Book-9-C, Dr. 11-A

T. & L.
FIELD BOOK
560 A

35-M20

TABLES FOR EXCAVATIONS AND EMBANKMENTS.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.
ROADWAY 18 FEET WIDE. SIDE SLOPES 1 TO 1.
FOR SINGLE TRACK EXCAVATION.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	0
1	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	1
2	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	2
3	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	3
4	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	4
5	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	5
6	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	6
7	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	7
8	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	8
9	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	9
10	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	10
11	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	11
12	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	12
13	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	13
14	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	14
15	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	15
16	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	16
17	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	17
18	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	18
19	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	19
20	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	20
21	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	21
22	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	22
23	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	23
24	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	24
25	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	25
26	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	26
27	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	27
28	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	28
29	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	29
30	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	30
31	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	31
32	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	32
33	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	33
34	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	34
35	44.0	44.1	44 2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	35
36	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	36

Calculated by Julien A. Hall, M. Am. Soc. C. E.

For Keith's Railroad Curve Tabels see end of book.

Sta	+	⊼	− Elev	Ground	Grade	Dt. Grade
B.M. ⊙	5.13 7.16	884.88 891.88	0.16 - 884.72			
62						
+50					85.5	
63				86.3	84.5	83.0
+50	C-32		C-31	86.1	84.9	83.4
64	C-31		C-29	85.1	84.2	82.7
+50	C-31		C 31.5	84.8	83.2	81.7
65				82.8	82.0	80.5
+50				80.4	80.4	78.9

Gr. Rod

Spk in 20" Oak 120' Lt Sta 55+64 Elev. 879.15

To be Revised

See Page 23

6.4

4.5 / 33 — C 4.5 / 4.4 / 27.0 — 4.1 / 15 — 4.8 / 8 — C 2.7 / 4.7 — 4.1 / 7 — 5.2 / 17 — C 3.4 / 5.5 / 25.4 — 5.6 / 33 — 7.4 / 8.9

6.2 / 40 — C.23 / 6.2 / 32.2 — 6.3 / 25 — 5.3 / 13 — C.1.1 / 5.9 — 6.5 / 9 — DC.1.4 / 7.1 / 28.6 — 7.0 / 33 — 7.0 / 8.5

7.3 / 40 — DC.0.7 / 8.5 / 25.8 — 7.7 / 7 — C.1.1 / 6.6 — 7.3 / 13 — C.1.6 / 7.6 / 29.4 — 7.7 / 9.2

10.0 / 40 — DC.0.6 / 9.6 / 31 — 9.1 / 24 — 6.5 / 7 — C.1.3 / 7.4 / 9 — 8.0 / 8 — C.2.1 / 8.1 / 31.4 — 8.1 / 40 — 8.7 / 10.2

10.7 / 40 — DC.0.9 / 11.5 / 31 — 9.7 / 18 — 8.4 / 7 — 9.1 / 3 — C.0.6 / 9.3 / 0 — 10.1 / 16 — DC.1.0 / 10.4 / 31.0 — 10.6 / 40 — 9.9 / 11.4

11.9 / 40 — DC.1.3 / 11.7 / 31 — 11.6 / 13 — 10.7 / 7 — F.0.1 / 11.6 — 12.1 / 19 — DC.0.7 / 12.3 / 31 — 12.6 / 40 — 11.5 / 13.0

Sta	+	⊼	−	Ground	Grade	Dt. Grade
⊙	3.00	882.33	12.55	879.33		
66				79.0	78.7	77.2
+50				77.5	77.0	75.5
67				75.5	75.3	73.8
+50				73.0	73.6	72.1
+68				72.1	73.0	71.5
⊙	3.10	874.04	11.39	870.94		
68				70.9	72.0	70.5
+20				70.2	71.4	69.9

X = Stake not set

DG. Rod

Gr Rod

1½:1 Slope all 31.0' except Sta. 6.7 which is 32

	X C 3.2				C 0.1		D.C.			3.6
1.7/4	1.9/35.8	2.0/12	2.7/5	3.4/4	3.5/0	3.9/27	1.2/3.9/31	4.2/40		5.1
	X C 5.0				C 0.3		C. 1.9			
1.5/50	1.8/43.0	2.0/35	1.1/12	3.7/8	4.9/4	5.0/0	4.3/16	4.9/31	5.0/40	5.3
										6.8
	X C 6.2				F 0.3			D.C. 0.9		
2.2/50	2.3/47.8	3.3/29	3.5/12	7.1/3	7.3/0	7.2/7	7.2/19	7.6/31	7.6/40	7.0
										8.5
	X C 4.0				F 1.1		F 1.6			
5.9/50	6.2/39.0	6.8/21	6.6/11	9.1/4	9.8/0	10.3/18	10.3/19.4		10.7/33	8.7
										10.2
6.5/50	7.7/30	8.1/16	8.2/9	9.8/4	10.5/0	10.4/11	11.6/40			9.3
	X C 2.9				F 1.6		F 4.1			
0.3/40	0.6/34.6	1.6/19	1.6/9	3.2/4	3.6	3.2/7	4.8/16	6.1/29.4	6.9/40	2.0
										3.5
1.5/40	2.7/17	4.3/5	4.0	4.0/6	5.4/12	7.1/25	6.9/40			

