

FIELD BOOK

360-A

30-12

# KEUFFEL & ESSER CO.

## DRAWING MATERIALS AND SURVEYING INSTRUMENTS. NEW YORK.

CHICAGO. ST. LOUIS. SAN FRANCISCO. MONTREAL.

### TABLES FOR EXCAVATIONS AND EMBANKMENTS.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

ROADWAY 18 FEET WIDE. SIDE SLOPES 1 TO 1.

FOR SINGLE TRACK EXCAVATION.

*"Copyright, 1895, by Keuffel & Esser Co."*

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

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

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

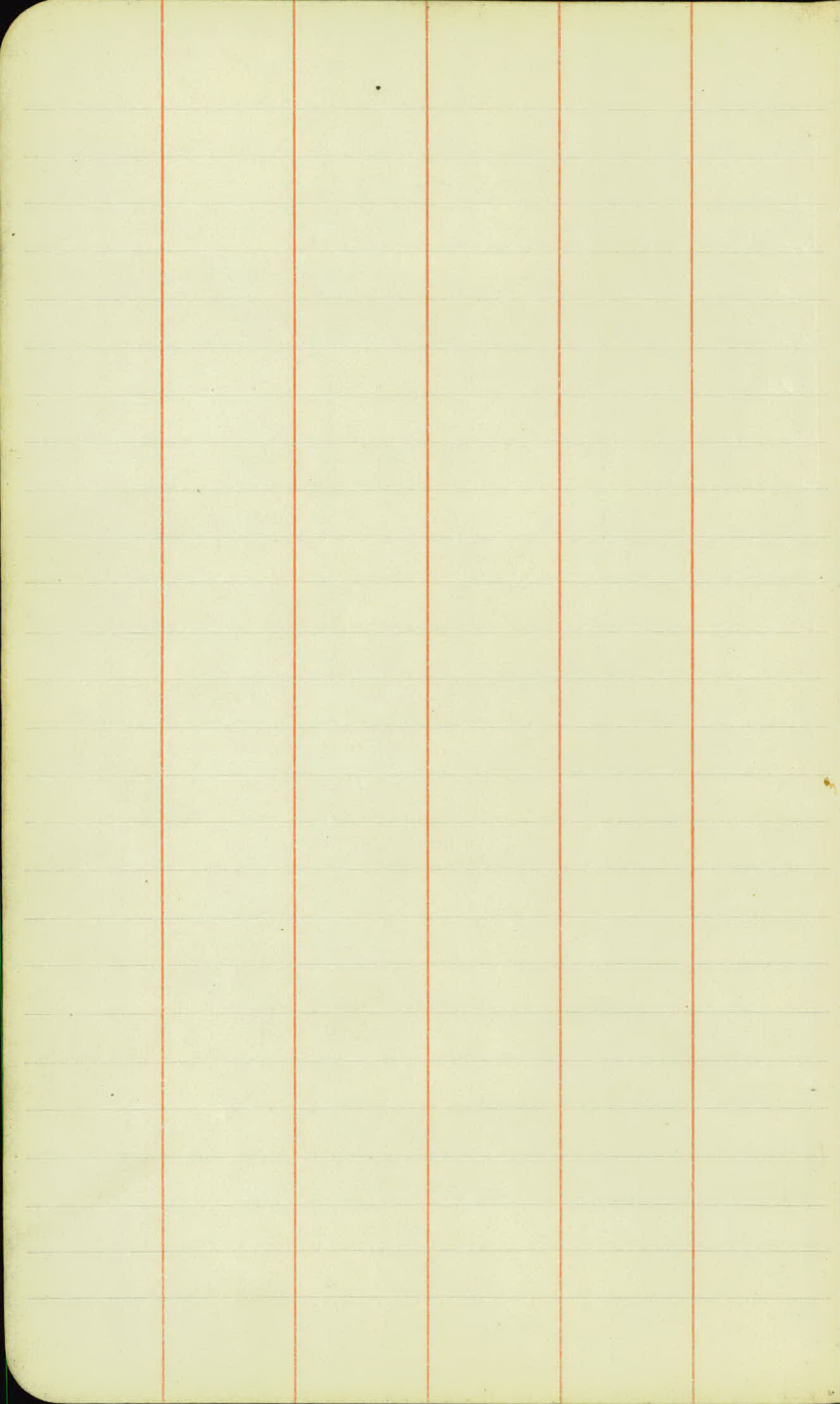
$$\begin{array}{r} 615 \\ 15 \\ \hline 463 \end{array}$$

$$\begin{array}{r} 251 \\ 4650 \\ 46 \\ \hline 190 \\ 151 \end{array}$$

T.P. 0 - 4458

4459 • T.P.

STA TO	STA.	DESCRIPTION	PAGE To	PAGE.
0+00	47+64	ALIGNMENT.	1	4
47+64	80+00	ALIGNMENT.	73	74
23	42	ORIGINAL X SECTIONS	5	8
0+00	23	ORIGINAL X SECTIONS	9	12
42	100	ORIGINAL X SECTIONS	13	23
0+00	99+00	FINAL X-SECTIONS	24	40
		Ground Rail	43	

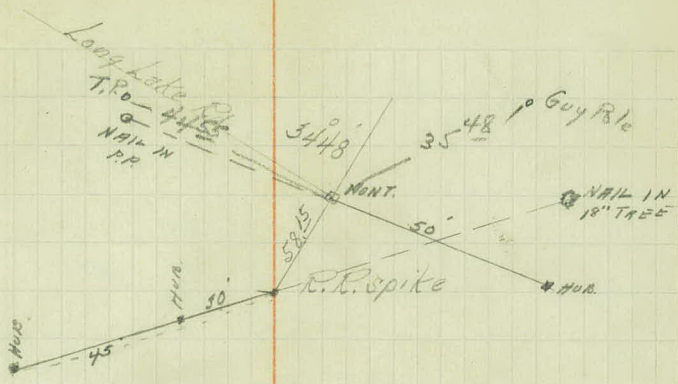




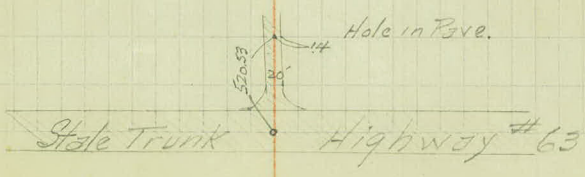
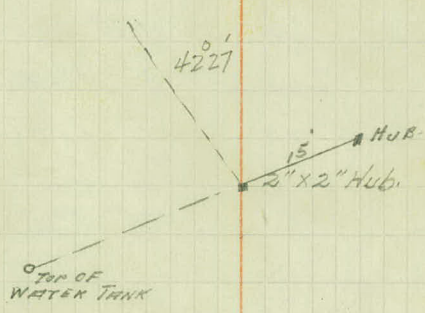
Sta. Point  $\Delta Lt$   $\Delta Rt.$

	+46.0 P.T.		1724	$\left\{ \begin{array}{l} \Delta = 3448 \\ D = 120 \text{ Ft.} \\ T = 149.2 \\ L = 290.0 \\ R = 478.34 \end{array} \right.$
9			1438.5	
	+50		1138.5	
	+05.3 P.I.			
8			838.5	
	+50		538.5	
7			238.5	
6	+56.0 P.C.		0°-00'	

	+71.67 P.T.		2114	$\left\{ \begin{array}{l} \Delta = 4227 \\ D = 90 \text{ Lt} \\ T = 247.51 \\ L = 471.67 \\ R = 637.27 \end{array} \right.$
	+50		2015	
4			1800	
	+50		1545	
3			1336	
	+50		1115	
	+47.51 P.I.			
2			900	
	+50		645	
1			430	
	+64.3		254	
	+50		215	
0+00	P.C.			



• R.R. spike  
• R.R. spike



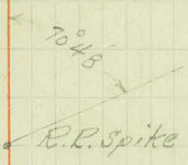
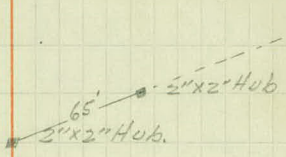
Sta. Point  $\Delta L$   $\Delta R$

25+85.89 P.O.T.

+974	P.T.		35°24'	✓
+50			31°50'	✓
20			28°05'	✓
+50			24°20'	} $\Delta 70^{\circ}48'$ $D=15^{\circ} P.T.$ $T=272.22$ $L=472.0$ $R=383.06$
19			20°35'	
+974.63	P.I.			
+50			16°50'	
18			13°05'	
+50			9°20'	✓
17			5°35'	✓
+50		0.10	1°50'	✓
16+254	P.C.	0.07	0°-00'	

50.0  
25.4  
24.67

Ctr. Ball on  
Top  
Water tower  
New. Br.



NEIL IN  
P.P.

R.R. spike

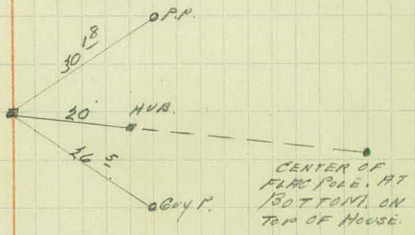
STN. POINT ALT. Δ RT

SEE PAGE 73

47+63 <sup>92</sup>	P.T.	35°-26	
150		34°-02	
47		29°-02	
150		24°-02	
46+14 <sup>53</sup>	P.I.		Δ-70°-52
46		19°-02	D.-20°-L.
150		14°-02	T.-204 <sup>87</sup>
45		9°-02	L.-354 <sup>53</sup>
150		4°-02	R.-287 <sup>94</sup>
44+09 <sup>66</sup>	P.C.	0°-00	

32+31<sup>91</sup> P.O.T.

5-17-30



STA.	T	M. I.	-	ELEV	OR ROD
B.M.	8.13	901.70		893.57	
	8.91	908.98	1.63	900.07	
23				03.6	54
	+50			03.7	51
24				03.8	52
	+50			03.5	55
25				02.8	62
	+50			01.7	71
26				00.8	82
	+08			00.6	84
	+70			99.1	99
27				98.6	104
	1.19	901.04	7.13	897.85	
	+50			97.5	95
B.M.	7.48	901.05	7.48	893.56	893.57

LEFT

RIGHT

5-19-30

SPK IN 12" TR 100 RT. STA. 27+50

(5.4)

$\frac{9}{13} \frac{60}{26}$	$\frac{5}{2} \frac{64}{10}$	68	64	5.8	5.6	4.9	4.3	$\frac{9}{4} \frac{48}{10.6}$
		33	22	10	10.2	15	33	

(5.1)

$\frac{2}{3} \frac{5.7}{-0.6}$	5.9	5.7	5.6	5.2	4.8	4.2	$\frac{0}{2} \frac{44}{10.7}$
	33	21	9	0.1	14	33	

(5.2)

$\frac{6}{13} \frac{5.6}{-0.4}$	$\frac{0}{2} \frac{5.2}{0.0}$	5.2	5.2	5.6	5.9	6.0	6.2	6.2	$\frac{5}{2} \frac{6.2}{-1.0}$	$\frac{5}{4} \frac{6.2}{-1.0}$
		33	25	12	0.7	10	22	33		

(5.3)

$\frac{5}{2} \frac{4.8}{10.7}$	4.4	4.9	5.7	6.3	7.2	8.2	8.8	$\frac{4}{1} \frac{7.7}{-2.2}$
	33	23	10	-0.8	11	24	33	

(6.2)

$\frac{6}{2} \frac{3.8}{7.2.4}$	6.3	6.7	6.0	3.7	4.3	4.7	5.4	5.9	7.2	8.6	10.3	$\frac{0}{1} \frac{7.7}{-1.5}$
	48	36	33	29	24	19	9	10.3	11	23	33	

(7.1)

$\frac{4}{2} \frac{7.1}{0.0}$	7.2	7.0	7.5	4.7	5.4	5.6	6.8	8.7	10.6	$\frac{7}{2} \frac{8.6}{-1.5}$
	39	30	20	14	7	11.5	11	22	33	

(9.2)

$\frac{4}{2} \frac{8.2}{0.0}$	4.6	8.2	8.2	8.7	7.6	7.1	7.9	8.3	10.3	$\frac{0}{2} \frac{9.1}{-0.9}$
	33	24	14	2	10.6	1	9	18	33	

(9.4)

4.5	8.4	8.4	9.0	7.4	8.4	9.2	10.4
33	22	12	-0.6	6	16	25	33

(9.9)

$\frac{8}{2} \frac{8.0}{1.9}$	8.0	8.1	7.5	7.9	9.5	10.0	10.0	10.2	7.9	10.4	10.6	$\frac{1}{4} \frac{9.8}{70.1}$
	33	26	12	10	4	0.1	11	23	26	29	36	

(10.9)

$\frac{2}{2} \frac{7.6}{10.8}$	9.6	9.7	9.8	9.7	9.5	10.3	10.9	10.7	11.1	$\frac{4}{2} \frac{10.8}{-0.4}$
	33	20	8	10.7	5	7	12	23	33	

(3.3)

$\frac{4}{2} \frac{3.2}{-1.7}$	5.2	5.0	4.6	4.7	4.4	3.5	4.0	4.4	$\frac{3}{2} \frac{3.7}{-0.2}$
	33	23	11	1.2	16	19	25	33	

SPK IN 12" TREE 100 RT. STA. 27+50

STATION	+	H. I.	-	ELEV	OR ROD
		901.05 ✓			
28				964 ✓	4.7
	+50			953 ✓	5.8
29				942 ✓	6.9
	+50			931 ✓	8.0
30				920 ✓	9.1
30 +50				910 ✓	10.1
	3.30	891.98 ✓	12.37	888.68 ✓	
30 +50				910 ✓	1.0
31				900 ✓	2.0
	+50			892 ✓	2.8
32				88.5 ✓	3.5
	+57			88.0 ✓	4.0
33				87.3 ✓	4.7

LT

(4.7)

RT

5-19-30

$$\begin{array}{r} 96 \overset{x}{/} 8.1 \\ \underline{-33} \end{array} \quad \begin{array}{r} 92 \\ 33 \end{array} \quad \begin{array}{r} 81 \\ 21 \end{array} \quad \begin{array}{r} 71 \\ 8 \end{array} \quad \begin{array}{r} 68 \\ 20 \end{array} \quad \begin{array}{r} 67 \\ 11 \end{array} \quad \begin{array}{r} 70 \\ 25 \end{array} \quad \begin{array}{r} 65 \\ 33 \end{array} \quad \begin{array}{r} 8 \overset{x}{/} 6.9 \\ \underline{-21} \end{array}$$

(6.8)

$$\begin{array}{r} 104 \overset{x}{/} 8.5 \\ \underline{-27} \end{array} \quad \begin{array}{r} 97 \\ 33 \end{array} \quad \begin{array}{r} 84 \\ 14 \end{array} \quad \begin{array}{r} 89 \\ 13 \end{array} \quad \begin{array}{r} 83 \\ 3 \end{array} \quad \begin{array}{r} 78 \\ 20 \end{array} \quad \begin{array}{r} 7.5 \\ 15 \end{array} \quad \begin{array}{r} 8.0 \\ 18 \end{array} \quad \begin{array}{r} 8.5 \\ 33 \end{array} \quad \begin{array}{r} 0 \overset{x}{/} 7.8 \\ \underline{-2.0} \end{array}$$

(6.9)

$$\begin{array}{r} 24 \overset{x}{/} 6.8 \\ \underline{-101} \end{array} \quad \begin{array}{r} 72 \\ 33 \end{array} \quad \begin{array}{r} 67 \\ 21 \end{array} \quad \begin{array}{r} 67 \\ 10 \end{array} \quad \begin{array}{r} 70 \\ 5 \end{array} \quad \begin{array}{r} 65 \\ 104 \end{array} \quad \begin{array}{r} 69 \\ 14 \end{array} \quad \begin{array}{r} 77 \\ 21 \end{array} \quad \begin{array}{r} 90 \\ 33 \end{array} \quad \begin{array}{r} 5 \overset{x}{/} 7.9 \\ \underline{-10} \end{array}$$

(8.0)

$$\begin{array}{r} 73 \overset{x}{/} 5.8 \\ \underline{-27.2} \end{array} \quad \begin{array}{r} 60 \\ 33 \end{array} \quad \begin{array}{r} 5.9 \\ 25 \end{array} \quad \begin{array}{r} 6.0 \\ 7 \end{array} \quad \begin{array}{r} 6.5 \\ 11.5 \end{array} \quad \begin{array}{r} 7.2 \\ 6 \end{array} \quad \begin{array}{r} 7.7 \\ 9 \end{array} \quad \begin{array}{r} 8.2 \\ 16 \end{array} \quad \begin{array}{r} 10.5 \\ 33 \end{array} \quad \begin{array}{r} 5 \overset{x}{/} 9.0 \\ \underline{-7.0} \end{array}$$

(9.1)

$$\begin{array}{r} 6 \overset{x}{/} 7.4 \\ \underline{-21.7} \end{array} \quad \begin{array}{r} 73 \\ 33 \end{array} \quad \begin{array}{r} 7.9 \\ 19 \end{array} \quad \begin{array}{r} 8.4 \\ 8 \end{array} \quad \begin{array}{r} 8.9 \\ 10.2 \end{array} \quad \begin{array}{r} 9.8 \\ 10 \end{array} \quad \begin{array}{r} 11.0 \\ 20 \end{array} \quad \begin{array}{r} 11.8 \\ 23 \end{array} \quad \begin{array}{r} 11.7 \\ 26 \end{array} \quad \begin{array}{r} 12.4 \\ 33 \end{array} \quad \begin{array}{r} 8 \overset{x}{/} 10.5 \\ \underline{-1.4} \end{array}$$

(10.1)

$$\begin{array}{r} 23 \overset{x}{/} 10.6 \\ \underline{-0.5} \end{array} \quad \begin{array}{r} 10.4 \\ 33 \end{array} \quad \begin{array}{r} 10.8 \\ 26 \end{array} \quad \begin{array}{r} 11.5 \\ 12 \end{array} \quad \begin{array}{r} 12.4 \\ -2.3 \end{array}$$

(1.0)

$$\begin{array}{r} 43 \overset{x}{/} 7 \\ \underline{-20} \end{array} \quad \begin{array}{r} 5.8 \\ 33 \end{array} \quad \begin{array}{r} 7.3 \\ 33 \end{array} \quad \begin{array}{r} 2 \overset{x}{/} 6.1 \\ \underline{-5.1} \end{array}$$

(2.0)

$$\begin{array}{r} 8 \overset{x}{/} 4.9 \\ \underline{-2.9} \end{array} \quad \begin{array}{r} 46 \\ 33 \end{array} \quad \begin{array}{r} 4.8 \\ 21 \end{array} \quad \begin{array}{r} 5.5 \\ 9 \end{array} \quad \begin{array}{r} 6.3 \\ -4.3 \end{array} \quad \begin{array}{r} 7.4 \\ 9 \end{array} \quad \begin{array}{r} 8.3 \\ 18 \end{array} \quad \begin{array}{r} 9.3 \\ 26 \end{array} \quad \begin{array}{r} 9.7 \\ 33 \end{array} \quad \begin{array}{r} 8 \overset{x}{/} 9.4 \\ \underline{-7.4} \end{array}$$

(2.8)

$$\begin{array}{r} 4 \overset{x}{/} 7.0 \\ \underline{-4.2} \end{array} \quad \begin{array}{r} 7.6 \\ 33 \end{array} \quad \begin{array}{r} 7.2 \\ 25 \end{array} \quad \begin{array}{r} 6.9 \\ 14 \end{array} \quad \begin{array}{r} 7.0 \\ -4.2 \end{array} \quad \begin{array}{r} 7.0 \\ 10 \end{array} \quad \begin{array}{r} 7.2 \\ 23 \end{array} \quad \begin{array}{r} 7.1 \\ 33 \end{array} \quad \begin{array}{r} 8 \overset{x}{/} 7.2 \\ \underline{-4.4} \end{array}$$

(3.0)

$$\begin{array}{r} 2 \overset{x}{/} 9.1 \\ \underline{-5.6} \end{array} \quad \begin{array}{r} 10.1 \\ 33 \end{array} \quad \begin{array}{r} 8.7 \\ 21 \end{array} \quad \begin{array}{r} 6.8 \\ 8 \end{array} \quad \begin{array}{r} 5.9 \\ -2.4 \end{array} \quad \begin{array}{r} 4.9 \\ 10 \end{array} \quad \begin{array}{r} 4.3 \\ 21 \end{array} \quad \begin{array}{r} 4.0 \\ 33 \end{array} \quad \begin{array}{r} 8 \overset{x}{/} 4.3 \\ \underline{-0.8} \end{array}$$

(4.0)

$$\begin{array}{r} 34 \overset{x}{/} 9.2 \\ \underline{-5.2} \end{array} \quad \begin{array}{r} 10.9 \\ 33 \end{array} \quad \begin{array}{r} 10.0 \\ 23 \end{array} \quad \begin{array}{r} 6.1 \\ 16 \end{array} \quad \begin{array}{r} 5.5 \\ 5 \end{array} \quad \begin{array}{r} 4.4 \\ -0.4 \end{array} \quad \begin{array}{r} 4.4 \\ 7 \end{array} \quad \begin{array}{r} 4.8 \\ 11 \end{array} \quad \begin{array}{r} 5.4 \\ 22 \end{array} \quad \begin{array}{r} 4.9 \\ 27 \end{array} \quad \begin{array}{r} 4.6 \\ 33 \end{array} \quad \begin{array}{r} 9 \overset{x}{/} 5.4 \\ \underline{-0.6} \end{array}$$

(4.7)

$$\begin{array}{r} 4 \overset{x}{/} 6.9 \\ \underline{-2.2} \end{array} \quad \begin{array}{r} 10.8 \\ 33 \end{array} \quad \begin{array}{r} 10.1 \\ 24 \end{array} \quad \begin{array}{r} 8.2 \\ 21 \end{array} \quad \begin{array}{r} 5.4 \\ 12 \end{array} \quad \begin{array}{r} 5.5 \\ -0.8 \end{array} \quad \begin{array}{r} 5.7 \\ 11 \end{array} \quad \begin{array}{r} 5.1 \\ 12 \end{array} \quad \begin{array}{r} 4.9 \\ 18 \end{array} \quad \begin{array}{r} 3.9 \\ 33 \end{array} \quad \begin{array}{r} 6 \overset{x}{/} 4.3 \\ \underline{-1.4} \end{array} \quad \begin{array}{r} 4 \overset{x}{/} 5.5 \\ \underline{-0.8} \end{array}$$

STA.	T	M.I.	-	ELEV	DR. FOO
		891.98			
	+50			869 ✓	5.1
34				866 ✓	5.4
	+50			864 ✓	5.6
	5.96	891.41 ✓	6.53	885.45 ✓	
35				863 ✓	5.1
	+50			862 ✓	5.2
36				862 ✓	5.2
36 +50				860 ✓	5.4
37				85.8 ✓	5.4
37 +50				85.4 ✓	6.0
	10.56	895.88	6.09	885.32 ✓	
36 +50				86.0 ✓	7.9
37				85.8 ✓	10.1
37 +50				85.4 ✓	10.5

LT

RT

5-19-80

(5.1)

$\frac{6}{1} \frac{5.4}{-0.3}$	$\frac{0}{2} \frac{7.1}{-2.0}$	$\frac{9.5}{33}$	$\frac{9.3}{26}$	$\frac{9.4}{24}$	$\frac{5.5}{18}$	$\frac{5.6}{11}$	$\frac{5.3}{-0.2}$	$\frac{5.4}{9}$	$\frac{5.6}{11}$	$\frac{5.0}{18}$	$\frac{4.3}{20}$	$\frac{3.4}{38}$	$\frac{5}{2} \frac{7.1}{11.0}$
--------------------------------	--------------------------------	------------------	------------------	------------------	------------------	------------------	--------------------	-----------------	------------------	------------------	------------------	------------------	--------------------------------

(5.4)

$\frac{0}{4} \frac{5.9}{-0.5}$	$\frac{3}{2} \frac{7.4}{-2.0}$	$\frac{9.0}{38}$	$\frac{8.4}{23}$	$\frac{5.3}{11}$	$\frac{5.7}{10}$	$\frac{5.4}{0.0}$	$\frac{5.5}{11}$	$\frac{5.1}{18}$	$\frac{3.2}{23}$	$\frac{2.7}{33}$	$\frac{6}{2} \frac{3.0}{24}$	$\frac{2}{3} \frac{5.5}{-0.1}$
--------------------------------	--------------------------------	------------------	------------------	------------------	------------------	-------------------	------------------	------------------	------------------	------------------	------------------------------	--------------------------------

(5.6)

$\frac{0}{2} \frac{6.9}{1.3}$	$\frac{8.2}{33}$	$\frac{8.0}{26}$	$\frac{6.8}{24}$	$\frac{6.6}{19}$	$\frac{5.4}{15}$	$\frac{5.9}{9}$	$\frac{5.5}{10.1}$	$\frac{5.7}{12}$	$\frac{4.8}{20}$	$\frac{1.8}{27}$	$\frac{2.2}{30}$	$\frac{1.9}{33}$	$\frac{2}{2} \frac{2.1}{15.5}$
-------------------------------	------------------	------------------	------------------	------------------	------------------	-----------------	--------------------	------------------	------------------	------------------	------------------	------------------	--------------------------------

(5.1)

$\frac{1}{3} \frac{5.1}{0.0}$	$\frac{2}{2} \frac{6.3}{-1.2}$	$\frac{7.6}{33}$	$\frac{7.1}{25}$	$\frac{4.7}{17}$	$\frac{5.2}{9}$	$\frac{4.9}{10.2}$	$\frac{5.1}{11}$	$\frac{5.1}{13}$	$\frac{5.2}{19}$	$\frac{2.3}{26}$	$\frac{1.6}{33}$	$\frac{2}{2} \frac{1.6}{18.5}$	$\frac{1}{3} \frac{5.1}{0.0}$
-------------------------------	--------------------------------	------------------	------------------	------------------	-----------------	--------------------	------------------	------------------	------------------	------------------	------------------	--------------------------------	-------------------------------

(5.2)

$\frac{0}{2} \frac{6.5}{1.3}$	$\frac{8.1}{33}$	$\frac{7.5}{24}$	$\frac{5.2}{20}$	$\frac{5.4}{9}$	$\frac{5.2}{0.0}$	$\frac{5.5}{11}$	$\frac{4.5}{16}$	$\frac{4.5}{21}$	$\frac{3.1}{25}$	$\frac{3.1}{33}$	$\frac{1}{2} \frac{5.1}{12.1}$
-------------------------------	------------------	------------------	------------------	-----------------	-------------------	------------------	------------------	------------------	------------------	------------------	--------------------------------

(5.2)

$\frac{9}{2} \frac{5.9}{-0.7}$	$\frac{7.5}{33}$	$\frac{7.4}{27}$	$\frac{6.0}{24}$	$\frac{4.8}{14}$	$\frac{6.0}{8}$	$\frac{5.7}{-0.5}$	$\frac{5.9}{11}$	$\frac{4.6}{21}$	$\frac{1.9}{27}$	$\frac{2.3}{33}$	$\frac{5}{2} \frac{2.2}{15.0}$	$\frac{2}{3} \frac{5.6}{-2.4}$
--------------------------------	------------------	------------------	------------------	------------------	-----------------	--------------------	------------------	------------------	------------------	------------------	--------------------------------	--------------------------------

(5.4)

$\frac{3}{2} \frac{3.2}{10.2}$	$\frac{5.6}{33}$	$\frac{5.4}{30}$	$\frac{6.3}{28}$	$\frac{5.3}{25}$	$\frac{4.2}{15}$	$\frac{5.4}{12}$	$\frac{5.7}{8}$	$\frac{5.6}{-0.2}$	$\frac{5.8}{12}$	$\frac{4.1}{18}$	$\frac{3.4}{23}$	$\frac{1.1}{27}$	$\frac{2}{3} \frac{5.8}{-0.4}$
--------------------------------	------------------	------------------	------------------	------------------	------------------	------------------	-----------------	--------------------	------------------	------------------	------------------	------------------	--------------------------------

(6.6)

$\frac{2}{2} \frac{3.5}{12.1}$	$\frac{5.7}{33}$	$\frac{3.5}{38}$	$\frac{2.2}{24}$	$\frac{4.4}{20}$	$\frac{4.4}{14}$	$\frac{5.7}{11}$	$\frac{6.0}{7}$	$\frac{5.8}{-0.2}$	$\frac{6.1}{11}$	$\frac{3.8}{19}$	$\frac{2.2}{25}$	$\frac{4}{3} \frac{5.8}{-0.2}$
--------------------------------	------------------	------------------	------------------	------------------	------------------	------------------	-----------------	--------------------	------------------	------------------	------------------	--------------------------------

(6.0)

$\frac{6}{1} \frac{6.3}{-0.3}$	$\frac{1}{4} \frac{5.5}{10.5}$	$\frac{6.2}{33}$	$\frac{6.1}{26}$	$\frac{4.9}{22}$	$\frac{5.9}{19}$	$\frac{6.6}{8}$	$\frac{6.4}{-0.4}$	$\frac{6.6}{12}$	$\frac{5.0}{21}$	$\frac{3.0}{26}$	$\frac{4}{1} \frac{6.2}{-0.2}$
--------------------------------	--------------------------------	------------------	------------------	------------------	------------------	-----------------	--------------------	------------------	------------------	------------------	--------------------------------

(9.9)

$\frac{5.7}{32}$	$\frac{5.8}{33}$	$\frac{4.1}{35}$	$\frac{5}{3} \frac{3.8}{16.1}$
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(10.1)

$\frac{2.4}{33}$	$\frac{2.1}{35}$	$\frac{3}{3} \frac{2.4}{17.7}$
------------------	------------------	--------------------------------

(10.5)

$\frac{3.3}{33}$	$\frac{2.8}{36}$	$\frac{3}{3} \frac{3.3}{17.2}$
------------------	------------------	--------------------------------

STA.	+	M.I.	-	ELEV.	Gr. R.O.D.
		895.88			
38				84.9	11.0
	4.12	889.44	10.56	885.32	
38				84.9	4.5
	7.50			84.1	5.3
39				83.3	6.1
	7.50			82.4	7.0
40				81.5	7.9
	7.50			80.6	8.8
41				79.7	9.7
	7.50			78.8	10.6
42				78.0	11.4
B.M.			7.03	882.41	882.41

SEE PAGE 13

LT.

RT.

