

DR#9 Blackhawk

BOOK 9

1089

ENGINEER'S
LEVEL BOOK
No. 412

Construction

SEC. 1-2-3-4.

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 $30.6 + (20 - 16) \div 2$ or 2 ft. added to 30.6 = 32.6. For slopes of 1 on 1½ see inside of back cover.

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3.08

21

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FEB 27 '23

FILED

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BR. F

BR. F. Right

8/8/22

78	10.11
6	9.98
49.18	0.13
103.	176
5025	1068

49.78	76+10
2	
49.50	
49.78	
5018	

18" 90 to 75

Top 16"	9.90	59.90	50.00	
Top 8"		10.11		
Invert.		10.72	49.18	
O 417		7.28	52.52	49.18
O + 50		5.87	54.03	49.48
1		5.70	54.20	49.08
1 + 75 End		6.00	53.90	50.28

E. R. d. to 1+60	6.50	52.40	50.18
W. R. d 1+30	7.20	52.60	49.90

Q-R

T	11.00	84.46	73.46
T.P. CL	8.92	89.54	3.85
C-L		7.30	82.24
CL		7.20	
		5.90	83.64

37.14

24.18

70

BR. Q Right

8/9/22

12M	5.10	75.24	70.14	(Pg. 101. this Book.)	
Invert Conn.		13.71	61.53	61.53	
0		7.60	67.64	61.50	6.14
0 + 50		7.17	68.07	62.15	5.92 80
1		6.52	68.72	62.80	5.92 30
2		6.02	69.22	64.10	5.12
3		5.25	69.99	65.40	4.59
4		4.85	70.39	66.00	4.29
5		4.28	70.96	66.60	4.36
6	8.73	79.97	4.00	71.24	67.20 4.04 80
7		8.10	71.87	67.80	4.07 0
8		7.16	72.81	68.40	4.01
9		6.51	73.46	69.00	4.46
10		5.57	74.40	69.60	4.80
11		4.47	75.50		
12		3.66	76.31		

Cont P. 30 Book 11

$\frac{14}{52} 70$
 $\frac{8.76}{4.95}$
 $\frac{137}{127}$
 $\frac{89.00}{45}$
 $\frac{645}{655}$
 $\frac{7000}{45}$
 $\frac{7.50}{4.9}$
 $\frac{72.60}{61.5}$
 $\frac{5.60}{65.00}$
 $\frac{0.10}{0.00}$
 $\frac{6540}{420}$
 $\frac{696}{696}$

9/5/22 AP. B

Cont. from page 116 Book 6

BM			65.30		Spike in top of 5 th end E Cap Bridge
48			63.31	57.00	631 = End of 32' tile E of Sta 44+50
			Wrong BM: B5		Should be 4.56
BM	3.71	69.01	65.30		
	4.56	69.86			
42			7.30	61.71	62.56 55.80 6.76
Top 32'			10.70	58.31	3.10 55.21 Sta. 42
43			6.91	62.10	62.95 56.00 6.95
44			6.80	62.21	63.06 56.20 6.86
44+50			7.58	61.42	62.28 56.30 5.98
45			5.24	63.77	64.62 56.40 8.22
46			5.03	63.98	64.83 56.60 8.23
46+50			5.67	63.24	64.19 56.70 7.49
47			5.93	62.08	63.93 56.80 7.13
47+50	5.51	68.27 69.12	6.25	62.76	63.61 56.90 6.71
48			5.60	62.67	63.52 57.00 6.52
48+50			5.52		63.60 57.11 6.49
49			5.53		63.69 57.22 6.37

Spike - Grade at Sta 48 = End of 32' tile 15 approx to 7' higher than designed - Profile shows 6' of 2.5% for 30' tile

.29%

.22%

Note: - Grade at Sta 48 = End of 32" tile 15 approx. 6.7 higher than designed - Profile shows Gr of 2.5% for 30" tile

50	68.27 69.12	5.06	63.21	64.06	57.44	6.62
50+75		4.76	63.51	64.36	57.61	6.75
52		4.60		64.52	57.88	6.64
53		4.26		64.88	58.10	6.76
54	4.86	68.73 69.78	4.20	64.07	64.92	58.32
55			5.44	63.49	64.34	58.54
56			4.50	64.43	65.28	58.76
57			4.78	64.15	65.00	58.98
58			4.53	64.40	65.25	59.20
59			4.20	64.73	65.58	59.42
60			4.40	64.53	65.38	59.64
60+50			4.12	64.80	65.65	59.75

P.L.

M917

2/14/22

Br 993
B259

60	5.94	71.32		65.38	59.64	5.74
60+50	5.66	71.31		65.65	59.75	5.90
60+75			5.40	65.91	59.80	6.11
61			5.40	65.91	59.86	6.05
61+25			5.36	65.95	59.92	6.03

BM. 4.19 69.49 65.30

44+50 7.19 62.30

BM. 4.19
3.34 ~~4.19~~
85

MAIN Hubs 1/14/22

61+50 71.31 5.10 66.21 59.98 6.22

61+75 5.25 66.06 60.04 6.02

Jc. BR West.

62 5.03 66.28 60.11 6.17

62+50 4.97 66.34 60.23 6.11

63 4.85 66.46 60.36 6.10

63+50 4.88 66.43 60.49 5.94

64 4.70 66.61 60.61 6.00

65 5.10 72.41 4.00 67.31 60.86 6.45

66 4.80 67.61 61.11 6.50

67 4.40 68.01 61.36 6.65

68 4.20 68.21 61.61 6.60

69 4.11 68.30 61.86 6.44

13

Main

2/14/22

68.05 67.99
67.99
16

14

69+50	72.41	4.70	67.71	61.98	5.73	
70		3.40	69.01	62.11	6.90	
BM		4.42	67.99			SPICE in tree in sta. 69+50
BM. 5.69	73.68		67.99			
70		4.68	69.00	62.11	6.89	
70+50		4.87	68.81	62.23	6.58	
71		4.80	68.88	62.36	6.52	
71+50		4.84	68.84	62.49	6.35	
72		4.73	68.95	62.61	6.34	
73		4.46	69.22	62.86	6.36	
74		4.35	69.33	63.11	6.22	
75	5.65	74.98	4.35	69.33	63.36	5.97
76		5.21	69.77	63.61	6.16	
77		5.11	69.87	63.86	6.01	
77+50		4.96	70.02	63.99	6.03	
78		4.81	70.17	64.11	6.06	
78+50		4.90	70.08	64.23	5.85	
79		4.65	70.33	64.36	5.97	
BM.		4.17		(70.81)		SPICE Willow E sta. 78

75%
26" x 101/24/22
issued

RPPB

15

2/11/22

64.36 70.25

BPM	5.47	73.46		67.99		spice tree 69+50
69+50		5.71	67.75			
70		4.45	69.01			78.75
69		5.36	68.10	61.86	6.24	

2/20/22

BPM	4.94	75.75		70.81		spice Willow 34.78
79		5.39	70.36	64.36	6.00	
80		5.35	70.40	64.61	5.79	
80+50		5.05	70.70	64.73	5.97	95
81		4.97	70.78	64.86	5.92	89
82		4.14	71.61	65.11	6.50	6
83		4.28	71.37	65.36	6.01	
84	5.44	77.35	3.84	71.91	65.61	6.30
85		5.39	71.96	65.86	6.10	
86		5.42	71.93	66.11	5.82	
87		5.00	72.35	66.36	5.99	
88		4.26	73.09	66.61	6.48	
89		4.50	72.85	66.86	5.99	

Issued
2/21/22
R.F.B.

Main

3/9/22

82 5.30 76.67 71.37

84 4.73 76.84 71.91

10.85

85 4.85 76.81 71.96

86 4.88 76.81 71.93

76.82

10.85 65.97

85 4.85 71.97 65.86

86 4.88 71.94 66.11

87 4.46 72.36 66.36

88 3.42 73.39 66.61

89 4.18 72.64 66.86

90 3.29 73.43 67.11

91 3.15 73.67 67.36

B.M. 4.48 72.34

25
40
65.86
1.50
67.36

3 Spruce Root. stump opp 86

Main

3/12/22

B.M. 5.68 78.02 72.34

Invert 71 10.48 67.54

67.36

92 3.86 74.14 67.61

93 3.77 74.25 67.86

74 3.51 74.51 68.11

93 5.04 79.29 } 79.35 74.25

94 4.87 79.38 } 74.51

95 4.45 74.90 68.36

+75 4.28 75.07 68.55

96 4.44 74.91 68.61

+50 4.15 75.20 68.74

97 4.04 75.31 68.86

B.M. 1.56 77.79

11.79 47.36 25
75 75
12 68.11 75

4.8
36
8

24"
89+50

Note

26"

78+65

67.36

6.53

6.39

6.40

6.54

6.52

6.30

6.46

6.45

68.11

67.86

.25

67.61

.25

86

2

41.75

18

.25%

Out

New Levels

BR 6 Left

May 3 '22

Hoff.
A Nelson

BM	2.81	68.11	65.30	Spike top 5 Cap Br. Sta 45 Main
0		4.80	63.31 58.10	5.21 = Sta. 47+75 Main
1		4.62	63.49 58.80	4.69
2		5.01	63.10 59.50	3.60
3		4.01	64.10 60.20	3.90
4		2.75	65.36 60.90	4.46
5		1.72	66.39 61.60	4.79

3.20
1.00

2.20

1.10

3.30
58.10
61.60

BR 8 Left

5/10/22

Hoff
Mat/bems

BM	5.02	75.39	70.37	Lath hub by 3d F.P. N. Sta 1450
0 H.		10.15	65.24 65.24	5.04
Hub		5.10	70.29 65.25	5.5
0		4.81	70.58 65.75	4.83
1		5.00	70.89 66.00	4.39
+50		4.48	70.91 66.25	4.66
2		4.00	71.39 66.75	4.64
3		3.59	71.80 67.25	4.55
4				

Cont A9-71

0.50%
10"

$$\begin{array}{r} 9.40 \\ 420 \\ \hline 1360 \end{array}$$

$$\begin{array}{r} 94+75 \quad 31 \\ 21 \\ \hline 62 \\ 12 \\ \hline 74 \end{array}$$

Main Hub

BM. 4.29 81.90 77.67
 T/c 13.60 68.30
 94+75

22.45 2.20

Hub 95 7.33 74.57 6836 6.21
 95+75 7.20 74.90 6855 6.15
 96 7.41 74.49 68.61 5.88
 96+50 7.21 74.69 6874 5.95
 97 7.10 74.80 6886 5.94
 97+50 7.05 74.85 6899 5.86
 98 7.02 74.88 6911 5.77
 99 6.67 75.23 6936 5.87

22' tile end at Sta 95+60
 125-8%

95+60 = End 22" tile

= 0 of BR 9 Rt.