Sta	+	⊼ 874.04	−	Ground	Grade	Dt. Grade
68+50				69.1	70.6	69.1
69				68.3	69.6	68.1
+50				67.7	68.8	67.3
70				66.9	68.4	66.9
+50				67.3	68.2	66.7
	4.87	871.65				
71				67.4	68.3	66.8
+50				67.3	68.3	66.8
B.M.	4.87	871.65		866.78		
72				66.9	68.5	67.0

															Gr Bal
4.1 / 36	DC.0.5 4.4 / 11.0	4.7 / 22	6.8 / 14	6.1 / 6	5.3 / 4	F1.1 5.1	5.3 / 7	6.8 / 15	7.5 / 17	6.8 / 19	F3.4 6.8 / 26.6	6.8 / 40			3.4 4.9

BM Ctr Mon Sta 866.78

4.8 / 40	DC.0.1 4.8 / 31.0	4.7 / 20	4.6 / 13	4.5	4.7 / 8	4.7 / 17	6.0 / 18	4.8 / 20	DC.0.3 4.6 / 31.0	4.6 / 40					3.4 4.9

5.2 / 40	F1.8 5.2 / 20.2	5.0 / 7	F1.2 4.6 / 0	4.9 / 9	4.9 / 17	6.0 / 18	4.8 / 21	DC.0.1 4.8 / 31.0	4.8 / 40						3.4 4.9

Ctr. Mon Sta 72+38

5.2 / 40	F2.0 5.2 / 21.0	5.2 / 7	F1.6 4.6 / 0	5.2 / 18	6.8 / 21	6.8 / 25	F3.0 6.2 / 25.0	5.2 / 28	40						3.2 4.7

Sta	+	π 871.65	−	Ground	Grade	D+Grade
72+50				67.1	68.7	
+60					68.7	
+80					68.9	
+85					69.0	
+95					69.1	
73				66.6	69.1	
+50				66.9	69.7	

B.M. El. 866.78
Ctr Mon Sta 72+38

5"

Gr. Rod.

5.2 / 40 — F2.2 5.2 / 21.8 — 4.6 / 5 — F1.8 4.8 / 0 — 4.6 / 5 — 5.1 / 9 — F1.9 4.9 / 20.6 — 5.0 / 40 — 3.0 / 45

3.0 / 4.5

5.2 / 40 — F2.7 5.3 / 23.8 — 5.3 / 10 — 4.9 / 6 — 5.2 / 5 — F3.5 5.1 / 0 — 5.4 / 5 — 9.4 / 9 — 9.4 / 29 — F4.9 7.5 / 32.6 — 5.9 / 40 — 2.6

F2.7 4.7 / 23.8 — 4.7 / 8 — 4.9 / 7 — F2.8 4.8 / 0 — 4.8 / 9 — F3.2 5.2 / 25.8 — 5.1 / 33 — 2.0 / 3.5

Sta	+	π	−	Ground	Grade	Dt. Grade
BM	9.22	876.0		866.78		
74				68.0	70.3	
+50				69.8	71.0	
75				71.6	71.9	
+40				72.0		
+50				72.1	72.7	
76				71.3	73.6	
+50				71.7	74.4	

866.78
922
876.00

Gr. Rod

ctr Mon Sta 72+38

8.8 / 40 | F2.3 8.0 22.2 | 7.4 / 13 | 7.4 / 9 | 7.8 / 8 | 7.7 / 2 | F2.3 8.0 0 | 7.6 / 6 | F2.0 7.7 21.0 | 8.0 / 40 | 5.7 / 12

8.4 / 40 | F2.4 7.4 22.6 | 6.4 / 8 | 6.9 / 3 | 6.6 / 1 | F1.2 6.2 0 | 5.8 / 4 | 6.4 / 7 | 5.5 / 18 | DC.0.9 5.6 31.0 | 5.7 / 40 | 5.0 / 6.5

6.2 / 40 | DC.00 5.6 31.0 | 4.1 16-8 | 5.1 6-1 | F0.3. 4.4 | 3.6 / 4 | 4.3 / 9 | DC.1.3 4.3 31.0 | 4.3 / 40 | 4.1 / 5.6

5.1 / 42 | 3.0 / 8 | 3.7 / 5 | 4.0 | 3.3 / 2 | 4.0 / 7 | 4.0 / 32 | L.0.

5.4 / 40 | DC.0.4 4.4 31.0 | 3.1 / 8 | 3.8 / 5 | 4.1 / 40 | F0.6 3.9 0 | 3.4 / 3 | 4.0 / 9 | DC.1.0 3.8 31.0 | 4.1 / 40 | 3.3 / 4.8

5.7 / 40 | F3.4 5.8 26.6 | 5.8 / 12 | 4.6 / 5 | F2.3 4.7 0 | 4.7 / 4 | F2.5 4.9 23.0 | 4.5 / 40 | 2.4 / 3.9

5.5 / 40 | F3.9 5.5 28.6 | 5.5 / 11 | 4.2 / 8 | 3.9 / 3 | F2.7 4.3 | 4.3 / 3 | 4.7 / 6 | F2.9 4.5 24.6 | 4.3 / 40 | 1.6

Sta	+	π	−	Ground	Grade	Dt. Grad
		876.00 883.48				
76+76				65.2	74.7	
0	8.92	883.48	1.44	74.56		
77				74.1	75.3	
+50				71.0	76.1	
78				77.8	77.0	
+50				79.3	77.8	
79				78.7	78.7	
+50				78.7	79.5	

