Levels Burton-Clarideon
Resurfacing
Burton Twp.

DIETZGEN
TRADE MARK

ENGINEERS'
LEVEL BOOK
No. 410

EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

Distances from Center of Roadway for Cross-Sectioning
Roadway 16 feet wide. Side Slopes 1 on 1.
For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	0
1	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	1
2	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	2
3	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	3
4	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	4
5	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	5
6	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	6
7	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	7
8	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	8
9	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	9
10	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	10
11	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	11
12	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	12
13	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	13
14	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	14
15	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	15
16	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	16
17	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	17
18	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	18
19	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	19
20	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	20
21	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	21
22	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	22
23	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	23
24	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	24
25	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	25
26	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	26
27	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	27
28	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	28
29	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	29
30	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	30
31	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	31
32	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	32
33	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	33
34	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	34
35	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	35
36	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	36
37	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	37
38	46.0	46.1	46.2	46.3	46.4	46.5	46.6	46.7	46.8	46.9	38
39	47.0	47.1	47.2	47.3	47.4	47.5	47.6	47.7	47.8	47.9	39
40	48.0	48.1	48.2	48.3	48.4	48.5	48.6	48.7	48.8	48.9	40

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 30.6. For same slopes but other widths of roadbed, correct above figures by one-half difference in width of roadbed; thus in example above, for 20 ft. roadbed distance will be 30.6 + (20—16) ÷ 2 or 2 ft. added to 30.6 = 32.6. For slopes of 1 on 1½ see inside of back cover.

Level & Burton Clarion
Resurface and Widening
Sec A + B
Sta 0+00 Burton Village
Line

Book 16

CK #3 CLARIDON - TROY RD. SEC. B-C
D & E (pt.) Levels 1-15

CLARIDON - TROY RD. SEC. E (pt)
& F Levels 24-38

Culverts & slopes (all above sections) 39-53

Cross Sections Sec. A 1927(?)

Sta	BS	HI	FS	Elev.
BM #21				1283.75 BM
	2-19	1285.94	1281.1	
10+00	25 19 15-16 12 1 2 9 10 15 17 19 23 25 4.2 4.2 5.8 5.2 4.8 4.8 4.9 4.6 5.6 5.4 3.8 3.7			
		1279.6		
9+00	25 19 15 16 12 1 2 9 12 14-15 20 25 5.3 5.8 7.3 6.8 6.3 6.3 6.5 6.4 7.1 6.7 5.7			
	25	1277.8		
8+00	21 17 14 13 1 2 9 12 15-16 21 25 6.5 7.3 8.4 8.7 8.0 8.1 8.2 8.0 8.9 7.2 7.2			
		1276.2		
7+00	25 18 14 13 1 2 9 10 14-16 19 25 8.4 8.6 10.8 10.4 9.7 9.7 9.8 9.5 11.2 9.2 7.8			
		11.83	1274.11	
	2-14	1276.25	1274.2	
6+00	25 18 14 12 1 2 9 11 16 19 25 1.3 1.2 3.4 2.6 2.0 2.1 2.1 1.7 3.8 2.7 1.7			
		1272.4		
5+00	25 19 14-16 12 1 2 9 14 25 9.2 4.1 4.7 4.1 3.7 3.9 3.9 3.8 3.6			
		1271.5		
4+00	25 19 17 14 12 1 2 9 10 11 25 4.2 4.6 5.6 4.6 4.7 4.8 4.5 4.6 4.6 4.4			

1

Spike SW root Maple 25' Rt of ℄ Sta 10+30

Sta	BS	HI	FS	Elev
		1276.25		
		1271.5		
3+14			FL 8.0	
			HI 4.3	
			℄ 4.8	
			Hdwl 3.7	
			FL 8.1	

1271.6

	23/60	24	17	19 13	11	10	1	℄	7	10	18	19	21
3+00		6.4	7.6	4.6	9.7	4.5	4.5	4.7	4.9	4.6	5.2	5.4	4.9

BM #22 (new) 1271.5 5.54 1270.71

	25	19	16 17	13	1	℄	7	11	18	21	
2+00	6.1	5.6	6.7	5.0	4.7	4.5	4.5	4.6	5.0	4.6	

1271.9

	25	19	14 17	13	1	℄	9	10	16	17	21
1+00	4.8	4.4	6.0	4.5	4.3	4.4	4.4	4.0	4.4	4.7	4.3

1272.9

	25	12	11	1	℄	7	11	16	25
0+00	3.5	3.4	3.6	3.4	3.4	3.6	3.1	2.9	2.9

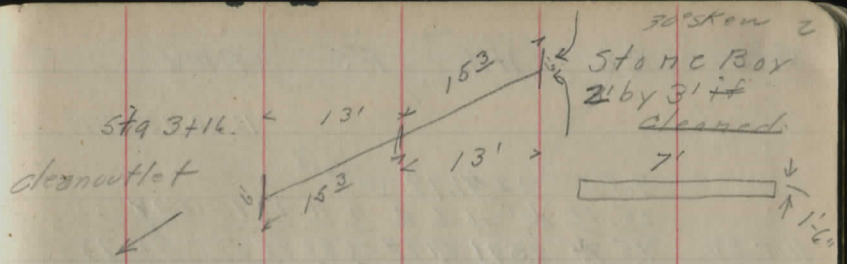
1273.1

	C					C
	12	12	℄	11	12	12
0+00 Rt.	3.4	4.0	3.2	3.4	3.8	3.3

1273.7

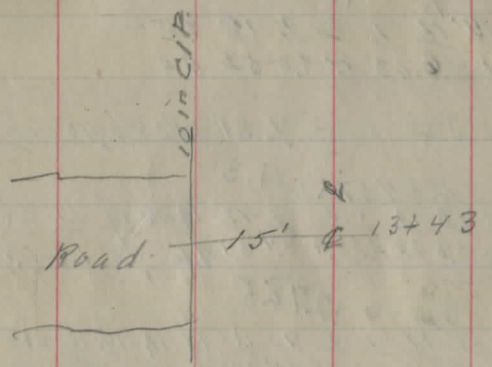
	℄	
0-50	2.6	
	℄	1274.4
0-100	1.9	
	℄	1275.0
0-150	1.3	
	℄	1275.7
0-200	0.6	

Raise 1 2" or 3"



(new)
BM SE Root Elm 20' Lt Sta 3+25

Sta	BS	HI	FS	Elev
BM 21				1283.75 BM
	7.43	1291.18		1282.8
11+00	25 18 ~~14~~ 15 13 1 2 9 11 ~~+17~~ ~~18~~ 25 7.5 7.5 ~~9.3~~ 9.1 8.4 8.4 8.6 8.2 8.2 ~~8.2~~ 7.3			
				1284.1
12+00	~~25~~ ~~18~~ ~~17~~ ~~14~~ 15-16 12 1 2 9 10 ~~18~~ ~~24~~ Elevations 6.0 6.6 ~~6.5~~ 8.4 7.5 6.9 7.1 7.0 6.9 ~~6.4~~ 5.2			
				1285.7
13+00	25 19 ~~15~~ 16 12 1 2 10 11 ~~14~~ 15 19 25 5.1 5.2 ~~7.1~~ 6.1 5.4 5.5 5.3 5.2 6.9 6.6 5.2 4.8			
				1286.0
14+00	25 ~~20~~ ~~18~~ 15 16 12 1 2 9 10 15 20 23 25 5.0 5.1 4.4 5.3 5.1 5.2 5.2 4.9 ~~7.0~~ 6.7 5.5 5.5			
				1286.1
15+00	25 ~~20~~ ~~17~~ 16 15 16 12 2 2 11 15 19 ~~19~~ ~~22~~ 25 5.2 5.3 6.6 5.7 5.1 5.2 ~~9.1~~ 7.0 6.6 6.4 5.4			
				1286.6
16+00	25 ~~20~~ 16 17 12 2 2 11 15 19 23 25 5.0 ~~5.4~~ 6.2 ~~4.9~~ 4.6 4.7 4.5 6.2 6.6 5.7			



Sta	BS	HI	FS	Elev
			4.60	1286.58
	4.13	1290.71		1286.7
17+00	25 20 15 12 1 2 7 11 17 14 19 23 – 25 3.6 3.2 5.3 4.3 3.9 4.0 4.2 3.8 4.3 5.8 5.5 4.2			
		1286.5		
18+00	25 18 10 1 2 9 11 12 15 16 17 20 – 25 2.8 3.2 4.6 4.1 4.2 4.5 4.2 4.6 5.5 5.5 3.2			
		1284.5		
19+00	25 19 15 14 13 1 2 9 10 20 – 6.1 6.3 7.1 6.6 6.3 6.2 6.3 6.3 4.4			
BM #20			7.31	1283.40
	1.27	1284.67		1281.3
20+00	25 19 15 13 11 1 2 9 12 14-16 18 21 25 1.0 2.0 3.0 3.5 3.6 3.3 3.4 3.4 3.1 4.6 3.5 1.3 1.3			
		1278.5		
21+00	25 21 18 14-15 17 1 2 9 11 13 14-15 21 25 3.2 3.2 4.6 6.7 7.0 6.2 6.2 6.4 6.2 8.1 7.3 6.1 4.0			
		1274.6		
22+00	25 23 18 14-15 13 9 2 9 11 15-16 22 25 11.4 10.4 10.4 10.1 10.2 10.0 11.3 8.3 8.3			
			11.95	1272.72
	0.10	1272.82		

could not find 4/55

Spike in E Root Maple 25' Lt Sta 17+80

1272.82

Sta	BS	HI	FS	Elev
				1271.2
23+00	15 23 18 10 1 2 9 11 14-18 21 25 0.9 0.7 3.9 2.3 1.4 1.6 1.5 1.4 2.8 1.7 1.0			
				1268.2
24+00	25 22 15 10 1 2 9 11 15-19 21 25 4.5 4.6 5.3 4.2 4.6 4.6 4.6 4.6 6.1 4.8 4.4			
				1265.6
25+00	25 22 16 13 10 2 9 11 14-16 22-25 6.9 6.8 8.7 7.4 7.8 7.3 7.2 7.1 8.5 7.0			
				1263.4
26+00	25 23 18 11-14 1 2 9 12 15-16 23 26 8.5 8.3 10.2 9.5 9.4 9.4 9.4 11.0 8.5			
				1260.66
27+00	0.69 1261.35 1260.0 22-25 16 14-10 2 9 11 15-17 -0.4 -0.5 -0.4 2.6 1.9 1.4 1.5 1.2 2.3 2.1 2.8			
				1257.2
28+00	22-25 16 14-10 2 9 11-12 14-16 19 21-26 3.5 5.7 4.9 4.2 4.2 4.0 5.4 8.1 2.7			
				1254.4
29+00	23-25 16 13-10 2 9 11-12 15-16 20 25 6.0 8.3 7.5 7.0 7.1 6.9 7.4 6.0 6.7			

