FIELD BOOK

360

No. 164

Job 30-301

County Aid Road #14

Page 1-5 Transit Notes.

7-14 Level Notes.

Job #295 County Aid Road No 1

Page 17 To 20 Transit Notes

22 To

1

C.A.R. #14 Mob 301

T136N. R29W LOON LAKE

21+90 End Swamp R & L

20

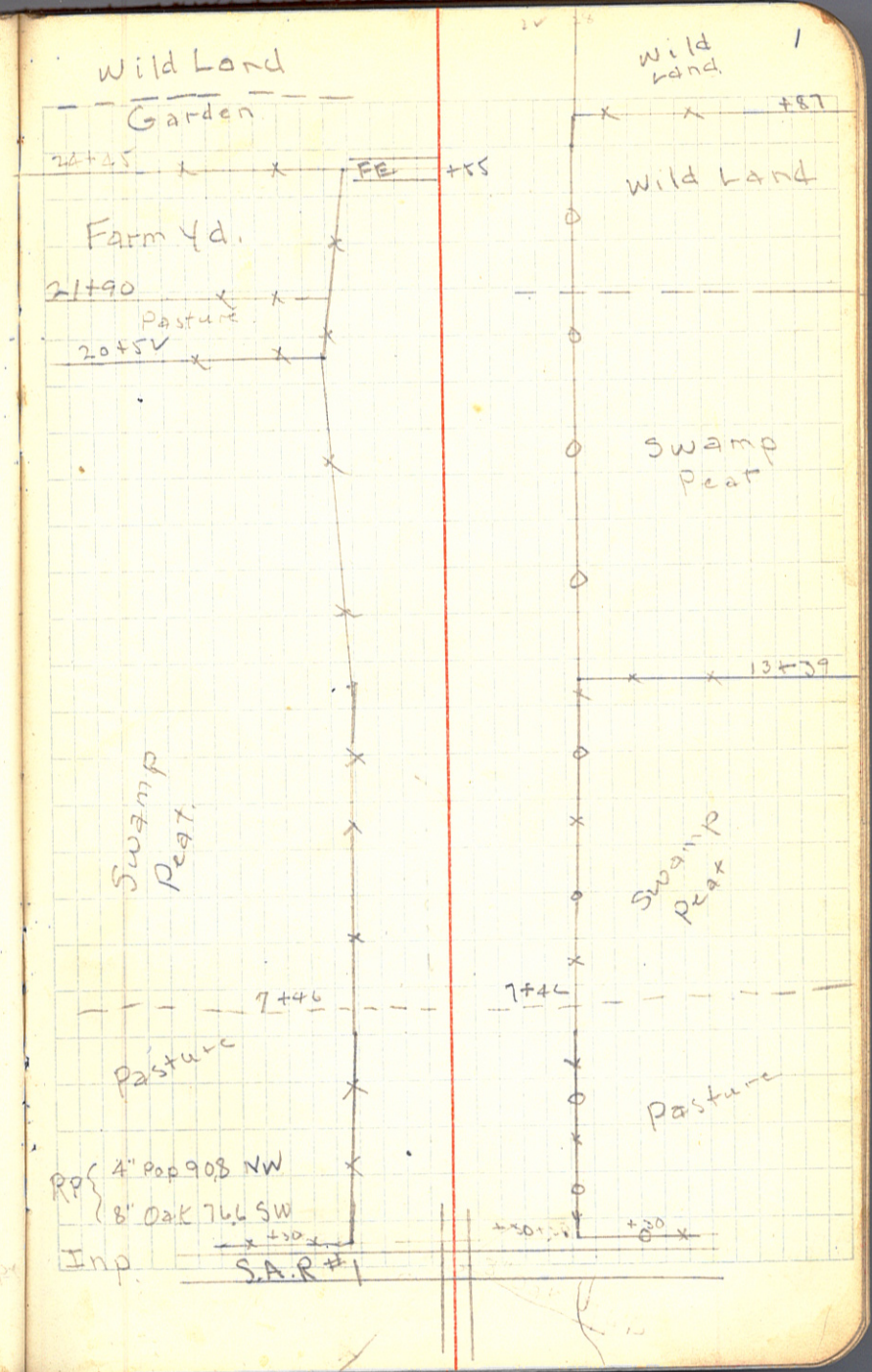
15

10

5

0+00 Beg of Project Sec. Cor. Iron Pipe

Beg. S.A.R. #1 N.W. Cor Sec. 14 - 136 - 30



1

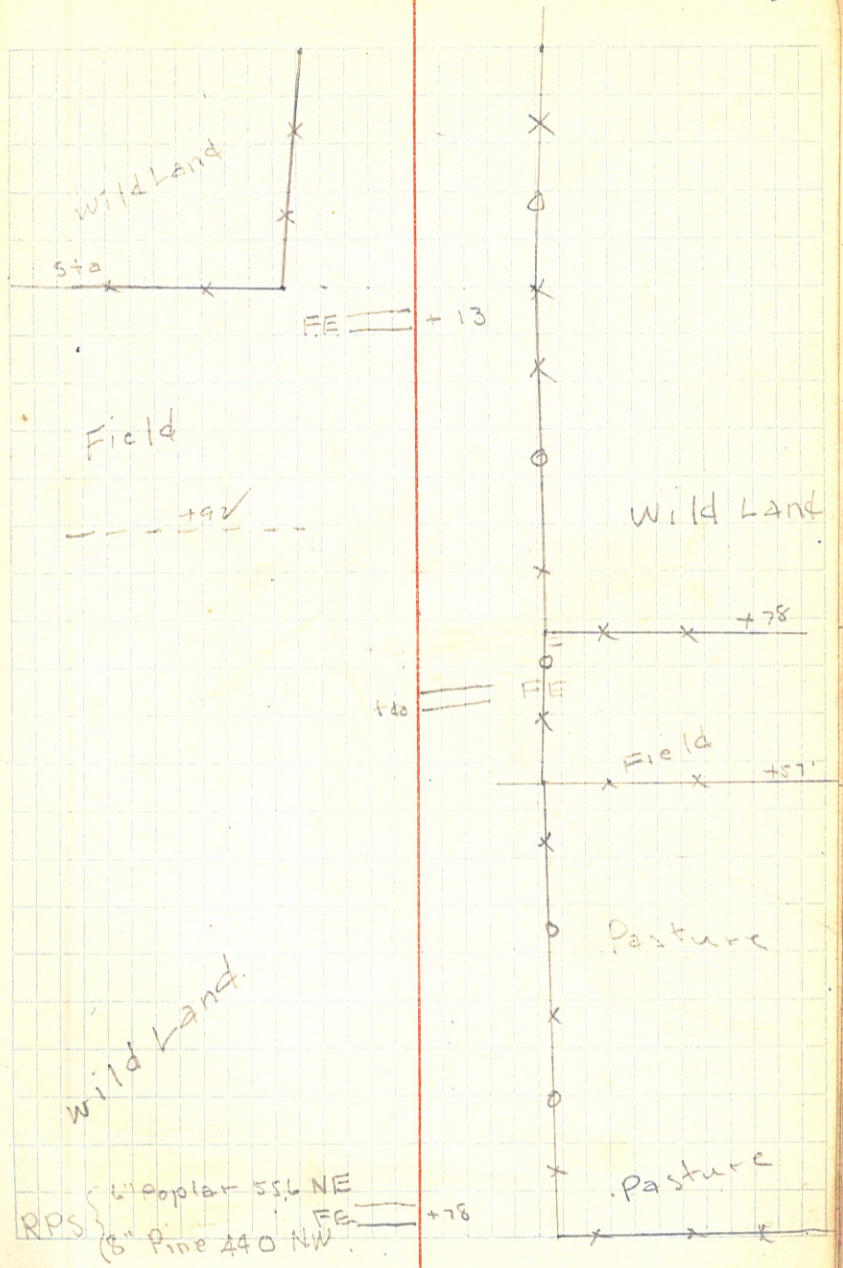
47

46

39

36

27+22.6 1/4 Cor. No Mon. Δ 0°09' L

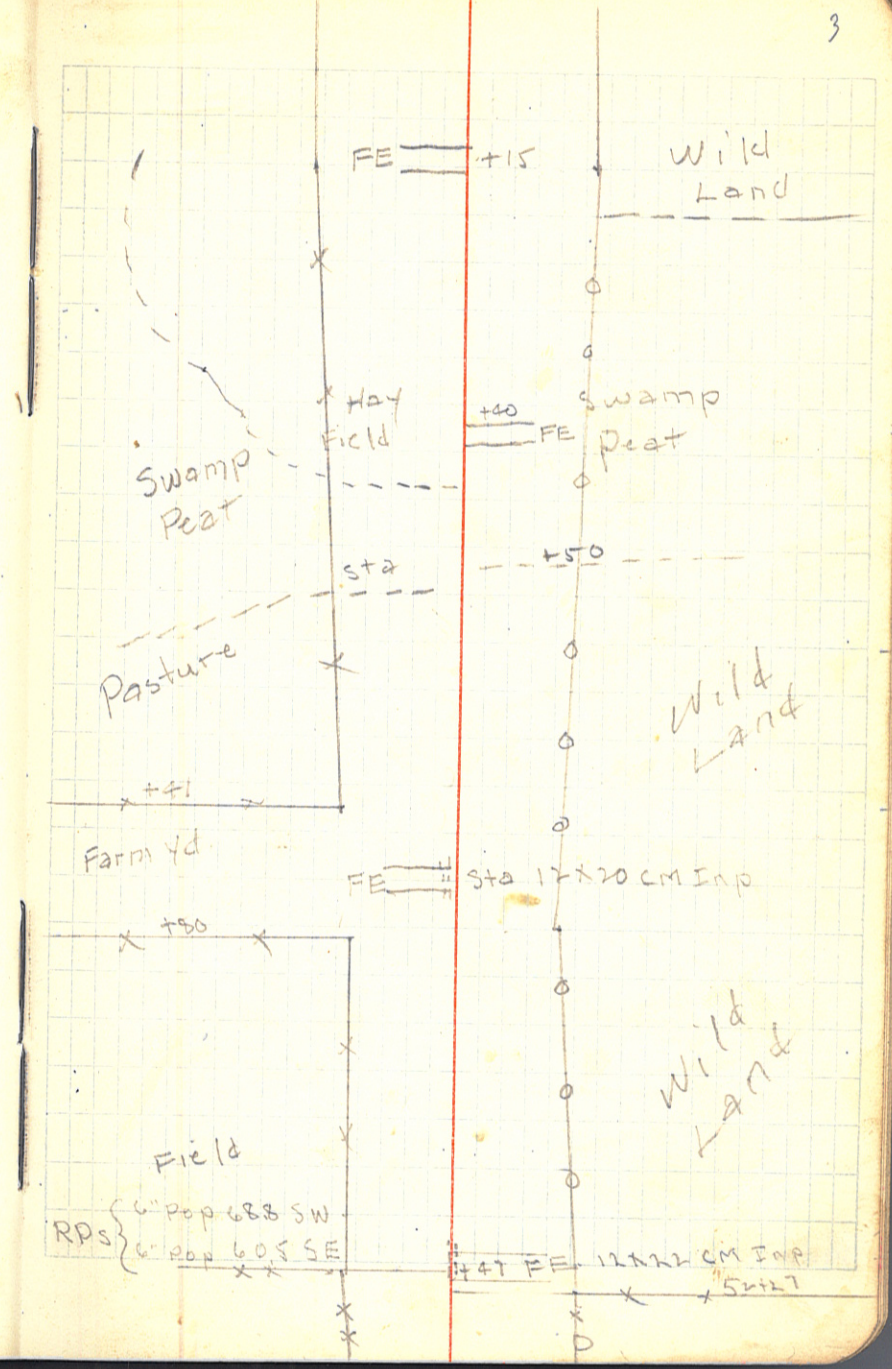


73

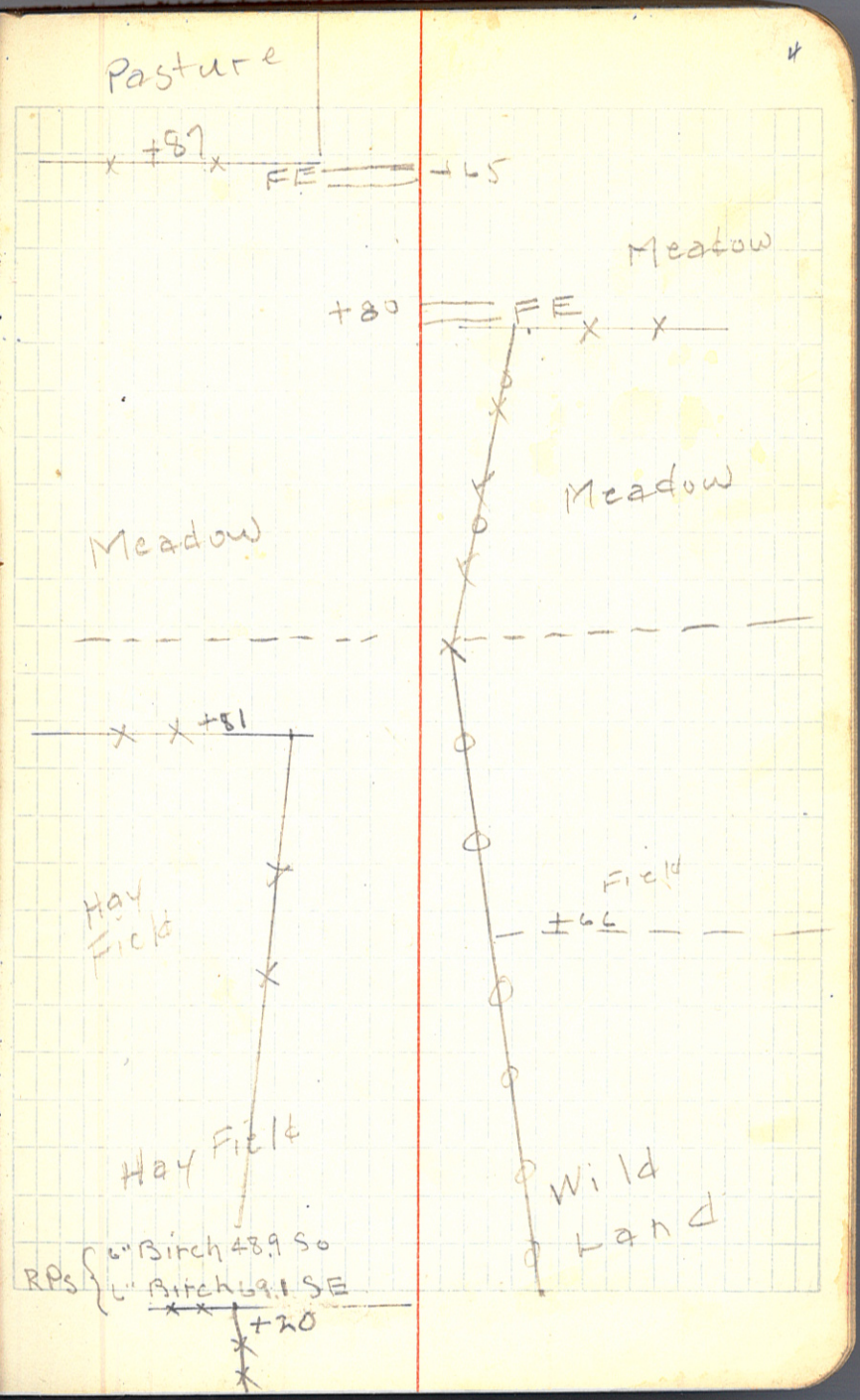
64

56

52+46.6 Sec Cor Iron pipe Imp △0°21 R



103					
99					
95					
90					
86					
79+19.7	1/4 Cor	Δ 0°05' R	Iron Pipe Imp		



124	P.O.T				
116	P.O.T				
114					
111					
