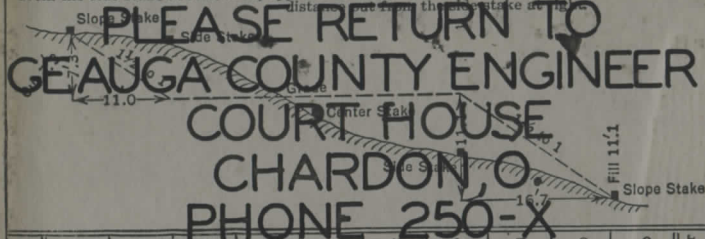


K & F
FIELD BOOK
F 360

DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING
 Roadway of any Width. Side Slopes 1/2 to 1.

In the figure below: opposite 7 under "Cut or Fill" and under .3 read 11.0, the distance out from the side stake at left. Also, opposite 11 under "Cut or Fill" and under .1 read 16.7, the distance out from the side stake at right.



Cut or Fill	Distance out from Side or Shoulder Stake										Cut or Fill
	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0.0	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.2	1.4	0
1	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.9	1
2	3.0	3.2	3.3	3.5	3.6	3.8	3.9	4.1	4.2	4.4	2
3	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.9	3
4	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.1	7.2	7.4	4
5	7.5	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.9	5
6	9.0	9.2	9.3	9.5	9.6	9.8	9.9	10.1	10.2	10.4	6
7	10.5	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9	7
8	12.0	12.2	12.3	12.5	12.6	12.8	12.9	13.1	13.2	13.4	8
9	13.5	13.7	13.8	14.0	14.1	14.3	14.4	14.6	14.7	14.9	9
10	15.0	15.2	15.3	15.5	15.6	15.8	15.9	16.1	16.2	16.4	10
11	16.5	16.7	16.8	17.0	17.1	17.3	17.4	17.6	17.7	17.9	11
12	18.0	18.2	18.3	18.5	18.6	18.8	18.9	19.1	19.2	19.4	12
13	19.5	19.7	19.8	20.0	20.1	20.3	20.4	20.6	20.7	20.9	13
14	21.0	21.2	21.3	21.5	21.6	21.8	21.9	22.1	22.2	22.4	14
15	22.5	22.7	22.8	23.0	23.1	23.3	23.4	23.6	23.7	23.9	15
16	24.0	24.2	24.3	24.5	24.6	24.8	24.9	25.1	25.2	25.4	16
17	25.5	25.7	25.8	26.0	26.1	26.3	26.4	26.6	26.7	26.9	17
18	27.0	27.2	27.3	27.5	27.6	27.8	27.9	28.1	28.2	28.4	18
19	28.5	28.7	28.8	29.0	29.1	29.3	29.4	29.6	29.7	29.9	19
20	30.0	30.2	30.3	30.5	30.6	30.8	30.9	31.1	31.2	31.4	20
21	31.5	31.7	31.8	32.0	32.1	32.3	32.4	32.6	32.7	32.9	21
22	33.0	33.2	33.3	33.5	33.6	33.8	33.9	34.1	34.2	34.4	22
23	34.5	34.7	34.8	35.0	35.1	35.3	35.4	35.6	35.7	35.9	23
24	36.0	36.2	36.3	36.5	36.6	36.8	36.9	37.1	37.2	37.4	24
25	37.5	37.7	37.8	38.0	38.1	38.3	38.4	38.6	38.7	38.9	25
26	39.0	39.2	39.3	39.5	39.6	39.8	39.9	40.1	40.2	40.4	26
27	40.5	40.7	40.8	41.0	41.1	41.3	41.4	41.6	41.7	41.9	27
28	42.0	42.2	42.3	42.5	42.6	42.8	42.9	43.1	43.2	43.4	28
29	43.5	43.7	43.8	44.0	44.1	44.3	44.4	44.6	44.7	44.9	29
30	45.0	45.2	45.3	45.5	45.6	45.8	45.9	46.1	46.2	46.4	30
31	46.5	46.7	46.8	47.0	47.1	47.3	47.4	47.6	47.7	47.9	31
32	48.0	48.2	48.3	48.5	48.6	48.8	48.9	49.1	49.2	49.4	32
33	49.5	49.7	49.8	50.0	50.1	50.3	50.4	50.6	50.7	50.9	33
34	51.0	51.2	51.3	51.5	51.6	51.8	51.9	52.1	52.2	52.4	34
35	52.5	52.7	52.8	53.0	53.1	53.3	53.4	53.6	53.7	53.9	35
36	54.0	54.2	54.3	54.5	54.6	54.8	54.9	55.1	55.2	55.4	36
37	55.5	55.7	55.8	56.0	56.1	56.3	56.4	56.6	56.7	56.9	37
38	57.0	57.2	57.3	57.5	57.6	57.8	57.9	58.1	58.2	58.4	38
39	58.5	58.7	58.8	59.0	59.1	59.3	59.4	59.6	59.7	59.9	39
40	60.0	60.2	60.3	60.5	60.6	60.8	60.9	61.1	61.2	61.4	40

KEUFFEL & ESSER CO., N. Y.
 For Curve Tables see end of book.

Return To
COUNTY ENGINEER
 Chardon, Ohio

The paper in this book No. F360
 is made of 100% high grade rag stock
 with a WATER RESISTING surface sizing.

Book 166

INDEX

C.H. 12

Fullertown Road Sec's DEF

Construction Pgs 1-4 ✓

Voytko ditch levels " 5-11 ✓

" " grades 9-17-42 16-77

Stillwell Road T.H. 19-22

Cemetery E of Steeles ✓

(Burton) Xing (S/for) 23-24
EX700

F 28 COUNTY LINE ROAD - RUSSELL 26-

F 35 FRANKLIN ST (MOON RD

NORTH) 12-15

9-12-41 Pomeroy
 9-13-41 Randles C.H. 12

FULLERTOWN ROAD

Construction
 Grades at 1st Curve
 Stakes set 15' off &

B.M.	6.51	1087.87		1081.36	Grade
T.P.	9.15	1094.78	2.24	1085.63	of E. berm
118+50				1085.01	
119+0				1086.15	
+50				1086.70	
120+0				1087.33	
T.P.	10.29	1096.07	7.00	1085.78	
+50				1088.66	
121+0				1090.02	
+50				1091.26	
T.P.	7.12	1099.64	3.55	1092.52	
B.M. (Set)	0.23	1099.64	0.23	1099.41	
T.P.	0.63	1092.39	7.88	1091.76	
T.P.	3.42	1087.20	8.61	1083.78	
B.M.			5.85	1081.35 (1081.36)	

SEC. 5 D E F

Stake	Rod	Rod	Grd	Stake
9.38 G	9.38	9.78	9.8	9.28 C0'-6"
8.34 F1'-0"	7.34	8.63	8.65	7.65 C1'-0"
8.56 F2'-6"	6.06	8.08	8.40	7.58 C0'-6"
8.50 F3'-6"	5.00	7.45	7.60	6.95 C0'-6"
9.61 F4'-0"	5.61	7.41	8.0	7.41 G
5.50 F0'-6"	5.00	6.05	6.76	5.30 C0'-9"
4.24 C0'-6"	4.74	4.81	5.38	3.06 C1'-9"
Spk SW root Pine 123± 20 Rt 29'				

Sections for proposed new
Taken 90° to tangent stations except

B.M. 13 11.52 1117.63 1106.10
182+0

+50

183+0

4.89 1110.99

1106.10

+50

184+0

+50

185+0

Curve at Cedar Rd

183+50 bisecting angle

Drill hole 24' from E end Conc. Hdwl.

$\frac{48}{E}$ $\frac{50}{8}$ $\frac{56}{12}$ $\frac{62}{15}$ $\frac{66}{17}$ $\frac{71}{21}$ $\frac{76}{25}$ $\frac{80}{34}$ E →

$\frac{79}{E}$ $\frac{83}{11}$ $\frac{87}{13}$ $\frac{91}{17}$ $\frac{97}{21.5}$ $\frac{103}{25}$ $\frac{107}{34}$

$\frac{104}{E}$ $\frac{100}{5}$ $\frac{114}{18}$ $\frac{126}{23}$ $\frac{142}{26}$ $\frac{160}{35}$ $\frac{180}{50}$ $\frac{211}{56}$

$\frac{144}{E}$ $\frac{145}{18.5}$ $\frac{160}{23.5}$ $\frac{169}{24}$ $\frac{173}{27}$ $\frac{170}{32}$

$\frac{57}{E}$ $\frac{52}{5}$ $\frac{68}{20}$ $\frac{82}{27}$ $\frac{90}{40}$ $\frac{91}{60}$

$\frac{5.9}{E}$ $\frac{6.3}{25}$ $\frac{7.3}{46.5}$ $\frac{9.7}{44}$

$\frac{6.0}{E}$ $\frac{6.4}{12}$ $\frac{6.9}{15}$ $\frac{7.5}{16}$ $\frac{6.0}{19}$ $\frac{6.4}{34}$

open field on Worthington
brush & small trees on Mansfield

183+02

53' 8" W.Ch.

+80

31' 14" Apple

+45

31' 14" Apple

182+08

31' 14" Apple

Grades at 2nd Curve
Stakes set 16' off E

B.M. 10.15 1078.98 1068.83

139+0

+50

138+0

T.P. 7.19 1085.10 1.07 1077.91

+50

137+0

+50

136+0

Note: Grades as given on
plans not used.