Sta	BS	HI	FS	Elev
		1261.35		

1250.8

30+00: 25/7.8 23/7.9 17-18/12.1 —10/11.8 ℄/10.6 9-11/10.7 13-14/11.7 18-25/8.8

Sta	BS	HI	FS	Elev
			12.31	1249.04
	1.08	1250.12		

1247.7

31+00: 25—14/1.0 16/4.2 20 17 19/— 9/3.3 ℄/2.4 9/2.6 11/2.8 14-25/3.9 19—25/1.4

1244.6

32+00: 25/4.0 21/6.0 17-19/7.2 14—9/6.2 ℄/5.5 9/5.7 11/5.7 14-16/7.7 19-25/4.8

1240.9

33+00: 23/8.0 7.8 19.6/9.4 16-17/11.0 14/9.9 9/9.2 ℄/9.2 9/9.0 —12/— 13-16/10.4 21-25/6.9

Sta	BS	HI	FS	Elev
			12.32	1237.80
	3.02			
BM#18			6.74	1234.06 1234.12
				1234.2
	2.39	1236.35.2		

1236.14

34+00: 23-25/— -1.9 18/1.0 16-17/2.0 14/— 10/1.1 ℄/0.38 9/0.4 11/1.4 13-15/1.3 —/—.0 19.5/-1.9 —/-0.9 22/-3.9

6

Probably destroyed 4/35

BM Spike W root Oak 25' Rt of ℄ Sta 35+00

1236.52

Sta | BS | HI 1231.98 | FS | Elev

35+00 — 26/6.0, 22-18/5.9, 16/6.8, 15 13/5.2, ℄/[illegible], 4/4.5, 9/4.7, 11/4.5, 14-14/5.5, 19/5.0, ~~22/6.1~~, 24/3.0

35+15 — 25/-.8, 18/-.1, 17-16/-.8, 13/+4, 9/+.2, ℄/1231.4, 11/-.2, 15/-1.0, 25/-2.3

1229.92

35+75 — FL/11.0, H/5.8, ℄/6.6, H/5.9, FL/11.4, TO/7.4

1229.52

36+00 — 25/10.3, ~~22/9.8~~, 20-10/10.3, 14/6.8, 1/6.8, ℄/7.00, 9/7.2, ~~10/6.8~~, 13/7.3, 18/9.1, 25/9.5

1229.61

37+00 — ~~25/5.8~~, 27/5.8, 21/7.3, 18 17/9.4, 12/7.3, 1/7.1, ℄/6.8, 7.0, 9/7.0, 12/7.0, 15/9.4, 25/9.5

1231.87

38+00 — 28/0.0, 20/2.1, ~~X/1.5~~, 14/5.2, 13+9/4.8, [illegible], ℄/4.65, 9/4.7, 11/4.4, 14/5.7, 15 19/3.5, ~~X/5.8~~, 23-25/2.0

1232.54

38+80 — 27/1.1, 21/1.8, 15.5/3.5, 11/4.0, ℄/3.9, 9/4.3, 13/4.3, 14-15/4.8, 20-25/2.5, ~~2.0~~

1232.15

39+00 — 26/0.7, 19/1.4, 15/4.9, 14-9/4.5, 4.5, ℄/4.37, 9/4.8, 12/4.4, 14-15/5.1, 20/1.8, 24/~~3.5~~ -1.3

1228.40

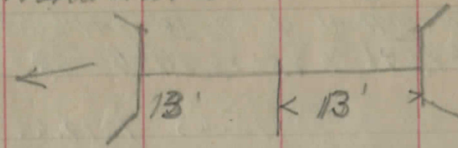
40+00 — -22/2.0, 18/5.7, 16 13/8.6, 18 ~~14/7.8~~, 1/8.0, ℄/8.12, 9/8.4, 12/8.8, 14 13/8.7, 19/6.3, 23-25/2.2

10.53 1225.99

6.30 1232.29

Headwalls Broken and Crumbled would advise new Culv

3' by 3½ Std Box



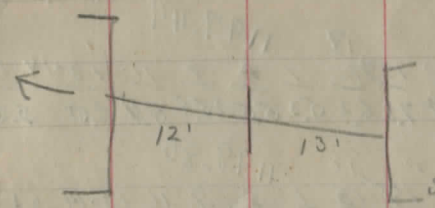
Sta 35+75

Can build on New Headwalls

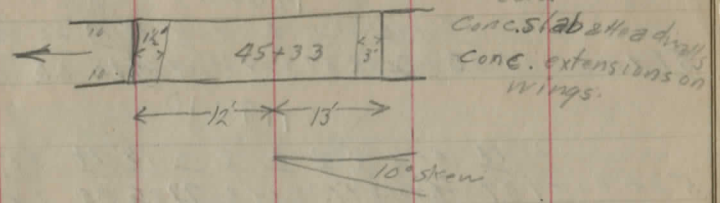
Sta	BS	HI	FS	Elev
	1232.29			
			12 23.79	
41+00	25 21 17.5 13 12 1 4 9 12 13-14 20.5 24-25 3.4 3.0 6.2 9.6 9.1 8.6 8.50 8.4 8.6 9.5 5.8 2.9			
			12.43	1219.46
	2.61	1222.27		
			1219.09	
42+00	21 19.5 13 11 1 4 5 11 14-15 26 4.2 3.5 3.8 3.3 3.2 3.18 3.33 3.7 4.2 4.5			
			1212.59	
43+00	25 22 19.5 13 1 4 9 11 14-15 23.5 27 28 1.0 1.5 6.8 10.6 9.7 9.6 9.6 10.4 5.8 1.1 1.1			
			11.93	1210.34
	0.17	1210.51		
			1205.97	
44+00	23 15 13 1 4 9 13 15 18 25 5.7 5.2 5.4 4.3 4.6 4.6 4.9 5.4 3.8			
			1200.15	
45+00	26 19.5 22 18 18 10 9 9 12 14 24 27 14.6 14.0 10.5 10.5 10.34 10.7 10.6 15.1 15.8 16.8			
			10.23	1200.28
	2.46	1202.94		

8' by 8' deep Bridge

Conc. Bridge Stone sidewalls Fine Cond.



Sta	BS	HI	FS	Elev
		1202.94		1198.79
46+33	FL 14.7	TO 7.2 / H 2.8	E 4.10	H 2.7 / TO 7.0 / FL 15.1
				1197.24
46+00	30 1.2 / 25 10.3 / 20 7.6 / 16 5.8 / 1 5.5	2 5.4 / 5 5.1 / 9 5.5 / 13 6.7 / 15 6.8 / 17 7.3 / 25 —		
				1197.44
47+00	25 6.1 / 20 6.9 / 15 7.1 / 12 6.2 / 1 5.3	2 5.5 / 5 5.5 / 9 5.5 / 11 6.0 / 13-14 5.0 / 18 1.3 / 20 0.0 / 25		
				1198.80
48+00	24 1.7 / 20 5.5 / 17 4.7 / 15 4.0 / 1	2 4.1 / 5 4.2 / 9 3.9 / 11 4.6 / 13-14 0.5 / 21-25		
BM #17		0.11	1202.83	1202.80
				1202.80
	3.14	1205.94		
				1199.72
49+00	24 8.4 / 21 7.6 / 17-18 5.2 / 13 4.7 / 1 6.1	2 6.2 / 5 6.2 / 9 5.8 / 11 7.1 / 14 7.0 / 18 6.2 / 20 5.7 / 25		
				1200.98
50+00	25 5.6 / 20 3.7 / 16 6.2 / 14 5.0 / 1 4.7	2 4.8 / 5 5.0 / 9 4.6 / 11 5.3 / 14 2.4 / 15 2.4 / 20 / 25		
				1202.45
50+75	25 6.3 / 20 6.6 / 15 3.7 / 13 3.2 / 1 3.3	4 3.4 / 8 3.6 / 12 3.9 / 13-15 4.4 / 23-25 6.0 -1.0		



42"
Spike Wroot Maple 25' Rt of ℄ Sta 47+10

1205.94

Sta	135	H1	F5	Elev

1202.20

	25	19	14	15	X	4	9	11	19	19	22	25
51+00	0.7	0.5	4.0	3.5	3.7	3.7	4.4	3.7	3.7	4.7	1.5	-0.5	-1.0

1198.10

	25	19	15	16	14	11	1	4	7	12	14	15	21	25
52+00	5.4	5.7	8.9	8.2	8.0	7.8	8.0	7.9	8.5	8.0	1.9			

1193.02

	25	18	17	18	12	1	4	3	12	14	15	20	25	-
53+00	11.0	10.9	13.9	13.9	13.5	13.2	12.8	13.1	12.8	13.2	9.1	5.4		

