SF}$$

AREA OF SECTOR

$$\pi R^2 \frac{\Delta}{360} = \pi (1000)^2 \frac{60}{360} = 523,598.78 \text{ SF}$$

AREA OF WEDGE

$$\text{Small } \Delta + \text{Large } \Delta - \text{SECTOR} = \underline{\underline{53,751.22 \text{ SF}}}$$



Title *CONSTR. GRAPHICS*
HORIZONTAL CURVES

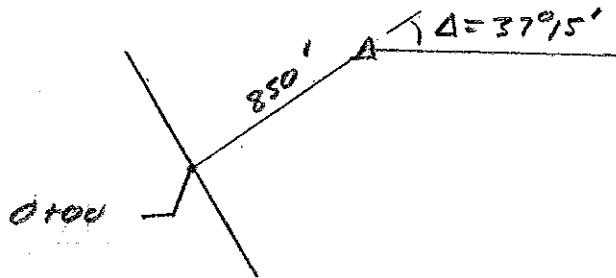
Sheet No. of

1 1

By *NK* 3116101 Chk. 1 1

Job No. *CST-2010*

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Using $P_c = 9^\circ$
Find: PC & PT STATIONS
M & C.

$$R = \frac{5729.58}{4} = 1432.395'$$

$$L = \frac{\pi R \Delta}{180} = \frac{\pi (1432.395) 37.25^\circ}{180} = 931.25'$$

$$T = R \tan \frac{\Delta}{2} = 1432.395 \tan \frac{37.25^\circ}{2} = 482.75'$$

$$PI \text{ STA} = 8+50$$

$$PC \text{ STA} = 8+50 - 482.75 = 3+67.25$$

$$PT \text{ STA} = 3+67.25 + 931.25 = 12+98.50$$

$$M = R \left(1 - \cos \frac{\Delta}{2}\right) = 1432.395 \left(1 - \cos \frac{37.25^\circ}{2}\right) = 75.02'$$

$$C = 2R \left(\sin \frac{\Delta}{2}\right) = 2(1432.395) \sin \frac{37.25^\circ}{2} = 919.94'$$



Title		CONSTN. GRAPHICS		Sheet No.		of	
		HORIZONTAL SIGHT DISTANCE		1		1	
By		NK 3116101		Chk.		1 1	
						Job No. CEF2030	

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TWO-LANE RURAL HIGHWAY.

10° CURVE SECTION. 11' LANES.

OBSTRUCTION INSIDE CURVE @ 24.5' FROM E

WHAT IS SSD?

WHAT IS PREFERRED DESIGN SPEED? (ODOT 201-1)

$$R = \frac{5729.58}{10} = 572.958' \text{ TO E}$$

$$R_s = 572.958' - \frac{11}{2} = 567.958'$$

$$M = 24.5' - \frac{11}{2} = 19'$$

$$SSD = \frac{R}{28.65} \left[\cos^{-1} \left(\frac{R-M}{R} \right) \right]$$

$$= \frac{567.958}{28.65} \left[\cos^{-1} \left(\frac{567.958 - 19}{567.958} \right) \right]$$

$$= 294.5'$$

DESIGN SPEED 39 MPH ODOT 201-1E