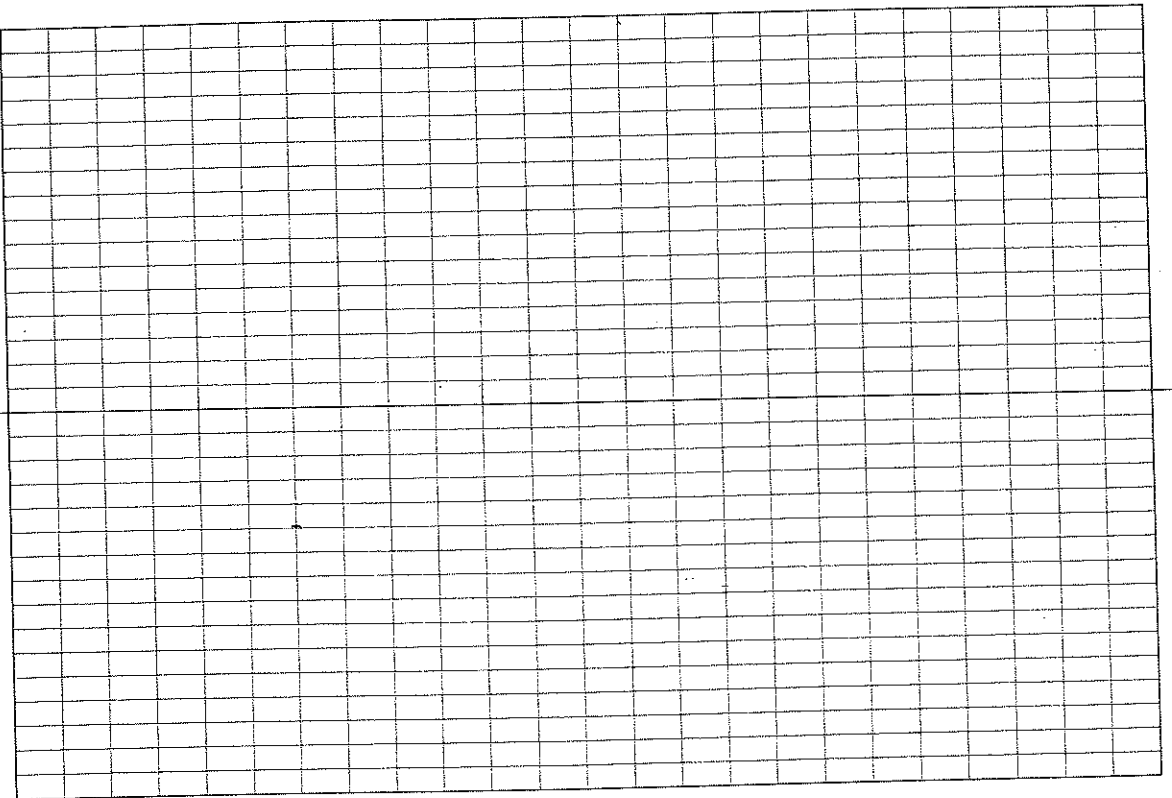
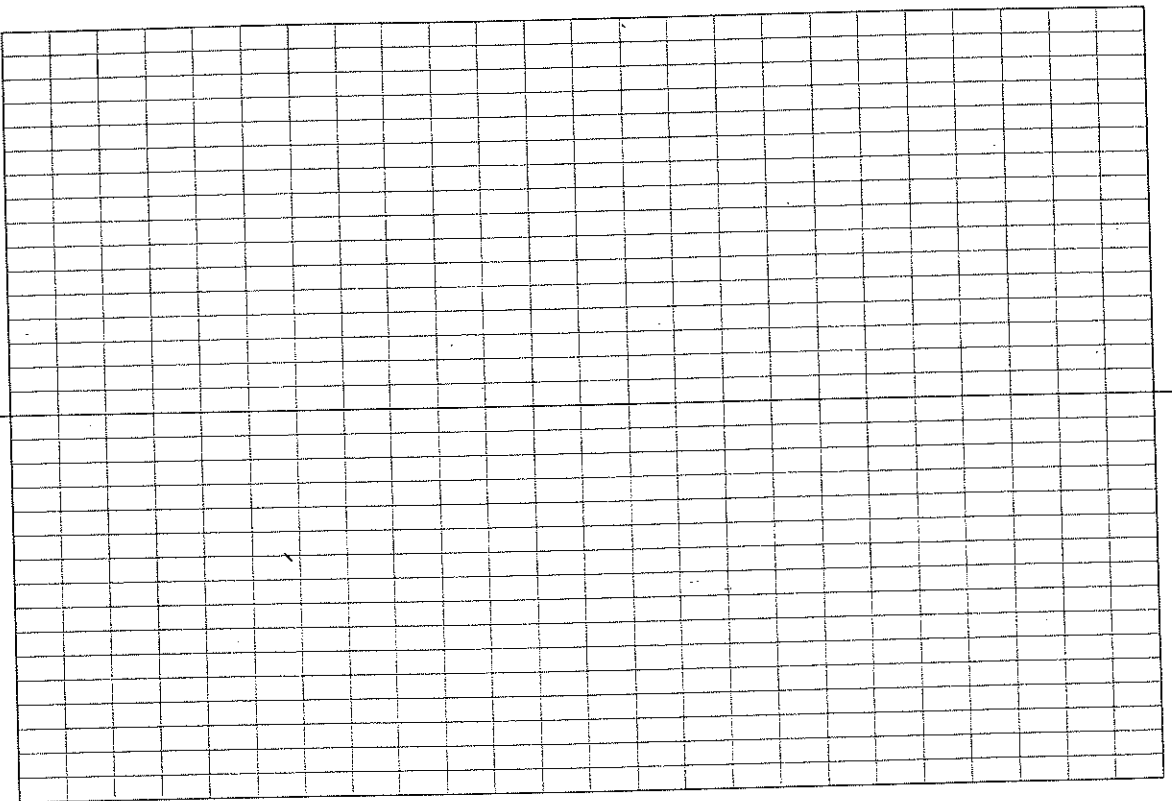