Stk	Lt		Rt		Stk
	Gd	Rod	Rod	Gd	
5.53 C1'-3"	5.64	5.78	5.30	6.05	4.55 C0'-9"
3.55 C0'-9"	4.05	4.28	2.96	4.14	2.23 C0'-9"
1.06 C1'-3"	2.16	2.31	0.36	1.66	0.11 C0'-5"
4.06 C2'-0"	5.30	6.10	3.81	5.04	3.78 G
3.76 C1'-6"	4.38	5.26	3.25	3.86	2.25 C1'-0"
4.17 C2'-3"	5.55	6.42	5.04	4.50	2.54 C2'-6"
6.00 C0'-6"	6.96	6.53	5.96	7.0	7.93 F2'-0"

4-7-42
Pomeroy

Gundersen Hosford

LEVELS VOYTKO

	+	HI	-	E
72+0				1181.4
T.P.	3.01	1190.52		1187.51
300 W				1179.4
200 W				1179.2
T.P.	6.61	1192.70		1186.09
T.P.	rain 11.30		7.53	1186.09
100 W				1179.9
W. FL.				1180.4
T.P.			6.11	1187.51
73+0				1180.3
74+0				1180.9
74+90				1179.9
B.M.			7.37	1186.25
T.P.	1.98	1193.62	12.25	1191.64
T.P.	0.08	1203.89	12.36	1203.81
T.P.	0.18	1216.17	12.64	1215.99
T.P.	1.03	1228.63	6.79	1227.60
B.M.	2.36	1234.39		1232.03

DITCH

S (ft)	E	N (ft)
3.51	4.8	7.4
5.1	15	5
		15
		13.3
		13.5
Large rock		
		13.7
		13.2
5+K 73		
6.11		13.3
5+K		
7.67	9.0	12.2
5+K	15	6
		12.7
		12.3
		11.1
		15
	8.13	13.7
	5+K	FL.
Spike N.W. root 22" Elm ± 25' S.E. of S end bridge		
X S.E. 4 of Conc Advt N.E. quadrant of intersection Chardon-Auburn road & Chag. Falls-Greenville road.		

	+	H1	-	E
F.L. (5)				1193.6
B.M.	1.77	1204.87		1203.10
61				
T.P.			4.79	1185.21
62				1182.6
63				1182.4
64				(82.8) 1185.0
65				1183.0
B.M.			2.04	1187.96
66				1182.2
67				1181.2
T.P.	3.07	1190.00	3.59	1186.93
68				1180.6
69				1181.3
70				1181.0
71				1181.4
		1190.52		

	S	E	N	E
				11.3
B.M. #3	Stafford road. Spk S. root 28" Maple			
	25' Lt. Sta. 17+10			
	Stopped for high H ₂ O rock (see page 11)			
	5.2 28		7.4	5.2 50
			7.6	4.16 STK
	5.7 24	7.2 15	5.7 4	5.0
			3.8 12	3.24 STK
			7.0	6.1 18
				4.67 STK
				Top large boulder 66 to 40' R+
		6.8 15	7.8	5.8 6
			3.7 15	2.26 STK
			8.8	2.57 STK
	6.7 18		9.9	6.7 15
				5.50 STK
			9.2	2.63 STK
		5.9 15	7.1 6	9.5
				9.1
		3.63 STK		

	+	H.I.	-	E
T.P.	4.92	1195.13	5.97	1190.21
13				1188.1
12				1188.6
10795				1188.6
B.M.			3.92	1192.26
10				1189.3
T.P.	3.99	1196.18	5.68	1192.19
9				1189.2
8				1189.7
7				1190.3
6				1190.5
5				1190.5
4				1192.4
3				1194.1
T.P.	1.98	1192.87	8.98	1195.89
2				1192.10
1				1192.5
		1204.87		

(E)	Lt		R+	(W)	7
		€			
		4.92		8.1	
		5			
		5.54	6.8	7.6	6.6
		5	12		
		5.07		7.6	
		5			
E root 24° Elm 9:30 50' W					
		5.28	6.4	6.5	6.9
		5	12	4	13
					20
					7.4
					5
		5.7		8.7	9.6
		5			3
		4.68	6.1	6.0	7.4
		5	12	8	4
					8.2
					9.0
					7.5
					5.9
					5
					12
					15
		3.24	4.2	5.5	7.1
		12	7	4	7.6
					8.3
					7.2
					5.0
					2.4
					2
					6
					12
					20
		3.32	4.9	6.6	7.4
		5	7	4	7.6
					3
					10
					15
					12
		2.93			7.4
		5			
		2.77			5.5
		STK	4.3	3.8	6.8
			1.2	7	6
					6.1
					1.2
					4.3
					15
		1.98			3.8
		STK			6.1
					8
		8.22	9.7	9.6	11.9
		STK	12	7	12.8
					16.9
					8
					10.2
					11
					8.7
					17
					8.30
					12.4
					5

	+	H1	-	E
25				1187.1
B.M.			4.02	1189.97
24				1187.6
23				1186.8
22				1186.6
21				1186.8
20				1187.1
T.P.	3.19	1193.99	4.33	1190.80
19				1188.3
18				1187.2
17				1187.7
16				1188.0
15				1187.6
14				1188.0

1195.13

	LT (E)	E	RT (W)	8
	3.65	6.9		
Spike E root	40	Elm	24 ± 50	25 RT
	4.47	5.8	5.2	6.9
	5	25	13	5
				5.2
				3
				4.2
				8
				14
				3.3
				5.1
				20
	4.01	7.2		
	5			
	4.10	5.9	7.4	5.1
	5	25		12
	3.94	7.2		
	5			
	5.1	4.31	6.9	5.1
	20	5		15
				18
	4.3	6.8		
	5.1			
	6.0	4.59	6.1	7.9
	20	5	11	8
				5.8
				20
	4.18	7.4		
	5			
	4.42	6.3	7.1	5.8
	5	9		13
		25		
	4.36	7.5		
	5			
	4.30	6.2	6.3	7.1
	5	12	5	5.9
				5.1
				15
				20

50 84.3

7 84.3

8 84.3

7 84.4

6 84.5

T.P. 2.76 1190.41 3.63 1187.65

5 84.7

4 84.7

3 84.9

2 85.3

1 85.3

40 85.3

T.P. 2.58 1191.28 4.39 1188.70

39 85.3

38 85.6

1193.09

LE E R+W 10

4.8 3.9 4.8 6.1 4.8 4.3 5.0 3.58
20 11 7 7 10 15 850703

6.7 6.1 2.60
2 5TH

5.1 5.1 6.1 4.7 4.5 3.21
20 9 8 15 5TH

6.0 3.52
5TH

4.4 3.9 4.5 5.9 4.5 3.7 4.3 2.94
20 12 8 5 7 15 5TH

6.6 3.6
5

4.7 5.1 6.6 5.9 3.38
11 8 15 5

6.4 3.62
5

4.9 4.7 4.9 6.0 4.9 4.8 3.27
20 14 10 3 15 5

6.0 3.23
5

4.6 6.2 6.0 5.0 4.5 3.06
13 6 10 15 5
20

7.8 4.4
5

6.3 5.4 6.5 7.8 7.5 6.5 4.4 2.86
20 13 9 4 7 15 5

T.P. 3.53 1185.24 (1185.21)

1 82.6

60 82.8

9 (82.8)

83.4

T.P. 3.18 1188.77 4.40 1185.59

8 83.0

7 83.1

6 83.1

5 82.8

54 83.3

53 83.9

52 83.9

T.P. 2.70 1189.99 3.12 1187.29

51 84.2

1190.41

See pg 6 (rock)

6.2 3.08
5

5.1 5.0 6.0 5.1 4.8 2.97
22 18 9 15 5

6.0 5.4 4.17
4 5

6.3 7.0 5.7 4.90
13 15 5

6.9 4.05
5

5.8 5.8 2.2 6.9 5.6 5.1 3.44
15 8 2 7 15 5

7.2 3.86
5

5.8 5.8 6.7 5.7 4.9 3.71
20 10 6 15 5

6.5 3.12
5

5.4 5.4 5.6 6.5 5.6 4.5 3.12
16 10 8 5 15 57.11

6.2 3.9.4
5

7-12-42
Pomeroy
Clark

2 P.M.
TH. 188

FRANKLIN STREET

30" Maple

99.22

Moon

65+99.60

28.54

T.P.

53.27

18" Hick.

Halbrook

Pin in man box
fd

Sta. 57+53²⁵

Pin in man box. fd.