Gr Rod

11.3/40, 11.2/17, 10.4/11, 10.8, 10.3/2, 10.4/7, 10.4/23, 10.3/40

8.4/40, (D.C. 1.4 8.3/31.0), 8.4/23, 7.8/16, 8.5/10, 9.5/8, F 1.2 9.4, 8.4/2, 8.7/7, 9.0/20, (D.C. 0.9 8.8/31.0), 8.8/40 | 8.2 9.7

6.3/40, (D.C. 2.6 6.3/33.4), 6.1/22, 6.1/11, 7.1/6-3, F 0.1 7.5/0, 6.5/3, 7.0/7, 6.7/23, (D.C. 2.4 6.5/32.6), 6.5/40 | 7.4 8.9

4.3/50, (D.C. 3.7 4.3/37.8), 4.0/23, 3.8/12, 5.5/7, C 0.8 5.7, 4.8/3, 5.7/8, 5.7/23, D.C. 2.3 5.7/32.2, 5.9/40 | 6.5 8.0

4.6/40, (D.C. 2.6 4.6/33.4), 4.3/21, 3.9/12, 4.7/8, 4.8/2, C 1.5 4.2/0, 4.2/3, 5.3/7, 5.7/23, (D.C. 1.3 5.9/31.0), 6.2/40 | 5.7 7.2

5.3/40, (D.C. 1.3 5.3/31.0), 5.0/22, 4.0/12, 5.0/8, 5.2/2, 0.0 4.8, 6.2/9, 6.6/23, (F 1.7 6.5/19.8), 6.8/40 | 4.8 6.3

6.2/40, 6.1/32, (0.0 D.C. 5.5/26.8), 5.5/17, 4.8/14, 4.7/10, 5.0/9, F 0.8 4.8, 5.5/5, 5.9/11, (F 2.0 6.0/21.0), 6.2/40 | 4.0 5.5

Sta	+	Π	−	Ground	Grade	Dt. Grade
BM	2.95	887.52		884.57		
80				79.8	80.4	
+50				80.7	81.0	
81				82.0	81.8	
+50				82.7	82.3	
82				83.5	82.7	
+50				84.3	82.9	
83				84.3	83.0	

884.52
Z95
887.52

5/14/25

Purtell
Stenglein
Ball
Goldberg

SpKim 20 Pop R+Sta 84+75

12 / 43	10.1 / 36	9.1 / 28	F1.5 86 19.0	8.5 / 12	8.5 / 7	8.1 / 4	F0.8 7.9 0	8.5 / 5	9.3 / 12	F2.7 9.8 23.8	10.3 / 40			7.1 / 8.6
	8.7 / 40		DDRC. 8.0 29.7	6.7 / 11	7.2 / 7	6.9 / 4	F0.3 6.8 0	8.0 / 4	8.6 / 12	F2.7 9.2 23.8	9.6 / 40			6.5 / 8.0
7.0 / 40	C.07 6.5 31.0		5.2 / K-11	6.0 / 11	5.8 / 8	5.4 / 4	C.0.1 5.6 0	6.8 / 5	7.5 / 15	F2.2 7.9 21.8	8.4 / 40			5.7 / 7.2
5.2 / 40	DC.1.7 5.0 31.0		4.4 / 20	3.8 / 15	5.1 / 9	5.1 / 7	4.9 / 3	6.0 3 4.9 0	6.1 / 6	DC.0.2 6.5 22.3	7.0 / 40			5.2 / 6.7
4.7 / 40	DC.1.7 4.6 31.0	4.4 / 24	3.6 / 16	3.8 / 11	4.4 / 10	4.3 / 7	4.1 / 3	C.0.0 4.2 0	4.7 / 3	5.5 / 15	DC.0.7 5.6 22.5	6.0 / 40		4.8 / 6.3
4.5 / 40	DC.2.0 4.1 31.8	3.8 / 22	2.8 / 17	2.9 / 12	3.4 7-11	3.1 / 3	C1.8 3.3 0	3.5 / 16	DC. 2.6 3.5 25.4	3.9 / 40				4.6 / 6.1
4.5 / 40	C1.8 4.2 31.0	3.6 / 19	3.6 / 9	3.7 / 4	C1.7 3.3 0	3.0 / 17	DC 3.0 3.0 26.0	3.6 / 40						4.5 / 6.0

Sta	+	℄ 887.52	−	Ground	Grade	℄ 886.31
83+50				83.6	83.0	
84				82.9	82.8	3.5
+50				82.1	82.5	3.8
B.M.	2.02	886.59				
85				81.9	82.1	4.2
+50				81.5	81.6	4.7
86				80.6	81.3	5.0
+50				79.1	81.0	5.3

BM. El. 88457 Spk in 20"
Pap Rt. Sta 84+75

Gr. R.

5.0 / 40 — C.12 / 48 / 31.0 — 4.7 / 27 — 4.2 / 14 — 4.4 / 9 — 4.0 / 5 — C.0.5 / 4.6 / 0 — 3.6 / 8 — 3.2 / 22 — DC.2.9 / 3.1 / 25.9 — 3.2 / 40 — 4.5 / 6.0

6.1 / 40 — DC.0.7 / 5.5 / 31.0 — 4.8 / 20 — 5.0 / 10 — 0.0 / 4.7 / 0 — 4.0 / 17 — D.C. / 2.4 / 3.8 / 25.1 — 3.2 / 40 — 4.7 / 6.2

7.2 / 40 — DC.DC. / 6.5 / 30.6 — 6.0 / 21 — 5.2 / 15 — 5.7 / 7 — F0.5 / 5.5 / 0 — 5.0 / 13 — DC.2.7 / 3.8 / 25.1 — 3.5 / 40 — 5/14/35 — 5.0 / 6.5