End of 20" tile

7/15/22

Hoff
Mathews

B.17 2.79 80.46 77.67
 99 5.19 75.29 6936 5.91
 100 5.19 75.29 69.61 5.66
 Tile top 9.00 71.26 180 69.66
 100+70
 101 6.81 82.50 4.77 75.69 69.86 5.83

$$\begin{array}{r} 99.50 \\ 95.20 \\ \hline 4.30 \end{array}$$

25

Hubs Main

72. ¹⁵/₂₅72. ²⁶/₂₆

82.50

102 6.19 76.31 70.11 6.20

+50 5.90 76.60 70.24 6.36

103 5.69 76.81 70.36 6.45

+50 5.50 77.00 70.49 6.51

104 5.41 77.09 70.61 6.48

+50 5.82 76.68 70.74 5.94

105 5.84 76.66 70.86 5.80

106 5.53 82.82 5.21 77.29 71.11 6.19

107 5.30 77.52 71.36 6.16

108 5.39 77.43 71.61 5.82

109 5.21 77.61 71.86 5.75

110 4.32 78.50 72.11 6.39

R.P. 4.24 78.58

Double Hub Fence Cor by 5 to 11 or 20 Main

27

72.25 76
22 140
112
12.60

72.11 12
72.23

25
12

Main Hubs

72.11
1200
8470

6/1/22

B1190

Earl

72.23

R.P.	4.60	83.18	78.56		
110	4.70	83.20	78.50 ⁸⁰	72.11	
Invert 110		83.19	10.75	72.24	72.11
110+50		5.67	77.52	72.23	5.29
111		4.42	78.77	72.45	6.32
112		3.70	77.49	72.90	6.59
113		3.59	79.60 ⁹⁰	73.35	6.25
114	6.01	86.40	2.80	80.39 ¹⁰⁰	73.80
115		5.55	80.85	74.25	6.60
116		5.18	81.22	74.70	6.52
117		4.50	81.90	75.15	6.75
118		4.32	82.08	75.60	6.48
119		3.70	82.70	76.05	6.65
120		3.52	82.87	76.50	6.37

Cont. P4-121

120
110+50

9.50
40
0750
3800

42750
72.23
7650

9750
3800
42750

BR. D.R. Hubs

2/14/22

Briggs

B.M.

67.78

Willow Root.

64.85

Hub 60 5.97 77.07

71.10

60+50 5.98 77.08

71.10

61+50 6.20 77.10

70.96

77.09

O DR

5.83 71.26 65.60

5.66 = 61 S.R.

Top 20"

10.20 12.20 64.79

Sta. 61

0+50

6.46 70.63 66.10

4.53

1 5.69 71.40 66.60

4.80

2 4.54 72.55 67.60

4.95

3 3.50 73.59 68.60

4.99

4 2.60 74.49 69.60

4.89

5 8.78 83.99 1.88 75.21 70.60

4.61

6 7.69 76.30 71.40

4.90

7 6.24 77.75 72.20

5.55

8	83.99	5.06	78.93	73.00	5.93
9		4.04	79.95	73.80	6.15
10		3.33	80.66	74.60	6.06
11		3.12	80.87	75.40	5.47
10	5.74	86.40	80.66		
11	5.51	86.38	80.87	75.40	5.47
		86.39			
11+50		5.05	81.34	75.80	5.54
11+75		5.14	81.25	76.00	5.25
12		4.95	81.44	76.20	5.24
13		4.55	81.84	77.00	4.84
14		3.82	82.57	77.80	4.77

1/2 5/22
RPIB.

Hub 5 Br 6 Left
Cont from p 21

BM	2.52	67.82	65.30
T.P.	4.97	72.28	0.51 67.31
5		5.85	68.43 61.60
+50		5.46	66.82 61.95
6		4.97	67.31 62.80
7		4.20	68.08 63.00
8		3.69	68.59 68.70
9	6.93	76.41	2.80 69.48 64.40
10		6.22	70.19 65.10
11		5.21	71.20 65.90
			66.90
12		4.61	71.80 67.20
13		3.92	72.49 67.50
+50		3.87	72.54 67.90
14		3.50	72.91 68.30
4+14 FLine		3.10	73.31
R.P.		3.29	73.12

Cont Pg. 63

4.83
4.87
~~4.82~~
5.01
~~4.91~~
5.08
~~4.68~~
4.89
~~4.59~~
5.08
~~5.68~~
5.09
~~4.69~~
5.80
~~4.80~~
5.40
~~4.60~~
4.99
~~4.99~~
4.64
~~4.64~~
4.61
4.6

70/0
10
80/0
2

Highest of flat rock by 2^d FP.
N of sta 14+14

25 Hubs Br 9-Left

2.2
1.0
1.2

68.15
60
69

52
2 1/2 5/3/22
37
108
110

Hoff
Mathews

BM 3.18 80.85 77.67

0 5.81 75.04 69.50

5.54

= 94 95 735 Main

1 5.52 75.33 70.92

5.31

2 4.94 75.91 70.54

5.37

3 5.26 75.59 71.06

4.53

4 4.43 76.42 71.58

4.84

1/6
52

69.50
20
69.70

150 6.02 82.92 3.95 76.90 71.84

5.06

5 5.33 77.39 72.10

5.29

5450 5.29 77.63 72.35

5.28

6 5.16 77.76 72.60

5.16

7 10 Ditch King 6.16 76.76 73.10

3.66

1/10
5

+ 96 4.19 78.73 73.58

5.15

8 4.39 78.53 73.60

4.93

7+96 648 85.16 78.73

5/15/22

Hoff
Mathews

8 6.3 86.63 85.16 78.53 73.60

4.93

9 6.32 78.84 74.10

4.74

10 5.53 79.63 74.60

5.03

37

Hubs 9-left

85.16

11		5.11	80.05	75.10	4.95
12		4.57	80.59	75.60	4.99
13	In Ditch	3.52	79.64	76.10	3.52
14		3.46	81.70	76.60	5.10
15		2.93	82.23	77.10	5.13

Cut given 9/12/22

Briggs
Earl

5/

14	6.85	88.55		81.70	
15	6.32	88.55		82.23	
16		5.50	83.05	77.73	5.32
17		5.13	83.42	78.36	5.06
18		4.64	83.91	78.99	4.92
19		3.94	84.61	79.62	4.99
20		3.50	85.05	80.25	4.80
21		2.62	85.93	80.88	5.05
22	5.30	91.77	2.09	86.47	81.51
23		4.97	86.80	82.14	4.66

77.18
63
77.70
500
82.77

.5 = 15
.63 = 34 - 5.5
1.2 = ~~92 + 78~~
36 + 91

39

Cons. Hubo

9-L.

82.23
83.4063
20463
53
189
315
3339

23+74

91.77

West P.L. Force

24

3.23 88.54 82.77 5.77

24+53

3.66 88.11 83.10 5.01

East P.L.F.

B.M.

1.59 90.18

Center West Wall Conc. Culv.

9L Reset

4/6/1922

17 5.60 89.02 83.42

26 3.99 89.04 85.05 80.45 4.80

19 4.56 84.47 79.62 4.85 New

18 5.22 83.81 78.99 4.82 New

} 4/1/22

21 3.10 85.93

$$\begin{array}{r} 23 \\ 25 \\ \hline 315 \\ 126 \\ \hline 1515 \end{array}$$

$$\begin{array}{r} 32 \\ 24 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 62 \\ 2 \\ \hline 504 \end{array}$$

$$\begin{array}{r} 82.77 \\ 50.5 \\ \hline 27.81 \end{array}$$

BM	4.74	94.92	90.18		
24+53	6.80	94.91	88.11		
25		94.92	6.34	88.58	83.40
				5.18	
25+25			6.26	88.66	83.56
				5.10	
26			5.90	89.02	84.08
				4.99	
27			5.66	89.26	84.66
				4.60	8/0
28			4.88	90.04	85.29
				4.75	11/0
29			3.77	91.15	85.92
				5.23	
30			3.17	91.75	86.55
				5.20	
31			2.60	92.32	87.18
				5.14	
32			2.10	92.82	87.81
				5.01	

Cuts Given 6/8/22
R.P.B.