12.84 1193.10

1.13 1194.23

1188.58

	35	25	X	19	19	12	1	4	2	11	14	15	26
54+00	3.8	3.8	1.4	6.9	5.6	5.4	5.6	5.5	5.8	5.5	6.6	4.6	4.3	2.8

1186.16

	30	20	13	1	4	9	11	22	29
55+00	11.3	11.1	8.0	7.8	8.0	8.1	8.0	12.1	12.8

1186.05

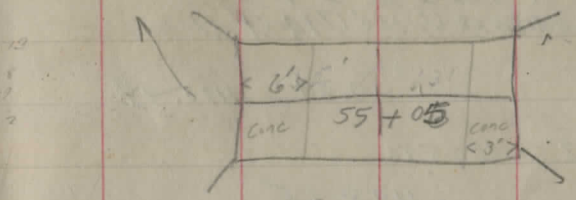
	FL	TD	H	4	H	TD	FL	
55+05	1179.1	1187	9.9	6.6	8.1	8	6.4	9.1	14.8	1179.4

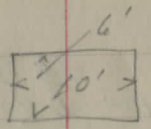
1187.89

	18	X	18	11	1	4	2	12	19	26
56+00	10.2	11.4	9.5	6.5	6.1	6.3	4	6.3	6.2	9.0	9.0	

Clean West Channel

10' x 52 Conc Slab Bridge Stone walls good Cond





Sta	BS	HI	FS	Elev
		1194.28		
				1192.68
57+00	29 17 13 11 1 4 9 14 19 25 5.4 4.4 2.3 1.8 1.8 1.5 1.7 1.4 2.1 5.1			
			0.29	1193.94
57	11.48	1205.42		
				1198.65
58+00	16 23 19 15 13 1 4 9 13 14 23 28 0.0 4.0 5.6 2.7 7.9 6.8 6.7 6.7 6.7 7.1 8.0 5.2			
BM #16 (new)			6.95	1198.47
			0.52	1204.92
59	9.98	1214.88		
				1205.54
59+00	26 12 17 36 12 43 11 1 4 9 11 14 12 26 1.4 4.7 11.0 10.4 9.4 7.3 4 7.4 9.5 9.8 6.5 1.4			
60		1211.52		
60+00	24 14 15 11 9 4 2 25 3.7 4.2 3.1 3.7 3.3 6 3.4 0.2			
			1.33	1213.55
	10.03	1223.58		

5

11

BM 27 Ft Rt Sta. 58+10 6 pike in Maple (new) 10" (fence post)

2

1223.58

Sta	BS	HI	FS	Elev
				1216.04
61+00	25-42 21 15 16/13 1 2		2 11 15-16 21 25	
	6.2 6.2 7.0 8.2 7.5 7.5		7.5 7.6 8.6 6.8 6.3	
				1218.83
62+00	27 21 16 17/13 1 4		9 11 14-16 19 25	
	2.8 3.8 6.4 5.5 4.7 4.7		4.9 4.6 6.2 5.0 4.9	
				1220.24
63+00	25 20 15 14/13 1 4		2 11 16 17/17 21-25	
	1.4 2.8 4.6 3.9 3.1 3.3		3.4 3.0 4.8 3.1	
				1222.34
64+00	25 19 15 16/18 2 4		9 10-12 15-17 21 25	
	0.3 0.4 2.7 1.7 1.2 1.2		1.3 1.2 2.9 2.7 1.4 1.2	
			0.44	1223.17
	8.39	1231.53		
BM #5			7.39	1224.14
				1224.16
	7.39	1231.49		
				1224.96
65+00	25 19 15/15 16/14 1 4		2 11 13 19 16/25	
	3.6 4.2 5.4 4.5 4.5 6.5		3.4.7 6.4 7.4 6.3 6.0	

1224.10 BM Spike Wroot 36" Maple 30' Rt of ℄ Sta 64+30

Sta	BS	HI	FS	Elev
		1231.49		

1226.61

66+00 — 25/3.7 17/4.3 13-14/5.8 12/5.2 1/4.8 ℄/4.88 9/5.0 10-12/4.9 16-17/6.4 19/6.1 25/6.0

1226.75

67+00 — 17/4.5 14-15 (25)/6.0 13/5.2 1/4.8 ℄/4.74 9/4.8 10-12/4.8 16-17/6.4 22/5.2

1225.28

68+00 — 25/6.4 1/6.0 ℄/6.21 9/6.3 25/6.0

1223.50

69+00 — 25/6.7 ~~20/6.6~~ ~~14-16/8.9~~ 18/8.4 1/7.8 ℄/7.99 9/8.1 11-13/7.8 14/8.7 17/7.1 25/6.5

Sta	BS	HI	FS	Elev
			7.00	1224.49
	1.20	1225.69		

1221.36

70+00 — 25/3.2 22/3.6 16-17/5.3 14/4.6 ~~4~~/4.5 1/4.1 ℄/4.33 9/4.3 11/4.5 14/5.0 18/4.9 20/3.7 25/3.6

1219.43

71+00 — 25/7.0 19/7.0 15-16/7.2 13/4.3 1/4.2 ℄/6.26 9/6.35 11/5.9 13/6.6 14-15/6.8 25/5.1

1217.95

72+00 — 25-20/9.4 16-19/9.5 13/8.2 11/8.0 ℄/7.74 9/7.7 ~~12~~ 12/13-16/8.7 25/7.7

Sta	BS	HI	FS	Elev	
BM#14			6.80	1218.89	1218.88

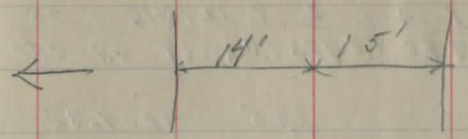
Spike W root 24" Maple 30' Rt. of ℄ Sta 72+00

Sta	BS	HI	FS	Elev
		1217.23		
73+00	25 20 16 17 1 2 9 11 13 14-15 18 25 10.2 10.0 10.2 8.0 8.4 8.4 8.6 8.1 8.8 9.2 8.6 8.6			
			8.86	1216.83
	6.09	1222.92		
		1216.97		
74+00	25 20 17 18 1 2 9 11 13 15 19 25 7.4 7.3 7.8 6.4 5.8 5.95 6.0 5.7 7.5 7.8 6.5 6.6			
		1217.10		
74+03	100 FL H ? 2 2 H FL 10.5 8.6 6.16.2 5.82 6.2 6.0 8.0			
		1217.43		
75+00	25 21 16 18 1 2 9 11 13 15-16 19 25 6.3 6.4 7.1 6.1 5.4 5.19 5.7 5.2 6.1 6.9 6.1 6.2			
		1218.53		
76+00	28 23 15 18 1 2 2 10 13 14-15 18 25 3.5 3.8 5.8 5.1 4.2 4.39 4.4 4.1 4.5 4.7 4.2 4.0			
		1219.09		
77+00	31 25 22 19 1 2 9 11 12 15 20 25 3.1 4.8 4.6 4.0 3.7 3.83 3.9 3.6 4.5 4.0 3.6			
		1218.06		
78+00	24 25 21 18 1 2 9 12 13-14 18 25 3.2 4.8 5.1 5.2 4.9 4.86 4.9 4.8 5.3 4.6 4.3			
			6.11	1216.81
	2.46	1219.27		

12" VSP Con. Headwalls

Clean ditch

Sta 74+03

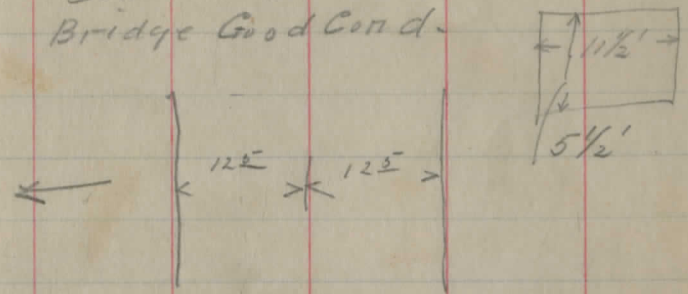


Sta	BS	HI	FS	Elev	
		1219.27 / 1215.66			
79+00	25/0.3 23/0.5 16/4.7 13/4.7 ℄/3.7 2/3.6	9/3.7 11/3.6	13/4.6 14/16/4.2 21/2.2	26/1.6 25/1.4	
		1209.60			
80+00	14/5.4 25/20/8.3 16/10.8	12/10.3 10/9.8 2/9.6	7/9.8 9/9.8 12/9.8 14/10.6	20/8.1 25-25/6.0	
			12.61	1206.66	
	0.59	1207.25			
		1202.52			
81+00	25/2.4 17/5.7 17/5.9	18/14/5.0 ℄/4.7 2/4.7	3 9/5.0 12/5.0 16/17/6.7	22/4.3 28/2.7	
BM#13			2.95	1204.30	1204.32
		1198.55			
81+80²	25/10.5 16/10.1	11/8.6 ℄/8.6 2/8.7	0 9/9.0 11/8.7 14-15/10.7	17/1.8 21/8.1 25/7.4	
		1198.10			
82+00	35/11.2 17/11.3	12/9.6 ℄/9.1 2/9.1	5 9/9.4 12/9.7 14/11.4	19/11.3 20-25/10.2	
		1197.25			
	FL/16.8	—/9.2 —/10.2 2/10.2	0 —/10.3 —/9.4	FL/14.1	

Spike W. root 12" Cherry 30' Rt of ℄ Sta 81+10

Town Line Claridon Burton Twp

Conc Slab on Stone Side Walls
Bridge Good Cond.



(Note: Sta 77+06² = 0+00 Wells St)

Cross Sections Sec B.

