

Book 1

dist. 26/7

1080

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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Chas. E. Boyack,

Independence, Iowa.

Book 1. Drainage, Dist No. 9,
Black Hawk Co IOWA

FILED
FEB 27 23
CITY OF INDEPENDENCE

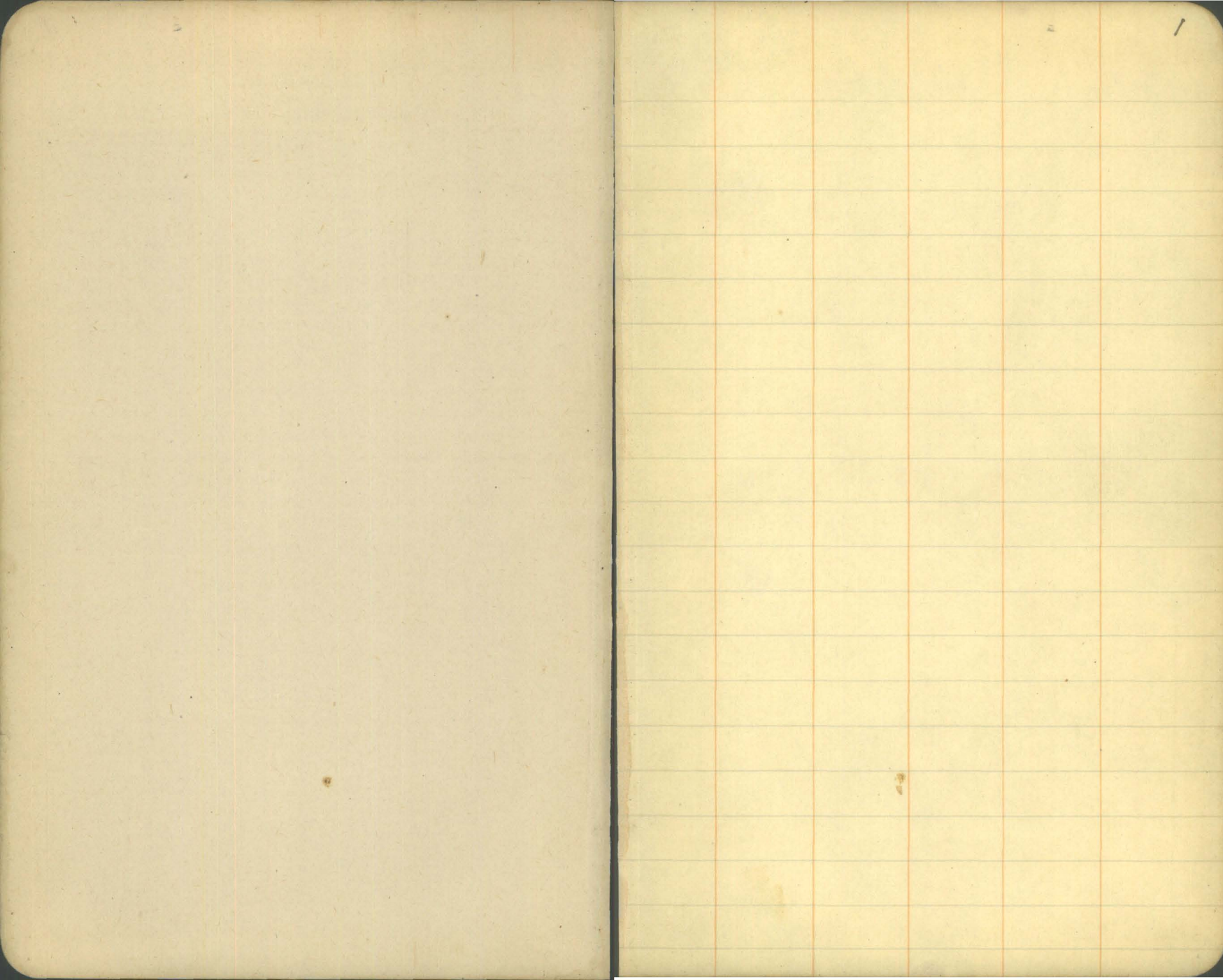
4799.23 @
100

Fall Main 4668

No Feet 134563 = 25.47 mi
100

Estimated Cost \$128,681.15

#12
Purvey Cornell
Gladstone
Contractor



B.M.'s Main Line

- + B.M. No 1 Top of Side of Bridge
at S.W. cor Elev. 50.00
- + B.M. 2, spike in root of
Cottonwood in NE cor - NW-SW ^{Elev 51.73} 13
- + B.M. No 3, Spikes in S End
East Cap. Bridge. Between secs
14 & 23, Elev 57.83
- B.M. No 4 Top of Boulder 84^{ft} South
of sta 72, Elev 61.84
- + B.M. 5. Top South End of East
Cap Bridge thru N $\frac{1}{2}$
sec 23 - Elev 65.45
- B.M. 6, spikes in W End of South
Cap Bridge W Line Sec 23 ^{Elev 66.57}
- B.M. - 7, spikes in S End of
East Cap. Bridge S of Sec 22. ^{Elev 79.15}
- B.M. - 8 - Top ^{W End} placement Culvert
on N + S Road W Line sec. 27
Elev - 94.75

B.M. 9. Top. S End W Cap
Bridge on E+W Road And
51 ft E of Sta 8+56 E Road
Elev 61.04

June 11-19

Drainage Dist. No 9 Black Hawk Co.
Main Line ^{La} Sheet 1.

Com at S Lin of Road at

Bridge 891' E NW cor SE-NW
Sec 13 - South 21° W to Sta 4

At Sta 4 Angle 36° Right

Sta 15+42, E N+S Road thru
center of W 1/2 Sec 13. and 208'
N of S-E cor SW-NW-Sec 13

E Fence Sta 15+77 W Fence Sta 15+76

At Sta 16 - Angle 5° Right

- Sta 19-294 W - SE cor - SW -
N-W-Sec 13 -

At Sta 30 Angle 16° Left

Sta 31+75 - 572' N - NW cor
SW-SW - Sec 13 (W-section)

Sta 38+90 - 451' E NE cor
SE-SE - Sec 14 - 89-11

At Sta 47. Angle 6° Left

June 11 con

Main con

Sta 53+96 - 99' North

SW-cor - SE - SE Sec 14

Sta 54+80 N Road Fence

E+W Road between

Secs 14 & 23. Barclay Twp

Sta 55+10 E Road - 63' W - SE cor

SW - SE - Sec 14

Sta 55+39 South Road Fence

June 12-19

At Sta 64 - Angle 29° Right

At Sta 68 Angle 13° Right

Sta 68-362 E N of E+W

Road thru N 1/2 Sec 23

At Sta 74 - Angle 11° Right

At Sta 84 - Angle 20° Left

At Sta 90 - Angle 31° Left

Sta 96+4 N. Road Fence

(over)

July 12-19

Drainage Dist Wagon Black Hawk

96+37

Main Con

Sheet 2

Sta ~~96~~ of E & W Road thru
 N $\frac{1}{2}$ sec. 23 - 606' E of SW-
 cor NW-NW-sec 14 -
 (17 $\frac{1}{2}$ ' E- East End of Bridge)
 At Sta 100. Angle Right

Sta- 104+35 E. Fence

Sta 104+66 E N & S Road and
 509' South of NW-Cor
 SW-NW- Sec 23

July 14-19

Sta 104+98 W Road Fence

Sta 104+66 E Road 51' S of Bridge

June 14-19

At Sta 114 Angle 50° Left
 above Line continue strike N Line
 of NW-SE-Sec 22. 100' West
 of NE Cor.

150
147

July 14-19

1474.25
11.0

2.4 / 113 (9.6
 226 4

Main Con'

At Sta 117 Angle 15° Left
 Sta 117+43 at Fence, N Line
 NE-SE-Sec 22 & 453' East
 of NW-Cor
 at Sta 122 Angle 7° Right
 at Sta 131 Angle 31° Right
 Sta 146+48 N Road Fence
 Sta 146+89 E Road. Between
 Secs 22 & 27 (Hawkeye Hwy)
 815' East SW cor SW-SE
 Sec 22-89-11- And 50' East
 East end of Bridge

S Road Fence Sta 147+25

at Sta 148 Angle 20° Left

July 15-19

At Sta 155+50 Angle 31° Right
 Sta 162+76 at East Line NE-
 NW-sec 27-89-11
 and 16' N- of SE Cor

Main Cor

Sta 163. at S Line NE-NW
Sec 27, and 18^{ft} W- of SE cor

at Sta 163 Angle 16° Right
at Sta 177. Angle 35° Right
Pond 218^{ft} N of Sta 177

Sta 177+47, at W-Line, S.W
NW- sec 27- and 628^{ft} South
of NE cor, -

At Sta 184 Angle 5° Left
Sta 190+50 East Fence

Sta 190+80. E N+S Road
between Secs 27 & 28
and 849^{ft} N- SW cor-SW-
NW- Sec 27-89-11

and 19^{ft} N- N side of Culvert
Sta 191+10. West Road Fence
(End of Main)

Drainage Dist No 9 Black Hawk

Ma 177

Sta	R R	H I	Elev	Cut	Elev Ditch	Sta	R R	MAIN H I	Elev	Cut	Elev D
B.M. 1	1.95	51.95	50.00			11	4.31	52.31	48.00	6.525	41.475
Water Level	9.85		42.10			12	2.90		49.41	7.81	41.60
0	7.84		44.11	4.11	40.11	13	2.64		49.67	7.945	41.725
1	8.94		43.01	2.775	40.235	+BS	4.55	54.22			
2	5.62		46.33	5.97	40.36	creek 13+75	9.72		44.50		
3	7.39		44.56	4.075	40.485	14	5.76		48.46 49.46	7.61	41.85
3+65	6.75		45.20			15	5.40		48.82	6.855	41.975
4	6.08		45.87	5.26	40.61	FF 15+7	5.57		48.65	6.611	41.989
C Sat	6.21		45.74			E Road 15+42	3.94		50.28	5.825	42.03
4			45.74			WF	15+76	6.24	47.98	5.91	42.07
4+35	7.96		43.99 44.99			16	6.28		47.94	5.84	42.10
5	6.12		45.83	5.095	40.735	in Creek	17	9.90	44.32	2.095	42.225
6	5.31		46.64	5.79	40.850	18	5.49		48.73	6.38	42.35
+BS	5.67	52.31				+BS	5.25	53.98			
7	6.28		46.03	5.055	40.975	B.M. 2	2.25		51.73		
8	5.53		46.78	5.68	41.10	in Creek 19	8.35		45.63	3.155	42.475
8+50 Creek	9.90		42.41			20	5.90		48.08	5.48	42.60
9	5.44		46.87	5.645	41.225	in Creek 21	7.82		46.16	3.435	42.725
10	4.14		48.17	6.82	41.35	22	5.10		48.88	6.03	42.85
J.B.W.			R.B.			J.B.W.			R.B.		

July 22-19 Drainage Dist No 9					July 22-19 Main				
Sta	R.R.	M.I.	Elev	Cut Elev D	Sta	R.R.	H.I.	Elev	Cut Elev D
+BS	6.12	55.00			36	5.56	56.86	51.30	6.55 44.75
23	7.42		47.58	4.60 542.975	37	6.03		50.83	5.93 44.90
in Creek	24	8.27	46.73	3.63 43.10	38	5.63		51.23	6.18 45.05
25	5.21		49.79	6.56 543.225	+BS	5.80	57.03		
26	5.30		49.70	6.35 43.35	38+90	5.26		52.77	7.59 45.18
27	4.85		50.15	36.67 543.475	39	6.15		50.88	5.68 45.20
+BS	5.65	55.80			Pond	8.70		48.33	
28	5.48		50.32	6.72 43.60	40	5.29		51.74	6.39 45.35
29	5.55		50.25	6.52 543.725	41	5.61		51.42	5.92 45.50
30	7.24		49.56	5.71 43.85	42	4.76		52.27	6.62 45.65
Pond	8.70		47.10		+BS	7.82	60.09		
31	4.80		51.00	7.00 44.00	43	9.03		51.06	5.26 45.80
31+75	4.65		51.15	7.04 44.14	44	8.72		51.37	5.42 45.95
32	4.62		51.18	7.03 44.15	45	7.40		52.69	6.59 46.10
33	4.74		51.06	6.76 44.30	46	6.40		53.69	7.44 46.25
+BS	5.80	56.86			47	7.46		52.69	6.29 46.40
34	5.80		51.06	6.61 44.45	+BS	9.09	61.78		
34+50	9.23		47.63		48	8.77		53.01	6.46 46.55
Creek	35	6.43	50.43	5.85 44.60	49	8.15		53.63	6.93 46.70
			R.B.			B.W.		R.B.	

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July 22-19

Drainage Dist No 9 Black Hawk Co

Sheet 1

Main

Sta	RR	HI	Elev	Cut	Elev D
50	7.88	61.78	53.90	7.05	46.85
51	7.70		54.08	7.08	47.00
52	8.23		53.55	6.40	47.15
53	8.40		53.38	6.08	47.30
→ BS	8.06	61.44			
53+96	6.78		54.66	7.22	47.44
54	6.85		54.59	7.14	47.45
54+80	7.88		54.56	7.01	47.55
55	6.16		55.28	7.68	47.60
2 Riad					
55+10	4.96		56.48	8.86	47.62
55+39	5.85		55.59	7.94	47.65
56	6.25		55.19		47.75
Bm					
No 3	3.61		57.83		
→ BS	5.10	60.29			
57	4.91		55.38	7.48	47.90
58	5.97		54.32	6.27	48.05
59	4.88		55.41	7.21	48.20
60	4.10		56.19	7.74	48.35
61	3.05		57.24	8.74	48.50

JBW.

R.B.

Ave Cut 6.95 ft

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July 22-19

Main

Sta	RR	HI	Elev	Cut	Elev D
62	2.60		57.69	9.04	48.65
→ BS	6.26	63.95			
Pond	10.00		53.95		
63	9.55		54.40	5.60	48.80
64	9.48		54.47	5.42	48.95
65	7.98		55.97	6.87	49.10
66	7.47		56.48	7.23	49.25
67	7.94		56.01	6.61	49.40
67+35					
creek	10.22		53.73		
68	8.74		55.21	5.66	49.55
→ BS	7.72	62.93			
69	6.09		56.84	7.14	49.70
70	6.06		56.87	7.02	49.85
71	5.36		57.57	7.57	50.00
72	5.37		57.56	7.41	50.15
Bm 4	1.09		61.84		
73	5.93		57.00	6.70	50.30
74	5.94		56.99	6.54	50.45
→ BS	6.85	63.84			

JBW.

R.B.

Ave Cut 6.95 ft

22 July 22-19
Drainage Dist No 9

Sheet 1

Sta	R.R.	H.I.	Elev	Cut	Elev D
75	6.05	63.84	57.79	7.19	50.60
76	6.05		57.79	7.04	50.75
77	8.21		55.63	4.73	50.90
78	5.88		57.96	6.91	51.05
79	5.25		58.59	7.39	51.20
80	4.72		59.12	7.77	51.35
→ B.S.	6.43	65.55			
81	5.85		59.70	8.10	51.60
82	5.94		59.61	7.76	51.85
83	6.95		58.60	6.50	52.10
84	6.44		59.11	6.76	52.35
85	5.57		59.98	7.38	52.60
86	5.32		60.23	7.38	52.85
→ B.S.	6.10	66.33			
87	5.68		60.65	7.55	53.10
88	5.36		60.97	7.62	53.35
89	5.53		60.80	7.20	53.60
90	5.70		60.63	6.78	53.85
B.S.	7.00	67.63			

J.B.W. R.B.