Hubs 9 Left

31	6.78	99.30	92.32		
32	6.51	99.33	92.82	87.81	5.01
23		99.82	5.15	93.67	88.44 5.23
34			5.00	94.32	89.07 5.25
35			3.72	95.60	90.87 5.23
36			3.65	95.67	91.67 4.00
37 END.			2.10	97.22	92.97 4.25

$\begin{array}{r} 13 \\ 37 \\ \hline 3.7 \end{array}$
 $\begin{array}{r} 89.07 \\ 37 \\ \hline 92.97 \end{array}$

$\begin{array}{r} 99.22 \\ 92.27 \\ \hline 7.95 \end{array}$

6/8/22

 Briggs
 Mathews

Cuts used 6/8/22

PPB

45

$$\begin{array}{r} 2.95 \\ 3 \\ \hline 7.65 \end{array}$$

$$\begin{array}{r} 15 \\ 175 \\ \hline 60.65 \end{array}$$

$$\begin{array}{r} 13.97 \\ 15 \\ \hline 20 \end{array}$$

7-R.

Grade

Cut.

1/28/22

Briggs
Note J.

61 Main 4.97 70.88 65.91

61+25 4.98 70.93 65.95

61+75 4.85 70.91 66.06

70.90

= 0 of 7-R.

Top Main Tile 7.86 63.04 60.09
30"

F.L. 20" 10.25 60.65

0 4.85 66.05 60.60 5.45

0+50 4.48 66.42 60.71 5.71

1 4.56 66.34 60.83 5.51

2 4.29 66.61 61.06 5.55

3 3.90 67.00 61.29 5.71

4 4.05 66.85 61.52 5.33

5 5.16 72.79 3.27 67.63 61.75 5.88

5+50 5.03 67.76 61.87 5.89

6 4.76 68.03 61.98 6.05

7 4.45 68.34 62.21 6.13

1911M Grade. 23% 0-15
29% 15-55

1500' - 20"

1200' - 18"

1500' - 16"

700' - 14"

1000' - 12" North

600' - 12" SW

47

8 72.79 4.10 68.69 62.44 6.25

9 2.95 68.84 62.67 6.17

10 3.65 69.14 62.90 6.24

11 3.15 69.64 63.13 6.51

2/28/22

RFB

2/6/22

10 6.98 76.12 69.14

11 6.50 76.14 69.64

12 76.14 6.10 70.04 63.36 6.68

13 5.37 70.77 63.59 7.18

14 5.00 71.14 63.82 7.32

15 5.19 70.95 64.05 6.90

16 5.14 76.54 4.74 71.40 64.35 7.15

17 4.90 71.64 64.65 6.99

18 4.59 71.95 64.95 7.00

19 4.83 71.71 65.25 6.46

20 4.39 72.15 65.55 6.60

ISSUED 2/6/22

RFB

NEW grade .23% 0-15
.3% 15-55
RFB.

49

$$\begin{array}{r} 25 \\ 20 \\ \hline 75 \end{array}$$

$$\begin{array}{r} 9 \quad 65.55 \\ 9 \\ \hline 66.45 \end{array}$$

2/11/22

19	5.87	77.58	71.71	
20	5.42	77.57	72.15	65.55
21		4.96	72.61	65.85
22		4.62	72.95	66.15
23		4.43	73.14	66.45
24		4.30	73.27	66.75
25		4.23	73.34	67.05
26		4.04	73.53	67.25
27		4.11	73.46	67.65

6/10

M

6.76

6.80

6.69

6.52

6.29

6.18

5.81

Issued 2/11/22

R.P.D.

2/25/22

25	5.44	78.78	73.34	
26	5.24	78.77	73.53	
27	5.31	78.77	73.46	67.65
27+25		5.11	73.66	67.72
27+50		5.05	73.72	67.80
28		4.66	74.11	67.95
29		4.65	74.12	68.25

5.81

5.94

5.92

6.16

5.87

51

7-R

78.77

$$\begin{array}{r} 257 \\ 12 \\ \hline 245 \\ 12 \\ \hline 257 \end{array}$$

$$\begin{array}{r} 67.45 \\ 36 \\ \hline 71.25 \end{array}$$

30			4.18	74.59	68.55	6.04
31			3.74	75.03	68.85	6.18
32	5.38	81.04	2.11	75.66	69.15	6.51
33			5.18	75.91	69.45	6.46
33+50			4.89	76.15	69.60	6.55
33+70			4.93	76.11	69.66	6.45
34			4.94	76.10	69.75	6.35
35			4.59	76.45	70.05	6.40
36			4.90	76.14	70.35	5.79
37			4.46	76.58	70.65	5.93
38			3.95	77.09	70.95	6.14
39			3.86	77.18	71.25	5.93

Cont pg- 145

Hubs BR9RT

2.00
1.40
.6.

69.80

5/17/22 Hoff Mathews

B.M. 7.27 81.94

7767

0 6.85 75.09 69.75³¹ 5.34

= Sta 77+50 Main

1 6.51 75.43 70.06 5.37

2 6.17 75.77 70.37 5.40

3 5.92 76.02 70.68 5.34

4 5.47 81.72 5 6.97 6.25 70.99 5.26

5 5.19 76.33 71.30 5.23

End. 83.15
Sta. 70 76.20

+50 5.30 76.42 71.45 4.97

6 5.40 76.32 71.61 4.71

+75 5.40 76.32 71.69 4.63

+50 5.20 76.52 71.76 4.76

+75 5.08 76.64 71.84 4.80

7 5.21 76.51 71.92 4.59

+50 4.77 76.95 72.08 4.87

8 4.40 77.32 72.23 5.09

9 4.15 77.57 72.54 5.03

10 3.87 77.85 72.85 5.00

Cuts given

31%

141

Hubs 9 RT.

35
25
175
70
875

3.50
72.85
76.35

35
75
175
250
76.25
35
60

6/6/22

B. M. J. J.

Mathews

9	5.47	83.04		77.57	
10	5.17	83.02		77.85	72.85 5.00
11		83.03	4.84	78.19	73.20 4.99
12			4.49	78.54	73.55 4.99
13			4.18	78.85	73.90 4.95
13+75			4.02	79.01	74.16 4.85
14			3.94	79.09	74.22 4.84
14+25	5.81	84.94	3.90	79.13	74.28 4.79
15			5.52	79.42	74.60 4.82
16			5.23	79.71	74.92 4.76
17			4.90	80.09	75.30 4.74
18			4.56	80.38	75.60 4.73
19			4.10	80.84	76.00 4.64
20			3.52	81.42	76.35 5.07

Grade 3.5" x 10"

57

Hubs 9. Rt.

19 6.59 87.43 80.84

20 6.02 87.44 81.42 76.35

21 5.40 82.04 76.80

22 4.82 82.62 77.25

23 4.25 83.19 77.70

24 3.84 83.60 78.15

25 3.71 83.73 78.60

25+56 3.62 83.82 78.80

26 3.47 83.97 79.05

27 3.32 84.12 79.50

26 7.17 91.14 83.97 79.05

27 7.07 91.19 84.07 79.50

28 91.14 6.43 84.71 79.95

29 4.83 86.31 80.40

30 4.36 86.78 80.85

31 5.02 86.12 81.30

32 4.47 86.67 81.75

33 3.97 87.17 82.20

Cont. Pg 129

$$\begin{array}{r} 56 \\ 45 \\ \hline 224 \\ 250 \\ \hline 250 \end{array}$$

-35%

5.07

5.24

5.37

5.49

5.45

5.13

4.97

4.92

4.62

$$\begin{array}{r} 45 \\ 270 \\ \hline 270 \end{array}$$

$$\begin{array}{r} 45 \\ 81 \\ 7635 \\ 7250 \\ \hline 7250 \end{array}$$

$$\begin{array}{r} 79.50 \\ 270 \\ \hline 82.20 \end{array}$$

$$\begin{array}{r} 250 \\ 91.14 \\ 7.07 \\ \hline 34.07 \end{array}$$

$$\begin{array}{r} 83.70 \\ 740 \\ \hline 71.13 \end{array}$$

6/10/22

Briggs

Mathew

Grade = 45%

Cuto revised 6/10/22 R.P.B.

4.92

4.57

4.76

5.91

5.93

4.82

4.92

4.97

-45%

Cuto revised 6/14/22 R.P.B.

Cuts V- RT.

July 13	5.95	84.80	78.85	
" 14	5.75	84.84	79.09	
		84.82		
TOP 12'		9.33	10.53	74.29
0		5.75	79.07	74.50 4.57
0+50		5.44	79.38	74.80 4.58
1		4.90	79.92	75.10 4.82
1+50		5.20	79.52	75.40 4.12
S. ditch		6.60	(78.22)	
⊥ Road		3.38	(81.44)	
2		4.63	80.19	75.70 4.49
N. ditch		6.20	(78.62)	
2+22 END.		4.11	80.71	75.83 4.68

$$\begin{array}{r} 807.9 \\ 22 \overline{) 76.50} \\ 132 \overline{) 4.21} \end{array}$$

$$\begin{array}{r} 933 \\ 12 \overline{) 74.5005} \\ 15 \overline{) 76.00} \end{array}$$

$$\begin{array}{r} 12 \\ 12 \overline{) 74.50} \\ 75 \overline{) 7525} \end{array}$$

$$\begin{array}{r} 12 \\ 12 \overline{) 79.50} \\ 75 \overline{) 7525} \end{array}$$

6/13/22

Baird
Mazew

= 14 9R.

.6%
 giving 2.0' Cover
 in Road ditches

Hubs 11 Left.

5/29/22

Briggs
Earl.

R.P.	6.39	84.97	78.58			Page (25)
110	6.45	84.95	78.50			
0		84.96	6.40	78.56	72.40	6.16 = 109 + 78 (M.D.)
1			6.35	78.61	72.95	5.66
2			6.20	78.76	73.50	5.26
3			5.78	79.18	74.05	5.13
4			5.52	79.43	74.60	4.83
5			5.13	79.83	75.15	4.68
5+25			5.00	79.96	75.29	4.67
5+50			5.00	79.96	75.43	4.53
5+75			4.90	80.06	75.57	4.49
6			4.82	80.14	75.70	4.44
7			4.14	80.82	76.25	4.57
8			3.54	81.42	76.70	4.72
9			2.60	82.36	77.25	5.11
9+10			2.65	82.31	77.30	5.01

1000' - 10"
784' - 8"

.5% all

.55%

10 = 4.1

15 = 4.9

E.D = 5.5

Cont Pg 69.