44 STA	SD	%	HD	BEG A+D	ELEV
19+86 <sub>6</sub>	262 <sub>5</sub>	-6	262 <sub>0</sub>		512 <sub>5</sub>
17+24 <sub>6</sub>					528 <sub>2</sub>
	247 <sub>3</sub>	-8	246 <sub>5</sub>		
14+78 <sub>1</sub>					547 <sub>9</sub>
	171 <sub>6</sub>	+7	171 <sub>2</sub>		
13+06 <sub>9</sub>					535 <sub>9</sub>
	225 <sub>6</sub>	+11	224 <sub>2</sub>		
10+82 <sub>2</sub>					511 <sub>3</sub>
	125 <sub>2</sub>	+9	125 <sub>2</sub>		
$\Delta$					
9+57 <sub>5</sub>				N47 <sup>30'</sup> E	500 <sub>0</sub>



*Rate in the Run.*

STA	SD	%	HD	BEG APP	ELEV
19+86 <sup>6</sup>	262 <sup>5</sup>	+6.1	262 <sup>0</sup>		512 <sup>5</sup>
17+24 <sup>6</sup>	247 <sup>3</sup>	+8.2	246 <sup>5</sup>		528 <sup>2</sup>
14+78 <sup>1</sup>	171 <sup>6</sup>	+7	171 <sup>2</sup>		547 <sup>9</sup>
13+06 <sup>9</sup>	225 <sup>6</sup>	+11	224 <sup>2</sup>		535 <sup>9</sup>
10+82 <sup>2</sup>					511 <sup>3</sup>
	125 <sup>2</sup>	+9	125 <sup>2</sup>		
△					
9+57 <sup>5</sup>				N47°30'E	500 <sup>0</sup>



Note in the Return.

EXAMPLE VERT  
CURVE

$$VPI = 14+78 \frac{1}{2}$$

$$g_1 = 9.2\% \quad (47^{\frac{9}{10}} / 520.6)$$

$$g_2 = -7.0\% \quad (35^{\frac{4}{10}} / 508.5)$$

$$K = 25$$

$$RATE = 2a = \frac{100}{2K} = \left(\frac{50}{K}\right)^2 = 4\%$$

$$r = \frac{100(g_2 - g_1)}{L} =$$

$$\frac{g_2 - g_1}{L} = \frac{(-7 - 9.2)}{L} = 4$$

$$= 4.05 \text{ STATIONS}$$

$$L = 405'$$

$$BVC = VPI - L/2 = 14+78 \frac{1}{2} - 202.5 = 12+75 \frac{6}{10}$$

$$EVC = VPI + L/2 = 14+78 \frac{1}{2} + 202.5 = 16+80 \frac{6}{10}$$

$$ELEV_{BVC} = 547.9 - .092(202.5) = 529.3$$

$$ELEV_{EVC} = 547.9 - .07(202.5) = 533.7$$

AT 2% K = 50 RATE = 2%

$$L = \frac{(-7 - 9.2)}{L} = 2$$

$$L = 8.1 = 810'$$

CHANGE ALL SLOPES TO POSITIVE

$$g_1 = +9.2\%$$

$$VPI = 14 + 78'$$

$$g_2 = +1.5\%$$

AT 4% RATE

$$L = \frac{g_2 - g_1}{R} = \frac{1.5 - 9.2}{4} = 1.925$$
$$= 192.5'$$

$$BVC = 14 + 78' - 192.5/2 = 1381'$$

$$EVC = 14 + 78' + 192.5/2 = 15 + 74'$$

$$ELEV_{BVC} = 547.9 - .092(192.5/2) = 539.0$$

$$ELEV_{EVC} = 547.9 + .015(192.5/2) = 549.3$$