16.697
to spk E
side 18"
cherry

40.23

12" Maple

Spk. - S.E. side

30.52 NW + 4th
Post

30.86

Guard rail

15.15

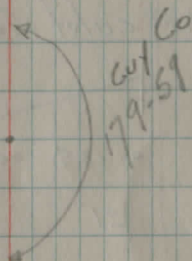
8.67

8.18

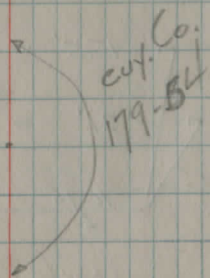
N.W. + N.
post

12.62 NW.
+ 2nd Post

(Moon road or Holbrook road
northerly)



cut Co.
179-51

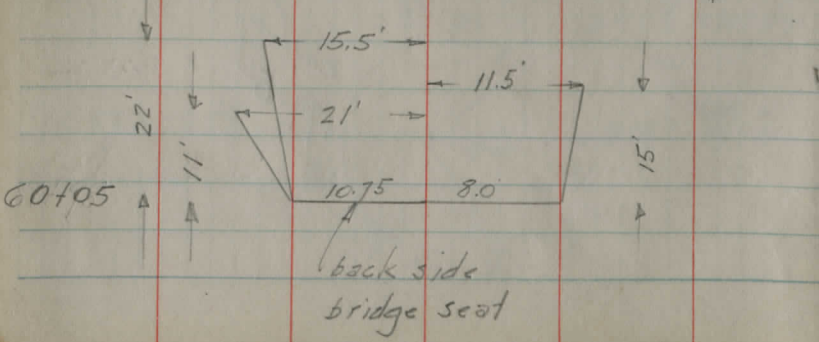


cut Co.
179-52

TOPO

+90		22'	10" Loc
+50		20'	→
18" x 30' C.I.P. culvert Conc hdwls			
outlet plugged O.K. otherwise			
+55		13.5' → 11.5' →	
+25	#	21'	
62+0		22'	→
+76		23'	14" Ch
+62		24'	8" Ch
+50		24'	→
+42		28' ✓	10" Loc
61+0		22'	→
+88	#	21'	
+84	10" Ap.	25'	
+61	Endgd. post	14.5'	
+50		22'	→

brush line ± 19'



6" drain tile			
61+04			
Moon Rd			
65+02	8" Elm	22'	
+50		25'	→
+73	#	21.5'	
64+07		22' ✓	24" WCh
+69		21'	→
+69		20.5' ✓	24" Loc
+61	F	20'	
+48		20' ✓	9" Loc
+22		21' ✓	16" Loc
+09		21'	15" Loc
63+0		20'	→

T.P. 470 118.58 2.04 113.88
 62150 111.82

top pipe outlet

62 109.72

+50

T.P. 8.84 115.92 2.15 107.08

+50

107.08

C. 61+25 Next pg

61 103.83

+50

100.93

60+05

99.03

B.M. 9.23 109.23 100.00 355.

E

W

14

Spk 63+0

+6.0 +5.3 4.5 4.7 4.6 4.1 4.6 5.1 6.5 6.8 7.2
 40 32 14.5 12 10 11.5 15.5 20 25 35

6.8

F.L.

3.9

6.6 7.0 7.2
 3 15 50

7.05

1.25

8.3 = F.L.

+3.8 +4.0

30 35

9.3 8.8 6.0 6.4 6.2 6.4 6.8 5.6 1.5 +0.8
 30 16 11 10 8 10.5 11.5 21 25
 25

0.1 1.8 4.4 6.5

Spike

2.3 2.0 2.5 3.0

3.2

1.8 2.7 2.3 2.15 2.2

10.5 8 7.5 9

10

1.4 1.2 6.0 6.6 5.8 5.4 5.6 0.0 +6.3 +7.0

25 19 13 11 10 9 25 30

30 12 40

12.6 11.4 8.0 9.1 8.6 8.3 8.7 7.4 8.1 9.0 9.8

30 22 11.5 7.5 6 9 11 16 25 30

9.5

10.20

S.W. 4 of S.W. Wing Wall

± 24' to toe of fill
 ± 13' to break in fill
 100' N of P.I.

61+25 105.51 +2.0 1.3
 37 30

T.P. 8.03 115.11 107.08

66+10 131.90

66+0 131.70

65+0 126.10 1.9
 30

+50 123.40 up 4.8
 30

T.P. 8.42 131.60 1.31 123.18
 64 119.99

+50 116.59

T.P. 10.61 124.49 113.88

63+0 113.88

118.58

E

W 15

3.8 5.0 8.7 9.7 10.4 9.9 9.6 9.9 9.6 8.9 +2.2 +1.6
 21 20 11.5 11 8.5 8 7 9 10 24 30

0.7

40

+0.3 = Summit

+0.1

2.6 2.3 6.1 5.9 6.6 5.9 5.5 5.6 +1.5
 25 20 14 10.5 9 7 11 22
 35

5.8 6.0 6.3 9.0 8.9 9.9 8.6 8.2 8.4 4.3 1.6 0.7
 25 21 17 14 12 11.5 9 13 18 25 30

+6.2 +3.7 5.2 5.8 5.1 4.5 5.0 0.6 +2.4
 35 26 12 9 8 10 17 30
 13 11

+3.2 1.5 8.1 9.4 8.3 7.9 8.4 7.8 0.6 2.3 4.0
 34 25 10.5 10 7 9 9.5 20 25 30

4.2 4.1 3.7 6.5 6.4 6.7 5.0 4.7 5.1 4.5 3.1 4.5 7.6
 30 25 18 15 12 11 7 10 12 15 20 29

9-02
Pomeroy - Clark

GRADES VOYTKO DITCH

B.M. 6.40 1198.66 1192.26

10

9

8

7

T.P. 3.28 1199.67 2.27 1196.39

6

5

4+50

4

T.P. 2.99 1201.65 1.01 1198.66

3

2

1

T.P. 5.87 1203.87 3.65 1198.00

A

0.10% G

(Stafford road Sly)

E root 24" Elm Sta. 9±30 50' West

Ground	Grade	Rod Reading	Cut	
9.54	1189.10	9.56	6.06	3.5

9.3	1189.2	9.46	5.46	4.0
-----	--------	------	------	-----

8.9	1189.3	9.36	5.36	4.0
-----	--------	------	------	-----

8.6	1189.4	9.26	2.26	7.0
-----	--------	------	------	-----

9.6	1189.5	10.17	3.42	6.75
-----	--------	-------	------	------

9.2	1189.6	10.07	2.57	7.5
-----	--------	-------	------	-----

	1189.65	10.02	2.02	8.0
--	---------	-------	------	-----

8.8	1189.7	9.97	0.97	9.0
-----	--------	------	------	-----

9.7	1189.8	11.85	3.85	8.0
-----	--------	-------	------	-----

9.7	1189.9	11.75	4.75	7.0
-----	--------	-------	------	-----

9.2	1190.0	11.65	3.65	8.0
-----	--------	-------	------	-----

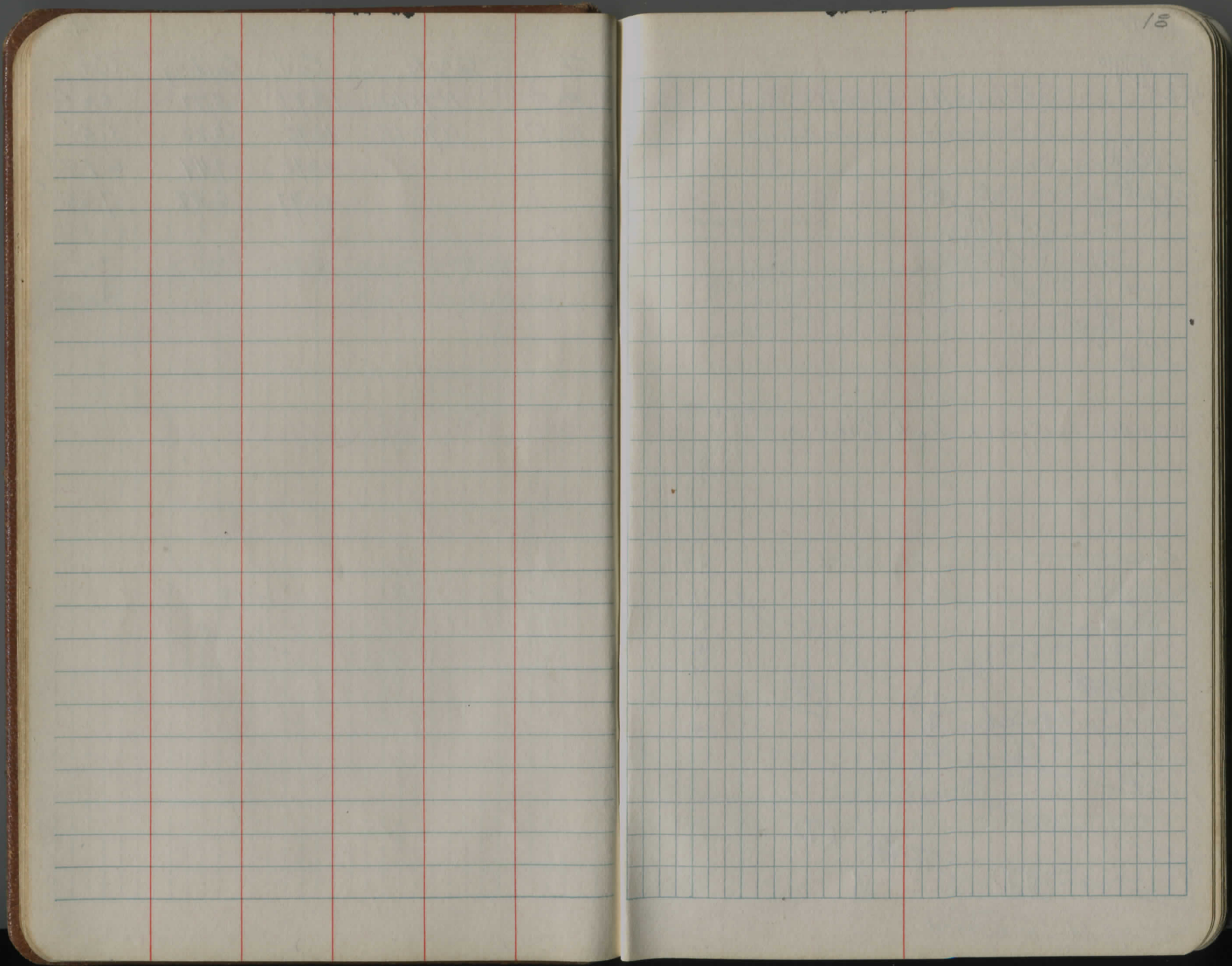
1203.87'