4/23/35   Richey Grav Road

℄

BM#13	0.22	1204.54		1204.32		
new BM#13			0.38		(1204.16)	Spike NW root 12" W cherry 80 SE of Sta 0
0+00			5.99	1198.55		26/84 21/7.7 15/73 11/6.0 9/62 12/6.5 14/8.0 -15/— 20/55 -25/—
1			7.44	1197.10		24/10.8 22/11.3 16/11.2 10/78 9/76 11/77 16/10.5 -17/— 19/9.7 -
1+23			7.49	1197.05		F1/14.0 TO/8.9 H/6.5 6/74 6/74 H/6.6 TO/8.9 F1/13.4
2			7.23	1197.31		-23/97 20/10.1 18-17/108 11/7.5 9/73 11/74 15/9.2 -16/— 19/9.0 25/98
3			5.00	1199.54		-27/29 21/49 18-/— 17/80 13/5.5 9/51 12/5.2 14/64 -15/— 20/37 23/24 -
	9.75	1209.42	4.87	1199.67		
4			6.72	1202.70		28/52 22/46 19/80 17-15/94 14/73 11/73 9/6.9 11/68 14/7.5 -15/— 20/52 22/39 -
5			4.92	04.50		30/39 26/31 23/39 17/70 17-15/79 11/49 10/51 9/50 12/47 15/53 19/51 25/48
6			4.33	05.09		-30/47 28/38 23/35. 18/62 17-14/74 11/52 9/45 11/46 14-16/52 18/38 25/23 -
new BM#12			1.01		(1208.41)	2 Spikes W root 48" Maple 33 Rt ℄ Sta 6+00
7			4.42	05.00		-32/62 25/44 20/51 17-14/69 11-/— 9/48 9/45 -11/— 15/62 21/61 28/57

		1209.42			
7+75			408	0536	
8			4.06	05.36	
9			3.90	05.52	
	8.37	121400	3.79	1205.63	
10			7.59	06.41	
11			6.21	07.79	
12			488	09.12	
13			298	11.02	
	926	1220.87	2.37	1211.61	
14			8.16	12.71	
15			6.40	14.47	
16			4.92	15.95	
BM# 11	Approx check		2.4		121804

E

			Fl 68	4 40	H 37	Fl 70					
28 68	22 49	17 60	13 58	10 43	9 41	13 41	15-17 62	18.5 50	22 41	26 52	
30 47	23 45	20 55	16 52	12 41	9 38	13 36	15-17 52	18 40	23 37	27 42	
27	22 77	19 90	18.5 90	14-13 83	9 76	14 74	15-17 85	18 75	20 70		
	21 68	18 80	14 76	12-8 70	9 61	11 60	15-17 75	18 67	22 53	26 56	
20 56	18 67	15 63	11 50	10 53	9 48	12 50	13.5-15 62		17 53	21 39	25 47
25 35	20 36	14-14.5 49	13 35	12 38	9 31	12 33	14-16 51	17 37	20 23	23 17	26 21
	21 81		17-15 93	13 88	9 82	13 87	15-16 10.2	17 8.9	23 61	25 68	
23 67	17-16 75		13 68	12 72	9 64	13 64	14-16 74	17 65	21 41	26 49	
28 46	25 50	20-16 61	14 56	13 58	9 48	13 44	14-16 56	17 45	20 31	25 38	

Tack 5E not near 50'Lt & sta 16+30 (Tack gone)

		1220.87		
17			3.13	17.74
18			1.42	19.45
	9.65	1230.09	0.43	1220.44
19			9.26	20.83
20			7.74	22.35
21			5.03	25.06
BM ± new 10			2.08	(1228.01)
22			1.60	28.49
BM ± 10	12.16	1240.17		
23			6.45	33.72
	10.31	1250.21	0.27	1239.90
24			10.39	39.82
25			6.34	43.87
26			5.16	45.05

℄

30/16	25/18	18/30	15/39	14/34	9/33	11-13/28		14-15/45	16/30	22/11	26/15	
	—20/24		16/26	13/21	9/1.5	13/1.0	15-17/23	18/11	23-25/-1.5			
22/105	18/108	15/106	12/95	11/97	9/92	10/88	14/87	16-17/10.1	12/88	23-26/74	80	
	-21/88	18/74	15/88	11/85	9/76	10/71	13/68	145-165/81	18/70	23-/57		
26/59	21/64	18.5/74	14/74	11/58	9/51	10/47	13/47	16-17/67	18.5/50	23/39	27/35	

could not find old Spike Nroot 18" Maple 26' Lt ℄ Sta 22+00

26/24	21/27	18/37	13/36	10/24	9/17	12/17	14-16/36	17/21	22/05	25/08

Large knuckle 15' Rt ℄ Sta 22+10

	27/36	17/60	14-15/81	12/74	9/67	12/68	16-18/74	24/43	28/36	33/45
	27/81	19/93	16/116	12/110	9/105	12/106	16-18/126	19/115	25/81	29-/52
	25/58	17/61	15-19/74	12/67	9/65	13/68	16-17/89	24/25	30-/16	
	26/73	18/71	16/75	11·/58	9/52	13.5/54	16-18/75	18.5/56	24/42	30/32

		1250.21			
27			4.53	45.68	
BM #9			3.18	1247.03	1247.05
28			4.20	46.01	
29			3.65	46.56	
	6.14	1253.89	2.46	1247.75	
30			6.23	47.66	
31			5.38	48.51	
32			4.85	49.04	
33			4.00	49.89	
34			3.70	50.19	
34+33			3.60	50.29	
new BM #8	5.47	1257.54	1.82		1252.07

℄

26/52 15/51 13/53 11/50 9/46 14/47 15.5-17.5/58 — 19/48 27/20 34/09

(Cornerboard)
Bottom of Weatherstrip NE ∡ Mainpart House 40' Lt ℄ Sta 27+60

— 27/55 20/53 14/4.6 9/41 15/45 16-17/50 18/35 25/28 32/14

Ground McMith House 4.3

— — — 24/52 9/37 -14 15-17/43 18/31 27/05 32/-0.3

barn

— 34/5.1 23/49 10/62 9/6.2 19/5.1 26/38 —

new culv at 30+80

28/78 23/74 22-17/78 13/67 9/56 -11 14-16/64 21/41 28/34

30/73 22/68 19-17/76 13/58 9/49 11/52 15-17/67 19/55 21/43 28/36

-27/33 21/39 19-17/61 13/45 9/41 11/44 14.5-16.5/6.6 23/1.0 28/0.3

30/61 25/57 21-19/70 13/43 9/38 11/39 16-17/75 23/36 29/33

1243.3 1245.6
— Fl/8.6 ~~10/7.0~~ 4/28 4/2.7 ~~10/6/2~~ Fl/83 —

Spike W root 18" Maple 28' Rt ℄ Sta 34+25
(Same Tree as old #8 new elev.

		1257.54			
35			6.54	51.00	
36			6.00	51.54	
37			5.06	52.48	
38			3.10	54.44	
	11.60	1268.48	0.66	1256.88	
39			9.00	59.48	
40			4.24	64.24	
41			1.54	66.94	
	6.09	1273.05	1.52	1266.96	
BM#7		4.12	4.05	69.00	(1268.25)
42			4.90	68.15	
43			3.87	69.18	

4

28

28/75 24/76 20-19/9.1 13/7.0 9/6.8 12/7.0 15-16/9.0 17/7.7 22/40 ~~27~~ 26

30/79 24/70 20/79 17/77 13/69 9-12/6.2 15-18/7.2 21/45 27/34

30/62 24/64 22/72 16.5/70 13/55 9/5.1 12/5.3 14-17/6.7 20/5.7 25/43

32/1.2 22/41 19-17/48 13/32 9/3.2 12/3.5 14/46 25/44

32/3.3 25/42 16-15/10.2 14/9.9 9/2.1 12/9.4 15/10.6 17/10.2 24/11.3 —

29/21 24/28 17/51 14/43 9/4.5 12.5/4.8 15-16/6.0 19/5.3 25/6.9

— 24/04 18/2.7 15/2.1 9-13/1.6 14-16/2.4 20/-0.1 27/0.5

some elevations old

Spike N root 24" Maple 30' Lt ℄ Sta 41+25

28/5.6 22/— 16/5.9 12/5.0 9/4.8 12.5/4.9 14-16/5.7 21/3.7

— 21/4.5 15/5.1 12/4.2 9/4.0 12/4.2 14-15/4.9 19/4.0 22/3.8 26/3.3

		1273.05			
44			2.46	70.59	
	11.85	1283.01	1.89	1271.16	
45			9.80	73.21	
46			6.68	76.33	
47			4.32	78.69	
48			3.17	79.84	
49			2.74	81.27	
	6.72	1286.57	3.16	1279.85	
BM #6	6.90	1286.44	6.90	1279.67	1279.54
50			5.53	8091	
50+18			5.23	81.21	
51			4.33	82.11	

4

—	-20/35	16/42	12/30	9-12/25	14-17/32	21/27	25/24
27/86	22/87	16-15/11.6	11/10.6	9/9.9	12/10.1	14.5 16.5/11.3	20/38 —
—	-23/43	16-15/7.8	14/7.2	9/6.7	13/6.8	14-16/7.6	22/5.1 —
—	30/32	24/41	19/45	9/4.3	12/4.1	14.5 15.5/5.3	19/20 25/1.6
—	-22/43	20-18/5.1	14/3.9	9/3.2	12/3.4	13-14/3.9	19/2.2 25/1.3
—	-22/36	18-17/4.9	14/3.0	9-11/2.9		13-15/3.8	19/2.5 25/0.8

same elev. as old.