5-19-30

(11.0)

$$\begin{array}{r} 11.1 \quad 11.5 \quad 104 \quad 9.8 \quad 7.7 \quad 7.7 \\ -0.1 \quad 12 \quad 18 \quad 25 \quad 31 \quad 33 \end{array} \quad \begin{array}{r} \sqrt[4]{9.6} \\ \sqrt[2]{11.1} \\ \sqrt[3]{-0.1} \end{array}$$

$$\begin{array}{r} \sqrt[8]{6.5} \quad \sqrt[2]{21} \quad \sqrt[2]{76} \quad \sqrt[4]{40} \quad \sqrt[5]{50} \quad \sqrt[4]{48} \\ -20 \quad 33 \quad 24 \quad 14 \quad 13 \quad 7 \end{array}$$

(5.3)

$$\begin{array}{r} \sqrt[4]{7.3} \quad \sqrt[1]{114} \quad \sqrt[1]{105} \quad \sqrt[6]{63} \quad \sqrt[4]{43} \quad \sqrt[5]{53} \quad \sqrt[5]{52} \quad \sqrt[5]{56} \quad \sqrt[5]{58} \quad \sqrt[4]{48} \quad \sqrt[4]{54} \quad \sqrt[6]{63} \quad \sqrt[5]{59} \\ -2.0 \quad 33 \quad 27 \quad 21 \quad 15 \quad 12 \quad 8 \quad -0.3 \quad 11 \quad 17 \quad 22 \quad 26 \quad 29 \quad 33 \end{array} \quad \begin{array}{r} \sqrt[6]{7.3} \\ \sqrt[3]{-0.1} \\ \sqrt[5]{5.4} \end{array}$$

(6)

$$\begin{array}{r} \sqrt[6]{7.9} \quad \sqrt[1]{105} \quad \sqrt[2]{93} \quad \sqrt[2]{80} \quad \sqrt[6]{66} \quad \sqrt[6]{65} \quad \sqrt[6]{64} \quad \sqrt[6]{66} \quad \sqrt[6]{68} \quad \sqrt[2]{72} \quad \sqrt[2]{71} \quad \sqrt[2]{64} \\ -1.8 \quad 33 \quad 25 \quad 17 \quad 14 \quad 8 \quad -0.3 \quad 11 \quad 14 \quad 18 \quad 28 \quad 33 \end{array} \quad \begin{array}{r} \sqrt[6]{7.4} \\ \sqrt[2]{-0.2} \\ \sqrt[3]{-0.1} \end{array}$$

(7.0)

$$\begin{array}{r} \sqrt[5]{2.0} \quad \sqrt[2]{91} \quad \sqrt[2]{84} \quad \sqrt[2]{74} \quad \sqrt[2]{74} \quad \sqrt[2]{73} \quad \sqrt[2]{75} \quad \sqrt[2]{75} \quad \sqrt[2]{75} \quad \sqrt[2]{61} \quad \sqrt[2]{53} \quad \sqrt[2]{43} \\ -2.2 \quad -1.0 \quad 33 \quad 25 \quad 15 \quad 9 \quad -0.3 \quad 10 \quad 20 \quad 24 \quad 30 \quad 33 \end{array} \quad \begin{array}{r} \sqrt[6]{5.9} \\ \sqrt[5]{+1.1} \end{array}$$

(9.9)

$$\begin{array}{r} \sqrt[4]{8.1} \quad \sqrt[5]{8.2} \quad \sqrt[2]{9.0} \quad \sqrt[2]{8.0} \quad \sqrt[2]{7.8} \quad \sqrt[2]{8.4} \quad \sqrt[2]{8.4} \quad \sqrt[2]{8.4} \quad \sqrt[2]{8.4} \quad \sqrt[2]{8.4} \quad \sqrt[2]{4.7} \quad \sqrt[2]{5.0} \\ -1.2 \quad -0.3 \quad 33 \quad 23 \quad 15 \quad 12 \quad 8 \quad -0.5 \quad 12 \quad 17 \quad 26 \quad 33 \end{array} \quad \begin{array}{r} \sqrt[6]{3.9} \\ \sqrt[3]{14.0} \\ \sqrt[5]{-0.3} \end{array}$$

(8.8)

$$\begin{array}{r} \sqrt[6]{8.4} \quad \sqrt[2]{94} \quad \sqrt[2]{84} \quad \sqrt[2]{75} \quad \sqrt[2]{93} \quad \sqrt[2]{93} \quad \sqrt[2]{94} \quad \sqrt[2]{96} \quad \sqrt[2]{91} \quad \sqrt[2]{88} \quad \sqrt[2]{56} \quad \sqrt[2]{2.4} \quad \sqrt[2]{11} \quad \sqrt[2]{14} \\ -10.4 \quad 33 \quad 24 \quad 15 \quad 13 \quad 9 \quad -0.4 \quad 11 \quad 13 \quad 21 \quad 24 \quad 29 \quad 33 \quad 35 \end{array} \quad \begin{array}{r} \sqrt[3]{1.3} \\ \sqrt[5]{+7.5} \end{array}$$

(9.7)

$$\begin{array}{r} \sqrt[5]{10.0} \quad \sqrt[6]{8.3} \quad \sqrt[2]{93} \quad \sqrt[2]{80} \quad \sqrt[2]{80} \quad \sqrt[2]{101} \quad \sqrt[2]{101} \quad \sqrt[2]{101} \quad \sqrt[2]{102} \quad \sqrt[2]{93} \quad \sqrt[2]{3.8} \quad \sqrt[2]{1.4} \quad \sqrt[2]{1.2} \quad \sqrt[2]{1.2} \\ -0.3 \quad -1.4 \quad 33 \quad 25 \quad 17 \quad 14 \quad 9 \quad -0.4 \quad 12 \quad 18 \quad 25 \quad 29 \quad 33 \quad 36 \end{array} \quad \begin{array}{r} \sqrt[3]{1.2} \\ \sqrt[5]{+8.5} \\ \sqrt[4]{7.7} \\ \sqrt[5]{-0.2} \end{array}$$

(10.6)

$$\begin{array}{r} \sqrt[6]{7.5} \quad \sqrt[2]{82} \quad \sqrt[2]{71} \quad \sqrt[2]{73} \quad \sqrt[2]{109} \quad \sqrt[2]{110} \quad \sqrt[2]{110} \quad \sqrt[2]{114} \quad \sqrt[2]{108} \quad \sqrt[2]{106} \quad \sqrt[2]{41} \quad \sqrt[2]{32} \quad \sqrt[2]{41} \\ -15.1 \quad 33 \quad 28 \quad 21 \quad 16 \quad 10 \quad -0.4 \quad 11 \quad 13 \quad 14 \quad 25 \quad 28 \quad 35 \end{array} \quad \begin{array}{r} \sqrt[6]{2.0} \\ \sqrt[5]{+6.6} \end{array}$$

(11.0)

$$\begin{array}{r} \sqrt[4]{2.3} \quad \sqrt[2]{93} \quad \sqrt[2]{92} \quad \sqrt[2]{122} \quad \sqrt[2]{111} \quad \sqrt[2]{120} \quad \sqrt[2]{122} \quad \sqrt[2]{115} \quad \sqrt[2]{84} \quad \sqrt[2]{82} \\ -0.9 \quad -12.1 \quad 33 \quad 28 \quad 22 \quad 10 \quad -0.4 \quad 14 \quad 17 \quad 23 \quad 33 \end{array} \quad \begin{array}{r} \sqrt[5]{7.7} \\ \sqrt[2]{+3.7} \\ \sqrt[3]{-0.4} \end{array}$$

SPR IN T.P. LT. 57R. 41+70

STA	+	H.I.	-	ELEV	dr. rod
B.M.	3.18	890.67		887.49	
0764 <sup>s</sup>				86.5	4.2
1		2.22		86.5	4.7 4.2 5.8
+50		2.22		86.6	5.1 4.1 3.3
2		2.20		86.6	5.4 4.1 3.0
+50		2.22		86.7	5.3 4.0 2.9
3		2.22		86.7	5.3 4.0 2.9
+50		2.22		86.8	5.2 3.9 2.8
4		2.22		86.8	5.2 3.9 2.8
	3.29	871.55	2.43	888.24	
+50		1.82		86.9	5.7 4.6 3.4
5		0.20		86.9	5.3 4.6 3.9
+50				87.0	4.7 4.5 4.1
6				87.0	4.1 4.5 4.9

LT.

RT.

5-26-30

ON N.W. COR. CONC. STEP IN FRONT OF POST OFFICE

40	35	42	44	46
33	22	37	13	33

3/46	47	46	0/47	47	47	68	122	194	8/47
6/701	33	24	8/25	48	9	15	25	33	4/29

3/50	48	49	47	0/48	47	62	73	90	102	4/50	
6/701	33	27	18	4/27	47	13	20	24	26	33	1/17

2/33	34	34	53	55	51	0/48	47	55	63	4/47	
2/721	33	31	25	15	13	8/27	47	17	22	33	1/17

3/56	8/42	27	48	58	53	54	0/49	44	46	47	45	0/44	
2/23	27	711	33	27	20	12	8	48	8	20	25	33	1/15

2/53	2/47	33	44	55	47	46	45	44	46	42	4/46	0/42
1/00	2/706	33	29	21	11	-0.6	8	18	27	33	6/17	1/13

6/30	18	32	42	46	42	40	42	45	42	6/44	8/42
2/42	33	27	22	13	-0.3	6	16	21	33	2/16	1/14

8/40	35	42	37	38	36	40	38	51	3/39	8/37
2/712	33	13	10.2	12	14	18	23	33	2/21	4/19

8/57	40	53	58	51	47	48	48	49	74	85	8.2	7/56	5/48
2/00	33	27	18	15	-2.1	10	13	20	25	28	33	2/20	1/12

7/63	50	62	54	47	46	46	48	72	111	108	2/55
2/10	33	29	14	14	0.0	10	14	22	31	33	4/14

9/80	73	77	78	50	47	48	51	74	103	112	0/78
1/33	33	29	18	14	-0.2	11	14	19	27	33	2/35

4/98	96	93	49	48	50	61	104	120	4/51
6/57	33	19	10	-0.3	13	17	25	33	3/22

891.53 ✓

f50

1.00

871 ✓

35 44 53

7

2.50

871 ✓

34 44 54

f50

2.56

872 ✓

32 43 54

8

2.36

872 ✓

32 43 54

f50

2.56 ✓

871 ✓

33 44 57

B.M.

4.03

891.62 ✓

3.93

887.60 ✓

887.59

9

2.54

870 ✓

35 46 59

B.M.

3.96

887.66 ✓

f50

1.00

868 ✓

40 48 57

10

0.00

865 ✓

46 51 54

f50

861 ✓

54 55 54

11

857 ✓

59

f50

853 ✓

63

12

849 ✓

67

5-26-50

(4)

$\frac{5}{2} \frac{97.5}{-60}$	78	74	84	50	48	50	74	11.5	$\frac{97.5}{-20}$	$\frac{4}{1} \frac{50}{103}$
	33	29	16	9	0.4	14	24	33		

(4)

$\frac{6}{2} \frac{87}{-53}$	56	87	82	50	78	52	70	10.5	106	$\frac{9}{1} \frac{76}{-60}$	$\frac{5}{1} \frac{54}{102}$
	33	29	16	10	0.4	14	22	27	33		

(4)

$\frac{4}{1} \frac{54}{-22}$	59	58	45	46	51	20	95	102	$\frac{2}{2} \frac{74}{-38}$
	33	19	14	0.3	11	16	24	33	

(4)

$\frac{8}{1} \frac{41}{-0.9}$	43	43	41	46	47	54	71	106	112	$\frac{9}{2} \frac{76}{-20}$	$\frac{4}{1} \frac{56}{100}$
	33	20	9	0.3	7	15	25	29	33		

(4)

$\frac{2}{1} \frac{39}{-06}$	29	33	40	45	48	44	45	$\frac{5}{2} \frac{44}{-10}$
	50	33	12	101	7	14	53	

ON S.W. COR OF MONT.

(4)

$\frac{6}{2} \frac{31}{104}$	25	37	45	45	44	47	39	42	50	$\frac{8}{2} \frac{44}{-15}$
	33	20	16	8	102	12	14	27	33	

SAR IN 18" TAGE 50 NT STA 8 + 75

(4)

$\frac{4}{1} \frac{29}{101}$	40	43	52	50	52	47	48	$\frac{6}{2} \frac{47}{-70}$
	24	14	11	02	10	19	35	

(5)

$\frac{4}{1} \frac{53}{-0.7}$	$\frac{2}{2} \frac{58}{-12}$	57	54	56	54	57	54	47	50	$\frac{2}{2} \frac{48}{-108}$	$\frac{0}{1} \frac{56}{10}$
		33	15	10	03	10	15	24	35		

(6)

$\frac{8}{2} \frac{62}{-0.8}$	70	62	57	60	59	58	51	45	$\frac{8}{4} \frac{54}{-102}$
	33	25	13	8	02	11	15	26	

(6)

$\frac{4}{1} \frac{62}{-0.7}$	$\frac{2}{2} \frac{71}{-12}$	74	70	64	65	62	64	66	62	60	$\frac{4}{2} \frac{65}{-0.4}$	$\frac{4}{1} \frac{65}{-0.6}$
		33	23	11	9	03	11	16	26	33		

(6)

$\frac{4}{1} \frac{76}{-13}$	$\frac{5}{2} \frac{80}{-20}$	107	95	80	68	72	70	72	69	84	79	78	$\frac{8}{1} \frac{83}{-20}$	$\frac{6}{1} \frac{78}{-15}$
		33	25	19	12	9	07	10	10	18	27	33		

(6)

$\frac{6}{1} \frac{84}{-15}$	117	107	85	75	76	78	96	115	$\frac{8}{2} \frac{106}{-99}$
	83	28	17	10	0.9	11	14	33	

891.62 ✓

f50

84.5 ✓

7.1

13

84.1 ✓

7.5

f50

83.8 ✓

7.8

3.88

887.39 ✓

8.11

883.51 ✓

14

83.7 ✓

3.5

f50

84.2 ✓

3.2

15

84.8 ✓

2.9

f50

0.00

85.6 ✓

15 1.8 2.1

7.46

889.14 ✓

5.69

881.70 ✓

16

0.36

86.8 ✓

17 2.4 3.1

f50

2.53

88.1 ✓

0.1 1.1 2.2

17

2.89

89.4 ✓

-1.3 -0.2 1.1

f50

2.89

90.7 ✓

-2.4 -1.5 0.2

18

2.89

92.0 ✓

-2.8 1.5

11.89

900.38 ✓

0.67

888.49 ✓

5-26-30

(7.1)

$\frac{4}{2} \frac{x}{7.7}$	$\frac{0}{7.1}$	53	44	77	76	77	75	97	11.5	$\frac{4}{5} \frac{x}{8.8}$
$\frac{1}{-0.6}$	$\frac{4}{6.0}$	33	28	17	10	-0.6	11	24	33	$\frac{5}{-7.2}$

(7.5)

$\frac{6}{3} \frac{x}{7.8}$	$\frac{0}{7.5}$	40	72	83	71	78	77	7.7	8.7	8.5	8.0	8.7	$\frac{5}{8.5} \frac{x}{8.5}$	$\frac{4}{2.8}$
$\frac{1}{-0.3}$	$\frac{4}{6.0}$	33	26	17	12	9	-0.2	11	13	22	24	33	$\frac{2}{-0.8}$	$\frac{3}{-1.3}$

(7.8)

$\frac{4}{2} \frac{x}{8.7}$	44	8.5	25	7.9	7.9	8.1	8.9	8.8	7.5	7.8	$\frac{4}{3} \frac{x}{7.6}$
$\frac{2}{-0.9}$	33	26	15	7	-0.1	11	15	18	22	33	$\frac{4}{7.02}$

(3.5)

$\frac{5}{1} \frac{x}{4.6}$	$\frac{0}{4.8}$	2.9	4.6	4.2	4.4	4.2	4.2	4.7	5.2	5.2	6.1	$\frac{7}{5} \frac{x}{5.5}$
$\frac{1}{-1.1}$	$\frac{2}{-1.3}$	33	27	14	11	0.7	10	13	19	24	33	$\frac{1}{-2.0}$

(3.2)

$\frac{4}{1} \frac{x}{2.4}$	7.9	7.4	6.0	4.2	4.3	4.6	6.4	2.3	7.2	7.6	$\frac{6}{3} \frac{x}{3.5}$
$\frac{1}{-3.2}$	33	22	14	10	-1.1	11	15	22	28	33	$\frac{2}{-5.8}$

(2.6)

$\frac{6}{5} \frac{x}{8.9}$	8.7	8.6	7.1	5.0	4.8	5.1	6.7	8.2	9.6	9.9	$\frac{6}{2} \frac{x}{7.9}$
$\frac{5}{-6.3}$	33	25	16	10	2.2	11	13	20	23	33	$\frac{2}{-7.3}$

(1.8)

$\frac{4}{2} \frac{x}{7.2}$	9.1	8.8	5.0	5.1	5.2	8.8	9.9	10.1	$\frac{0}{1.01}$
$\frac{2}{-7.7}$	33	17	10	-3.5	10	16	23	33	$\frac{1}{-8.0}$

NW16 IN P.P. LT. STA. 16+10

(2.1)

$\frac{0}{11.7}$	11.7	11.5	10.0	6.7	6.5	6.7	10.7	12.1	12.7	12.7	11.8	$\frac{5}{12.2} \frac{x}{12.2}$
$\frac{3}{-10.0}$	33	23	15	10	4.1	10	15	27	28	30	33	$\frac{1}{-9.2}$

(1.1)

$\frac{3}{2} \frac{x}{11.4}$	11.4	11.0	8.6	5.3	5.5	5.4	8.7	10.2	11.6	$\frac{0}{11.6}$
$\frac{3}{-11.5}$	33	27	18	12	4.4	10	15	20	33	$\frac{3}{-9.4}$

(-0.2)

$\frac{4}{2} \frac{x}{3.6}$	8.1	4.4	3.5	4.2	4.0	4.1	4.0	3.4	4.1	10.1	11.8	11.8	$\frac{3}{11.8} \frac{x}{11.8}$
$\frac{4}{-4.6}$	33	25	19	17	7	-4.3	2	3	9	19	26	33	$\frac{3}{-10.7}$

(-1.5)

$\frac{2}{2} \frac{x}{2.0}$	2.1	2.0	2.4	2.0	3.4	6.5	7.6	7.9	8.5	$\frac{2}{8.5} \frac{x}{8.5}$
$\frac{2}{-4.6}$	33	21	12	10	-4.9	6	11	24	33	$\frac{2}{-8.5}$

(2.3)

0.8	1.8	2.5	$\frac{5}{2.5} \frac{x}{2.5}$
-3.6	17	33	$\frac{3}{-3.8}$

900.38 ✓

18

92.0 ✓ 73 8.4

+50

289

93.3 ✓ 6.0 71 8.4

9.23 908.61 ✓ 1.00

899.38 ✓

19

289

74.6 ✓ 127 14.0 15.3

+50

289

95.9 ✓ 116 12.7 14.0

20

289

97.2 ✓ 103 11.4 12.7

+50

289

98.5 ✓ 90 10.1 11.4

21

1.44

97.8 ✓ 79 8.8 9.8

+50

0.00

01.1 ✓ 7.0 7.5 8.0

22

02.2 ✓ 6.3 6.4 6.5

+50

03.1 ✓ 5.5

B.M.

4.81

903.80

1.59 904.08 ✓

6.12

902.49 ✓

1

3.22 901.07 ✓

6.23

897.85 ✓

P.M.

7.52

893.55 ✓ 893.57

SEE PAGE 5.

5-27-30

(8.4)

2/109 114 120 107 114  
2/-36 33 29 26 15

(7.1)

7/24 83 43 10 29 37 53 73 8/68  
2/136 42 33 27 11 13 2 17 33 2/116

(14.0)

7/84 83 86 77 81 84 23 25 20 8/84  
5/45 35 33 9 15 9 11 17 33 37 3/169

(12.0)

8/82 83 76 71 70 64 65 64 9/65  
2/134 33 20 16 15.7 15 33 35 3/175

(11.0)

2/25 72 74 71 63 55 49 48 9/49  
2/128 33 30 20 14 9 17 33 35 3/178

(10.1)

2/75 25 74 72 69 67 66 9/67  
2/115 33 14 12 9 15 33 35 3/147

(8.8)

5/69 72 67 64 64 61 61 9/61  
2/70 33 13 12 14 16 33 35 3/137

(7.5)

9/24 67 63 54 49 47 47 9/47  
2/106 33 22 9 12 12 33 2/133

(6.2)

4/60 63 57 56 52 45 2/45  
2/103 33 16 10 8 17 33 2/120

(5.5)

8/63 65 59 56 56 46 7/50  
2/104 33 12 -0.1 12 33 2/105

SPK IN 12" TREE 100 FT. STA. 23+00.

SPK IN 12" TREE 100 FT. STA. 27+50.

B.M.	0.51	882.94		882.43		
42750				77.1	5.8	
43				76.4	6.6 6.5 6.4	
	3.08	878.08	7.74	875.00		
750				75.7	2.9 2.4 1.9	
44			1.10	76.1	3.9 3.0 2.1	
750			3.38	74.6	4.8 3.5 2.5	
45			3.44	74.1	5.4 4.0 2.9	
750			3.44	73.7	5.8 4.4 3.3	
46			3.44	73.4	6.1 4.7 3.6	
750			3.44	73.1	6.4 5.0 3.7	
47			3.44	72.8	6.7 5.3 4.2	
750			2.60	72.5	6.7 5.6 4.7	
B.M.	3.21	876.91	4.38	873.70		
48			0.20	72.3	5.2 4.6 4.0	

5-27-30

NAIL IN T.P. LT. STA. 41770

2/74	69	61	74	66	70	67	69	62	57	61	0/5.8
2/76	53	38	22	11	9	-0.9	11	14	27	33	0/00

0/10.6	123	10.1	79	78	79	77	84	93	0/24	4/81
2/-40	33	18	10	-1.3	12	13	22	33	2/-20	1/77

2/85	72	87	63	43	41	42	45	66	70	6/67
2/56	33	24	17	11	-1.7	10	16	22	33	2/-48

5/84	77	79	54	48	47	48	46	60	80	8/66
2/-45	33	21	15	11	-1.7	10	13	18	33	2/-44

8/60	73	60	62	54	49	48	51	45	57	5.5	0/4.5
2/72	33	24	17	14	8	-1.3	13	16	27	33	1/-20

4/5.4	4/5.4	34	5.3	5.1	49	47	47	42	4.5	6/4.7
1/0.0	2/0.0	33	13	-1.1	3	14	24	30	33	1/-18

2/46	4.7	4.2	4.3	4.1	5.2	5.3	9/4.7
2/112	33	15	10	17	24	33	2/-14

4/3.4	3.4	2.6	2.6	2.0	1.2	2.2	5.2	3/1.4
5/72.7	33	11	7.1	17	31	33	37	2/122

8/2.8	2.8	2.6	1.8	1.4	5.6	5.3	4.9	0/5.2
5/13.6	33	16	13.2	4	12	17	33	2/-2.5

1/4.9	4.9	5.1	4.2	6.4	6.4	5.7	5.7	5.2	5.6	6.4	7.1	9/5.2
5/11.8	33	22	10	5	4	-0.4	3	12	14	38	33	2/7.4

1/7.9	4/80	7.8	8.1	7.7	6.3	6.1	6.0	6.2	6.6	7.0	8/6.7	0/6.3
1/-1.4	2/7.3	33	20	13	7	-0.5	5	14	19	33	1/-20	1/-1.6

Spike in P.P. 150 ft. STA 45 + 75

4/16.5	4/6.8	6.5	6.7	6.7	5.2	5.4	5.2	5.5	6.3	7.5	8.1	8.7	6/6.8
5/21.3	2/7.6	33	23	13	8	6	-0.4	13	15	24	30	33	1/-2.8

876.91 ✓

f50

72.1 ✓ 4.9 4.8 4.7

49

71.8 ✓ 5.0 5.1 5.2

f50

0.52

71.5 ✓ 4.7 5.4 6.1

50

2.82

71.4 ✓ 4.5 5.5 6.7

f50

3.44

71.5 ✓ 4.5 5.4 6.8

7.97

879.15 ✓

5.75

871.16 ✓

51

3.44

71.9 ✓ 6.2 7.3 8.7

B.M.

6.90

879.14 ✓

6.90

872.25 ✓ 272.24

f50

3.44

72.4 ✓ 5.4 6.7 8.1

52

3.44

73.2 ✓ 4.8 5.9 7.3

f50

3.44

74.3 ✓ 3.7 4.8 6.2

53

3.44

75.4 ✓ 2.6 3.7 5.1

f50

3.44

76.6 ✓ 1.4 2.5 3.9

8.87

886.77 ✓

1.24

877.90 ✓

54

3.01

77.7 ✓ 8.1 9.1 10.5

5-31-30

(4.8)

9/79	80	77	73	5.7	5.5	5.4	6.9	2.5	2.5	2.7	6/20
9/-30	33	25	16	9	0.7	13	20	31	33	2/10	5/-13

(5.1)

9/83	80	82	63	5.8	60	6.9	7.4	7.4	5/62
1/-33	33	18	10	-0.7	12	17	27	33	1/-7.4

(5.4)

4/84	82	81	77	61	5.7	61	5.4	61	6.7	6.3	8/64
8/-37	33	27	17	11	0.3	9	12	18	24	33	2/-0.2

(5.5)

6/83	79	80	83	62	5.4	5.8	5.5	6.4	5.9	5/62
6/-38	33	30	20	13	0.1	8	9	17	33	2/10.5

(5.8)

0/83	79	80	63	61	6.1	5.8	6.4	7.1	7.1	6.3	5/6.7	8/7.1
7/-20	33	27	20	9	-0.7	1	8	11	20	33	2/10.1	1/-0.5

(7.0)

8/80	8.7	9.1	8.6	9.8	9.9	10.0	9.7	9.0	1/9.6	4/9.7
1/-28	33	17	15	9	-2.6	7	20	33	2/-0.9	1/-2.0

N.W. COR. OF MONT. STAIR 52.53

(6.7)

4/60	9.5	10.0	9.9	9.6	9.1	5.1	9.2	9/9.4
2/-4.4	33	11	-3.2	15	33	4/-7.1	1/-7.3	

(6.8)

0/75	9.2	9.3	9.3	9.1	8.6	5.1	8.6	4/9.0
2/-4.5	33	10	3.4	13	33	2/-1.3	1/-1.7	

(6.8)

7/5.7	6.6	6.6	5.9	5.7	6.3	6.8	6.9	7.0	7.5	6/7.4	8/7.1
1/-2.0	33	38	25	14	10	7.0	7	14	33	2/-7.2	1/-0.9

(6.1)

0/4.6	4.4	4.7	4.0	4.4	4.9	6.6	5.9	4.2	3.8	4.8	5.4	5.6	9/5.4
1/-2.0	33	16	24	23	15	12	4	-0.5	3	17	2.2	33	2/-1.7

(6.5)

8/33	4.7	4.6	3.6	3.8	3.2	3.3	2.8	3.1	3.7	5.7	5.3	3.5	4.4	2/4.0
1/-7.9	33	31	28	2.5	15	5	4	-0.4	4	7	13	17	33	2/-0.1

(9.1)

0/10.1	9.6	9.8	11.6	10.7	10.1	9.6	9.6	9.5	9.9	12.4	12.1	9.0	8.3	0/8.3	0/7.3
1/-2.0	33	27	24	21	17.5	9.6	-0.5	6	12	16	21	27	33	5/12.0	2/-2.0

886.77 ✓

+50

0.43

78.7 ✓

12 7.9 8.6

55

0.00

80.0 ✓

65 6.8 7.1

+50

81.2 ✓

5.6

54

82.3 ✓

4.5

+50

F.64

83.5 ✓

3.3

7.40

892.55 ✓

1.62

885.15 ✓

57

F.02

84.6

8.0

8.44

893.74 ✓

7.25

885.30 ✓

+50

F.01

85.8 ✓

7.9

58

C.62

86.8 ✓

6.9

+50

88.0 ✓

5.7

59

88.8 ✓

4.9

+50

89.7 ✓

4.0

60

90.5 ✓

3.2

5-31-30

(1.1)

$\frac{0}{100}$	8.3	8.2	10.2	9.7	8.5	8.8	8.6	8.8	8.2	8.9	11.0	10.2	9.6	6.8	7.1	$\frac{2}{7.7}$
$\frac{1}{-3.0}$	33	24	20	14	13	12	-0.7	11	7	13	14	19	24	29	33	$\frac{2}{-1.1}$

(6.8)

$\frac{2}{26}$	7.2	6.4	9.4	7.6	7.6	7.3	7.4	7.2	7.1	9.3	10.7	$\frac{6}{9.1}$
$\frac{1}{-7.1}$	33	27	21	15	12	-0.6	7	8	16	23	33	$\frac{2}{-2.0}$

(5.6)

$\frac{0}{61}$	$\frac{1}{76}$	8.0	7.7	8.8	6.5	6.2	6.6	6.1	6.2	6.3	5.1	9.4	10.9	$\frac{2}{7.6}$
$\frac{1}{-0.5}$	$\frac{2}{-2.0}$	33	27	23	19	15	11	-0.5	8	10	16	23	33	$\frac{2}{-2.0}$

(4.5)

$\frac{4}{4.8}$	$\frac{2}{6.5}$	6.5	5.7	6.5	6.5	4.9	5.2	4.9	5.2	4.1	8.9	10.5	$\frac{1}{6.5}$
$\frac{2}{-0.3}$	$\frac{4}{-2.0}$	33	29	26	21	18	13	-0.4	7	15	24	33	$\frac{2}{-2.0}$

(3.3)

3.6	$\frac{0}{2.6}$	0.8	2.1	3.6	3.6	4.3	3.6	4.0	3.8	3.9	2.4	3.0	2.6	2.3	$\frac{0}{2.3}$
0.8	$\frac{2}{7.7}$	33	27	23	17	13	12	7.5	8	11	17	25	33	$\frac{2}{-2.0}$	

(8.0)

8.4	$\frac{1}{5.9}$	5.7	6.0	8.3	8.3	8.2	8.5	7.5	9.1	9.2	10.1	$\frac{0}{9.1}$
$\frac{1}{-0.4}$	$\frac{2}{7.2}$	33	27	22	12	2.4	8	14	18	24	33	$\frac{2}{-1.1}$

(7.4)

N.A.H.	IN.	P.P.	RT.	ST.	7.5	7.10	$\frac{0}{8.0}$	8.2	8.1	7.3	6.9	5.7	6.1	$\frac{1}{6.1}$					
					3.4	3.9	7.5	8.4	8.5	8.0	7.2	13	19	22	33	$\frac{2}{7.15}$			
					3	14.4	33	26	20	4	11	-0.1	7	12	13	19	22	33	$\frac{2}{7.15}$

(6.9)

$\frac{2}{3.4}$	3.1	3.9	5.7	7.7	6.6	6.7	6.8	7.1	7.1	6.0	5.7	4.7	4.0	$\frac{4}{4.5}$
$\frac{2}{7.3.5}$	33	26	23	19	15	7	10.1	10	12	14	20	23	33	$\frac{2}{7.2.6}$

(5.7)

$\frac{6}{3.3}$	3.7	3.4	3.8	5.7	5.9	7.1	7.1	6.5	6.0	6.2	6.4	5.2	4.2	2.8	2.0	$\frac{7}{2.7}$
$\frac{2}{7.2.4}$	33	27	23	20	17	16	14	12	-0.3	11	12	14	21	24	33	$\frac{2}{7.3.0}$

(4.1)

$\frac{5}{3.9}$	4.7	4.2	4.6	6.2	6.2	5.5	5.4	5.5	5.6	4.6	3.7	3.6	$\frac{8}{3.7}$
$\frac{2}{7.1.0}$	33	28	18	14	12	11	-0.5	11	12	13	23	33	$\frac{2}{7.1.2}$

(4.0)

$\frac{3}{4.3}$	3.1	3.3	3.9	4.4	3.7	4.8	4.8	4.6	4.7	4.5	3.9	4.0	3.7	$\frac{4}{3.6}$
$\frac{2}{-0.3}$	33	27	26	17	17	14	11	-0.6	10	12	13	20	33	$\frac{2}{7.0.4}$

(7.4)

$\frac{4}{3.5}$	$\frac{8}{4.0}$	3.0	3.5	3.6	4.1	3.7	3.8	3.6	3.7	2.7	2.0	1.8	$\frac{5}{2.0}$
$\frac{1}{-0.3}$	$\frac{4}{-0.8}$	33	27	24	22	19	9	2.4	10	13	24	33	$\frac{2}{7.1.2}$

893.74

60+50

91.2 ✓

2.5

5.22

896.93

2.03

891.71 ✓

61

91.7 ✓

5.2

61+50

92.2 ✓

4.7

62

92.6 ✓

4.3

62+50

93.0 ✓

3.9

63

93.2 ✓

3.7

12.03

904.65

4.31

892.62 ✓

62

92.6 ✓

12.1

62+50

93.0 ✓

11.7

63

93.2 ✓

11.5

5.14

897.78 ✓

12.03

892.62 ✓

63+50

93.4 ✓

4.4

64

93.5 ✓

4.3

B.M.