106+028		Δ 0°52'	R	No Mon.	

118+30
F L 33

Wild Land

RP { 10" Pine 247 N
10" Poplar 568 NW

RP { F.P. 427 SE
F P 490 NE

FE +53
116+00
FE
FE
114+60 End Fen 26

Field

Field FE +41

Wild Land

RPS { 8" J.Pine 807 SE 106+83
4" J.Pine 888 NE
105+80
22' L

106+83
105+73
28' R

(7) Levels Co. Aid No 14 Oct 8-1929

Job 301

Prudle π
Trout Rod
Mast Chain

B.M.	2.23	1302.23		1300.00
0-200			6.2	96.0
0-100			8.2	94.0
0-40			8.0	94.2
0+00			5.5	96.7
+30			7.2	95.0
	0.16	90.58	11.81	90.42
1+00			1.5	89.1
+50			5.1	85.5
2+00			7.6	83.0
3+00			8.5	82.1
4+00			8.5	82.1
	2.43	84.41	8.60	81.98
5+00			3.4	81.0
6+00			6.8	77.6
7			10.1	74.3
	2.45	77.11	9.75	74.66
+50			4.1	73.0
8			4.7	72.4
9			5.0	72.1
10			5.0	72.1
+50			5.3	71.8
11			6.2	70.9
12			7.2	69.9
BM			6.90	70.11