July 22-19
Main

23

Sta	R.R.	H.I.	Elev	Cut	Elev D
91	7.07		60.56	6.46	54.10
92	5.98		61.65	7.30	54.35
93	5.64		61.99	7.39	54.60
94	5.72		61.91	7.06	54.85
→ B.S.	7.52	69.43			
95	7.17		62.26	7.16	55.10
96	7.13		62.30	6.95	55.35
96+4	6.98		62.45	7.09	55.36
96+37	4.55		64.88	9.44	55.44
96+70	7.46		61.97	6.44	55.53
97	7.30		62.13	6.53	55.60
BM 5	3.98		65.45		
98	6.67		62.76	6.91	55.85
99	6.53		62.90	6.80	56.10
100	6.20		63.23	6.88	56.35
→ B.S.	5.75	68.98			
101	5.38		63.60	7.00	56.60
102	5.45		63.53	6.68	56.85
103	5.63		63.35	6.25	57.10

J.B.W. R.B.

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July 22-19

Sheet 2

Drainage Dist No. 9 Black Hawk

Sta RR H Main Elev Cut Elev. D

104 5.01 68.98 63.97 6.62 57.35

EF
104+35 4.77 64.21 6.77 57.44
@ Road

104+66 3.58 65.40 7.88 57.52

W.F.
104-98 4.92 64.06 6.47 57.59

→ BS 538 69.44

BM-6 2.87 66.57

105 5.80 63.64 6.04 57.60

106 5.37 64.07 6.22 57.85

107 5.22 64.22 6.12 58.10

→ BS 6.51 70.73

108 6.20 64.53 6.18 58.35

109 5.70 65.03 6.43 58.60

110 5.41 65.32 6.47 58.85

→ BS 5.96 71.28

111 5.80 65.48 6.38 59.10

112 5.58 65.70 6.35 59.35

113 5.36 65.92 6.32 59.60

114 5.42 65.86 6.01 59.85

115 4.85 66.43 6.33 60.10

J.B.W.

R.B.

July 23-19

Drainage Dist No. 9 Black Hawk

✓ 25

Sta RR H Main Elev Cut Elev. D

BS 572 72.15

116 5.48 66.67 6.32 60.35

117 5.45 66.70 6.10 60.60

117+43 4.86 67.29 67.31 6.59 60.72

118 5.04 67.11 6.26 60.85

→ BS 6.43 73.54

119 6.17 67.37 6.27 61.10

120 5.78 67.76 6.41 61.35

121 5.46 68.08 6.48 61.60

(21+50)
Pitch 8.20 65.34

122 5.36 68.18 6.33 61.85

123 4.75 68.79 6.69 62.10

124 4.27 69.27 6.92 62.35

125 4.44 69.10 6.50 62.60

→ BS 5.62 74.72

126 5.50 69.22 6.37 62.85

127 5.30 69.42 6.32 63.10

128 5.17 69.55 6.20 63.35

129 4.75 69.97 6.37 63.60

J.B.W. J.B.W.

R.B.

Ave Cut 6.34

Sta	R R	H I	Elev	Cut	Elev D	Sta	R R	H I	Elev	Cut	Elev D
130	4.91	74.72	69.81	5.96	63.85	145	7.85	81.65 82.80	75.90 73.98	7.60	68.35
131	4.75		69.97	5.87	64.10	146	7.67		76.13 74.59	7.38	68.75
→ B.S.	6.56	76.53				NF	7.09		76.71 77.00	7.16	68.95
132	6.20		70.33	5.98	64.35	146+48 E Road	4.65		77.15 76.90	10.02	69.13
133	5.76		70.77	6.17	64.60	147	4.70		77.10 77.00	9.95	69.15
134	5.49		71.04	6.19	64.85	BM-7	4.65		77.15 74.53		
135	5.18		71.35	6.25	65.10	SF	7.12		74.53 72.65	7.33	69.25
136	4.96		71.57	6.22	65.35	inditch	9.00		74.80 74.72	5.25	69.55
137	4.73		71.80	6.20	65.60	149	6.93		76.87 77.80	6.92	69.95
138	4.09		72.44	6.59	65.85	150	6.80		77.00 75.10	6.65	70.35
139	3.97		72.56	6.48	66.10	→ B.S.	6.35	81.20 83.35	77.25 75.42		
→ B.S.	7.90	80.46				151	6.10		77.57 75.41	6.50	70.75
140	6.05	78.31	72.26	8.06	66.35	152	5.78		77.57 75.41	6.42	71.15
141	5.29		73.02	8.42	66.75	153	5.79		77.56 75.94	6.01	71.55
142	5.95		74.51	7.36	67.15	154	5.23		78.12 76.34	6.27	71.95
142+50 Ditch	7.91		70.40			155	4.86		78.49 76.53	6.14	72.35
143	4.79		72.55	8.12	67.55	155+50	4.67		78.68 76.69	6.13	72.55
144	4.40		73.51	8.11	67.95	→ B.S.	6.35	82.88 85.03	78.84 76.69		
→ B.S.	7.74	81.60	76.06			156	6.19		78.84 76.69	6.09	72.75
J.B.W.		83.80				J.B.W.		R.B.	J.B.W.		

subtract.
 To this H.I. subtract 2.15' found
 error between Sta. 135+00
 and 140 Brigs.

72.9 Ft
 Ave Cut

72.9 Ft
 Ave Cut

6.72 Ft
 Ave Cut

July 23-19
Drainage Dist 109 Black Hawk

Sheet 2

Main

H.I.

82.88

85.03

77.37

79.52

77.42

79.57

77.63

79.78

77.47

79.59

84.17

86.32

78.25

80.40

78.82

80.97

78.10

80.15

79.21

81.36

79.65

81.80

80.03

82.18

86.78

88.93

80.68

82.83

81.12

83.27

81.90

84.05

82.12

84.27

82.43

84.58

89.01

91.16

R.B.

Elev

Cut Elev D

76.11

78.26

77.37

79.52

77.42

79.57

77.63

79.78

77.47

79.59

84.17

86.32

78.25

80.40

78.82

80.97

78.10

80.15

79.21

81.36

79.65

81.80

80.03

82.18

86.78

88.93

80.68

82.83

81.12

83.27

81.90

84.05

82.12

84.27

82.43

84.58

89.01

91.16

R.B.

Cut Elev D

5.11 73.15

5.97 73.55

5.62 73.95

5.43 74.35

4.84 74.75

5.25 75.15

5.52 75.45

4.60 75.55

5.41 75.95

5.45 76.35

5.43 76.75

5.68 77.15

5.72 77.55

6.10 77.95

5.92 78.35

5.83 78.75

5.68 77.15

5.72 77.55

6.10 77.95

5.92 78.35

5.83 78.75

5.68 77.15

5.72 77.55

6.10 77.95

5.92 78.35

5.83 78.75

5.68 77.15

5.72 77.55

6.10 77.95

5.92 78.35

5.83 78.75

5.68 77.15

5.72 77.55

6.10 77.95

5.92 78.35

5.83 78.75

5.68 77.15

5.72 77.55

6.10 77.95

Sta

R R

H I

Elev

Cut

Elev D

172

173

174

175

176

177

177+47

178

179

180

181

182

183

184

185

186

187

188

189

190

191

192

193

194

195

196

197

198

199

200

201

202

203

204

205

206

207

208

209

R R

H I

Elev

Cut

Elev D

5.86

5.65

5.19

4.60

5.74

5.15

6.84

5.74

5.34

5.61

5.27

4.79

4.62

6.40

6.07

5.35

5.11

4.66

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

H I

Elev

Cut

Elev D

89.01

85.30

85.51

85.97

86.56

85.42

85.86

86.01

90.11

92.26

84.37

86.52

86.92

86.65

86.99

87.47

87.64

85.82

87.97

88.69

88.93

89.38

89.97

85.82

87.97

88.69

88.93

89.38

89.97

85.82

87.97

88.69

88.93

89.38

89.97

85.82

87.97

88.69

88.93

Elev

Cut

Elev D

83.15

85.30

85.51

85.97

86.56

85.42

85.86

86.01

90.11

92.26

84.37

86.52

86.92

86.65

86.99

87.47

87.64

85.82

87.97

88.69

88.93

89.38

89.97

85.82

87.97

88.69

88.93

89.38

89.97

85.82

87.97

88.69

88.93

89.38

89.97

85.82

87.97

88.69

88.93

Cut

Elev D

6.15

5.96

6.02

6.21

4.67

5.37

5.57

5.10

5.04

5.12

5.48

6.40

6.07

5.35

5.11

4.66

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

4.07

Elev D

73.15

73.55

73.95

74.35

74.75

75.15

75.45

75.55

75.95

76.35

76.75

77.15

77.55

77.95

Sta	R R	Main H I	Elev	Cut	Elev D
187	3.95	94.04 91.89 94.41	87.94 90.09	4.94	85.15
→ BS	6.47	96.56			
188	5.75	90.81 88.23	88.66 91.38	5.26	85.55
189	5.18	92.08 90.55	89.93 92.70	5.43	85.95
190	4.48	94.02 90.03	91.84 92.18	5.73	86.35
EF 190+50	3.86	93.10 92.18	90.55 91.84	6.15	86.55
Q Road 190+80	2.54	94.02 90.03	91.84 92.18	7.35	86.67
191	4.38	93.10 90.93	90.03 93.10	5.43	86.75
191+10	3.46	96.73 98.88	90.93 93.10	6.31	86.79
→ BS	5.78	98.88			
B.M. 8	4.13	92.60 94.75			

Total Fall on Main 46.68 ^{Fe}

R.B.

July 19-19

Drainage Dist No 9 Black Hawk
Sheet 3

Branch 1 Right

Conn at Sta 1 Main, Angle 66°

Right—

at Sta 1 Angle 8° Right

Sta 9+42 E Fence, N & S

Road, thru W 1/2 sec 13—

Sta 9+68. E Road—140' S

NE, Cor—SW—NW—Sec—13

Sta 9+91 W Road Fence

at Sta 10 Angle 38° Right

Sta 11+87—S Road Fence

Sta 12+35 E E+W Road thru

N 1/2 Sec 13, & 218' W—NE Cor

SW—NW—Sec 13—89—11

Sta 12+88 North Road Fence

July 24-19

Sheet 3 33

Sta	Branch		Right	V	
	R R	H I	Elev	cut	Elev D
0	10.57	53.58	43.01	1.31	41.70
1	4.69		48.89	6.04	42.85
2	4.21		49.37	5.37	44.00
3	3.76		49.88	4.73	45.15
4	2.80		50.78	4.48	46.30
+B.S.	7.08	57.86			
5	5.95		51.91	4.46	47.45
6	4.52		53.34	4.74	48.60
7	3.34		54.52	4.77	49.75
8	2.78		55.08	5.18	50.90
+B.S.	8.10	63.18			
9	6.90		56.28	4.23	52.05
E F					
9+42	6.02		57.16	4.61	52.55
E Road					
9+68	4.41		58.77	5.81	52.96
W F					
9+94	5.32		57.86	4.71	53.15
10	5.62		57.56	4.36	53.20
11	3.23		59.95	5.50	54.45
+B.S.	6.82	66.77			
11+87	4.85	R.R.B.	61.92	6.39	55.53
J.B.W. Cont't Bottom Page 34					

J.B.W. Conn't Bottom Page 34

Drainage Dist. No 9 Black Hawk

Branch A, Right

Corn at Sta 4 B.I.R. Angle

49° Right

Sta 1+42 S Road Fence

Sta 1+80 E & W Road thru

N ½ Sec 13-89-11

Sta 2+19, N-Road Fence

at Sta 2+50, Angle 29° Left

Sta 16+16 at W. Line NE-NW-Sec 13. and

141° N of SW. Cor

0	7.08	58.40	50.78	Notes
1	5.21			47.
S.F.				
1+42	4.23			
E Road				
1+80	3.48			
2	4.86			
N.F.				
2+19	3.24			
B.I.R. Corn				
12	4.76	66.77	62.01	6.31 55.70
E Road				
12.35	3.50		63.27	7.13 56.14
12+88	4.27		62.50	5.70 56.80
J.B.W.				

Level
on page 47.

Branch 2 Right Sheet 3.

Corn at Sta 28 on Main

Angle 56° Right-

Sta 3 at W Line NW-SW-Sec 13

and 395^{ft} S of NW Cor

At Sta 10-Angle 20° Right

Sta 12+9 at N-Line NE-SE-Sec. 14

at Sta 14-Angle 21° Right

Sta 27+59 S Fence

E Road Sta 27+95 Road thru N ½

Sec 14-89-11

Sta 28+31 N Fence

Sta 27+95 E Road 225^{ft} W-S-E Cor

NW-NE-Sec. 13.

36	July 24-19				Sheet 3			
	B 2 R							
Sta	R R	H I	Elev	Out Elev D				
0	6.90	57.22	50.32	4.51 44.82	45.50			
1	7.38		49.84	4.09	45.75	→ BS		
2	7.18		50.04	4.04	46.00	17		
3	5.30		51.92	4.77	47.15	18		
4	3.77		53.45	5.15	48.30	19		
5	1.65		55.57	6.12	49.45	20		
→ BS	8.35	63.92				21		
6	7.11		56.81	6.21	50.60	22		
7	6.00		57.92	6.17	51.75	→ BS		
8	5.33		58.59	5.69	52.90	23		
9	4.48		59.44	5.39	54.05	24		
10	3.45		59.47 60.47	4.27	55.20	25		
11	2.29		61.63	5.28	56.35	26		
→ BS	7.85	69.48				27		
12	7.06		62.42	4.92	57.50	27+59		
12+9	6.70		62.78	5.18	57.60	27+95		
13	6.03		63.45	4.80	58.65	28		
14	5.01		64.47	4.67	59.80	28+31		
15	4.19		65.31	4.36	60.95			

J.B.W. R.R.B.

	July 24 - 19					37
	B. 2. R. cont				V	
Sta	RR	H I	Elev	Out	Elev D	
16	3.27	69.48	66.21	4.11	62.10	
BS	9.18	75.38	⊙			
17	7.70		67.68	4.43	63.25	
18	6.62		68.76	4.36	64.40	
19	5.28		70.10	4.55	65.55	
20	4.06		71.32	4.62	66.70	
21	3.23		72.15	4.30	67.85	
22	2.11		73.27	4.27	69.00	
BS	8.36	81.63				
23	7.18		74.45 74.55	4.40	70.15	
24	5.94		75.69	4.39	71.30	
25	4.93		76.50 76.50	4.05	72.45	
26	3.72		77.91	4.31	73.60	
27	2.47		78.16	3.41	74.75	
SF						
27+59	2.16		79.47	4.05	75.42	
Q Road						
27+95	0.65		80.98	5.13	75.85	
28	0.70		80.93	5.03	75.90	
N F						
28+31	1.20		80.43	4.18	76.25	

J.B.W. R.R.B.

July 24-19
Branch B Right Sheet 4

com at Sta 2-B 2 R
Angle 47° Right
Sta 2+62 at West Line
NW-SW Sec 13
Sta 4+62-71^{ft} W-NW cor
NE-SE-Sec 13
At Sta 5+50- Angle 1°15' Right
at Sta 18+50 Angle 10° Left
Sta 18+59 S.E.-E+W Road
Sta 19+34 N Fence
E Road Sta 18+9.6-E+W Road
thru N¹/₂ Sec 14-89-11
at Sta 22+26. Angle 41° Left
Sta 28-89 at E Line NW-
NE and 487^{ft} N-S. E cor

July 25-19 ^{3171.32}
Branch B. Right ^{27 462} V
Sheet 4 ³⁹

	Sta	RR	H I	Elev	Cut	Elev D
	0	9.56	59.60	50.04	3.94	46.10
	1	7.68		51.92	4.47	47.45
	2	5.89		53.71	4.91	48.80
	2+62	4.50		55.10	5.47	49.63
	3	4.13		54.47	4.32	50.15
	4	2.46		57.14	5.64	51.50
	4+62	1.96		57.64	5.31	52.33
	5	1.60		58.00	5.15	52.85
	BS	8.15	66.15			
	5+50	7.50		58.65	5.30	53.35
	6	6.80		59.35	5.50	53.85
	7	5.87		60.28	5.23	54.85
	8	5.24		60.91	5.06	55.85
	9	4.60		61.55 61.45	4.60	56.85
	10	4.00		62.15	4.30	57.85
	11	3.25		62.90	4.05	58.85
	BS	8.04	70.94			
	12	7.35		63.59	3.74	59.45
		JRW	R.P.B.			