63 Cont. from P933

Hubs 6 Left

R.P.	5.75	78.87	73.12		
13+50	6.33	78.87	72.54	67.90	4.64
14		5.95	72.92	68.30	4.62
14+14		5.57	73.30	68.41	4.89
14+50		5.83	73.04	68.70	4.34
15		5.23	73.64	69.10	4.54
16		4.74	74.13	69.90	4.23
17		4.18	74.69	70.70	3.99
18		3.56	75.31	71.50	3.81
19		2.63	76.24	72.90	3.94
20		1.41	77.46	73.10	4.36

Run

R.P.	5.85	78.97	73.12		
16		4.83	74.14	69.90	4.24
17		4.26	74.71	70.70	4.01
18		3.65	75.32	71.50	3.82

2.5 16
68.30 18
70.50 12

68.30
48
73.10

60.00
40.1
199

6/6/22

flat rock 14+

Berggo
machines

8" 80%

10" Carried to 9+50

Cuts used 6/6/22

RKB.

Grade .8 to 2.0
.7 to End.
80.00

19	76.97	2.72	76.25	72.30	3.95
20		1.51	77.46	73.10	4.36
15		5.22	73.65	69.10	4.55

6 Left. 6/18/22

R.P.	7.67	80.79	73.12		
19			4.62	76.17	72.20 76.25 3.87
20			3.42	77.37	73.10 77.46 4.27
18			5.51	78.28	75.32
21			2.68	78.11	73.70 4.41
22			2.14	78.65	74.30 4.35
22+60	7.49	86.53	1.75	79.04	74.66 4.38
23			2.25	79.18	74.90 4.28
23+25			7.30	79.23	75.05 4.18
23+50			7.19	79.37	75.20 4.19
24			6.63	79.90	75.50 4.40
25			5.88	80.65	76.10 4.55
26			5.05	81.48	76.70 4.78

8%

—

8%

Return 6/16/22

27		86.53	4.68	81.85	77.20	4.55
28			4.44	82.09	77.90	4.19
29			3.60	82.93	78.50	4.43
30			2.50	84.02	79.10	4.93
20+50			2.10	84.43	79.40	5.03

6/16/22

25	3.05	83.70		80.65	76.10	4.55
26	2.19	83.67		81.48	76.70	4.78
24		83.69	2.75	79.94	75.50	4.40
23+50			4.38	79.31	75.20	4.11
23+75			4.35	79.34	75.05	4.29
23			4.61	79.08	74.90	4.18
22+50			4.59	79.10	74.60	4.50
22			4.96	78.73	74.30	4.43
21			5.55	78.14	73.70	4.40

6/16/22
 6/16/22
 6/16/22

Cont from pg- 61
Huts 11 left.

9	5.52	87.88	82.36	77.25	5.11
8	6.44	87.86	81.42	77.15	
9+10		87.87	5.62	82.25	77.30 4.95
9+35			5.42	82.45	77.49 4.98
10			5.10	82.77	77.75 5.02
11			5.50	82.37	78.25 4.12
12			4.80	83.07	78.75 4.32
13			4.94	82.93	79.25 3.68
14			4.46	83.41	79.75 3.66
15			4.16	83.71	80.25 3.46
16			3.64	84.23	80.75 3.48
17			2.20	85.67	81.25 4.42
18			1.98	85.89	81.75 4.14
19			1.50	86.37	82.25 4.12
19+70 End-					

38
175
86.37
82.75
362
5.50
77.25
82.75
86.37
82.25
4.12
77.25
82.75

6/8/22
Briggs
Mathews

Center revised 6/8/22

RRB

Cont. from pg 21

BR. 8 left.

6/9/22

RRB

Earl - M.

2	6.75	77.66	70.91	66.25
3	6.32	77.71	71.39	66.75
4	5.95	77.75	71.80	67.25

77.73

2	6.75	70.91	66.25	4.73
3	6.32	71.41	66.75	4.66
4	5.95	71.78	67.25	4.58
5	5.40	71.33	67.75	4.58
6	4.70	73.03	68.25	4.78
7	4.64	73.09	68.75	4.84
8	4.70	73.09	67.25	3.78
9	3.17	74.56	69.75	4.81
10	2.30	75.43	70.25	5.18

4.2
4.66
4.58
4.58
5.0

8 Lert.

6/12/22

9	6.72	81.28	74.56		
10	5.88	81.21	75.43	70.25	5.18
11		81.29	5.11	76.18	70.75
11+50		4.88	76.41	71.00	5.43
12		4.53	76.76	71.25	5.41
13		4.20	77.09	71.75	5.51
14		3.78	77.54	72.25	5.34
15	5.32	83.58	3.04	78.25	72.75
16		4.85	78.73	73.25	5.50
17		4.46	79.12	73.75	5.48
18		4.68	78.90	74.25	5.35
19		3.89	79.69	74.75	4.65
20		3.20	80.38	75.25	4.94
				5.13	

= 0 of BR

Cuts valued 6/12/22

R.P.B.

Cont Page 91-

75

Hubs
8 Rt.

25
1250

25
75.15
75.90
125.40
88.40

84.54
E20
75.90
0.4
243

6/13/22
Briggs
Mathews

H.I (P. 59) 84.82

Top 10"

7.93 8.93 75.89

0

2.97 80.85 75.90 4.95

= 18+69 9 Rt.

0+50

2.95 80.87 76.10 4.77

1

3.52 81.30 76.30 5.00

1+50

5.20 79.62 76.50 2.12

90

in S Road ditch

E Road

2.20 (82.62)

2

4.90 79.92 76.70 3.22

in N. Road ditch

3

2.47 82.35 77.10 5.25

BM

4.36 (80.46)

latter hub Phone Pole N. Side Road
opp str. 16 9 Rt.

77

$$\begin{array}{r} 28 \\ 25 \\ \hline 27 \end{array}$$

$$\begin{array}{r} 12 \\ 4 \\ \hline 80 \end{array}$$

$$\begin{array}{r} 77.10 \\ 430 \\ \hline 800 \end{array}$$

6/14/22

8 Rt.

2	7.26	87.28	79.92		
3	4.92	87.27	82.35	77.10	
4		4.74	82.53	77.50	5.03
5		4.79	82.48	77.90	4.58
5+68		4.43	82.84	78.17	4.67
6		4.30	82.97	78.30	4.67
7		4.20	83.07	78.70	4.37
8	6.17	89.40	4.04	83.23	79.10
9		5.44	83.96	79.50	4.46
10		5.15	84.25	79.90	4.25
11		4.87	84.53	80.30	4.23
12		4.53	84.87	80.70	4.17
13		3.85	85.55	81.10	4.45
14		3.40	86.00	81.50	4.50
15		2.80	86.60	81.90	4.70

$$\begin{array}{l} 17.00 \\ \% \\ 4 \end{array}$$

Cuto moved 6/14/22

R.P.D.

79

8-Rt.

14	6.80	92.80	86.00	
15	6.25	92.85	86.60	81.90
16		92.82	5.77	87.05
17			5.18	87.64
18			4.39	88.43
18+25			4.27	88.55
19			3.35	89.47
19+10			3.09	89.75
20			3.00	89.82
20+70 FMD			2.31	90.51

$\begin{array}{r} 10.70 \\ 8.25 \\ \hline 28.95 \end{array}$
 $\begin{array}{r} 25 \\ 100 \\ \hline 125 \end{array}$
 $\begin{array}{r} 20.70 \\ 3.2 \\ \hline 23.90 \end{array}$
 $\begin{array}{r} 82.70 \\ 32 \\ \hline 114.70 \end{array}$

6.70

20.70 3.2

6/20/22

4.70

4.75

4.90

4.93

4.85

5.17

5.35

4.72

4.85

B.M.

6.70

87.16

80.46

H/L 3

4.83

87.18

82.35

0

5.95

81.23

5.00

75.83

75.70

+50

5.15

1

4.80

76.33

76.30

+

4.75

2

4.50

76.73

76.70

file CHIC

8-Rt.

7/20/22

81

CHK 8-Rt.

5.95

0.45
1.8
5.75

85.60
1.32
83.74
3.75
87.49

2+50	81.23	4.40			114 50	85.60	5.10		
3		4.20	77.03	77.10	12		4.90	80.70	80.70
+		2.94			+		4.70		
4		2.72	77.51	77.50	13		4.45	81.15	81.10
+		2.50			+		4.30		
5		2.30	77.92	77.90	14		4.10	81.50	81.50
+		2.10			+		3.90		
6		2.90	78.53	78.30	15		2.75	81.85	81.90
+		2.75			+		2.55		
7		2.50	79.73	78.70	16		2.35	82.25	82.30
+		2.35			+		2.10		
8		2.15	79.08	79.10	17		2.90	82.70	82.70
+		1.95			+		2.50		
9		1.70	79.53	79.50	18		2.15	83.45	83.50
+		1.50			+		1.90		
10	5.47	85.40	1.30	79.93	79.90	19		1.30	84.30
+		85.60			+		2.73	84.76	
11			5.30	80.30	80.30	20		2.25	85.14
							1.80	85.69	85.66

20+70 END

Call to Field
7/20/22
F.A. Work Excellent

Tile Check 8 Left.