Spk in 20" Pap. Rt. Sta. 84+75 Elev. 88.457

F0.4

7.2 / 40 — 6.6 / 31 — C.00 / 6.0 / 26 — 6.0 / 23 — 5.1 / 17 — 4.9 / 0 — 4.0 / 12 — C.2.4 / 3.6 / 25.1 — 3.0 / 40 — 4.5 / 6.0

7.1 / 40 — C.0.1 / 6.4 / 31 — 4.6 / 15 — 5.2 / 13 — 4.7 / 9 — 5.2 / 6 — F0.3 / 5.3 / 0 — 4.6 / 3 — 5.1 / 13 — C.2.5 / 4.0 / 25.3 — 4.0 / 40 — 5.0 / 6.5

X

7.7 / 40 — C.00 / 7.5 / 34.4 — 5.5 / 23 — 6.4 / 14 — F0.2 / 6.2 / 0 — 5.2 / 5 — 6.6 / 13 — C.0.7 / 6.8 / 24.3 — 7.0 / 40 — 6.2 / 6.0 / 7.5

9.8 / 40 — F3.1 / 9.2 / 26.8 — 9.1 / 15 — 7.4 / 5 — F2.2 / 7.8 / 0 — 7.5 / 4 — 9.2 / 14 — F3.9 / 6.5 / 28.6 — 9.7 / 40 — 5.6 / 7.1

Sta	+	⊼ 886.59	−	Ground	Grade	
87				78.6	80.8	5.5
+50				79.2	80.7	5.7
88				79.8	80.7	5.7
+50				80.8	80.7	5.7
89				81.8	80.9	5.4
+50				82.3	81.1	5.2
90				82.2	81.3	5.0

GR.

8.8 / 40	F 3.3 9.1 26.2	9.4 / 23	8.8 / 17	9.7 / 16	8.0 / 6	F 2.3 8.1 0	8.1 / 4	9.4 / 14	F 3.9 9.7 28.6	10.0 / 40	5.8
7.1 / 40	F 1.5 7.4 19	8.1 / 13	7.6 / 11	F 1.8 7.7 0	7.4 / 3	8.4 / 11	F 3.1 8.0 25.4	9.1 / 40			5.9 7.4
6.5 / 40	C 0.9 6.5 31	6.3 / 16	6.8 / 14	F 1.0 6.9 0	6.9 / 6	8.0 / 17	F 2.3 8.2 22.2	8.7 / 40			5.9 7.4
5.6 / 40	C 1.7 5.5 30.6	5.4 / 21	5.5 / 6	F 0.3 6.2 0	5.7 / 3	6.4 / 10	F 1.5 1.4 19				5.9 7.4
4.8 / 40	C 2.4 4.8 32.6	4.6 / 18	C 0.9 4.8 0	4.7 / 4	6.0 / 12	C 0.4 6.8 31	6.8 / 40				5.7 7.2
4.5 / 40	C 2.6 4.4 33.4	4.3 / 17	C 1.3 4.2 0	4.4 / 5	5.4 / 9	6.0 / 19	C 0.8 6.2 31	6.3 / 40			5.5 7.0
3.7 / 40	C 3.1 3.7 35.4	3.7 / 25	4.4 / 16	3.8 9-7	4.3 / 6	C 1.0 4.3 0	5.4 / 10	C 0.7 6.1 31.0	6.1 / 40		5.3 6.8

Sta	+	℄ 886.59	−	Ground	Grade	
90+50				81.8	81.5	4.8
91				81.2	81.7	4.6
+50				81.4	81.9	4.4
92				82.3	81.9	4.4
⊙	4.84	887.63	3.80	882.79		
+50				81.8	82.0	4.0
						885.97 ℄
93				81.1	81.9	4.1
+50				80.9	81.8	4.2

Gv.R

3.9/40 (C 2.6 / 4.0 / 33.4) 5.2/17 4.3/11-8 4.9/6 (C 0.0.1 / 5.0 / 0) 4.6/1 5.8/8 5.7/10 6.1/20 (G 0.0.5 / 6.1 / 31) 6.1/40 — 5.1 / 6.6

5.0/40 (C 0.0.6 / 5.8 / 31.0) 6.4/15 5.2/7 (F 0.0.6 / 5.5 / 0) 5.1/1 5.5/7 6.5/10 (F 2.0 / 6.9 / 31.0) — 4.9 / 6.4

5.3/40 (C 0.0.9 / 5.3 / 31.9) 6.1/17 5.6/11 5.0/7 (F 0.0.6 / 5.3 / 0) 4.5/4 5.7/10 6.4/16 (C 0.0.0 / 6.2 / 31.0) 6.2/40 — 4.7 / 6.2

4.5/40 (C 1.1.7 / 4.5 / 31.0) 4.3/18 3.8/9 (C 0.0.3 / 4.4 / 0) 4.0/1-5 5.4/11 (G 0.0.7.2 / 6.0 / 31.0) 5.7/39 6.1/44 — 4.7 / 6.2

5.5/40 (C 0.0.4 / 5.5 / 31.0) 5.2/20 5.4/7 6.0/5 (F 0.0.5 / 6.1 / 0) 5.6/2 5.5/7 6.3/11 7.0/20 (C 0.0.0 / 21 / 27.0) 7.3/40 — 5.6 / 7.1