July 25-19

Sheet 4

Branch B. Right

Sta RR H I Elev Out Elev D

13 6.57 70.94 64.37 3.52 60.85

14 5.52 65.42 3.57 61.85

15 3.80 67.14 4.29 62.85

16 2.66 68.28 4.43 63.85

17 1.16 69.78 4.93 64.85

→ BS 8.41 78.19

18 7.13 71.06 5.21 65.85

18+50 6.19 72.00 5.65 66.35

S.F.
18+59 5.95 72.24 5.80 66.44E Road
18+96 5.36 72.83 6.02 66.81

19 6.46 71.73 4.88 66.85

N.F.
19+34 6.84 71.35 4.06 67.29

20 6.05 72.14 4.29 67.85

21 5.80 72.39 3.69 68.70

22 4.65 73.54 3.99 69.55

→ BS 7.55 81.09

22+26 7.40 73.69 3.92 69.77

23 6.88 74.21 3.81 70.40

24 6.46 74.63 3.38 71.25

J.B.W. R.P.B.

July 25-19

Branch B. Right-Cont

Sheet 4

Sta RR H I Elev

25 5.31 81.09 75.78 3.68 72.10

BS 7.65 83.43

26 6.14 77.29 4.34 72.95

27 5.39 78.04 4.24 73.80

28 4.55 78.88 4.23 74.65

28+89 3.24 80.19 4.79 75.40

R.P.B.

J.B.W.

July 25-19

Sheet 4

Branch 3 Right

Com at Sta 36. Main

Angle 53° Right

at Sta 3+89 Angle 26° Right

Sta 11+65 ^{57°} N-N-SW cot

NE-SE Sec 14

at Sta 17 Angle 31° Right

Sta 23+19 at S Little SW-NE-

Sec 14. and 531.5' E. SW cot

July 26-19

B, B, R

Sheet 4

Sta RR H I Elev

0 7.05 58.35 51.30 5.30 46.00

1 6.43 51.92 5.02 46.90

2 5.33 53.02 5.22 47.80

3 6.35 52.00 3.30 48.70

3+89 5.35 53.00 3.49 49.51

4 5.31 53.04 3.44 49.60

5 3.14 55.21 4.71 50.50

6 2.69 55.66 4.26 51.40

B.S 8.16 63.82

7 7.40 56.42 4.12 52.30

8 6.73 57.09 3.89 53.20

9 5.73 58.09 3.99 54.10

10 4.96 58.86 3.68 55.00

11 4.00 59.82 3.92 55.90

11+65 3.08 60.74 4.26 56.48

12 2.88 60.94 4.14 56.80

B.S 7.69 68.63

13 6.78 61.85 4.15 57.70

14 6.11 62.52 3.92 58.60

J.B.W. R.P.B.

July 25-19

Sheet 4

B 3 R - con

Sta RR H I Elev Cut Elev D

15 507 68.63 63.56 4.06 59.50

16 4.66 63.97 3.57 60.40

17 3.95 64.68 3.38 61.30

18 3.02 65.61 3.41 62.20

→ BS 8.13 73.74

19 6.65 67.09 3.99 63.10

20 5.45 68.29 4.29 64.00

21 4.11 69.63 4.43 65.20

22 3.10 70.64 4.24 66.40

23 1.83 71.91 4.31 67.60

23+19 1.26 72.48 4.66 67.82

R.P.B.

J.B.W.

July 25-19

Sheet 4 45

Branch, 4, Right

Conn. at Sta 50. Main

Angle 42° Right

Sta 2+21 E Line SW-SE

Sec 14, and 372 ft N-SE corner

water shed 40 @

Sta RR H I Elev Cut Elev D

0 5.43 59.33 53.90 5.90 48.00

1 5.81 53.52 4.92 48.60

2 5.56 53.77 4.57 49.20

2+21 5.42 53.91 4.59 49.32

R.P.B.

J.B.W.

July 25-19

Sheet 4

Branch C. Right

Corn at Sta 5 B.3.R

Angle 55° Left

Sta 5+86 N. Line SE-SE-14

Sta 6+59 W Line SE-S-E and

36^{ft} S. NW Corn

Branch C. Right.

Sta RR H I Elev Cut Elev D

0 7.02 62.23 55.21 4.51 50.70

1 7.09 55.14 3.64 51.50

2 6.25 55.98 3.68 52.30

3 4.53 57.70 4.00 53.70

4 2.45 59.78 4.68 55.10

5 1.90 60.33 3.83 56.50

→ B.S. 6.70 67.03

Fence 5+86 4.37 62.66 4.96 57.70

6 4.94 62.09 4.19 57.90

6+59 3.50 63.53 4.81 58.72

J.B.W. R.F.B.

Aug 21-19

Sheet 3.

See Page 34.

Branch A Right (Record. 34)

Page

Sta RR H I Elev Cut Elev D

0 7.08 57.86 50.78 4.38 46.40

1 5.21 52.65 4.60 48.05

S F

1+42

4.23 53.63 4.89 48.74

2 Road

1+80

3.48 54.38 5.01 49.37

2

4.86 53.00 3.30 49.70

N F

2+19

3.24 54.62 4.61 50.01

+ B.S.

9.83 64.45

2+50

9.24 55.21 4.67 50.54

3

7.87 56.58 5.23 51.35

4

6.40 58.05 5.05 53.00

5

4.83 59.62 4.97 54.65

6

3.90 60.55 4.25 56.30

6+16

2.70 61.75 5.19 56.56

R.F.B.

J.B.W.

July 26-19

Sheet 5

Branch 5 Right

Cm at Sta 79. Mark

Angle 45° Right.At Sta 2+75. Angle 28° Right

Sta 8+30 S Road Fence { E & W

Sta 8+84 N Road Fence { Road betw
secs 14 & 23Sta 8+56 E Road-1881 ¹⁸⁸¹ Ft East

NW Cor Sec 23-89-11-

At Sta 9. Angle 21° Left.At Sta 27+50 Angle 32° RightSta 36+94-19^{ft} W SE cor S W-NW-14

Sta 37+95 E Line SW-NW- and

99^{ft} N SE corAt Sta 45 Angle 28° Left

Sta 49+6 E Line SW-NW-14

and 139' S-NE cor

Sta 50+25-^{SE E & W Road} 37 W-NE cor

SW NW-14

At Sta 50+25 Angle 13° Right

Sta 50+83 N Fence

July 29-19

v

B. S. R. C. T.

Sta 50+48 E & W Road
thru $N\frac{1}{2}$ Sec 14. and 15^{ft} W of
W-End of BridgeSta 64+4 N Line NW-NW-Sec 14
+163^{ft} W-NE corAt Sta 64+4 Angle 3° RightSta 78-224^{ft} W-E Line NW-SW-11
at Sta 78 Angle 20° Rightat Sta 83+67 Angle 45° Right

Sta 83+89 W Fence Road

Sta 84+~~78~~ E Fence RoadSta 84+27 E N & S Road thru $W\frac{1}{2}$
Sec 11.

Sta 98+81 N Line NE-SW-Sec 11

23^{ft} W of NE corSta 99+20 Near SW cor SW-NE
Sec 11-89-11

Branch 5 Right

Sta R R H I Elev Cut Elev D

27+50 4.79 68.80 ~~64.81~~ 64.01 5.36 58.65→ BS. 6.02 ~~70.83~~ 70.03

28 5.71

28+25
Ditch 7.25

29 5.77

30 5.06

31 4.76

32 4.44

33 4.04

→ BS 5.59 ~~72.38~~ 71.58

34 6.47

inditch
35 6.68

36 5.34

36+94 4.53

37 4.55

37+95 4.06

→ BS 6.30 ~~74.62~~ 73.82

38 6.20

39 6.06

J.B.W. R.P.B.

Branch 5 Right

Sta R R H I Elev Cut Elev D

40 5.74 ~~74.62~~ ~~68.88~~ 68.08 5.28 62.80

41 5.23

42 4.64

43 4.05

44 3.60

→ BS 6.50 ~~77.52~~ 76.72

45 6.29

46 6.58

47 6.70

48 6.38

49 5.46

49+06 5.28

50 5.30

50+25 SF 5.08

→ BS 6.44 ~~78.88~~ 78.08

50+48 RR road 4.80

50+83 N.F. 6.56

51 6.70

52 6.27

J.B.W. R.P.B.

July 29-19

Branch, 5. Right

Sheet 5.

July 29-19

B.5.R

N

Sta R R H. I. Elev Cut Elev D

53 6.24 ~~78.88~~ ^{78.88} ~~71.64~~ 71.84 4.55 67.2954 5.50 ~~73.38~~ ^{73.38} ~~72.58~~ 4.96 67.62+ BS 7.58 ~~80.96~~ ^{80.96} ~~80.16~~55 6.97 ~~73.19~~ ^{73.19} 5.23 67.9656 6.24 ~~73.72~~ ^{73.72} ~~73.92~~ 5.63 68.2957 5.71 ~~75.23~~ ^{75.23} ~~74.45~~ 5.83 68.6258 5.19 ~~73.77~~ ^{73.77} ~~74.97~~ 6.02 68.9559 4.98 ~~75.98~~ ^{75.98} ~~75.18~~ 5.90 69.28177 511 ch 60 6.15 ~~74.81~~ ^{74.81} ~~74.01~~ 4.40 69.61+ BS 6.83 ~~81.64~~ ^{81.64} ~~80.84~~61 5.07 ~~76.57~~ ^{76.57} ~~75.77~~ 5.83 69.9462 5.36 ~~76.28~~ ^{76.28} ~~75.48~~ 5.21 70.2763 5.26 ~~78.38~~ ^{78.38} ~~75.58~~ 4.98 70.6064 4.89 ~~76.75~~ ^{76.75} ~~75.95~~ 5.02 70.9364 + 4 4.89 ~~76.75~~ ^{76.75} ~~75.95~~ 5.01 70.9465 4.64 ~~77.80~~ ^{77.80} ~~76.20~~ 5.24 70.9666 4.38 ~~77.36~~ ^{77.36} ~~76.46~~ 5.17 71.29+ BS 5.34 ~~82.60~~ ^{82.60} ~~81.80~~67 5.69 ~~76.91~~ ^{76.91} ~~76.11~~ 4.49 71.62

J.B.W. R.R.B.

Sta R R H. I. Elev Cut Elev D

68 5.54 ~~83.60~~ ^{83.60} ~~81.80~~ ~~77.06~~ 76.26 4.31 71.9569 4.86 ~~77.74~~ ^{77.74} ~~76.94~~ 4.66 72.2870 4.39 ~~78.51~~ ^{78.51} ~~77.41~~ 4.80 72.6171 3.88 ~~78.72~~ ^{78.72} ~~77.92~~ 4.98 72.9472 3.68 ~~78.92~~ ^{78.92} ~~78.12~~ 4.85 73.27+ BS 6.43 ~~85.35~~ ^{85.35} ~~84.55~~73 6.16 ~~79.19~~ ^{79.19} ~~78.39~~ 4.79 73.6074 5.90 ~~79.45~~ ^{79.45} ~~78.65~~ 4.72 73.9375 5.35 ~~80.00~~ ^{80.00} ~~79.20~~ 4.94 74.2676 4.99 ~~80.36~~ ^{80.36} ~~79.56~~ 4.97 74.5977 4.55 ~~80.80~~ ^{80.80} ~~80.00~~ 5.08 74.9278 4.04 ~~81.31~~ ^{81.31} ~~80.51~~ 5.26 75.25BS 6.82 ~~88.13~~ ^{88.13} ~~87.33~~79 6.24 ~~81.89~~ ^{81.89} ~~81.09~~ 5.57 75.5880 5.64 ~~82.49~~ ^{82.49} ~~81.69~~ 5.78 75.9181 5.84 ~~82.29~~ ^{82.29} ~~81.49~~ 5.25 76.2482 3.46 ~~84.67~~ ^{84.67} ~~83.87~~ 7.30 76.5783 4.61 ~~83.57~~ ^{83.57} ~~82.72~~ 6.82 76.9083 + 67 4.60 ~~83.53~~ ^{83.53} ~~82.73~~ 5.61 77.12

J.B.W. R.R.B.

July 30-19
Branch D Right Sheet 5

Comm at Sta 45- B.5. R
Angle 48° Right
at Sta 2 Angle 31° Right
at Sta 9+50 Angle 29° Left
at Sta 12+50 Angle 48° Left
Sta 12+85 E-Line-SE-NW-14
and 235^{FT} South of NE cor
Sta 15 S Road Fence
Sta 15+67 N Road Fence
Sta 15+33 E, E+W Road
Thru North 1/2 Sec 14 and
91^{FT} E. NE cor SE-NW

July 30-19
Branch D Right

Sheet 5

Sta	R R	H I	Elev	Out	Elev D
0	7.52	78.75 77.95	71.23 70.43	5.43	65.00
1	7.61		71.14 70.34	4.51	65.83
2	5.91		72.84 72.04	5.38	66.66
3	5.45		73.90 72.50	5.01	67.49
4	4.64		74.06 73.26	4.94	68.32
5	3.89		74.86 74.06	4.91	69.15
6	3.04		75.71 74.91		69.98
BS	9.25	84.96 84.16	76.99 76.29	4.99	
7	7.97		78.08 77.20	5.48	70.81
8	6.96		78.91 78.11	5.56	71.64
9	6.05		79.26 78.46	5.64	72.47
9+50	5.70		79.56 78.76	5.58	72.88
10	5.40		80.11 79.31	5.46	73.30
11	4.85		80.34 79.44	5.18	74.13
12	4.72		86.76 85.96	4.48	74.96
→ BS	6.52		80.28 79.48		
12+50	6.48		81.23 80.42	4.11	75.37
12+85	5.54		81.32 80.52	4.76	75.66
13	5.44			4.73	75.79

J.B.W. J.B.W.

July 30 - 19

Branch D Right Sheet 5

Sta	R.R.	H.I.	Elev	Cut	Elev D
14	4.90	85.96	81.06	4.44	76.62
SF			82.52		
15	4.20		81.76	4.31	77.45
2 Road			84.00		
15+33	2.76		83.20	5.48	77.72
N F			83.26		
15+67	3.50		82.46	4.46	78.00

July 30 - 19

Sheet 6 61

Branch E, Right v

Comat Sta 49, B. 5, R Angle 30°
Right

Sta 1+18 S Road Fence

Sta 1+70 N Road Fence

Sta 1+48 E E+W Road thru

N 1/2 Sec. 14 - and 33rd East
of N.W. Cor. S E - N W - 14

Sta	R.R.	H.I.	Elev	Cut	Elev D
0	4.83	76.09	72.06	4.76	66.50
1	4.95		71.14	4.14	67.00
SF			72.41		
1+18	4.48		71.61	4.52	67.09
2 Road			83.51		
1+48	3.38		72.71	5.47	67.24
N F			72.79		
1+70	4.10		71.99	4.64	67.35

J.B.W. J.B.W.

J.B.W. J.B.W.