76.04

6/15/22

BM

Cont Read

76.81

SPIKE W. H. H. 78

Br. 990
Mathews

3	4.62	76.04	71.41	7
1	4.26	76.04	71.78	+50

7.85	81.58	2.21	73.73
	<u>76.58</u>	7.60	

Tile

8

7.23 Rod = 4.00
10" = 1.00

0 + 50	71.04	5.60	65.44	65.45	+
--------	-------	------	-------	-------	---

7.10

1	5.55	65.49	9
---	------	-------	---

6.87 6.71 ✓

+	5.30	+
---	------	---

6.65

2	4.65	66.39	66.25	10
---	------	-------	-------	----

6.48

+	4.45	+60
---	------	-----

6.10

3	4.20	11
---	------	----

5.90 70.68 70.75

+	4.00	+50
---	------	-----

5.60 70.98 71.00

+	3.90	12
---	------	----

5.30 71.28

+	3.60	
---	------	--

OK up to Sta. 12 + 00

5	3.40	67.64	67.75
---	------	-------	-------

Ordered to fix

+	3.10	
---	------	--

Earl has 3 P. H. R. R. R.

6	2.80	
---	------	--

er. Connect

6/16/22

+	2.50	
---	------	--

R.R.B.

		Left file Chronic		19+50	82.96 4.90	3.13	6/
11+50	6.55	82.96	76.41	20	78.06	3.03	75.03 75.25
12	6.20	82.96 8.9	76.76	7.10	87.03 4.80	19.93	
File 12		78.06	6.65	7+50	82.23	6.85	
+		6.75		21		6.55	75.68 75.75
13		6.45	76.61 OK			6.30	
		6.25		22		6.05	
14		5.90				5.78	
		5.65		23		5.48	76.75 76.75
15		5.40				5.25	
		5.25		24		4.95	
16		5.00	78.06 78.20			4.55	
		4.72		25		4.30	
17		4.50				3.70	
		4.15		76+25		3.20	79.03
18		3.95	74.11 74.25 26+60 End			3.00	79.23
		3.68					
17		3.50					All OK Can file

87 Cont. from pg. 131

$\frac{85}{425}$ $\frac{76}{765}$ $\frac{76}{85}$ $\frac{85}{715}$ $\frac{81.71}{769}$ $\frac{85}{8740}$
 $\frac{120}{2125}$ $\frac{8365}{8365}$ $\frac{85}{425}$ $\frac{85}{425}$ $\frac{85}{425}$ $\frac{85}{17}$

7	8.21	89.42		81.21						270-2
8	8.32	89.47		81.15	76.00	5.15				8570
9		89.43	7.75	81.68	76.85	4.83				
9+25			7.38	82.05	77.06	4.99				
9+50			7.45	81.98	77.27	4.71				
10			7.08	82.35	77.70	4.65				
11			6.38	83.05	78.55	4.58				
D			7.40	—						
12			5.36	84.07	79.49	4.67				
13			4.60	84.82	80.25	4.58				
14	6.65	92.64	3.44	85.99	81.10	4.89				
15			5.70	86.94	81.95	4.99				
16			4.77	87.87	82.80	5.07				
17			4.27	88.37	83.65	4.72				
17+70			4.08	88.56	83.82	4.74				
D			4.7							
18 End.			—	—	84.33					

85% 8-End.

added 8/22/22

89

S-R

8/22/22

Top 18" 11.25 61.25

B.H 12"

13.05 48.20

0

7.65 53.60 48.80 4.80

1

6.69 54.56 49.60 4.96

2

6.25 55.00 50.40 4.60

3

4.97 56.28 51.20 5.08

3+50

4.65 56.60 51.60 5.00

4

4.28 56.97 52.00 4.97

5

3.58 57.67 52.80 4.87

6

2.78 58.47 53.60 4.87

7

2.15 59.10 54.40 4.70

7+25 End

1.50 59.75 54.60 5.15

50.00	6.30	4.95	495	4.75
1.00		6.20	180	6.30
40.20		53.60	1125	6.70
20.00		48.20	1.50	11.25
20.00		15.00	7300	
		725	5130	48.20
		5800	1305	
		4880	4325	4880
			4280	55
			580	5440
			5460	

Cuts 8/22/22 R12

Cont. from pg. 73

S. Left Hubs

19	6.70	86.39	79.69
20	6.09	86.47	80.38 75.25
18	7.46	86.38	78.90

86.38

21		5.30	81.08	75.75	5.33
22		5.18	81.20	76.25	4.95
23		4.84	81.54	76.75	4.79
24		4.14	82.24	77.25	4.99
24+15		4.03	82.35	77.37	4.98
24+80		4.03	82.35	77.49	4.86
24+60		3.63	82.75	77.72	5.02
25		2.20	83.18	78.05	5.12
25+75		2.14	84.20	78.65	5.59
26+25		—			
26+60 END		—			
1 BR X		3.52	82.86	78.27	4.49
1+26 END		3.02	83.35	78.63	4.72

$\begin{array}{r} 26+60 \\ 16 \\ \hline 28.76 \\ 96.38 \\ 6.09 \\ \hline 80.29 \\ 7.25 \\ \hline 5.04 \end{array}$

$\begin{array}{r} 12 \\ 16 \\ \hline 28.10 \\ 15 \\ 2 \\ \hline 120 \end{array}$

$\begin{array}{r} 38 \\ 4.46 \\ 3.87 \end{array}$

6/20/22
Buggo
Mathews

90
50

= 0 BR X Extra.

90
8

.5 = 24

.8 = End.

8-L is now BR.

11+50 6.48 82.89 76.41

12 6.13 82.89 76.76

13 5.82 82.91 77.09

82.89

0 76.41 71.20

1 5.65 77.24 71.80

2 4.80 78.09 72.40 5.69

3 4.70 78.19 73.00 5.19

4 4.55 78.34 73.60 4.74

5 4.10 78.79 74.20 4.59

6 3.64 79.25 74.80 4.45

7 5.28 84.95 3.22 79.67 75.40 4.27

8 5.27 79.56 76.00 3.56

9 4.04 80.91 76.60 4.31

$$\begin{array}{r} 71.20 \\ 12 \\ \hline 832.40 \\ 7570 \\ \hline 71.20 \\ 12 \\ \hline 832.40 \end{array}$$

6/23/22

Bazys
Markus

= 11+50

.60

Cuts added 6/23/22 RPB

95

J-L = BR

$$\begin{array}{r} 100 \\ 94 \\ 6 \\ 76.40 \\ 18 \\ 78.20 \\ 120 \\ 120 \end{array}$$

$$\begin{array}{r} 75.8 \\ 79.67 \\ 27.25 \end{array}$$

$$\begin{array}{r} 81.18 \\ 78.40 \\ 374 \end{array}$$

6/29/22

8	7.67	87.28	79.56		
9	6.34	87.25	80.91	76.60	
10		87.25	5.84	81.41	77.10 4.31
11			5.49	81.76	77.60 4.16
12			5.11	82.14	78.10 4.04
13			4.38	82.87	78.60 4.27
13+25			4.24	83.01	78.72 4.29
13+50			4.03	83.22	78.85 4.37
13+75			3.95	83.30	78.97 4.33
14			3.98	83.27	79.11 4.16
15	7.44	91.60	3.11	84.14	79.60 4.54
16			6.75	84.85	80.10 4.75
17			5.70	85.90	81.00 4.90
18			5.06	86.54	81.90 4.64
19			3.97	87.63	82.80 4.83
20			2.98	88.62	83.70 4.92
21			2.58	89.02	84.60 4.42

$$\begin{array}{r} 100 \\ 94 \\ 6 \\ 76.40 \\ 18 \\ 78.20 \\ 120 \\ 120 \end{array}$$

21+15 END.

Cute wind 6/29/22

Dr #9

Sec 2

BR 6Rt

11/4/21

Hoff
Bud KC

R.P. 3.93 65.58

61.65

Highest pt Rock d' N Sta 35 Main

0

55.90

= 37490 Main (Gr of Main Sta 38 = 55.00)

0450

4.15

61.43

56.05

5.38

1

3.93

61.65

56.20

5.45

+50

3.87

61.71

56.35

5.36

2

3.45

62.13

56.50

5.63

+50

3.00

62.58

56.65

5.93

2475

5.49

68.19

2.88

62.70

56.72

5.98

3

5.20

62.99

56.80

6.19

+50

4.90

63.29

56.95

6.34

4

4.80

63.39

57.10

6.29

5

5.03

63.16

57.40

5.76

6

4.82

63.37

57.70

5.67

7

6.58

70.40

4.37

63.82

58.00

5.82

8

5.95

64.45

58.30

6.15

9

5.56

64.84

58.60

6.24

0440

5.13

65.27

58.72

6.55

WHY 1E

BM.

3.13

(67.27)

NE Cor E Wing Hwy Culv S of Sta 9+

Sta 0-18 - .3%
18" r/c

6.00
1.00
5.00

G-R.

12/19/21

BPM	4.42	66.07	61.65	Rock off. 35 main
0+50		4.65	61.42	56.05
1		4.53	61.54	56.20
14.50		4.28	61.67	56.35
2		3.94	62.13	56.50
2+50		3.49	62.58	56.65
2+75		3.40	62.67	56.72
3		3.10	62.97	56.80
3+50		2.80	63.27	56.95

Bright
Budke

1/3/22

BPM	3.47	70.14	67.27	NE. Cor Ewing Hwy Culv 3. Sta 92
4+40		5.47	65.27	58.72
+50		5.64	65.10	58.75
10		5.32	65.42	58.90
11		4.98	65.96	59.20
12		4.66	66.08	59.50
13		4.52	66.20	59.80

6.55

6.35

6.52

6.96

6.58

6.40

70.74

14 7.16 73.56 4.34 66.40 60.10 6.30

15 6.45 67.11 60.40 6.71

16 6.26 67.30 60.70 6.60

17 5.55 68.01 6.00 7.01

Near S. Hwy 0

+50 6.13 67.43 61.15 6.28

N. Hwy 0

18=old 20 5.75 67.81 61.30 6.51

BM. 3.42 70.14

Spikes in NE end ECR

BM 3.49 73.63 70.14

1/14/22

Briggs
Berg

Hwy 18 5.72 67.91 61.30 6.61

19 4.82 68.81 61.60 7.21

20 4.81 68.82 61.90 6.92

20+50 4.45 69.18 62.05 7.13

21 4.54 69.09 62.20 6.89

21+37 5.12 74.74 4.01 69.62 62.31 7.31

Jc BR East.