4" Birch 75' S.W. 0+00

6.2

8.2

132/40 107/28 100/19 88/12 8.0 78/8 85/10 80/12 65/16 50/27

55/300 157/200 107/100 5.5 03/100 55/200

157/65 155/45 140/32 130/24 85/17 7.2 77/14 115/22 117/30 112/40 97/50 67/65

82/40 80/33 60/17 16/9 1.5 23/9 50/16 59/26 60/40

91/30 84/23 71/13 53/8 5.1 55/10 67/12 77/20 77/30

96/28 85/10 80/7 7.6 76/10 85/15 77/18 83/21 68/25 60/31

104/30 102/22 108/12 92/9 8.5 86/10 103/16 98/23 100/31

95/30 92/16 99/14 87/11 8.5 90/12 110/16 109/23 85/24 86/30

25/30 25/20 53/14 39/8 3.4 38/10 64/17 61/22 52/24 52/27 30/30

76/30 73/17 91/14 71/8 6.8 68/12 79/17 83/22 61/26 LO

96/30 95/19 107/16 112/12 101/9 10.1 104/11 113/17 103/20 102/30

58/30 58/19 60/12 47/8 4.1 42/10 50/15 55/26 55/30

64/30 61/15 62/12 53/8 4.7 48/8 60/12 64/23 66/30

55/30 57/14 67/12 52/9 5.0 54/8 68/11 60/14 61/24 LO

60/30 60/22 57/14 66/13 52/7 5.0 52/9 67/13 55/14 51/26 LO

60/30 60/18 70/14 57/11 5.3 57/10 77/15 64/21 61/27 LO

71/30 71/17 83/14 69/11 6.2 64/9 84/14 74/18 73/27 LO

83/30 84/16 92/13 75/8 7.2 74/9 91/14 83/20 83/30

6" Poplar 100' L 11+50

(8)

		.7711		
13			8.4	68,7
	4.39	7302	8.48	136863
14			4.3	68.7
15			4.5	685
16			4.5	685
17			5.1	679
18			5.3	677
19			5.4	676
18+52	18"x 20' CMC		New 10'R 10'L	levels for offtake
	6.10	7357	5.55	6747
20			6.2	674
21			55	681
BM 22			2.17	690
			46	690
23			2.9	707
	1143	8192	3.08	7049
24			7.9	740
25			5.2	767
	1141	9210	123	8069
26			8.7	834
	1062	0187	0.85	9125
27			10.6	913
27+50			7.4	945
28			5.7	967
29			3.6	983

97/30 97/20 96/13 103/11 87/8 8.4 86/9 97/12 94/17 93/30

58/30 60/23 57/15 65/12 54/10 4.3 49/8 66/1✓ 59/14 59/30

61/36 61/27 60/14 65/11 53/9 4.5 50/8 61/12 55/14 60/27 L

L 55/25 59/15 66/13 52/9 4.5 52/8 68/12 59/14 57/30

63/30 62/17 69/13 59/10 5.1 55/8 70/11 64/13 65/30

69/31 64/16 71/14 65/12 56/8 5.3 57/7 65/10 72/12 66/14 66/30

68/30 70/13 60/8 5.4 61/8 74/12 68/14 67/30

78/Ditch 71/100 74/200 74/300 74/400 77/500 77/600 72/700 83/800

73/30 72/15 77/12 69/10 6.2 68/9 80/11 73/13 72/27 LO

✓ 58/24 60/18 68/16 67/13 60/9 5.5 60/9 70/12 65/14 64/30

8" Tam. 50'L 21+50

36/30 38/21 65/18 58/14 52/10 4.6 52/10 62/13 54/14 58/24 58/30

26/30 26/19 28/16 40/13 34/10 2.9 32/9 43/12✓ 36/14 36/30

84/30 77/19 88/16 85/13 82/10 7.9 82/9 87/12 74/15 80/26 86/33

45/33 51/30 60/18 60/15 56/10 5.2 54/8 67/10 74/13 83/22✓ 89/30

61/30 67/19 96/13 90/10 8.7 91/7 99/10 99/15 105/21 112/30

LO 78/26 82/17 112/12 111/10 10.6 111/7 120/11 114/14 95/18 102/29

54/32✓ 52/26 64/17 72/9 77/7 7.4 78/8 85/11 83/14 66/17 68/26 70/32✓

43/31 43/21 58/17 53/13 5.1 64/9 67/12 65/14 51/17 49/30

34/30 34/22✓ 50/20 41/16 3.1 42/8 52/12✓ 43/14 46/23 LO

(9)

		01,87		
30			4.1	97,8
31			58	96.1
	1,85	97,84	588	13959
32V			37	94.1
BM			1.48	
33			6.0	91,8
34			7.1	90,7
35			7.0	90,8
	2,47	93.10	7,21	90.63
36			30	90,1
37			44	88,7
38			55	87,6
39			62	86,9
40			79	85.2
	138	86,53	7,95	85.15
41			50	81.5
42V			7.0	79,5
43			7.7	78,8
	34V	82,45	7.50	79.03
+50			2.7	79,8
44			3.2	79.3
45			48	77,7
46			79	74,6
47			11.4	71.1
BM			7.40	
	206	72,87	11.64	70.81

$\frac{33}{30}$ $\frac{35}{21}$ $\frac{49}{19}$ $\frac{45}{15}$ 4.1 $\frac{44}{9}$ $\frac{57}{12}$ $\frac{47}{15}$ $\frac{50}{20}$ $\frac{49}{27}$

60 58 20

37

10" Oak 110' L 32+20

60

7.1

70

30

44

5.5

$\frac{68}{30}$ $\frac{65}{19}$ $\frac{80}{16}$ $\frac{66}{11}$ 62 $\frac{65}{9}$ $\frac{80}{14}$ $\frac{64}{17}$ $\frac{62}{27}$ L

$\frac{77}{30}$ $\frac{75}{17}$ $\frac{97}{14}$ $\frac{85}{11}$ 79 $\frac{82}{8}$ $\frac{97}{13}$ $\frac{104}{15}$ $\frac{80}{20}$ $\frac{80}{30}$

$\frac{51}{30}$ $\frac{49}{18}$ $\frac{71}{15}$ $\frac{62}{13}$ $\frac{55}{9}$ 50 $\frac{53}{9}$ $\frac{72}{13}$ $\frac{58}{16}$ $\frac{55}{30}$

$\frac{84}{30}$ $\frac{81}{14}$ $\frac{82}{10}$ $\frac{74}{L}$ 70 $\frac{74}{9}$ $\frac{83}{11}$ $\frac{94}{15}$ $\frac{86}{17}$ $\frac{89}{23}$

$\frac{87}{30}$ $\frac{81}{18}$ $\frac{91}{15}$ $\frac{88}{13}$ $\frac{80}{9}$ 77 $\frac{80}{9}$ $\frac{95}{15}$ $\frac{87}{17}$ $\frac{84}{30}$

$\frac{26}{30}$ $\frac{28}{18}$ $\frac{48}{16}$ $\frac{42}{13}$ $\frac{32}{9}$ 2.7 $\frac{33}{10}$ $\frac{49}{15}$ $\frac{35}{17}$ $\frac{35}{30}$

$\frac{20}{30}$ $\frac{22}{18}$ $\frac{49}{14}$ $\frac{36}{11}$ 32 $\frac{36}{9}$ $\frac{47}{13}$ $\frac{54}{15}$ $\frac{42}{17}$ $\frac{49}{30}$

$\frac{36}{30}$ $\frac{40}{19}$ $\frac{62}{16}$ $\frac{62}{15}$ $\frac{48}{12}$ 48 $\frac{50}{10}$ $\frac{59}{13}$ $\frac{65}{15}$ $\frac{52}{17}$ $\frac{55}{25}$ $\frac{61}{25}$ L

$\frac{64}{30}$ $\frac{70}{18}$ $\frac{96}{16}$ $\frac{96}{14}$ $\frac{83}{12}$ 79 $\frac{81}{11}$ $\frac{95}{15}$ $\frac{95}{17}$ $\frac{78}{18}$ $\frac{85}{25}$ L

$\frac{107}{18}$ $\frac{110}{19}$ $\frac{133}{15}$ $\frac{124}{12}$ $\frac{111}{8}$ 114 $\frac{115}{11}$ $\frac{131}{15}$ $\frac{119}{17}$ $\frac{123}{24}$ L

5" Poplar 45' R 45+20

(10)

		137287		
48			3.6	69.3
49			5.1	67.8
50			5.4	67.5
51			5.8	67.1
	4.74	71.66	5.95	66.92
52			4.9	66.8
53			4.9	66.8
54			5.7	66.0
+50			5.5	66.2
55			6.1	65.6
	211	67.57	6.20	65.46
55+50			4.0	63.6
56			4.6	63.0
57			5.9	61.7
+60			6.2	61.4
BM			74	60.15
58			7.3	60.3
	346	63.59	7.44	60.13
+70			4.0	59.6
59			3.6	60.0
60			7.2	56.4
61			8.6	55.0
	0.85	55.94	8.50	55.09
62			5.9	50.0
+50			8.0	47.9
	1.14	49.23	7.85	48.09