Branch F. Right

Com at Sta 60. B, 5, R

Angle 66° Right

Sta 1+9 W Road Fence

Sta 1+74 E Road Fence

Sta 1+41 E N + S Road

Thru N $\frac{1}{2}$ -NW $\frac{1}{4}$ Sec 14

Sta	R R	H I	Elev	Cut	Elev D
0	8.12	82.93 82.13	77.81 74.01	4.01	70.00
1	6.58	76.35 75.55	76.35 75.55	5.05	70.50
W F		76.78 75.98	76.78 75.98	5.44	70.54
1+9	6.15	77.94 77.24	77.94 77.24	6.54	70.70
2 Road		76.56 75.76	76.56 75.76	4.89	70.97
1+41	4.99				
E Fence					
1+74	6.37				

Branch G. Right

Com at Sta 83+67. B 5 R

Sta 0+95-S Line N $\frac{1}{2}$ -N-W

SW-sec 11. and 107' W of S E. cor

Sta 9+11 N Line N $\frac{1}{2}$ NW-SW

at Sta 10 Angle 1° Left

at Sta 18 Angle 42° Left

Sta 20+49 at W Line SW-NW
Sec 11-

July 30-19

Sheet 6.

Branch G. Right-

Sta R R H I Elev Out Elev D

0 6.05 ~~87.78~~ 82.73 4.73 78.000+95 5.66 ~~88.78~~ ~~83.12~~ 3.88 78.241 5.87 ~~81.91~~ 3.66 78.252 5.33 ~~83.45~~ 3.95 78.503 5.00 ~~82.45~~ 4.03 78.754 4.50 ~~83.78~~ 4.28 79.005 3.96 ~~81.28~~ 4.57 79.256 3.51 ~~84.82~~ 4.44 79.837 BS 6.07 ~~85.82~~ 4.30 80.417 5.63 ~~85.27~~ 4.99 80.998 5.36 ~~85.71~~ 4.30 81.579 4.47 ~~87.32~~ 4.69 81.639+11 4.02 ~~86.32~~ 5.34 82.1510 2.85 ~~88.49~~ 5.14 84.47→ BS 5.53 ~~87.80~~ 3.57 82.73pond 11 6.72 ~~86.30~~ 4.49 83.3112 6.22 ~~87.80~~ 4.23 83.8913 4.90 ~~87.12~~ 5.14 84.4714 4.41 ~~89.61~~

J.B.W. J.B.W.

July 30-19

Sheet 6. 65

Branch G. Right

Sta R R H I Elev Out Elev D

15 3.95 94.02 ~~90.07~~ 4.02 85.05BS 7.23 ~~96.30~~ 4.09 85.6316 6.58 ~~97.30~~ 4.79 86.2117 5.30 ~~90.72~~ 4.22 86.7918 5.29 ~~89.72~~ 4.27 87.3719 4.66 ~~92.00~~ 4.32 87.9520 4.03 ~~91.00~~ 4.94 88.2420+49 3.12 ~~92.01~~

J.B.W. J.B.W.

Branch I. Right

Com at Sta 11 BGR

Angle 57° Left

Sta 6+55, W Line SW-NW
and 51° N of SW CorAt sta 6+55, Angle 30° Right
at Sta. 17- Angle 32° LeftSta 20+71 at W. Line SE-NE
Sec 10- and 377' N-S W. cor

Sta RR HI Elev Cut Elev D

0 7.00 93.30 ~~87.30~~ 3.50 82.801 5.57 94.30 ~~87.73~~ 4.63 83.102 5.02 ~~89.28~~ 4.88 83.403 5.38 ~~87.92~~ 4.22 83.704 5.10 ~~89.20~~ 4.20 84.005 5.11 ~~88.19~~ 3.89 84.306 5.10 ~~88.10~~ 3.50 84.60

→ BS 7.18 95.28

6+55 6.16 96.38 ~~89.12~~ 4.36 84.76

J.B.W. J.B.W.

Branch I. Right V

Sta RR HI I Elev Cut Elev D

7 6.36 96.38 ~~90.02~~ 4.02 84.908 5.77 ~~89.51~~ 4.31 85.209 5.49 ~~89.79~~ 4.29 85.5010 4.80 ~~90.48~~ 4.68 85.8011 4.22 ~~91.06~~ 4.26 86.8012 3.07 ~~92.21~~ 4.41 87.80

→ BS 9.28 101.49

13 8.57 102.59 ~~94.02~~ 5.12 88.8014 7.47 ~~94.02~~ 4.22 89.8015 5.91 ~~95.58~~ 4.78 90.8016 4.52 ~~96.97~~ 5.17 91.8017 4.08 ~~97.41~~ 4.61 92.80

→ BS 7.45 104.86

18 6.52 105.96 ~~98.34~~ 4.54 93.8019 5.95 ~~98.91~~ 4.11 94.8020 4.77 ~~100.09~~ 4.29 95.8020+71 3.83 ~~101.03~~ 4.52 96.51

J.B.W. J.B.W.

Note: Add 0.80 to all
elevations shown
in red to correct.Note: Add 0.80 to all
elevations shown in
red to correct.

Ave C-4.36 Ft

July 31 - 19 Sheet 6
Branch H. Right

Comm at Sta 2 B.G.R.
Sta 5+77 at N Line N $\frac{1}{2}$
NW-SW-sec 11, and 142^{ft} W
of N.E. cor -

Sta	R R	H I	Elev	Cut	Elev D
0	6.60	89.05	83.45 82.45	3.95	78.50
1	6.36	90.05	83.69 82.69	3.59	78.90
2	5.68		84.37 83.37	4.07	79.30
3	4.96		85.09 84.09	4.39	79.70
4	4.50		86.56 84.55	4.45	80.10
5	4.18		85.87 84.87	4.37	80.50
5+77	3.74		86.31 85.31	4.51	80.80

Note: - Add 0.80 to all
elevations shown in red
to correct.

J.B.W. J.B.W.

July 31 - 19 Sheet 6
Branch J. Right

Comm at Sta 27+50, B.S.R.
Angle 26° Left
at Sta 9+50 Angle 11 $\frac{1}{2}$ ° Right
Sta 13+87 - S. Line SW-NW-
sec 14 - and 152^{ft} E of SW cor
Sta 15+93 East Fence.
Sta 16+74 West Fence
Sta 16+34 $\oplus$ N & S Road between
secs 14 & 15, and 189^{ft} N of
SW cor SW-NW-14
at Sta 17, Angle 15° Left
at Sta 29 - Angle 14° Right
Sta 33+59 S. Fence
Sta 34+33 N. Fence
Sta 33+97 $\oplus$ E+W. Road
thru N $\frac{1}{2}$ Sec. 15 - and 56^{ft}
East of SW cor NE-NE-15

July 31-19

Sheet 6.

Branch J Right Cont

Sta 34+82 W Lim NE-NE
 Sec 15. and 66^F N of SW Cor
 at Sta 35. Angle 5° Left
 at Sta 41 Angle 5° Left
 Sta 53+85 N Line NE-NW-sec
 15 and 93^F W of NE Cor

Sta

0
0+50
Ditch

1

2

3

4

5

6

→ BS

7

8

9

9+50

10

11

12

BS

13

13+87

July 31-19

Branch J Right

RR

H I

Elev

Cut

Elev Ditch

5.83

69.84

64.01

4.81

59.20

7.25

62.59

5.82

64.02

4.49

59.53

5.44

64.40

4.54

59.86

5.20

64.64

4.45

60.19

4.71

65.13

4.61

60.52

4.57

65.27

4.42

60.85

4.67

65.17

3.99

61.18

6.31

71.48

6.16

65.32

3.81

61.51

5.67

65.81

3.97

61.84

5.31

66.17

4.00

62.17

4.90

66.58

4.25

62.33

4.75

66.73

4.23

52.50

4.43

67.05

4.22

52.83

4.27

67.21

4.05

53.16

7.05

74.26

6.47

67.79

4.30

53.49

5.78

68.48

4.74

53.74

J.B.W. J.B.W.

Sheet 6

B.J.R.

Sta R R H I Elev Cut Elev D

14 5.81 74.26 68.45 4.43 53.82

15 5.23 69.03 4.88 54.15

EF

15+93 4.39 69.87 5.30 54.57

16 4.54 69.72 5.11 54.61

Road

6+34 3.40 70.86 6.10 54.76

NF

6+74 4.45 69.81 4.86 54.95

17 4.70 69.56 4.49 55.07

→ BS 6.42 75.98

18 5.87 70.11 4.58 55.53

19 5.53 70.45 4.46 55.99

20 4.90 71.08 4.63 56.45

21 4.00 71.98 5.07 56.91

22 3.52 72.46 5.09 57.37

23 2.54 73.44 5.61 57.83

→ BS 6.28 79.72

24 5.89 73.83 5.54 58.29

25 5.64 74.08 5.33 58.75

26 5.46 74.26 5.05 59.21

27 4.85 74.87 5.20 59.67

J.B.W. J.B.W.

Note: - Add 0.80 to all elevations to correct.

Ave

Ave

Ave

B.J.R.

Sta R R H I Elev Cut Elev D

28 4.42 79.72 75.30 5.17 60.13

29 3.89 75.83 5.44 60.59

30 3.28 75.44 4.39 61.05

31 6.01 82.68 4.16 61.51

32 5.51 77.17 4.20 61.97

33 5.01 77.67 4.24 62.43

33+59 4.55 78.13 4.56 62.57

33+97 3.19 79.19 5.61 62.88

→ BS 5.68 84.17

34 5.63 85.17 5.65 62.89

34+33 6.83 78.44 4.30 63.04

34+82 6.35 78.82 4.56 63.26

35 6.26 78.91 4.56 63.35

36 6.13 79.04 4.23 63.81

37 5.61 79.06 4.29 64.27

38 5.00 79.17 4.44 64.73

39 4.58 79.59 4.40 65.19

40 4.67 79.50 3.85 65.65

J.B.W. J.B.W.

Note: - Add 0.80 to all elevations shown in red to correct.

Ave

July 31-19

Sheet 6

Branch J Right

Sta R R H I Elev Cut Elev D

→ BS	7.66	87.16				
41	6.54	88.16	81.62	80.62	4.34	66.28
42	6.00		82.16	81.16	4.25	66.91
43	4.78		83.38	82.38	4.84	67.54
44	3.95		84.21	83.21	5.04	68.17
45	4.05		84.11	83.11	4.31	68.80
46	3.79		84.37	83.37	3.94	69.43
→ BS	7.49	90.86				
47	6.98	91.86	84.88	83.88	3.82	70.06
48	5.91		85.95	84.95	4.24	70.69
49	5.11		86.45	85.45	4.43	71.32
50	4.39		87.47	86.47	4.52	71.95
51	3.41		88.45	87.45	4.50	72.95
→ BS	6.66	94.11				
52	5.45	95.11	89.66	88.66	4.71	73.95
53	4.71		90.40	89.40	4.45	74.95
53+85	3.69		91.42	90.42	4.62	75.80

Note: - Add 0.80 to all
Elevations shown
in red to correct.

J.B.W. J.B.W.

Sheet 7

Aug 1 - 19

Branch K Right

Con at Sta 20. B. J. R

Angle 39° Right

Sta 9+17 S. Fence

Sta 9+68 N. Fence

Sta 9+42 E E+W. Road thru

N 1/2 Sec 15 - and 510' west

of S-E cor. NE-NE-Sec 15

at Sta 10. Angle 8° Right

at Sta 19. Angle 33° Left

Sta 23+89 North Line NE-NE-

Sec 15. and 432 East of

NW cor

Brack, K. Right

B, K, R.

✓

Sta	R.R.	H.I.	Elev	Cut	Elev
0	6.60	77.68	71.08	4.58	66.50
1	6.90		70.78	3.63	67.15
2	6.12		71.56	3.76	67.80
3	5.41		72.27	4.82	68.45
4	4.35		73.33	4.23	69.10
5	3.63		74.05	4.30	69.75
6	3.17		74.51	4.11	70.40
→ B.S.	7.70	82.21		4.61	
7	6.51		75.70	4.65	71.05
8	5.81		76.40	4.70	71.70
9	5.03		77.18	4.83	72.35
S.F. 9+17	4.65		77.56	5.10	72.46
D.Road 9+42	3.62		78.59	5.97	72.62
N.F. 9+68	4.49		77.72	4.93	72.79
10	4.70		77.51	4.51	73.00
11	3.85		78.36	4.71	73.65
12	3.24		78.97	4.67	74.30
→ B.S.	7.41	86.38		4.61	
13	6.61		79.77	4.82	74.95

J.B.W. J.B.W.

Note: Add 0.80' to all elevations to correct.

4,61 Ft. X Ave cut 4,62 Ft.

S F
9 + 17
Q Road
9 + 42
N F

J. B. W. J. B. W.

Aug 1-19
Branch, L. Right Sheet 7

corn at Sta 20 BKR

Angle 28° Left

Sta 7+38 at W-Line of NE-NE
Sec 15 and 12' S. of NW-Cor

Sta	RR	H I	Elev	Cut	Elev D
0	6.04	90.00	83.96	4.26	79.70
1	5.30		84.70	4.40	80.30
2	5.29		84.71	3.81	80.90
3	5.21		84.79	3.29	81.50
4	4.28		85.72	3.62	82.10
5	3.26		86.74	4.04	82.70
→ BS	6.22	92.96			
6	5.26		87.70	4.40	83.30
7	3.75		88.21	4.31	83.90
7+38	3.07		88.89	4.77	84.12

Note: - Add 0.80 to all
elevations to
Correct.

J.B.W.

Aug 1-19 Sheet 7 81
Branch, M. Right

corn at Sta 29. BJ R

Angle 22° Left

at Sta 3+50 Angle 20° Left

at Sta 8. Angle 6° Left

W is 334^{ft} S of E Road

Sta 17+12 at W. Line SW-NE-
Sec 15. and 512 S. of NW-Cor.

Sta	RR	H I	Elev	Cut	Elev D
0	7.43	83.26	75.83	5.03	70.80
1	7.06		76.20	4.68	71.52
2	6.24		77.02	4.78	72.24
3	5.52		77.74	4.78	72.96
3+50	5.17		78.09	4.77	73.32
4	4.87		78.39	4.71	73.68
5	4.38		78.88	4.48	74.40
6	3.85		79.41	4.29	75.12

Note: - Add 0.80 to all
elevations to
Correct.

over

J.B.W. J.B.W.

Aug 1-19

Sheet 7

B.M. R

Sta	R R	H I	Elev	Cut	Elev D
→ BS	7.60	87.01			
7	6.89		80.12	4.28	75.84
8	6.69		80.32	3.76	76.56
9	5.58		81.43	4.15	77.28
10	4.65		82.36	4.36	78.00
11	3.86		83.15	4.43	78.72
12	3.20		83.81	4.5	79.44
→ BS	7.60	91.41			
13	6.71		84.70	4.54	80.16
14	5.91		85.50	4.62	80.88
15	5.24		86.17	4.57	81.60
16	4.50		86.91	4.59	82.32
17	2.72		88.49	5.45	83.04
17+12	3.36		88.05	4.93	83.12

Note: - Add 0.80 to all elevations to correct.

Aug 1-19

Sheet 7

Branch 6. Right

com at Sta 90 - Main
 Angle 10° Right
 At Sta 7+44. Angle 36° Right
 Sta 10 E Fence
 Sta 10+75 W Fence
 Sta 10+37, & N & S Road
 W Line, NW - NW Sec 23 and
 564' South NW cor
 Sta 18+79 S Fence
 Sta 19+62 N Fence
 Sta 19+20 & E & W Road
 N Line Sec 22 and 669' E
 W. of NE cor
 At Sta 24. Angle 44° Right
 Sta 34+20. at N. Line SE - SE
 Sec 15 and 200' E of NW cor

Aug 2-19

Sheet 7

Branch. 6, Right

Sta	RR	HI	Elev	Cut	Elev D
0	6.07	66.70	60.63	5.03	55.60
1	5.14		61.56	5.64	55.92
2	5.05		61.65	5.41	56.24
3	4.95		61.75	5.19	56.56
4	4.25		62.45	5.57	56.88
5	4.32		62.38	5.18	57.20
6	4.29		62.41	4.89	57.52
BS	6.56	68.97			
7	6.22		62.75	5.49	57.84
7+44	5.75		63.22	5.28	57.94
8	5.70		63.27	5.11	58.16
9	5.16		63.81	5.33	58.48
EF					
10	4.40		64.57	5.77	48.80
ERoad					
10+37	2.89		66.08	7.17	48.91
W.F					
10+75	4.45		64.52	5.48	49.04
11	4.40		64.57	5.45	49.12
12	4.12		64.85	5.41	49.44
BS	5.97	70.82			
13	5.88		64.94	5.18	49.76
	J.B.W.	J.B.W.			