6.3/40 (C 0.0.9 / 6.3 / 31.0) 6.6/19 6.3/14 6.2/6 6.7/5 (F 1.1 / 6.8 / 0) 6.8/1 6.4/2 7.0/7 8.0/16 (F 2.3 / 8.0 / 22.2) 8.5/40 — 5.7 / 7.2

7.0/40 (C 0.0.4 / 7.0 / 31.9) 7.2/22 6.8/15 6.5/6 7.0/4 (F 1.2 / 7.1 / 0) 7.1/2 6.8/3 8.1/13 (F 2.5 / 8.4 / 23.0) 8.7/40 — 5.9 / 7.4

Sta	+	⊼ 887.63	−	Ground	Grade	
94				80.9	81.7	4.3
+50				81.0	81.7	4.3
95				81.2	81.7	4.3
+50				81.0	81.9	4.1
+70				81.0	82.1	
+86				81.0	82.1	
96				81.2	82.2	3.8
+50				82.1	82.7	3.3

Gr R.

6.8/40 (C.0.7 6.8/31.0) 7.2/16 6.7/5 7.2/4 F1.1 7.1/0 7.3/2 6.8/3 8.2/14 (F2.4 8.4/22.6) 8.8/40 — 6.0 / 7.5

6.6/40 (C.0.9 6.6/31.0) 7.4/17 6.6/13 6.4/5 6.8/4 (F0.8 6.8/0) 7.1/2 6.7/3 7.2/8 8.2/14 (F2.3 8.3/22.2) 8.8/40 — 6.0 / 7.5

5.8/40 (C.1.7 5.8/31.0) 5.8/29 7.3/17 6.7/14 6.3/5 6.8/2 (F0.7 6.7/0) 7.0/3 6.5/5 7.7/14 (F2.0 8.0/21.0) 8.7/40 — 6.0 / 7.5

6.1/40 (C1.2 6.0/31.0) 6.6/29 6.9/9 6.6/5 (F1.1 6.8/0) 6.8/4 6.5/6 7.8/12 (F2.1 7.8/21.4) 8.3/40 — 5.7 / 7.2

#104

5.0/58 8.1/45 10.1/34 10.5/25 10.2/20 6.8/11 6.9 6.9/4 6.6/8 7.1/12 7.1/26 8.2/40

6.0/40 6.0/33 7.7/16 7.3/7 6.6/5 7.0/3 6.9 6.9/5 6.4/8 7.0/27 7.5/40

5.6/40 (C.0.7 6.2/31.0) 7.1/13 6.8/8 6.2/4 6.2/2 (F1.2 6.6/0) 6.8/4 6.2/7 7.2/15 7.8/21 (F5.2 10.6/33.8) 8.0/38 7.2/45 — 5.4 / 6.9

4.7/40 (C.1.6 4.8/31) 5.4/13 (F0.9 5.8/0) 5.8/5 5.2/16 (C.0.0 6.4/31.0) 6.7/40 — 4.9 / 6.4

Sta	+	⊼	−	Ground	Grade	
		887.63				
97				82.8	83.2	2.8
+50				83.7	83.8	2.8
98				84.3	84.4	1.6
+47				84.6	84.9	1.1
+50					85.0	
+52						
+58						
+65						
+79.1						
BM			3.22	884.41		

B.M. Elev. 884.48
Spk in T.P. S.E. Cor Hodgson + No. 60. L.

Gr. R.

3.1 / 40 — C 2.5 — 3.4 / 33.0 — 4.5 / 18 — 4.7 / 9 — 5.2 / 3 — F 0.8 — 5.2 / 0 — 5.2 / 4 — 4.3 / 10 — 3.8 / 16 — C 1.6 — 4.3 / 31.0 — 4.3 / 40 — 4.9 / 5.1

1.9 / 40 — C 3.3 — 2.0 / 36.2 — 2.0 / 33 — 3.6 / 13 — 4.3 / 4 — F 0.4 — 4.2 / 8 — 3.0 / 8 — 2.6 / 16 — 4.0 / 27 — C 1.3 — 4.0 / 31.0 — 4.0 / 40 — 3.8 / 5.3

0.8 / 45 — C 3.9 — 1.8 / 38.6 — 1.0 / 31 — 2.9 / 13 — 3.2 / 6 — F 0.8 — 3.5 / 0 — 3.6 / 5 — 2.5 / 12 — 2.2 / 16 — 3.2 / 27 — C 1.5 — 3.2 / 31 — 3.3 / 40 — 3.2 / 4.7

0.6 / 45 — C 3.5 — 0.7 / 37.0 — 2.6 / 9 — 3.1 / 5 — F 0.5 — 3.2 / 0 — 3.2 / 12 — 2.0 / 17 — 1.6 / 25 — C 2.2 — 1.0 / 31.8 — 2.7 / 4.2

4.6 / 40 — 4.6 / 29 — 4.0 / 15 — 3.0 / 10 — 3.0 / 0 — 3.2 / 15 — 4.0 / 23 — 4.8 / 40

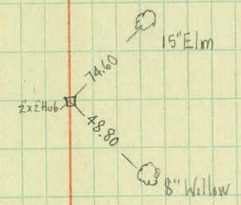
4.3 / 40 — 4.3 / 32 — 4.0 / 15 — 3.0 / 11 — 2.8 — 2.8 / 11 — 3.0 / 21 — 3.2 / 40