4.83

897.82 ✓

4.79

892.99 ✓

64+50

93.5 ✓

4.3

6-4-30

$\frac{2.5}{2.0} \frac{7/4.5}{-2.0} \frac{4.3}{33} \frac{4.4}{31} \frac{3.6}{28} \frac{3.4}{24} \frac{3.5}{22} \frac{2.5}{12} \frac{2.8}{11} \frac{2.6}{-0.1} \frac{2.8}{9} \frac{1.8}{14} \frac{0.2}{23} \frac{0.3}{33} \frac{7/2.7}{4/1.8}$

(51)

$\frac{0/5.7}{-0.5} \frac{0/7.2}{-2.0} \frac{8.0}{33} \frac{7.6}{24} \frac{6.2}{17} \frac{5.7}{11} \frac{5.4}{-0.2} \frac{5.4}{11} \frac{4.9}{18} \frac{4.3}{33} \frac{9/4.6}{2/7.0} \frac{4/5.4}{1/0.2}$

(52)

$\frac{2/6.7}{-2.0} \frac{7.4}{33} \frac{7.6}{25} \frac{6.1}{19} \frac{5.5}{12} \frac{5.2}{10} \frac{5.2}{10} \frac{4.7}{17} \frac{5.7}{33} \frac{9/4.0}{2/7.7}$

(53)

$\frac{8/4.7}{-0.4} \frac{3/6.5}{-2.0} \frac{7.0}{33} \frac{6.1}{22} \frac{5.1}{19} \frac{4.7}{13} \frac{5.0}{11} \frac{4.7}{-0.4} \frac{4.6}{10} \frac{4.7}{13} \frac{5.2}{15} \frac{4.7}{18} \frac{2.4}{21} \frac{0/5.3}{1/7.0}$

(54)

$\frac{4/4.5}{-0.6} \frac{4.7}{33} \frac{4.7}{31} \frac{4.9}{22} \frac{5.1}{21} \frac{5.2}{20} \frac{5.8}{18} \frac{4.9}{16} \frac{4.3}{12} \frac{4.5}{11} \frac{4.3}{-0.4} \frac{4.6}{8} \frac{4.2}{10} \frac{4.1}{13} \frac{4.7}{15} \frac{3.9}{19} \frac{2.1}{21} \frac{4/4.7}{1/0.8}$

(39)

$\frac{5/4.8}{-1.1} \frac{8/5.7}{-2.0} \frac{6.8}{33} \frac{5.9}{22} \frac{5.0}{17} \frac{4.2}{12} \frac{4.4}{11} \frac{4.0}{-0.3} \frac{4.1}{9} \frac{4.4}{13} \frac{5.1}{12} \frac{4.9}{20} \frac{8/5.1}{1/7.4}$

(31)

$\frac{7.2}{27} \frac{6.2}{33} \frac{5/6.2}{2/7.9}$

(11)

$\frac{5.8}{29} \frac{4.9}{33} \frac{0/4.7}{2/7.8}$

(11)

$\frac{7.8}{27} \frac{6.9}{33} \frac{7/7.7}{2/7.8}$

(11)

$\frac{4/5.1}{-0.7} \frac{0/6.4}{-2.0} \frac{8.5}{33} \frac{7.9}{27} \frac{5.2}{17} \frac{5.1}{11} \frac{4.6}{-0.2} \frac{4.6}{11} \frac{5.2}{14} \frac{5.2}{23} \frac{4.8}{33} \frac{8/5.2}{2/2.8}$

(11)

$\frac{4/5.0}{-0.7} \frac{8/6.3}{-2.0} \frac{8.5}{33} \frac{7.4}{27} \frac{6.0}{23} \frac{4.8}{13} \frac{4.6}{-0.3} \frac{4.8}{11} \frac{5.4}{18} \frac{7.2}{33} \frac{1/5.8}{1/1.5} \frac{4/5.0}{1/0.7}$

(11)

SPK IN 16" TRACK RT STR 63+75  
 $\frac{2/8.1}{-1.7} \frac{6.9}{33} \frac{6.4}{28} \frac{5.4}{24} \frac{5.0}{18} \frac{4.8}{13} \frac{4.8}{-0.4} \frac{5.1}{7} \frac{4.8}{9} \frac{4.8}{17} \frac{6.0}{21} \frac{7.2}{27} \frac{7.2}{33} \frac{8/6.4}{1/2.0}$

(11)

STA.	T	M.I.	-	ELEV	OR ROD.
		897.82 ✓	X		
65				93.4 ✓	44
	750			93.3 ✓	45
66				93.3 ✓	45
	4.68	898.19 ✓	4.31	895.51 ✓	
	750			93.2 ✓	5.0
67				93.2 ✓	5.0
	750			93.1 ✓	5.1
68				93.1 ✓	5.1
	750			93.0 ✓	5.2
69			X	93.0 ✓	5.2
B.M.	3.15	898.18 ✓	3.15	895.04 ✓	895.03
	750			92.9 ✓	5.3
70				92.7 ✓	5.3
	750			92.8 ✓	5.4
	4.45	897.46 ✓	5.15	893.03 ✓	

LT.

RT.

6-5-30

(4.4)

$\frac{6}{3} \frac{x}{4.8}$	$\frac{4}{1} \frac{x}{4.2}$	4.7	4.9	4.1	4.5	4.8	5.0	4.8	4.9	4.7	5.4	4.8	5.2	6.1	5.9	9) 5.9	$\frac{x}{3} \frac{4}{4.7}$
$\frac{3}{-0.3}$	$\frac{2}{10.3}$	33	30	26	19	14	13	-0.4	6	7	12	14	17	22	32	7.4	$\frac{1}{-0.2}$

(4.5)

$\frac{7}{2} \frac{x}{2.4}$	2.4	2.7	3.0	4.6	4.8	4.6	4.2	4.5	5.0	5.1	3.8	3.4	4.1	$\frac{5}{3} \frac{x}{3.6}$
$\frac{2}{12.2}$	33	29	20	17	13	-0.1	5	7	9	11	13	15	33	$\frac{2}{10}$

(4.5)

$\frac{2}{3} \frac{x}{4.7}$	$\frac{4}{3} \frac{x}{0.3}$	0.5	0.4	1.9	4.8	4.4	4.9	4.6	4.7	4.4	4.7	3.8	3.4	1.8	1.0	9) 1.3
$\frac{3}{-0.1}$	$\frac{3}{14.3}$	33	29	24	17	15	13	-0.1	6	7	9	12	14	18	33	$\frac{2}{13.5}$

(5.0)

$\frac{2}{3} \frac{x}{0.8}$	0.7	0.5	1.1	5.4	4.8	5.0	4.9	5.0	4.9	5.2	5.8	1.9	1.0	$\frac{0}{1} \frac{x}{1.1}$
$\frac{3}{14.8}$	33	29	24	18	15	13	10	1.6	8	11	15	18	33	$\frac{3}{14.0}$

(5.0)

$\frac{4}{3} \frac{x}{5.3}$	$\frac{5}{9} \frac{x}{1.4}$	1.6	1.3	2.5	5.7	5.2	5.1	5.1	5.7	4.1	3.1	2.9	2.5	$\frac{3}{1} \frac{x}{2.9}$
$\frac{1}{-0.2}$	$\frac{2}{13.7}$	33	29	23	18	14	-0.1	7	10	14	19	26	33	$\frac{2}{12.2}$

(5.1)

$\frac{5}{2} \frac{x}{6.2}$	5.4	5.0	6.1	6.2	5.4	5.2	5.2	5.4	5.2	5.7	5.1	5.5	5.8	$\frac{5}{3} \frac{x}{5.5}$
$\frac{2}{-1.0}$	33	27	24	18	16	14	-0.1	6	7	13	15	26	33	$\frac{2}{10.3}$

(5.1)

$\frac{2}{3} \frac{x}{5.3}$	$\frac{3}{2} \frac{x}{7.2}$	7.9	8.0	6.7	5.2	5.5	5.1	5.2	6.5	7.2	7.4	$\frac{2}{1} \frac{x}{7.5}$
$\frac{1}{-0.1}$	$\frac{2}{-2.0}$	33	25	22	15	13	0.0	6	11	16	33	$\frac{1}{-2.1}$

(5.2)

$\frac{1}{3} \frac{x}{5.3}$	7.5	8.0	8.6	8.5	5.4	5.2	5.1	5.2	5.6	7.4	7.8	7.5	$\frac{4}{1} \frac{x}{7.6}$
$\frac{1}{0.0}$	33	24	23	22	14	14	10.1	6	10	15	31	33	$\frac{1}{-2.8}$

(5.2)

$\frac{0}{4} \frac{x}{5.3}$	$\frac{0}{2} \frac{x}{6.6}$	5.4	6.4	6.4	5.6	5.2	5.4	5.3	5.6	5.4	5.9	7.8	7.5	11.3	$\frac{0}{1} \frac{x}{9.5}$
$\frac{0}{0.0}$	$\frac{0}{-1.3}$	33	24	20	18	15	14	-0.1	7	8	10	15	21	33	$\frac{2}{-4.0}$

(5.2)

$\frac{0}{4} \frac{x}{5.2}$	3.9	3.8	5.0	5.5	5.7	5.5	5.8	6.1	7.4	7.9	10.7	12.2	$\frac{0}{2} \frac{x}{9.7}$
$\frac{2}{0.0}$	33	29	26	14	13	-0.2	7	10	15	16	26	33	$\frac{2}{-4.5}$

(5.2)

$\frac{1}{2} \frac{x}{3.2}$	2.6	2.6	3.5	5.7	5.8	5.6	6.0	8.0	8.8	7.6	$\frac{2}{9} \frac{x}{8.4}$
$\frac{2}{7.2}$	33	29	25	21	13	-0.3	8	14	25	33	$\frac{1}{-3.1}$

(5.1)

$\frac{1}{2} \frac{x}{2.0}$	2.1	2.0	3.9	5.9	5.8	5.8	6.1	6.2	5.7	6.0	7.2	7.9	$\frac{0}{2} \frac{x}{2.4}$	$\frac{6}{1} \frac{x}{5.7}$
$\frac{2}{13.4}$	33	29	23	19	13	-0.4	9	12	14	18	21	33	$\frac{2}{-2.0}$	$\frac{1}{-0.3}$

897.46 ✓

71

92.8 ✓

47

+50

102

92.7 ✓

48

72

101

92.7 ✓

48

+50

003

92.6 ✓

49

73

004

92.6 ✓

49

4.44

896.69 ✓

5.21

892.25

+50

92.6 ✓

41

74

92.7 ✓

41 40 39

+50

005

92.8 ✓

45 39 38

75

2.30

93.2 ✓

46 35 20

+50

3.74

93.5 ✓

45 3.2 21

+73

93.7 ✓

3.0

76

3.44

94.1 ✓

4.0 26 15

10.35

903.25 ✓

3.79

892.90 ✓

6-5-30

(17)

$\frac{0}{-0.3} \frac{x}{5.0}$	$\frac{9}{2} \frac{x}{2.1}$	$\frac{1.3}{33}$	$\frac{1.3}{30}$	$\frac{2.0}{29}$	$\frac{2.7}{24}$	$\frac{4.7}{20}$	$\frac{5.1}{15}$	$\frac{5.0}{-0.3}$	$\frac{5.5}{10}$	$\frac{5.2}{18}$	$\frac{6.3}{19}$	$\frac{7.0}{33}$	$\frac{7.0}{2}$	$\frac{6.8}{-1.2}$	$\frac{8}{4} \frac{x}{5.6}$
--------------------------------	-----------------------------	------------------	------------------	------------------	------------------	------------------	------------------	--------------------	------------------	------------------	------------------	------------------	-----------------	--------------------	-----------------------------

(18)

$\frac{0}{2} \frac{x}{2.0}$	$\frac{1.7}{33}$	$\frac{2.8}{29}$	$\frac{5.2}{24}$	$\frac{5.2}{12}$	$\frac{5.0}{0.2}$	$\frac{5.4}{10}$	$\frac{5.6}{11}$	$\frac{4.8}{15}$	$\frac{5.0}{17}$	$\frac{6.0}{20}$	$\frac{6.7}{33}$	$\frac{0}{2} \frac{x}{6.1}$
-----------------------------	------------------	------------------	------------------	------------------	-------------------	------------------	------------------	------------------	------------------	------------------	------------------	-----------------------------

(18)

$\frac{9}{2} \frac{x}{2.3}$	$\frac{1.5}{33}$	$\frac{2.1}{29}$	$\frac{3.3}{24}$	$\frac{4.8}{20}$	$\frac{4.7}{14}$	$\frac{4.9}{11}$	$\frac{4.9}{-0.1}$	$\frac{5.3}{10}$	$\frac{5.4}{13}$	$\frac{4.4}{15}$	$\frac{4.7}{19}$	$\frac{5.5}{21}$	$\frac{6.7}{33}$	$\frac{0}{2} \frac{x}{5.6}$	$\frac{1}{4} \frac{x}{7.9}$
-----------------------------	------------------	------------------	------------------	------------------	------------------	------------------	--------------------	------------------	------------------	------------------	------------------	------------------	------------------	-----------------------------	-----------------------------

(19)

$\frac{0}{2} \frac{x}{2.1}$	$\frac{1.6}{33}$	$\frac{2.3}{28}$	$\frac{3.6}{22}$	$\frac{4.3}{20}$	$\frac{4.6}{11}$	$\frac{4.6}{7.03}$	$\frac{5.0}{7}$	$\frac{5.8}{18}$	$\frac{7.1}{33}$	$\frac{0}{2} \frac{x}{6.1}$
-----------------------------	------------------	------------------	------------------	------------------	------------------	--------------------	-----------------	------------------	------------------	-----------------------------

(19)

$\frac{8}{2} \frac{x}{1.7}$	$\frac{0.5}{33}$	$\frac{1.6}{29}$	$\frac{3.0}{23}$	$\frac{4.8}{19}$	$\frac{4.5}{12}$	$\frac{4.7}{11}$	$\frac{4.5}{7.04}$	$\frac{4.9}{9}$	$\frac{5.6}{12}$	$\frac{5.5}{17}$	$\frac{6.7}{21}$	$\frac{8.2}{33}$	$\frac{0}{2} \frac{x}{6.9}$	$\frac{2}{4} \frac{x}{5.5}$
-----------------------------	------------------	------------------	------------------	------------------	------------------	------------------	--------------------	-----------------	------------------	------------------	------------------	------------------	-----------------------------	-----------------------------

(11)

$\frac{1}{2} \frac{x}{5.6}$	$\frac{2.1}{33}$	$\frac{2.9}{28}$	$\frac{5.5}{23}$	$\frac{5.7}{18}$	$\frac{4.7}{16}$	$\frac{4.0}{12}$	$\frac{3.9}{7.02}$	$\frac{4.3}{9}$	$\frac{4.4}{12}$	$\frac{5.1}{13}$	$\frac{6.6}{19}$	$\frac{8.0}{21}$	$\frac{9.0}{33}$	$\frac{0}{2} \frac{x}{5.6}$
-----------------------------	------------------	------------------	------------------	------------------	------------------	------------------	--------------------	-----------------	------------------	------------------	------------------	------------------	------------------	-----------------------------

(20)

$\frac{0}{4} \frac{x}{4.6}$	$\frac{8}{2} \frac{x}{4.9}$	$\frac{3.2}{33}$	$\frac{3.4}{29}$	$\frac{4.9}{26}$	$\frac{4.9}{16}$	$\frac{4.4}{11}$	$\frac{4.4}{7.04}$	$\frac{4.7}{8}$	$\frac{5.4}{11}$	$\frac{7.1}{15}$	$\frac{9.4}{21}$	$\frac{10.2}{33}$	$\frac{0}{2} \frac{x}{7.4}$
-----------------------------	-----------------------------	------------------	------------------	------------------	------------------	------------------	--------------------	-----------------	------------------	------------------	------------------	-------------------	-----------------------------

(31)

$\frac{4}{1} \frac{x}{5.0}$	$\frac{3.1}{33}$	$\frac{3.7}{31}$	$\frac{6.4}{25}$	$\frac{6.4}{18}$	$\frac{5.1}{15}$	$\frac{4.7}{12}$	$\frac{4.5}{-0.6}$	$\frac{4.9}{9}$	$\frac{5.2}{11}$	$\frac{9.9}{20}$	$\frac{10.6}{31}$	$\frac{11.9}{33}$	$\frac{8}{2} \frac{x}{11.2}$
-----------------------------	------------------	------------------	------------------	------------------	------------------	------------------	--------------------	-----------------	------------------	------------------	-------------------	-------------------	------------------------------

(32)

$\frac{4}{3} \frac{x}{6.6}$	$\frac{4.2}{33}$	$\frac{5.6}{26}$	$\frac{7.6}{21}$	$\frac{7.6}{18}$	$\frac{5.2}{14}$	$\frac{4.8}{12}$	$\frac{4.4}{-0.9}$	$\frac{4.4}{9}$	$\frac{4.9}{12}$	$\frac{5.2}{14}$	$\frac{7.7}{26}$	$\frac{10.6}{33}$	$\frac{12.4}{5}$	$\frac{0}{2} \frac{x}{12.4}$
-----------------------------	------------------	------------------	------------------	------------------	------------------	------------------	--------------------	-----------------	------------------	------------------	------------------	-------------------	------------------	------------------------------

(32)

$\frac{4}{-2.0} \frac{x}{6.5}$	$\frac{5}{6} \frac{x}{5.1}$	$\frac{4.2}{33}$	$\frac{4.8}{29}$	$\frac{7.1}{17}$	$\frac{6.7}{12}$	$\frac{4.6}{7}$	$\frac{4.4}{5}$	$\frac{4.1}{-0.9}$	$\frac{4.6}{16}$	$\frac{5.0}{20}$	$\frac{7.0}{23}$	$\frac{9.4}{33}$	$\frac{8}{7} \frac{x}{4.5}$
--------------------------------	-----------------------------	------------------	------------------	------------------	------------------	-----------------	-----------------	--------------------	------------------	------------------	------------------	------------------	-----------------------------

(30)

$\frac{4.5}{33}$	$\frac{5.0}{29}$	$\frac{7.0}{18}$	$\frac{7.1}{9}$	$\frac{5.7}{3}$	$\frac{4.4}{7.02}$	$\frac{3.8}{12}$	$\frac{4.3}{23}$	$\frac{4.5}{27}$	$\frac{5.7}{29}$	$\frac{7.9}{38}$
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(26)

$\frac{0}{2} \frac{x}{6.8}$	$\frac{4.7}{33}$	$\frac{6.7}{29}$	$\frac{6.6}{9}$	$\frac{6.7}{-4.1}$	$\frac{6.0}{4}$	$\frac{4.3}{8}$	$\frac{4.0}{11}$	$\frac{3.5}{23}$	$\frac{3.9}{33}$	$\frac{1}{2} \frac{x}{5.6}$
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903.25

+50

3.44

945

02 8.8 71

B.M.

4.05

903.23

4.05

899.60

899.10

77

3.44

95.2

74 80 09

+50

3.44

95.9

2.7 73 62

78

3.44

96.6

20 66 53

891.7 LNEY SWAMP  
891.4 INTAKE

+50

3.44

97.3

73 59 42

79

3.40

98.1

60 51 42

+50

1.20

98.7

4.9 4.5 4.1

80

0.00

97.4

38

6.96

905.72

4.47

898.76

+50

0.50

00.1

55 56 00

81

3.60

00.8

42 49 57

6.74

908.64

3.84

901.88

+50

4.00

01.5

60 71 20

82

4.00

02.2

53 64 10

8/110  
 2/-0.8  
 6/107 114 110 106 113 104 104 98 113 111 100 98 99 93 4/9.9  
 2/-0.5 33 29 32 16 10 -1.6 21 25 30 33 36 38 50 7/-2.2

(8)

8/89 98 90 93 92 80 69 58 5.0 6/5.4  
 2/105 33 29 24 17 13 +11 17 33 2+15

(8.0)

6/90 99 91 80 79 68 6.2 5.5 4.3 3.0 7/4.4  
 2/103 33 28 17 9 4 +11 14 33 33 6/118

(9.3)

4/100 113 100 87 75 69 75 7.2 2.3 99 66 59 2/7.0  
 2/-2.0 33 20 8 -0.9 3 12 17 21 24 29 42 7/-2.1

(6.6)

4/113 115 110 107 89 72 66 62 5.6 6.0 5.8 6.6 3/5.9 6/5.6  
 2/-4.0 33 21 10 3 -1.3 2 4 14 25 28 33 2/-1.1 1/-0.8

(5.9)

0/98 10.1 7.2 5.9 5.4 5.7 5.8 7.2 8.2 9.0 10.5 11.0 4/7.5  
 2/-3.8 33 18 8 -0.3 12 16 18 22 24 28 33 7/-3.8

(6)

0/83 87 88 78 5.9 5.3 4.9 5.1 5.3 7.4 8.7 10.8 8/9.5  
 2/-5.4 33 26 19 15 11 -0.2 8 11 15 20 33 2/-4.4

(4.5)

2/64 4.5 5.4 6.2 6.3 4.6 4.6 4.0 4.5 4.2 6.3 7.1 8.2 9.2 9.5 0/7.5  
 2/-2.4 33 28 23 17 14 12 0.2 8 11 15 20 21 28 33 2/-3.5

(3.8)

4/25 6.2 7.9 8.4 6.6 6.2 5.8 6.2 6.2 6.6 7.5 7.5 7.9 4/7.4 5/6.8  
 2/-3.3 33 27 17 14 12 -0.2 8 12 13 18 29 33 2/-1.4 1/-2.8

(5.6)

4/5.4 5/6.2 5.8 6.8 6.4 5.7 5.4 5.0 5.2 4.8 5.3 6.2 6.7 6/6.7 2/6.0  
 1/-1.2 2/-2.0 33 28 19 17 14 -0.1 6 7 10 19 33 2/-1.0 1/-0.3

(4.9)

NAIL IN TOP 11.5 7.9 8.1 + 4.0  
 2/7.4 7.6 7.7 11.4 7.7 7.4 2.5 8.0 9.2 9.5 8.2 2/7.0 4/9.0  
 1/-1.4 33 28 17 9 4 3 -0.9 9 17 33 2/-0.5 1/-1.1

(7.1)

4/85 7.4 7.4 7.8 8.6 9.4 9.0 8.5 7.4 6.8 5.9 5/6.1 1/0.78  
 1/-3.2 33 30 26 20 6 -2.6 8 21 23 33 3+1.7 1/0.0

(6.2)

908.64 ✓

750

400

02.9 ✓ 44 5.7 7

83

400

03.6 ✓ 59 5.0 04

750

400

04.2 ✓ 33 4.4 50

7.80

912.32 ✓

4.12

904.52 ✓

84

393

04.4 ✓ 69 7.9 72

750

125

04.4 ✓ 71 7.9 80

85

000

04.1 ✓ 77 8.2 80

750

03.6 ✓ 86 8.7 01

86

02.7 ✓ 9.4

750

01.7 ✓ 10.4

87

00.7 11.6

2.67

903.42 ✓

11.57

700.75 ✓

750

9.97 ✓ 3.7

88

9.87 ✓ 4.7

6-7-30

(57)  
 $\frac{6}{2} \frac{619}{33}$      $\frac{100}{33}$      $\frac{100}{20}$      $\frac{92}{2}$      $\frac{88}{3.1}$      $\frac{82}{3}$      $\frac{7.1}{14}$      $\frac{6.5}{17}$      $\frac{4.5}{33}$      $\frac{4.2}{35}$      $\frac{9}{226}$

(50)  
 $\frac{4}{8} \frac{81}{53}$      $\frac{75}{33}$      $\frac{89}{29}$      $\frac{89}{13}$      $\frac{80}{5}$      $\frac{70}{-20}$      $\frac{45}{12}$      $\frac{3.5}{33}$      $\frac{3.5}{35}$      $\frac{2.5}{131}$

(44)  
 $\frac{6}{4} \frac{42}{-0.9}$      $\frac{5}{2} \frac{45}{-10}$      $\frac{4.7}{33}$      $\frac{4.2}{21}$      $\frac{4.3}{8}$      $\frac{4.4}{5}$      $\frac{5.0}{3}$      $\frac{4.8}{-0.4}$      $\frac{4.3}{3}$      $\frac{2.4}{8}$      $\frac{2.8}{20}$      $\frac{3.5}{24}$      $\frac{3.0}{33}$      $\frac{2.9}{35}$      $\frac{0}{127}$

(11)  
 $\frac{8}{4} \frac{78}{-0.9}$      $\frac{6}{2} \frac{78}{-0.9}$      $\frac{34}{33}$      $\frac{75}{27}$      $\frac{77}{22}$      $\frac{28}{14}$      $\frac{75}{6}$      $\frac{7.6}{103}$      $\frac{7}{7}$      $\frac{20}{11}$      $\frac{8.2}{13}$      $\frac{28}{18}$      $\frac{2.5}{24}$      $\frac{5.8}{33}$      $\frac{5.2}{33}$      $\frac{3}{441}$

(79)  
 $\frac{4}{1} \frac{78}{-0.7}$      $\frac{6}{4} \frac{67}{104}$      $\frac{6.9}{33}$      $\frac{6.6}{17}$      $\frac{8.0}{15}$      $\frac{8.0}{10}$      $\frac{7.6}{103}$      $\frac{7.9}{11}$      $\frac{8.0}{15}$      $\frac{7.6}{22}$      $\frac{4.9}{27}$      $\frac{4.7}{30}$      $\frac{4.7}{33}$      $\frac{4}{441}$

(62)  
 $\frac{0}{2} \frac{5.7}{120}$      $\frac{6.0}{33}$      $\frac{5.3}{23}$      $\frac{6.6}{18}$      $\frac{8.5}{14}$      $\frac{8.1}{10}$      $\frac{7.8}{104}$      $\frac{8.2}{11}$      $\frac{7.9}{17}$      $\frac{6.5}{19}$      $\frac{4.6}{29}$      $\frac{4.9}{33}$      $\frac{0}{441}$

(87)  
 $\frac{0}{10} \frac{7}{374}$      $\frac{4.2}{33}$      $\frac{4.0}{50}$      $\frac{7.6}{25}$      $\frac{10.2}{21}$      $\frac{9.4}{16}$      $\frac{8.8}{11}$      $\frac{8.9}{10}$      $\frac{8.5}{10.2}$      $\frac{8.7}{11}$      $\frac{8.7}{12}$      $\frac{8.4}{16}$      $\frac{6.7}{20}$      $\frac{7.5}{33}$      $\frac{7}{718}$      $\frac{0}{1.00}$

(90)  
 $\frac{4}{4} \frac{105}{-0.7}$      $\frac{6}{3} \frac{5.2}{15.4}$      $\frac{4.1}{33}$      $\frac{4.2}{33}$      $\frac{3.8}{30}$      $\frac{5.1}{28}$      $\frac{10.8}{22}$      $\frac{10.0}{11}$      $\frac{9.7}{-0.1}$      $\frac{10.1}{11}$      $\frac{9.8}{12}$      $\frac{9.7}{15}$      $\frac{6.5}{22}$      $\frac{6.0}{25}$      $\frac{7.2}{33}$      $\frac{6}{131}$      $\frac{4}{22}$

(106)  
 $\frac{8}{2} \frac{74}{132}$      $\frac{7.2}{33}$      $\frac{7.6}{27}$      $\frac{9.6}{21}$      $\frac{10.7}{15}$      $\frac{11.1}{12}$      $\frac{10.8}{11}$      $\frac{10.6}{0.0}$      $\frac{10.9}{11}$      $\frac{10.8}{15}$      $\frac{10.5}{17}$      $\frac{7.9}{25}$      $\frac{8.5}{30}$      $\frac{8.9}{33}$      $\frac{9}{126}$      $\frac{4}{102}$

(106)  
 $\frac{0}{-0.5} \frac{72.1}{118}$      $\frac{7}{2} \frac{7.8}{118}$      $\frac{9.7}{33}$      $\frac{9.8}{34}$      $\frac{10.8}{20}$      $\frac{11.9}{18}$      $\frac{12.1}{13}$      $\frac{11.8}{10}$      $\frac{11.5}{10.1}$      $\frac{11.8}{11}$      $\frac{11.6}{12}$      $\frac{11.9}{15}$      $\frac{11.5}{20}$      $\frac{11.6}{28}$      $\frac{12.4}{33}$      $\frac{4}{103}$      $\frac{6}{119}$      $\frac{0}{-0.3}$

(37)  
 $\frac{8}{3} \frac{41}{-0.4}$      $\frac{5}{2} \frac{3.0}{11.7}$      $\frac{4.5}{33}$      $\frac{3.6}{31}$      $\frac{2.0}{27}$      $\frac{2.1}{22}$      $\frac{4.1}{17}$      $\frac{3.7}{10}$      $\frac{4.1}{0.0}$      $\frac{3.4}{8}$      $\frac{3.8}{11}$      $\frac{1.8}{10}$      $\frac{2.4}{24}$      $\frac{2}{33}$      $\frac{1}{118}$      $\frac{0}{1.00}$

(47)  
 $\frac{8}{1} \frac{5.1}{-0.4}$      $\frac{0}{1} \frac{2.7}{12.0}$      $\frac{5.2}{33}$      $\frac{2.7}{27}$      $\frac{3.5}{23}$      $\frac{4.7}{19}$      $\frac{5.1}{14}$      $\frac{4.6}{10}$      $\frac{5.1}{10.1}$      $\frac{4.4}{10}$      $\frac{3.8}{18}$      $\frac{3.4}{21}$      $\frac{3.0}{24}$      $\frac{3.2}{33}$      $\frac{6}{119}$      $\frac{4}{149}$      $\frac{0}{-0.2}$

703.42

+50

- F02

97.7 ✓

5.7

89

F06

96.6 ✓

68

+50

F06

95.5 ✓

79

4.76 898.11 ✓

10.07

893.35 ✓

90

F08

94.4 ✓

3.7

+50

93.3 ✓

48

91

92.1 ✓

60

+50

90.9 ✓

1.5 7.2 69

2.50 892.28 ✓

8.33

889.78 ✓

B.M.