1 4.76 69.98 63.21 6.77

2 4.22 70.52 64.11 6.41

3 3.83 70.71 65.01 5.90

Roo 6% Sta 340

2	6.06	76.58	70.52	65.01	
3	5.64	76.56 76.55	70.91	65.01	5.90
4			51.2	71.44	65.91
5			4.79	71.77	66.46
6			4.82	71.77	67.01
7	6.48	78.55	4.49	72.07	67.56
8			5.70	72.85	68.11
9			5.62	72.93	68.66
10			3.96	74.59	69.21
11			3.48	75.07	69.76
12			3.92	74.63	70.31

65.91
4.80
70.71

55
8
4.40
65.91
70.31

4.51
15.5
16

O-R. Hubs

1/25/22
Briggs
Pete J.

11	5.92	80.99	75.07		
12	6.36	80.99	74.63	70.30	4.33

13		5.53	75.46	70.90	4.56
----	--	------	-------	-------	------

14		5.00	75.99	71.50	4.49
----	--	------	-------	-------	------

15		4.20	76.79	72.10	4.69
----	--	------	-------	-------	------

16		3.47	77.52	72.35	5.17
----	--	------	-------	-------	------

17	4.99	83.21	2.77	78.22	72.60	5.62
----	------	-------	------	-------	-------	------

B17		4.80	78.41		
-----	--	------	-------	--	--

18		4.64	78.57	72.85	5.72
----	--	------	-------	-------	------

19		4.82	78.39	73.10	5.29
----	--	------	-------	-------	------

20		4.53	78.68	73.35	5.38
----	--	------	-------	-------	------

/6" file

spike Root W. Row J. Side
ditch sta. 17+50

1/25/22

RIPB

15-25 = .25%

25-45 = .5%

45-End .7%

Cont. pg 127

49.4
12
61.4

Tile Check 9 Lert.

B.M.	3.22	80.90	77.67
		<u>5.20</u>	
		75.70	
0+50		6.20	69.76
1		5.82	
1+50		5.60	
2		5.30	70.40
+		5.10	
3		4.90	76.80
+		4.63	
4		4.40	
+		4.05	
5		3.83	
+		3.60	
6		3.33	
+		3.10	
7	6.22	84.46	78.24
+50		6.05	

Coic. Bridge

8	84.46	5.85	
	<u>5.20</u>		
+50	79.26	5.70	X
9		5.00	74.26
8+75		5.70	
8+75		5.50	
9		5.45	73.81
+50		5.15	
10		4.95	
+		4.70	
11		4.70	
+		4.40	
12		4.12	
+		3.80	
13		3.60	
+		3.40	

14		84.46	2.07		27	93.56	4.15		
+		$\frac{5.00}{79.46}$	2.73		28	$\frac{4.80}{88.76}$	3.50	85.26	1000 = 1.2"
15			2.40	77.06	29		2.80		1000 = 10"
+			2.18		30	6.81	93.47	2.10	86.66
16	6.91	89.47	1.90	82.56	31		6.30		
		$\frac{5.00}{64.47}$			32		5.80		87.81
17			6.33		33		5.16		88.44
18			5.70		34		4.45		
19			5.00	79.47	35		3.10		
20			4.40	80.07	36		1.80		91.67
21			3.95		37		0.60		
22			2.30						
23			2.60	76.87					
T.P.	6.74	93.49	2.72	86.75					
BM		93.56	3.38	90.11					
		88.76							
24			6.00	87.49					
25			5.20						
25+25			5.20						
26			4.80	83.96					

Tile Check

9 Rt.

BM 3.35 81.02 77.67

$\frac{5.40}{76.42}$

75.43

Holy 1

0+50 5.90 70.52

1 5.68 70.74

1+50 5.50 70.92

2 5.40 71.02

+ 5.20

3 5.08 71.34

+ 4.95

4 4.73 71.69

+ 50 4.58

4+75 4.55

5 4.50 } 71.92

+ 4.30

6 4.20 72.22

+ 25 4.05

6+50

7 5.63

+

8

+

9

+

10

+

11

+

12

+

13

+

13+75

14

75.43
5.79
 $\frac{1.5}{54}$
81.22
81.02
76.42

71.24
70.63
46
4.02
4.51
76.46
3.90

77.22

5.50

5.25

5.14

4.95

4.80

4.72

77.65 4.55

4.40

4.26

4.05

3.90

3.73

3.50

3.40

3.30

6/10/22

Briggs
E. Matthews

73.65

72.62

on 12"

73.25

113

82.85

14+25

77.65 3.25

+

3.15

15

3.00

+

77.85 2.90

16

2.78 75.07

+

5.19

85.44 2.60

80.25

+

17

80.44

4.95

22

+

4.90

+

18

4.75 75.69

+

4.55

+

19

4.40

24

+

4.20

+

20

4.10 76.34

25

+

26

+

27

+

75.07
49.4582.85
577.85
9-10

22 5.57

88.19

22 5.00

88.19

24 4.61

88.20

88.20

5.75

82.45

5.63

76.82

76.80

5.40

5.20

77.25

77.25

5.00

4.73

77.72

77.70

4.53

4.26

78.19

78.15

4.13

2.90

78.55

78.60

3.65

2.42

79.02

79.05

3.20

2.00

79.45

79.50

2.70

1.00
2.000.85
1.2
2.05

9-R CLK

BR. P. R. 941

75.90

28	82.45	2.48	89.97	79.95	27 (1)	5.96	87.90	81.94	
+		2.25			26	5.99	87.40	81.91	75.20
T.T.	5.40	85.59	2.26	(80.17)	25	6.30	87.90	81.60	
29		5.10	80.49	80.40	Invert.		12.71	75.19	
+		4.96			1		5.96	81.94	75.90
30		4.70	80.89	80.85	2		5.45	82.45	76.60
+		4.60			3		4.81	83.09	77.30
31		4.30	81.29	81.30	4		4.45		78.00
+		4.10			5				78.70
32		3.83	81.76	81.80					
+		3.65							
33		3.44	82.15	82.30					
+		3.19							
34		2.90	82.69	82.80					
+		2.62							
35		2.40	82.19	82.30					
+		2.10							
36		1.85	83.74	83.80					

OK to file
7/20/22
R. P. R.

117

P. R. ght.

83.70

0.26

87.90

81.91

75.20

6.71

1

5.96

81.94

75.90

6.04

2

5.45

82.45

76.60

5.85

3

4.81

83.09

77.20

5.79

4

4.45

82.45

78.00

5.45

5

3.80

84.10

78.70

5.40

6

3.26

84.64

79.20

5.34

7

7.51

92.59

2.82

85.08

79.90

5.18

8

4.96

85.63

80.50

5.13

9

6.38

86.21

81.10

5.11

10

5.50

87.09

81.70

5.39

11

5.14

87.45

82.20

5.15

12

4.54

88.05

82.90

5.15

13

4.18

88.41

83.50

4.91

14

3.71

88.88

84.10

4.78

15

3.17

89.42

84.70

4.72

Cuts 8/4/22 RRB.

119

P. Right

8/10/22

15	6.58	96.00	89.42		
14	7.11	95.99	88.88		
15			89.42	84.70	4.72
15+25		6.46	89.53	84.85	4.68
15+50		6.47	89.52	85.00	4.52
16		6.28	89.61	85.20	4.31
17		5.95	90.04	85.90	4.14
18		5.22	90.77	86.50	4.27
19		4.44	91.55	87.10	4.45
20		4.01	91.98	87.70	4.28
21		3.25	92.74	88.30	4.44
22		2.52	93.47	88.90	4.57

Cont 141

$\frac{42}{25}$
 $\frac{20}{84}$
 $\frac{1050}{20}$
 $\frac{125}{125}$

75% - 15-E, d

4.20
 84.70
 8290

.60

Cuts 8/10/22

R.P.B.