3.0 / 45 — 2.9 / 33 — 3.0 / 14 — 2.5 — 2.8 / 21 — 3.1 / 41

3.7 / 50 — 2.4 / 25 — 2.4 — 2.5 / 15 — 3.8 / 50

9479105

83+00 P.O.T. Set 2"x2" Hub


15" Elm
74.60
2x2x46
48.80
8" Willow

5/4/35

Portell
Skoog Ion
Bell
Goldberg

Check Levels

	+	⊼	−	Elev	Orig.
B.M.	3.19	887.60		884.41	884.48
⊙	3.90	886.62	4.88	882.72	
B.M.	3.27	887.83	2.06	884.56	884.57
⊙	1.18	877.05	11.96	875.87	
B.M.	12.75	867.51	10.26	866.79	866.78
⊙		880.26	0.72	877.56	
⊙	0.90		2.70		
BM			6.81		

Spk in T.P. S.E. Cor Hodgson & No. Co. Line

Top Slope Stake Lt Sta 92+50

Spk in 20" Pop. Rt. Sta 84+75

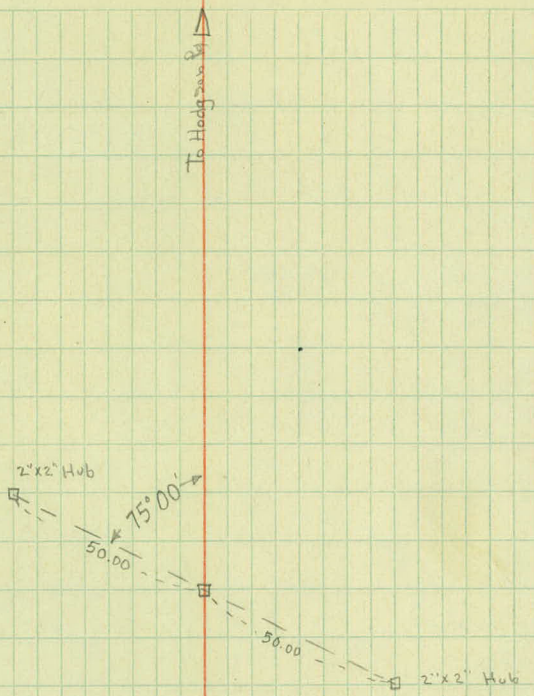
Top Stake 15' Lt. Sta 77+00

Ctr. Mon Sta 72+38

Top Stake 25' Rt Sta 67+00

Blue Top

Tie to Mont. @ Sta. 72+38


To Hodgson Rd
2"x2" Hub
75°00'
50.00
50.00
2"x2" Hub

Sta	+	∧	−	Elev.	Grade
	5.61	884.77			
	5.91	889.88	0.80	883.97	
62+80				86.0	
63				86.9	85.4 Dit.
+50				86.2	84.9
64				85.1	84.2
+50				84.8	83.7
65				82.8	82.0
+50				80.4	80.4
66				78.9	78.7

0.0 / 7.9 — 1.5 ditch.

D&/23.0

W. H.C.
A.D.C.
D.S.
J.B.
L.G.
} May-20/25

Rod. LT ℄ RT

Spike in 20" oak 130' Lt. Sta. 55+64 Elev. 875.45

	20 / 40	22 / 28	5.7 / 21	5.9 / 16	4.4 / 12	3.9	4.4 / 12	5.1 / 16	5.7 / 22	2.9 / 27	3.4 / 40
	C-2.3										C-1.0
	22 / 33	21.2 / 24	22 / 25	23 / 17	3.6 / 9	C-1.5 3.0	2.8 / 9	3.1 / 26	3.1 / 24.6		3.8 / 33
				C-1.1		C-1.3			D.C-1.5		
.0		3.7 / 38		3.8 / 33	2.8 / 12	3.7 / 0	3.6 / 3	4.4 / 9	5.0 / 31	4.5 / 33	
			D.C-1.6			C-0.9			D.C. 1.5		
5.7		6.7 / 33	6.6 / 31	6.4 / 26.2	5.0 / 9	4.8	5.2 / 10		5.7 / 31	5.7 / 33	
		DC-0.7				C-1.6			C-0.7		
6.7		7.8 / 33	7.5 / 31	1.3 / 26.6	6.8 / 22	5.7 / 16	4.4 / 7	5.1	5.6 / 8	6.0 / 32.8	5.9 / 38
			DC.1.12			C-0.8			DC-1.4		
7.9	8.5 / 40	8.2 / 31		7.7 / 15	6.7 / 7	7.1 / 3	7.1	7.7 / 14	8.0 / 31	8.3 / 40	
		D.C. 1.1	0.0			0.0			F.0.3	D.C-0.9	
9.5	9.9 / 40	9.9 / 31.0	9.5 / 13	8.6 / 8	9.3 / 4	9.5	5.8 / 4	9.8 / 17.2		10.1 / 31.0	10.4 / 40
		C-1.7				C-0.2	X 0.0		D.C.1.2		
11.2	9.6 / 40	9.5 / 33	9.7 / 31	9.9 / 7	11.8 / 4	11.0	11.2 / 13.0		11.5 / 31.0		11.8 / 40

		889.88			
66+50				72.5	77.0
T.P.	4.67	881.30	13.25	876.63	
67				75.3	75.3
+50				72.9	73.6
+68				72.0	73.0
68+00				70.7	72.0
+20				70.0	71.4
T.P.	1.60	871.83	11.07	870.23	
68+50				68.9	70.6
69				67.8	69.6

Lt. | Rt.