35/30 36/16 48/13 45/9 38/6 — 36 42/12 58/17 48/20 51/29

50/29 50/18 58/14 58/10 53/7 — 51 49/12 60/15 61/18 53/21 57/30

62/30 58/21 69/16 66/12 57/7 — 54 55/11 62/15 71/18 54/21 56/30

61/30 58/21 76/14 69/11 62/7 — 58 61/11 72/16 61/20 62/30

50/30 50/24 54/15 69/13 62/10 54/7 — 49 54/12 63/16 59/20 53/22 LO

50/30 53/22 50/15 66/11 58/8 — 49 52/11 61/15 66/18 52/20 52/30

65/30 62/17 76/13 69/10 61/7 — 57 LO/11 70/14 76/17 63/19 62/30

LO 66/24 62/17 80/14 69/11 60/8 — 55 61/10 68/12 77/16 58/19 59/30

72/28 68/23 62/15 91/12 74/10 65/7 — 61 64/11 73/14 80/15 54/18 50/26 44/33

53/30 53/15 58/12 50/9 42/1 — 40 43/12 53/15 55/18 28/23 23/30

LO 51/22 50/14 62/12 50/7 — 46 50/11 61/16 29/19 37/28

LO 50/25 55/14 69/11 63/8 — 59 66/10 84/16 91/24 98/32

48/22 51/15 76/10 65/7 — 62 68/12 84/16 72/19 80/26 LO

10" Poplar - 70' R 57+50

80/30 80/17 90/13 74/7 — 73 78/11 92/17 82/19 79/30

64/30 59/21 52/16 62/14 43/7 — 40 40/10 53/15 40/18 34/30

62/29 52/18 68/15 39/7 — 36 42/9 55/14 58/29

77/30 73/27 96/18 85/15 73/9 — 72 74/11 79/17 65/21 62/30

123/37 106/25 123/19 112/15 89/9 — 86 90/11 97/20 70/26 68/36

76/31 72/25 62/19 64/10 — 59 62/15 62/17 61/20 61/30

148/30 146/26 124/18 85/9 — 80 81/11 94/19 100/22 94/33

(11)

		1349.23		
63			2.5	46.7
64			5.6	43.6
65			7.6	41.6
BM	5.55	46.32	8.46	40.77
66			4.9	41.4
67			4.7	41.6
68			4.5	41.8
69			5.6	40.7
70			7.0	39.3
71			7.6	38.7
	5.68	44.35	7.65	38.67
72			5.0	39.4
73			4.2	40.2
74			4.7	39.7
75			4.9	39.5
76			6.1	38.3
+33	30 x 30 New		15' R 15' L	Creek Dr. N.
77			6.0	38.4
	5.96	44.31	6.00	38.35
78			5.4	38.9
79			5.0	39.3
80			5.0	39.3
81			5.3	39.0
82			5.6	38.7
83			6.3	38.0
BM	~~5.38~~		5.54	38.77
	5.38	43.88	5.81	38.50

LO 83/26 69/22 57/15 28/9 2.5 25/17 41/24 50/35
83/30 72/25 67/14 62/11 5.6 56/14 81/23 82/30
LO. 105/21 100/15 88/12 7.6 80/10 97/15 183/21 106/30

8" Poplar 85' L 63+80

LO 73/26 71/16 56/10 4.9 56/10 68/15 73/21 71/30
LO 67/26 73/22 73/17 52/13 4.7 53/13 80/17 80/21 62/23 62/30
LO 49/26 75/23 74/18 48/13 4.5 51/13 82/17 80/23 54/27 LO
LO 67/29 87/24 83/17 64/14 5.6 63/13 90/17 90/21 63/26 LO
LO 94/24 100/19 80/15 7.0 82/13 101/18 101/21 92/23 93/30
102/33 102/24 95/17 81/14 7.6 84/12 97/13 97/20 97/30

LO 65/28 82/23 80/19 58/14 5.0 54/14 80/17 83/22 60/25 LO
LO 43/31 66/26 64/19 45/14 4.2 49/13 78/18 74/24 57/33
LO 52/32 77/29 73/20 50/14 4.7 53/12 82/17 86/26 75/36 55/41
LO 77/34 84/29 83/18 55/13 4.9 57/12 92/17 94/25 92/32
86/30 83/19 60/14 6.1 64/10 90/14 95/30
101/100 10.0
80/33 82/26 50/23 68/15 6.0 65/12 90/17 93/21 74/24 76/30

78/32 76/21 62/15 5.4 61/13 82/18 84/24 83/30
70/31 67/22 57/17 5.0 55/13 70/18 56/23 LO
66/31 63/23 54/19 5.0 52/13 69/16 68/20 57/24 LO
55/31 70/28 67/24 56/20 49/10 5.3 57/14 71/17 71/19 54/21 LO
LO 63/28 67/24 53/19 52/10 5.6 66/16 78/19 79/22 63/26 LO
73/26 71/20 63/15 58/9 6.3 68/15 66/19 67/29 LO

8" Poplar 50' R 82+40

(12)

		1343.88		
84			4.7	39.2
85			3.6	40.3
86			4.8	39.1
87			5.7	38.2
88			5.5	38.4
+50			4.6	39.3
	3.35	42.59	4.64	39.24
89			3.4	39.2
90			4.5	38.1
91			7.3	35.3
92			8.7	33.9
93			8.7	33.9
BM			3.85	38.74
	3.51	37.37	8.73	33.86
94			4.1	33.3
95			4.3	33.1
96			4.8	32.6
97			4.9	32.5
98			4.5	32.9
99			4.7	32.7
100			3.9	33.5
	5.84	39.21	4.00	33.57
100+09	72"	X20 CMC	12'R 8'L	Conc Wing Wall
101			5.9	33.3
102			5.3	33.9

L 52/24 56/12 62/19 49/14 44/7 4.1 49/4 62/10 66/15 49/20 50/30
31/30 39/24 45/19 41/14 35/7 3.6 42/8 53/15 62/21 41/25 40/30
44/29 48/13 54/20 48/15 4.8 56/12 50/15 53/30
62/31 67/22 81/20 58/14 60/12 5.7 66/4 72/10 70/21 70/30
57/30 60/20 69/16 55/13 5.5 66/14 50/22 48/32
LO 52/26 58/19 47/13 4.6 56/14 41/19 43/31

52/30 51/23 45/18 32/12 3.4 32/6 44/13 28/18 33/30
34/30 34/20 46/15 40/12 4.5 45/9 62/15 67/24 43/32
75/31 75/21 82/17 72/13 7.3 70/4 84/13 71/17 70/30
LO 94/23 99/19 91/14 8.7 87/4 109/17 102/15 103/31
100/30 105/20 92/14 8.7 102/6 109/13 100/16 102/20 102/30

T.P. 120'L 91+00
50/30 51/16 43/13 4.1 42/3 58/13 48/15 48/30
51/30 62/20 48/13 4.3 44/4 52/6 61/16 53/21 54/30
56/30 55/24 63/19 51/12 4.8 51/6 63/15 55/18 55/30
LO 58/22 61/17 52/12 4.9 49/9 65/17 59/20 58/30
61/30 60/20 65/15 51/10 4.5 49/9 63/16 64/20 54/22 56/30
L 54/26 54/20 65/12 50/6 4.7 52/12 64/18 57/24 L
48/30 46/16 57/13 42/10 3.9 42/9 65/16 59/22 57/30

Creek Dr. S.E. 51 113 97/WL
84/30 86/21 94/15 59/7 5.9 60/9 84/12 84/29
87/30 84/23 92/18 82/12 55/8 5.3 52/8 74/12 78/22 75/30

(13)

		133921		
103			5.2	340
			46	346
+26	Edge Bridge	16' Rd.way		RR Steel Stringers
+46			4.6	34.6 Conc. wings & Abut.
Clearance			5.6	33.6
Bot Creek			10.4	28.8
WL			10.0	29.2
104			5.6	33.6
105			4.8	34.4
106			4.0	35.2
BM	3.97	40.64	2.54	36.67
+60			4.9	35.7
107			5.2	35.4
+50			6.3	34.3
108			6.7	33.9
+60			6.5	34.1
	8.20	42.23	6.61	34.03
109			7.4	34.8
110			4.3	37.9
	9.55	51.48	0.30	41.93
111			9.6	41.9
112 ✓			5.7	45.8
113			1.7	49.8
	9.96	59.59	1.85	49.63
114			4.1	55.5
	5.86	64.47	0.98	58.61

84/30 87/21 96/15 56/8 5.2 ✓ 55/8 70/13 76/21 79/30

4.6

4.6

5.6

Creek Drain

10.4

10.0 103/200 Down.