9.13 892.39 ✓

9.13

883.15 ✓

883.26

92

0.43

89.7 ✓

3.4 2.7 10

+50

3.01

88.5 ✓

5.1 3.9 29

93

3.44

87.3 ✓

6.5 5.1 40

+14

87.0 ✓

5.4

6-7-30

(5.7)

4/34	45	53	56	62	65	62	61	66	62	65	49	50	45	47	1/13
2/25	33	28	24	17	13	10	-24	10	11	14	18	20	21	33	2/14

(6.0)

9/34	37	35	24	73	76	74	79	77	75	42	43	53	44	1/13
2/14	33	24	17	12	10	-06	9	10	14	20	26	33	2/24	

(7.1)

3/50	47	49	42	44	90	88	87	90	88	65	55	63	1/58
2/29	33	27	27	25	17	11	-08	10	16	20	25	33	2/21

(7.1)

NAIL IN. N.F. RT STA 90150															
6/50	6/33	26	21	54	57	50	49	46	52	53	43	20	27	42.1	9/57
1/19	2/14	33	23	17	14	13	10	-09	10	18	21	24	33	2/16	1/20

(4.8)

4/20	49	49	67	77	76	69	61	61	58	63	64	75	78	62	42	43	8/15
1/22	33	32	30	27	21	17	15	10	7.0	11	13	18	23	27	30	33	1/29

(6.0)

8/25	74	72	88	85	75	73	70	74	73	81	89	88	64	66	8/29
1/25	33	28	26	17	15	10	-1.0	10	13	17	19	26	29	33	1/29

(7.7)

4/22	105	101	92	82	82	78	84	89	99	110	109	97	100	6/27
1/17	33	26	16	14	10	-0.4	10	14	18	22	25	26	33	1/28

(7.1)

4/34	88	74	60	48	33	33	29	32	29	30	60	71	6/58
1/00	33	30	26	18	14	10	-0.2	11	13	14	21	33	2/38

(7.1)

6/51	11	88	42	43	38	40	41	8.8	9.5	9/37
1/00	33	24	14	9	10.1	13	17	30	33	1/10

(3.1)

6/20	99	99	98	90	67	5.1	4.9	4.6	5.1	5.7	9.7	9/6.0
2/33	33	22	18	16	10	4	10.0	11	21	29	37	2/2.0

(5.4)

9.5	9.0	100	9.5	8.0	5.7	5.1	5.3	4.9	5.5	6.0	8.3
33	21	19	12	8	3	-	5	16	23	33	38

892.39

f50

3.44

86.3

7.5 61 5.0

f56

4.7  
7.69

86.5

6.1

94

3.44

85.6

82 68 5.7

f50

3.44

85.4

84 70 5.0

95

3.44

85.4

84 70 5.0

11.21

894.47

7.13

883.22

f50

3.44

85.9

10.0 8.6 7.5

96

3.44

86.7

92 78 6.1

f50

3.20

87.7

80 68 5.8

97

0.70

88.7

66 58 5.1

f50

0.00

89.7

5.2 48 4.4

98

90.7

3.9 3.8 3.7

f50

91.7

2.8

6-9-30

(6.1)

$\frac{1}{1} \frac{0}{28}$	$\frac{4}{1} \frac{7.5}{0.0}$	$\frac{8.1}{33}$	$\frac{7.7}{18}$	$\frac{7.4}{3}$	$\frac{7.2}{3.1}$	$\frac{9.5}{2}$	$\frac{8.7}{8}$	$\frac{5.9}{15}$	$\frac{5.9}{22}$	$\frac{5.7}{34}$	$\frac{6.2}{47}$	$\frac{6.1}{50}$	$\frac{5.9}{29}$
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(6.)

$\frac{8.0}{33}$	$\frac{7.4}{15}$	$\frac{7.1}{4}$	$\frac{7.0}{5}$	$\frac{9.5}{11}$	$\frac{9.0}{15}$	$\frac{7.2}{18}$	$\frac{6.5}{25}$	$\frac{6.0}{38}$	$\frac{5.9}{51}$	$\frac{6.4}{56}$	$\frac{6.2}{56}$
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(6.8)

$\frac{1}{1} \frac{1}{8.4}$	$\frac{8.4}{33}$	$\frac{8.4}{23}$	$\frac{7.4}{4}$	$\frac{7.4}{10.2}$	$\frac{6.6}{15}$	$\frac{5.7}{25}$	$\frac{5.5}{30}$	$\frac{8.3}{35}$	$\frac{9.3}{37}$	$\frac{8.7}{46}$	$\frac{6.9}{50}$	$\frac{6.8}{10.4}$	$\frac{5.3}{10.1}$	$\frac{5.8}{10.1}$
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(7.0)

$\frac{1}{1} \frac{1}{8.6}$	$\frac{8.4}{33}$	$\frac{8.4}{27}$	$\frac{7.6}{19}$	$\frac{7.4}{8}$	$\frac{6.7}{10.3}$	$\frac{5.9}{11}$	$\frac{5.5}{26}$	$\frac{5.2}{44}$	$\frac{4.7}{66}$	$\frac{8.4}{72}$	$\frac{8.6}{78}$	$\frac{7.5}{100}$	$\frac{7.4}{10.5}$
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(7.0)

$\frac{0}{5} \frac{5.3}{13.1}$	$\frac{5.4}{33}$	$\frac{5.6}{25}$	$\frac{5.6}{7}$	$\frac{5.2}{11.8}$	$\frac{5.8}{16}$	$\frac{5.2}{37}$	$\frac{9.0}{47}$	$\frac{8.4}{50}$	$\frac{7.8}{56}$	$\frac{4}{10.3}$	$\frac{4}{10.3}$
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(8.6)

$\frac{8}{3} \frac{7.7}{12.3}$	$\frac{7.7}{30}$	$\frac{8.6}{17}$	$\frac{8.9}{0.3}$	$\frac{8.9}{8}$	$\frac{10.3}{13}$	$\frac{10.2}{16}$	$\frac{9.2}{20}$	$\frac{8.6}{35}$	$\frac{9.1}{47}$	$\frac{9.5}{77}$	$\frac{9.5}{12.0}$
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(7.8)

$\frac{1}{1} \frac{6}{9.8}$	$\frac{8}{10.4}$	$\frac{8.6}{33}$	$\frac{9.5}{20}$	$\frac{9.8}{4}$	$\frac{8.6}{1}$	$\frac{8.6}{-0.8}$	$\frac{8.4}{12}$	$\frac{8.6}{25}$	$\frac{9.2}{2.7}$	$\frac{11.1}{30}$	$\frac{9.6}{33}$	$\frac{0}{5} \frac{8.7}{20}$
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(6.8)

$\frac{0}{1} \frac{10.2}{2.2}$	$\frac{9.5}{36}$	$\frac{9.8}{31}$	$\frac{10.1}{15}$	$\frac{8.2}{12}$	$\frac{7.6}{10}$	$\frac{7.3}{-0.5}$	$\frac{7.6}{12}$	$\frac{8.2}{15}$	$\frac{10.8}{22}$	$\frac{11.4}{33}$	$\frac{8}{5} \frac{11.2}{5.4}$
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(5.8)

$\frac{1}{1} \frac{1}{9.0}$	$\frac{9.2}{33}$	$\frac{7.4}{27}$	$\frac{9.6}{30}$	$\frac{6.4}{13}$	$\frac{6.4}{10}$	$\frac{6.0}{-0.4}$	$\frac{6.5}{12}$	$\frac{9.9}{18}$	$\frac{9.9}{28}$	$\frac{9.7}{35}$	$\frac{2}{3} \frac{10.2}{5.1}$
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(6.8)

$\frac{0}{1} \frac{10.0}{4.8}$	$\frac{9.8}{33}$	$\frac{10.0}{27}$	$\frac{9.9}{21}$	$\frac{8.6}{18}$	$\frac{5.4}{12}$	$\frac{5.0}{-0.2}$	$\frac{5.4}{12}$	$\frac{10.1}{19}$	$\frac{11.2}{24}$	$\frac{11.0}{33}$	$\frac{6}{2} \frac{11.2}{6.8}$
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(7.8)

$\frac{1}{1} \frac{1}{8.1}$	$\frac{9.5}{33}$	$\frac{8.6}{25}$	$\frac{7.8}{18}$	$\frac{4.4}{13}$	$\frac{3.8}{0.0}$	$\frac{4.2}{12}$	$\frac{8.4}{19}$	$\frac{10.1}{25}$	$\frac{11.2}{31}$	$\frac{11.5}{33}$	$\frac{4}{2} \frac{10.9}{7.2}$
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(7.8)

$\frac{1}{1} \frac{1}{6.9}$	$\frac{6.6}{33}$	$\frac{6.9}{26}$	$\frac{6.8}{19}$	$\frac{2.9}{13}$	$\frac{2.4}{10.4}$	$\frac{2.7}{12}$	$\frac{8.4}{21}$	$\frac{9.7}{28}$	$\frac{10.3}{33}$	$\frac{2}{3} \frac{9.4}{6.6}$
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894.47

99

B.M.

11.21

92.7

1.8

883.26 ✓

6-9-30

(48)

<u>1.5</u>	<u>1.3</u>	<u>3.2</u>	<u>3.2</u>	<u>1.4</u>	<u>1.1</u>	<u>1.6</u>	<u>4.0</u>	<u>4.5</u>	<u>5.4</u>
23	23	18	16	12		14	19	24	33

Sta.	+	H.I.	-	Elev.
B.M.	4.25	891.74		887.49
0+64 <sup>3</sup>				

1

+50

2

+50

3

T.P.	5.40	891.68	5.46	886.28
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+50

July 18-30

4

+50

5

+50

6

July 17 30

24

Left

£

Right

$\frac{5.0}{33}$	$\frac{5.0}{26}$	$\frac{4.5}{24}$	$\frac{4.7}{10}$	$\frac{5.0}{4.8}$	$\frac{5.0}{5}$	$\frac{5.5}{7}$	$\frac{5.7}{33}$
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$\frac{5.7}{33}$	$\frac{6.0}{26}$	$\frac{6.0}{23}$	$\frac{5.4}{21}$	$\frac{5.2}{10}$	$\frac{5.0}{5.0}$	$\frac{5.0}{6}$	$\frac{5.8}{8}$	$\frac{6.6}{13}$	$\frac{14.7}{28}$	$\frac{15.7}{33}$
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$\frac{6.7}{33}$	$\frac{6.2}{30}$	$\frac{9.3}{26}$	$\frac{9.0}{22}$	$\frac{6.3}{19}$	$\frac{5.1}{5.0}$	$\frac{4.8}{9}$	$\frac{5.9}{12}$	$\frac{7.0}{19}$	$\frac{10.4}{27}$	$\frac{11.7}{33}$
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$\frac{4.1}{33}$	$\frac{4.1}{32}$	$\frac{9.5}{27}$	$\frac{9.4}{21}$	$\frac{6.6}{17}$	$\frac{5.1}{5.1}$	$\frac{4.4}{11}$	$\frac{5.7}{14}$	$\frac{6.0}{18}$	$\frac{7.7}{33}$
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$\frac{4.6}{33}$	$\frac{5.0}{30}$	$\frac{9.5}{25}$	$\frac{9.1}{19}$	$\frac{6.4}{16}$	$\frac{5.0}{5.2}$	$\frac{4.6}{14}$	$\frac{5.6}{16}$	$\frac{6.0}{25}$	$\frac{5.8}{33}$
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$\frac{4.2}{33}$	$\frac{5.6}{28}$	$\frac{9.4}{25}$	$\frac{9.0}{19}$	$\frac{6.4}{15}$	$\frac{5.1}{5.1}$	$\frac{4.2}{15}$	$\frac{5.4}{16}$	$\frac{5.7}{25}$	$\frac{5.4}{33}$
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Top store Lt 3+50

$\frac{2.8}{33}$	$\frac{4.0}{29}$	$\frac{8.7}{24}$	$\frac{8.4}{19}$	$\frac{5.6}{15}$	$\frac{4.9}{4.7}$	$\frac{3.8}{13}$	$\frac{5.6}{17}$	$\frac{5.8}{20}$	$\frac{5.5}{21}$	$\frac{5.3}{33}$
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$\frac{4.5}{33}$	$\frac{5.0}{28}$	$\frac{8.3}{24}$	$\frac{8.2}{21}$	$\frac{5.4}{15}$	$\frac{4.9}{4.3}$	$\frac{3.8}{13}$	$\frac{5.7}{16}$	$\frac{6.0}{19}$	$\frac{5.0}{20}$	$\frac{5.5}{33}$
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$\frac{3.8}{33}$	$\frac{5.8}{26}$	$\frac{8.0}{23}$	$\frac{7.5}{18}$	$\frac{5.3}{14}$	$\frac{4.8}{4.5}$	$\frac{3.9}{13}$	$\frac{6.2}{16}$	$\frac{6.3}{19}$	$\frac{5.0}{20}$	$\frac{8.7}{28}$	$\frac{8.7}{33}$
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$\frac{5.3}{33}$	$\frac{6.7}{25}$	$\frac{7.8}{23}$	$\frac{7.4}{18}$	$\frac{5.1}{13}$	$\frac{4.6}{4.6}$	$\frac{4.2}{13}$	$\frac{5.8}{16}$	$\frac{7.3}{21}$	$\frac{11.1}{33}$
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$\frac{7.5}{33}$	$\frac{8.2}{25}$	$\frac{8.1}{18}$	$\frac{4.9}{13}$	$\frac{4.6}{4.6}$	$\frac{4.6}{13}$	$\frac{6.2}{15}$	$\frac{8.5}{21}$	$\frac{11.1}{33}$
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$\frac{7.8}{33}$	$\frac{9.8}{24}$	$\frac{4.3}{13}$	$\frac{4.6}{4.6}$	$\frac{5.1}{14}$	$\frac{6.7}{18}$	$\frac{11.3}{28}$	$\frac{12.7}{33}$
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Sta.	+	H.I.	-	Elev.
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891.68

6+50

7

+50

8

B.M.	3.71	891.30 ✓	4.09	887.59 ✓
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+50

9

+50

10

+50

11

+50

+93

X Drain = 24" x 42' R. 3

12

T.P.

5.72

889.36 ✓

1.66

883.64 ✓

Left      E      Right

$\frac{81}{33}$	$\frac{95}{31}$	$\frac{96}{26}$	$\frac{38}{13}$	$\frac{46}{46}$	$\frac{55}{75}$	$\frac{72}{78}$	$\frac{98}{23}$	$\frac{115}{33}$
-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	------------------

$\frac{58}{33}$	$\frac{88}{25}$	$\frac{88}{22}$	$\frac{37}{73}$	$\frac{46}{46}$	$\frac{56}{75}$	$\frac{80}{79}$	$\frac{104}{25}$	$\frac{108}{33}$
-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	------------------	------------------

$\frac{66}{33}$	$\frac{66}{26}$	$\frac{66}{21}$	$\frac{56}{78}$	$\frac{36}{73}$	$\frac{45}{45}$	$\frac{55}{75}$	$\frac{95}{23}$	$\frac{100}{25}$	$\frac{104}{33}$
-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	------------------	------------------

$\frac{50}{33}$	$\frac{45}{24}$	$\frac{38}{15}$	$\frac{46}{46}$	$\frac{55}{73}$	$\frac{90}{79}$	$\frac{90}{22}$	$\frac{84}{23}$	$\frac{107}{33}$
-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	------------------

S.W. cor. Mont.

$\frac{37}{33}$	$\frac{37}{22}$	$\frac{34}{19}$	$\frac{43}{43}$	$\frac{50}{75}$	$\frac{74}{79}$	$\frac{74}{25}$	$\frac{43}{28}$	$\frac{43}{33}$
-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------

$\frac{21}{33}$	$\frac{28}{25}$	$\frac{57}{23}$	$\frac{57}{78}$	$\frac{36}{74}$	$\frac{45}{45}$	$\frac{52}{74}$	$\frac{77}{78}$	$\frac{77}{24}$	$\frac{41}{29}$	$\frac{47}{33}$
-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------

$\frac{40}{33}$	$\frac{36}{24}$	$\frac{68}{21}$	$\frac{66}{77}$	$\frac{41}{73}$	$\frac{44}{44}$	$\frac{52}{73}$	$\frac{80}{78}$	$\frac{78}{23}$	$\frac{44}{26}$	$\frac{48}{33}$
-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------

$\frac{55}{33}$	$\frac{55}{23}$	$\frac{72}{21}$	$\frac{72}{78}$	$\frac{45}{73}$	$\frac{48}{48}$	$\frac{54}{73}$	$\frac{80}{77}$	$\frac{81}{22}$	$\frac{47}{27}$	$\frac{46}{33}$
-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------

$\frac{66}{33}$	$\frac{58}{23}$	$\frac{78}{21}$	$\frac{78}{77}$	$\frac{53}{73}$	$\frac{52}{52}$	$\frac{55}{73}$	$\frac{80}{78}$	$\frac{82}{22}$	$\frac{50}{25}$	$\frac{42}{33}$
-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------

$\frac{66}{26}$	$\frac{68}{23}$	$\frac{81}{21}$	$\frac{81}{78}$	$\frac{56}{73}$	$\frac{55}{55}$	$\frac{55}{73}$	$\frac{85}{79}$	$\frac{85}{21}$	$\frac{60}{24}$	$\frac{56}{33}$
-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------

$\frac{100}{27}$	$\frac{80}{20}$	$\frac{86}{74}$	$\frac{86}{76}$	$\frac{62}{73}$	$\frac{60}{60}$	$\frac{62}{73}$	$\frac{90}{78}$	$\frac{90}{21}$	$\frac{76}{26}$	$\frac{74}{33}$
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12.55 ← Flowline → 12.65

$\frac{110}{33}$	$\frac{98}{25}$	$\frac{86}{78}$	$\frac{65}{73}$	$\frac{67}{67}$	$\frac{67}{73}$	$\frac{97}{78}$	$\frac{106}{24}$	$\frac{107}{33}$
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West side Drain 11 + 45 RT.

Sta.	+	H.I.	-	Elev.
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889.36

+50

13

+50

14

+50

15

+50

+76

X Ordin = 24" X 56' P. 3

16

+50

T.P.

4.09

892.75<sup>v</sup>

0.70

888.66<sup>v</sup>

17

+50

18

T.P.

8.47

901.01<sup>v</sup>

0.21

892.54<sup>v</sup>

July. 19-30

26

Left

£

Right

$\frac{32}{33}$	$\frac{54}{24}$	$\frac{71}{21}$	$\frac{72}{16}$	$\frac{49}{13}$	(49) 49	$\frac{49}{13}$	$\frac{71}{16}$	$\frac{75}{23}$	$\frac{92}{30}$	$\frac{96}{33}$	
$\frac{17}{33}$	$\frac{54}{24}$	$\frac{76}{22}$	$\frac{72}{16}$	$\frac{51}{13}$	(53) 51	$\frac{55}{13}$	$\frac{77}{17}$	$\frac{78}{22}$	$\frac{60}{24}$	$\frac{65}{33}$	
$\frac{21}{33}$	$\frac{64}{23}$	$\frac{80}{21}$	$\frac{78}{16}$	$\frac{54}{13}$	(56) 53	$\frac{55}{13}$	$\frac{78}{17}$	$\frac{82}{22}$	$\frac{53}{25}$	$\frac{55}{33}$	
$\frac{48}{33}$	$\frac{68}{22}$	$\frac{80}{20}$	$\frac{79}{17}$	$\frac{55}{13}$	(55) 54	$\frac{55}{13}$	$\frac{71}{16}$	$\frac{83}{19}$	$\frac{83}{22}$	$\frac{73}{23}$	$\frac{81}{33}$
$\frac{99}{33}$	$\frac{95}{23}$	$\frac{85}{19}$	$\frac{51}{13}$	(52) 50	$\frac{51}{14}$	$\frac{105}{24}$	$\frac{115}{31}$	$\frac{115}{33}$			
	$\frac{108}{33}$	$\frac{108}{26}$	$\frac{45}{13}$	(46) 43	$\frac{46}{13}$	$\frac{120}{21}$	$\frac{120}{33}$				
	$\frac{112}{33}$	$\frac{114}{27}$	$\frac{38}{13}$	(38) 35	$\frac{41}{13}$	$\frac{122}{29}$	$\frac{122}{33}$				
	$\frac{124}{35}$	$\frac{121}{31}$	$\frac{24}{13}$	(26) 27	$\frac{33}{13}$	$\frac{125}{32}$	$\frac{125}{35}$				
	$\frac{120}{33}$	$\frac{115}{31}$	$\frac{07}{13}$	(13) 14	$\frac{24}{15}$	$\frac{118}{33}$	$\frac{116}{38}$				
$\frac{123}{33}$	$\frac{90}{25}$	$\frac{70}{21}$	$\frac{26}{13}$	(34) 34	$\frac{50}{16}$	$\frac{152}{33}$	$\frac{152}{35}$				
	$\frac{57}{33}$	$\frac{51}{21}$	$\frac{13}{13}$	(21) 22	$\frac{35}{16}$	$\frac{125}{33}$	$\frac{130}{37}$				
$\frac{40}{33}$	$\frac{46}{25}$	$\frac{35}{22}$	$\frac{31}{17}$	(08) 08	$\frac{23}{16}$	$\frac{56}{22}$	$\frac{60}{26}$	$\frac{62}{27}$	$\frac{66}{33}$		

Flooding 14.95

Sta	+	Ht. ✓	-	Elev ✓	
	+50	901.01			
19					
T. Point	7.81	904.92 ✓	3.90	897.11 ✓	
	+50				
20					
	+50				
21					
	+50				
22					
B.M.	4.80	908.60 ✓	1.10	903.82 ✓	903.80
	+50				
23					
	+50				
24					

LEFT

£

RIGHT

$\frac{2.8}{33}$	$\frac{2.0}{29}$	$\frac{9.4}{20}$	$\frac{9.4}{76}$	$\frac{6.9}{73}$	$\frac{7.7}{77}$	$\frac{9.0}{16}$	$\frac{11.7}{20}$	$\frac{12.0}{24}$	$\frac{7.5}{28}$	$\frac{8.1}{33}$
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$\frac{0.8}{33}$	$\frac{2.7}{31}$	$\frac{8.4}{20}$	$\frac{8.4}{17}$	$\frac{5.2}{13}$	$\frac{6.3}{63}$	$\frac{7.8}{16}$	$\frac{10.3}{19}$	$\frac{10.3}{23}$	$\frac{1.3}{34}$	$\frac{1.7}{39}$
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$\frac{4.5}{33}$	$\frac{4.4}{30}$	$\frac{10.7}{20}$	$\frac{10.7}{17}$	$\frac{7.9}{13}$	$\frac{9.2}{92}$	$\frac{10.6}{16}$	$\frac{12.6}{19}$	$\frac{12.8}{22}$	$\frac{2.9}{34}$	$\frac{2.9}{38}$
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$\frac{3.6}{33}$	$\frac{3.8}{28}$	$\frac{9.2}{19}$	$\frac{9.1}{75}$	$\frac{6.8}{13}$	$\frac{7.7}{77}$	$\frac{9.4}{14}$	$\frac{11.4}{17}$	$\frac{11.5}{21}$	$\frac{1.3}{34}$	$\frac{1.0}{38}$
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$\frac{3.9}{33}$	$\frac{4.0}{26}$	$\frac{7.7}{20}$	$\frac{7.6}{16}$	$\frac{5.5}{14}$	$\frac{6.2}{62}$	$\frac{7.5}{15}$	$\frac{9.8}{18}$	$\frac{10.0}{22}$	$\frac{2.9}{34}$	$\frac{2.7}{38}$
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$\frac{3.4}{33}$	$\frac{3.2}{25}$	$\frac{6.8}{21}$	$\frac{6.5}{17}$	$\frac{4.3}{13}$	$\frac{4.7}{47}$	$\frac{5.7}{14}$	$\frac{8.0}{19}$	$\frac{7.8}{23}$	$\frac{2.4}{31}$	$\frac{2.4}{33}$
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$\frac{3.1}{33}$	$\frac{2.7}{25}$	$\frac{6.0}{21}$	$\frac{5.8}{16}$	$\frac{3.6}{13}$	$\frac{3.5}{35}$	$\frac{4.1}{14}$	$\frac{6.2}{17}$	$\frac{6.2}{21}$	$\frac{1.1}{29}$	$\frac{1.0}{33}$
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$\frac{2.6}{33}$	$\frac{2.3}{24}$	$\frac{5.4}{21}$	$\frac{5.1}{16}$	$\frac{2.8}{13}$	$\frac{2.7}{27}$	$\frac{2.9}{13}$	$\frac{4.9}{16}$	$\frac{5.1}{21}$	$\frac{0.7}{27}$	$\frac{0.8}{33}$
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Spike in 12" tree 100' Lt 340 23+00

$\frac{6.6}{33}$	$\frac{6.3}{23}$	$\frac{8.2}{22}$	$\frac{8.1}{17}$	$\frac{5.7}{13}$	$\frac{56.1}{56.1}$	$\frac{5.6}{13}$	$\frac{7.8}{17}$	$\frac{7.8}{21}$	$\frac{5.1}{24}$	$\frac{4.5}{38}$
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$\frac{6.4}{33}$	$\frac{6.2}{22}$	$\frac{8.0}{21}$	$\frac{7.5}{16}$	$\frac{5.1}{13}$	$\frac{50.0}{50.0}$	$\frac{5.2}{14}$	$\frac{6.8}{18}$	$\frac{7.0}{22}$	$\frac{4.5}{25}$	$\frac{4.0}{33}$
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$\frac{5.5}{33}$	$\frac{5.4}{33}$	$\frac{7.5}{21}$	$\frac{7.3}{17}$	$\frac{5.1}{13}$	$\frac{4.6}{46}$	$\frac{4.8}{13}$	$\frac{6.7}{17}$	$\frac{7.0}{21}$	$\frac{3.9}{25}$	$\frac{3.7}{33}$
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$\frac{4.8}{33}$	$\frac{5.0}{24}$	$\frac{7.4}{21}$	$\frac{7.2}{17}$	$\frac{5.0}{13}$	$\frac{4.8}{5.0}$	$\frac{5.2}{13}$	$\frac{7.4}{17}$	$\frac{7.5}{21}$	$\frac{5.8}{23}$	$\frac{5.7}{33}$
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Station	+	Hi.	-	Elev
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908.60

+50

25

+50

26

+08

+70

T.P.

1.40

899.84

10.16

898.44

27

B.M.

