

Level + Slope  
Notes

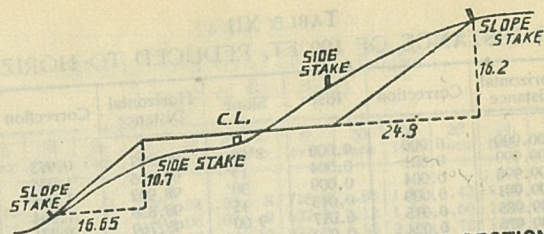
T. 19(3)

TRANSIT BOOK

Road  
Level & Slope  
Notes

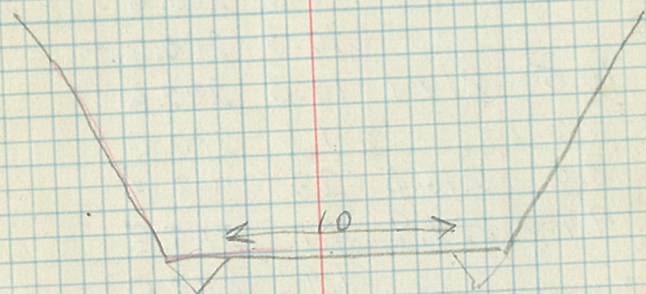
CC

68



**DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING.**  
SLOPE 1½ TO 1. ROADWAY OF ANY WIDTH.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0.00	0.15	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	0
1	1.50	1.65	1.80	1.95	2.10	2.25	2.40	2.55	2.70	2.85	1
2	3.00	3.15	3.30	3.45	3.60	3.75	3.90	4.05	4.20	4.35	2
3	4.50	4.65	4.80	4.95	5.10	5.25	5.40	5.55	5.70	5.85	3
4	6.00	6.15	6.30	6.45	6.60	6.75	6.90	7.05	7.20	7.35	4
5	7.50	7.65	7.80	7.95	8.10	8.25	8.40	8.55	8.70	8.85	5
6	9.00	9.15	9.30	9.45	9.60	9.75	9.90	10.05	10.20	10.35	6
7	10.50	10.65	10.80	10.95	11.10	11.25	11.40	11.55	11.70	11.85	7
8	12.00	12.15	12.30	12.45	12.60	12.75	12.90	13.05	13.20	13.35	8
9	13.50	13.65	13.80	13.95	14.10	14.25	14.40	14.55	14.70	14.85	9
10	15.00	15.15	15.30	15.45	15.60	15.75	15.90	16.05	16.20	16.35	10
11	16.50	16.65	16.80	16.95	17.10	17.25	17.40	17.55	17.70	17.85	11
12	18.00	18.15	18.30	18.45	18.60	18.75	18.90	19.05	19.20	19.35	12
13	19.50	19.65	19.80	19.95	20.10	20.25	20.40	20.55	20.70	20.85	13
14	21.00	21.15	21.30	21.45	21.60	21.75	21.90	22.05	22.20	22.35	14
15	22.50	22.65	22.80	22.95	23.10	23.25	23.40	23.55	23.70	23.85	15
16	24.00	24.15	24.30	24.45	24.60	24.75	24.90	25.05	25.20	25.35	16
17	25.50	25.65	25.80	25.95	26.10	26.25	26.40	26.55	26.70	26.85	17
18	27.00	27.15	27.30	27.45	27.60	27.75	27.90	28.05	28.20	28.35	18
19	28.50	28.65	28.80	28.95	29.10	29.25	29.40	29.55	29.70	29.85	19
20	30.00	30.15	30.30	30.45	30.60	30.75	30.90	31.05	31.20	31.35	20
21	31.50	31.65	31.80	31.95	32.10	32.25	32.40	32.55	32.70	32.85	21
22	33.00	33.15	33.30	33.45	33.60	33.75	33.90	34.05	34.20	34.35	22
23	34.50	34.65	34.80	34.95	35.10	35.25	35.40	35.55	35.70	35.85	23
24	36.00	36.15	36.30	36.45	36.60	36.75	36.90	37.05	37.20	37.35	24
25	37.50	37.65	37.80	37.95	38.10	38.25	38.40	38.55	38.70	38.85	25
26	39.00	39.15	39.30	39.45	39.60	39.75	39.90	40.05	40.20	40.35	26
27	40.50	40.65	40.80	40.95	41.10	41.25	41.40	41.55	41.70	41.85	27
28	42.00	42.15	42.30	42.45	42.60	42.75	42.90	43.05	43.20	43.35	28
29	43.50	43.65	43.80	43.95	44.10	44.25	44.40	44.55	44.70	44.85	29
30	45.00	45.15	45.30	45.45	45.60	45.75	45.90	46.05	46.20	46.35	30
31	46.50	46.65	46.80	46.95	47.10	47.25	47.40	47.55	47.70	47.85	31
32	48.00	48.15	48.30	48.45	48.60	48.75	48.90	49.05	49.20	49.35	32
33	49.50	49.65	49.80	49.95	50.10	50.25	50.40	50.55	50.70	50.85	33
34	51.00	51.15	51.30	51.45	51.60	51.75	51.90	52.05	52.20	52.35	34
35	52.50	52.65	52.80	52.95	53.10	53.25	53.40	53.55	53.70	53.85	35
36	54.00	54.15	54.30	54.45	54.60	54.75	54.90	55.05	55.20	55.35	36
37	55.50	55.65	55.80	55.95	56.10	56.25	56.40	56.55	56.70	56.85	37
38	57.00	57.15	57.30	57.45	57.60	57.75	57.90	58.05	58.20	58.35	38
39	58.50	58.65	58.80	58.95	59.10	59.25	59.40	59.55	59.70	59.85	39
40	60.00	60.15	60.30	60.45	60.60	60.75	60.90	61.05	61.20	61.35	40
41	61.50	61.65	61.80	61.95	62.10	62.25	62.40	62.55	62.70	62.85	41
42	63.00	63.15	63.30	63.45	63.60	63.75	63.90	64.05	64.20	64.35	42
43	64.50	64.65	64.80	64.95	65.10	65.25	65.40	65.55	65.70	65.85	43
44	66.00	66.15	66.30	66.45	66.60	66.75	66.90	67.05	67.20	67.35	44
45	67.50	67.65	67.80	67.95	68.10	68.25	68.40	68.55	68.70	68.85	45
46	69.00	69.15	69.30	69.45	69.60	69.75	69.90	70.05	70.20	70.35	46
47	70.50	70.65	70.80	70.95	71.10	71.25	71.40	71.55	71.70	71.85	47
48	72.00	72.15	72.30	72.45	72.60	72.75	72.90	73.05	73.20	73.35	48
49	73.50	73.65	73.80	73.95	74.10	74.25	74.40	74.55	74.70	74.85	49
50	75.00	75.15	75.30	75.45	75.60	75.75	75.90	76.05	76.20	76.35	50