0+0 =	14' S. of E	S.W. stk			
"	10' N of E	N.W. "			
"	" " " "	N.E. "			
0-28	" S "	S.E. "			
0-28					
T.P	6.42	1206.24	4.05	1199.82	
B.M.		3.14	1203.10	1203.10	

17

Ch.	Grade	Rod Reading	Reading	Cut
10.5	1190.10	13.77	5.77	8.0 ✓
10.57	1190.15	13.72	5.22	8.5 ✓
		13.72	7.47	6.25 ✓
		13.77	6.52	7.25 ✓

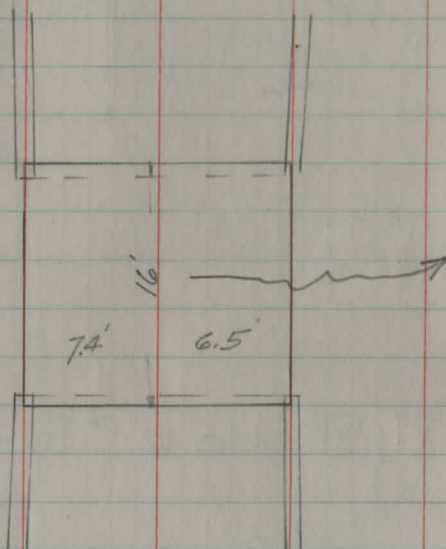
$$\begin{array}{r} 13.72 \\ 10.57 \\ \hline 3.15 \end{array}$$



18+12⁶

Prop. Line

N



15+54⁵

Sq W; S.W side

CEI #

553157

pipe

30⁰⁰

30⁵⁰

43⁴⁰

13+47.45

P.O.T.

Boat Spk fd Sq W; E⁰⁰ side

10" down

12" W.Ch.

25¹⁰

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

x

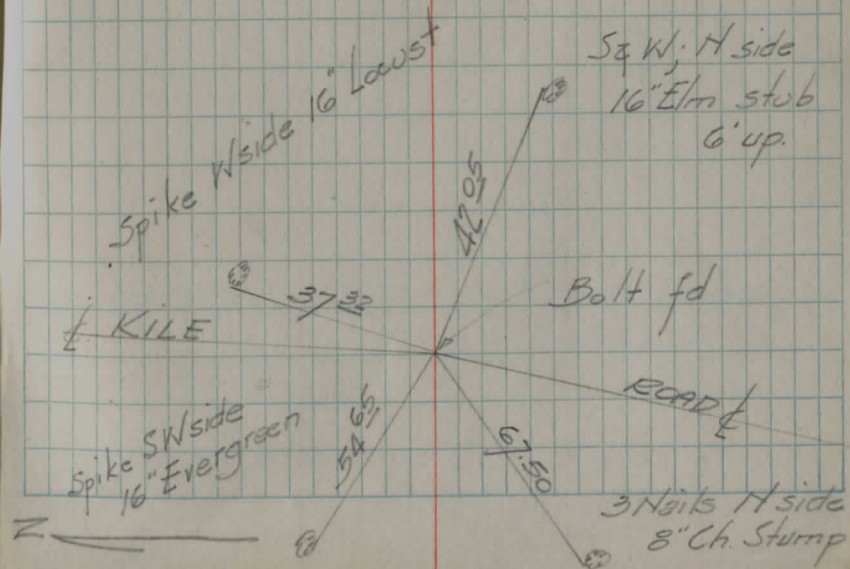
x

pipe fd

Note: See field book # 117^{Sec.}
for sections pg 121 } A

Sec. B = FB 117 pg. 130

49+26⁵⁰
= 35+65⁰⁷ Kile Rd



5-18-43
 P.M. Hall-Randles
 P.M. part

5-19-43
 P.M. Hall-Snyder
 A.M.

BORTON TRUSTEES

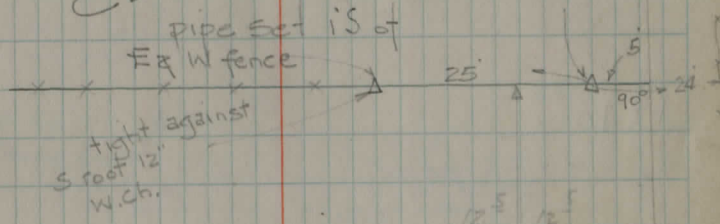
see pg 25
 Resurvey
 1944

Cemetery of Steels King

5' offset
 from fence
 ± 3000' to E

PIPE SET
 12" DIA 6" N
 of fence

CEM.



5312

1" P. set
 6" S of fence
 to d

90° 01' 30"
 4' 5"

1" P. set
 6" S of fence

J.P. in rd
 5.87 S of
 1" P. set

SPK

Clardon-Troy
 Road

pipe fd
 NE & Kacar

pipe fd
 SE & Kacar
 NE & Poplowski

300°
 90033

BM 7.37 107.37 100° Ass.

0+0 101.45

1+0 101.1

1+70 102.3

2+0 103.7

T.P 10.28 117.49 0.16 107.21

3+0 107.9

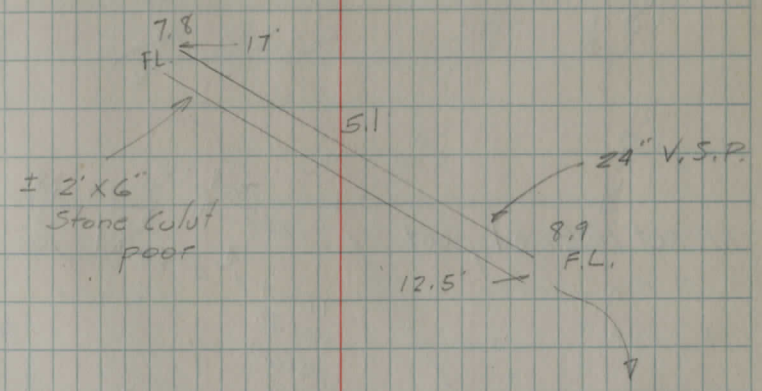
4+0 111.5

5+0 115.9

NE X E Hdwall ± 50 S of
Town Line

5.92

± 5.7	6.6	7.0	6.3	6.3	6.7	7.8	7.3	6.8
15	12	7	5		3	6	12.5	15



7.0	6.6	4.0	3.7	3.9	4.3	3.3
15	12.5	5		3	5	12
						15

9.8	10.1	10.2	9.9	9.6	9.6	9.3	8.4	8.2
15	12	7	6		3	8	12.5	15

Level	7.0	6.4	6.0	6.2	7.0	6.4	5.9	Level
	12.5	6		2	4	6	12.5	

Lev	2.4	1.9	1.6	1.8	2.6	2.3	2.0
	12.5	10	10	2	4	6	12.5

117.45

28.5
X post SE of How-
glowski

5+31

BM

0.5 117.0

0.11 = 28'
8'

X post E end
Whites pasture

I.P. on N & S line

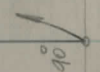
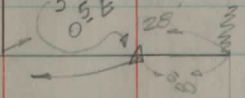
3.75 So. of X

3.5 of X post
0.2 E

3.5 of X post
0.5 E

Spk top
X post

m 62
54
90°



m 38
143

m 25
119

I.P. set 1.0 E of X post

I.P. set
May 43
SW Cem.

m 88
8

m 56
87

1.3 S of X
1.0 E of X

0-02 1/2
0-05

m 73
502

Should have been
502.98 - 0.25 = 502.73

m 90-01-30

m 025

8°

I.P. set
May 43

Shire Cem. E/W 4rd. marg.

I.P. N side Dr

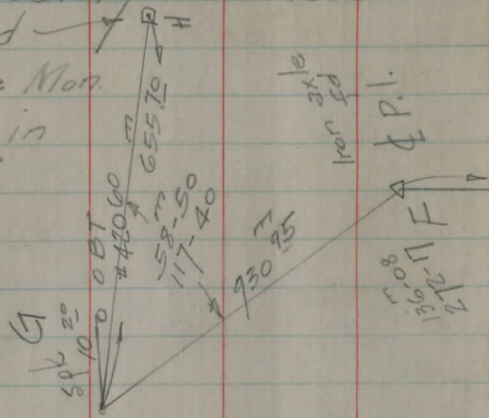
119.25
25
94.25

8 32

7-9-43 Pom - Boone

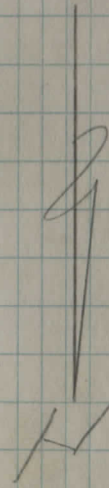
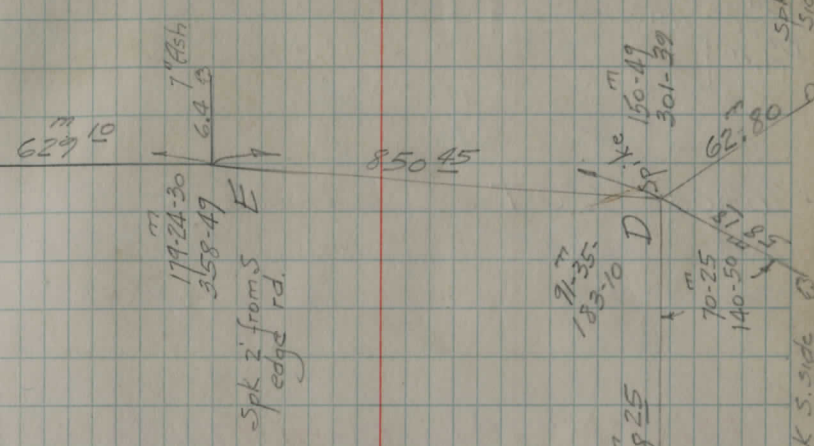
County Line Russell Twp

Stone fd
May not be Mon
called for in
deeds.