+50

6.28

893.56

893.57

28

+50

29

+50

Left

L

Right

$\frac{4.1}{33}$	$\frac{4.4}{25}$	$\frac{7.6}{22}$	$\frac{7.6}{17}$	$\frac{5.3}{13}$	5.1 $\frac{5.2}{13}$	$\frac{8.1}{17}$	$\frac{8.2}{21}$	$\frac{7.7}{22}$	$\frac{8.2}{33}$	
$\frac{5.7}{33}$	$\frac{3.7}{28}$	$\frac{7.7}{22}$	$\frac{7.6}{16}$	$\frac{6.1}{13}$	5.4 $\frac{5.9}{14}$	$\frac{8.9}{18}$	$\frac{8.8}{21}$	$\frac{8.0}{22}$	$\frac{10.0}{33}$	
$\frac{6.7}{33}$	$\frac{6.9}{21}$	$\frac{7.9}{20}$	$\frac{8.2}{16}$	$\frac{6.7}{13}$	6.1 $\frac{6.9}{13}$	$\frac{6.8}{18}$	$\frac{9.5}{22}$	$\frac{8.3}{23}$	$\frac{10.4}{33}$	
$\frac{4.3}{33}$	$\frac{4.3}{31}$	$\frac{6.7}{28}$	$\frac{7.7}{26}$	$\frac{7.7}{13}$	7.6 $\frac{7.7}{13}$	$\frac{10.1}{17}$	$\frac{10.1}{21}$	$\frac{8.6}{22}$	$\frac{10.1}{33}$	
$\frac{5.7}{27}$	$\frac{7.8}{24}$	$\frac{8.0}{22}$	$\frac{8.2}{21}$	$\frac{8.3}{17}$	7.8 $\frac{7.9}{13}$	$\frac{8.1}{17}$	$\frac{10.2}{21}$	$\frac{8.8}{23}$	$\frac{9.8}{33}$	
$\frac{7.8}{33}$	$\frac{7.8}{26}$	$\frac{11.3}{21}$	$\frac{11.5}{17}$	$\frac{9.4}{13}$	9.1 $\frac{9.4}{13}$	$\frac{9.5}{19}$	$\frac{10.4}{21}$	$\frac{10.4}{24}$	$\frac{9.6}{25}$	$\frac{10.3}{33}$
$\frac{9.5}{33}$	$\frac{4.4}{25}$	$\frac{12.0}{21}$	$\frac{11.8}{17}$	$\frac{10.0}{13}$	10.0 $\frac{10.0}{13}$	$\frac{10.6}{28}$	$\frac{10.8}{33}$			
spike $\frac{4.8}{33}$	10.12 $\frac{4.2}{21}$	C.V. $\frac{4.5}{20}$	10.9 $\frac{4.4}{16}$	10.4 $\frac{2.3}{13}$	10.4 $\frac{2.3}{13}$	27+50 $\frac{2.5}{13}$	$\frac{3.3}{15}$	$\frac{2.7}{20}$	$\frac{2.9}{26}$	$\frac{2.7}{33}$
$\frac{8.0}{33}$	$\frac{7.5}{23}$	$\frac{6.5}{19}$	$\frac{3.6}{13}$	3.4 $\frac{3.4}{13}$	3.4 $\frac{3.4}{13}$	$\frac{5.7}{16}$	$\frac{5.6}{28}$	$\frac{4.9}{33}$		
	$\frac{8.5}{33}$	$\frac{7.1}{18}$	$\frac{4.5}{13}$	4.5 $\frac{4.3}{13}$	4.5 $\frac{4.3}{13}$	$\frac{6.7}{17}$	$\frac{6.9}{24}$	$\frac{7.2}{33}$		
$\frac{6.0}{33}$	$\frac{6.0}{26}$	$\frac{8.3}{21}$	$\frac{8.1}{16}$	$\frac{5.8}{12}$	5.6 $\frac{5.3}{13}$	$\frac{5.4}{18}$	$\frac{7.5}{23}$	$\frac{7.0}{25}$	$\frac{7.8}{33}$	
$\frac{4.9}{33}$	$\frac{4.7}{28}$	$\frac{9.2}{21}$	$\frac{9.0}{18}$	$\frac{6.8}{13}$	6.7 $\frac{6.5}{13}$	$\frac{6.8}{17}$	$\frac{8.5}{24}$	$\frac{7.8}{25}$	$\frac{9.2}{33}$	

Station	+	H.I.	-	Elev
30		899.84 ✓		
	+50			
T.P.	1.64	892.58 ✓	8.90	890.94 ✓
31		<sup>21</sup> 90.48		July. 21-20.P
	+50			
32				
	+37			
33				
	+50			
34				
	+50			
35				
	+50			

Left

±

Right

$\frac{6.5}{33}$	$\frac{6.4}{27}$	$\frac{10.2}{22}$	$\frac{10.2}{78}$	$\frac{7.7}{13}$	$\frac{7.6}{7.5}$	$\frac{7.5}{13}$	$\frac{7.5}{17}$	$\frac{10.5}{23}$	$\frac{11.3}{33}$
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$\frac{9.4}{33}$	$\frac{9.8}{23}$	$\frac{11.2}{21}$	$\frac{10.8}{16}$	$\frac{8.9}{13}$	$\frac{8.8}{8.5}$	$\frac{9.0}{13}$	$\frac{13.8}{23}$	$\frac{15.0}{33}$
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Nail in T.P. 22' Lt Sta.

$\frac{5.3}{33}$	$\frac{5.6}{25}$	$\frac{5.6}{18}$	$\frac{2.3}{13}$	$\frac{3.0 + 6.2}{2.1}$	$\frac{2.1}{13}$	$\frac{10.0}{27}$	$\frac{10.4}{33}$
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$\frac{8.4}{33}$	$\frac{7.7}{21}$	$\frac{3.3}{13}$	$\frac{3.4}{2.8}$	$\frac{3.1}{13}$	$\frac{7.8}{22}$	$\frac{8.0}{33}$
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$\frac{10.8}{33}$	$\frac{10.6}{28}$	$\frac{9.3}{22}$	$\frac{4.0}{73}$	$\frac{4.1}{3.8}$	$\frac{3.8}{13}$	$\frac{6.1}{18}$	$\frac{6.3}{22}$	$\frac{5.1}{23}$	$\frac{4.7}{33}$
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$\frac{11.5}{33}$	$\frac{10.8}{26}$	$\frac{7.6}{18}$	$\frac{4.3}{73}$	$\frac{4.6}{4.4}$	$\frac{4.6}{13}$	$\frac{5.2}{22}$	$\frac{5.6}{24}$	$\frac{5.5}{33}$
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$\frac{11.4}{33}$	$\frac{10.7}{24}$	$\frac{7.1}{17}$	$\frac{5.1}{13}$	$\frac{5.3}{5.1}$	$\frac{5.0}{11}$	$\frac{7.8}{18}$	$\frac{7.8}{22}$	$\frac{5.0}{25}$	$\frac{4.2}{33}$
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$\frac{9.8}{27}$	$\frac{10.4}{24}$	$\frac{7.6}{21}$	$\frac{8.1}{20}$	$\frac{7.4}{16}$	$\frac{5.8}{13}$	$\frac{4.1}{5.4}$	$\frac{5.4}{13}$	$\frac{8.2}{19}$	$\frac{8.2}{23}$	$\frac{4.6}{26}$	$\frac{3.6}{33}$
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$\frac{9.7}{33}$	$\frac{9.1}{24}$	$\frac{8.2}{21}$	$\frac{8.5}{20}$	$\frac{8.2}{17}$	$\frac{6.0}{13}$	$\frac{6.0}{5.7}$	$\frac{5.7}{13}$	$\frac{8.0}{18}$	$\frac{8.5}{23}$	$\frac{3.7}{28}$	$\frac{3.1}{33}$
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$\frac{8.0}{26}$	$\frac{8.5}{24}$	$\frac{7.5}{22}$	$\frac{7.5}{21}$	$\frac{8.4}{17}$	$\frac{8.3}{13}$	$\frac{6.4}{6.0}$	$\frac{6.2}{13}$	$\frac{8.3}{18}$	$\frac{8.4}{23}$	$\frac{2.7}{30}$	$\frac{2.4}{33}$
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$\frac{8.8}{33}$	$\frac{7.8}{22}$	$\frac{8.5}{21}$	$\frac{8.2}{17}$	$\frac{6.2}{13}$	$\frac{6.3}{6.0}$	$\frac{6.1}{13}$	$\frac{8.0}{18}$	$\frac{8.4}{23}$	$\frac{2.7}{30}$	$\frac{2.7}{33}$
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$\frac{9.4}{33}$	$\frac{9.0}{28}$	$\frac{8.2}{22}$	$\frac{8.5}{21}$	$\frac{7.8}{18}$	$\frac{6.4}{13}$	$\frac{6.4}{6.2}$	$\frac{6.3}{13}$	$\frac{9.0}{19}$	$\frac{9.0}{23}$	$\frac{4.3}{28}$	$\frac{4.0}{33}$
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Sta.	+	H.I.	-	Elev.
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897.58 ✓

36 ✓

T.P.	8.53	894.66	6.45	886.13 ✓
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+50

37

+50

38 ✓

T.P.	4.58	888.50 ✓	10.74 ✓	883.92 ✓
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+50

39

+50

40

+50

41

+50

Left

L

Right

7.7	8.7	7.5	8.8	8.2	6.5	6.3	6.4	8.9	8.9	3.4	3.4	
3	28	24	21	76	19	6.4	73	17	22	29	33	
8.7	9.4	8.5	10.8	10.6	8.8	8.5	8.7	10.8	10.9	2.6	2.0	
29	27	25	21	16	13	8.7	13	17	21	35	37	
7.0	6.5	11.4	11.4	9.3	8.8	8.9	9.1	11.3	11.4	1.1	0.4	
33	26	20	16	13	8.8	9.1	13	17	21	35	40	
9.2	8.2	12.0	11.6	9.8	9.3	9.3	9.6	11.7	12.2	1.6	1.8	
3	26	23	19	76	13	9.3	13	17	21	36	40	
9.7	13.0	11.5	12.5	12.5	10.3	9.8	10.1	12.2	12.4	8.3	6.5	6.7
3	24	21	20	16	12	9.8	13	17	22	26	31	33
10.4	9.6	5.8	7.9	7.2	4.6	4.4	4.5	7.0	7.0	5.3	5.0	
33	27	22	19	76	73	4.5	73	18	33	25	33	
9.5	7.6	8.2	8.2	5.4	5.2	5.3	5.6	7.2	7.5	6.2	6.4	5.5
33	21	20	17	13	5.3	5.3	13	16	21	23	27	33
8.4	7.1	9.1	8.7	6.5	6.1	6.0	6.4	8.4	8.6	5.0	4.4	3.4
33	23	21	17	13	6.0	6.0	13	17	22	25	30	33
8.2	7.4	7.2	10.4	10.1	7.5	7.0	7.3	9.3	9.5	3.0	2.2	
33	27	24	21	17	73	7.2	13	17	22	30	33	
8.5	8.0	7.5	10.6	10.7	8.2	7.9	8.0	9.8	10.0	0.3	0.5	
33	29	25	22	17	13	7.8	13	7.7	22	35	40	
8.5	8.2	7.4	11.4	11.3	8.8	8.8	8.7	10.7	10.7	0.0	0.4	
33	30	26	22	17	73	8.6	14	17	22	35	40	
7.2	6.5	12.1	11.7	9.8	9.7	9.4	9.5	11.4	11.4	3.2	3.0	
3	30	28	23	16	73	9.4	73	17	22	33	37	

Sta + H.I. - Elev

888.50

42

T.P. 3.10 879.22 12.38 876.12

+50

43

+50

+76.5 X Drain 36" X 48' P<sub>3</sub>

44

+50

45

+50

46

B.M.

5.54 873.68 873.70

+50

47

+50

T.P. 4.38 876.95 6.65 872.57

Left

±

Right

$\frac{8.4}{33}$	$\frac{8.3}{30}$	$\frac{13.0}{24}$	$\frac{13.1}{19}$	$\frac{10.6}{13}$	10.5	$\frac{10.5}{13}$	$\frac{12.5}{16}$	$\frac{12.6}{22}$	$\frac{6.9}{29}$	$\frac{7.2}{33}$
$\frac{3.0}{33}$	$\frac{3.2}{26}$	$\frac{4.8}{24}$	$\frac{4.6}{19}$	$\frac{2.0}{13}$	2.1	$\frac{2.0}{13}$	$\frac{4.0}{17}$	$\frac{4.1}{22}$	$\frac{2.2}{27}$	$\frac{2.2}{33}$
		$\frac{8.5}{33}$	$\frac{7.0}{20}$	$\frac{3.0}{13}$	2.8	$\frac{2.8}{13}$	$\frac{6.6}{21}$	$\frac{6.4}{24}$	$\frac{5.2}{25}$	$\frac{5.5}{33}$
		$\frac{10.5}{33}$	$\frac{9.8}{24}$	$\frac{3.8}{13}$	3.5	$\frac{3.3}{13}$	$\frac{7.5}{22}$	$\frac{8.5}{33}$		
14.70 ← Flowline → 14.40										
	$\frac{11.0}{33}$	$\frac{9.4}{23}$	$\frac{4.8}{14}$	$\frac{4.1}{4.0}$	4.1	$\frac{3.7}{12}$	$\frac{7.0}{17}$	$\frac{8.4}{24}$	$\frac{9.0}{33}$	
	$\frac{8.4}{33}$	$\frac{7.3}{25}$	$\frac{7.3}{19}$	$\frac{6.1}{16}$	4.6	$\frac{3.5}{13}$	$\frac{5.6}{17}$	$\frac{6.0}{21}$	$\frac{7.1}{28}$	$\frac{6.8}{33}$
$\frac{6.5}{33}$	$\frac{6.5}{28}$	$\frac{8.8}{25}$	$\frac{8.7}{20}$	$\frac{6.6}{16}$	5.1	$\frac{4.0}{13}$	$\frac{5.8}{19}$	$\frac{6.0}{27}$	$\frac{5.3}{30}$	$\frac{5.8}{33}$
$\frac{6.0}{33}$	$\frac{5.7}{30}$	$\frac{9.1}{25}$	$\frac{8.6}{19}$	$\frac{6.4}{15}$	5.5	$\frac{4.6}{13}$	$\frac{6.6}{16}$	$\frac{6.6}{20}$	$\frac{5.8}{22}$	$\frac{6.6}{25}$ $\frac{6.1}{33}$
$\frac{4.7}{37}$	$\frac{4.5}{33}$	$\frac{9.8}{27}$	$\frac{9.2}{22}$	$\frac{7.2}{16}$	5.8	$\frac{5.0}{13}$	$\frac{7.3}{17}$	$\frac{7.3}{20}$	$\frac{2.6}{24}$	$\frac{2.6}{30}$ $\frac{4.2}{33}$
spike in P.P. 150' 84 54 45 + 75										
$\frac{4.1}{37}$	$\frac{4.2}{33}$	$\frac{10.0}{27}$	$\frac{9.5}{23}$	$\frac{7.2}{17}$	6.1	$\frac{5.2}{14}$	$\frac{7.2}{18}$	$\frac{7.5}{22}$	$\frac{6.2}{23}$	$\frac{6.2}{33}$
$\frac{6.3}{33}$	$\frac{6.3}{30}$	$\frac{9.9}{25}$	$\frac{9.6}{21}$	$\frac{7.8}{16}$	6.4	$\frac{5.7}{13}$	$\frac{8.0}{18}$	$\frac{8.0}{21}$	$\frac{6.8}{23}$	$\frac{8.3}{33}$
$\frac{9.0}{33}$	$\frac{9.3}{25}$	$\frac{10.0}{23}$	$\frac{9.4}{19}$	$\frac{7.9}{16}$	6.7	$\frac{5.9}{13}$	$\frac{8.4}{18}$	$\frac{9.1}{26}$	$\frac{10.4}{33}$	

Sta.	+	H.I.	-	Elev	L. Br.
48		876.95			
	+50				
49					871.75
	+50				871.75
		76.95			
50		75.25			871.75
	+50				871.45
51					871.55
	+35	X Drain 24" X 42' P. 3			
	+50				871.85
52					872.85
	+50				874.55
53					875.95
B. M.	1162	883.71	4.89	872.06	orig. 872.24 New 872.09
	+50				

Left      £      Right

$\frac{6.6}{33}$	$\frac{6.8}{16}$	$\frac{5.3}{13}$	$\frac{4.7}{4.5}$	$\frac{4.2}{13}$	$\frac{6.8}{18}$	$\frac{7.4}{24}$	$\frac{8.6}{33}$
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$\frac{8.0}{33}$	$\frac{8.0}{19}$	$\frac{5.0}{13}$	$\frac{4.9}{4.8}$	$\frac{4.8}{13}$	$\frac{6.8}{17}$	$\frac{7.4}{23}$	$\frac{8.5}{33}$
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$\frac{8.4}{33}$	$\frac{8.3}{26}$	$\frac{9.0}{19}$	$\frac{5.3}{13}$	$\frac{5.4}{5.0}$	$\frac{5.3}{13}$	$\frac{8.0}{19}$	$\frac{8.0}{22}$	$\frac{7.0}{23}$	$\frac{7.4}{33}$
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$\frac{8.2}{33}$	$\frac{8.6}{19}$	$\frac{5.0}{13}$	$\frac{6.4}{5.2}$	$\frac{6.0}{15}$	$\frac{7.5}{18}$	$\frac{7.7}{23}$	$\frac{6.6}{24}$	$\frac{6.3}{33}$
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$\frac{8.2}{33}$	$\frac{8.5}{21}$	$\frac{4.7}{13}$	$\frac{5.0}{5.2}$	$\frac{6.2}{15}$	$\frac{8.0}{19}$	$\frac{8.2}{26}$	$\frac{6.3}{27}$	$\frac{5.9}{33}$
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$\frac{8.0}{33}$	$\frac{8.3}{28}$	$\frac{6.5}{21}$	$\frac{6.5}{17}$	$\frac{4.6}{13}$	$\frac{5.5}{5.5}$	$\frac{6.3}{9}$	$\frac{6.5}{16}$	$\frac{8.3}{20}$	$\frac{8.4}{25}$	$\frac{6.7}{27}$	$\frac{6.3}{33}$
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$\frac{6.4}{33}$	$\frac{6.5}{16}$	$\frac{4.5}{13}$	$\frac{5.1}{5.4}$	$\frac{6.7}{17}$	$\frac{8.5}{21}$	$\frac{8.6}{25}$	$\frac{7.3}{26}$	$\frac{7.0}{33}$
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$\frac{7.4}{33}$	$\frac{7.8}{17}$	$\frac{4.1}{13}$	$\frac{9.5}{22}$ ← <i>Flareline</i>	$\frac{6.3}{5.1}$	$\frac{8.3}{21}$	$\frac{8.4}{24}$	$\frac{7.3}{25}$	$\frac{6.5}{33}$
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$\frac{6.8}{33}$	$\frac{6.8}{20}$	$\frac{3.0}{13}$	$\frac{3.8}{4.1}$	$\frac{5.2}{16}$	$\frac{7.4}{19}$	$\frac{7.5}{25}$	$\frac{6.6}{26}$	$\frac{6.2}{33}$
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$\frac{4.5}{33}$	$\frac{3.8}{26}$	$\frac{3.5}{17}$	$\frac{1.1}{13}$	$\frac{2.7}{2.4}$	$\frac{4.2}{16}$	$\frac{6.4}{20}$	$\frac{6.2}{24}$	$\frac{5.4}{25}$	$\frac{5.4}{33}$
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$\frac{2.3}{33}$	$\frac{1.8}{24}$	$\frac{2.4}{22}$	$\frac{2.4}{18}$	$\frac{0.2}{13}$	$\frac{1.6}{1.0}$	$\frac{2.6}{17}$	$\frac{5.0}{22}$	$\frac{4.6}{26}$	$\frac{3.3}{27}$	$\frac{3.5}{33}$
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N.W. cor. Mont 52 + 53      this B.M. had been run over with Tractor. Checked From B.M. 45 + 75

$\frac{9.7}{33}$	$\frac{8.1}{27}$	$\frac{7.7}{16}$	$\frac{6.3}{13}$	$\frac{1.1}{7.0}$	$\frac{8.5}{18}$	$\frac{10.3}{22}$	$\frac{10.5}{28}$	$\frac{8.9}{30}$	$\frac{9.1}{33}$
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Sta.	+	H.I. ✓	-	Elev
54		883.71		
	+50			
55				
	+50			
56				
T.P.	12.06	893.28 ✓	2.49	881.22 ✓
	+50			
57				
	+50			
58				
	+50			
59				
	+50			

Left.

2  
6.0

Right

$\frac{6.4}{33}$	$\frac{6.8}{28}$	$\frac{8.5}{23}$	$\frac{8.2}{78}$	$\frac{5.0}{12}$	6.0	$\frac{7.1}{76}$	$\frac{9.0}{20}$	$\frac{9.0}{25}$	$\frac{5.4}{30}$	$\frac{5.4}{33}$
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$\frac{5.1}{33}$	$\frac{5.0}{24}$	$\frac{7.2}{20}$	$\frac{7.2}{18}$	$\frac{4.2}{73}$	4.8 4.8	$\frac{5.2}{13}$	$\frac{7.6}{17}$	$\frac{7.7}{19}$	$\frac{7.0}{20}$	$\frac{6.5}{24}$	$\frac{36}{29}$	$\frac{4.0}{33}$
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$\frac{4.3}{33}$	$\frac{3.2}{27}$	$\frac{5.8}{21}$	$\frac{5.5}{18}$	$\frac{3.5}{13}$	3.7 3.7	$\frac{3.8}{13}$	$\frac{5.9}{17}$	$\frac{6.2}{21}$	$\frac{5.6}{22}$	$\frac{7.5}{33}$
------------------	------------------	------------------	------------------	------------------	------------	------------------	------------------	------------------	------------------	------------------

$\frac{4.7}{27}$	$\frac{5.7}{23}$	$\frac{4.0}{21}$	$\frac{4.6}{20}$	$\frac{4.4}{18}$	2.5 2.5	$\frac{2.7}{13}$	$\frac{4.8}{17}$	$\frac{5.2}{21}$	$\frac{7.2}{27}$	$\frac{7.8}{33}$
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$\frac{3.3}{33}$	$\frac{3.6}{25}$	$\frac{3.2}{21}$	$\frac{3.8}{20}$	$\frac{1.4}{13}$	1.4 1.4	$\frac{1.5}{13}$	$\frac{3.2}{16}$	$\frac{4.2}{21}$	$\frac{6.2}{26}$	$\frac{7.2}{33}$
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$\frac{8.4}{33}$	$\frac{9.2}{25}$	$\frac{11.8}{22}$	$\frac{11.7}{17}$	$\frac{10.0}{13}$	9.8 9.8	$\frac{9.8}{13}$	$\frac{11.8}{17}$	$\frac{13.0}{25}$	$\frac{14.7}{28}$	$\frac{15.8}{33}$
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$\frac{6.3}{33}$	$\frac{6.5}{27}$	$\frac{10.8}{22}$	$\frac{10.8}{17}$	$\frac{8.6}{12}$	8.5 8.5	$\frac{8.8}{13}$	$\frac{10.2}{16}$	$\frac{10.8}{22}$	$\frac{9.9}{23}$	$\frac{11.0}{33}$
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$\frac{2.7}{33}$	$\frac{3.2}{27}$	$\frac{9.6}{20}$	$\frac{9.6}{16}$	$\frac{7.3}{12}$	7.3 7.3	$\frac{7.3}{13}$	$\frac{9.3}{18}$	$\frac{10.0}{28}$	$\frac{5.7}{32}$	$\frac{6.0}{37}$
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$\frac{2.4}{31}$	$\frac{2.7}{33}$	$\frac{7.7}{27}$	$\frac{8.4}{18}$	$\frac{6.0}{13}$	6.0 6.0	$\frac{6.1}{13}$	$\frac{8.5}{17}$	$\frac{8.5}{29}$	$\frac{3.4}{33}$	$\frac{3.2}{37}$
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$\frac{3.7}{37}$	$\frac{3.4}{33}$	$\frac{8.4}{28}$	$\frac{8.5}{21}$	$\frac{7.5}{16}$	$\frac{5.3}{11}$	5.3 5.1	$\frac{5.4}{13}$	$\frac{7.7}{17}$	$\frac{7.5}{28}$	$\frac{1.5}{34}$	$\frac{1.0}{38}$
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$\frac{4.3}{32}$	$\frac{8.3}{28}$	$\frac{8.3}{22}$	$\frac{7.4}{17}$	$\frac{4.5}{12}$	4.5 4.5	$\frac{4.6}{13}$	$\frac{6.8}{17}$	$\frac{7.6}{22}$	$\frac{7.6}{27}$	$\frac{3.1}{32}$	$\frac{3.2}{37}$
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$\frac{6}{3}$	$\frac{2.7}{31}$	$\frac{7.1}{27}$	$\frac{7.0}{22}$	$\frac{6.3}{18}$	$\frac{3.6}{13}$	3.8 3.8	$\frac{3.8}{13}$	$\frac{5.8}{16}$	$\frac{6.8}{20}$	$\frac{7.0}{26}$	$\frac{3.2}{31}$	$\frac{3.2}{35}$
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Sta	+	H.I.	-	Elev
		893.28		
60				
T.P.	12.46	901.33	4.41	888.87
	+50			
61				
	+50			
62				
	+50			
63				
T.P.	4.67	898.37	7.63	893.70
	+50			
B.M.			5.36	893.01
64				892.99
	+50			
65				
	+50			

Left.                      ♀                      Right

$\frac{2.7}{33}$	$\frac{3.1}{26}$	$\frac{6.3}{23}$	$\frac{6.2}{20}$	$\frac{2.9}{13}$	$\frac{2.8}{29}$	$\frac{5.1}{19}$	$\frac{5.2}{23}$	$\frac{1.5}{27}$	$\frac{1.6}{33}$
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$\frac{10}{3}$	$\frac{11.0}{26}$	$\frac{12.0}{24}$	$\frac{12.5}{22}$	$\frac{12.4}{17}$	$\frac{10.2}{13}$	$\frac{10.3}{13}$	$\frac{11.5}{15}$	$\frac{12.0}{22}$	$\frac{8.4}{26}$	$\frac{7.9}{33}$
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$\frac{12.5}{33}$	$\frac{11.5}{22}$	$\frac{12.3}{21}$	$\frac{12.0}{18}$	$\frac{9.4}{13}$	$\frac{9.7}{9.5}$	$\frac{9.4}{13}$	$\frac{11.0}{17}$	$\frac{11.5}{22}$	$\frac{9.0}{26}$	$\frac{8.5}{33}$
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$\frac{12.0}{33}$	$\frac{11.3}{21}$	$\frac{11.7}{20}$	$\frac{11.2}{17}$	$\frac{9.2}{13}$	$\frac{9.1}{9.2}$	$\frac{9.1}{13}$	$\frac{11.1}{17}$	$\frac{11.4}{22}$	$\frac{8.4}{26}$	$\frac{8.0}{33}$
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$\frac{11.4}{33}$	$\frac{10.8}{22}$	$\frac{11.4}{21}$	$\frac{10.9}{18}$	$\frac{8.9}{13}$	$\frac{8.8}{8.8}$	$\frac{8.8}{13}$	$\frac{10.6}{16}$	$\frac{10.7}{22}$	$\frac{2.8}{33}$	$\frac{2.2}{37}$
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$\frac{9.1}{33}$	$\frac{8.8}{24}$	$\frac{10.4}{22}$	$\frac{10.2}{17}$	$\frac{8.5}{13}$	$\frac{8.4}{8.4}$	$\frac{8.3}{13}$	$\frac{10.2}{16}$	$\frac{10.4}{23}$	$\frac{1.6}{33}$	$\frac{0.9}{37}$
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$\frac{11.2}{33}$	$\frac{10.0}{22}$	$\frac{10.7}{20}$	$\frac{10.0}{18}$	$\frac{8.0}{13}$	$\frac{8.1}{7.9}$	$\frac{8.1}{12}$	$\frac{10.2}{16}$	$\frac{10.2}{24}$	$\frac{3.6}{33}$	$\frac{3.1}{37}$
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$\frac{9.2}{33}$	$\frac{8.8}{28}$	$\frac{7.0}{23}$	$\frac{7.5}{22}$	$\frac{7.2}{18}$	$\frac{4.8}{13}$	$\frac{5.0}{4.8}$	$\frac{5.0}{13}$	$\frac{7.0}{16}$	$\frac{7.5}{20}$	$\frac{5.7}{23}$	$\frac{4.6}{33}$
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Spike in 12" tree at Sta 63+75

$\frac{8.0}{33}$	$\frac{8.5}{30}$	$\frac{6.7}{23}$	$\frac{7.4}{22}$	$\frac{7.1}{18}$	$\frac{4.7}{13}$	$\frac{4.8}{4.8}$	$\frac{5.0}{13}$	$\frac{6.4}{17}$	$\frac{6.9}{19}$	$\frac{6.4}{20}$	$\frac{8.1}{33}$
$\frac{7.5}{33}$	$\frac{5.8}{24}$	$\frac{7.3}{22}$	$\frac{7.1}{19}$	$\frac{4.8}{13}$	$\frac{4.8}{4.8}$	$\frac{4.9}{13}$	$\frac{7.6}{18}$	$\frac{7.9}{22}$	$\frac{7.1}{23}$	$\frac{7.8}{27}$	$\frac{7.8}{33}$

$\frac{5.4}{33}$	$\frac{4.7}{25}$	$\frac{7.6}{22}$	$\frac{7.5}{17}$	$\frac{4.8}{13}$	$\frac{8.0}{4.8}$	$\frac{5.1}{13}$	$\frac{7.6}{17}$	$\frac{8.0}{21}$	$\frac{6.6}{23}$	$\frac{7.6}{33}$
------------------	------------------	------------------	------------------	------------------	-------------------	------------------	------------------	------------------	------------------	------------------

$\frac{2.9}{33}$	$\frac{2.9}{29}$	$\frac{4.2}{23}$	$\frac{6.9}{17}$	$\frac{4.8}{13}$	$\frac{8.1}{4.9}$	$\frac{5.0}{13}$	$\frac{7.4}{17}$	$\frac{7.5}{22}$	$\frac{4.3}{25}$	$\frac{4.8}{33}$
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Sta.            +            H.I.            -            Elev

898.37

66

+50

67

+50

68

T.P.

6.38

897.80

6.95

891.42

+50

July 22-30

+51

X Drain 24" X 36' P. 3

69

+50

70

+50

71

+50

Left

L

Right

$\frac{1.0}{33}$	$\frac{0.8}{30}$	$\frac{7.2}{24}$	$\frac{7.2}{19}$	$\frac{4.8}{13}$	(51) 48	$\frac{5.0}{13}$	$\frac{7.2}{17}$	$\frac{7.4}{24}$	$\frac{1.9}{29}$	$\frac{1.6}{33}$
------------------	------------------	------------------	------------------	------------------	------------	------------------	------------------	------------------	------------------	------------------

$\frac{0.6}{33}$	$\frac{0.4}{29}$	$\frac{7.1}{24}$	$\frac{7.1}{18}$	$\frac{5.0}{13}$	(52) 50	$\frac{4.9}{13}$	$\frac{7.0}{17}$	$\frac{7.0}{24}$	$\frac{1.3}{30}$	$\frac{1.3}{33}$
------------------	------------------	------------------	------------------	------------------	------------	------------------	------------------	------------------	------------------	------------------

$\frac{1.7}{33}$	$\frac{1.5}{29}$	$\frac{7.4}{24}$	$\frac{7.3}{18}$	$\frac{5.0}{13}$	(53) 51	$\frac{5.2}{13}$	$\frac{7.3}{16}$	$\frac{7.5}{24}$	$\frac{3.0}{28}$	$\frac{2.8}{33}$
------------------	------------------	------------------	------------------	------------------	------------	------------------	------------------	------------------	------------------	------------------

$\frac{5.5}{33}$	$\frac{5.4}{26}$	$\frac{7.6}{24}$	$\frac{7.4}{17}$	$\frac{5.1}{13}$	(54) 50	$\frac{5.3}{13}$	$\frac{7.6}{17}$	$\frac{7.6}{21}$	$\frac{5.7}{24}$	$\frac{6.0}{33}$
------------------	------------------	------------------	------------------	------------------	------------	------------------	------------------	------------------	------------------	------------------

$\frac{8.4}{26}$	$\frac{7.4}{23}$	$\frac{7.7}{21}$	$\frac{7.7}{18}$	$\frac{5.0}{13}$	(55) 51	$\frac{5.4}{13}$	$\frac{7.4}{17}$	$\frac{7.4}{33}$		
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Top of East End.  $\times$  Drain Sta. 68 + 50 = 4. P.M.