88/30 89/21 82/14 60/9 5.6 60/9 75/15 85/26 80/31

L0 80/23 53/20 73/14 57/9 4.8 53/10 69/18 63/26

42/200 36/100 40/12 4.0 43/30 54/100 65/200

10" Pine 40' R 106+50

43/30 40/23 50/13 4.9 60/15 36/19 40/36

50/25 47/21 52/16 59/12 5.2 ✓ 64/15 47/19 51/26 L0

76/30 72/23 81/18 75/7 6.3 73/17 64/19 64/30

90/30 90/26 88/17 75/10 6.7 73/16 82/19 83/30

81/30 81/27 75/15 70/10 6.5 69/11 75/17 86/20 90/26 90/30

81/30 81/26 87/21 81/14 78/9 7.4 82/12 90/17 86/20 90/30

L0 31/27 39/18 47/13 4.3 48/17 40/24 ✓ 43/30

L0 88/29 94/26 97/16 103/13 98/8 9.6 97/13 102/17 96/20 97/25 L0

✓ 55/27 60/24 62/14 58/9 5.7 59/10 67/17 63/20 67/30

20/30 25/21 20/11 1.7 19/7 32/15 34/19 34/23 39/30

18/30 33/19 47/15 41/12 4.1 48/14 32/18 33/25 41/31

(14)

		136447		
		"		
114+50			6.3	58.2
115			5.2	59.3
116			4.5	60.0
+50			4.4	60.1
117			4.9	59.6
BM			2.72	
118			8.6	55.9
	193	5595	1045	5402
119			3.8	52.2
120			7.1	48.9
121			10.5	45.5
	310	4853	1057	4543
122			4.6	43.9
+64	15" X 28 CMC Fair. 14'L-14'R			
123			4.8	43.7
124			2.9	45.1
+30			2.0	46.5
125			2.9	45.6
BM			454	43.99

52/31 52/23 61/17 72/14 69/11 63 68/7 72/15 62/18 65/27 LO
47/32 49/22 52/17 56/15 53/13 52 51/7 64/15 60/18 67/28
40/33 43/27 49/18 49/13 45 49/7 64/16 60/18 63/24 69/31
51/33 33/25 43/19 45/13 44 47/7 58/16 51/19 57/24 61/31
44/32 44/19 53/15 49 52/7 57/9 61/15 54/18 56/30

8" Gate Post 40'L 116+20

84/35 89/25 87/18 89/15 86 89/7 95/14 89/17 85/25 LO

39/30 39/18 43/15 41/10 38 41/10 51/15 35/18 35/30
70/30 70/19 79/16 73/9 71 74/8 81/15 65/18 64/20 66/31
112/30 111/20 103/15 107/9 105 108/10 121/17 115/20 113/29

51/28 54/18 70/16 51/8 46 49/6 65/16 58/19 61/32
67 85/100
57/30 58/23 67/21 67/18 54/12 48 50/8 68/14 72/17 65/19 68/27
29
20
29

10" Pine 25'L 124+00

(17)

C. A. R. No. 1. Job
T 143-144 N. R 25 W. WAHENA.

Transit Notes Job 29-5

39+52.0	P.O.T.	
26+31.2	1/4 Cor. Stk. Inp. P.O.T.	
13+20	P.O.T	
0+00	Section No. Mon. Inp.	△0°11'R S6°45'E
0-800		

RPS { 6" Pop 467 SW
4" Pop 426 NW

RP { 4" Maple 517 SW
3" Pop 502 NW

Wild Land

Wild Land

RP { 3" Pop NE 344
3" Pop SE 463

10+00

S6°30'W

Swamp

Swamp

RP { 15" Tam Stump 655 SW
TP 370 NW

0+00 Town Road

0-150

FE 0-570

Wild Land

0-710 FE

Field

RP { FP 386 SW
FP 305 NW

92+31.0 P.O.T.

79+11.0 1/4 Line P.O.T.

65+91.0 P.O.T.

52+71.2 Sec Line No. Mon A 0° 19' R

RP { 6" Pop 45.2 NE
6" Pop 61.4 SE

N. 56° 00' W.

Wild Land

RP { 6" Pop 80.2 NE
8" pop 83.9 NW

77+80

Swamp Peat

Swamp Peat

67+20

RP { 4" Birch 49.0 NW
2" Birch 40.5 SW

RP { 6" pop. 39.8 E
5" pop 51.4 SE

Wild Land

145+45 P.O.T.

132+20 1/4 Line No. Mon. P.O.T.

118+90 P.O.T.

105+60 Sec Line No. Mon P.O.T.

147+00

Pot Hole 144+00

RP { 8" Pop 36.2 W
6" Pop 69.5 N.W.

137+50

Swamp

135+88

RP { 14" W Pine 52.6 NW
10" N. Pine 45.0 SW

Wild land

Wild Land.

Swamp

RP { 4" Pop. 47.3 NW
3" Pop 51.7 NE

Wild Land

Wild Land.

RP { 3" Pop 59.4 SW
6" Stump 38.0 N.W.

211+80.0 Sec Line End of Project-T.H. 4

198+45.0 P.O.T.

185+20.0 1/4 Line No. Mon. P.O.T.

171+95.0 P.O.T.

158+70.9 Sec. Line No. Mon. P.O.T.

RP { 12" Stub S 13° W 5.13
3" Maple S 41° E 4.43

RP { T.P. 47.2 SW
2" Poplar 46.5 SE

200+90

Swamp

199+20

R.P. { 8" Pop. 6.39 SW
6" Pop 5.60 NW

Wild Land

Wild Land

RP { 10" N.P. 7.0 ft N.W.
10" Maple 6.6 9 NE

S 60° 00' W

RP { 8" Maple 3.7.3 SW
12" Maple 4.4.3 NW

RP { 10" Maple 8.7.5 NE
14" Birch 15.0 E

(21)

295

Clearing & Grubbing Co. Aid Job ~~801~~

0-13+20	Clear.	1.5 Ac	Grub	0.1 Ac	
13+20-26+31	"	1.6 "	"	0.3 Ac	
26+31- 39+52	"	1.5 "	"	1.1 Ac.	
39+52	52+71	" 1.5 "	"	1.2 Ac	)
52+71	65+91	" 1.2 "	"	0.7 Ac.	
65+91	79+11	" 1.5 "		0.6 Ac.	
79+11-	92+31	" 1.6 "		1.1 Ac.	
92+31-	105+60	" 1.6 "		1.6 Ac.	
105+60	118+90	" 1.8 "		1.7 Ac.	
118+90-	132+20	" 1.2 "		1.2 Ac.	
132+20-	158+70	" 1.5 "		1.2 Ac.	
158+70-	171+95	" 1.6 "		1.2 Ac.	
191+95	185+20	" 1.6 "		1.2 Ac.	
185+20	198+45	" 1.6 "		1.2 Ac.	
198+45	211+80	" 1.2 "		1.1 Ac.	

 Level Notes C.A.R. #1 Job # 295
T 143-144 R 25 W Wadena
Oct 22-1929

Station	BS	HI	FS	Elev.	Remarks
BM	0.37	1300.37		1300.00	
0-9+00			6.0	94.4	
0-8+00			5.2	95.2	
0-7+00			4.4	96.0	
0-6+00			3.2	97.2	
0-5+00			4.7	95.7	
0-4+00			5.0	95.4	
0-3+00			4.9	95.5	
0-200			5.7	94.7	
0-100			6.3	94.1	
	5.21	1299.30	6.28	1294.09	
0+00			5.0	94.3	
0+50			6.0	93.3	
1+00			6.4	92.9	4' Peat
2			6.5	92.8	4.5' Peat
3			6.6	92.7	5.0 Peat
4			6.8	92.5	
5			6.6	92.7	
6			6.7	92.6	
	6.41	1299.31	6.40	1292.90	
7			6.9	92.4	
8			7.2	92.1	
9			7.0	92.3	
10			7.3	92.0	
11			5.5	93.8	

Water Dr. 50. 2-15 x 30 CMC

Prudlo ⊼
Trout Rod
Mast Chain

Sp. in 12" Elm. 220' R 0-650

Left	C	Right
	6.0	
62/33 62/20 72/15 78/13 56/7	5.2	55/7 71/13 64/15 57/21 47/25 40/33
49/33 52/15 62/13 47/7	4.4	48/7 62/14 62/18 46/23 46/33
36/33 35/22 40/15 48/13 38/7	3.2	38/7 53/14 51/16 39/20 43/33
48/33 46/22 51/17 66/14 49/8	4.7	51/7 69/14 52/17 58/23 62/25 LO
55/33 52/25 54/17 73/13 54/8	5.0	52/7 72/14 57/16 53/23 55/33
58/33 60/17 76/14 62/11 55/8	4.9	54/8 74/14 63/17 53/22 53/33
69/33 67/22 70/15 73/13 59/8	5.7	61/8 80/14 66/16 65/25 65/33
72/33 72/19 77/16 82/14 63/5	6.3	63/8 84/15 77/16 69/20 68/33
4.7/300 5.0/200 5.1/100	5.0	5.5/100 54/200 54/300
61/30	6.0	63/30
62/30	6.4	64/30
65/30	6.5	65/30
66/30	6.6	68/30
66/30	6.8	67/30
69/30	6.6	66/30
68/30	6.7	66/30
71/30	6.9	67/30
72/30	7.2	73/30
70/30	7.0	71/30
75/30	7.3	70/30
63/30 63/30	5.5	42/22 42/33