Cont from Ry. 27

Main Hubs 6/27/22

118	6.70	88.78	82.08		
119	6.07	88.77	82.70		
120	5.92	88.79	82.87	76.50	6.37
121		88.78	5.27	82.51	76.95 6.56
122			4.64	84.14	77.40 6.74
123			4.43	84.35	77.85 6.50
123+50			5.58	83.20	78.07 5.13
123+75			5.58	82.20	78.19 5.01
124			5.50	82.28	78.30 4.98
124+25			4.60	84.18	78.41 5.77
124+50			4.58	84.20	78.52 5.68
124	6.70	89.98	83.28	78.30	4.98
124+50	5.80	90.00	84.20	78.52	5.68
124+25		89.99	5.11	84.88	78.41 6.47
125			5.55	84.44	78.75 5.69
126			5.23	84.76	79.35 5.41

Certs 6/27/22

.690

$$\begin{array}{r} 25 \\ 15 \\ \hline 25 \\ 55 \\ \hline 125 \\ 100 \\ \hline 112 \end{array}$$

$$\begin{array}{r} 75 \\ 45 \\ \hline 30 \\ 30 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 45 \\ 22 \\ \hline 22 \end{array}$$

$$\begin{array}{r} 45 \\ 22 \\ \hline 22 \end{array}$$

$$\begin{array}{r} 45 \\ 22 \\ \hline 22 \end{array}$$

123

124.51

$$\begin{array}{r} 30 \\ 18752.5 \\ 3757875 \\ 3125 \\ 13405 \\ 6700 \\ 1825 \\ 8546 \end{array}$$

$$\begin{array}{r} 124 \\ 780 \\ 7875 \\ 8655 \end{array}$$

6/29/22

127 89.99 4.84 85.15 79.95 5.20

128 4.42 85.57 80.55 5.02

129 4.08 85.91 81.15 4.76

130 3.70 86.29 81.75 4.54

131 3.06 86.93 82.35 4.58

132 6.50 93.94 2.55 87.44 82.95 4.49

133 6.06 87.88 83.55 4.38

134 5.64 88.30 84.15 4.15

135 4.98 88.96 84.75 4.21

136 4.49 89.45 85.35 4.10

137 4.15 89.79 85.95 3.84

138 2.86 91.06 86.55 4.51

6.90

138+40 EMD. 3.30 90.64 86.79 3.85

mixed 6/29/22

RRR.

BR. 12 left.

88.70

78.40

84.40

78.40
45
72.20

78.15

78.40

78.40
45
72.20

78.40

56

84.00

6/27/22

0 = 123 + 75

5.55 82.20 78.40 4.80

0 + 50

4.62 84.10 78.75 5.35

1

4.45 84.33 79.11 5.22

2

3.44 85.34 79.80 5.54

3

7.43 73.30 2.91 85.87 80.50 5.27

4

7.00 86.30 81.20 5.10

5

5.32 87.78 81.90 6.08

6

6.00 87.20 82.60 4.70

7

5.80 87.50 82.20 4.20

8 END.

4.80 88.50 84.00 4.50

Cute 6/27/22

127

Cont from 105

25	56
1.75	28
7260	280
7436	112
	1400

12	72.60
	14
	72.74

O-R

6/20/22

6.88

B.M. 5.08 83.49 78.41

17+56 4.64 78.85 72.74 6.11

P.L.

18 4.95 78.54 72.85 5.69

5645 = 84.80

19 4.95 78.54 72.10 5.44

20 4.86 78.63 72.25 5.28 80

21 4.14 79.35 72.60 5.75 60

22 3.23 80.26 72.85 6.41 10

22+50 3.55 79.94 72.97 5.97

23 2.48 81.01 74.10 6.91

24 2.48 81.01 74.35 6.66

Wend 6/30/22
R.P.B.

7/8/22

23 3.80 84.81 81.01 2.50

24 3.79 84.80 81.01 74.35 6.66

25 3.20 81.60 74.60 7.00

26 2.70 82.10 75.16 6.95

27 2.86 81.94 75.70 6.24

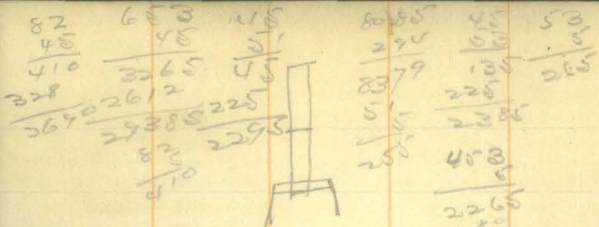
28 Cont 135

From pg. 57

9 Rt. Hubs

7/11/22

31	5.46	91.58	86.12						
32	4.94	91.61	86.67						
33	4.47	91.64	87.17						
29		91.60	4.93	86.67	80.40			6.27	%
30			4.50	87.10	80.85	6.25	80.85	6.25	%
31			5.46	86.14	81.30	4.84	81.30	4.84	%
32			4.94	86.66	81.75	4.91	81.80	4.86	
33			4.47	87.13	82.20	4.93	82.30	4.83	
33+82			3.45	88.15	82.57	5.58	82.71	5.44	
34			2.20	88.40	82.66	5.75	82.80	5.60	%
34+51			2.98	88.62	82.88	5.70	82.05	5.57	%
35			2.32	88.28	82.10	5.18	82.30	4.98	
36			4.06	87.54	82.55	3.99	83.80	3.74	
36+53 END			2.35	89.25	82.79	5.46	84.06	5.19	

Bryant
Machens
$$\begin{array}{r} 12 \\ 25 \\ \hline 40 \\ 34 \\ \hline 300 \end{array}$$

7/11/22

BR. T-R.

48+70	5.28	85.29	79.61	
49+25	5.59	85.27	79.68	
49+60	5.50	85.27	79.77	
0 = 48+70		85.28	5.28	79.60
Irrest. Curr		10.91	74.37	
1		5.64	79.64	74.60
1+85		5.47	79.61	74.77
2		5.20	80.08	74.80
2+75		5.33	79.95	74.85
3		4.67	80.61	75.00
4		4.50	80.78	75.20
5		4.32	80.96	75.40
6		4.27	80.91	75.60
7		4.07	81.21	75.80
8		4.13	81.15	76.00
8+80		3.57	81.71	

CONT. C1 87

48+70 (7R) = 0 OF T-R.

5.04
5.04
5.28
5.10
5.61
5.58
5.56
5.21
5.41
5.15

BR-7. left.

Top 30" 8.22 58.22 50.00

0 Hvy 4.47 53.75 48.40 5.25

1 5.09 53.13 49.00 4.13 2°

2 5.02 53.20 49.60 3.60 1°

2 + 90 END 3.70 54.52 50.14 4.38

0 + 50 d. to 7. 7.00 51.20

50.00 .4 51 2.

1.6 .6

48.40 .6

1.6

50.00

2.98

1.6

2.2

48.40

1.6

50.00

58.00

.50

51.20

48.40

2.60

11.92

4.60

3.32

2.50

8

Cuts 7/10/22

R.P.S.

from pg 127

Q-R

$$\begin{array}{r} 45 \\ 75 \\ \hline 70 \\ 74 \\ \hline 12 \end{array}$$
$$\begin{array}{r} 45 \\ 22 \\ \hline 19 \end{array}$$
$$\begin{array}{r} 19 \\ 5 \\ \hline 9.5 \end{array}$$
$$\begin{array}{r} 74.60 \\ 1200 \\ \hline 8660 \\ 7460 \\ \hline 1200 \\ \hline 8560 \end{array}$$

.25 to 25
.5 to 45 = 84.80

$$\begin{array}{r} 55 \\ \times 9 \\ \hline 495 \\ 7570 \\ \hline 8065 \end{array}$$

old 27

26	6.88	88.98	82.10	75.15	6.95
----	------	-------	-------	-------	------

7.03	88.97	81.94
------	-------	-------

27	6.82	82.15	75.70	6.45
----	------	-------	-------	------

28	6.35	87.62	76.25	6.37
----	------	-------	-------	------

29	5.76	83.21	76.80	6.41
----	------	-------	-------	------

20	5.24	83.73	77.35	6.38
----	------	-------	-------	------

21	5.03	83.94	77.90	6.04
----	------	-------	-------	------

32	4.45	84.52	78.45	6.07
----	------	-------	-------	------

22	3.26	85.61	79.00	16.61
----	------	-------	-------	-------

34	3.10	85.87	79.55	1.32
----	------	-------	-------	------

25	2.05	85.92	80.11	5.82
----	------	-------	-------	------

36	2.98	85.99	80.6	534
----	------	-------	------	-----

Cuts 7/19/22

R45

$$\begin{array}{r} 56.32 \\ E.7d-0 \end{array}$$

$$\begin{array}{r} 678' \\ 300 \\ 972 \\ 300 \\ 1272 \end{array}$$

$$\begin{array}{r} 25' \\ 5' \\ 125' \end{array}$$

$$\begin{array}{r} 8' 2' \\ 46' 0' \\ 75' 10' \end{array}$$

$$\begin{array}{r} .5 = 45 \\ .7 = 64 \end{array}$$

$$\begin{array}{r} 5432 \\ 42490 \\ 1242 \end{array}$$

$$\begin{array}{r} 1273 \\ 1242 \\ 8'' \quad 3/1000 \end{array}$$

25	6.48	92.40	85.92		
26	6.40	92.29	85.99	80.60	5.39
27		6.20	86.19	81.10	5.09
28		5.50	86.89	81.60	5.29
29		5.03	87.36	82.10	5.26
40		4.50	87.89	82.60	5.29
41		4.20	88.19	83.10	5.09
42		4.02	88.27	83.60	4.77
43		3.75	88.64	84.10	4.54
43+25		2.38	89.01	84.22	4.79
44		2.96	89.43	84.60	4.83
45		2.11	90.28	85.10	5.18

5%

10" 9/10 43+4%

Cuts 7/26/22 R.P.B.