$\frac{7.0}{33}$	$\frac{7.3}{24}$	$\frac{8.0}{23}$	$\frac{7.6}{19}$	$\frac{4.6}{13}$	(56) 4.4	$\frac{4.4}{13}$	$\frac{8.0}{19}$	$\frac{8.4}{23}$	$\frac{7.2}{24}$	$\frac{7.4}{33}$
------------------	------------------	------------------	------------------	------------------	-------------	------------------	------------------	------------------	------------------	------------------

$\frac{8.4}{18}$  ← Flowline →  $\frac{8.7}{18}$

$\frac{4.8}{33}$	$\frac{6.1}{23}$	$\frac{6.5}{22}$	$\frac{6.1}{17}$	$\frac{4.4}{13}$	(57) 4.4	$\frac{4.4}{14}$	$\frac{9.0}{22}$	$\frac{10.1}{29}$	$\frac{10.8}{33}$
------------------	------------------	------------------	------------------	------------------	-------------	------------------	------------------	-------------------	-------------------

$\frac{3.4}{33}$	$\frac{4.5}{26}$	$\frac{7.2}{22}$	$\frac{6.8}{16}$	$\frac{4.8}{13}$	(58) 4.5	$\frac{4.4}{14}$	$\frac{9.4}{24}$	$\frac{11.8}{33}$
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$\frac{2.3}{33}$	$\frac{2.7}{27}$	$\frac{7.4}{23}$	$\frac{7.2}{16}$	$\frac{5.0}{13}$	(59) 4.8	$\frac{4.8}{14}$	$\frac{8.0}{20}$	$\frac{9.2}{33}$
------------------	------------------	------------------	------------------	------------------	-------------	------------------	------------------	------------------

$\frac{1.5}{33}$	$\frac{1.6}{29}$	$\frac{7.3}{24}$	$\frac{6.8}{16}$	$\frac{5.0}{13}$	(60) 5.0	$\frac{5.0}{14}$	$\frac{6.2}{16}$	$\frac{5.5}{18}$	$\frac{7.1}{21}$	$\frac{7.7}{33}$
------------------	------------------	------------------	------------------	------------------	-------------	------------------	------------------	------------------	------------------	------------------

$\frac{1.5}{33}$	$\frac{2.3}{28}$	$\frac{7.3}{23}$	$\frac{6.7}{17}$	$\frac{5.0}{13}$	(61) 5.0	$\frac{5.2}{13}$	$\frac{7.5}{17}$	$\frac{7.7}{21}$	$\frac{6.6}{22}$	$\frac{7.5}{33}$
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$\frac{1.9}{33}$	$\frac{2.2}{28}$	$\frac{7.3}{24}$	$\frac{6.8}{17}$	$\frac{5.0}{13}$	(62) 5.0	$\frac{5.2}{13}$	$\frac{7.3}{16}$	$\frac{7.5}{20}$	$\frac{6.3}{21}$	$\frac{7.1}{33}$
------------------	------------------	------------------	------------------	------------------	-------------	------------------	------------------	------------------	------------------	------------------

Sta	+	HI	-	Elev
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897.80 ✓

72

+50

73

+50

74

+50

T.P.

7.00

897.45 ✓

7.35

890.45 ✓

+93

X Drain = 24" X 54' P. 3

75

+50

+73

76

+50

T.P.

6.60

902.18 ✓

1.87

895.58 ✓

77

Left

£

Rt

$\frac{2.0}{33}$	$\frac{2.5}{27}$	$\frac{7.0}{24}$	$\frac{7.0}{17}$	$\frac{4.6}{13}$	(5.1) 4.9	$\frac{5.3}{13}$	$\frac{7.2}{16}$	$\frac{7.3}{19}$	$\frac{5.0}{20}$	$\frac{6.0}{21}$	$\frac{6.8}{33}$
------------------	------------------	------------------	------------------	------------------	--------------	------------------	------------------	------------------	------------------	------------------	------------------

$\frac{2.5}{33}$	$\frac{3.0}{28}$	$\frac{7.0}{24}$	$\frac{7.0}{17}$	$\frac{4.5}{13}$	(5.2) 4.8	$\frac{5.0}{13}$	$\frac{7.5}{17}$	$\frac{7.5}{21}$	$\frac{6.4}{23}$	$\frac{7.5}{33}$
------------------	------------------	------------------	------------------	------------------	--------------	------------------	------------------	------------------	------------------	------------------

$\frac{1.5}{33}$	$\frac{1.8}{28}$	$\frac{6.9}{23}$	$\frac{6.8}{17}$	$\frac{4.7}{13}$	(5.1) 4.8	$\frac{4.9}{13}$	$\frac{7.8}{18}$	$\frac{7.8}{21}$	$\frac{7.1}{22}$	$\frac{8.5}{33}$
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$\frac{5}{3}$	$\frac{4.7}{27}$	$\frac{6.5}{23}$	$\frac{7.2}{22}$	$\frac{6.7}{17}$	(5.2) 4.9	$\frac{5.1}{13}$	$\frac{6.9}{17}$	$\frac{9.1}{21}$	$\frac{9.9}{33}$
---------------	------------------	------------------	------------------	------------------	--------------	------------------	------------------	------------------	------------------

$\frac{4.0}{33}$	$\frac{5.1}{27}$	$\frac{6.5}{23}$	$\frac{7.2}{21}$	$\frac{7.2}{17}$	(5.1) 4.9	$\frac{4.8}{15}$	$\frac{10.0}{24}$	$\frac{11.1}{33}$
------------------	------------------	------------------	------------------	------------------	--------------	------------------	-------------------	-------------------

$\frac{4.2}{33}$	$\frac{7.3}{25}$	$\frac{7.2}{22}$	$\frac{7.8}{21}$	$\frac{7.6}{18}$	(5.0) 4.8	$\frac{4.6}{15}$	$\frac{12.4}{30}$	$\frac{12.8}{33}$
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$$H.I. = 897.45 \rightarrow \frac{9.35}{21}$$

Flowline →

$$\frac{12.6}{33}$$

$\frac{4.8}{33}$	$\frac{6.0}{27}$	$\frac{8.4}{25}$	$\frac{8.2}{20}$	$\frac{5.4}{15}$	(5.3) 4.4	$\frac{3.4}{13}$	$\frac{12.2}{31}$	$\frac{12.7}{33}$
------------------	------------------	------------------	------------------	------------------	--------------	------------------	-------------------	-------------------

$\frac{5.0}{33}$	$\frac{6.3}{25}$	$\frac{7.8}{24}$	$\frac{8.0}{21}$	$\frac{5.2}{16}$	(5.0) 4.7	$\frac{3.0}{13}$	$\frac{5.4}{17}$	$\frac{8.0}{22}$	$\frac{11.0}{33}$
------------------	------------------	------------------	------------------	------------------	--------------	------------------	------------------	------------------	-------------------

$\frac{5.0}{33}$	$\frac{6.5}{25}$	$\frac{7.8}{24}$	$\frac{7.7}{21}$	$\frac{5.0}{17}$	(5.0) 3.8	$\frac{3.1}{13}$	$\frac{4.8}{17}$	$\frac{5.2}{25}$	$\frac{7.8}{33}$
------------------	------------------	------------------	------------------	------------------	--------------	------------------	------------------	------------------	------------------

$\frac{5.0}{33}$	$\frac{7.0}{26}$	$\frac{7.6}{25}$	$\frac{7.3}{21}$	$\frac{4.9}{17}$	(5.0) 3.7	$\frac{2.5}{13}$	$\frac{4.0}{17}$	$\frac{4.7}{33}$
------------------	------------------	------------------	------------------	------------------	--------------	------------------	------------------	------------------

$\frac{5.6}{33}$	$\frac{5.0}{26}$	$\frac{6.7}{24}$	$\frac{6.6}{20}$	$\frac{4.5}{17}$	(5.0) 3.2	$\frac{2.0}{13}$	$\frac{4.3}{17}$	$\frac{4.8}{33}$
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$\frac{8.9}{33}$	$\frac{7.8}{29}$	$\frac{10.4}{27}$	$\frac{10.2}{21}$	$\frac{8.4}{17}$	(5.0) 7.2	$\frac{6.0}{13}$	$\frac{8.5}{17}$	$\frac{8.8}{27}$	$\frac{3.8}{33}$	$\frac{3.6}{37}$
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Sta.	+	H.I.	-	Elev
+50		902.18 <sup>v</sup>		
78				
B.M.			2.91	899.17 <sup>Ⓢ</sup> 899.18
+50				27
79				
+50				
80				
+50				
T.P.	8.79	909.34 <sup>v</sup>	1.63	900.55 <sup>v</sup>
81				
+50				
82				
+50				
83				

Lt

E

Rt

$$\begin{array}{r} 88 \\ 33 \end{array} \quad \begin{array}{r} 80 \\ 27 \end{array} \quad \begin{array}{r} 95 \\ 25 \end{array} \quad \begin{array}{r} 93 \\ 20 \end{array} \quad \begin{array}{r} 75 \\ 17 \end{array} \quad \begin{array}{r} 64 \\ 64 \end{array} \quad \begin{array}{r} 53 \\ 13 \end{array} \quad \begin{array}{r} 85 \\ 20 \end{array} \quad \begin{array}{r} 82 \\ 27 \end{array} \quad \begin{array}{r} 26 \\ 33 \end{array} \quad \begin{array}{r} 23 \\ 37 \end{array}$$

$$\begin{array}{r} 101 \\ 35 \end{array} \quad \begin{array}{r} 92 \\ 24 \end{array} \quad \begin{array}{r} 84 \\ 19 \end{array} \quad \begin{array}{r} 69 \\ 17 \end{array} \quad \begin{array}{r} 60 \\ 60 \end{array} \quad \begin{array}{r} 45 \\ 15 \end{array} \quad \begin{array}{r} 76 \\ 21 \end{array} \quad \begin{array}{r} 76 \\ 26 \end{array} \quad \begin{array}{r} 58 \\ 28 \end{array} \quad \begin{array}{r} 52 \\ 33 \end{array}$$

$$\begin{array}{r} 104 \\ 33 \end{array} \quad \begin{array}{r} 97 \\ 23 \end{array} \quad \begin{array}{r} 61 \\ 16 \end{array} \quad \begin{array}{r} 50 \\ 50 \end{array} \quad \begin{array}{r} 37 \\ 13 \end{array} \quad \begin{array}{r} 67 \\ 18 \end{array} \quad \begin{array}{r} 73 \\ 23 \end{array} \quad \begin{array}{r} 49 \\ 25 \end{array} \quad \begin{array}{r} 48 \\ 30 \end{array} \quad \begin{array}{r} 56 \\ 53 \end{array}$$

$$\begin{array}{r} 88 \\ 33 \end{array} \quad \begin{array}{r} 86 \\ 23 \end{array} \quad \begin{array}{r} 51 \\ 17 \end{array} \quad \begin{array}{r} 41 \\ 41 \end{array} \quad \begin{array}{r} 33 \\ 13 \end{array} \quad \begin{array}{r} 58 \\ 17 \end{array} \quad \begin{array}{r} 68 \\ 22 \end{array} \quad \begin{array}{r} 91 \\ 27 \end{array} \quad \begin{array}{r} 98 \\ 33 \end{array}$$

$$\begin{array}{r} 75 \\ 33 \end{array} \quad \begin{array}{r} 71 \\ 21 \end{array} \quad \begin{array}{r} 38 \\ 15 \end{array} \quad \begin{array}{r} 34 \\ 34 \end{array} \quad \begin{array}{r} 30 \\ 13 \end{array} \quad \begin{array}{r} 70 \\ 19 \end{array} \quad \begin{array}{r} 90 \\ 23 \end{array} \quad \begin{array}{r} 97 \\ 33 \end{array}$$

$$\begin{array}{r} 33 \\ 33 \end{array} \quad \begin{array}{r} 47 \\ 26 \end{array} \quad \begin{array}{r} 52 \\ 18 \end{array} \quad \begin{array}{r} 28 \\ 13 \end{array} \quad \begin{array}{r} 27 \\ 27 \end{array} \quad \begin{array}{r} 28 \\ 13 \end{array} \quad \begin{array}{r} 53 \\ 17 \end{array} \quad \begin{array}{r} 73 \\ 22 \end{array} \quad \begin{array}{r} 82 \\ 33 \end{array}$$

$$\begin{array}{r} 26 \\ 33 \end{array} \quad \begin{array}{r} 46 \\ 26 \end{array} \quad \begin{array}{r} 50 \\ 19 \end{array} \quad \begin{array}{r} 16 \\ 13 \end{array} \quad \begin{array}{r} 17 \\ 17 \end{array} \quad \begin{array}{r} 24 \\ 14 \end{array} \quad \begin{array}{r} 48 \\ 17 \end{array} \quad \begin{array}{r} 52 \\ 21 \end{array} \quad \begin{array}{r} 40 \\ 23 \end{array} \quad \begin{array}{r} 42 \\ 33 \end{array}$$

$$\begin{array}{r} 80 \\ 33 \end{array} \quad \begin{array}{r} 100 \\ 19 \end{array} \quad \begin{array}{r} 90 \\ 15 \end{array} \quad \begin{array}{r} 78 \\ 13 \end{array} \quad \begin{array}{r} 82 \\ 82 \end{array} \quad \begin{array}{r} 95 \\ 17 \end{array} \quad \begin{array}{r} 113 \\ 20 \end{array} \quad \begin{array}{r} 117 \\ 25 \end{array} \quad \begin{array}{r} 104 \\ 27 \end{array} \quad \begin{array}{r} 102 \\ 33 \end{array}$$

$$\begin{array}{r} 84 \\ 33 \end{array} \quad \begin{array}{r} 82 \\ 27 \end{array} \quad \begin{array}{r} 72 \\ 25 \end{array} \quad \begin{array}{r} 68 \\ 13 \end{array} \quad \begin{array}{r} 74 \\ 74 \end{array} \quad \begin{array}{r} 92 \\ 16 \end{array} \quad \begin{array}{r} 105 \\ 19 \end{array} \quad \begin{array}{r} 114 \\ 25 \end{array} \quad \begin{array}{r} 96 \\ 27 \end{array} \quad \begin{array}{r} 88 \\ 33 \end{array}$$

$$\begin{array}{r} 83 \\ 32 \end{array} \quad \begin{array}{r} 102 \\ 30 \end{array} \quad \begin{array}{r} 97 \\ 23 \end{array} \quad \begin{array}{r} 86 \\ 18 \end{array} \quad \begin{array}{r} 57 \\ 13 \end{array} \quad \begin{array}{r} 66 \\ 66 \end{array} \quad \begin{array}{r} 86 \\ 17 \end{array} \quad \begin{array}{r} 102 \\ 21 \end{array} \quad \begin{array}{r} 104 \\ 27 \end{array} \quad \begin{array}{r} 67 \\ 31 \end{array} \quad \begin{array}{r} 65 \\ 33 \end{array}$$

$$\begin{array}{r} 108 \\ 33 \end{array} \quad \begin{array}{r} 108 \\ 24 \end{array} \quad \begin{array}{r} 96 \\ 20 \end{array} \quad \begin{array}{r} 48 \\ 12 \end{array} \quad \begin{array}{r} 60 \\ 60 \end{array} \quad \begin{array}{r} 80 \\ 16 \end{array} \quad \begin{array}{r} 94 \\ 20 \end{array} \quad \begin{array}{r} 97 \\ 26 \end{array} \quad \begin{array}{r} 51 \\ 32 \end{array} \quad \begin{array}{r} 49 \\ 35 \end{array}$$

$$\begin{array}{r} 81 \\ 33 \end{array} \quad \begin{array}{r} 73 \\ 28 \end{array} \quad \begin{array}{r} 70 \\ 21 \end{array} \quad \begin{array}{r} 43 \\ 14 \end{array} \quad \begin{array}{r} 53 \\ 53 \end{array} \quad \begin{array}{r} 70 \\ 17 \end{array} \quad \begin{array}{r} 85 \\ 20 \end{array} \quad \begin{array}{r} 85 \\ 26 \end{array} \quad \begin{array}{r} 40 \\ 33 \end{array} \quad \begin{array}{r} 38 \\ 36 \end{array}$$

Sta.            +            H.I.            -

909.34

+50

84

+50

85

+50

T.P.            414            908.07            5.41            903.93

86

+50

87

+50

88

T.P.            194            900.57            9.44            898.63

+50

89

Lt

E

Pt.

$$\frac{5.5}{33} \quad \frac{4.8}{17} \quad \frac{3.8}{14} \quad \frac{5.1}{4.8} \quad \frac{5.7}{16} \quad \frac{7.2}{19} \quad \frac{7.7}{26} \quad \frac{4.0}{31} \quad \frac{3.8}{35}$$

$$\frac{5.1}{33} \quad \frac{4.6}{24} \quad \frac{5.1}{23} \quad \frac{5.2}{17} \quad \frac{3.8}{13} \quad \frac{4.7}{4.7} \quad \frac{6.3}{17} \quad \frac{7.8}{20} \quad \frac{7.8}{26} \quad \frac{2.5}{31} \quad \frac{2.4}{35}$$

$$\frac{4.0}{33} \quad \frac{3.6}{24} \quad \frac{7.0}{21} \quad \frac{6.6}{16} \quad \frac{4.4}{13} \quad \frac{4.7}{4.7} \quad \frac{5.7}{17} \quad \frac{7.4}{20} \quad \frac{7.7}{26} \quad \frac{1.6}{34} \quad \frac{1.4}{38}$$

$$\frac{3.0}{33} \quad \frac{2.8}{26} \quad \frac{7.3}{22} \quad \frac{7.4}{17} \quad \frac{4.8}{13} \quad \frac{4.7}{4.7} \quad \frac{5.3}{16} \quad \frac{7.6}{20} \quad \frac{7.6}{25} \quad \frac{1.6}{31} \quad \frac{1.6}{33}$$

$$\frac{1.3}{33} \quad \frac{1.3}{30} \quad \frac{8.3}{21} \quad \frac{8.0}{16} \quad \frac{5.7}{13} \quad \frac{5.7}{5.5} \quad \frac{5.7}{16} \quad \frac{8.0}{20} \quad \frac{8.1}{24} \quad \frac{4.1}{29} \quad \frac{4.2}{33}$$

$$\frac{4.02}{35} \quad \frac{0.0}{32} \quad \frac{8.0}{20} \quad \frac{8.0}{16} \quad \frac{5.6}{13} \quad \frac{5.4}{5.4} \quad \frac{5.6}{14} \quad \frac{7.5}{18} \quad \frac{7.6}{22} \quad \frac{2.3}{29} \quad \frac{3.0}{33}$$

$$\frac{2.8}{33} \quad \frac{3.0}{28} \quad \frac{9.0}{21} \quad \frac{9.1}{17} \quad \frac{6.6}{13} \quad \frac{6.3}{6.3} \quad \frac{6.5}{13} \quad \frac{8.6}{17} \quad \frac{8.8}{22} \quad \frac{3.9}{29} \quad \frac{4.7}{33}$$

$$\frac{5.5}{33} \quad \frac{5.6}{27} \quad \frac{10.2}{21} \quad \frac{10.2}{17} \quad \frac{7.5}{13} \quad \frac{7.4}{7.2} \quad \frac{7.4}{13} \quad \frac{9.0}{16} \quad \frac{9.5}{21} \quad \frac{6.8}{26} \quad \frac{8.2}{33}$$

$$\frac{9.1}{33} \quad \frac{7.2}{28} \quad \frac{11.0}{23} \quad \frac{10.6}{16} \quad \frac{8.6}{13} \quad \frac{8.1}{8.2} \quad \frac{8.5}{13} \quad \frac{10.8}{16} \quad \frac{11.1}{21} \quad \frac{6.6}{27} \quad \frac{7.0}{33}$$

$$\frac{9.8}{33} \quad \frac{7.6}{28} \quad \frac{11.6}{23} \quad \frac{11.6}{17} \quad \frac{9.4}{13} \quad \frac{9.1}{9.2} \quad \frac{9.3}{13} \quad \frac{11.3}{16} \quad \frac{11.8}{22} \quad \frac{7.5}{28} \quad \frac{7.8}{33}$$

$$\frac{1.6}{33} \quad \frac{0.6}{29} \quad \frac{5.1}{22} \quad \frac{4.7}{17} \quad \frac{2.9}{13} \quad \frac{1.9}{2.9} \quad \frac{2.9}{13} \quad \frac{5.0}{17} \quad \frac{5.3}{22} \quad \frac{1.5}{27} \quad \frac{1.8}{33}$$

$$\frac{1.0}{33} \quad \frac{0.4}{30} \quad \frac{5.9}{23} \quad \frac{5.9}{17} \quad \frac{4.0}{13} \quad \frac{4.0}{4.3} \quad \frac{4.2}{13} \quad \frac{6.2}{17} \quad \frac{6.2}{21} \quad \frac{1.4}{27} \quad \frac{2.4}{33}$$

Sta	+	Hi.	-	Elev
		900.57 <sup>v</sup>		
+50				
90				
+50				
91				
+50				
T.P.	0.92	891.65 <sup>v</sup>	9.84	890.73 <sup>v</sup>
92				
+50				
+55		X Drain = 24" x 64' P <sup>3</sup>		
93				
+14				
+50				
+56				
B.M.	7.58	890.84 <sup>v</sup>	8.41	883.24 <sup>v</sup>
94				883.26

Lt                      ♀                      Rt

$\frac{1.8}{33}$     $\frac{2.0}{28}$     $\frac{7.0}{23}$     $\frac{6.7}{17}$     $\frac{5.1}{13}$     $\frac{5.1}{54}$     $\frac{5.3}{13}$     $\frac{7.4}{17}$     $\frac{7.4}{22}$     $\frac{3.0}{27}$     $\frac{3.4}{33}$

$\frac{5.0}{33}$     $\frac{5.0}{26}$     $\frac{8.5}{23}$     $\frac{8.3}{16}$     $\frac{6.4}{13}$     $\frac{6.7}{63}$     $\frac{6.2}{13}$     $\frac{8.3}{17}$     $\frac{8.7}{22}$     $\frac{4.5}{27}$     $\frac{5.2}{33}$

$\frac{7.1}{35}$     $\frac{7.4}{32}$     $\frac{10.1}{27}$     $\frac{10.0}{18}$     $\frac{7.3}{13}$     $\frac{7.3}{75}$     $\frac{7.3}{13}$     $\frac{10.1}{19}$     $\frac{10.3}{24}$     $\frac{6.8}{30}$     $\frac{6.8}{33}$

$\frac{10.0}{33}$     $\frac{9.6}{28}$     $\frac{11.4}{27}$     $\frac{11.0}{18}$     $\frac{8.5}{13}$     $\frac{8.5}{86}$     $\frac{8.6}{13}$     $\frac{11.0}{18}$     $\frac{11.4}{26}$     $\frac{9.0}{29}$     $\frac{9.1}{33}$

$\frac{12.7}{33}$     $\frac{12.0}{16}$     $\frac{10.0}{13}$     $\frac{9.7}{98}$     $\frac{9.5}{13}$     $\frac{11.8}{16}$     $\frac{13.2}{24}$     $\frac{12.0}{26}$     $\frac{11.8}{33}$

$\frac{8.3}{33}$     $\frac{5.7}{27}$     $\frac{3.7}{16}$     $\frac{2.1}{13}$     $\frac{1.7}{18}$     $\frac{1.7}{13}$     $\frac{3.3}{16}$     $\frac{5.6}{23}$     $\frac{6.7}{33}$

$\frac{10.5}{33}$     $\frac{9.6}{28}$     $\frac{6.5}{21}$     $\frac{4.0}{16}$     $\frac{2.4}{28}$     $\frac{3.2}{13}$     $\frac{4.2}{15}$     $\frac{8.0}{20}$     $\frac{8.6}{30}$     $\frac{8.6}{33}$

$\frac{10.15}{29}$    ← Flowline →    $\frac{10.3}{35}$

$\frac{9.2}{33}$     $\frac{8.0}{20}$     $\frac{5.6}{16}$     $\frac{2.8}{43}$     $\frac{2.8}{20}$     $\frac{3.2}{23}$     $\frac{4.5}{25}$     $\frac{5.0}{29}$     $\frac{8.0}{33}$

$\frac{8.2}{33}$     $\frac{8.2}{24}$     $\frac{8.6}{23}$     $\frac{8.2}{20}$     $\frac{6.1}{17}$     $\frac{3.1}{47}$     $\frac{3.4}{16}$     $\frac{4.8}{27}$     $\frac{5.5}{30}$     $\frac{5.5}{33}$

$\frac{7.4}{33}$     $\frac{6.8}{27}$     $\frac{9.0}{25}$     $\frac{9.0}{22}$     $\frac{7.0}{18}$     $\frac{5.1}{51}$     $\frac{4.1}{13}$     $\frac{4.0}{30}$     $\frac{4.0}{35}$     $\frac{4.2}{45}$     $\frac{5.4}{47}$     $\frac{6.4}{50}$

$\frac{7.2}{33}$     $\frac{7.0}{27}$     $\frac{9.1}{25}$     $\frac{9.1}{21}$     $\frac{7.0}{18}$     $\frac{5.2}{52}$     $\frac{4.4}{13}$     $\frac{4.4}{37}$     $\frac{4.8}{50}$     $\frac{5.5}{52}$     $\frac{7.0}{56}$

in Spike in P.P. East of Int. Long Lake Rd. x Rice Creek Road.

$\frac{7.1}{33}$     $\frac{7.1}{28}$     $\frac{9.0}{25}$     $\frac{8.5}{20}$     $\frac{6.6}{17}$     $\frac{5.0}{51}$     $\frac{4.4}{13}$     $\frac{7.2}{18}$     $\frac{6.6}{29}$     $\frac{7.2}{32}$     $\frac{7.1}{38}$     $\frac{5.5}{40}$     $\frac{4.8}{50}$

Station	+	H.I.	-	Elev.
		890.84		
	+50			
95				
	+50			
96				
	+50			
97				
	+50			
T.P.	3.40	892.71	1.53	889.31
98				
	+50			

99. (Finis) July-22-30  
 3:45 P.M. ✓  
 B.M. 9.45 883.26 883.21

Level → T. Skyleson  
 Book → Weber  
 Tape → Bell  
 Stevens

LEFT

L

RIGHT

$\frac{7.0}{33}$	$\frac{7.1}{26}$	$\frac{9.0}{24}$	$\frac{9.0}{19}$	$\frac{7.0}{16}$	(5.4) 5.8	$\frac{4.5}{13}$	$\frac{7.1}{17}$	$\frac{6.7}{24}$	$\frac{3.7}{28}$	$\frac{3.5}{46}$	$\frac{3.0}{50}$	$\frac{2.4}{66}$
------------------	------------------	------------------	------------------	------------------	--------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------

$\frac{4.0}{33}$	$\frac{4.0}{31}$	$\frac{8.8}{26}$	$\frac{8.6}{20}$	$\frac{6.8}{17}$	(5.4) 5.9	$\frac{4.5}{13}$	$\frac{6.7}{17}$	$\frac{6.4}{44}$	$\frac{7.1}{46}$	$\frac{7.0}{51}$	$\frac{6.1}{54}$	$\frac{6.1}{56}$
------------------	------------------	------------------	------------------	------------------	--------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------

$\frac{3.8}{33}$	$\frac{4.2}{30}$	$\frac{8.4}{25}$	$\frac{8.7}{20}$	$\frac{6.6}{16}$	(4.9) 5.4	$\frac{4.2}{13}$	$\frac{4.5}{33}$	$\frac{4.5}{46}$	$\frac{5.5}{50}$
------------------	------------------	------------------	------------------	------------------	--------------	------------------	------------------	------------------	------------------

$\frac{4.7}{33}$	$\frac{5.1}{21}$	$\frac{7.7}{25}$	$\frac{7.6}{19}$	$\frac{6.0}{17}$	(4.1) 4.5	$\frac{3.1}{24}$	$\frac{5.2}{27}$	$\frac{7.4}{31}$	$\frac{6.1}{33}$
------------------	------------------	------------------	------------------	------------------	--------------	------------------	------------------	------------------	------------------

$\frac{5.9}{33}$	$\frac{6.2}{29}$	$\frac{6.5}{20}$	$\frac{4.5}{16}$	(7.1) 3.6	$\frac{2.9}{16}$	$\frac{7.0}{24}$	$\frac{7.5}{33}$
------------------	------------------	------------------	------------------	--------------	------------------	------------------	------------------

$\frac{5.5}{33}$	$\frac{5.7}{21}$	$\frac{2.7}{15}$	(2.1) 2.4	$\frac{2.4}{14}$	$\frac{6.8}{21}$	$\frac{5.9}{33}$
------------------	------------------	------------------	--------------	------------------	------------------	------------------

$\frac{6.3}{33}$	$\frac{6.3}{21}$	$\frac{1.8}{14}$	(1.1) 1.4	$\frac{1.3}{14}$	$\frac{7.3}{23}$	$\frac{7.4}{33}$
------------------	------------------	------------------	--------------	------------------	------------------	------------------

$\frac{7.8}{33}$	$\frac{6.6}{25}$	$\frac{6.2}{20}$	$\frac{2.2}{14}$	(7.0) 2.0	$\frac{2.1}{13}$	$\frac{8.4}{23}$	$\frac{9.1}{27}$	$\frac{9.8}{33}$
------------------	------------------	------------------	------------------	--------------	------------------	------------------	------------------	------------------

$\frac{4.9}{33}$	$\frac{5.0}{21}$	$\frac{1.2}{14}$	(1.0) 0.7	$\frac{1.0}{13}$	$\frac{6.7}{20}$	$\frac{8.4}{33}$
------------------	------------------	------------------	--------------	------------------	------------------	------------------

$\frac{+0.2}{33}$	$\frac{+0.4}{22}$	$\frac{1.5}{17}$	$\frac{0.1}{14}$	(0.0) +0.6	$\frac{+0.3}{13}$	$\frac{2.3}{19}$	$\frac{3.7}{33}$
-------------------	-------------------	------------------	------------------	---------------	-------------------	------------------	------------------

spike in PP.