Level Notes T.T. 4193

Sta.	BS.	HI	FS	Elev.	Ties+Curve
0+00	5.5	205.5	—	200(as.)	
R30			3.5	202.0	
L20			4.2	201.3	
1+00			4.1	201.4	
R20			4.7	200.8	
L20	6.7	210.9	1.3	204.2	
2+00			10.3	200.6	
R20			10.3	200.6	
L20	10.5	211.1	10.3	200.6	
3+00			1.1	210.0	
L20	8.0	216.3	2.8	208.3	
R30	9.7	224.9	1.1	215.2	
4+00			1.9	223.0	
R15			0.6	224.3	
L20	10.0	229.3	5.6	219.3	
4+78			3.6	225.7	P.I.
R20			2.9	226.4	
L30			6.5	222.8	
6+00			6.1	223.2	
R30			7.3	222.0	
L20	6.1	229.6	5.8	223.5	
7+00			5.9	223.7	
R30			10.4	219.2	
L20			5.2	224.4	

56.5

32.1

G.R. Heath

7/26/37

Drainage

Soil  
Clay Loam

Cover types  
Grass

Culvert

$$\begin{aligned} \text{First El.} &= 200.0 \\ \Sigma \text{ I.S.} &= \underline{56.5} \\ &= 256.5 \end{aligned}$$

$$\begin{aligned} \Sigma \text{ FS} &= \underline{32.1} \\ \text{Last El.} &= 224.4 \checkmark \end{aligned}$$

Sta	BS	HI	FS	Elev.	Ties + Curve
8+00	10.1	229.6	10.1	219.5	
R30			10.1	219.5	
L30			8.0	201.6	
9+00	5.3	233.9	1.0 ✓	228.6	
R20			6.2	227.7	
L20			4.5	229.4	
9+50	7.0	239.3	1.6 ✓	232.3	
10+00			4.2	235.1	
L20			1.7	237.6	
R20			4.7	234.6	
10+50	6.9	244.7	1.5 ✓	237.8	
11+00			4.9	239.8	
R20			3.3	241.4	
L15			5.5	239.2	
11+61	4.3	244.8	4.2 ✓	240.5	P.C. ♀
R15			3.8	241.0	
L20			5.8	239.0	
12+60			8.9	235.9	P.I.
R15			9.0	235.8	
L20	2.6	238.6	8.8 ✓	236.0	
14+00			5.9 ✓	232.7 ✓	
	36.2		23.0		

Drainage

Soil

Cover type

Brush + Oak + Birch  
saplings.