23

		1299.31			
12			4.5	948	
13			3.0	96.3	
	5.72	1302.27	2.76	1296.55	
14			4.7	97.6	
15			4.9	97.4	
BM			3.14	1299.13	
16			4.7	97.6	
17			3.2	99.1	
	9.75	1309.02	3.00	1299.27	
18			5.6	03.4	
19			1.8	07.2	
	4.44	1311.90	1.56	1307.46	
19+50			4.0	07.9	
20			5.7	06.2	
+50			6.5	05.4	
21			5.3	06.6	Dr. 15"
22			4.1	07.8	
B.M.			2.22	1309.68	
+50			3.3	08.6	
	8.15	1316.68	3.37	1308.53	
23			5.5	11.2	
+50			4.9	11.8	
24			5.1	11.6	
25			5.1	11.6	
26			5.1	11.6	
	8.37	1320.25	4.80	1311.88	

36/30 4.5 42/30

25/33 25/26 3.0 27/33

53/30 4.7 44/35

44/33 4.9 52/33

10" Ash. 32' R 14+80

47/33 4.7 41/32

36/33 35/24 3.2 20/29 17/33

84/33 77/24 5.6 46/30

18/33 1.8 15/30

37/33 4.0 41/33

57/31 5.7 61/30

62/30 6.5 69/30

60/30 53/10 5.3 58/30

4.1

4" Spruce. 60' L 21+70

3.3

5.5

4.9

52/30 5.1 53/30

49/30 5.1 51/30

54/30 5.1 49/30

		1320.25			
27			8.0	12.3	
+40			3.3	17.0	
28			3.5	16.8	
29			5.9	14.4	
30			6.3	14.0	
31			5.2	15.1	Dr. E 15"
32			8.2	12.1	
33			8.0	12.3	
	7.56	1319.79	8.02	1312.23	
34			6.6	13.2	
35			5.6	14.2	
36			5.0	14.8	
BM			4.59	1315.20	
37			6.1	13.7	
38			7.3	12.5	
39			7.7	12.1	Dr. E 18" CM.
40			5.3	14.5	
	11.18	1326.02	4.95	1314.84	
41			8.7	17.3	
42			5.1	20.9	
43			4.0	22.0	
44			5.5	20.5	
45			6.5	19.5	
46			6.8	19.2	
	6.14	1325.51	6.65	1319.37	
47			5.4	20.1	

78/30 8.0 83/30
30/30 3.3 41/30
37/30 37/10 3.5 40/30
56/30 5.9 63/30
63/30 6.3 67/30
51/30 50/17 5.2 57/30
91/200 83/30 8.2 87/30
81/30 8.0 81/30

67/30 6.6 69/30
58/30 5.6 50/30
5.0

4" Poplar 60' L 35+40

6.1
7.3
7.7
5.3

8.7
5.1
4.0
5.5
6.5
6.8

Special Ditch on West to Dr North

5.4

		1325.51			
48			5.1	204	
49			3.4	22.1	
	8.07	133140	2.18	1323.33	
50			6.4	25.0	
51			4.8	26.6	
52			4.8	26.6	
53			6.3	25.1	
+50					
54			6.2	25.2	
			6.4	25.0	
	6.57	1332.02	5.95	1325.45	
+20			9.4	22.6	Dr. E. 15" CMC
+80			9.0	23.0	
55			5.4	26.6	
BM	7.21	1334.63	4.60	1327.42	
+60			2.7	31.9	
56			3.1	31.5	
	3.62	1335.36	2.89	1331.74	
57			5.3	30.1	
58			5.2	30.2	
+30			5.4	30.0	
59			11.5	23.9	
+40			12.8	22.6	
	1.78	132482	12.32	1323.04	
60			5.3	19.5	
61			10.8	14.0	
+50			12.0	12.8	

5.1
3.4

6.4
4.8
52/30 51/17 4.8 45/30
69/30 67/15 6.3 60/30
65/30 67/15 6.2 66/30
70/30 67/15 6.4 64/25 60/30

96/30 9.4 94/30
90/30 9.0 92/30
26/30 31/25 5.4 63/26 66/30

6" Poplar 60' R 54+90
36/30 37/20 2.7 24/28 24/30
25/30 35/20 3.1 23/30

52/30 5.3 52/21 52/30
71/30 67/11 5.2 40/14 35/33
71/30 67/24 5.4 55/11 54/30
125/30 123/13 11.5 107/12 92/32
105/28 122/13 12.8 141/19 143/30

27/33 43/13 5.3 53/16 37/31
83/33 104/14 10.8 105/14 106/33
73/35 113/17 12.0 113/13 86/30

26

		132485			61470 15" CM DF
62			11.0	13,8	
+55			26	22,2	
63			5.4	19,4	
+50			11.5	13,3	
	056	131463	10.75	131407	
64			5.6	09,0	
+50			5.6	09.0	
65			6.2	08,4	
+50			9.4	05.2	
66			11.3	03.3	
	112	130448	11.27	130336	
BM			0.05	130443	
66+50			70	97,5	
67			11.2	93,3	
68			12.9	91.6	
69			13.0	91.5	
70			13.0	91.5	
71			13.1	91.4	
	8.55	1300,80	12.23	1292.25	
72			9.2	91.6	
73			9.0	91.8	
74			8.8	92.0	
75			9.1	91.7	
76			9.3	91.5	
77			9.2	91.6	

12.9/2.09 12.4/15 11.0 8.4/17 5.5/3.2

7.3/3.0 5.2/1.4 2.6 1.3/1.5 0.3/3.2

9.4/3.1 7.4/2.0 5.4 3.1/1.9 1.4/3.3

13.6/5.1 13.3/1.8 11.5 9.6/1.1 9.0/3.0

7.9/3.1 7.3/2.0 5.6 2.6/1.5 0.0/3.5

10.2/3.0 8.6/1.3 5.6 3.6/1.7 0.3/3.3

11.4/3.0 9.0/1.1 6.2 5.2/6 3.0/1.2 0.8/2.9 0.3/3.3

13.7/3.2 13.1/2.0 9.4 7.9/1.1 5.1/2.4 3.7/3.3

15.5/3.0 14.5/2.5 13.3/1.2 11.3 10.4/1.1 9.6/2.4 9.3/3.2

12" Pine Stump. 110' R 66+20

7.0/3.0 7.0 7.0/1.4 7.5/3.0

11.6/3.0 11.2 11.0/3.0

12.5/3.0 12.9 12.9/3.0

12.8/3.0 13.0 12.9/3.0

13.0/3.0 13.0 13.0/3.0

13.0/3.0 13.1 13.3/3.0

9.2/3.0 9.2 9.4/3.0

9.1/3.0 9.0 9.2/3.0

8.7/3.0 8.8 8.8/3.0

9.0/3.0 9.1 9.2/3.0

9.3/3.0 9.3 9.3/3.0

9.2/3.0 9.2 9.1/3.0

27

		130080		
77+80			9.0	918
78			6.5	94.3
B.M.			4.14	1296.66
	7.09	1307,01	0.88	1299.92✓
79			7.4	996
80			4.8	022
81			4.9	021
+50			3.2	038
82✓			3.0	040
83			26	044
	10.00	1314.57	2.44	130457
84			7.7	069
85			4.1	10.5
86			30	116
87			04	142
	10.74	132525	0.06	131451
88			8.3	17.0
89			2.1	23.2
	12.05	133687	0.43	132482
90			7.7	29.2
91			7.2	29.7
92✓			22	34.7
	5.60	1341,60	0.87	1336,00
93			6.1	35.5
+60			6.0	35.6

Good Borrow [illegible]

	91/30	9.0	92/30	
75/32✓	73/20	6.5	73/24	80/30

6" Poplar 80' L 78+30

99/30	81/14	7.4	85/19	10.0/30
55/30	50/23	4.8	5.2/15	55/31
31/33	40/14	4.9	64/18	73/30
22/30	28/15	3.2✓	36/30	
10/32✓	2.6/13	3.0	3.8/14	42/30
10/33	15/21	2.6	31/16	32/30
79/31	80/20	7.7	77/14	78/30
52/32✓	48/24	4.1	43/12✓	43/30
	41/30	3.0	16/30	
		0.4		
		8.3		
		2.1		
		7.7		
		7.2✓		
		2.2✓		
		6.1		
		6.0		

		1341.60				
94			7.2	34.4		7.2
95			9.9	31.7		9.9
	4.05	1333.26	12.39	1329.21		
96			5.0	28.3		5.0
97			4.6	28.7		4.6
+50			5.7	27.6		5.7
98			4.7	28.6		4.7
99			5.5	27.8	Drift 18" CMP 97+50	5.5
100			6.2	27.1		6.2 ✓
101			6.4	26.9		6.4
	7.52 ✓	1334.42	6.36	1326.90		
102 ✓			7.0	27.4		7.0
103			4.3	30.1		4.3
BM			2.34	1332.08		12" NPine 40'R 103+60
104			4.3	30.1		4.3
105			4.1	30.3		4.1
106			2.8	31.6		2.8
	4.75	1337.62 ✓	1.55	1332.87		
107			5.2	32.4		5.2 ✓
108			6.6	31.0		6.6
109			7.9	29.7		7.9
110			10.2	27.4		10.2 ✓
111			11.4	26.2		11.4
	4.72 ✓	1331.56	10.78	1326.84		
112 ✓			6.3	1325.3		6.3