Sta.	Object	Side	Cubic Cut	Yards Fill
2+50	Private Ent.	(Right)		4.0
3+42	" "	"		4.0
8+60	" "	"	3.0	8.5
10+20	" "	"		13.0
11+30	" "	(Right)		8.0
11+93	X Drain	(Left)		3.5
12+35	" "	(Left)		6.0
14+18	" "	(Left)		6.0
15+76	X Drain			
17+72	Private Ent.	(Left)		56.0
17+87	Int. Old Road	"	X DR	7.0
28+28	Private Ent.	(Right)		10.0
28+54	Field	(Left)		20.0
36+21	" "	"		12.0
42+50	" "	(Right)		11.0
42+60	" "	(Left)		8.0
43+76 <sup>E</sup>	X Drain			
44+65	Field Ent.	(Left)		2.5
45+17	Int. Old Road	Right		11.0
51+35	X Drain			
53+80	Private Ent.	Left		12.0
56+13	" "	"		5.5
57+95	" "	"		15.0
59+60	" "	"		16.5
60+02	" "	"		13.0

(Dist)

No. Culvert.

" "

" "

15" x 20' C.M. (New) 20' Lt ✓

15" x 20' C.M. " 19' Lt ✓

24" x 42' P<sub>3</sub> ✓

No. Culvert.

15" x 20' C.M. (New) 20' Lt ✓

= 24" x 54' P<sub>3</sub> ✓

15" x 20' C.M. New 46' Lt Int. of Old Road. Force Acct.

15" x 20' C.M. (New) 38' Lt Force Acct.

No Culvert

" "

" "

26

24

15" x 20' C.M. (New) 20' Lt ✓

10

12" x 21' C.M. (Old) 22' Lt ✓

15

36" x 48' P<sub>3</sub> ✓

No. Culv.

" "

24" x 42' P<sub>3</sub> ✓

15" x 24' C.M. (New) 25' Lt ✓

15" x 20' C.M. (New) 20' Lt ✓

15" x 20' " " " 20' Lt ✓

15" x 21' " " (Old) 25' Lt ✓

15" x 20' " " (New) 21' Lt ✓

Sta.	Object	Side	=Cubic Yards =	
			Cut	Fill
61+12	Private Ent	Right		8.0
63+94	" "	"		6.0
64+65	Field Ent.	Left		8.0
65+25	" "	Right		9.5
67+80	" "	Right		6.0
68+07	" " "	Right		8.0
68+51	X Drain			
68+78	Private Ent.	Left		4.0
70+28	Private Ent.	Right		11.0
72+55	Private Ent.	Left		13.0
72+55	Field Ent	Right		5.0
74+93	X Drain			
76+22	Int. of Old Road	Right		12.0
78+30	" " " "	"		13.5
81+32	" " " "	Left		14.0
83+52	Private Ent	Right	6.0	7.0
84+25	Field Ent	Left		9.0
87+02	Field Ent	Right		4.0
91+45	" "	"		6.0
91+45	" "	Left		8.0
92+55	X Drain			

| Dist. |

- 15" X 20' C.M. (New) 20 Rt ✓
- 15" X 20' C.M. (New) 18 Rt ✓
- 15" X 20' " " (New) 20 Lt ✓
- 18" X 20' C.M. (Old) 21 Rt ✓
- 12" X 21' C.M. (Old) 19 Rt ✓
- 12" X 21' C.M. (Old) 20 Rt ✓
- No. Culvert 24" X 36' P.I. ✓
- " "
- 15" X 20' C.M. (New) 23 Lt ✓
- 18" X 14' C.M. (Old) 19 Rt ✓
- 24" X 54' P.I. ✓
- 15" X 20' C.M. (New) ✓ 22 Rt X Drain on Old Rt. Ret
- 15" X 20' C.M. (New) 22 Rt ✓
- No. Culvert
- 12" X 16' C.M. (Old) 19 Rt ✓
- No. Culv.
- " "
- 24" X 64' P.I. Left in place (No work on it.)

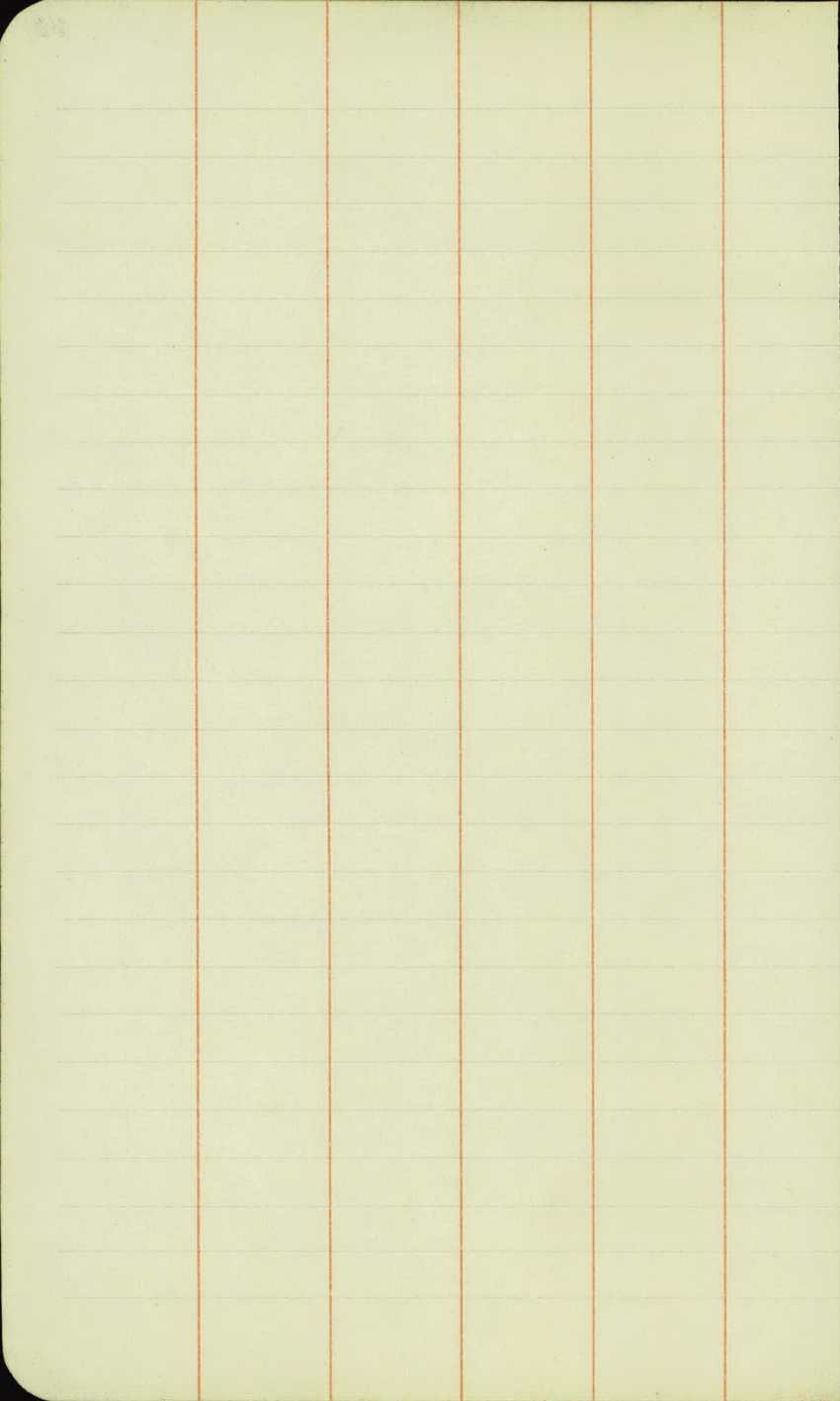
July 30 - 31-1930  
Lt

Sta.	Rt. Lin. Ft	Gr.	Sta.	Lin. Ft
4+62	336		5+50	180
14+10	384		14+38	312
30+25	156		30+80	276
43+00	192		42+75	156
68+27	180		48+50	528
73+35	252		81+75	240
			91+75	144

(Lined Feet.) Sept. 15-30

Sta.	To	Sta.	Left	Right	Anchors
4+62	"	7+98		336	2
5+50	"	7+30	180		2
14+10	"	17+95		385	2
14+38	"	17+50	312		2
30+24	"	31+80		156	2
30+85	"	33+49.6	264.6		2
42+74	"	44+31.5	157.5		2
42+96	"	44+83		192	2
45+37	"	46+18		301.5	2
48+50	"	53+59.4	528.5		2
68+24.5	"	70+04.5		180	2
73+35	"	75+96		265.2	2
77+67	"	80+77	301.5		2
81+75	"	84+04	242		2
91+76	"		144		2
Total		3946.8	2130 <sup>L</sup>	1816 <sup>R</sup> 2130 <sup>L</sup> 3946 <sup>S</sup>	30

→ Replace old G.R.



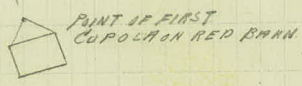
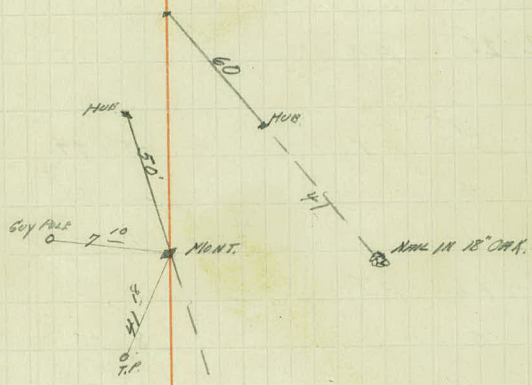
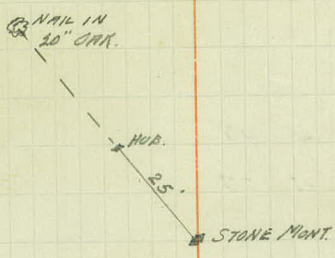
The image shows a page of graph paper with a grid of small squares. A vertical red line runs down the center of the page, dividing it into two equal halves. The grid consists of 20 columns and 30 rows of squares. The paper is off-white and has rounded corners on the right side.

6 + 76  
4 71.57  
1.84.33

The image shows a page of graph paper with a grid of small squares. A vertical red line runs down the center of the page, dividing it into two equal halves. The grid consists of 20 columns and 20 rows of squares. The paper is off-white and has rounded corners.

STA.	POINT.	$\Delta$ LT.	$\Delta$ RT.
79 + 43 <sup>48</sup>	P.T.	45°-04	
79		40°-43	
750		35°-43	
78		30°-43	
77 + 81 <sup>4</sup>	P.I.		$\Delta$ -90°-08
750		25°-43	P.-20°-L.
77		20°-43	T-288 <sup>59</sup>
750		15°-43	L.-450 <sup>67</sup>
76		10°-43	R.-287 <sup>94</sup>
750		5°-43	
75		0°-43	
74 + 92 <sup>81</sup>	P.C.	0°-00	
62 + 20 <sup>0</sup>	P.O.T.		
54 + 25 <sup>19</sup>	P.T.		44°-16'
54			41°-45'
750			36°-45'
53			31°-45'
52 + 63 <sup>16</sup>	P.I.		$\Delta$ -88°-32
750		26°-45'	P.-20°-R.
52		21°-45'	T-280 <sup>64</sup>
750		16°-45'	L.-442 <sup>63</sup>
51		11°-45'	R-287 <sup>94</sup>
750		6°-45'	
50		1°-45'	
49 + 82 <sup>52</sup>	P.C.	0°-00	

5-19-30



STA.	POINT	Δ LT.	Δ RT.
96 + 83 <sup>11</sup>	P.T.	45°-47	
150		42°-27	
96		37°-27	0.19
150		32°-27	
95 + 21 <sup>19</sup>	P.I.		A-91°-34
95		27°-27	D-20°-L
150		22°-27	T-295 <sup>91</sup>
94		17°-27	L-457 <sup>83</sup>
150		12°-27	R-287 <sup>94</sup>
93		7°-27	
150		2°-27	0.17
92 + 25 <sup>28</sup>	P.C.	0°-00	
84 + 38 <sup>75</sup>	P.T.	45°-44	
84		40°-53 <sup>5</sup>	
150		34°-38 <sup>5</sup>	
83 + 09 <sup>84</sup>	P.I.		A-91°-28
83		28°-23 <sup>5</sup>	D-25°-R
150		22°-08 <sup>5</sup>	T-236 <sup>90</sup>
82		15°-53 <sup>5</sup>	L-365 <sup>87</sup>
150		9°-38 <sup>5</sup>	R-231 <sup>01</sup>
81		3°-23 <sup>5</sup>	
80 + 72 <sup>88</sup>	P.C.	0°-00	



0	+100					
	+64 <sup>3</sup>	2.22	0.00	0.00	86.45	
1	"	"	-0.50	+0.40	86.50	✓
	+50	"	-1.00	+0.80	86.55	✓
2	"	"	-1.27	+1.08	86.60	✓
	+50	"	"	"	86.65	✓
3	"	"	"	"	86.70	✓
	+60	"	"	"	86.75	✓
4		2.32	-1.27	+1.08	86.80	✓
	+50	1.82	-1.10	+0.97	86.85	✓
5		0.18	-0.65	+0.65	86.90	✓
	+50		-0.20	+0.20	86.95	✓
	+64		0.00	0.00		
6			+0.40	-0.40	87.00	✓
	+50	1.00	+0.81	-0.87	87.05	✓
7		2.50	+1.04	-1.24	87.10	✓
	+50	2.56	+1.08	-1.29	87.20	✓
8		"	"	"	87.30	✓
	+50	"	"	"	87.40	✓
9		2.56	+1.08	-1.29	87.50	✓
	+50	1.00	+0.81	-0.87	86.80	✓
10		0.00	+0.49	-0.49	86.50	✓
	+50		+0.10	-0.10	86.10	✓
11					85.70	✓
	+50				85.30	✓
12					84.90	✓

	750				84.5	✓
13					84.1	✓
	750				83.8	✓
14					83.9	✓
	750				84.2	✓
15		0.00	0.00		84.8	✓
	750	0.00	+ 0.30	- 0.30	85.6	✓
16		0.36	+ 0.69	- 0.69	86.8	✓
	750	2.53	+ 0.99	- 1.17	88.1	✓
17		2.89	+ 1.08	- 1.32	89.4	✓
	750	"	"	"	90.7	✓
18		"	"	"	92.0	✓
	750	"	"	"	93.3	✓
19		"	"	"	94.6	✓
	750	"	"	"	95.9	✓
20		2.89	+ 1.08	- 1.32	97.2	✓
	750	2.89	+ 1.06	- 1.30	98.5	✓
21		1.44	+ 0.86	- 0.96	99.8	✓
	750	0.00	+ 0.49	- 0.49	101.1	✓
22			+ 0.11	- 0.11	102.2	✓
	750		0.00	0.00	103.1	✓
23					103.6	✓
	750				103.9	✓
24					103.8	✓
	750				103.5	✓

90546  
 531  
 90315

90319

25				02.8	
	+50			01.7	
26				00.8	
	+50			99.7	
27				98.6	
	+50			97.5	
28				96.4	
	+50			95.3	
29				94.2	
	+50			93.1	
30	2.18	892.58	10.79	92.0	11.19
	+50			91.0	15.8
31				90.0	2.58
	+50			89.2	3.39
32				88.5	4.28
	+50			88.0	4.28
33				87.3	
	+50			86.9	
34				86.6	
	+50			86.4	4.18
35				86.3	4.28
	+50			86.2	4.28
36				86.2	
	+50			86.0	
37				85.8	2.16

892.58

	750				85.4	2.66
38	750	0.82	885.45	7.75	84.9	3.16
	750				84.1	3.96
39	750				83.3	4.76
	750				82.4	5.66
40	750				81.5	6.56
	750			11.82	80.6	7.46
41	750			873.61	79.7	8.36
	750				78.8	9.26
42	750				78.0	10.06
	750				77.1	10.96
43	750		-0.10	+0.10	76.4	11.66
	750	0.00	-0.49	+0.49	75.7	12.36
		41.878.00	3.76	2.16		
44	750	1.10	-0.86	+0.80	75.1	
	750	3.38	4.11	2.36	74.6	
	750	3.44	-1.31	+1.04	74.1	
	750	"	5.26	2.92	73.7	
	750	"	-1.36	+1.08	73.4	
	750	"	5.66	3.22	73.1	
	750	"	"	"	72.8	
	750	"	5.96	3.52	72.5	
46	750	"	6.26	3.82	72.5	
	750	"	"	"	72.1	
	750	"	6.56	4.12	71.8	
47	750	3.44	-1.36	+1.08	71.5	
	750	2.60	6.63	4.56	71.5	
	750	0.20	-1.13	+0.94	71.5	
	750	0.00	6.30	5.10	71.5	
	750	0.00	-0.60	+0.60	71.5	
	750	0.00	8.01	5.79	71.5	
	750	0.00	-0.11	+0.11	71.5	
	750	0.00	6.31	6.09	71.5	
	750	0.00	+0.11	-0.11	71.5	
	750	0.32	7.15	5.85	71.5	
	750	0.32	+0.65	-0.65	71.5	

H. 1 878.43  
 318  
 875.25

GR

50	2.82	+0.96	-1.17	714	
150	3.44	+1.08	-1.36	715	
51	3.44	5.45 "	7.89 "	717	
150	3.44	"	"	724	
52	3.44	"	"	73.2	
150	3.44	"	"	74.3	
53	3.44	"	"	75.4	
150	3.44	+1.08	-1.34	766	
54	3.01	+0.78	-1.21	777	
150	0.43	+0.69	-0.70	78.7	
55	0.00	+0.30	-0.30	80.0	
150		0.00	0.00	81.2	✓ 5.34
56				82.3	✓ 4.24
150				83.5	✓ 3.04
57				84.6	✓ 1.74
150				85.8	✓ 74
58		891.79		86.8	✓ 8.49
150				88.0	✓ 7.29
59				88.8	✓ 6.49
150				89.7	✓ 5.59
60				90.5	✓ 4.79
150				91.2	✓ 4.09
61				91.7	✓ 3.59
150				92.2	✓ 3.09
62				92.4	✓ 2.67

41895.79

G.P.

+50

93.0 \ 2.79

63

93.2 \ 2.59

+50

93.4 \ 2.39

64

93.5 \ 2.29

+50

93.5 \ 2.29

65

93.4 \ 2.39

+50

93.3 \ 2.49

66

93.3 \ 2.49

+50

93.2 \ 2.59

67

93.2 \ 2.59

+50

93.1 \ 2.69

68

93.1 \ 2.69

+50

93.0 \ 2.79

69

93.0 \ 2.79

+50

41897.79

92.9 \ 2.89

70

92.9 \ 4.89

+50

92.8 \ 4.99

71

92.8 \ 4.99

+50

92.7 \ 5.09

72

92.7 \ 5.09

+50

92.6 \ 5.19

73

92.6 \ 5.19

+50

0.00      0.00

92.6 \ 5.19

74

0.00      -0.12      +0.12

92.7 \ 5.09

+50

0.05      -0.57      +0.57

92.8 \ 4.99

#1 = 900.37

75	2.30	-1.07	+0.91	93.2	7.17
150	3.44	-1.34	+1.07	93.5	6.87
76	3.44	-1.37	+1.08	94.1	6.27
150	"	"	"	94.5	5.87
77	"	"	"	95.2	5.77
150	"	"	"	95.9	4.67
78	"	"	"	96.6	3.77
150	3.44	-1.37	+1.08	97.3	3.07
79	3.40	-0.90	+1.08	98.0	2.37
150	1.20	-0.40	+0.41	98.7	1.65
80	0.00	0.00	0.00	999.4	5.95
150	0.50	+0.40	-0.40	900.1	5.25
81	3.60	+0.70	-0.80	00.8	4.55
150	4.00	+1.08	-1.42	01.5	3.85
82	"	"	"	02.2	3.15
150	"	"	"	02.9	2.45
83	"	"	"	03.6	1.75
150	4.00	+1.08	-1.42	04.2	5.41
84	3.93	+1.04	-1.35	04.4	4.71
150	1.25	+0.30	-0.28	04.4	5.21
85	0.00	+0.49	-0.49	04.1	5.02
150		+0.07	-0.07	03.6	6.01
86		0.00	0.00	02.7	6.91
150				01.7	7.91
87				00.7	8.91

883.26

	+50				899.7	991
88					98.7	10.91
	+50				97.7	11.91
89					96.6	1.2
	+50				95.5	2.22
90					94.4	3.22
	+50				93.3	4.42
91		0.00	0.00		92.1	5.62
	+50	0.00	-0.50	+0.50	90.9	6.82
			-0.50			
92		0.43	-0.70	+0.69	89.7	
	+50	3.01	-1.22	+0.99	88.5	6.22 4.21
93		3.44	-1.37	+1.08	87.3	7.77 6.40 5.21
	+50	3.44	"	"	86.3	8.77 7.40 6.21
			"	"		
94		3.44	"	"	85.6	7.22 8.10 9.47
	+50	3.44	"	"	85.4	9.67 8.30 7.22
			"	"		
95		3.44	"	"	85.4	9.67 8.30 7.22
	+50	3.44	"	"	85.9	9.17 7.80 6.72
			"	"		
96		3.44	-1.37	+1.08	86.7	8.37 7.0 5.72
	+50	3.20	-1.24	+1.01	87.7	7.22 6.0 4.91
97		0.70	-0.30	+0.74	88.7	5.8 5.0 4.26
	+50	0.00	-0.39	+0.39	89.7	4.39 4.0 3.61
98			-0.05	+0.05	90.7	3.05 3.0 2.2
	+50		0.00	0.00	91.7	2.0
99					92.7	1.0
	+50				93.7	0.0

11+93 24" X 42' P<sup>3</sup>

15+70 24" X 54' P<sup>3</sup>

43+70 36" X 48' P<sup>3</sup>

51+35 24" X 42' P<sup>3</sup>

68+49 24" X 36' P<sup>3</sup>

74+93 24" X 54' P<sup>3</sup>

6-11-30

878.83  
21

878.53  
21

875.0  
27

874.8  
27

864.78  
24

865.52  
24

865.32  
24

864.58

24 6-11-30.

864.82 FLY LONG LARK

867.54  
22

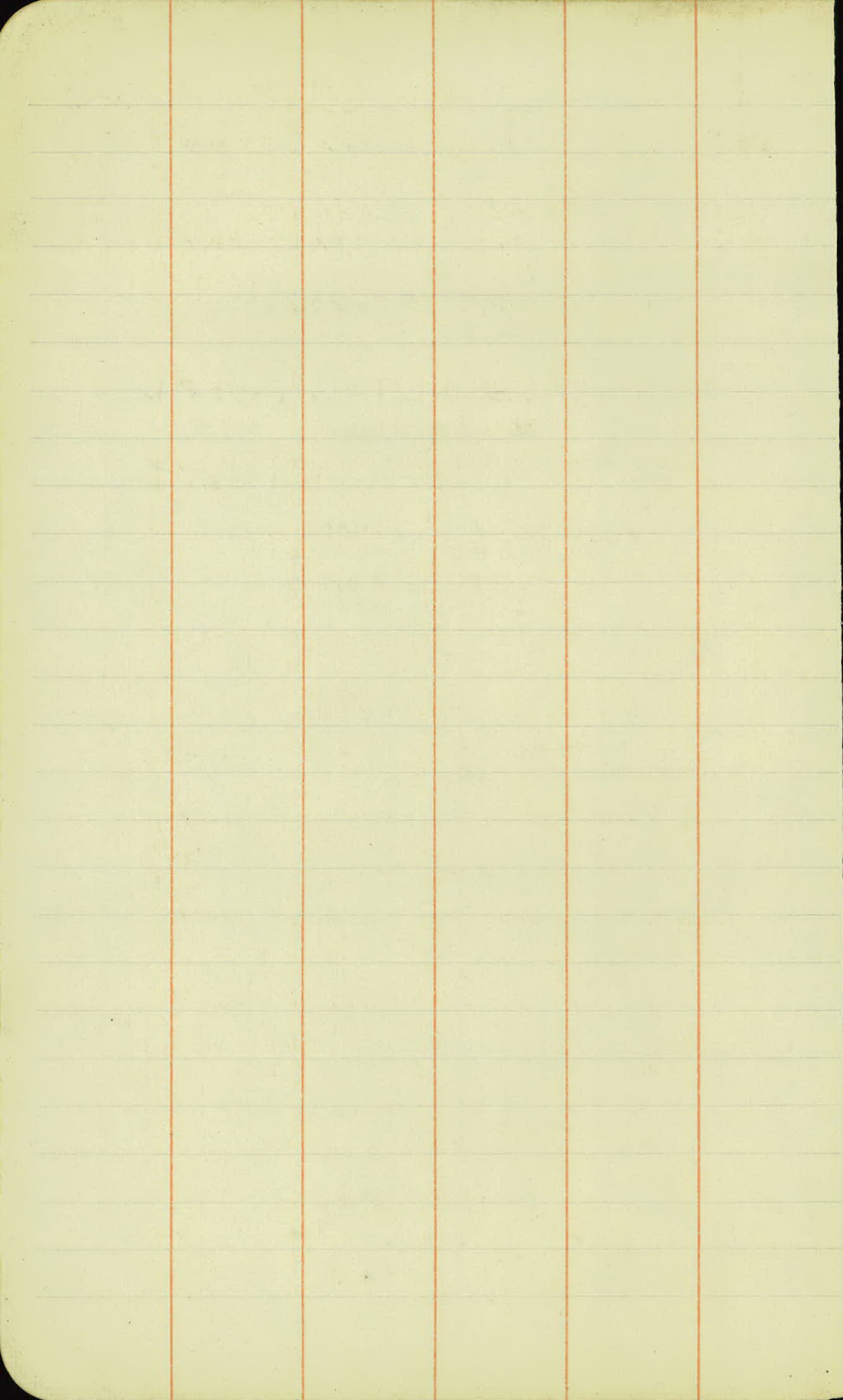
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889.20  
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17

888.00  
21

881.00  
33



# KEITH'S RAILROAD CURVE TABLES.

Published by KEUFFEL & ESSER CO., New York.

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## HOW TO USE KEITH'S TABLES.

### EXAMPLE.

Wanted a Curve with an Ext. of about 12 ft. Angle  
of Intersection or I. P.= $23^{\circ} 20'$  to the R. at Station  
 $542+72$ .

Ext. in Tab. IV opposite  $23^{\circ} 20'$ =120.87  
 $120.87+12=132.87$ . Say a  $10^{\circ}$  Curve.

Tan. in Tab. IV opp.  $23^{\circ} 20'$ =1183.1  
 $1183.1 \div 10=118.31$ .

Tab. V. correction for A.  $23^{\circ} 20'$  for a  $10^{\circ}$  Cur.=0.16  
 $118.31+0.16=118.47$ =corrected Tangent.

(If corrected Ext. is required find in same way)  
Ang.  $23^{\circ} 20'$ = $23.33^{\circ} \div 10=2.3333$ =L. C.

$2^{\circ} 19\frac{1}{2}'$ =def. for sta.	542	I. P.=sta.	542+72
$4^{\circ} 49\frac{1}{2}'$ = " " "	+50	Tan.=	1.18.47
$7^{\circ} 19\frac{1}{2}'$ = " " "	543	B. C.=sta.	541+53.53
$9^{\circ} 49\frac{1}{2}'$ = " " "	+50	L. C.=	2.33.33
$11^{\circ} 40'$ = " " "	543+	E. C.=sta.	543+86.86
	86.86		

$100-53.53=46.47 \times 3'$ (def. for 1 ft. of  $10^{\circ}$  Cur.)= $139.41'$ =  
 $2^{\circ} 19\frac{1}{2}'$ =def. for sta. 542.

Def. for 50 ft.= $2^{\circ} 30'$  for a  $10^{\circ}$  Curve.

Def. for 36.86 ft.= $1^{\circ} 50\frac{1}{2}'$  for a  $10^{\circ}$  Curve

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

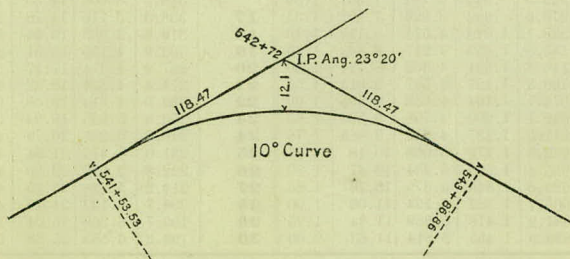


TABLE I. — Minutes in Decimals of a Degree.

<b>1'</b>	.0167	<b>11'</b>	.1833	<b>21'</b>	.3500	<b>31'</b>	.5167	<b>41'</b>	.6833	<b>51'</b>	.8500
<b>2</b>	.0333	<b>12</b>	.2000	<b>22</b>	.3667	<b>32</b>	.5333	<b>42</b>	.7000	<b>52</b>	.8667
<b>3</b>	.0500	<b>13</b>	.2167	<b>23</b>	.3833	<b>33</b>	.5500	<b>43</b>	.7167	<b>53</b>	.8833
<b>4</b>	.0667	<b>14</b>	.2333	<b>24</b>	.4000	<b>34</b>	.5667	<b>44</b>	.7333	<b>54</b>	.9000
<b>5</b>	.0833	<b>15</b>	.2500	<b>25</b>	.4167	<b>35</b>	.5833	<b>45</b>	.7500	<b>55</b>	.9167
<b>6</b>	.1000	<b>16</b>	.2667	<b>26</b>	.4333	<b>36</b>	.6000	<b>46</b>	.7667	<b>56</b>	.9333
<b>7</b>	.1167	<b>17</b>	.2833	<b>27</b>	.4500	<b>37</b>	.6167	<b>47</b>	.7833	<b>57</b>	.9500
<b>8</b>	.1333	<b>18</b>	.3000	<b>28</b>	.4667	<b>38</b>	.6333	<b>48</b>	.8000	<b>58</b>	.9667
<b>9</b>	.1500	<b>19</b>	.3167	<b>29</b>	.4833	<b>39</b>	.6500	<b>49</b>	.8167	<b>59</b>	.9833
<b>10</b>	.1667	<b>20</b>	.3333	<b>30</b>	.5000	<b>40</b>	.6667	<b>50</b>	.8333	<b>60</b>	1.0000

TABLE II. — Inches in Decimals of a Foot.