Spike N. root 15" Maple 30' Lt & S10 49+15

—	-21/70	19-16/7.6	12/6.2	9-12/5.7		15-16/7.6	20/4.6 25/4.4
		30/8.6	F1/7.7	F1/8.1 —			
—	-21/57	19-16/6.4	14/5.1	9-12/4.3		14.5 15.5/5.7	16.5/4.9 26/3.7

		1286.44			
52			2.70	83.74	
	9.51	1294.18	1.77	1284.67	
53			8.80	85.38	
54			7.12	87.06	
55			5.60	88.58	
new BM #5			1.78		(1292.20)
56			3.68	90.50	
57			2.48	91.70	
58			2.22	91.96	
	2.74	1294.30	2.62	1291.56	
59			3.92	90.38	
60			6.60	87.70	
60+96			8.85	85.45	
T.P.	9.12	1294.52	8.90	1285.40	1285.45

℄

28/3.5	22/3.8	19-17/3.1	13/3.4	9-13/2.8	14-16/3.5	20/1.4	28/1.2
—23/3.5	19-16/1.43	11/93	9/87	13/88	19-16-15/100	22/75	27/1.2
—22/84	19-16/91	12/78	9/71	13.5/73	18-17/81	21/59	25/51
29/60	-22/63	18-15/76	12/62	9/56	12.5/58	14-15.5/68	22/36	27/29

could not find old

25 spikes Wroot 18' Osage 30' R.R. ℄ Sta 55+50

—26/51	16-15/58	12/45	9/39	13/38	14-15/46	21/21	24-/14
—26/38	16/37	12/30	9/26	13/25	14-15/31	21/-05	26/-0.8
30/34	20/32	17-16/38	13/29	9-13/23	14-15/32	20/0.7	25/04
26/69	23-20/63	15/60	12/48	9/40	13/41	14-15/48	21/25	25/22
—27/61	—22	16/82	13/73	9/66	12.5/67	13.5-15/76	21/26	26-/20

1278.5

FI/15.8	TO/11.6	H/9.1	A/8.8	TO/11.1	FI/14.1

802

X on NE Cor LE Headwall 60+98

		1294.52			
61			9.10	85.42	
62			7.20	87.32	
63			1.76	92.76	
	9.30	130364	0.18	129434	
64			6.32	1297.32	
65			5.05	1298.59	
~~BM #3~~					~~1301.53~~
66			4.38	1299.26	
new BM #4			6.00		1297.64
67			3.65	130000	
68			2.90	130074	
	5.78	130677	2.65	130099	
69			5.40	01 37	
70			5.02	01.75	

℄

30/134	25/12.7	21/13.0	17/121	19/94	9/92	12/94	17/10.7	23/124	26/130
	28/78	22/88	14/84	12/77	9/73	12/71	14/79	19/80	29-/69
8/17	27/04	20/27	14/26	12-8/29	9/19	-11	14-15/33	29-/-29	
	— —		27/68	15/74	9/64	15/52	18/35	25/24	
	25/72	19/62	18/68	15/59	9/52	12/51	14-16/62	21/37	30/32
	couldn't find								
	—	24/59	17/60	13/53	9/44	12/43	13-14/51	17/32	25/27
Spike Root 18" Elm 30' Lt ℄ Sta 66+90									
	—	25/58	19-15/52	13/45	9-11/37		13-14/43	18/21	25/15
	—	25/54	18/46	14/39	9/29	12/28	13-14/33	19/11	25/0.2
	—	25/81	15/80	12/64	9/55	12.5/56	14-16/65	17/57	25/46
	25/75	20/66	16/68	12/56	9/50	13/46	21-/51		

		1306.77		
71			484	130193
71+27			47	0207
72			462	0215
73			435	0242
74			404	0273
	5.26	1307.99 .080	404	1302.73
75			518	0281
75+26				
76			394	0405
77			454	0345
77+97			6.50	0199

32

—	-19/56	16-15/64	13/54	9/49	14/44	17-18/60	22/27 —
		1299.1 FI 7.7		1299.7 FI 7.1			
	-25/66	21/58	17-16/64	14/53	9/45	13/46	19-15/51	19/23 —
—	-20/67		18-17/70	12/50	9-12/43		14-15/54	23/30	30/26
—	-20/68		18-17/79	11/49	9/41	12/42	15-16/58	25/28	30/25
—	-20/95		19-18/99	10/60	9/53	11/54	17-19/78	28/48 —
			1298.6 FI 8.4		1299.8 FI 8.2		
—	25/44		16/54	13/45	9-12/40		17/38	22/07 —
—	27/31		19-17/65	13/54	9/46	11/45	13-15/54	19/49	23/21	26/13
		1297.6 FI 10.4	TO 81	H 56	H 55	TO 81	1297.7 FI 10.3			

		1307.99			
78			6.00	01.99	
BM #3	1.16	1307.99	1.16	1306.83	1307.06
79			5.38	02.61	
80			3.82	04.17	
	5.47	1302.82	3.56	1304.43	
81			4.62	05.30	
82			4.05	05.87	
83			4.22	05.70	
84			4.78	05.14	
new BM 2A			3.20		1306.72
85			6.00	03.92	
	2.21	1303.81	8.32	1301.60	
86			3.90	1299.91	
86+64			6.41	1297.40	

℄

— 25/104	17/102	11/67	9/62	11.5/63	18-17/98	22/75	30/25

same elev as old

Spike Wroot 12" Maple 30' Rt ℄ Sta 78+90

— -20/74	18-16/80	12/83	9-11/55	14-16/70	23/24	30/12
— -21/55	19-16/63	12/47	9-12/39	13-15/53	21-/29	
— -21/50	17-15/63	12/33	9/47	12/48	14-15/63	20/37	25/33
— -21/48	18-16/59	12.5/46	9/41	-12.5	15-17/56	18/48	21-/34
-25/58 21/54	18-16/69	12/50	9-13/43		14.5-16/51	17/42	27/34
— —	-21-17/64	12/57	9/48	20-/46	— —		

Spike Wroot 18" Maple 27' Rt ℄ Sta 84+75

— -21/65	17-15/79	13/68	9/61	-12.5	14-15/68	19/46	25-/36
— —	-25/42	15/48	9/40	16-18/50	25/43	—	

	1288.0				1288.1	
	FI	TO	IN	IN	TO	FI
	15.8	132	116	107	125	15.7

		1303.81		
87			6.42	1297.39
88			2.78	1301.03
	7.82	1311.45	0.18	1303.63
89			6.12	0533
90			4.06	0739
91			4.15	0730
92			5.55	0590
93			7.00	0445
94			7.45	0400
94+27			73	0415
	13.09	1317.16	7.38	1304.07
95			12.40	0476

—	-26/11.9	17/99 11/67	9/65 13/67	18/92 27/10.5		
—	-23/27	—14-9/46	9/28 13/29	155-165/40	25/04	30/-10
—	-25/51	19/54 13/66	9/62 -12	14-15/69 24/31	26-/28	
— —		25/47 14/46	9-14/41	15-16/44 22/18	24-/14	
— —		25/45 13/47	9/42 12/41	13-15/47 20/23	25-/19	
—	25/65	17/68 12/61	9/56 -12	14-15/66 19/45	28-/39	
—	25/90	17/90 11/75	9/71 12/72	13-14/83 19/66	25/55	
— —		-19/103 11/77	9/75 12/76	15-16/91 19-/86		
	FI/107	TO/95 H/79	7H/76 TO/93	FI/10.6		
—	25/135	15/137 13/126	9/12.4 -12	15/134 25/138		

		1317.16		
96			8.90	08.26
97			4.10	13.06
new BM #2	6.60	1323.17	0.59	1316.57
98			6.42	16.75
99			5.06	18.11
100			4.65	18.52
101			2.67	20.50
	4.07	1326.06	1.18	1321.99
102			3.60	22.46
103			3.56	22.50
104			5.72	20.34
105			8.26	17.80

℄

— -25/81 23/95 8/98 9/90 12/92 14/100 -17 20/87 -

— -19/25 16/46 13/45 9/42 -12 14-16/49 19/36 25/21 -

Spike ℄ root 30" Maple 25' Lt ℄ Sta 97+20

— -22/59 19-17/77 13/68 9/65 13/64 16-17/75 20/56 -

— -24/49 18-16/71 12/55 9/52 13/53 14-17/62 21/52 -25/55

— -25/- 17/71 11/51 9/49 12/47 15/61 25/59

-23/38 21/49 15/47 12/34 9/27 11/28 14-19/42 25/21 -

-22/23 16/45 14/38 9/36 10/31 -21/- 25/23 -

25/33 20/35 14/42 13/40 9/36 17/29 20/20 25/19

— -18/65 16-14/70 12/63 9/58 -19/- 25/52 —

— — 25/95 13/87 9/83 11/84 14/97 25/88

		1326.06			
106			10.72	1315.34	
	1.23	1316.13	11.16	1314.90	
107 new BM #1			2.86	13.27	
			1.95		1314.18
108			4.12	12.01	
108+12			4.3	11.83	
109			5.07	11.06	
109+83			4.90	11.23	
110			4.72	11.41	
111			2.88	13.25	
	10.72	1324.52	2.33	1313.80	
112			8.42	16.10	
113			5.50	19.02	

℄

20 18 — 16 12 | 9 12 | 13 25
118 125 113 | 10.8 110 | 115 98

— — | 25 9 | 9 — 11 | 14 12 27
3.1 32 | 29 | 4.0 38 23

Spike Eroot 30' Elm 30' Lt ℄ Sta 106+80
23 18 | 15 10 | 9 11.5 | 15-16 18 25
60 72 | 70 43 | 42 45 | 7.1 36 53

clean outlet 50' | Fl TO H | H TO | Fl | House screw 60' East
84 5.6 28 | 28 34 | 8.3 | 7.4

— 27 17 11 | 9 16 | 26 —
6.6 70 34 | 51 53 | 42

— | Knotted 94 | Fl 92 | Fl 87 | Tile E 85 | Tile S 84 | Tile N 79
1306.7 | 1307.4

— 18 17-16 13 10 | 9 10 | 15 —
65 77 68 52 | 48 47 | 52

— 25 18 14 | 9 10 | 22 —
40 38 35 | 28 25 | 18

— 25 16 — 12 | 9 15 | 25 —
83 70 | 85 80 | 71

— 21 15-14 12 | 9 14 | 17-18 25 30
50 70 62 | 56 59 | 71 39 35

	1324.52				
114		340	21.12		
114+28 ℄ Mayfield		3.02	21.50		
BM #0		2.84	1321.68	1321.66	
BM on Clarsden Ch. N.		1.59	1322.93	1322.97	

℄

— 25/32 21/36 16/41 9-19/33 21-22/42 26-/26

X cut SE Cor porch of Bruce store 70' NW Sta 114+28

Spike S root 30" Elm 70' N℄ Sta 114+28
Same as BM #1 Clarsden Center N.