Culvert

old road

First Elev. 219.5

Σ BS. 36.2

255.7

Σ FS. 23.0

Last Elev. 232.7 ✓

Sta	BS	HI	FS	Elev.	Ties + Curve	Drainage	Soil	Cover Type
14+00	8.3	241.0	—	232.7			Sandy Clay	Brush + Oak + Birch Saplings.
R20			6.9	234.1				
L20			9.8	231.2				
15+00			2.8	238.2				
R20			1.2	239.8				
L10	7.8	246.7	2.1 ✓	238.9				
16+00			5.2	241.5				
R20			3.9	242.8		Culvert		
L20			4.2	242.5				
17+00	6.0	248.2	4.5 ✓	242.2				
R20			5.6	242.6				
L30			6.9	241.3				
18+44			3.6	244.6	P.I.			
R20			5.3	242.9				
L15	2.1	247.2	3.1 ✓	245.1				
19+33			13.0	234.2	P.T.	Culvert		
R20			12.3	234.9				
L20			12.0	235.2				
19+59			9.7 ✓	237.5	End of Survey Iron Pipe NE Cor. Tower Lot			
R20			9.2	238.0				
L20			10.7	236.5				
	24.2		19.7					

$$\text{First Elev} = 232.7$$

$$\Sigma \text{BS} = 24.2$$

$$256.9$$

$$\Sigma \text{FS} = 19.7$$

$$237.5 \checkmark$$

Level Notes T.T. 419 N					Drainage	Soil	Type
Sta	B.S.	HI	FS	Elev.	Ties + Curve		
0+00	5.9	205.9	—	200.0			
19+70			5.7	200.2	PI - 115' N 85° 55' E from 1/4 Cor. S. 20 21	Sandy Clay	Grass
L20			4.7	201.2			
R20			4.5	201.4			
20+62	3.6	200.4	9.1	196.8	P.T.	Sandy Loam	Old Twp. road
21+00			5.3	195.1			
L20			6.7	193.7			
R15			3.1	197.3			
22+00	0.5	190.1	10.8	189.6			
R15			0.1	190.0			
L15			1.9	188.2			
23+00			4.1	186.0			
R15			2.5	187.6			
L20			6.7	183.4			
24+00			7.9	182.2			
R20			8.6	181.5			
L15			9.5	180.6			
25+00	4.4	181.8	12.7	177.4			
R15			4.9	176.9			
L15			5.6	176.2			
25+75			4.6	177.2	P.C.		
26+30			6.5	175.3	P.I.		
R15			6.6	175.2			
L20			2.6	179.2			



Sta	B.S.	HI	FS	Elev.	Curve + Ties
		181.8			
26+85	5.8	176.3	11.3	170.5	P.T.
27+00	.8	169.7	7.4	168.9	
L20			3.1	173.2	
R15			5.9	170.4	
T.P.1	.3	160.3	9.7	160.0	
28+00			4.4	155.9	
L15			4.2	156.1	
R15			4.3	156.0	
T.P.2	2.6	151.8	11.1	149.2	
29+00			7.6	144.2	
R15			10.0	141.8	
L15			8.1	143.7	
T.P.3	0.2	140.4	11.6	140.2	
30+00			5.5	134.9	
R15			6.2	134.2	
L20			7.5	132.9	
30+70	5.5	134.7	11.2	129.2	PI
L15			1.2	133.5	
R15			6.9	127.8	
31+03	1.4	126.2	9.9	124.8	PT
31+80			9.2	117.0	PI
R20			9.7	116.5	
L20			11.2	115.0	

Drainage - Soil

Sandy  
loam

Type

Old Twp. road

Sta	Slope stake		Note-T.T. 419(S)		
	B.S.	H.I.	F.S.	Elev.	Grade
0+00				200	200.0
1+00	4.8	206.2		201.4	202.0
2+00			6.2	200.0	204.0
3+00	5.9	215.9		210.0	212.0
3+50			7.0	219.4	216.0
4+00	3.4	226.4		223.0	218.4
4+78	5.1	230.8		225.7	222.0
6+00	4.4	227.6		223.2	222.0
7+00	3.8	227.5		223.7	222.0
8+00	4.5	224.0		219.5	222.0
9+00	4.6	233.2		228.6	228.0
10+00	4.4	239.5		235.1	234.0
11+00	5.3	245.1		239.8	237.0
11+61	4.8	245.3		240.5	238.8
12+60	5.2	241.1		235.9	236.8
14+00	4.4			232.7	236.4
15+00	4.7	242.9		238.2	238.4
16+00	4.8	246.3		241.5	240.4
17+00	4.7	246.9		242.2	242.4
18+44	5.2	249.8		244.6	242.4
19+33	6.4	240.6		234.2	239.6
19+59	2.9	240.4		237.5	240.4