Aug 2-19

Sheet 7

Branch 6 Right

Sta	RR	H I	Elev	Cut	Elev D
14	5.46	70.82	65.36	5.28	50.08
15	5.19		65.63	5.33	50.30
16	4.56		66.26 65.26	4.56	50.62
17	4.26		66.56 65.56	4.62	50.94
→ BS	9.23	74.79			
18	8.72	75.79	67.07 66.07	4.81	51.26
SF 18+79	7.91		67.88 66.88	5.38	51.50
19	6.30		69.19 68.49	4.83	51.56
Road 19+20	6.40		68.39 68.39	6.77	51.62
NF 19+62	7.64		68.15 67.15	5.49	51.66
20	8.24		67.05 66.55	4.67	51.88
21	7.46		68.33 67.33	5.13	52.20
22	7.42		68.37 67.37	4.85	52.52
23	7.10		68.69 67.69	4.85	52.84
24	6.45		69.34 68.34	5.18	53.16
→ BS	7.66	76.00			
25	6.78	77.00	70.22 69.22	5.74	53.48
26	5.67		71.33 70.33	5.78	54.55
27	4.65		72.35 71.35	5.75	55.60

J.B.W. J.B.W.

Aug 2-19

B.L.R

Sta	RR	H I	Elev	Cut	Elev D
28	3.47	77.00	73.53 72.53	5.88	56.65
29	3.01		73.99 72.99	5.29	57.70
30	7.61	80.60	74.82 73.82	5.07	58.75
31	5.81		75.79 74.79	4.99	59.80
32	4.85		76.75 75.75	4.90	60.85
33	3.88		77.72 76.72	4.82	61.90
34	2.92		78.68 77.68	4.83	62.95
34+20	2.42		79.18 78.18	5.03	63.15

J.B.W. J.B.W.

Aug 2-19

Sheet, 7.

Branch, N. Right ✓

Com at Sta 27 B. 6, R

Angle 41° Left

Sta 3+69 W. Line SE-SE

Sec - 15-

Sta	R R	H I	Elev	Cut	Elev D
0	6.42	77.77	72.35 71.35	4.55	66.80
1	5.75	78.77	73.02 72.02	4.22	67.80
2	4.55		74.22 73.22	4.42	68.80
3	3.18		75.39 74.59	4.79	69.80
3+69	2.42		76.30 75.35	4.88	70.47

J. B. W.

Aug 2-19

Sheet, 8, 89.

Branch, O. Right

Com at Sta 24 B. 6, R

Angle 45° Leftat Sta 8 Angle 27° Rightat Sta 12+39. Angle 13° RightSta 17+65 at W Line W $\frac{1}{2}$
SE $\frac{1}{4}$ SEC 15 and 743^{ft} North
of S W Cor.at Sta 23 Angle 15° RightSta 43+51 at N Line NW-
SW- and 974^{ft} E. of NW-CorAt Sta 44 Angle 10° Left

Sta 56+37 E Road fence

Sta 57+6 W " "

Sta 56+71. E W & S Road
on W. Line Sec 15. and
456^{ft} South NW-Cor
SW- NW- 15.

Aug 2-19

Sheet 8

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Branch. O. Right-

Sta	RR	HI	Elev	Cut	Elev D
0	6.35	84.69	69.34 78.34	4.74	73.60
1	5.74	75.69	69.95 79.95	5.90	74.05
2	5.50		70.19 79.19	4.69	74.50
^{L.F.} 2+95	4.83		70.86 79.86	4.94	74.92
3	4.82		70.87 79.87	4.92	74.95
4	4.88		70.81 79.81	4.41	75.40
5	4.15		71.54 80.54	4.69	75.85
6	3.55		72.17 81.14	4.84	76.30
→ BS	6.62	87.76			
7	6.31	78.76	72.45 81.45	4.70	76.75
8	5.07		73.69 82.69	5.49	77.20
9	4.39		74.37 83.37	5.72	77.65
10	3.79		74.97 83.97	5.87	78.10
11	3.26		75.50 84.50	5.95	78.55
→ BS	6.07	90.57			
12	5.50	81.57	76.07 85.07	6.07	79.00
12+39	5.09		76.48 85.48	6.31	79.17
13	4.77		76.80 85.80	6.35	79.45
14	4.01		77.66 86.56	6.66	79.90

J.B.W. J.B.W.

B.O.R

B.O.R

✓

Sta	R R	H I	Elev	Cut	Elev D	Sta	R R	H I	Elev	Cut	Elev D
15	351	81.57	78.06 87.06	6.71	80.35	29	5.91	87.22	81.31 90.31	5.19	85.12
→ BS	5.25	92.31	77.69 86.69	5.89	80.80	30	5.81	81.41 90.41	5.01	85.40	
16	5.62	83.31	77.78 86.78	5.53	81.25	31	5.57	81.65 90.65	4.75	85.90	
17	5.53		78.35 87.35	5.81	81.54	32	4.96	82.26 91.26	4.86	86.40	
17+65	4.96		78.39 87.39	5.69	81.70	33	4.35	82.87 91.87	4.97	86.90	
18	4.92		78.83 87.83	5.78	82.15	BS	7.16	99.03			
19	4.38		79.18 88.18	5.58	82.60	34	6.40	83.63 90.03	5.23	87.40	
20	4.13		78.82 87.82	4.94	82.88	35	5.96	84.07 93.07	5.17	87.90	
→ BS	5.02	93.20	79.00 88.00	4.84	83.16	36	5.89	84.14 93.14	4.74	88.40	
Pond	5.38	84.20	79.35 88.35	4.91	83.44	37	5.64	84.39 93.39	4.49	88.90	
21	5.38	84.20	78.88 87.88	4.16	83.72	38	5.21	84.82 93.82	4.42	89.40	
22	5.20		79.88 88.88	4.91	83.44	39	4.66	85.37 94.37	4.47	89.90	
23	4.85		78.88 87.88	4.16	83.72	→ BS	6.93	101.30			
→ BS	5.14	93.49	78.94 87.94	3.94	84.06	40	6.10	86.30 92.30	4.80	90.40	
24	5.61	84.20	79.39 88.39	4.11	84.28	41	5.57	86.73 95.73	4.83	90.90	
25	5.55		80.12 89.12	4.56	84.56	42	5.41	86.89 95.89	4.49	91.40	
26	5.10		80.75 89.75	4.91	84.84	43	5.12	87.18 96.18	4.28	91.90	
27	4.37		80.75 89.75	4.91	84.84	43+51	4.68	87.62 96.62	4.47	92.15	
28	3.74		80.75 89.75	4.91	84.84	44	4.58	87.72 96.72	4.32	92.40	
→ BS	6.47	96.22				J.B.W.	J.B.W.				

Note: Add 1.04 to
elevations shown
in red, beginning
at Sta. 24
to correct.

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Sheet 8

B.O.R

Sta	R R	H I	Elev	Cut	Elev
45	3.79	92.30	88.51 97.51	4.61	92.90
+BS	7.05	104.56			
46	6.35	95.56	89.21 98.21	4.61	93.60
47	5.76		89.80 98.80	4.50	94.30
48	5.05		90.51 99.51	4.51	95.00
BS	9.26	108.77			
49	8.57	99.77	91.20 100.20	4.50	95.70
50	7.42		92.35 101.35	4.95	96.40
51	6.92		92.86 101.85	4.75	97.10
52	6.07		93.70 102.70	4.90	97.80
53	5.45		94.32 103.32	4.82	98.50
54	4.86		94.91 103.91	4.71	99.20
55	4.64		95.13 104.13	4.23	99.90
56	3.15		95.62 105.62	4.92	100.60
EF			97.19 106.19		
56+37	2.58		99.32 107.32	5.35	100.84
Q Road					
36+71	1.45		97.26 106.26	6.23	101.09
57	2.51		97.82 106.82	4.96	101.30
WF					
57+6	1.95			5.48	101.34

JBW JBW.

Aug 4-19

Sheet 8

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Branch, P. Right

com at sta 27- 13.0, R,

Angle 23° Left

at Sta 17-Angle 26° Left

Sta 21+81 E Road Fence

Sta 22+45 W " "

Sta 22+13 E N+S Road on West
Line Sec 15, and 449'South of NW-Cor NW-SW-
Sec 15

at Sta 22+70 Angle 45° Right

Sta 29+5 N Line NE-SE,
Sec 16 and 483^{ft} West of

NE Cor

Aug 5 - 19

Sheet 8

Branch, P. Right

Sta	R R	H I	Elev	Cut	Elev D
0	7.19	96.31	80.12 89.12	4.32	84.80
1	6.20	87.31	81.11 90.11	4.85	85.26
2	5.75	81.56	96.56	4.84	85.72
3	4.98	82.33	91.33	5.15	86.18
4	4.94	82.37	91.37	4.73	86.64
5	4.57	82.44	91.74	4.64	67.10
→ BS	6.70	98.44			
6	6.06	89.14	83.38 92.38	4.82	67.56
7	5.59		83.85 92.85	4.73	68.02
8	4.95		84.49 93.49	4.37	68.48
9	4.44		85.00 94.00	5.06	68.94
10	4.86		87.08 93.58	4.18	69.40
→ BS	6.57	100.15			
11	6.05	91.15	85.10 94.10	4.24	69.86
12	5.46		85.69 94.69	4.37	70.32
13	5.30		85.85 94.85	4.07	70.78
14	4.69		86.46 95.46	4.22	71.24
15	4.45		86.70 95.70	4.00	71.70
→ BS	7.86	94.56 103.56			
J.B.W. J.B.W.					

Aug 5 - 19

B. P. R

Sta	R R	H I	Elev	Cut	Elev D
16	6.35	94.56	88.21 97.21	4.81	72.40
17	5.61		88.95 97.95	4.85	73.10
18	4.99		89.57 98.57	4.77	73.80
19	4.26		90.30 99.30	4.80	74.50
20	3.64		90.92 99.92	4.72	75.20
BS	7.91	107.83			
21	7.29	98.83	91.54 100.54	4.64	75.90
21+81	7.12		91.71 100.71	4.25	76.46
22	6.32		92.51 101.51	4.91	76.60
22+13	5.30		93.58 102.58	5.84	76.69
22+45	5.93		92.90 101.90	4.99	76.91
22+70	6.10		92.73 101.73	4.64	77.09
BS	6.43	108.16			
23	6.30	99.16	92.86 101.86	4.56	77.30
24	5.76		93.40 102.40	4.40	78.00
25	5.19		93.97 102.97	4.27	78.70
26	4.45		94.71 103.71	4.31	79.40
27	3.42		95.74 104.74	4.64	80.10
→ BS	5.62	101.36 110.36			
J.B.W. J.B.W.					

Note: Add 1.10 to all elevations shown in red. to correct.

AVG CUT 4.67

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Aug 5 - 19

Sheet 8.

B.P.R

Sta	R.R.	H.I.	Elev	Cut	Elev D
28	5.15	101.36	105.21 96.31	4.41	80.80
29	4.42		105.94 96.94	4.44	81.50
29+5	4.25		106.11 97.11	4.58	81.53

Note: - Add 1.10 to all
elevations shown in
red to correct.

Aug 5 - 19

Sheet 9.

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Branch Q Right ✓

Com at Sta 18 - B6R

Sta 1-66 F.S. of Road thence West to Sta 11
at Sta 11 - Angle = 38° Left

at Sta 17 - " 38° Right

Sta 22+10 at W Line NW-NE
Sec 22 and 437^{ft} S of NW Cor

Sta	R.R.	H.I.	Elev	Cut	Elev D
0	8.50	84.57	67.07 76.07	4.37	71.70
1	8.10	75.57	67.47 76.47	4.91	72.56
2	6.41		67.16 78.46	5.04	73.42
3	4.70		70.87 79.87	5.59	74.28
4	3.58		71.98 80.98	5.85	75.14
5	3.12		72.45 81.45	5.45	76.00
6	2.98		72.69 81.59	4.95	76.64
7	6.70	88.27	73.17 82.17	4.87	77.28
8	5.64		73.63 82.63	4.71	77.92
9	5.24		74.05 83.03	4.47	78.56

J.B.W. J.B.W.

J.B.W. J.B.W.

Aug-5-19

Sheet 9

Sta	RR	M. I.	Elev	Cut	Elev D.
10	4.77	79.29	74.53 83.50	4.30	79.20
11	4.12		75.17 84.15	4.31	79.84
12	3.42		75.87 84.85	4.37	80.48
→ BS	7.16	92.01			
13	6.20	83.03	76.85 85.81	4.69	81.12
14	5.51		77.52 86.50	4.74	81.76
15	4.97		78.06 87.04	4.64	82.40
16	4.40		78.63 87.61	4.31	83.30
17	3.85		79.18 88.16	5.39	84.20
→ BS	6.96	95.12			
18	5.66	86.17	80.48 89.46	4.36	85.10
19	3.41		82.73 91.71	5.71	86.00
→ BS	8.20	99.91			
20	6.54	90.93	84.39 93.57	6.47	86.90
21	5.34		85.59 94.57	6.77	87.80
22	6.52		87.41 93.39	4.69	88.70
R2+10	6.67		87.26 93.24	4.45	88.79

JBW JBW.

Aug 5-19

Branch, 7, Right sheet 9

comm at Sta 114. Main

Angle 10° Right

Sta 4+34 N-S-Line SE-NE 22

at Sta 4+34 Angle 24° Right

Sta 18+77-157° N-SW cor NE-22

at Sta 27 Angle 37° Right

at Sta 34 Angle 29° Left

at Sta 42+50 Angle 30° Right

Sta 47+78 E, Road Fence

Sta 48+46 W Road Fence

Sta 48+12 E N+S Road, W, Line

Sec 22, and 265° S-NW cor SW-NW

at Sta 49. Angle 50° Left

at 52+50 Angle 33° Left

at Sta 60- Angle 26° Left

Sta 66+22 at S. Line SE-NE-21

Aug 6 - 19

Branch 7 Right sheet 9

Sta R R H I Elev

0 5.51 71.37 65.86 5.06 60.80

1 5.20 66.17 5.12 61.05

1+60 Ditch 8.00 63.37

2 5.27 66.10 4.80 61.30

3 4.88 66.49 4.94 61.55

4 4.85 66.52 4.72 61.80

4 + 34 4.65 66.72 4.64 61.98

5 4.58 66.79 4.74 62.05

→ BS 6.41 73.20

6 6.50 66.70 4.40 62.30

7 5.61 67.59 5.04 62.55

8 5.16 68.04 5.24 62.80

9 in ditch 5.10 68.10 5.05 63.05

10 6.63 66.57 3.27 63.30

BS 8.83 75.40

11 6.30 69.10 5.55 63.55

12 5.78 69.62 5.82 63.80

13 5.18 70.22 6.17 64.05

14 4.56 70.84 6.54 64.30

J.B.W. J.B.W.

Aug 6 - 19

B.T.R

Sta R R H I Elev Out Elev Ditch

15 4.40 75.40 71.00 6.45 64.55

BS 5.62 76.62

16 5.98 70.64 6.84 64.80

17 5.54 71.08 6.03 65.05

18 5.09 71.53 6.23 65.30

8 + 77 4.80 71.82 6.36 65.46

19 5.11 71.51 6.26 65.55

20 5.33 71.29 5.49 65.80

21 4.49 71.13 5.08 66.05

BS 6.51 77.64

22 5.90 78.64 5.44 66.30

23 5.62 73.02 5.47 66.55

24 5.31 72.33 5.53 66.80

25 5.56 72.08 5.03 67.05

26 5.16 72.48 5.18 67.30

27 5.06 72.58 5.03 67.55

BS 5.65 78.23

28 5.24 72.99 5.19 67.80

29 4.55 73.68 5.63 68.05

J.B.W. J.B.W.