		check Level			
BM 3	1.92	130891		130699	
	3.53	130611	6.33	130258	
	1.91	130274	5.28	130083	
BM 4	~~2.04~~		4.96	129778	129750
	1.83	129253	12.04	129070	
TP			6.96	128557	128556

Culvert at Sta 3+15 Sec A

℄ Road	4.1		
Flow inlet	7.3		
Grade R	7.5		
Stake R	3.5		C4.0
Grade L	8.0		
Stake L.	8.2	7.2	C1.0

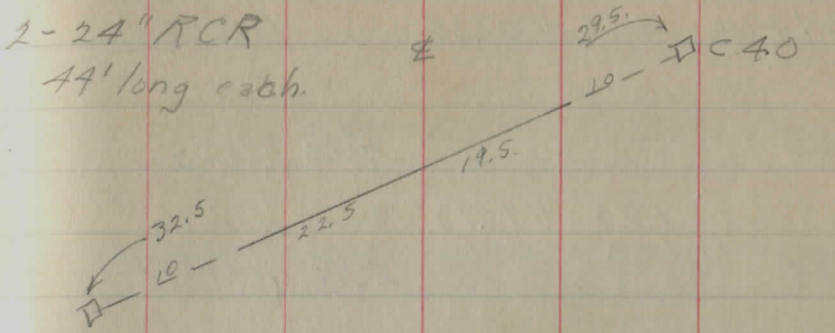
Culvert 74+02

℄ Road	5.1		
Flow R	7.5		
Stake R	7.35	4.85	C2.5
Flow L	8.0		
Stake L.	8.15	6.65	C1.5

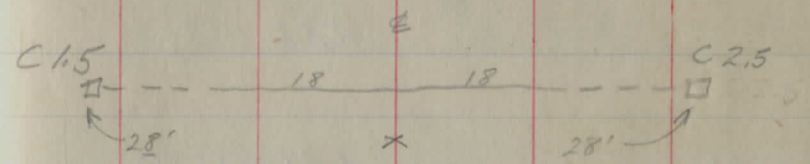
Culvert 35+75

℄	5.3		
Flow R	9.4		
Stake R	9.25	6.75	C2.5
Flow L	9.9		
Stake L	10.05	8.55	C1.5

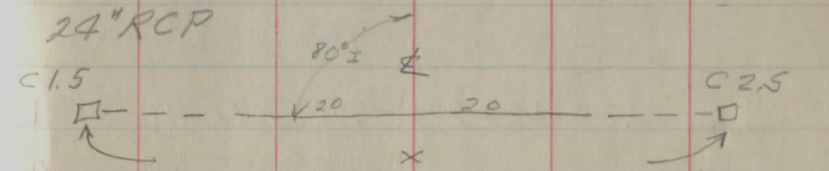
2-24" RCR
44' long catch.



15" RCP.



24" RCP



	Slopestakes		Revised Grade		
BM 47+00	4.45	1207.25		1202.80	
52			9.00	1198.25	PM.1
	1.83	1196.73	12.35	1194.90	Begin at 51+85
53			2.56	1194.17	
54			6.52	1190.21	
	4.82	1192.78	8.77	1187.96	87.6
55			4.83	1187.93	
55+50			4.48	1188.30	
56			2.56	1190.22	
57			-1.88	1194.66	
	13.28	1205.75	0.31	1192.47	
58			5.57	1200.18	
BM #58+10			7.29	1198.47	End at
59					59+10
59				1205.70	

Sec A. (22) 15-18 40

C1.8 / 24.5	C1.7 / 24.5	C7.0 / 32.5	C7.2 / 32.5
C1.0 / 23.2	C0.8 / 23.2	C7.0 / 32.5	C7.3 / 32.5
F2.6 / 19.8	F2.6 / 19.8	F0.5 / 21.3	F0.4 / 21.3

SE Cor. E Hdwl.

F6.0 / 27.4	F6.2 / 27.4	F6.8 / 28.6	F6.6 / 28.6
F6.3 / 28.0	F6.5 / 28.0	F5.0 / 25.0	F4.9 / 25.0
F4.3 / 23.0	F4.5 / 23.0	F6.9 / 29.0	F6.9 / 29.0
C4.4 / 28.6	C4.4 / 28.6	F3.2 / 20.4	F3.2 / 20.4

Fine Grade. Sec A

BM#16	11.09	1209.56			1198.47
59+50			1.09	0.92	✓
59			3.86	1205.70	✓
58+50			6.62	1202.94	✓
58			9.38	1200.18	✓ F0.5
BM#16	0.22	1198.69		1198.47	
57+50			1.27	1197.42	✓ F0.5
57			4.03	1194.66	✓ F0.5
56+50			6.67	1192.02	✓
56			8.47	1190.22	✓
55+50			10.39	1188.30	✓
T.P.	7.98	1195.94	10.69	1187.96	
55			8.01	1187.93	✓
54+50			6.81	1189.13	✓
54			5.73	1190.21	✓
53+50			3.81	1192.13	✓
53	8.56	1202.73	1.77	1194.17	✓
52+50			6.52	1196.21	✓
52			4.48	1198.25	✓
51+50			2.59 2.76		✓ C0.5

Slopes Sec B.

BM#13	0.40	1204.56		1204.16	
	6.35	1204.33	6.58	1197.98	← SE & West Abut
0					
1					
2			6.9		
3			4.6		
	5.73	1208.49	1.57	1202.76	
4			5.6		
5			3.8		
BM#12	2.17	1210.58	0.09	1208.40	1208.41
6			5.3		
7			5.4		
8			5.0		

15-18-22.0 7/30/38

Stake	Trial	Trial	Stake
21.5	21.5	23.5	23.5
23.5	23.5	20.5	20.5
21.6	~~20.0~~	~~18.5~~	19.5
28.0	~~29.5~~	25.5	25.9
28.4	27.5	26.0	26.4
27.7	27.5	21.5	22.6
26.5	27.5	24.0	24.7
26.7	25.5	19.0	19.8
19.5	18.0	22.5	22.0

Special Ditch 36" Below ℄.

Grade = 26.5 move 1' W

			L	℄	R	
9			curve 24.0	24.0	22.0	22.0
10			curve 22.0	22.0	22.0	22.0
11			curve 22.0	22.0	21.5	21.5
12		9.5	20.2	F0.7 20.2	C0.7 22.3	22.3
13		7.7	20.5	F0.5 20.5	C1.4 23.4	23.4
14		6.1	21.1	F0.1 21.1	C1.3 23.2	23.2
15		4.2	19.8	F1.0 19.8	C1.4 23.4	23.4
16		8.6	19.3	F1.3 19.3	C2.2 24.6	24.6
17		6.8	21.9	C0.4 21.9	C2.8 24.3	24.3
18		5.0	19.8	F1.0 19.8	C3.2 26.1	26.1

19		6.5		19.8	F1.0 19.8	C2.4 24.9	24.9
20		5.0		20.2	F0.7 20.2	C3.0 25.8	25.8
21		8.1		19.8	F2.1 19.8	C1.7 23.1	23.1
22		4.9		19.2	F1.9 19.2	C0.8 22.5	22.5
23		4.5		21.7	C0.3 21.7	C1.7 23.8	23.8
24		5.6		23.7	C1.6 23.7	C1.2 23.1	23.1
25		5.4		21.6	C0.2 21.6	C4.6 28.2	28.2
26		4.2		20.1	F2.2 20.1	F0.2 21.0	21.0
27		4.8	5.5	19.0	19.0	C0.6 22.2	22.2
28		4.4	27 to 28 Summit.	19.6	F1.1 19.6	C2.0 24.3	24.3

29			3.8	no stake at Lt.	18.3	F1.6 18.3	C 3.5 26.5	26.5	
30			2.7	summit	22.5	C 1.5 22.5	C 1.9 27.9	27.9	Summit
31			5.6		21.9	F 2.8 21.9	C 1.1 22.9	22.9	
32			5.1		21.3	F 2.6 21.3	C 0.7 22.3	22.3	
33			4.2		20.1	F 0.8 20.1	C 3.5 26.5	26.5	
34			3.9		22.8	F 3.1 22.8	F 2.1 19.8	19.8	
35			3.1		20.7	F 2.4 20.7	C 2.4 24.9	24.9	
36			7.0		19.2	F 1.9 19.2	C 1.8 24.0	24.0	
37			6.0		19.5	F 2.0 19.5	F 0.6 20.4	20.4	
38			4.1		19.5	F 1.2 19.5	F 1.7 18.6	18.6	

39		9.1		29.0	C9.2 29.0	F1.9 19.2	19.2	
40		4.4		23.1	C1.2 23.1	F1.3 19.3	19.3	
41		5.8		21.0	F0.2 21.0	C1.6 23.7	23.7	
42		4.5		19.8	F1.0 19.8	C1.0 22.8	22.8	
43		5.3		20.1	F0.8 20.1	C0.6 22.2	—	
44		3.9		19.3	F1.3 19.3	F0.6 20.4	20.4	
45		4.3		22.3	C0.7 22.3	C0.0 21.4	21.4	
46		7.0		24.6	C2.2 24.6	C1.7 23.8	23.8	
47		4.6	5.3	21.1	F0.1 21.1	C2.9 24.0	24.4	Summit
48		4.8		19.5	F2.0 19.5	C11 22.9	22.9	

49		4.3					
50		3.6					
51		2.4					
52		6.4					
53		4.7					
54		3.2					
55		5.9					
56		4.0					
57		5.1					
58		4.8					