		1331.56				
113			7.3	24.3	D.W. 18" CM Sta. 113	7.3
114			6.5	25.1		6.5
115			3.9	27.7		3.9
116			3.4	28.2		3.4
117			3.0	28.6		3.0
~~118~~			2.3	~~29.3~~		2.3
	4.73	1334.42	1.87	1329.69		
118			5.3	29.1		5.3
BM			4.30	1330.12		12" Nor. Pine 80' R 120+00
119			4.6	29.8		4.6
120			4.7	29.7		4.7
121			5.8	28.6		5.8
122			6.7	27.7		6.7
123			8.2	26.2		8.2
	4.26	1330.87	7.81	1326.61		
124			4.5	26.4		4.5
125			6.6	24.3		6.6
+50			7.5	23.4		7.5
126			7.7	23.2	D.W. 18" CM 127+00	7.7
127			5.7	25.2		5.7
128			3.6	27.3		3.6
	10.38	1337.90	3.35	1327.52		
129			9.8	28.1		9.8
130			7.5	30.4		7.5
131			5.7	32.2		5.7

		1337.90			
132			4.6	33.3	
133			4.7	33.2	
13+50			5.3	32.6	
134			4.2	33.7	
	5.27	1339.17	4.00	1333.90	
135			6.2	33.0	
136			8.8	30.4	Pot Hole
137			8.8	30.4	No Drainage
138			6.7	32.5	18" Crk
	7.63	1340.50	6.30	1332.87	
139			7.5	33.0	
140			4.7	35.8	
141			6.2	34.3	
142			6.6	33.9	
	8.44	1342.61	6.33	1334.17	
143			6.7	35.9	
144			5.6	37.0	
BM			4.16	1338.45	
145			9.3	33.3	
146			12.1	30.5	
+50			13.2	29.4	Dr. W. 15" CM
147			12.1	30.5	
	7.12	1337.92	11.81	1330.80	
148			5.0	32.9	
+60			5.2	32.7	

Needs 200' Offtake Dr. To West

Good B

48/30	46	43/30
49/30	47	44/30
55/30	53	53/30
36/30	42	37/30
63/30	62	54/30
90/30	88	88/30
87/30	88	89/30
68/30	67	66/30
77/30	75	73/30
42/30	47	51/30
65/30	62	64/30
56/30	66	63/30
61/30	67	67/30
55/30	56	57/30

14" Nor. Pine 50' R 143+60

94/30	93	89/30
121/30	121	122/30
134/30	132	132/30
124/30	121	122/30
50/30	50	40/20 40/30
38/30 42/15	52	67/20 69/30

(31)

		1337.92			
149			3.0	34.9	
	10.43	1345.78	2.57	1335.35	
150			6.9	38.9	
151			5.0	40.8	
152			3.9	41.9	
+75			5.0	40.8	
153			7.7	38.1	
	4.44	1342.74	7.48	1338.30	
+50			7.2	35.5	DrE 15" CM+50
154			6.9	35.8	
155			5.1	37.6	
+50			4.2	38.5	
156			5.1	37.6	
157			4.9	37.8	
	12.50	1350.52	4.72	1338.02	
158			10.8	39.7	
159			4.8	45.7	
+50			2.9	47.6	
160			1.9	48.6	
	182	1351.47	0.87	1349.65	
161			3.1	48.4	
162			5.8	45.7	
BM			7.21	1344.26	
163+60			10.0	41.5	
163			10.6	40.9	

37/30	30	30/15	34/30
71/30	69	64/30	
47/30	50	50/30	
	39		
	50		
	77		
	72		
	69		
	51		
	42		
	51		
	49		
	108		
	48		
	29		
	19		
	31		
	58		
12" Maple 35R	162+10		
	100		
	106		

32

		1351.47			
164			13.0	38.5	
	4.14	1343.23	12.38	1339.09	
165			5.4	37.8	
166			7.1	36.1	
+70			7.1	36.1	Dr E 15" CMC
167			6.5	36.7	
168			6.3	36.9	
	3.72	1341.42	5.53	1337.70	
169			3.5	37.9	
170			4.7	36.7	
171			6.7	34.7	
172			8.2	33.2	
	3.94	1337.96	7.40	1334.02	
173			4.3	33.7	
174			5.0	33.0	
+50			4.5	33.5	
175			6.7	31.3	
176			9.4	28.6	
177			11.2	26.8	
	0.40	1327.83	10.53	1327.43	
178			5.8	22.0	
179			9.4	18.4	Dr. E & W 18.0 CM
BM			8.05	1319.78	
180			7.4	20.4	
181			3.1	24.7	
	4.80	1331.91	0.71	1327.11	

130	
54	
7.1	
7.1	
6.5	
6.3	
3.5	
4.7	
6.7	
8.2	
4.3	
5.0	
4.5	
6.7	
9.4	
11.2	
5.8	
9.4	
10" Poplar 60' L 179+50	
7.4	
3.1	

33

		1331.91			
182			3.3	28.6	
+50			2.4	29.5	
183			5.0	26.9	
+50			6.4	25.5	
184			4.9	27.0	
185			7.8	24.1	Dr.E. 15"CM
186			5.0	26.9	
	5.98	1330.54	4.35	1327.56	
187			8.4	25.1	
188			5.0	28.5	
+40			4.9	28.6	
189			10.9	22.6	
+75			12.3	21.2	
190			11.7	21.8	Dr W 12"CM
	5.44	1327.98	11.00	1322.54	
191			5.0	23.0	
192			5.0	23.0	
193			11.1	16.9	
194			12.6	15.4	
	3.82	1319.69	12.11	1315.87	
+50			7.5	12.2	Dr E 12" CM
195			6.7	13.0	
+50			4.7	15.0	
196			6.4	13.3	
BM			2.43	1317.26	

33			
24			
50			
64			
49			
78			
50			
89/50	84	80/50	
48/30	50	65/30	
43/30	49	64/30	
115/30	109	109/30	
121/30	123	125/30	
110/30	117	122/30	
40/30	50	55/30	
40/30	50	62/30	
107/30	111	108/30	
126/29	126	124/26	
79/30	75	64/31	
74/29	67	57/30	
50/30	47	43/29	
67/30	64	61/15	61/30

8" Poplar - 65' R 195 +50

(34)

		131969			
197			6,9	12,8	
	320	131654	6,35	1313,34	
+40			3.5	13.0	
198			6.4	10,1	
+45			7.8	08,7	
199			13,2	03,3	
	250	130902	10,02	1306,52	
200			7.9	01.1	18" CM
+60			7.7	01.3	
201			6.4	02,6	
202			5.3	03,7	
203			2.8	06.2	
	800	131498	2,04	1306,98	
204			7.7	07,3	
+60			6.0	09,0	
205			6.1	08,9	
+50			4.6	10.4	
206			5.2	09.8	
+30			4.6	10.4	
	641	131929	2,10	1312,88	
207			6.0	13,3	
208			6.2	13,1	
209			4.8	14.5	143
	1156	132661	4,24	1315,05	
210			4.8	21.8	143
211			5.9	20,7	

66/30 69 67/31

35/30 35 32/33

50/30 54/16 64 79/20 80/30

56/30 69/12 78 95/13 105/30

132/29 132 135/30

77/30 79 79/33

74/30 77 77/31

68/29 64 60/30

51/33 53 50/33

30/30 28 26/31

74/30 77 73/30

77/30 60 58/30

73/30 61 53/12 50/30

51/30 46 36/28

58/29 52 41/30

49/28 46 43/30

60/30 61/12 60 64/20 66/32

68/30 64/13 62 54/14 52/30

58/31 54/24 50/12 48 51/12 64/30

16/40 26/30 44/12 48 58/11 68/26 75/40

58/50 60/31 62/12 59 60/24 52/31 52/50

		1326.6			
21+80			5.2	21.4	
BM			9.87	1316.74	

148/300 115/200 83/100 5.2 50/60 60/100 104/200 142/300

T.P. 75' SE 21+80 & T.H. #34

Oct 21-1929

Transit Notes Wahena Twp

Prudlo ⛪
Trout HC
Most RC.

66+36 Sec Line

RP { 42.4 Poplars" NE.
6" Basswood 248 NW ○

52+88 1/16 Line P.O.T. Fen Line W.

RP { 6" Pop. 40.6 E
5" Ash 40.5 SE

26+76.6 1/4 Line. △ 85° 60' No Mon Inp.