Toe	Left		Shoulder	Right	
	Shoulder	☉		Shoulder	Toe
		0 <sup>0</sup>			
$\frac{C0-9}{11.8}$	$\frac{C0^3}{7}$	F0 <sup>6</sup>	$\frac{F0^8}{7}$	$\frac{F0^8}{9.4}$	
		F4 <sup>0</sup>	$\frac{F3.9}{7.5}$		
		F2 <sup>0</sup>			
		C3 <sup>4</sup>			
		C4 <sup>6</sup>			
		C3 <sup>7</sup>			
		C1 <sup>2</sup>			
		C1 <sup>7</sup>			
		F2 <sup>5</sup>			
		C0 <sup>6</sup>			
		C1 <sup>1</sup>			
		C2 <sup>8</sup>			
		C1 <sup>7</sup>			
		F0 <sup>9</sup>			
		F3 <sup>7</sup>			
		F0 <sup>2</sup>			
		C1 <sup>1</sup>			
		F0 <sup>2</sup>			
		C2 <sup>2</sup>			
		F5 <sup>4</sup>			
		F2 <sup>9</sup>			



Sta	Slopes	Stakes	Notes	T.T. 419(S)	
	BS	HI	FS	Elev.	Grade
19+70				200.0	200.0
21+00	5.0			195.1	194.3
22+00	4.6			189.6	190.0
23+00	4.8			186.0	185.6
24+00	4.5			182.2	181.2
25+00	5.1			177.4	177.6
25+75PI	4.6			177.2	174.4
26+30PI	5.1			175.3	172
27+00	6.1			168.9	165
28+00	4.5			155.9	155
29+00	4.1			144.2	145
30+00	4.4			134.9	135
30+70PI	7.6			129.2	128
31+80PI				117	117

0°  
 C0<sup>8</sup>  
 F0<sup>4</sup>  
 C0<sup>1</sup>  
 C1<sup>0</sup>  
 F0<sup>2</sup>  
 C2<sup>8</sup>  
 C3<sup>3</sup>  
 C3<sup>2</sup>  
 C0<sup>2</sup>  
 F0<sup>8</sup>  
 F0<sup>1</sup>  
 C1<sup>2</sup>  
 0°

1.2  
4

For Remer - to  
use in construction  
of south portion of  
T.T. 419;

1. Level & Slope notes
2. Traverse map
3. MRI
4. Profile

G.R.H.

8/7/37

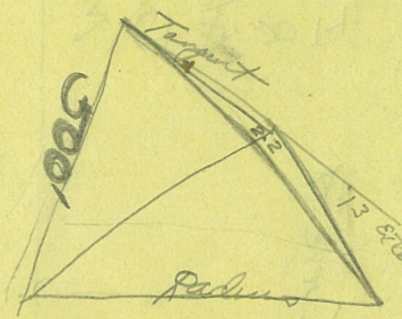
Curve #1

$130^{\circ}38'$

Radius 500' - 3.6'

External - 58'

Middle  
Ordinate



Curve #2

$\angle 270^{\circ}45'$

Radius - 400'

External - 12'

Tangent - ~~99'~~

Middle  
Ordinate

Chord = 93.5  
46.7  
M.O. = 2.8

6.98  
5.60  
1.38

Curve #3

$\angle 250^{\circ}15'$

Radius - 400'

External - 10'

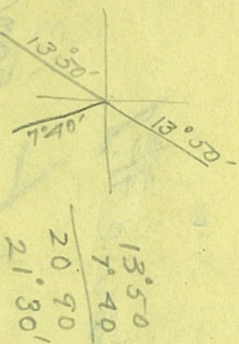
Tangent - 89'

Middle  
Ordinate

Chord - 88  
- 44  
M.O. = 2.4

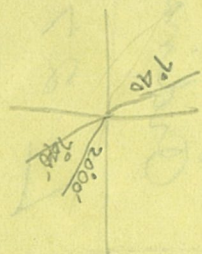
Curve #4

I = 21° 30'  
R = 500  
External = 9'  
Tangent = 92' - 46  
M.O. = 2'



Curve #5

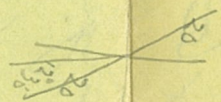
I = 12° 20'  
R = 500  
External = 3'  
Tangent = 55' - 27.5'  
M.O. = .8



20  
19° 60'  
+ 7° 40'  
-----  
12° 20'

Curve #6

I = 7° 30'  
R = 500  
External = 1.2'  
Tangent = 33'  
M.O. = None needed



19° 60'  
12° 30'  
-----  
7° 30'

30 x 10  
33  
-----  
3

2630  
55  
-----  
2685

2630  
55  
-----  
2575