19.5	F2.0 / 19.5	C03 / 21.7	21.7	
19.5	F2.0 / 19.5	C08 / 22.5	22.5	
19.8	F2.1 / 19.8	F0.3 / 20.8	20.8	
19.5	F2.0 / 19.5	C1.6 / 23.7	23.7	
18.9	F1.8 / 18.9	C1.0 / 22.8	22.8	
19.8	F2.1 / 19.8	C1.2 / 23.1	23.1	
19.5	F2.0 / 19.5	C2.3 / 24.7	24.7	
19.2	F1.9 / 19.2	C2.1 / 24.4	24.4	
19.2	F1.9 / 19.2	C2.9 / 25.6	25.6	
19.8	F10 / 19.8	C1.6 / 23.7	23.7	

59			40					
60			6.7		19.2	F1.9 19.2	C4.8 28.5	28.5
61			5.4	7' Berm	27.6	F4.7 27.6	F3.7 25.6	25.6 7' Berm.
62			5.4		19.0	F1.5 19.0	F0.3 20.8	20.8
63			5.4		19.8	F1.0 19.8	C4.4 27.9	27.9
64			5.4	Special	20.5	F1.2 20.5	C3.4 25.1	25.1 Special
65			4.2		19.0	F1.5 19.0	C1.3 23.2	23.2
66			3.5		19.0	F1.5 19.0	C1.3 23.2	23.2
67			6.2		16.9	F1.8 18.9	C1.7 23.8	23.8
68			5.5		18.9	F1.8 18.9	C2.5 25.0	25.0

69		4.8
70		4.4
71		4.3
72		5.1
73		4.9
74		4.5
75		4.4
76		3.2
77		3.4
78		4.9

21.6	E 2.7 21.6	C 0.5 22.0	22.0
20.1	E 2.2 20.1	F 0.4 20.7	20.7
20.1	E 0.8 20.1	C 2.3 24.7	24.7
19.2	F 1.9 19.2	C 2.0 24.3	24.3
19.3	F 1.3 19.3	C 0.6 22.2	22.2
19.2	F 1.9 19.2	F 0.4 20.7	20.7
27.9	F 4.8 27.9	F 1.4 19.2	19.2
19.8	E 1.0 19.8	C 2.3 25.6	25.6
19.2	F 1.9 19.2	C 3.0 25.8	25.8
28.8	E 5.1 28.8	F 2.4 20.7	20.7

79		4.2		20.7	F2.4 20.7	C3.3 26.2	26.2	
80		6.4		20.1	E2.2 20.1	C1.0 22.8	22.8	
81		5.2		19.9	E0.9 19.9	C0.9 22.6	22.6	
82		4.7		19.2	F1.9 19.2	C1.0 22.8	22.8	
83		4.9		19.2	E1.9 19.2	C0.8 22.5	22.5	
84		3.7		F2.1 19.7	F2.1 19.7	C0.2 20.3	20.3	Special
85		5.0		19.2	F1.9 19.2	C1.9 23.1	23.1	Special
86		5.4		20.1	F0.8 20.1	F0.8 20.1	20.1	
87		5.4	7' Berm	29.6	F5.4 29.6	F3.4 24.7	24.7	7' Berm
88		5.4		20.5	E0.5 20.5	C3.2 26.1	26.1	

89			6.8		22.6	C09 22.6	C30 25.8	25.8
90			4.7		20.4	F06 20.4	C26 25.2	25.2
91			4.7		20.2	F0.7 20.2	C1.9 24.1	24.1
92			6.1		19.6	F1.1 19.6	C1.5 23.5	23.5
93			5.8		18.9	F18 18.9	C08 22.5	22.5
94			6.2		22.5	F30 22.5	F1.2 19.5	19.5
95			5.4		19.3	F1.3 19.3	F14 19.2	19.2
96			8.6		19.8	F10 19.8	C0.1 21.4	21.4
97			3.8	Special	21.0	C0.7 21.0	C1.7 23.8	23.8
98			6.2	Special	19.0	E1.1 19.0	F07 21.0	21.0 Special

99			4.8				
100			4.5				
101			7.4				
102			5.4				
103			5.3				
104			7.6				
105			2.0				
106			4.3				
107			6.5				
108			3.8				

	19.3	F1.3 19.3	F0.1 21.1	21.1	
	21.6	F2.7 21.6	F1.4 19.2	19.2	
	20.7	F2.4 20.7	F1.7 18.6	18.6	
Special	20.9	C0.6 20.9	C0.4 21.9	21.9	
	21.1	F0.1 21.1	C1.4 22.1	22.1	Special
Special	19.0	19.0	C0.2 21.6	C0.2	
Special	20.0	F1.0 20.0	F1.0 19.8	19.8	
	18.6	F1.7 18.6	F0.3 20.8	20.8	
Special	19.4	F0.9 19.4	F0.5 19.0	19.0	Special
	20.4	F2.3 20.4	F1.4 21.0	21.0	Special

109			4.7					
110			4.4					
111			2.5					
112			8.6					
113			5.6					
114								

	19.2	F1.9 / 19.2	F02 / 19.7	19.7	Special
	19.2	F1.9 / 19.2	F0.7 / 19.0	19.0	Special
Special	20.5	F1.2 / 20.5	C0.5 / 20.8	20.8	Special
Special	19.0	F0.7 / 19.0	C0.7 / 21.2	21.2	Special
Special	20.2	C0.1 / 20.2	F1.7 / 19.2	19.2	
Special	—	19	19	—	

Flow pipe. 7.15

Flow calv. 7.65

~~Stake~~ 7.55

455 C 3.0

84

30

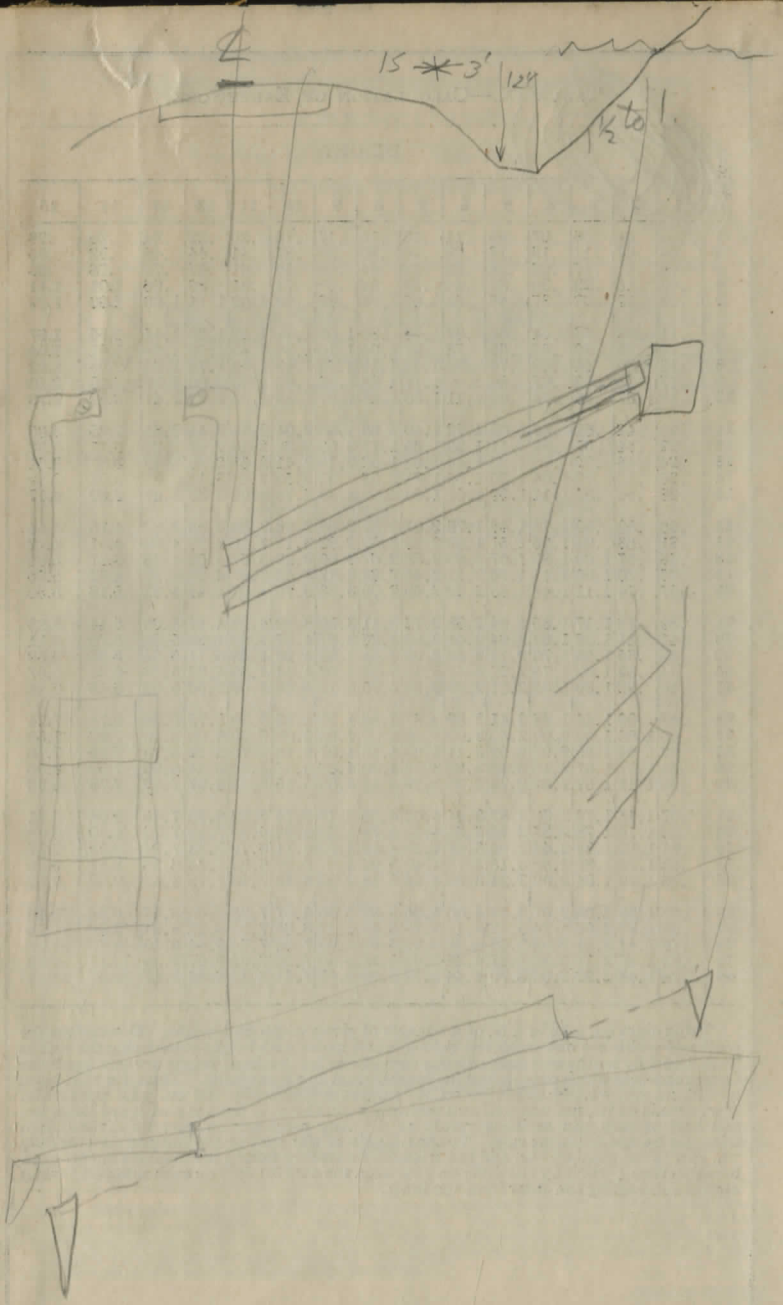


Table IX.—Calculation of Earthwork.