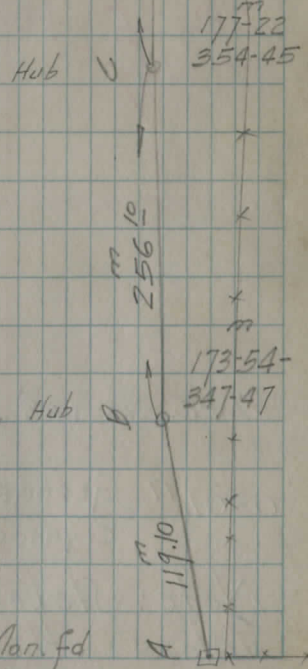


spk set
27 35
from spk
in E/W
9+04 70

Random Traverse



150
1001
2561



Stone Mon. fd
1" E of 4 post
1" below gd. level

spk 1
spk 2
spk 3
spk 4
spk 5
spk 6
spk 7
spk 8
spk 9
spk 10
spk 11
spk 12
spk 13
spk 14
spk 15
spk 16
spk 17
spk 18
spk 19
spk 20
spk 21
spk 22
spk 23
spk 24
spk 25
spk 26
spk 27
spk 28
spk 29
spk 30
spk 31
spk 32
spk 33
spk 34
spk 35
spk 36
spk 37
spk 38
spk 39
spk 40
spk 41
spk 42
spk 43
spk 44
spk 45
spk 46
spk 47
spk 48
spk 49
spk 50

7-13-43 T.H. 43

COUNTY LINE ROAD

Pom
Hall
Boone
Thompson

10+00 POT

NOTE: Sta 0-01.77 to
46+67 1/2 is intended to
be \notin for construction
only

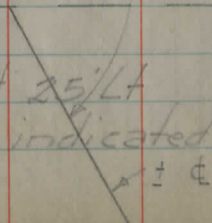
Exist. ext. = 8'

0-01.77 GEauga
Cuyahoga

COUNTY
COUNTY

Note: Stakes set 25' LT
unless otherwise indicated

$\pm 146^{\circ} 10'$



Russell II Twp

Sq W (vert) rd W root 24"
Elm

15 3/5

Boat Spike Set

77 80

Sq W; W side
20" Map

41 28

Sq W; N.W

side 12"
Pine 8' E of drive

Sta. 0-01.77 Boat Spk set

Sq W SE side 36" Elm

Sq W NE

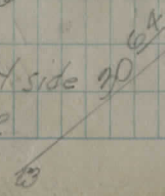
24 48

49 40

side

twin
Elm

Sq W N side 20"
12" Osage



Note: 32+59.50

swing 2° W

compute new Δ

26+60⁰⁶ 135.04^m
270-09

15 Ext. exit.

To 17

→ New

Δ = 44-55-30 Lt.

D = 22°

R = 260.435

P.I. 26+60.06

T 1 07.67

P.C. 25+52.39

L 2 04.20

P.T. 27+56.59

Δ 45-07

D = 22

R = 260.435

P.I. 26+60.06

T 1 08.19

P.C. 25+51.87

L 2 05.08

P.T. 27+56.95

E = 21.58

15+33²⁵

Δ =

44-20 Lt.

D =

21°

R =

272.84

P.I. =

Lot 18

15+33.95

T =

0-0

1 11.16

P.C. =

14+22.79

L =

2 11.09

P.T. =

16+33.88

To random pt. E

47.61 Def

26+0 = 5-14-15

27+0 = 16-14-15

PT = 22-27-45

S&W; S.E. side
10" Ash

Sta Def

26 5-17-40

27 16-17-40

+56²⁵ 22-33-30

S&W; E side 28" Apples

28

Boat Spike set

S&W E side Elm?

(See pg. 29
for Lot 4)

S&W; N root 20" Cucumber

Iron Axle fd

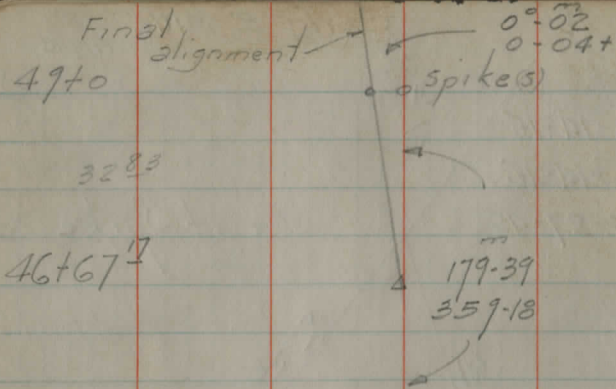
Sta Def

15+0 8-06-30

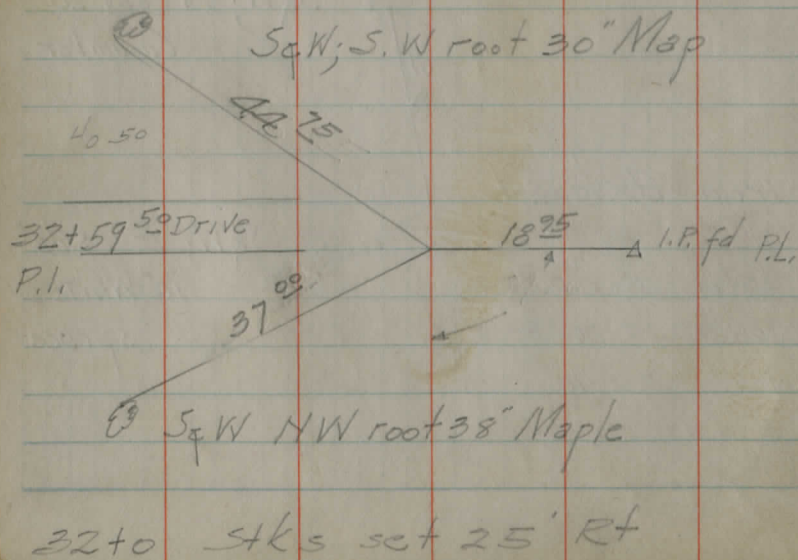
16+0 18-36-30

P.T. 22-10

S&W; E side
10" White Spruce

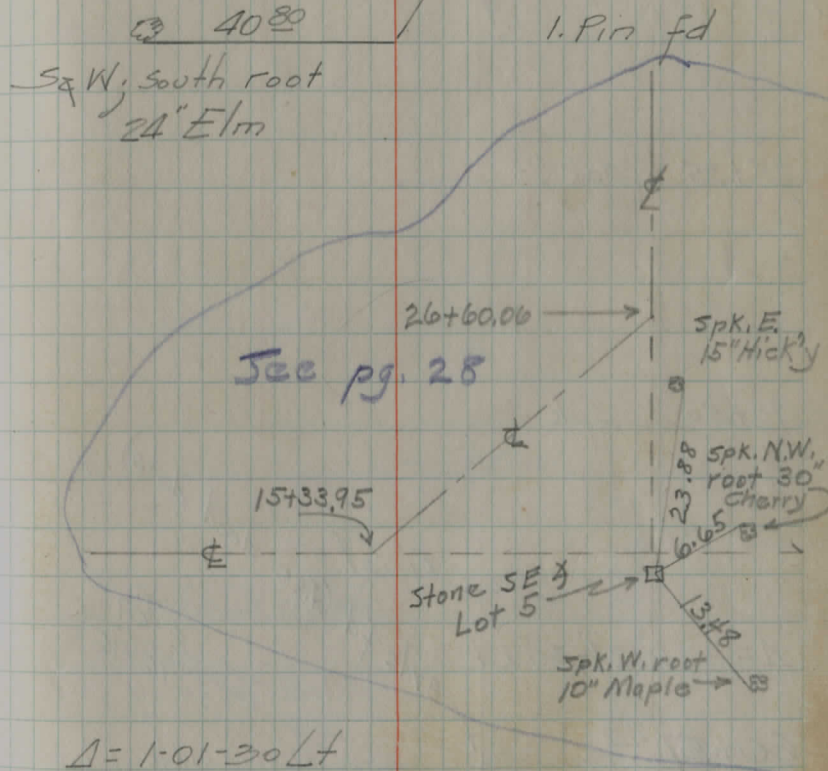


Note:

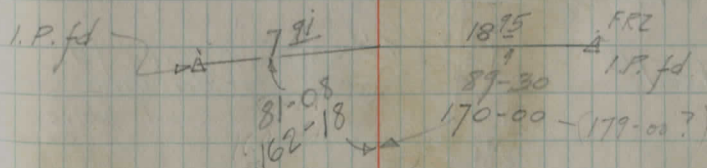


pg 29

SqW; SE
Root 12" Hem-
lock (1st N. of
drive)