Note: - Subtract 0.60

from all elevations

shown in red

beginning at Sta 22

to correct.

5.38 ft

X

5.45

Sta	RR	H I	Elev	Cut	Elev D
30	4.83	79.23	74.40 73.40	5.10	68.30
31	4.60		74.65 73.63	5.08	68.55
32	4.06		75.17 74.17	5.37	68.80
33	3.46		75.77 74.77	5.72	69.05
34	3.31		75.92 74.92	5.62	69.30
→ B.S.	5.94	80.86			
35	5.54	81.86	76.32 75.32	5.77	69.55
36	5.38		76.48 75.48	5.68	69.80
37	5.48		76.38 75.38	5.33	70.05
38	5.30		76.56 75.56	5.26	70.30
39	4.80		77.06 76.06	5.51	70.55
40	4.73		77.13 76.13	5.33	70.80
→ BS	6.17	82.29			
41	5.68	83.30	77.12 76.61	5.31	71.30
42	5.33		77.97 76.96	5.36	71.60
42+50	5.14		78.16 77.15	5.40	71.75
43	4.87		78.43 77.42	5.52	71.90
44	4.69		78.61 77.60	5.40	72.20
45	4.29		79.01 78.00	5.50	72.50

Note: Subtract
0.60 from all
elevations shown
in red to correct

Ave

J.B.W. J.B.W.

Sta	RR	H I	Elev	Cut	Elev D
46	4.26	83.30	79.04 78.03	5.23	72.80
BS	8.78	86.81			
47	8.18	87.82	79.64 78.63	5.53	73.10
47+78	8.80		79.02 78.01	4.61	73.40
48	7.67		80.15 79.14	5.44	73.70
2 Road 48+12	6.02		81.80 80.79	7.05	73.74
48+46	7.74		80.08 79.07	5.23	73.84
49	7.24		80.58 79.57	5.57	74.00
BS	5.00	84.57			
50	5.66	85.58	79.92 78.91	4.61	74.30
51	5.32		80.26 79.25	4.65	74.60
52	5.26		80.32 79.31	4.41	74.90
52+50	4.87		80.71 79.70	4.65	75.05
53	4.54		81.04 80.03	4.83	75.20
54	4.17		81.71 80.40	4.90	75.50
BS	6.92	87.32			
55	6.58	88.33	81.70 80.74	4.94	75.80
56	5.62		82.71 81.70	5.10	76.60
57	5.10		83.23 82.22	4.82	67.40

Note: Subtract 0.60
from all elevations
shown in red to
correct

Ave Cut 4.58

Ave Cut 4.74

J.B.W. J.B.W.

Aug 7-19

Branch, T. Right

Sheet 9

Sta	R R	H I	Elev	Cut	Elev D
58	4.41	88.33	82.91 ^{83.92}	4.71	68.20
59	3.56		83.76 ^{84.77}	4.76	69.00
60	2.94		84.38 ^{85.39}	4.58	69.80
→ BS	8.36	92.74			
61	7.84	93.75	84.90 ^{85.91}	4.30	70.60
62	7.00		85.74 ^{86.75}	4.34	71.40
63	5.76		86.98 ^{87.99}	4.78	72.20
64	4.67		88.07 ^{89.08}	5.07	73.00
65	4.66		88.08 ^{89.09}	5.28	73.80
66	4.06		89.69 ^{90.70}	4.08	74.60
66+22	3.74		89.00 ^{90.01}	4.63	74.77

Note: Subtract 0.60
from all elevations
shown in red to
correct.

J.B.W. J.B.W.

Aug 7-19

Branch, R. Right

Sheet 9

Conn at Sta 9 B.T.R

Angle 41° Left

Sta 2+41 at S. Line SW-NE, sec 22.

Sta	R R	H I	Elev	Cut	Elev D
0	5.26	73.36	68.10	4.10	64.00
1	4.47		68.89	4.14	64.75
2	3.80		69.56	4.06	65.50
2+41	3.23		70.13	4.33	65.80

Ave Cut 4.15

J.B.W. J.B.W.

Aug 7-19
Branch S. Right - Sheet 10

Corr at Sta 27. B. T. R.

Angle 20° Left

Sta 2+15. S Line SE-NW, Sec 22.

Sta 7+18 E Line NW-SW-Sec 22 and

363. ^{ft} S. NE Cor

Sta	RR	HI	Elev	Cut	Elev. D
0	7.50	80.08	73.58 72.58	4.38	68.20
1	6.80	81.08	74.28 73.28	4.28	69.00
2	5.79		75.29 74.29	4.49	69.80
2+15	5.81		75.27 74.27	4.33	69.94
3	5.07		76.01 75.01	4.41	70.60
4	4.40		76.68 75.68	4.28	71.40
5	3.44		77.64 76.64	4.44	72.20
6	2.68		78.40 77.40	4.40	73.00
7	1.61		79.47 78.47	3.67	74.80
7+18	1.13		79.95 78.95	4.01	74.94

Note: Subtract 0.60' from
all elevations shown in red
to correct.

J/BW J/BW

Aug 7-19
Branch T Right - Sheet 10

Corr at Sta 49. B T R

Angle 45° Right

Sta 2+14 S Line NE-NF-21, and

Sta 8+79 at S Line N $\frac{1}{2}$ NE-NE, 21

and 145° ESE Cor

Angle at 8+79 46° Right

Sta 10+62 W Road Fence

E Road 11+2 - (N+S Road
487 S-N E. Cor)

Sta 11+42 E Road Fence

Sta 16+99 S Road Fence

Sta 17+73 N Road Fence

Sta 17+37 E E+W Road

N. Line NW-NW sec 22

and 317 East of NW-Cor

Aug 7-19

Sheet 10

Branch T. Right

Sta RR H I Elev Cut Elev D

0 6.73 86.29 ~~80.58~~ 79.57 5.47 74.101 6.98 ~~87.31~~ ~~80.83~~ 79.31 4.91 74.402 5.63 ~~81.68~~ ~~80.66~~ 59.6 74.702+14 5.21 ~~82.10~~ ~~81.08~~ 6.33 74.753 4.94 ~~82.37~~ ~~81.35~~ 6.35 75.004 5.69 ~~81.62~~ ~~80.60~~ 5.30 75.305 6.10 ~~81.21~~ ~~80.19~~ 4.59 75.606 5.85 ~~81.46~~ ~~80.44~~ 4.54 75.90

→ BB 6.40 86.84

7 6.26 87.86 ~~81.60~~ ~~80.58~~ 4.38 76.208 6.10 ~~81.76~~ ~~80.74~~ 4.24 76.508+79 5.38 ~~82.18~~ ~~81.46~~ 4.73 76.739 5.60 ~~82.36~~ ~~81.24~~ 4.44 76.8010 4.70 ~~83.16~~ ~~82.14~~ 5.04 77.10WF 10+62 3.90 ~~83.96~~ ~~82.94~~ 5.29 77.6511 2.85 ~~84.01~~ ~~83.99~~ 5.99 78.00E Road 11+2 2.79 ~~86.07~~ ~~84.05~~ 6.03 78.02EF 11+42 3.85 ~~84.01~~ ~~82.99~~ 4.62 78.3712 3.08 ~~84.78~~ ~~83.76~~ 4.66 78.90

J.B.W. J.B.W.

Aug 7-19

Branch T. Right ✓

Sta RR H I Elev Cut Elev D

BS 7.95 91.71

13 7.02 92.73 ~~85.81~~ ~~84.69~~ 4.89 79.8014 6.12 ~~86.61~~ ~~85.59~~ 4.89 80.7015 4.98 ~~87.75~~ ~~86.73~~ 5.13 81.6016 4.11 ~~88.92~~ ~~87.60~~ 4.10 82.50SF 16+99 3.70 ~~89.03~~ ~~88.01~~ 4.61 83.4017 3.40 ~~89.33~~ ~~88.31~~ 4.91 83.40E Road 17+37 2.26 ~~90.47~~ ~~89.45~~ 5.62 83.73N F 17+73 2.85 ~~89.88~~ ~~88.86~~ 4.81 84.05Note: - Subtract 0.60' from
all elevations shown in
red to correct.

Ave Cut 5.00

J.B.W. J.B.W.

Aug 7-19
Branch, U. Right [✓] Sheet 10

corn at Sta 51, B, R

Angle 70° Left

at Sta. 8+50 Angle 34° Right

Sta 11+56 S. Line S. E-NE 21 and

633⁵ West of SE cor

Sta	R R	1+1	Elev	Cut	Elev
0	8.00	87.25	79.25 81.37	4.55	74.70

1	6.89	88.26	80.36 81.96	4.89	75.47
---	------	-------	------------------------	------	-------

2	6.30		80.75 82.35	4.71	76.24
---	------	--	------------------------	------	-------

3	5.68		81.57 83.27	4.56	77.01
---	------	--	------------------------	------	-------

4	4.99		82.26 84.36	4.48	77.78
---	------	--	------------------------	------	-------

5	3.90		83.55 85.06	4.80	78.55
---	------	--	------------------------	------	-------

6	3.20		84.05 85.82	4.73	79.32
---	------	--	------------------------	------	-------

7	2.44		84.81 87.56	4.72	80.09
---	------	--	------------------------	------	-------

→ BS	7.25	92.06			
------	------	-------	--	--	--

8	5.51	93.07	84.55 87.58	5.69	80.86
---	------	-------	------------------------	------	-------

8+50	5.49		86.57 87.76	5.36	81.21
------	------	--	------------------------	------	-------

9	5.31		86.75 88.36	5.12	81.63
---	------	--	------------------------	------	-------

10	4.71		87.36 88.70	4.95	82.40
----	------	--	------------------------	------	-------

11	4.32		87.74 88.32	4.57	83.17
----	------	--	------------------------	------	-------

11+56	3.75		88.31	4.78	83.53
-------	------	--	------------------	------	-------

Aug 8-19

Branch, B. Right [✓] Sheet 10

corn at Sta 146+48. Main

at N Road Fence (Hawkeye

Sta 1. 16^F N of E & W of Main

Thence W to Sta 20+50

at Sta ^{90.50} Angle 31° Right

Sta 20+79 N Road Fence (Hawkeye)

Sta 21+75 E. Line SW-SW 22 and

80^F N of SE cor. -

Sta 36+82 E Road Fence

Sta 37+45 W " "

Sta 37+13 E N & S Road W Line

Sec 22, and 134^F South of SE cor

N¹/₂-N¹/₂-SE-SE Sec 21-

at Sta 37+75 Angle 55° Right

Sta 38+79 S Line N¹/₂-N¹/₂

SE-SE Sec 21

Aug 8-19

Branch 8, Right

Sheet 10

Aug 8-19
Branch 8, Right✓ sheet 10¹¹⁵

Sta	R R	H I	Elev	Cut	Elev D	Sta	R R	H I	Elev	Cut	Elev D
0	8.20	82.76 84.91	74.56 76.71	6.71	70.00	17	6.15	85.87	79.72 81.87	4.73	77.14
1	9.85		72.91 75.06	4.64	70.42	18	5.98		79.89 82.04	4.48	77.56
2	8.53		74.23 76.38	5.54	70.84	19	5.57		80.30 82.45	4.47	77.98
3	8.36		74.40 76.55	5.29	71.26	BS	7.02	87.32 89.47	80.45 82.60	4.20	78.40
4	6.94		73.82 77.97	6.29	71.68	20	6.87		80.57 82.72	4.10	78.62
5	6.25		76.31 78.66	6.56	72.10	10+50	6.75		83.44 85.59	5.85	78.74
6	5.45		77.31 79.46	6.74	72.52	20+79	4.88		82.54 84.69	5.84	78.85
→ BS	7.36	84.67 86.82	77.64 79.79			21	4.78		82.32 84.47	5.21	79.16
7	7.03		77.88 80.03	6.85	72.94	Fence 21+75	5.10		82.22 84.37	5.07	79.30
8	6.79		78.16 80.31	6.67	73.36	22	5.10		82.38 84.53	4.98	79.75
9	6.51		78.73 80.88	6.53	73.78	23	4.74		83.12 85.27	5.07	80.20
10	5.94		79.32 81.47	6.68	74.20	24	4.20		83.30 85.45	5.00	81.10
11	5.35		78.74 80.89	6.85	74.62	→ BS	6.45	89.57 91.72	83.95 86.10	4.81	81.55
12	5.93		79.10 81.25	5.85	75.04	25	6.27		84.21 86.36	4.45	82.00
→ BS	7.13	85.87 88.02	79.00 81.15			26	5.62		84.30 86.45	4.65	82.45
13	6.77		79.36 81.51	5.29	75.46	27	5.36		84.95 87.10	4.36	82.90
14	6.87		79.86 82.01	5.27	75.88	28	5.27		85.11 87.26		
15	6.51			5.21	76.30	29	4.62				
16	6.01			5.29	76.72	30	4.46				
J.B.W.	J.B.W.					J.B.W.	J.B.W.				

Aug 8-19

Branch 8 Right V

Sta R. R. H I Elev Cut Elev

→ BS	654	91.65 93.80	85.23		
31	642		87.38 85.99	3.98	834.0
32	5.66		88.14 86.13	4.24	83.90
33	5.52		88.28 86.89	3.88	84.40
34	4.76		89.04 87.50	4.14	84.90
35	4.15		89.65 88.07	4.25	85.40
36	358		90.22 95.19	4.32	85.90
→ B.S.	7.12	97.34	88.84		
EF 36+82	6.35		90.99 89.74	4.68	86.31
37	5.45		91.89 89.97	5.49	86.40
2 Road 37+13	5.22		92.12 89.63	5.66	86.46
W F 37+45	5.56		91.78 89.53	5.16	86.62
37+75	5.66		91.68 89.68	4.96	86.72
38	5.51		91.83 90.34	4.93	86.90
38+79	4.85		92.49	5.30	87.19

J.B.W. J.B.W.

Aug. 8-19

Branch 9. Right Sheet 10

Corn at Sta 150. Main.
 Angle 51° Right
 at Sta 3. Angle 27° Right
 Sta 7+14 - E. Line, N.E - NW - 27
 and 303^F South of NE Cor
 at Sta 19+34, Angle 10° Left
 and 97^F S. of Road (Hawkeye)
 Sta 33+31. E Road Fence
 Sta 33+97 W " "
 Sta 33+63 E N+S Road, West
 Line, Sec 27, and 109^F South
 of NW cor of Sec-27
 at Sta 34, Angle 46° Right
 at Sta 34+35, Angle 42° Right
 Sta 34+95. S Road Fence
 Sta 35+52 N " "
 Sta 35+23. E+W Road N Line
 Sec 28, and 63^F W of NE-Cor.

Aug 9 - 19

Sheet 10

Branch 9 Right

Sta	R R	H I	Elev	Out Elev	Sta
0	6.28	81.13 83.28	74.86 77.00	5.00 72.00	16
1	5.92		75.21 77.36	5.00 72.36	17
2	5.62		75.51 77.66	4.94 72.72	18
3	5.04		76.09 78.24	5.16 73.08	19
4	4.16		76.97 79.12	5.68 73.44	19+34
5	2.85		78.28 80.43	6.63 73.80	B.S.
6	3.86		77.27 79.42	5.26 74.16	20
B.S.	5.77	83.04 85.19			21
7	5.63		77.41 79.56	5.04 74.52	22
7+14	5.28		77.76 79.91	5.34 74.57	23
8	5.49		77.55 79.70	4.82 74.88	24
9	4.90		78.14 80.29	5.05 75.24	25
10	4.98		78.06 80.21	4.41 75.60	B.S.
11	4.51		78.53 80.68	4.72 75.96	26
12	4.14		78.90 81.05	4.73 76.32	27
13	3.71		79.35 81.48	4.80 76.68	28
B.S.	6.02	85.35 87.50			29
14	5.58		79.77 81.92	4.88 77.04	30
15	5.28		80.07 82.22	4.82 77.40	B.S.