Width \ Height	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	.02	.04	.06	.07	.09	.11	.13	.15	.17	.18	.20	.22	.24	.26	.28
2	.04	.07	.11	.15	.18	.22	.26	.30	.33	.37	.41	.44	.48	.52	.56
3	.06	.11	.17	.22	.28	.33	.39	.44	.50	.56	.61	.67	.72	.78	.83
4	.07	.15	.22	.30	.37	.44	.52	.59	.67	.74	.81	.89	.96	1.04	1.11
5	.09	.19	.28	.37	.46	.56	.65	.74	.83	.93	1.02	1.11	1.20	1.30	1.39
6	.11	.22	.33	.44	.56	.67	.78	.89	1.00	1.11	1.22	1.33	1.44	1.55	1.67
7	.13	.26	.39	.52	.65	.78	.91	1.04	1.16	1.30	1.42	1.55	1.68	1.81	1.94
8	.15	.30	.44	.59	.74	.89	1.04	1.19	1.33	1.48	1.63	1.78	1.92	2.08	2.22
9	.17	.33	.50	.67	.83	1.00	1.17	1.33	1.50	1.67	1.83	2.00	2.17	2.33	2.50
10	.18	.37	.56	.74	.93	1.11	1.30	1.48	1.67	1.85	2.04	2.22	2.41	2.59	2.78
11	.20	.41	.61	.82	1.02	1.22	1.43	1.63	1.83	2.04	2.24	2.44	2.65	2.85	3.06
12	.22	.44	.67	.89	1.11	1.33	1.56	1.78	2.00	2.22	2.44	2.67	2.89	3.11	3.33
13	.24	.48	.72	.96	1.20	1.44	1.68	1.92	2.16	2.41	2.65	2.89	3.13	3.37	3.61
14	.26	.52	.78	1.04	1.30	1.55	1.81	2.08	2.33	2.59	2.85	3.11	3.37	3.63	3.89
15	.28	.56	.83	1.11	1.39	1.67	1.94	2.22	2.50	2.78	3.06	3.33	3.61	3.89	4.17
16	.30	.59	.89	1.18	1.48	1.78	2.07	2.37	2.67	2.96	3.26	3.56	3.85	4.15	4.44
17	.31	.63	.94	1.26	1.57	1.89	2.20	2.52	2.83	3.15	3.46	3.78	4.09	4.41	4.72
18	.33	.67	1.00	1.33	1.67	2.00	2.33	2.67	3.00	3.33	3.67	4.00	4.33	4.67	5.00
19	.35	.70	1.06	1.41	1.76	2.11	2.46	2.82	3.17	3.52	3.87	4.22	4.57	4.92	5.28
20	.37	.74	1.11	1.48	1.85	2.22	2.59	2.96	3.33	3.70	4.07	4.44	4.81	5.18	5.56
21	.39	.78	1.17	1.55	1.94	2.33	2.72	3.11	3.50	3.89	4.28	4.67	5.06	5.44	5.83
22	.41	.81	1.22	1.63	2.04	2.44	2.85	3.26	3.67	4.07	4.48	4.89	5.30	5.70	6.11
23	.43	.85	1.28	1.70	2.13	2.56	2.98	3.41	3.83	4.26	4.68	5.11	5.54	5.96	6.39
24	.44	.89	1.33	1.78	2.22	2.67	3.11	3.56	4.00	4.44	4.89	5.33	5.78	6.22	6.67
25	.46	.92	1.39	1.85	2.31	2.78	3.24	3.70	4.17	4.63	5.09	5.56	6.02	6.48	6.94
26	.48	.96	1.44	1.92	2.41	2.89	3.37	3.85	4.33	4.82	5.30	5.78	6.26	6.74	7.24
27	.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00	6.50	7.00	7.50
28	.52	1.04	1.55	2.07	2.59	3.11	3.63	4.15	4.67	5.18	5.70	6.22	6.74	7.26	7.78
29	.54	1.07	1.61	2.15	2.68	3.22	3.76	4.30	4.83	5.37	5.91	6.44	6.98	7.52	8.06
30	.56	1.11	1.67	2.22	2.78	3.33	3.89	4.44	5.00	5.55	6.11	6.67	7.22	7.78	8.33
31	.57	1.15	1.72	2.30	2.87	3.44	4.02	4.59	5.17	5.74	6.32	6.89	7.46	8.04	8.61
32	.59	1.18	1.78	2.37	2.96	3.56	4.15	4.74	5.33	5.92	6.52	7.11	7.70	8.30	8.89
33	.61	1.22	1.83	2.44	3.05	3.67	4.28	4.89	5.50	6.11	6.72	7.33	7.94	8.55	9.17
34	.63	1.26	1.89	2.52	3.15	3.78	4.40	5.04	5.67	6.29	6.93	7.56	8.18	8.81	9.44
35	.65	1.30	1.94	2.59	3.24	3.89	4.53	5.18	5.83	6.48	7.13	7.78	8.42	9.08	9.72
36	.67	1.33	2.00	2.67	3.33	4.00	4.66	5.33	6.00	6.67	7.33	8.00	8.67	9.33	10.00
37	.68	1.37	2.06	2.74	3.42	4.11	4.79	5.48	6.17	6.85	7.54	8.22	8.91	9.59	10.28
38	.70	1.41	2.11	2.82	3.52	4.22	4.92	5.63	6.33	7.03	7.74	8.44	9.15	9.85	10.56
39	.72	1.44	2.17	2.89	3.61	4.33	5.05	5.78	6.50	7.22	7.95	8.67	9.39	10.11	10.83
40	.74	1.48	2.22	2.96	3.70	4.44	5.18	5.92	6.67	7.41	8.15	8.89	9.63	10.37	11.11

Table gives cu. yds. in 1 ft. of a triangle of given width and height. Corrections for tenths of width are one tenth the values found under each height considering the widths from 1 to 9 as tenths and similarly the corrections for tenths of height are one tenth the figures opposite width considering the heights from 1 to 9 as tenths. Thus if w =16.2 and h =5.3, cu. yds. =1.48+.028+.089 =1.597 cu. yds. or practically 160 cu. yds. per 100 ft. If w exceeds 40 ft., use one half and multiply result by 2, if both w and h are large use one half of each and multiply result by 4. Any cross-section may be divided into triangles by the following rule. To the triangle of the sum of the outside cuts (or fills) =h, and ½ the roadbed =w, add the triangles formed by taking the distance out to each break in turn (=w's) by the difference between the cuts (or fills) on each side of it (=h's) always subtracting the outer from the inner.

Distances from Center of Roadway for Cross-Sectioning.

Roadway 16 feet wide. Side Slopes 1 on 1½.

For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.2	8.3	8.5	8.6	8.8	8.9	9.1	9.2	9.4	0
1	9.5	9.7	9.8	10.0	10.1	10.3	10.4	10.6	10.7	10.9	1
2	11.0	11.2	11.3	11.5	11.6	11.8	11.9	12.1	12.2	12.4	2
3	12.5	12.7	12.8	13.0	13.1	13.3	13.4	13.6	13.7	13.9	3
4	14.0	14.2	14.3	14.5	14.6	14.8	14.9	15.1	15.2	15.4	4
5	15.5	15.7	15.8	16.0	16.1	16.3	16.4	16.6	16.7	16.9	5
6	17.0	17.2	17.3	17.5	17.6	17.8	17.9	18.1	18.2	18.4	6
7	18.5	18.7	18.8	19.0	19.1	19.3	19.4	19.6	19.7	19.9	7
8	20.0	20.2	20.3	20.5	20.6	20.8	20.9	21.1	21.2	21.4	8
9	21.5	21.7	21.8	22.0	22.1	22.3	22.4	22.6	22.7	22.9	9
10	23.0	23.2	23.3	23.5	23.6	23.8	23.9	24.1	24.2	24.4	10
11	24.5	24.7	24.8	25.0	25.1	25.3	25.4	25.6	25.7	25.9	11
12	26.0	25.2	26.3	26.5	26.6	26.8	26.9	27.1	27.2	27.4	12
13	27.5	27.7	27.8	28.0	28.1	28.3	28.4	28.6	28.7	28.9	13
14	29.0	29.2	29.3	29.5	29.6	29.8	29.9	30.1	30.2	30.4	14
15	30.5	30.7	30.8	31.0	31.1	31.3	31.4	31.6	31.7	31.9	15
16	32.0	32.2	32.3	32.5	32.6	32.8	32.9	33.1	33.2	33.4	16
17	33.5	33.7	33.8	34.0	34.1	34.3	34.4	34.6	34.7	34.9	17
18	35.0	35.2	35.3	35.5	35.6	35.8	35.9	36.1	36.2	36.4	18
19	36.5	36.7	36.8	37.0	37.1	37.3	37.4	37.6	37.7	37.9	19
20	38.0	38.2	38.3	38.5	38.6	38.8	38.9	39.1	39.2	39.4	20
21	39.5	39.7	39.8	40.0	40.1	40.3	40.4	40.6	40.7	40.9	21
22	41.0	41.2	41.3	41.5	41.6	41.8	41.9	42.1	42.2	42.4	22
23	42.5	42.7	42.8	43.0	43.1	43.3	43.4	43.6	43.7	43.9	23
24	44.0	44.2	44.3	44.5	44.6	44.8	44.9	45.1	45.2	45.4	24
25	45.5	45.7	45.8	46.0	46.1	46.3	46.4	46.6	46.7	46.9	25
26	47.0	47.2	47.3	47.5	47.6	47.8	47.9	48.1	48.2	48.4	26
27	48.5	48.7	48.8	49.0	49.1	49.3	49.4	49.6	49.7	49.9	27
28	50.0	50.2	50.3	50.5	50.6	50.8	50.9	51.1	51.2	51.4	28
29	51.5	51.7	51.8	52.0	52.1	52.3	52.4	52.6	52.7	52.9	29
30	53.0	53.2	53.3	53.5	53.6	53.8	53.9	54.1	54.2	54.4	30
31	54.5	54.7	54.8	55.0	55.1	55.3	55.4	55.6	55.7	55.9	31
32	56.0	56.2	56.3	56.5	56.6	56.8	56.9	57.1	57.2	57.4	32
33	57.5	57.7	57.8	58.0	58.1	58.3	58.4	58.6	58.7	58.9	33
34	59.0	59.2	59.3	59.5	59.6	59.8	59.9	60.1	60.2	60.4	34
35	60.5	60.7	60.8	61.0	61.1	61.3	61.4	61.6	61.7	61.9	35
36	62.0	62.2	62.3	62.5	62.6	62.8	62.9	63.1	63.2	63.4	36
37	63.5	63.7	63.8	64.0	64.1	64.3	64.4	64.6	64.7	64.9	37
38	65.0	65.2	65.3	65.5	65.6	65.8	65.9	66.1	66.2	66.4	38
39	66.5	66.7	66.8	67.0	67.1	67.3	67.4	67.6	67.7	67.9	39
40	68.0	68.2	68.3	68.5	68.6	68.8	68.9	69.1	69.2	69.4	40

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 41.9. For same slopes but other widths of roadbed correct above figures by one-half difference in width of roadbed; thus in example above for 20 ft. roadbed distance will be 41.9+(20—16)÷2 or 2 ft. added to 41.9 =43.9. For slopes of 1 on 1 see inside of front cover.

Made in Germany.