$\Delta = 1-01-30 Lt$



79+00⁰⁰ POT
 76+66²⁵ spk quit 7-16

75+35 spk

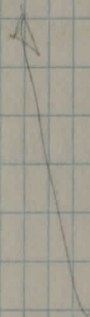
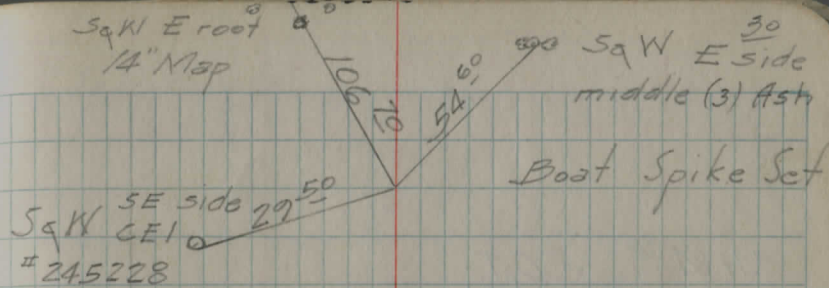
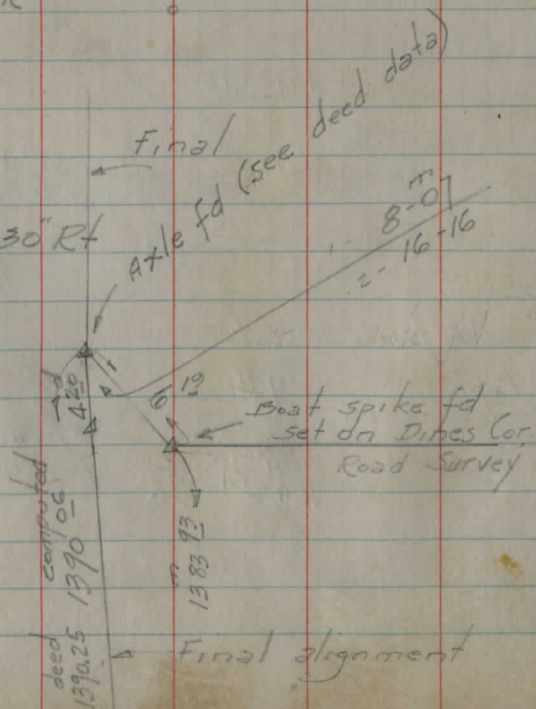
70+50 spk

42¹⁷

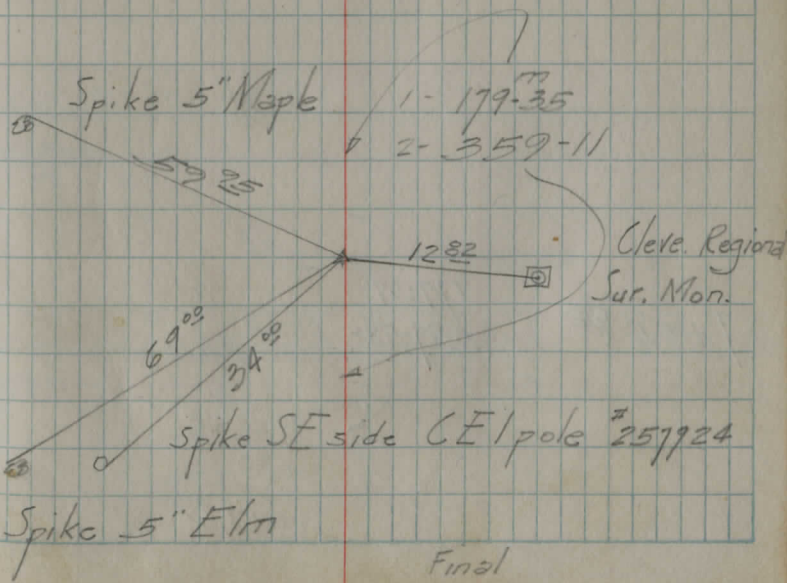
$\Delta = 0^\circ-24'-30''$ RT

60+57²³

60+51¹⁰



Final



94+84⁸⁵ P.O.T. 0

89+55⁰⁵

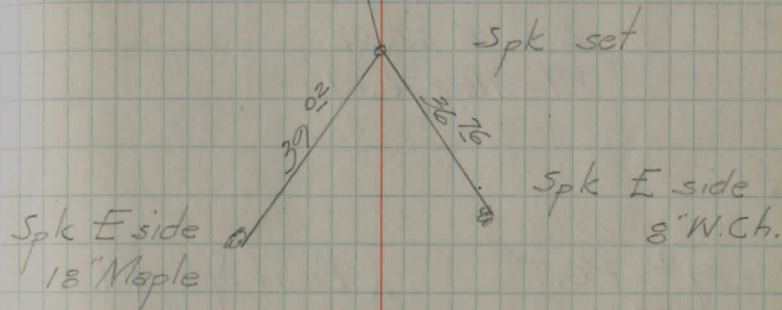
179-59
359-58+

8955.05

6057.23

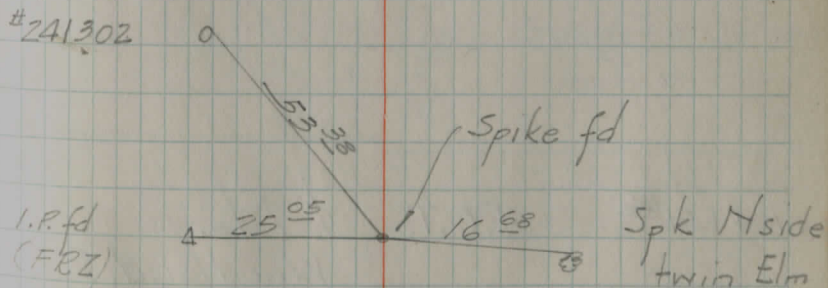
2897.8^v

Spk E side
18" Maple



Spk NE side CE1

#241302



1: 45-14-30 Rt 112+0 - 3°-32'-15"
 D = 8° 113+0 - 7-32-45
 114+0 11-32-45
 R = 716.21 115+0 15-32-45
 PI = 114+09.84 116+0 19-32-45
 T = 2 98.49 116+76.87 22-04-30
 PC = 111+11.35
 L = 5 65.52
 PT 116+76.87

114+09⁸⁴

111+59¹¹ P.O.T.

△ Boat Spk fd

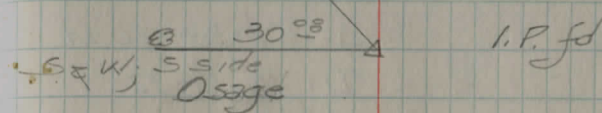
48⁰⁴

104+51⁹⁶

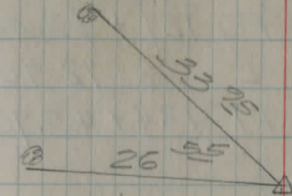
P.O.T.

E No.
 Woodland Rd.

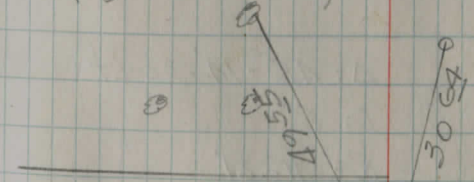
S&W; HE side 12" W.Ch. 32



Spike HE side 28" Elm



S&W; E side 14" Maple



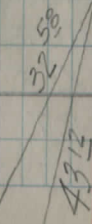
Cleve. Regional Geodetic Survey mon.

Bit. Mac.

Bit. Mac.
 E.R. spike set from ref.