J.B.W. J.W.

Aug 9 - 19

Branch 9 Right

R.R.	H I	Elev	Out Elev	Sta
5.21	85.35	80.14 82.29	4.53 77.76	
4.98		80.57 82.52	4.30 78.12	
4.57		80.78 82.93	4.45 78.48	
4.27		81.07 83.23	4.39 78.84	
4.17		81.18 83.33	4.31 79.02	
6.26		87.44 89.59		
6.01		81.43 83.58	4.38 79.20	
5.35		82.09 84.24	4.68 79.56	
4.96		82.63 84.43	4.51 79.92	
4.37		83.17 85.22	4.94 80.28	
4.06		83.38 85.53	4.89 80.64	
4.96		83.48 84.68	3.63 81.00	
6.12		88.60 90.75		
5.90		82.70 84.85	3.49 81.36	
5.48		83.12 85.27	3.55 81.72	
4.54		84.06 86.21	4.13 82.08	
3.28		85.32 87.47	5.03 82.44	
3.61		84.99 87.14	4.34 82.80	

Note: - Add 1.30 to all
Elevations shown
in red beginning
at Sta 26 to correct.

J.B.W. J.W.

Aug 9-19

Sheet 10

Branch 9 Right- v

Sta R R H. I. Elev Cut Elev D

31 5.92 91.29 ~~85.37~~ 7.52 4.36 83.1632 5.56 ~~85.73~~ 87.88 4.36 83.5233 5.27 ~~86.02~~ 88.17 4.31 83.86EF ~~85.23~~ 87.38 3.41 83.9733+31 6.06 ~~88.02~~ 90.17 6.09 84.08Q Road ~~86.94~~ 89.09 4.89 84.2033+63 3.27 ~~86.48~~ 88.63 4.41 84.22WF ~~93.74~~ 95.5934 4.81 ~~86.93~~ 89.08 4.74 84.34B.S 6.96 ~~87.13~~ 89.28 4.72 84.5634+35 6.51 ~~86.34~~ 88.49 3.91 84.58SF ~~88.29~~ 90.44 5.78 84.6634+95 6.31 ~~87.72~~ 89.87 4.82 84.85

35 7.10

Q Road 35+23 5.15

35+52 5.72

Cut at last sta not less than 4.80

J.B.W. J.B.W.

Aug 9-19

Branch V Right

Sheet 10

Com at Sta 16, B.B.R

Angle 45° Right

Sta at N Road Fence (Grant Hawkeye)

Sta R R H I Elev Cut Elev D

0 6.37 ~~86.23~~ 79.86 4.81 77.200+21 5.65 ~~80.58~~ 82.73 4.93 77.80

Branch W. Right

See Page 152, (Book 1)

J.B.W. J.B.W.

Aug 9-19

Branch 1 Left Sheet 11

Corn at sta 1 Main

Angle 77° LeftSta 4+1 E Line S.E.-N.W.-Sec 13
and 313^{ft} S of N.E. Cor

Sta	R.R.	H.I.	Elev	Cut	Elev	D.
0	10.28	53.29	43.01	1.21	41.80	
1	9.07		44.22	2.02	42.20	
2	5.24		48.05	4.55	43.50	
3	2.72		50.57	4.87	45.70	
4	0.85		52.44	4.54	47.90	
4+1	0.45		52.84	4.92	47.92	

Cut grade slight on
first 100^{ft}

J.B.W. J.B.W.

Aug 9-19

Branch 2. Left Sheet 11

Corn at Sta 9 Main

Angle 55° Leftat Sta 3+40 Angle 39° Left
Sta 7+18 at S. Line S.E.-N.W.-13
and 545^{ft} West of S.E. Corat Sta 7+25 Angle 14° Leftat Sta 17+50 Angle 130° Rightat Sta 26 Angle 27° LeftSta 29+26 S. Line, N.W.-S.E.-13
and 68^{ft} W of S.E. Corat Sta 32 Angle $3\frac{1}{2}^{\circ}$ Leftat Sta 39 Angle 23° Right

Sta 44+31 W Road fence

Sta 45+11 E. Road Fence

Sta 44+71 E N & S Road (Co Line)

E. Line S.E.-S.E. Sec 13

and 606^{ft} S of N.E. Cor

J.B.W.

Aug. 9, -19
Branch 2 Left v Sheet. 11.

Sta RR H I Elev Out Elev D Sta

0	5.80	52.67	46.87	4.07	42.80	→ BS
1	5.56		47.11	3.65	43.46	14
2	5.65		47.02	2.90	44.12	15
3	3.37		49.30	4.52	44.78	16
3+40	386		48.81	3.77	45.04	17
4	2.84		49.83	4.39	45.44	17+50
→ BS	6.55	56.38				→ BS
5	5.66		50.72	4.62	56.10	18
6	4.97		51.41	4.65	56.76	19
7	4.10		52.28	4.76	57.42	20
7+18	3.90		52.48	4.95	57.53	21
7+25	3.96		52.42	4.84	57.58	22
→ BS	7.95	60.37				23
8	8.83		51.54	3.36	58.18	→ BS
9	6.51		53.86	5.02	58.84	24
10	5.42		54.95	5.45	59.50	25
11	5.16		55.21	5.05	60.16	26
12	4.28		56.09	5.27	60.82	→ BS
13	2.71		57.66	6.18	61.49	27

J.B.W. J.B.W.

Aug 12 - 19

Sheet. 11 125

Branch 2 Left v
RR H I Elev Out Elev.

6.07	63.73				
5.60		58.13	5.99	62.14	
5.09		58.64	5.84	62.80	
4.53		59.20	5.74	63.46	
3.74		59.99	5.87	64.12	
3.38		60.35	5.90	64.45	
5.96	66.31				
5.40		60.91	6.03	64.88	
5.09		61.22	5.68	65.54	
4.99		61.32	5.12	66.20	
4.99		61.32	4.72	66.60	
4.92		61.39	4.39	67.00	
4.55		61.76	4.36	67.40	
5.96	67.72				
5.07		62.65	4.85	67.80	
5.15		62.57	4.37	68.20	
5.07		62.65	4.05	68.60	
6.88	69.53				
6.33		63.20	4.20	69.00	

J.B.W. J.B.W.

Aug 12-19
Branch 2 Left ✓ sheet 11

Sta R R H I Elev Out Elev D

28 5.81 69.53 63.72 4.32 69.40

29 5.23 64.30 4.50 69.80

29+26 4.98 64.55 4.64 69.91

30 4.76 64.77 4.57 70.20

31 3.85 65.68 4.72 70.96

→ B.S. 7.53 73.21

32 6.55 66.66 4.94 71.72

33 5.48 67.73 5.25 72.48

34 4.87 68.34 5.10 73.24

35 4.33 68.88 4.88 74.00

36 4.06 69.15 4.39 74.76

→ B.S. 6.95 76.10

37 6.21 69.89 4.37 75.52

38 5.67 70.43 4.15 76.28

39 4.75 71.35 4.31 77.04

40 3.73 72.37 4.57 77.80

41 3.09 73.01 4.45 78.56

→ B.S. 6.60 79.61

42 6.28 73.33 4.01 79.32

J.B.W. J.B.W.

Branch 2 Left ✓

Sta R R H I Elev Out Elev D

43 5.57 79.61 74.04 3.96 80.08

44 4.65 74.96 4.12 80.84

W F 74+31 4.27 75.34 4.27 81.07

E Road 44+71 2.82 76.79 5.41 81.38

45 3.98 75.63 4.03 81.60

E F 45+11 3.63 75.98 4.30 81.68

J.B.W. J.B.W.

Aug 12-19

Branch A Left

Sheet 11.

Corr at Sta 29, B. 2, L

Angle 32° Left

Sta 0+98 at W. Line

NE-SE, Sec 13.

And 30^{ft} N of SW cor

Sta RR HI Elev Out Elev D

0 5.64 69.94 64.30 4.30 60.00

0+98 4.23 65.71 4.73 60.98

J.B.W. J.B.W.

Aug 12-19

Branch B, Left Sheet 11.

Corr at Sta 26 B. 2, Left

Angle 25° Rightat Sta 1+15 Angle 35° Rightat Sta 5, Angle 49° Rightat Sta 15+50 Angle 50° Left

Sta 21+2 N Fence

Sta 21+55 S Fence

Sta 21+23 Q, E & W. Road

on S Line Sec 13, and 273^{ft}

W S E. cor. SE-SW-13

Sta RR HI Elev Out Elev D

0 8.02 70.67 62.65 4.15 58.50

1 7.15 63.52 4.52 59.00

1+15 6.61 64.06 4.99 59.07

2 5.80 64.87 5.37 59.50

3 5.72 64.95 4.95 60.00

4 5.98 64.69 4.19 60.50

5 5.36 65.31 4.31 61.00

J.B.W.

Aug 13-19

Branch, B, Left ✓

Sta RR H I Elev Cut Elev

→ BS	7.45	72.76			
6	6.47		66.29	4.35	61.94
7	5.52		67.24	4.36	62.88
8	4.33		68.43	4.61	63.82
9	3.45		69.31	4.57	64.76

→ BS 8.10 77.41

10 6.92 70.49 4.79 65.70

11 5.82 71.59 4.95 66.64

12 4.41 73.00 5.42 67.58

13 3.61 73.80 5.28 68.52

14 3.40 74.01 4.55 69.46

15 3.11 74.30 3.90 70.40

→ BS 7.77 82.07

15+50 7.60 74.47 3.60 70.87

16 6.81 75.26 3.82 71.34

17 5.74 76.33 4.05 72.28

18 4.48 77.59 4.37 73.22

19 3.73 78.34 4.18 74.16

20 2.17 79.90 4.80 75.10

J.B.W. J.B.W.

Aug 13-19

Branch, B, Left ✓

Sta RR H I Elev Cut Elev D

→ BS 7.72 87.62

21 6.50 81.12 5.08 96.04

N F 21+2 6.23 81.39 5.33 96.06

E Road 21+23 4.79 82.83 6.57 96.26

S F 21+55 4.82 82.80 6.26 96.54

Aug 13-19

Branch, C, Left - sheet 11.

Cum at Sta 5 B, B.L.

Angle 28° Left

Sta 9+64 N Fence

Sta 10+15 S Fence

Sta 9+89 E & W. Road S. Line

Sec 13. and 278° W of SW cor SW-SE

at Sta 10+50 Angle 80° Left

Sta 13+20 W Line NE-NE

sec 24 and 58° S of NW cor

J.B.W. J.B.W.

Aug 13-19
Branch C Left Sheet 11

Sta	R	R	H	I	Elev	cut	Elev
0	9.45	74.76	65.31	4.31	61.00		
1	8.52		66.24	4.24	62.00		
2	7.24		67.52	4.52	63.00		
3	6.09		68.67	4.67	64.00		
4	4.19		70.57	5.57	65.00		
5	2.52		72.24	6.24	66.00		
→ BS	6.86	79.10					
6	6.01		73.09	6.09	67.00		
7	6.33		72.77	4.77	68.00		
8	5.51		73.51	4.51	69.00		
9	4.10		75.00	5.00	70.00		
N F 9+64	3.46		75.64	5.00	70.64		
→ BS	7.30	82.94					
E Road 9+89	5.81		77.13	6.24	70.89		
10	5.73		77.21	6.21	71.00		
S F 10+15	6.45		76.49	5.28	71.21		
10+50	6.21		76.73	5.03	71.70		
11	6.04		76.94	4.54	72.40		
12	5.64		77.30	3.50	73.80		
13	3.28	JBW	79.66	4.46	75.20		
13+20	2.07	JBW	80.87	5.39	75.48		

Aug 13-19
Branch 3, Left Sheet 12

Com at Sta 59, Main
Angle 8° Left
at Sta 7+50. Angle 59° Right
Sta 12+48 N. Fence
Sta 12+83 S Fence
Sta 12+63, E E & W. Road thru
N $\frac{1}{2}$ Sec 23, and 191° E of NE
cor SE-NE Sec 23
at Sta 13. Angle 10° Left
at Sta 23. Angle 17° Left
Sta 26+43, at S. Line, SE-NE-23
and 338° E of SW cor
at Sta 35, Angle 56° Right
at Sta 40+50 Angle 45° Left
Sta 41+7, S. Line, NE-SE-23 and
378° E. of S.W. cor
at Sta 48, Angle 13° Right
Sta 54+35 N-F, Sta 54+83 S F
Sta 54+56 E Road, S. Line Sec 23
809° E West of SE cor

16.00

12.83

3.17

Aug 14-19

Branch 3 Left ✓ Shoot, 12

at Sta 54+95 Angle 26° Right
 at Sta 59+23 Angle 34° Right
 Sta 63+10 W. Line. NE-NE-26
 and 625^{ft} S of NW cor
 at Sta 68+50 Angle 41.0° Left
 Sta 72+78, at S Line NW-NE
 sec 26, and 720^{ft} E of SW cor
 at Sta 74, Angle 20° Right
 at Sta 76+60 Angle 38° Left
 Sta 86+67 at S. Line SW-NE
 sec 26, and 515^{ft} E of SW cor

Sta	RR	H I	Elev	Out	Elev D
0	6.44	61.85	55.41	5.61	49.80
1	5.97		55.88	5.63	54.25
2	6.15		55.70	5.00	50.70
3	5.95		55.90	4.75	51.15
4	4.22		57.63	6.03	51.60
5	3.21		58.64	6.59	52.05
6	3.20		58.65	6.15	52.50
BS	5.97	64.62			
7	6.02		58.60	5.65	52.95
7+50	6.18		58.44	5.27	53.17
8	5.73		58.89	5.49	53.40
9	5.08		59.54	5.69	53.85
10	4.69		59.93	5.63	54.30
in ditch					
11	5.48		59.14	4.39	54.75
12	3.90		60.72	5.52	55.20
BS	6.36	67.08			
IV F					
12+48	5.87		61.21	5.80	55.41
@ Road					
12+63	5.47		61.61	6.13	55.48
S F					
12+83	5.90		61.18	5.61	55.57

J.B.W. J.B.W.

Aug 14-19

Shoot, 12, 135

Branch 3 Left ✓

Ave Cut - 5.28 ft

Aug 14-19

Sheet 12

Branch 3 Left ✓

Sta R R H I Elev Cut Elev D

13 6.10 67.08 60.98 5.33 55.65

14 5.63 61.45 5.35 56.10

15 5.49 61.59 5.04 56.55

16 4.69 62.39 5.39 57.00

17 4.10 62.98 5.53 57.45

18 3.25 63.83 5.93 57.90

→ BS 6.37 70.20

18+85
Ditch 8.14 62.06

19 6.45 63.75 5.40 58.35

20 5.97 64.23 5.43 58.80

21 5.38 64.82 5.62 59.20

22 5.21 64.99 5.39 59.60

23 5.16 65.04 5.04 60.00

24 5.06 65.14 4.74 60.40

→ BS 6.56 71.70

25 6.12 65.58 65.48 4.68 60.80

26 5.77 65.93 4.73 61.20

Fence
26+43 5.49 66.21 4.84 61.37

27 5.31 66.39 4.79 61.60

J.B.W. J.B.W.

Aug 14-19

Sheet 12 137

Branch 3 Left ✓

Sta R R H I Elev Cut Elev D

28 5.15 66.55 4.56 62.00

29 4.89 66.81 4.41 62.40

30 4.49 67.21 4.41 62.80

BS 7.69 74.90

31 6.87 68.03 4.88 63.15

32 6.12 68.78 5.28 63.50

33 5.25 69.65 5.80 63.85

34 5.07 69.83 5.63 64.20

35 6.08 68.82 4.27 64.55

36 5.95 68.95 4.05 64.90

37 5.57 69.33 4.08 65.25

BS 6.47 75.80

38 5.77 70.03 4.43 65.60

39 5.36 70.44 4.49 65.95

Pond 6.35

69.45

40 5.27 70.53 4.23 66.30

40+50 5.25 70.55 4.08 66.47

41 5.19 70.61 3.96 66.65

41+7 4.70 71.10 4.43 66.67

J.B.W. J.B.W.