1-16	3-32	<sup>1</sup> / <sub>8</sub>	3-16	<sup>1</sup> / <sub>4</sub>	5-16	<sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	<sup>5</sup> / <sub>8</sub>	<sup>3</sup> / <sub>4</sub>	<sup>7</sup> / <sub>8</sub>
.0052	.0078	.0104	.0156	.0208	.0260	.0313	.0417	.0521	.0625	.0729
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>
.0833	.1667	.2500	.3333	.4167	.5000	.5833	.6667	.7500	.8333	.9167

TABLE III. — Radii, Ordinates and Deflections.

Deg.	Radius	Mid. Ord.	Tan. Def.	Chd. Def.	Def. for 1 Foot	Deg.	Radius	Mid. Ord.	Tan. Def.	Chd. Def.	Def. for 1 Foot
<b>0° 10'</b>	34377.	.036	.145	.291	0.05'	<b>7°</b>	819.0	1.528	6.105	12.21	2.10'
<b>20</b>	17189.	.073	.291	.582	0.10	<b>20'</b>	781.8	1.600	6.395	12.79	2.20
<b>30</b>	11459.	.109	.436	.873	0.15	<b>30</b>	764.5	1.637	6.540	13.08	2.25
<b>40</b>	8594.4	.145	.582	1.164	0.20	<b>40</b>	747.9	1.673	6.685	13.37	2.30
<b>50</b>	6875.5	.182	.727	1.454	0.25	<b>50</b>	716.8	1.746	6.976	13.95	2.40
<b>1</b>	5729.6	.218	.873	1.745	0.30	<b>20</b>	688.2	1.819	7.266	14.53	2.50
<b>10</b>	4911.2	.255	1.018	2.036	0.35	<b>30</b>	674.7	1.855	7.411	14.82	2.55
<b>20</b>	4297.3	.291	1.164	2.327	0.40	<b>40</b>	661.7	1.892	7.556	15.11	2.60
<b>30</b>	3819.8	.327	1.309	2.618	0.45	<b>9</b>	637.3	1.965	7.846	15.69	2.70
<b>40</b>	3437.9	.364	1.454	2.909	0.50	<b>20</b>	614.6	2.037	8.136	16.27	2.80
<b>50</b>	3125.4	.400	1.600	3.200	0.55	<b>30</b>	603.8	2.074	8.281	16.56	2.85
<b>2</b>	2864.9	.436	1.745	3.490	0.60	<b>40</b>	593.4	2.110	8.426	16.85	2.90
<b>10</b>	2644.6	.473	1.891	3.781	0.65	<b>10</b>	573.7	2.183	8.716	17.43	3.00
<b>20</b>	2455.7	.509	2.036	4.072	0.70	<b>30</b>	546.4	2.292	9.150	18.30	3.15
<b>30</b>	2292.0	.545	2.181	4.363	0.75	<b>11</b>	521.7	2.402	9.585	19.16	3.30
<b>40</b>	2148.8	.582	2.327	4.654	0.80	<b>30</b>	499.1	2.511	10.02	20.04	3.45
<b>50</b>	2022.4	.618	2.472	4.945	0.85	<b>12</b>	478.3	2.620	10.45	20.91	3.60
<b>3</b>	1910.1	.655	2.618	5.235	0.90	<b>30</b>	459.3	2.730	10.89	21.77	3.75
<b>10</b>	1809.6	.691	2.763	5.526	0.95	<b>13</b>	441.7	2.839	11.32	22.64	3.90
<b>20</b>	1719.1	.727	2.908	5.817	1.00	<b>30</b>	425.4	2.949	11.75	23.51	4.05
<b>30</b>	1637.3	.764	3.054	6.108	1.05	<b>14</b>	410.3	3.058	12.18	24.37	4.20
<b>40</b>	1562.9	.800	3.199	6.398	1.10	<b>30</b>	396.2	3.168	12.62	25.24	4.35
<b>50</b>	1495.0	.836	3.345	6.689	1.15	<b>15</b>	383.1	3.277	13.05	26.11	4.50
<b>4</b>	1432.7	.873	3.490	6.980	1.20	<b>30</b>	370.8	3.387	13.49	26.97	4.65
<b>10</b>	1375.4	.909	3.635	7.271	1.25	<b>16</b>	359.3	3.496	13.92	27.84	4.80
<b>20</b>	1322.5	.945	3.781	7.561	1.30	<b>30</b>	348.5	3.606	14.35	28.70	4.95
<b>30</b>	1273.6	.982	3.926	7.852	1.35	<b>17</b>	338.3	3.716	14.78	29.56	5.10
<b>40</b>	1228.1	1.018	4.071	8.143	1.40	<b>18</b>	319.6	3.935	15.64	31.29	5.40
<b>50</b>	1185.8	1.055	4.217	8.433	1.45	<b>19</b>	302.9	4.155	16.51	33.01	5.70
<b>5</b>	1146.3	1.091	4.362	8.724	1.50	<b>20</b>	287.9	4.374	17.37	34.73	6.00
<b>10</b>	1109.3	1.127	4.507	9.014	1.55	<b>21</b>	274.4	4.594	18.22	36.44	6.30
<b>20</b>	1074.7	1.164	4.653	9.305	1.60	<b>22</b>	262.0	4.814	19.08	38.16	6.60
<b>30</b>	1042.1	1.200	4.798	9.596	1.65	<b>23</b>	250.8	5.035	19.94	39.87	6.90
<b>40</b>	1011.5	1.237	4.943	9.886	1.70	<b>24</b>	240.5	5.255	20.79	41.58	7.20
<b>50</b>	982.6	1.273	5.088	10.18	1.75	<b>25</b>	231.0	5.476	21.64	43.28	7.50
<b>6</b>	955.4	1.309	5.234	10.47	1.80	<b>26</b>	222.3	5.697	22.50	44.99	7.80
<b>10</b>	929.6	1.346	5.379	10.76	1.85	<b>27</b>	214.2	5.918	23.35	46.69	8.10
<b>20</b>	905.1	1.382	5.524	11.05	1.90	<b>28</b>	206.7	6.139	24.19	48.38	8.40
<b>30</b>	881.9	1.418	5.669	11.34	1.95	<b>29</b>	199.7	6.360	25.04	50.07	8.70
<b>40</b>	859.9	1.455	5.814	11.63	2.00	<b>30</b>	193.2	6.583	25.88	51.76	9.00

TABLE IV. — Tangents and Externals to a 1° Curve.

Angle	Tangent	External	Angle	Tangent	External	Angle	Tangent	External
<b>1°</b>	50.00	.22	<b>11°</b>	551.70	26.50	<b>21°</b>	1061.9	97.57
10'	58.34	.30	10'	560.11	27.31	10'	1070.6	99.16
20	66.67	.39	20	568.53	28.14	20	1079.2	100.75
30	75.01	.49	30	576.95	28.97	30	1087.8	102.35
40	83.34	.61	40	585.36	29.82	40	1096.4	103.97
50	91.68	.73	50	593.79	30.68	50	1105.1	105.60
<b>2</b>	100.01	.87	<b>12</b>	602.21	31.56	<b>22</b>	1113.7	107.24
10	108.35	1.02	10	610.64	32.45	10	1122.4	108.90
20	116.68	1.19	20	619.07	33.35	20	1131.0	110.57
30	125.02	1.36	30	627.50	34.26	30	1139.7	112.25
40	133.36	1.55	40	635.93	35.18	40	1148.4	113.95
50	141.70	1.75	50	644.37	36.12	50	1157.0	115.66
<b>3</b>	150.04	1.96	<b>13</b>	652.81	37.07	<b>23</b>	1165.7	117.38
10	158.38	2.19	10	661.25	38.03	10	1174.4	119.12
20	166.72	2.43	20	669.70	39.01	20	1183.1	120.87
30	175.06	2.67	30	678.15	39.99	30	1191.8	122.63
40	183.40	2.93	40	686.60	40.99	40	1200.5	124.41
50	191.74	3.21	50	695.06	42.00	50	1209.2	126.20
<b>4</b>	200.08	3.49	<b>14</b>	703.51	43.03	<b>24</b>	1217.9	128.00
10	208.43	3.79	10	711.97	44.07	10	1226.6	129.82
20	216.77	4.10	20	720.44	45.12	20	1235.3	131.65
30	225.12	4.42	30	728.90	46.18	30	1244.0	133.50
40	233.47	4.76	40	737.37	47.25	40	1252.8	135.35
50	241.81	5.10	50	745.85	48.34	50	1261.5	137.23
<b>5</b>	250.16	5.46	<b>15</b>	754.32	49.44	<b>25</b>	1270.2	139.11
10	258.51	5.83	10	762.80	50.55	10	1279.0	141.01
20	266.86	6.21	20	771.29	51.68	20	1287.7	142.93
30	275.21	6.61	30	779.77	52.89	30	1296.5	144.85
40	283.57	7.01	40	788.26	53.97	40	1305.3	146.79
50	291.92	7.43	50	796.75	55.13	50	1314.0	148.75
<b>6</b>	300.28	7.86	<b>16</b>	805.25	56.31	<b>26</b>	1322.8	150.71
10	308.64	8.31	10	813.75	57.50	10	1331.6	152.69
20	316.99	8.76	20	822.25	58.70	20	1340.4	154.69
30	325.35	9.23	30	830.76	59.91	30	1349.2	156.70
40	333.71	9.71	40	839.27	61.14	40	1358.0	158.72
50	342.08	10.20	50	847.78	62.38	50	1366.8	160.76
<b>7</b>	350.44	10.71	<b>17</b>	856.30	63.63	<b>27</b>	1375.6	162.81
10	358.81	11.22	10	864.82	64.90	10	1384.4	164.86
20	367.17	11.75	20	873.35	66.18	20	1393.2	166.95
30	375.54	12.29	30	881.88	67.47	30	1402.0	169.04
40	383.91	12.85	40	890.41	68.77	40	1410.9	171.15
50	392.28	13.41	50	898.95	70.09	50	1419.7	173.27
<b>8</b>	400.66	13.99	<b>18</b>	907.49	71.42	<b>28</b>	1428.6	175.41
10	409.03	14.58	10	916.03	72.76	10	1437.4	177.55
20	417.41	15.18	20	924.58	74.12	20	1446.3	179.72
30	425.79	15.80	30	933.13	75.49	30	1455.1	181.89
40	434.17	16.43	40	941.69	76.86	40	1464.0	184.08
50	442.55	17.07	50	950.25	78.26	50	1472.9	186.29
<b>9</b>	450.93	17.72	<b>19</b>	958.81	79.67	<b>29</b>	1481.8	188.51
10	459.32	18.38	10	967.38	81.09	10	1490.7	190.74
20	467.71	19.06	20	975.96	82.53	20	1499.6	192.99
30	476.10	19.75	30	984.53	83.97	30	1508.5	195.25
40	484.49	20.45	40	993.12	85.43	40	1517.4	197.53
50	492.88	21.16	50	1001.7	86.90	50	1526.3	199.82
<b>10</b>	501.28	21.89	<b>20</b>	1010.3	88.39	<b>30</b>	1535.3	202.12
10	509.68	22.62	10	1018.9	89.89	10	1544.2	204.44
20	518.08	23.38	20	1027.5	91.40	20	1553.1	206.77
30	526.48	24.14	30	1036.1	92.92	30	1562.1	209.12
40	534.89	24.91	40	1044.7	94.46	40	1571.0	211.48
50	543.29	25.70	50	1053.3	96.01	50	1580.0	213.86

## IV

TABLE IV. — Tangents and Externals to a 1° Curve.

Angle	Tangent	External	Angle	Tangent	External	Angle	Tangent	External
<b>31°</b>	1589.0	216.3	<b>41°</b>	2142.2	387.4	<b>51°</b>	2732.9	618.4
10'	1598.0	218.7	10'	2151.7	390.7	10'	2743.1	622.8
20	1606.9	221.1	20	2161.2	394.1	20	2753.4	627.2
30	1615.9	223.5	30	2170.8	397.4	30	2763.7	631.7
40	1624.9	226.0	40	2180.3	400.8	40	2773.9	636.2
50	1633.9	228.4	50	2189.9	404.2	50	2784.2	640.7
<b>32</b>	1643.0	230.9	<b>42</b>	2199.4	407.6	<b>52</b>	2794.5	645.2
10	1652.0	233.4	10	2209.0	411.1	10	2804.9	649.7
20	1661.0	235.9	20	2218.6	414.5	20	2815.2	654.3
30	1670.0	238.4	30	2228.1	418.0	30	2825.6	658.8
40	1679.1	241.0	40	2237.7	421.4	40	2835.9	663.4
50	1688.1	243.5	50	2247.3	425.0	50	2846.3	668.0
<b>33</b>	1697.2	246.1	<b>43</b>	2257.0	428.5	<b>53</b>	2856.7	672.7
10	1706.3	248.7	10	2266.6	432.0	10	2867.1	677.3
20	1715.3	251.3	20	2276.2	435.6	20	2877.5	682.0
30	1724.4	253.9	30	2285.9	439.2	30	2888.0	686.7
40	1733.5	256.5	40	2295.6	442.8	40	2898.4	691.4
50	1742.6	259.1	50	2305.2	446.4	50	2908.9	696.1
<b>34</b>	1751.7	261.8	<b>44</b>	2314.9	450.0	<b>54</b>	2919.4	700.9
10	1760.8	264.5	10	2324.6	453.6	10	2929.9	705.7
20	1770.0	267.2	20	2334.3	457.3	20	2940.4	710.5
30	1779.1	269.9	30	2344.1	461.0	30	2951.0	715.3
40	1788.2	272.6	40	2353.8	464.6	40	2961.5	720.1
50	1797.4	275.3	50	2363.5	468.4	50	2972.1	725.0
<b>35</b>	1806.6	278.1	<b>45</b>	2373.3	472.1	<b>55</b>	2982.7	729.9
10	1815.7	280.8	10	2383.1	475.8	10	2993.3	734.8
20	1824.9	283.6	20	2392.8	479.6	20	3003.9	739.7
30	1834.1	286.4	30	2402.6	483.4	30	3014.5	744.6
40	1843.3	289.2	40	2412.4	487.2	40	3025.2	749.6
50	1852.5	292.0	50	2422.3	491.0	50	3035.8	754.6
<b>36</b>	1861.7	294.9	<b>46</b>	2432.1	494.8	<b>56</b>	3046.5	759.6
10	1870.9	297.7	10	2441.9	498.7	10	3057.2	764.6
20	1880.1	300.6	20	2451.8	502.5	20	3067.9	769.7
30	1889.4	303.5	30	2461.7	506.4	30	3078.7	774.7
40	1898.6	306.4	40	2471.5	510.3	40	3089.4	779.8
50	1907.9	309.3	50	2481.4	514.3	50	3100.2	784.9
<b>37</b>	1917.1	312.2	<b>47</b>	2491.3	518.2	<b>57</b>	3110.9	790.1
10	1926.4	315.2	10	2501.2	522.2	10	3121.7	795.2
20	1935.7	318.1	20	2511.2	526.1	20	3132.6	800.4
30	1945.0	321.1	30	2521.1	530.1	30	3143.4	805.6
40	1954.3	324.1	40	2531.1	534.2	40	3154.2	810.9
50	1963.6	327.1	50	2541.0	538.2	50	3165.1	816.1
<b>38</b>	1972.9	330.2	<b>48</b>	2551.0	542.2	<b>58</b>	3176.0	821.4
10	1982.2	333.2	10	2561.0	546.3	10	3186.9	826.7
20	1991.5	336.3	20	2571.0	550.4	20	3197.8	832.0
30	2000.9	339.3	30	2581.0	554.5	30	3208.8	837.3
40	2010.2	342.4	40	2591.0	558.6	40	3219.7	842.7
50	2019.6	345.5	50	2601.1	562.8	50	3230.7	848.1
<b>39</b>	2029.0	348.6	<b>49</b>	2611.2	566.9	<b>59</b>	3241.7	853.5
10	2038.4	351.8	10	2621.2	571.1	10	3252.7	858.9
20	2047.8	354.9	20	2631.3	575.3	20	3263.7	864.3
30	2057.2	358.1	30	2641.4	579.5	30	3274.8	869.8
40	2066.6	361.3	40	2651.5	583.8	40	3285.8	875.3
50	2076.0	364.5	50	2661.6	588.0	50	3296.9	880.8
<b>40</b>	2085.4	367.7	<b>50</b>	2671.8	592.3	<b>60</b>	3308.0	886.4
10	2094.9	371.0	10	2681.9	596.6	10	3319.1	892.0
20	2104.3	374.2	20	2692.1	600.9	20	3330.3	897.5
30	2113.8	377.5	30	2702.3	605.3	30	3341.4	903.2
40	2123.3	380.8	40	2712.5	609.6	40	3352.6	908.8
50	2132.7	384.1	50	2722.7	614.0	50	3363.8	914.5

## Natural Sines

DEG.	0'	10'	20'	30'	40'	50'	DEG.	DEG.	0'	10'	20'	30'	40'	50'	DEG.
0	0000	0029	0058	0087	0116	0145	89	40	6428	6450	6472	6494	6517	6539	49
1	0175	0204	0233	0262	0291	0320	88	41	6561	6583	6604	6626	6648	6670	48
2	0349	0378	0407	0436	0465	0494	87	42	6691	6713	6734	6756	6777	6799	47
3	0523	0552	0581	0610	0640	0669	86	43	6820	6841	6862	6884	6905	6926	46
4	0698	0727	0756	0785	0814	0843	85	44	6947	6967	6988	7009	7030	7050	45
5	0872	0901	0929	0958	0987	1016	84	45	7071	7092	7112	7133	7153	7173	44
6	1045	1074	1103	1132	1161	1190	83	46	7193	7214	7234	7254	7274	7294	43
7	1219	1248	1276	1305	1334	1363	82	47	7314	7333	7353	7373	7392	7412	42
8	1392	1421	1449	1478	1507	1536	81	48	7431	7451	7470	7490	7509	7528	41
9	1564	1593	1622	1650	1679	1708	80	49	7547	7566	7585	7604	7623	7642	40
10	1736	1765	1794	1822	1851	1880	79	50	7660	7679	7698	7716	7735	7753	39
11	1908	1937	1965	1994	2022	2051	78	51	7771	7790	7808	7826	7844	7862	38
12	2079	2108	2136	2164	2193	2221	77	52	7880	7898	7916	7934	7951	7969	37
13	2278	2306	2334	2363	2391		76	53	7986	8004	8021	8039	8056	8073	36
14	2419	2447	2476	2504	2532	2560	75	54	8090	8107	8124	8141	8158	8175	35
15	2588	2616	2644	2672	2700	2728	74	55	8192	8208	8225	8241	8258	8274	34
16	2756	2784	2812	2840	2868	2896	73	56	8290	8307	8323	8339	8355	8371	33
17	2924	2952	2979	3007	3035	3062	72	57	8387	8403	8418	8434	8450	8465	32
18	3090	3118	3145	3173	3201	3228	71	58	8480	8496	8511	8526	8542	8557	31
19	3256	3283	3311	3338	3365	3393	70	59	8572	8587	8601	8616	8631	8646	30
20	3420	3448	3475	3502	3529	3557	69	60	8660	8675	8689	8704	8718	8732	29
21	3584	3611	3638	3665	3692	3719	68	61	8746	8760	8774	8788	8802	8816	28
22	3746	3773	3800	3827	3854	3881	67	62	8829	8843	8857	8870	8884	8897	27
23	3907	3934	3961	3987	4014	4041	66	63	8910	8923	8936	8949	8962	8975	26
24	4067	4094	4120	4147	4173	4200	65	64	8988	9001	9013	9026	9038	9051	25
25	4226	4253	4279	4305	4331	4358	64	65	9063	9075	9088	9100	9112	9124	24
26	4384	4410	4436	4462	4488	4514	63	66	9135	9147	9159	9171	9182	9194	23
27	4540	4566	4592	4617	4643	4669	62	67	9205	9216	9228	9239	9250	9261	22
28	4695	4720	4746	4772	4797	4823	61	68	9272	9283	9293	9304	9315	9325	21
29	4848	4874	4899	4924	4950	4975	60	69	9336	9346	9356	9367	9377	9387	20
30	5000	5025	5050	5075	5100	5125	59	70	9397	9407	9417	9426	9436	9446	19
31	5150	5175	5200	5225	5250	5275	58	71	9455	9465	9474	9483	9492	9502	18
32	5299	5324	5348	5373	5398	5422	57	72	9511	9520	9528	9537	9546	9555	17
33	5446	5471	5495	5519	5544	5568	56	73	9563	9572	9580	9588	9596	9605	16
34	5592	5616	5640	5664	5688	5712	55	74	9613	9621	9628	9636	9644	9652	15
35	5736	5760	5783	5807	5831	5854	54	75	9659	9667	9674	9681	9689	9696	14
36	5878	5901	5925	5948	5972	5995	53	76	9703	9710	9717	9724	9730	9737	13
37	6018	6041	6065	6088	6111	6134	52	77	9744	9750	9757	9763	9769	9775	12
38	6157	6180	6202	6225	6248	6271	51	78	9781	9787	9793	9799	9805	9811	11
39	6293	6316	6338	6361	6383	6406	50	79	9816	9822	9827	9833	9838	9843	10
DEG.	60'	50'	40'	30'	20'	10'	DEG.	DEG.	60'	50'	40'	30'	20'	10'	DEG.
80	9848	9853	9858	9863	9868	9872	9								
81	9877	9881	9886	9890	9894	9899	8								
82	9903	9907	9911	9914	9918	9922	7								
83	9925	9929	9932	9936	9939	9942	6								
84	9945	9948	9951	9954	9957	9959	5								
85	9962	9964	9967	9969	9971	9974	4								
86	9976	9978	9980	9981	9983	9985	3								
87	9986	9988	9989	9990	9992	9993	2								
88	9994	9995	9996	9997	9997	9998	1								
89	9998	9999	9999	9999	1.0000	1.0000	0								
DEG.	60'	50'	40'	30'	20'	10'	DEG.								DEG.

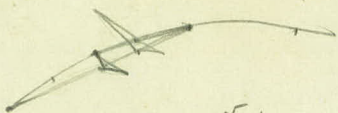
## Natural Cosines

Natural Tangents

deg.	0'	10'	20'	30'	40'	50'	deg.	0'	10'	20'	30'	40'	50'	deg.	
0	0000	0029	0058	0087	0116	0145	89	40	8391	8441	8491	8541	8591	8642	49
1	0175	0204	0233	0262	0291	0320	88	41	8693	8744	8796	8847	8899	8952	48
2	0349	0378	0407	0437	0466	0495	87	42	9004	9057	9110	9163	9217	9271	47
3	0524	0553	0582	0612	0641	0670	86	43	9325	9380	9435	9490	9545	9601	46
4	0699	0729	0758	0787	0816	0846	85	44	9657	9713	9770	9827	9884	9942	45
5	0875	0904	0934	0963	0992	1022	84	45	1.0000	1.0058	1.0117	1.0176	1.0235	1.0295	44
6	1051	1080	1110	1139	1169	1198	83	46	1.0355	1.0416	1.0477	1.0533	1.0599	1.0661	43
7	1228	1257	1287	1317	1346	1376	82	47	1.0724	1.0786	1.0850	1.0913	1.0977	1.1041	42
8	1405	1435	1465	1495	1524	1554	81	48	1.1106	1.1171	1.1237	1.1303	1.1369	1.1436	41
9	1584	1614	1644	1673	1703	1733	80	49	1.1504	1.1571	1.1640	1.1708	1.1778	1.1847	40
10	1763	1793	1823	1853	1883	1914	79	50	1.1918	1.1988	1.2059	1.2131	1.2203	1.2276	39
11	1944	1974	2004	2035	2065	2095	78	51	1.2349	1.2423	1.2497	1.2572	1.2647	1.2723	38
12	2126	2156	2186	2217	2247	2278	77	52	1.2799	1.2876	1.2954	1.3032	1.3111	1.3190	37
13	2309	2339	2370	2401	2432	2462	76	53	1.3270	1.3351	1.3432	1.3514	1.3597	1.3680	36
14	2493	2524	2555	2586	2617	2648	75	54	1.3704	1.3848	1.3934	1.4019	1.4106	1.4193	35
15	2679	2711	2742	2773	2805	2836	74	55	1.4281	1.4370	1.4460	1.4550	1.4641	1.4733	34
16	2867	2899	2931	2962	2994	3026	73	56	1.4826	1.4919	1.5013	1.5108	1.5204	1.5301	33
17	3057	3089	3121	3153	3185	3217	72	57	1.5399	1.5497	1.5597	1.5697	1.5798	1.5900	32
18	3249	3281	3314	3346	3378	3411	71	58	1.6003	1.6107	1.6212	1.6319	1.6426	1.6534	31
19	3443	3476	3508	3541	3574	3607	70	59	1.6643	1.6753	1.6864	1.6977	1.7090	1.7205	30
20	3640	3673	3706	3739	3772	3805	69	60	1.7321	1.7437	1.7556	1.7675	1.7797	1.7917	29
21	3839	3872	3906	3939	3973	4006	68	61	1.8040	1.8165	1.8291	1.8418	1.8546	1.8676	28
22	4040	4074	4108	4142	4176	4210	67	62	1.8807	1.8940	1.9074	1.9210	1.9347	1.9486	27
23	4245	4279	4314	4348	4383	4417	66	63	1.9626	1.9768	1.9912	2.0057	2.0204	2.0353	26
24	4452	4487	4522	4557	4592	4628	65	64	2.0503	2.0655	2.0809	2.0965	2.1123	2.1283	25
25	4663	4699	4734	4770	4806	4841	64	65	2.1445	2.1609	2.1775	2.1943	2.2113	2.2286	24
26	4877	4913	4950	4986	5022	5059	63	66	2.2450	2.2637	2.2817	2.2998	2.3183	2.3369	23
27	5095	5132	5169	5206	5243	5280	62	67	2.3559	2.3750	2.3945	2.4142	2.4342	2.4545	22
28	5317	5354	5392	5430	5467	5505	61	68	2.4751	2.4960	2.5172	2.5386	2.5605	2.5826	21
29	5543	5581	5619	5658	5696	5735	60	69	2.6051	2.6279	2.6511	2.6746	2.6985	2.7228	20
30	5774	5812	5851	5890	5930	5969	59	70	2.7475	2.7725	2.7980	2.8239	2.8502	2.8770	19
31	6009	6048	6088	6128	6168	6208	58	71	2.9042	2.9319	2.9600	2.9887	3.0178	3.0475	18
32	6249	6289	6330	6371	6412	6453	57	72	3.0777	3.1084	3.1397	3.1716	3.2041	3.2371	17
33	6494	6536	6577	6619	6661	6703	56	73	3.2709	3.3052	3.3402	3.3759	3.4124	3.4495	16
34	6745	6787	6830	6873	6916	6959	55	74	3.4874	3.5261	3.5656	3.6059	3.6470	3.6891	15
35	7002	7046	7089	7133	7177	7221	54	75	3.7321	3.7760	3.8208	3.8667	3.9136	3.9617	14
36	7265	7310	7355	7400	7445	7490	53	76	4.0108	4.0611	4.1126	4.1653	4.2193	4.2747	13
37	7536	7581	7627	7673	7720	7766	52	77	4.3315	4.3897	4.4494	4.5107	4.5736	4.6382	12
38	7813	7860	7907	7954	8002	8050	51	78	4.7046	4.7729	4.8430	4.9152	4.9894	5.0658	11
39	8098	8146	8195	8243	8292	8342	50	79	5.1446	5.2257	5.3093	5.3955	5.4845	5.5764	10
deg.	60'	50'	40'	30'	20'	10'	deg.	deg.	60'	50'	40'	30'	20'	10'	deg.

deg.	0'	10'	20'	30'	40'	50'	deg.
80	5.6713	5.7694	5.8708	5.9758	6.0844	6.1970	9
81	6.3138	6.4348	6.5606	6.6912	6.8269	6.9682	8
82	7.1154	7.2687	7.4287	7.5958	7.7709	7.9530	7
83	8.1443	8.3450	8.5555	8.7769	9.0098	9.2553	6
84	9.5144	9.7882	10.078	10.385	10.711	11.059	5
85	11.430	11.826	12.250	12.706	13.197	13.727	4
86	14.300	14.924	15.605	16.350	17.169	18.075	3
87	19.081	20.206	21.470	22.903	24.542	26.432	2
88	28.636	31.242	34.368	38.189	42.964	49.104	1
89	57.290	68.750	85.940	114.588	171.885	343.770	0
deg.	60'	50'	40'	30'	20'	10'	deg.

Natural Cotangents



5.1  
2.55

237

873.7  
4.78

878.08

665

72.04

871.43

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1.66

1.91

5.1

2

1.8

1.7



(54)

4296  
193

4089 3150  
51 60

4542 3085

68  
5350  
1450

656  
471.67  
184.33

3000  
235  
535  
1450  
680

5350  
5350  
30  
2350

4762 899.84  
336 628  
798 893.56

54  
4006  
52.54  
893.57  
6250  
535  
9.00

6820  
180  
7000 876.12  
31

89142 3.35  
235  
889.07

4537  
3015  
48385

87922  
665  
872.57  
438  
8.17  
876.95  
489  
872.06

4274  
1575  
42315

3005  
2641  
33496

7695  
485  
872.08  
8077  
7767  
3.10

5350  
30

7722  
666  
872.56  
489  
86767

591 807.288  
59 7943.48  
519 129.40

2350  
145  
9.0

9837  
532  
9302  
900

9837  
536  
3.02

9837  
9299  
5.38

801  
901  
96  
594  
B

L

841

52  
735  
485  
8

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

ROADWAY 14 FEET WIDE. SIDE SLOPES 1½ TO 1.

FOR SINGLE TRACK EMBANKMENT.

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

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

MADE IN GERMANY.

U2523