Bent Spk & W;
 SE side 12" Maple

S&W; NW side 15" Maple



132+00¹²

$\Delta = 89-33-20$ Lt

D = 13-18-32

R = 430.51

PI 132+00.19

T 4 27.19

PC 127+73.00

L 6 72.90

PT 134+45.90

119+79⁹²

$\Delta = 45-14-30$ Lt

D = 8°

R = 716.21

PI = 119+79.92

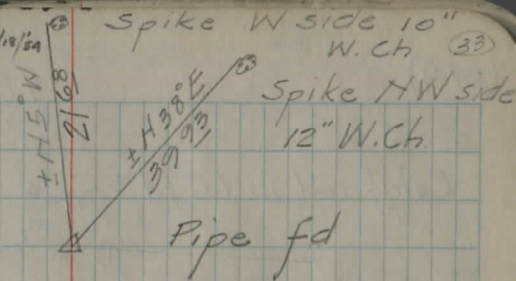
T = 2 98.49

P.C. = 116+81.43

L = 5 65.52

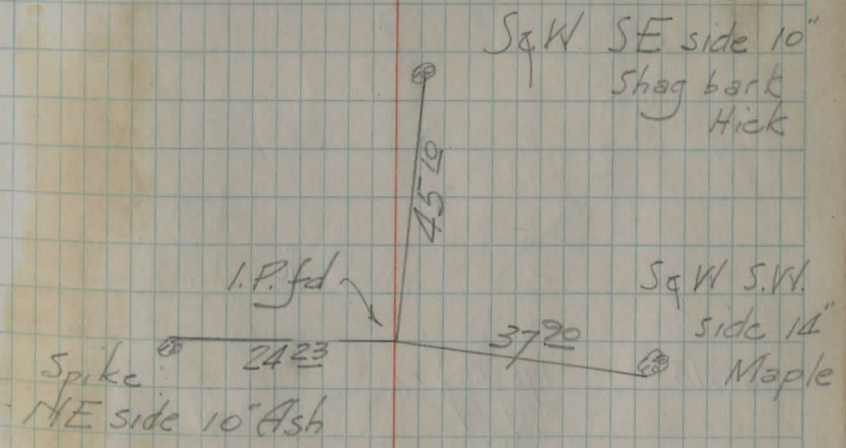
P.T. 122+46.95

S.W. SET ON E. S. 10° SAND
CHERRY TREE SAME DISTANCE 2 1/2' SA



Pipe fd

S & W SE side 10"
Shag bark
Hick



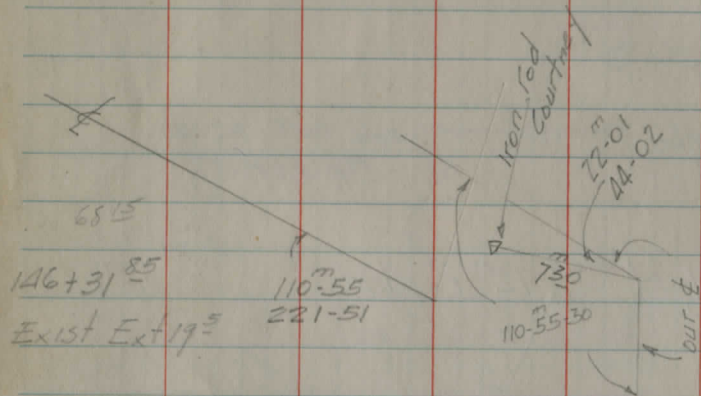
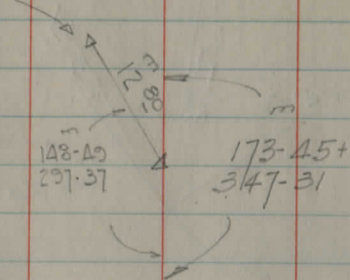
NE side 10" Ash

1. Piz (Court.)

150+89⁷⁷

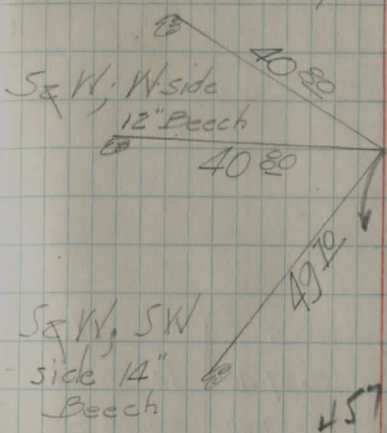
148-49
297.37

173-45+
347-31



S&W HW Foot
28" Maple

S&W W side
12" Beech



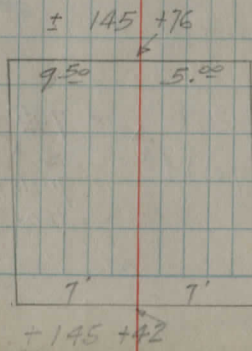
S&W SW
side 14"
Beech

East Spike Set

East Spike Set
Feb July '52

old rail fence
Spike & Wash E side
7" W Ch.

46⁵⁵
S&W, NE side 12"
Maple



9⁷⁷

160+90²³ P.T. & POT

	For.	Back.
70.24		
156+0	5-37-40	44-50-45
157+0	13-37-40	39-13-05
158+0	21-37-40	31-13-05
159+0	29-37-40	23-13-05
160+0	37-37-40	15-13-05
160+90 ²³	44-50-45	7-13-05

$\Delta = 89^\circ 41' 30''$ Rt.

$D = 16^\circ$

$R = 358.10'$

PI 158+85.84

T 3 56.18

PC 155+29.66

L 5 60.57

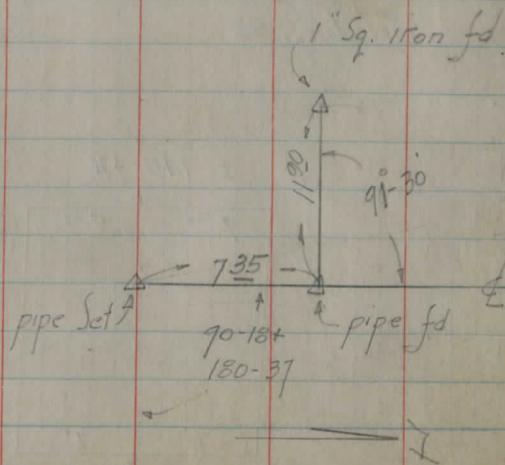
PT 160+90.23

E. = 146⁹⁸

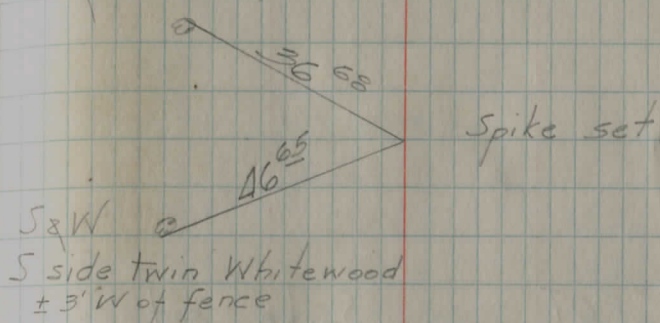
158+85⁸⁴

42' Ext. exist

try 85



S & W NE side 8" Elm

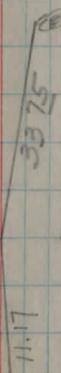


Spike S side 15"
Beech 1 1/2' up

S & W; E side 10"

Hemlock

I.P. set



S & W south side
10" Oak

168+01³⁷ POT

o Spike set

68³⁵

Russel. Chester
Twp. line
(per FR7)

165+31⁶⁵ P.O.T.

12'-14" Bit
Mac.

±975' ±4'

Note: 4 hits
ctr of trad.
rd ±250' M

NE cor. Conc. Sign (largest square)



S&W S side 24'
W. Ch. (twinn)

90⁸⁸
78

24⁸⁰

Pipe fd

55⁶²

S&W SE side 12" Hard Maple

COUNTY LINE

	N	E	S	
+	19'	2+25		x
		+84	19.5	8" Wch
		+69	pasture drive	brush hedge
		+56	19	8" Ash
		+43	20.5	8" Ash
			26'	
	19.5	1+0	21'	
		+79	17.5	10" Wch
		+69	17.5	9" Ash
		+50	17'	8" Ash
	20'	+09	22' ✓✓	8" Elm
36 Elm	24.5'	0-01.77	Coll. line	26' → x

12" Osage	19'	0-26
12" "	19'	0-53
	21'	0-53
10" Osage	19.5	0-64

open field

Topo taken on tangent this curve only

NOTE: Dist. taken to road face of objects.

Topo 12" Corr both ends 8" Middle (39)

		+40	9.5	10.5'	
9" Ash	18'	+21		17'	10" Elm
+	22.5'	7+05			
18" Hick	22'	+84			
		+61	15'		9" Map
		6+0	21'		
			16'		
8" Elm	21.5'	+38			
		5+10	15.5		10" Elm
		+79	15.5		10" Elm
		+65	14.5		9" Wal
		+60			
+19.5		9.2'	14'		8" Corr.
	22'	4+0	22'		
			17.5		
10" Ash ✓✓	11'	+94			
8" Ash ✓	15.5'	+81			
		+61	17'		10" Wal.
		+47	? 15.5'		10" Ash
			19'		
	21'	3+0	23'		to hedge
10" Wch	20.5'	+99			
10" Wch	19.5'	+50			
		+45	16.5'		8" W. Ch
10" Wch	19.5'	2+31			

barbed

BRUSH

hedge

4 rail

BRUSH

H	E	S
+ 21.5	+68	
10 Elm + 22	+57	
	+26	20.5'
	+21	11' ✓
9" Whit 19.5	+08	
	13+06	10' ✓
9" W.Ch 19.5	+71	
7" W.Ch 14.5	+45	
7" Hick 19'	+20	
	23'	12+0 21'
	+45	15'
✓ 20.5	11+40	
30 Elm 23'	+73	
	+57	15'
	10+0	19'
	+95	18'
	+81	22.5'
	+65	Estate Drive
10" Elm 21.5	+48	
M.B. 14.5	+37	
14	+25	
	9+04	8' ✓
	+85	10' ✓
	+37	11'
8" Map 14	+02	
	8+0	

Barberry & Spirea

End osage

barbed

osage hedge

Arauc

15" V.S.P.	18" Corr. OK
10.5	+25
	+14
	+13
	+07
7" Elm 12.5 ✓	+07
7" W.Ch 15.5	+06
7" Elm 12.5 ✓	18+04
	+98
	17+88
7" Ash 12' ✓	16+99
	15+74
	15+74
Nothing on inside of curve except fence	
← 20'	14+22 ⁷⁹ P.C. 21.5 →
12" Elm 18.5	14+22
	+93 ✓ 7.5' ✓
	+90 ✓ 7.5' ✓
12" Elm 16.5	+90
8" Ash 16	+83
Cent see daylight thru	
12" V.S.P.	12" Corr.
16.5	+78
	21
	+73 ✓ 8.5' ✓
	+67 ✓ 9.5' ✓
	13+65 12'

Light brush

very light brush Pl. on

Barba Spirea

Elm clump
8" Elm
8" Elm

12" Corr	14'			
12" VSP	12.5	+99		
26" Map	+31	+94		
		+91		
Drive		+60		
40" Map	+32	+54	15.5	18" Map
		+42		
MB	12'	+38		
12" Corr Stone Hdwl	11	+27		
10" Elm	12	32+24		
6" Elm	12'	+89		
		+80	16'	15" Map
7" Elm ✓	11.5	+67		
	+80	+50		
≠		+50		
		+42	21	
		+42	16'	16" Map
2" Evern	21	+11		
11" Elm	23'	31+08		
9" Map	17.5'	+93		
		+76	17	13" Map
MB	11"	+67		
10" Elm ↓	14'	+67		
		30+40		Drive