C-0.5 | C-0.8

9.5 / 40 | 8.6 / 38 | 9.1 / 18 | 8.6 / 12 | 12.4 / 4 | 12.4 | 11.7 / 12 | 12.1 / 37.2 | 12.3 / 40

C-4.2 | D.C.1.2

1.5 / 40 | 1.8 / 38 | 2.5 / 14 | 5.8 / 3 | 00 / 60 | 5.7 / 13 | 6.3 / 31 | 6.3 / 40

C-2.8 | F-0.7 | F1.2

4.9 / 40 | 4.9 / 38 | 4.7 / 12 | 8.4 / 2 | 8.4 | 8.8 / 17.8 | 9.5 / 31

C-2.3 | F1.0 | F0.5

5.8 / 40 | 6.0 / 38 | 6.5 / 28 | 6.1 / 12 | 8.6 / 4 | 9.3 | 9.2 / 7 | 9.5 / 12 | 8.8 / 15.0 | 10.1 / 31

C-1.4 | F1.3 | F4.0

7.6 / 40 | 7.9 / 38 | 8.9 / 18 | 8.9 / 8 | 10.5 / 4 | 10.6 | 10.5 / 7 | 13.3 / 29 | 14.3 / 40

C-0.6 | F1.4 | F4.4

8.8 / 40 | 9.3 / 31 | 10.3 / 12 | 11.4 / 6 | 11.3 | 11.2 / 6 | 12.7 / 12 | 14.3 / 30.5 | 14.3 / 40

F-1.3 | F-1.7 | F-3.3

7.7 / 38 | 7.5 / 18.2 | 9.8 / 12 | 9.9 / 6 | 8.0 / 3 | 7.9 | 8.2 / 7 | 9.0 / 12 | 9.8 / 16 | 9.5 / 16.2 | 9.6 / 40

F-2.4 | F1.8 | F2.8

4.7 / 33 | 4.6 / 21.6 | 4.9 / 9 | 4.3 / 3 | 4.0 | 4.1 / 6 | 4.7 / 8 | 5.0 / 24.2 | 5.0 / 38

		87A83			
69t50				67.4	68.8
70t0				66.8	68.4
70t50				67.0	68.2
71t00				867.2	68.3

Lt. ℄ Rt.

		F 2.0			F 1.4			F 1.9	
	5.0	5.0	5.0		4.5	5.0	4.7	5.0
3.0	33	21.0	13	4.4	7	12	20.6	33
		F 2.4		F 1.6			F 2.4	
	5.7	5.8	5.8	5.0	5.0	5.7	5.8	5.8
3.4	33	27.6	7		5	12	27.6	33
		F 1.8		F 1.2			F 1.4	
	5.4	5.4	5.2	4.8	5.0		5.0	4.9
3.6	33	20.7	17		12		18.6	58
3.5				4.6				

Cont on P. 4

					Grade
	11.72	890.87		879.15	
61+50				84.9	85.2 2.5-D+
62				85.2	85.4 2.4 D+
62+50				85.4	85.5 1.2 D+
63+0					85.4

G.R.

D.C-2.5

5.7	5.6/40	5.7/23	3.5/35	7.6/21	7.6/17	5.8/13	F-0.3 6.0	6.7/13	7.3/17	7.6/23	4.1/27	C-1.8 3.7/33	3.9/40
5.5	3.4/40	C-2.3 3.7/33	3.5/27	7.2/21	7.2/17	6.0/13	F-0.7 5.7	5.5/13	6.8/17	6.8/23	2.4/30	C-3.1 2.4/33	2.4/40
5.4	2.8/40	C-2.6 3.3/33	2.7/28	7.1/21	7.1/17	5.8/13	E-0.1 5.5	5.8/13	6.7/17	6.6/22	3.1/28	C-2.5 2.9/33	3.2/40

5

Cont on Page 20

Final X-Sections

6/21/35

Portell
Bell
Skoog
Goldberg

Sta	+	ℐ	-	Elev
B.M.	5.24	884.39		879.15
⊙	6.75	889.81	1.33	883.06
59				81.0
+50				82.0
60				83.0
+50				83.6
61				84.4
+50				84.9
62				85.4
+50				85.6
63				85.3
+50				84.6

Spk. in 20" Oak 120' Lt. Sta. 55+84

10.6 / 33	10.4 / 18	9.0 / 13	8.8 / 0	9.1 / 12	10.4 / 17-21	9.7 / 22-33

10.0 / 33-18	8.0 / 13	7.8	8.1 / 13	9.4 / 17	9.6 / 21	9.2 / 22	9.0 / 33

9.1 / 33	8.7 / 17	7.0 / 13	6.8	7.0 / 13	8.2 / 17-23	7.6 / 23	7.2 / 33

7.6 / 33	7.3 / 22	7.8 / 21-17	6.1 / 13	6.2	6.4 / 13	7.4 / 17	7.3 / 22	6.4 / 24	6.2 / 33

6.2 / 33	6.0 / 23	7.1 / 22	7.0 / 17	5.6 / 13	5.4	5.4 / 13	6.7 / 16	6.8 / 22	5.2 / 24	5.0 / 33

4.8 / 33	4.6 / 26	6.6 / 20-17	4.9 / 13	4.9	4.9 / 13	6.6 / 19-22	3.1 / 30	3.0 / 33

2.3 / 40	2.4 / 31	6.1 / 21-17	4.5 / 13	4.4	4.5 / 13	6.6 / 19	6.5 / 23	1.6 / 33	1.4 / 40

1.7 / 40	1.8 / 33	6.0 / 23-17	4.4 / 13	4.2	4.3 / 13	6.5 / 19	6.3 / 24	2.0 / 33	2.2 / 40