RPS { 5" Cedar 20.7 NE
10" Cedar 29.3 E

0+00 ℄ County Road 1/16 Line
N.W. Cor of S.W. 1/4 of Sec 7 - 144-25

RP { 10" Oak 61.9 NW
F.P. 69.1 NE

KEITH'S RAILROAD CURVE TABLES.

Published by KEUFFEL & ESSER CO., New York.

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in Washington, D.C.

HOW TO USE KEITH'S TABLES.

EXAMPLE.

Wanted a Curve with an Ext. of about 12 ft. Angle of Intersection or I. P.=23° 20′ to the R. at Station 542+72.

Ext. in Tab. IV opposite 23° 20′=120.87
120.87÷12=10.07. Say a 10° Curve.

Tan. in Tab. IV opp. 23° 20′=1183.1
1183.1÷10=118.31.

Tab. V. correction for A. 23° 20′ for a 10° Cur.=0.16
118.31+0.16=118.47=corrected Tangent.

(If corrected Ext. is required find in same way)
Ang. 23° 20′=23.33°÷10=2.3333=L. C.

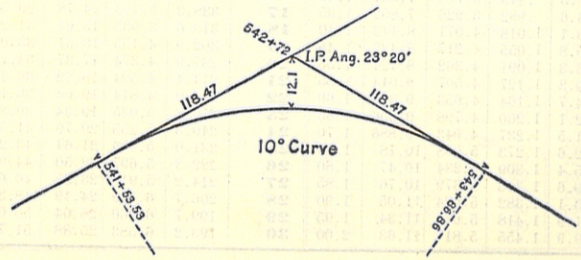
2° 19½′=def. for sta.	542	I. P.=sta.	542+72
4° 49½′= " " "	+50	Tan.=	1.18.47
7° 19½′= " " "	543	B. C.=sta.	541+53.53
9° 49½′= " " "	+50	L. C.=	2.33.33
11° 40′= " " "	543+	E. C.=sta.	543+86.86
	86.86		

100—53.53=46.47×3′(def. for 1 ft. of 10° Cur.)=139.41′=
2° 19½″=def. for sta. 542.

Def. for 50 ft.=2° 30′ for a 10° Curve.

Def. for 36.86 ft.=1° 50½′ for a 10° Curve

(These tables are published in Field Books of KEUFFEL & ESSER Co., New York, N. Y.)



Natural Tangents

Deg.	0′	10′	20′	30′	40′	50′	Deg.	Deg.	0′	10′	20′	30′	40′	50′	Deg.
0	0000	0029	0058	0087	0116	0145	89	40	8391	8441	8491	8541	8591	8642	49
1	0175	0204	0233	0262	0291	0320	88	41	8693	8744	8796	8847	8899	8952	48
2	0349	0378	0407	0437	0466	0495	87	42	9004	9057	9110	9163	9217	9271	47
3	0524	0553	0582	0612	0641	0670	86	43	9325	9380	9435	9490	9545	9601	46
4	0699	0729	0758	0787	0816	0846	85	44	9657	9713	9770	9827	9884	9942	45
5	0875	0904	0934	0963	0992	1022	84	45	1.0000	1.0058	1.0117	1.0176	1.0235	1.0295	44
6	1051	1080	1110	1139	1169	1198	83	46	1.0355	1.0416	1.0477	1.0533	1.0599	1.0661	43
7	1228	1257	1287	1317	1346	1376	82	47	1.0724	1.0786	1.0850	1.0913	1.0977	1.1041	42
8	1405	1435	1465	1495	1524	1554	81	48	1.1106	1.1171	1.1237	1.1303	1.1369	1.1436	41
9	1584	1614	1644	1673	1703	1733	80	49	1.1504	1.1571	1.1640	1.1708	1.1778	1.1847	40
10	1763	1793	1823	1853	1883	1914	79	50	1.1918	1 1988	1.2059	1.2131	1.2203	1.2276	39
11	1944	1974	2004	2035	2065	2095	78	51	1.2349	1.2423	1.2497	1.2572	1.2647	1.2723	38
12	2126	2156	2186	2217	2247	2278	77	52	1.2799	1.2876	1.2954	1.3032	1.3111	1.3190	37
13	2309	2339	2370	2401	2432	2462	76	53	1.3270	1.3351	1.3432	1.3514	1.3597	1.3680	36
14	2493	2524	2555	2586	2617	2648	75	54	1.3764	1.3848	1,3934	1.4019	1.4106	1.4193	35
15	2679	2711	2742	2773	2805	2836	74	55	1.4281	1.4370	1.4460	1.4550	1.4641	1.4733	34
16	2867	2899	2931	2962	2994	3026	73	56	1.4826	1.4919	1.5013	1.5108	1.5204	1.5301	33
17	3057	3089	3121	3153	3185	3217	72	57	1.5399	1.5497	1.5597	1.5697	1.5798	1.5900	32
18	3249	3281	3314	3346	3378	3411	71	58	1,6003	1.6107	1.6212	1.6319	1.6426	1.6534	31
19	3443	3476	3508	3541	3574	3607	70	59	1.6643	1 6753	1.6864	1.6977	1.7090	1.7205	30
20	3640	3673	3706	3739	3772	3805	69	60	1.7321	1.7437	1.7556	1.7675	1.7797	1.7917	29
21	3839	3872	3906	3939	3973	4006	68	61	1.8040	1.8165	1.8291	1.8418	1.8546	1.8676	28
22	4040	4074	4108	4142	4176	4210	67	62	1.8807	1.8940	1.9074	1.9210	1.9347	1.9486	27
23	4245	4279	4314	4348	4383	4417	66	63	1.9626	1.9768	1.9912	2.0057	2.0204	2.0353	26
24	4452	4487	4522	4557	4592	4628	65	64	2.0503	2.0655	2.0809	2.0965	2.1123	2.1283	25
25	4663	4699	4734	4770	4806	4841	64	65	2.1445	2.1609	2.1775	2.1943	2.2113	2.2286	24
26	4877	4913	4950	4986	5022	5059	63	66	2.2460	2.2637	2.2817	2.2998	2.3183	2.3369	23
27	5095	5132	5169	5206	5243	5280	62	67	2.3559	2.3750	2.3945	2.4142	2.4342	2.4545	22
28	5317	5354	5392	5430	5467	5505	61	68	2.4751	2.4960	2.5172	2.5386	2.5605	2.5826	21
29	5543	5581	5619	5658	5696	5735	60	69	2.6051	2 6279	2.6511	2.6746	2.6985	2.7228	20
30	5774	5812	5851	5890	5930	5969	59	70	2.7475	2.7725	2.7980	2.8239	2.8502	2.8770	19
31	6009	6048	6088	6128	6168	6208	58	71	2.9042	2.9319	2.9600	2.9887	3.0178	3.0475	18
32	6249	6289	6330	6371	6412	6453	57	72	3.0777	3.1084	3.1397	3.1716	3.2041	3.2371	17
33	6494	6536	6577	6619	6661	6703	56	73	3.2709	3.3052	3.3402	3.3759	3.4124	3.4495	16
34	6745	6787	6830	6873	6916	6959	55	74	3.4874	3.5261	3.5656	3.6059	3.6470	3.6891	15
35	7002	7046	7089	7133	7177	7221	54	75	3.7321	3.7760	3.8208	3.8667	3.9136	3.9617	14
36	7265	7310	7355	7400	7445	7490	53	76	4.0108	4.0611	4.1126	4.1653	4.2193	4.2747	13
37	7536	7581	7627	7673	7720	7766	52	77	4.3315	4.3897	4.4494	4.5107	4.5736	4.6382	12
38	7813	7860	7907	7954	8002	8050	51	78	4.7046	4.7729	4.8430	4.9152	4.9894	5.0658	11
39	8098	8146	8195	8243	8292	8342	50	79	5.1446	5.2257	5,3093	5.3955	5.4845	5.5764	10
Deg.	60′	50′	40′	30	20′	10′	Deg.	Deg.	60′	50′	40′	30′	20′	10′	Deg.

Deg.	0′	10′	20′	30′	40′	50′	Deg.
80	5.6713	5.7694	5.8708	5.9758	6.0844	6.1970	9
81	6.3138	6.4348	6.5606	6.6912	6.8269	6.9682	8
82	7.1154	7.2687	7.4287	7.5958	7.7704	7.9530	7
83	8.1443	8.3450	8.5555	8.7769	9.0098	9.2553	6
84	9.5144	9.7882	10.078	10.385	10.711	11.059	5
85	11.430	11.826	12.250	12.706	13.197	13.727	4
86	14.300	14.924	15.605	16.350	17.169	18.075	3
87	19.081	20.206	21.470	22.903	24.542	26.432	2
88	28.636	31.242	34.368	38.189	42.964	49.104	1
89	57.290	68.750	85.940	114.588	171.885	343.77	0
Deg.	60′	50′	40′	30′	20′	10′	Deg.

Natural Cotangents

730
73
857

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.

MADE IN GERMANY.
R.