Aug 14-19

Sheet, 12

Branch 3 Left

Sta R R H I Elev Cut Elev D

42 4.56 75.80 71.24 4.24 67.00

43 4.23 71.57 4.22 67.35

→ BS 6.71 78.28

44 6.07 72.21 4.51 67.70

45 5.97 72.31 4.26 68.05

in ditch

46 7.08 71.20 2.80 68.40

47 5.24 73.04 4.29 68.75

48 4.81 73.47 4.37 69.10

49 3.92 74.36 4.91 69.45

→ BS 7.08 81.44

50 6.41 75.03 5.23 69.80

51 5.74 75.70 5.55 70.15

52 5.29 76.15 5.65 70.50

53 5.31 76.13 5.28 70.85

54 5.21 76.23 5.03 71.20

N F

54+35 4.70 76.74 5.42 71.32

E Road

54+56 3.80 77.64 6.25 71.39

S F

54+83 4.75 76.69 5.20 71.49

→ BS 5.85 82.54

J.B.W. J.B.W.

Aug 14-19

Sheet, 12 139

Branch 3, Left

Sta R R H I Elev Cut Elev D

54+95 5.75 82.54 76.79 4.78 5.26 71.53

55 5.80 76.74 5.19 71.55

56 5.77 76.77 4.87 71.90

57 5.30 77.24 4.99 72.25

58 4.95 77.59 4.99 72.60

59 4.67 77.87 4.82 72.95

59+23 4.60 77.94 4.91 73.03

BS 5.39 83.33

60 5.57 77.76 4.46 73.30

61 5.36 77.97 4.32 73.65

62 5.00 78.33 4.33 74.00

63 4.51 78.82 4.48 74.35

63+10 4.20 79.13 4.75 74.38

64 4.10 79.23 4.53 74.70

BS 6.34 85.59

65 5.80 79.77 4.72 75.05

66 5.43 80.14 4.74 75.40

67 5.30 80.27 4.52 75.75

68 5.12 80.45 4.35 76.10

J.B.W. J.B.W.

Aug 14-19

Sheet 12

Branch 3, Left

v

Sta	R R	H I	Elev	Cut	Elev D
68+50	5.26	85.57	80.31	4.05	76.26
69	4.85		80.72	4.27	76.45
70	4.77		80.80	4.00	76.80
→ BS	7.81	88.61			
71	7.62		80.99	3.59	77.40
72	6.08		82.53	4.53	78.00
72+78	5.38		83.23	4.77	78.46
73	5.34		83.27	4.67	78.60
74	5.49		83.12	3.92	79.20
75	4.85		83.76	3.96	79.80
76	4.17		83.44	3.04	80.40
76+60	3.91		84.70	3.94	80.76
→ BS	8.56	93.26			
77	8.06		85.20	4.20	81.00
78	6.50		86.76	5.16	81.60
79	5.64		88.62	6.42	82.20
80	5.18		88.08	6.28	82.80
81	5.02		88.24	4.84	83.40
82	4.49		88.77	4.77	84.00

J.B.W. J.B.W.

Aug 14-19

Branch 3, Left

sheet 12

Sta	R R	H I	Elev	Cut	Elev D
6.93	95.70				
83	6.51		89.19	4.59	84.60
84	6.04		89.66	4.46	85.20
85	5.58		90.22	4.42	85.80
86	5.14		90.56	4.16	86.40
86+67	3.64		92.06	4.52	86.80

Branch D, Left Sheet 12

Corm at Sta 14 B.3.L

Angle 50° Right

Sta 2+46 at W. Line S E - N E
23, and 295° S of N W - Cor

Sta	R R	H I	Elev	Cut	Elev D
0	5.32	66.77	61.45	4.65	66.80
1	5.38		61.39	3.99	67.40
2	4.26		62.51	4.51	68.00
2+46	3.65		63.12	4.85	68.27

J.B.W. J.B.W.

Aug 15-19

Branch, E, Left sheet, 12

Corr at Sta 23, B, 3, L

Angle 52° RightSta 2+61, at W Line SE-
NE-23 and 156° N. of SW. Cor

Sta	R R	H I	Elev	Cut	Elev D
0	5.51	70.55	65.04	4.24	60.80
1	4.55		66.00	4.40	61.60
2	3.88		66.67	4.27	62.40
2+61	2.72		67.83	4.95	62.88

J.B.W. J.B.W.

Aug 15-19

Branch, F, Left sheet 12

Corr at Sta 40+50, B, 3, L

Angle 57° RightSta 3+67 at W Line NE-SE
Sec 23, and 50° N of SW. Cor

Sta	R R	H I	Elev	Cut	Elev D
0	5.49	76.04	70.55	4.75	66.80
1	5.31		70.73	2.93	67.80
2	3.61		72.43	3.63	68.80
3	2.40		73.64	3.84	69.80
3+67	0.95		75.09	4.62	70.47

J.B.W. J.B.W.

Aug 15-19

Branch G. Left

Street 13.

Comm at Sta 35 B. 3. L

Angle 17° Left

Sta 6+93. S. Line NE-SE-23
and 225° W. of SE cor

Sta 10+3 W Fence

Sta 10+82 E Fence

Sta 10+42 E N+S Road on East

Line Sec 23. and 263° South
of NE cor

at Sta 17+40, Angle 39° Right

Sta 22+33 N. Road Fence

Sta 22+86 S Road Fence

Sta 22+59 E E+W. Road. S. Line

sec 24. and 450° E. of SW. cor

Sta

R.R.

H I

Elev

Cut

Elev D

0

8.70

77.52

68.82

4.12

59.70

1

7.90

69.62

4.38

55.34

2

6.54

70.98

5.00

55.98

3

5.74

71.78

5.16

56.62

4

4.77

72.75

5.49

57.26

5

4.25

73.27

5.37

57.90

6

3.61

73.91

5.37

58.54

6+93

3.32

74.20

5.07

59.13

+BS

6.69

80.89

7

6.86

74.03

5.35

59.18

8

6.16

74.73

4.91

59.82

9

5.51

75.38

4.92

60.46

10

5.24

75.65

4.55

61.10

W R

10+3

5.04

75.85

4.73

61.12

10+42

2.88

78.01

6.65

61.36

10+82

4.34

76.55

4.93

61.62

11

4.42

76.47

4.73

61.74

12

4.73

76.16

3.78

62.38

+BS

6.85

83.01

J.B.W.

J.B.W.

J.B.W.

Aug 15-19

Branch G Left v

Aug 15-19

Branch G. Left sheet. 13.

Sta	RR	H I	Elev	Cut	Elev
13	6.32	83.01	76.69	3.67	63.02
14	5.68		77.33	4.67	63.66
15	5.02		77.99	3.69	64.30
16	4.22		78.79	3.85	64.94
17	2.79		80.22	4.64	65.58
→ B.D.	5.12	85.34			
17+40	5.53		80.81 79.81	3.98	65.83
18	5.07		81.27 80.27	4.05	66.22
19	4.36		81.98 80.98	4.12	66.86
20	3.63		82.71 81.71	4.21	67.50
21	2.86		83.48 82.48	4.34	68.14
→ B.S.	8.52	92.00 91.00			
22	7.57		84.43 83.43	4.65	68.78
N.F.			85.46 84.46	5.35	69.11
22+33	6.54		86.48 85.78	6.41	69.37
± Road	5.22		86.48 85.74	6.10	69.64
22+59	5.22				
S.F.					
22+86	5.26				

J.B.W. J.B.W.

Aug 15-19

Branch H Left sheet. 13.

Comm at Sta 7+50 B.3.L

Angle 16° Left

at Sta 8 Angle 30° Left

Sta 11+5 W Fence. Sta 11+58 E. Fence
Sta 11+31 ± N+S Road E. Line N-E-N-E
Sec 23, and 220° N of S E cor

→ Record continued on Page 150. ←

Sta	RR	H I	Elev	Cut	Elev
0	7.47	65.91	58.44	4.84	53.60
1	6.53		59.38	5.08	54.30
2	5.75		60.16	5.16	55.00
3	5.72		60.19	4.49	55.70
4	5.01		60.90	4.50	56.40
5	4.31		61.60	4.50	57.10
in ditch	4.80		61.11	4.31	57.80
in ditch	3.79		62.12	3.62	58.50
8	2.56		63.35	4.15	59.20
B.S.	7.01	70.36			
9	6.25		64.11	4.21	59.90

J.B.W. J.B.W.

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Branch. H. Left sheet 13

Sta	R R	H I	Elev	Out	Elev D
10	544	70.36	64.92	4.32	60.60
11	4.56		65.81	4.37	61.44
W F					
11+5	4.21		66.15	4.67	61.48
E Road					
11+31	2.16		68.20	6.50	61.70
E F					
11+58	3.60		66.76	4.84	61.92

Branch. H. Left. Continued on Page 150.

Branch. I. Left sheet 13

Corm at Sta 8 B.H.L

Angle 18° Right.

Sta 2+48 NE fence, 3+3 S Fence

2+76 E & W Road S of NE NE

Sec 23 and 125^E W of SE Cut

Sta 4+6 W Fence

Sta 4+83 E. Fence

Sta 4+44 E N+S Road

E Line Sec 23 and

114^E S of NE cut SE-NE.

J.B.W. J.B.W.

Aug 15-19

Sheet 13, 149

Branch. I. Left

Sta	R R	H I	Elev	Out	Elev D
0	8.10	71.45	63.35	3.85	59.50
1	6.73		64.72	3.37	60.35
2	5.62		65.83	4.63	61.20
N F					
2+48	5.09		66.36	4.76	61.60
E Road					
2+76	3.50		67.95	6.11	61.84
3	4.75		66.70	4.65	62.05
S F					
3+3	4.50		66.95	4.88	62.07
4	4.14		67.31	4.41	62.90
W F					
4+6	4.15		67.30	4.36	62.94
E Road					
4+44	2.87		68.58	5.27	63.31
E F					
4+83	3.75		67.70	4.10	63.60

J.B.W. J.B.W.

Aug 21-19

Branch H, Left, continue Sheet 13
From Page 147

at Sta 12+50-Angle 17° Left

Sta 23+83. 680° South + 146°

Went at NE, cut NW-NW-24

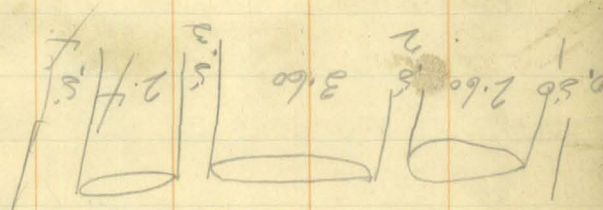
Sta	RR	HI	Elev	Cut	Elev D
→ BS	6.08	72.84			
12	6.08		66.76	4.48	62.28
12+50	5.92		66.92	4.22	62.70
13	5.42		67.42	3.82	63.54
14	4.91		67.93	3.55	64.38
15	3.86		68.98	3.76	65.22
→ BS	6.83	75.81			
16	5.92		69.89	3.83	66.06
17	5.17		70.64	3.74	66.90
18	4.38		71.43	3.69	67.74
19	3.13		72.68	4.10	68.58
→ BS	6.49	79.17			
20	6.56		72.61	3.19	69.42
JBW	JBW				

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Branch H Left, continued,

Sta	RR	HI	Elev	Cut	Elev D
21	5.50	79.17	73.67	3.61	70.06
22	4.56		74.61	3.71	70.90
23	3.95		75.22 76.22	4.48	71.74
23+83	2.01		77.16	4.75	72.41

09 01
09.7
09.3
07.2
07.0
07.0
07.0

09.8
07.2
07.0
07.0
07.0



06.9
00.1
09.2
05.0
08.1

9.2

9.8

JBW, JBW

Aug 21 - 19 Sheet 9.
Branch, W. Right ✓

corn at sta 29. B.O.R

Angle 60° Right

at Sta 5. Angle 11° Left

Sta 11+79 N. Line NE-SW-
Sec 15, and 482° W of NE corner

Sta	R R	H I	Elev	Cut	Elev D
0	7.52	97.83	81.31 90.31	4.61	85.70
1	7.84	88.83	80.99 90.99	4.69	86.30
2	6.70		82.13 91.13	4.23	86.90
3	5.55		83.28 92.28	4.78	87.50
4	5.09		83.74 92.74	4.64	88.10
5	4.66		84.17 93.17	4.47	88.70
6	4.00		84.83 93.83	4.53	89.30
BS	6.94	100.77			
7	6.51	91.77 477	85.26 94.26	4.36	89.90
8	5.91		85.86 94.86	4.36	90.50
9	5.05		84.12 95.72	4.62	91.10

J.B.W. J.B.W.

Aug 21 - 19 Sheet 9 153
Branch, W. Right ✓

Sta	R R	H I	Elev	Cut	Elev D
10	4.22	91.77	87.55 96.55	4.85	91.70
11	3.29		88.48 97.48	5.78	92.70
11+79	2.35		89.42 98.42	4.95	93.47

J.B.W. J.B.W.



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	3.75	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	2.12	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	5.13	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	2.12	2.68	3.22	3.76	4.30	4.83	5.37	5.91	6.44	6.98	7.52	8.06
30	.56	1.11	1.67	2.22	2.78	3.33	3.89	4.44	5.00	5.55	6.11	6.67	7.22	7.78	8.33
31	.57	1.15	1.72	2.30	2.87	3.44	4.02	4.59	5.17	5.74	6.32	6.89	7.46	8.04	8.61
32	.59	1.18	1.78	2.37	2.96	3.56	4.15	4.74	5.33	5.92	6.52	7.11	7.70	8.30	8.89
33	.61	1.22	1.83	2.44	3.05	3.67	4.28	4.89	5.50	6.11	6.72	7.33	7.94	8.55	9.17
34	.63	1.26	1.89	2.52	3.15	3.78	4.40	5.04	5.67	6.29	6.93	7.56	8.18	8.81	9.44
35	.65	1.30	1.94	2.59	3.24	3.89	4.53	5.18	5.83	6.48	7.13	7.78	8.42	9.08	9.72
36	.67	1.33	2.00	2.67	3.33	4.00	4.66	5.33	6.00	6.67	7.33	8.00	8.67	9.33	10.00
37	.68	1.37	2.06	2.74	3.42	4.11	4.79	5.48	6.17	6.85	7.54	8.22	8.91	9.59	10.28
38	.70	1.41	2.11	2.82	3.52	4.22	4.92	5.63	6.33	7.03	7.74	8.44	9.15	9.85	10.56
39	.72	1.44	2.17	2.89	3.61	4.33	5.05	5.78	6.50	7.22	7.95	8.67	9.39	10.11	10.83
40	.74	1.48	2.22	2.96	3.70	4.44	5.18	5.92	6.67	7.41	8.15	8.89	9.63	10.37	11.11

Table gives cu. yds. in 1 ft. of a triangle of given width and height. Corrections for tenths of width are one tenth the values found under each height considering the widths from 1 to 9 as tenths and similarly the corrections for tenths of height are one tenth the figures opposite width considering the heights from 1 to 9 as tenths. Thus if $w = 16.2$ and $h = 5.3$, cu. yds. $= 1.48 + .028 + .089 = 1.597$ cu. yds. or practically 160 cu. yds. per 100 ft. If w exceeds 40 ft., use one half and multiply result by 2, if both w and h are large use one half of each and multiply result by 4. Any cross-section may be divided into triangles by the following rule. To the triangle of the sum of the outside cuts (or fills) $= h$, and $\frac{1}{2}$ 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 $1\frac{1}{2}$.

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.