2.5 / 40	2.4 / 33	6.1 / 23-18	4.5 / 13	4.5	4.5 / 13	6.1 / 19-23	3.5 / 33	3.7 / 40

40 / 40-33	6.8 / 23-19	5.2 / 13	5.2	5.2 / 13	7.0 / 19	6.8 / 23	5.0 / 31-40

Sta.	+	⊼	−	Elev.
64				83.8
+50				
65				
+50				
66				
⊙	3.11	881.69	878.58	
+50				
67				
+50				

7.2/40 6.8/31 26- 7.5/19 6.1/13 6.0 6.0/13 7.7/19-23 5.7/32-40

8.2/40 7.5/31 8.5/24 8.6/19 6.7/13 6.8 6.8/13 8.4/19-23 6.0/33-40

8.3 8.2/13 10.0/19-24 8.0/31 8.2/40

Culverts

24" x 18'
" x 20'
" x 18'
x 20
x 20
x 20

116

4 - 24" X Bands
24" x 85
x 88
x 83

15" x 20'
15 x 20'

1.08 Perforated ~~3~~ sets 4 lines 8 hole in Line in valley

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

ROADWAY 14 FEET WIDE. SIDE SLOPES 1½ TO 1.

FOR SINGLE TRACK EMBANKMENT.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	7.0	7.2	7.3	7.5	7.6	7.8	7.9	8.1	8.2	8.4	0
1	8.5	8.7	8.8	9.0	9.1	9.3	9.4	9.6	9.7	9.9	1
2	10.0	10.2	10.3	10.5	10.6	10.8	10.9	11.1	11.2	11.4	2
3	11.5	11.7	11.8	12.0	12.1	12.3	12.4	12.6	12.7	12.9	3
4	13.0	13.2	13.3	13.5	13.6	13.8	13.9	14.1	14.2	14.4	4
5	14.5	14.7	14.8	15.0	15.1	15.3	15.4	15.6	15.7	15.9	5
6	16.0	16.2	16.3	16.5	16.6	16.8	16.9	17.1	17.2	17.4	6
7	17.5	17.7	17.8	18.0	18.1	18.3	18.4	18.6	18.7	18.9	7
8	19.0	19.2	19.3	19.5	19.6	19.8	19.9	20.1	20.2	20.4	8
9	20.5	20.7	20.8	21.0	21.1	21.3	21.4	21.6	21.7	21.9	9
10	22.0	22.2	22.3	22.5	22.6	22.8	22.9	23.1	23.2	23.4	10
11	23.5	23.7	23.8	24.0	24.1	24.3	24.4	24.6	24.7	24.9	11
12	25.0	25.2	25.3	25.5	25.6	25.8	25.9	26.1	26.2	26.4	12
13	26.5	26.7	26.8	27.0	27.1	27.3	27.4	27.6	27.7	27.9	13
14	28.0	28.2	28.3	28.5	28.6	28.8	28.9	29.1	29.2	29.4	14
15	29.5	29.7	29.8	30.0	30.1	30.3	30.4	30.6	30.7	30.9	15
16	31.0	31.2	31.3	31.5	31.6	31.8	31.9	32.1	32.2	32.4	16
17	32.5	32.7	32.8	33.0	33.1	33.3	33.4	33.6	33.7	33.9	17
18	34.0	34.2	34.3	34.5	34.6	34.8	34.9	35.1	35.2	35.4	18
19	35.5	35.7	35.8	36.0	36.1	36.3	36.4	36.6	36.7	36.9	19
20	37.0	37.2	37.3	37.5	37.6	37.8	37.9	38.1	38.2	38.4	20
21	38.5	38.7	38.8	39.0	39.1	39.3	39.4	39.6	39.7	39.9	21
22	40.0	40.2	40.3	40.5	40.6	40.8	40.9	41.1	41.2	41.4	22
23	41.5	41.7	41.8	42.0	42.1	42.3	42.4	42.6	42.7	42.9	23
24	43.0	43.2	43.3	43.5	43.6	43.8	43.9	44.1	44.2	44.4	24
25	44.5	44.7	44.8	45.0	45.1	45.3	45.4	45.6	45.7	45.9	25
26	46.0	46.2	46.3	46.5	46.6	46.8	46.9	47.1	47.2	47.4	26
27	47.5	47.7	47.8	48.0	48.1	48.3	48.4	48.6	48.7	48.9	27
28	49.0	49.2	49.3	49.5	49.6	49.8	49.9	50.1	50.2	50.4	28
29	50.5	50.7	50.8	51.0	51.1	51.3	51.4	51.6	51.7	51.9	29
30	52.0	52.2	52.3	52.5	52.6	52.8	52.9	53.1	53.2	53.4	30
31	53.5	53.7	53.8	54.0	54.1	54.3	54.4	54.6	54.7	54.9	31
32	55.0	55.2	55.3	55.5	55.6	55.8	55.9	56.1	56.2	56.4	32
33	56.5	56.7	56.8	57.0	57.1	57.3	57.4	57.6	57.7	57.9	33
34	58.0	58.2	58.3	58.5	58.6	58.8	58.9	59.1	59.2	59.4	34
35	59.5	59.7	59.8	60.0	60.1	60.3	60.4	60.6	60.7	60.9	35
36	61.0	61.2	61.3	61.5	61.6	61.8	61.9	62.1	62.2	62.4	36

Calculated by Julien A. Hall, M. Am. Soc. C. E.