139

①-R

8/8/22

45	7.26	97.54	90.28	85.10	5.18
44	8.10	97.53	89.43	85.85	
46		97.54	6.72	90.82	86.60
47			5.99	91.55	87.25
48			5.19	92.85	88.10
49			4.48	92.06	88.85
50			3.80	93.74	89.10
51	7.40	101.94	3.00	94.54	90.35
52			6.71	95.23	91.10
53			6.13	95.81	91.25
54			5.30	96.64	92.50
55			4.51	97.43	93.35
56			3.45	98.49	94.10
56+32 End			3.72	98.16	94.34

10.5
22.5
32.5
43.0
53.5
64.0
74.5
85.0
95.5
106.0
116.5
127.0
137.5
148.0
158.5
169.0
179.5
190.0
200.5
211.0
221.5
232.0
242.5
253.0
263.5
274.0
284.5
295.0
305.5
316.0
326.5
337.0
347.5
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368.5
379.0
389.5
400.0
410.5
421.0
431.5
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452.5
463.0
473.5
484.0
494.5
505.0
515.5
526.0
536.5
547.0
557.5
568.0
578.5
589.0
599.5
610.0
620.5
631.0
641.5
652.0
662.5
673.0
683.5
694.0
704.5
715.0
725.5
736.0
746.5
757.0
767.5
778.0
788.5
799.0
809.5
820.0
830.5
841.0
851.5
862.0
872.5
883.0
893.5
904.0
914.5
925.0
935.5
946.0
956.5
967.0
977.5
988.0
998.5
1009.0
1019.5
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1103.5
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1975.0
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5807.5
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5881.0
5891.5
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6007.0
6017.5
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6794.5
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6836.5
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6878.5
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6983.5
6994.0
7004.5
7015.0
7025.5
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7057.0
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7141.0
7151.5
7162.0
7172.5
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7193.5
7204.0
7214.5
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7235.5
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7277.5
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7298.5
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7319.5
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7351.0
7361.5
7372.0
7382.5
7393.0
7403.5
7414.0
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8642.5
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8663.5
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8684.5
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9671.5
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14479.5
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14509.5
14519.5
14529.5

141

Cont from 119

P-R

21	5.55	98.29	92.74
22	4.64	98.31	93.47 88.90
22+56		98.30	4.27 94.03 89.29
	6.10	100.13	94.03
22+75		6.18	93.95 89.42
23		6.24	93.89 89.60
24		5.65	94.48 90.20
25		5.14	94.99 91.00
26		4.38	95.75 91.70
27		3.41	96.72 92.40
28		2.83	97.30 93.10
29 End		1.70	98.43 93.80

$$\begin{array}{r} 75 \quad 56 \quad 25 \\ 2 \quad 2 \quad 2 \\ \hline 57 \quad 39 \quad 175 \end{array}$$

V-Rt.

$$\begin{array}{r} 145 \\ 50 \\ \hline 575 \end{array}$$

Short study of 9 Rt. 7/20/22

Outlet Drawing

BM	5.57	86.03	80.46
		5.75	
		80.28	
	0	Fill	5.75 74.53 74.50
	+50	to	5.50 74.78 74.80
	4.53	Alt, 1/20/22	
	4.29		5.20 75.08 75.10
	4.18	+50	4.90 75.38 75.40
	3.99	2 R/R's	4.60 75.68 75.70
	4.05	2+22	4.50 75.78 75.80
	4.30		
	4.20	4.9	4.20 5.60
	4.63	5890	5890 58.90
		7380	9310 94.50

cuts 8/17/22

R/R's.

BK. U-R. 7/11/22

81.50 80.80/1.2

35.4
31.69 75.20
4535.4
28.0
51.357.8
45.6
75.20
75.20

53 (7R) 6.14 87.32 81.18

T.P. 12" 11.10 76.22 75.02

0 = 51.55

6.45 80.87 75.20 75.20 5.67

0 U-R = 51.55 (7R)

1 5.91 81.4 76.00 76.10 5.31

2 5.37 81.95 76.80 77.00 4.95

3 4.61 82.71 77.60 77.90 4.81

4 3.60 83.72 78.40 78.80 4.92

5 7.58 72.19 2.71 84.61 79.20 79.70 4.91

6 6.62 85.56 80.00 80.60 4.96

6+90 4.95 87.24 80.72 81.41 5.83

7+05 4.82 87.37 80.84 81.55 5.22

7+20 4.62 87.57 80.96 81.68 5.29

7+35 4.47 87.72 81.08 81.81 5.91

7+50 4.66 87.53 81.20 81.95 5.58

8 4.72 87.47 81.60 82.40 5.07

9 3.98 88.21 82.40 83.30 4.91

10 3.61 88.58 83.20 84.20 4.36

10+57 End. 3.03 89.16 83.66 84.71 4.45

145

28+

Cont. from R^y 51
Hubo 7-R-

6/20/22

R.P	7.23	78.60	71.37
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Tap L¹¹⁵ 18+00

T.P	4.00	79.74	2.86	75.74
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B.M		3.74	76.00
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Strike W. Norm Sta 33

Tile 33	10.25	69.49	69.45	00.04
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Hub 33	4.15	75.59	69.45	6.14
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33+50	3.99	75.75	69.60	6.15
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34	3.98	75.76	69.75	6.01
----	------	-------	-------	------

35	3.75	75.99	70.05	5.94
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36	3.82	75.92	70.35	5.57
----	------	-------	-------	------

37	3.42	76.32	70.65	5.67
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38	3.00	76.74	70.95	5.79
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Cuts earned 6/20/22
R.P.B

147

Z R

6/26/22

2.4

$$\begin{array}{r} 2.4 \\ 70.95 \\ \hline 73.35 \end{array}$$

37	6.24	82.56	76.32			
38	5.84	82.58	76.74	70.95	5.79	
39		82.57	5.86	76.71	71.25	5.46
40			5.54	77.03	71.55	5.48
40+50			5.59	76.98	71.70	5.28
41			5.24	77.33	71.85	5.48
41+70			5.15	77.42	71.91	5.57
41+50			4.98	77.59	72.00	5.59
42			5.13	77.44	72.15	5.29
43			5.11	77.46	72.45	5.01
44			4.27	78.30	72.75	5.55
45			4.06	78.51	72.05	5.46
46			3.81	78.76	73.35	5.41

Cats named 6/26/22

R.P.B.

{ 45	7.81	86.32	78.51			
{ 46	7.56	86.32	78.76			
47			7.19	79.13	73.65	5.48

149

7-R

$$\begin{array}{r} 7395 \\ 18 \\ \hline 7543 \end{array}$$

$$\begin{array}{r} 35.73 \\ 3 \\ \hline 105.510 \end{array}$$

$$\begin{array}{r} 70.45 \\ 81 \\ \hline 71.46 \end{array}$$

47+50	86.22	6.32	79.99	73.80	6.19
48		7.51	78.81	73.95	4.86 90
48+70		6.71	79.61	74.16	5.45

- O B R T. R

6/29/22

47+50	4.70	84.69	79.99	
48	5.85	84.66	78.81	73.95
48+70	5.07	84.68	79.41	74.16
49		5.00	79.68	74.25
49+35		5.00	79.68	74.35
49+60		4.91	79.77	74.43
50		4.77	79.91	74.55
51		4.06	80.62	74.85
52		3.82	80.86	75.15
53		3.50	81.18	75.45

14" 90 to 49+90

12" " " 54+100

5.5%
5.5%
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5.5%

7-R

7/11/22

52	6.98	87.84	80.86		
53	6.67	87.85	81.18	75.45	5.73 $\frac{3}{10}$
54		87.85	5.98	81.87	75.75 6.12 -
55			5.49	82.36	76.55 5.81 $\frac{8}{10}$
56			4.85	82.00	77.35 5.65
57			4.07	82.78	78.15 5.62
58			3.38	84.47	78.95 5.52
59			2.60	85.25	79.75 5.50
60			2.09	85.76	80.55 5.21

Auto - 7/11/22 RRB.

7/18/22

7-R.

59	6.99	92.24		85.25		62	92.22	5.45	86.77	82.15	4.62
60	6.45	92.21		85.76	80.55	5.21	63	4.40	87.82	82.95	4.87
60+50		92.22	6.10	86.12	80.95	5.17	64	3.48	88.74	83.75	4.99
60+65			5.97	86.25	81.07	5.18	65	3.00	89.22	84.55	4.67
60+80			5.84	86.38	81.19	5.19	65+63 End.	2.46	89.76	85.05	4.71
60+95			5.82	86.39	81.31	5.08					
61+10			5.78	86.44	81.43	5.01					

Cuts 7/18/22
RAB.

Auto 7/18/22

RRB.

$\frac{2.55}{5.20}$
 $\frac{75}{80}$
 $\frac{81.25}{81.43}$
 $\frac{20.55}{1.2}$
 $\frac{20.55}{82.15}$
 $\frac{5.23}{82.15}$
 $\frac{48.04}{80.55}$
 $\frac{80.55}{80.55}$
 $\frac{53}{50.4}$

138

5.00

Bulkhead. 4/27/22 =

Elev. top Bulkhead. 3.56 T. Berg.

G.L. 6.15

H₀ 6.15 56.15 50.00

Top B.H. 2.56 52.59

F.L. 36 10.53 45.62

W.L. 9.70 46.45

Tide Check

10/14/22

15 3.87 90.81 86.94

16 2.76 90.83 87.87

90.82
4.80
86.02

12 5.77 79.05 79.40

+ 5.20

13 4.83

+ 4.30

14 3.90 80.92 81.10

+ 3.40

15 3.00

+ 2.50

16 2.10

+ 1.75

17 1.50

18 0.20

83.65

30 90 to 62

303
2.5

1515
606

757.5

2/6/22

24" C.B. main line.
Sta 43 + 15 main

Hwy 45	3.50	67.27	63.77
Spice 0+15	4.96	62.31	57.20
" 100'	5.00	62.27	58.20
Ice level 120'	6.20	61.07	60.07

approx 6" ice H. Fence.

Rp13

5-97

700
1000
1000
500

62

3200
60 00
57.00

3.00

Dec. 1921

Calvin-

6-Right

5.11

4.07

18" - 18+00
16" - 20+00
14" - 24+75
12" - 26+70
10" - 44+00

7 Right

16" - 42
14" - 50
12" - 54
10" - 61
8" -

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	5.35	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 $\frac{1}{2}$ 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	26.2	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 $41.9 + (20 - 16) \div 2$ or 2 ft. added to 41.9 = 43.9. For slopes of 1 on 1 see inside of front cover.