(41)

10" Ap ✓✓	13.5	+98		
≠	23.5	+83		
		39+0	21.5	
10" W. Ch.	15.5	+85		
8" Wch	21.5	+61		
≠	23.5	+58		
7" Elm ✓	14	38+49		
8" Wch.	23.5	+93		
8" Ap	15.5	+78		
	12.5	+55	14.5	12" Corr. OK
≠	25'	37+39		
12" Wch.	23.5'	+86		
8" Wch	16'	+72		
8" Wch.	23'	+51		
12" Elm	21'	+44		
10" Wch	10'	36+26		
7" Elm	23.5'	+24		
10" Elm	22.5	35+12	21.5	
15" Map	29'	+56		
15" Map	29'	+26		
16" Map	29'	34+03		
16" Map	29'	+74		
10" Elm	23'	+49		
8" "	17'	+49		
12" x 16" Corr	13'	33+26		

A rail

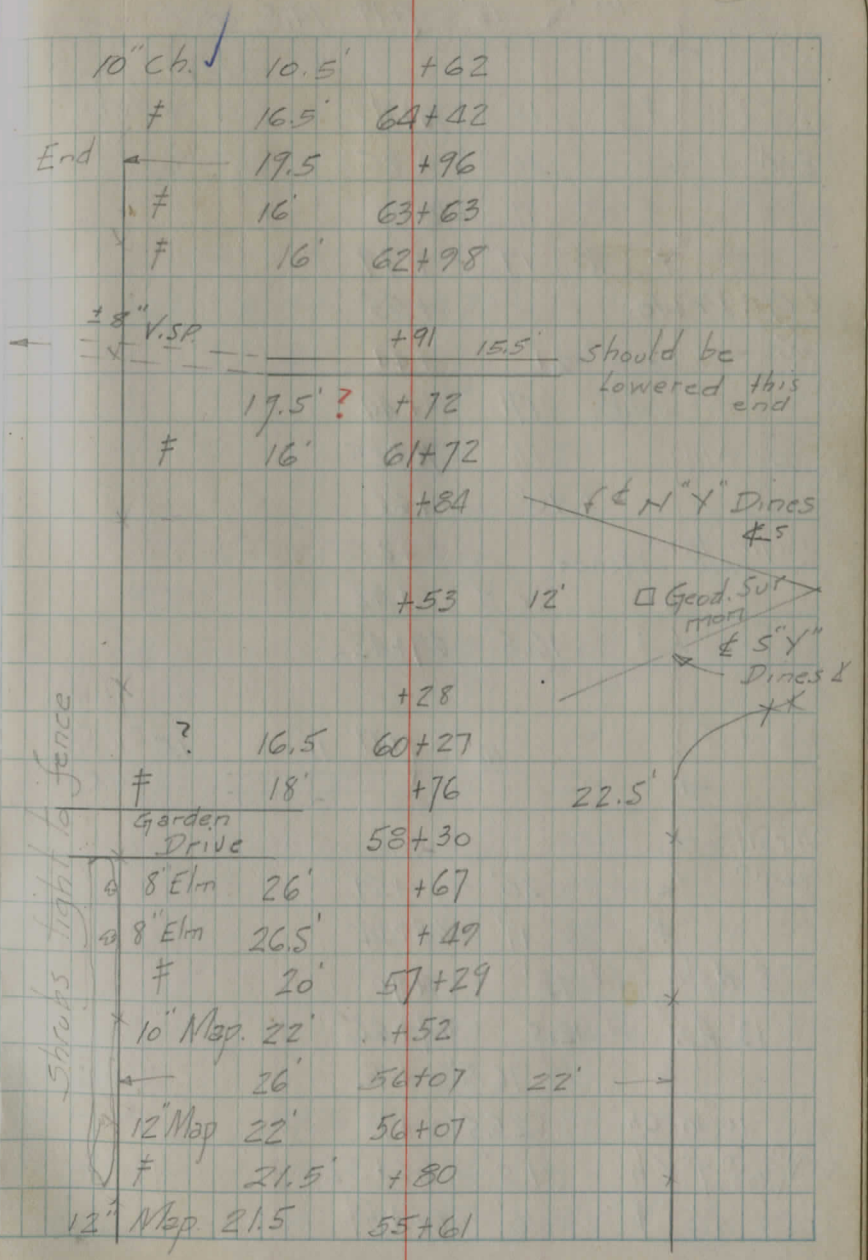
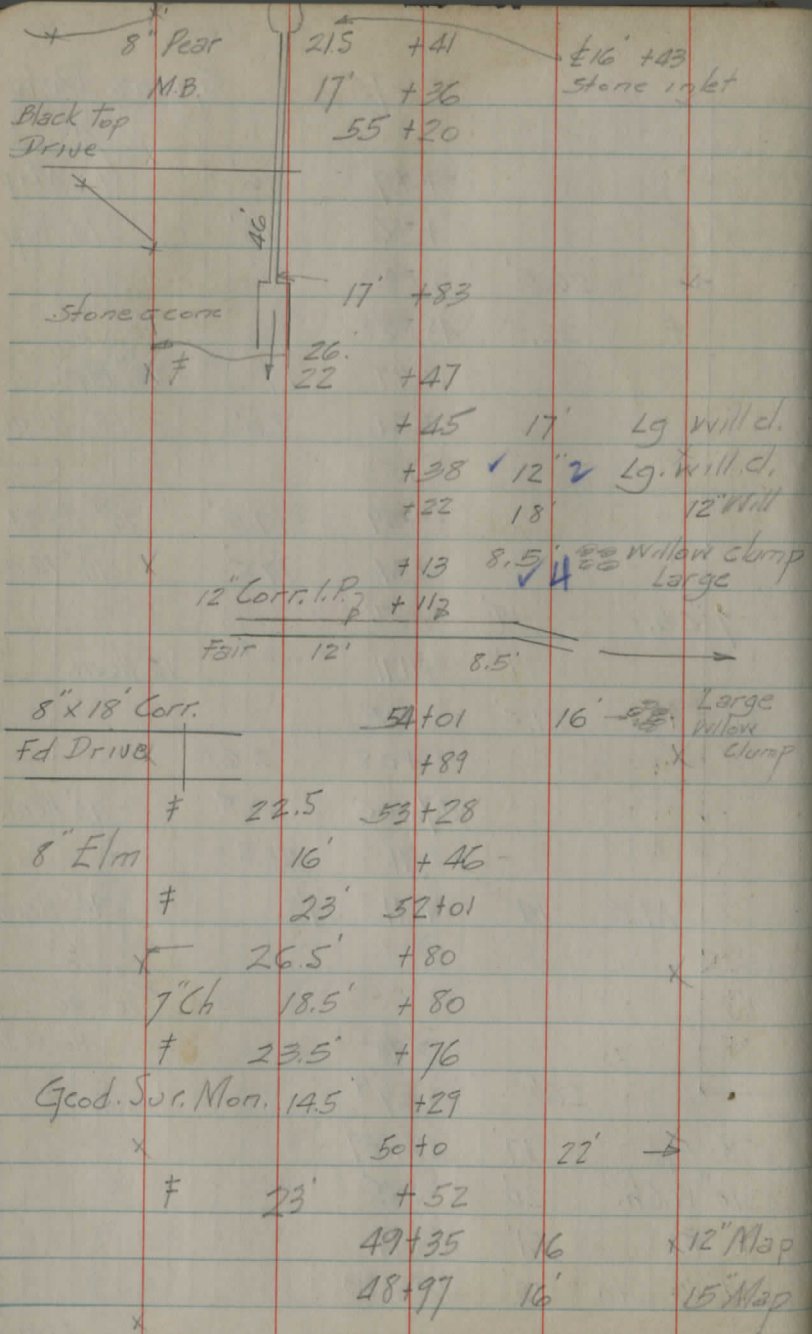
Light Rust

		+93	16'	14" Map
#	21'	+63		X 10'x20' corr
		+58		10.5' Barn drive
		44+31		X X
	15" V.S.P. OK.			
	14'	+88		X
			15.5'	
8" Wch	20'	+64		X
#	21'	+49		X
9" Elm	14.5' ✓	+46		
		150	12'	Elm Elm
		43+31	15'	X 15" Ap
		+95	24'	X X X
6" Ap	✓✓ 13'	+87		X
6" Elm	✓✓ 11'	+85		
8" W Ch.	21'	+60		
Elm clump	12' ✓✓	+58		
8" Elm	9' ✓✓	+58		X
#	22.5'	42+21		
7" W.Ch.	19'	+47		
7" W.Ch.	21.5'	+26		X
#	23'	41+0		
10" W.Ch.	22'	+88		
10" Elm	16'	40+04		X

42

		+75		Guinn Drive
		+49	16'	18" Map
		+36	16'	+18" Map
	26.5'	+28		
#	22.5'	48+28		
		+77	19'	12" Ap.
		+61	20'	18" Herm
		+53		
		+49	19.5'	16" Herm
		+34	19.5'	14" Herm
7" Ch.	19'	+27		
		+17	23?	16" Herm.
#	21.5'	+15		
		+08	±65'	
		47+06	23.5'	13" Herm.
		+91	23.5'	
M.B	14'	+91	19'	14" Herm.
		+78		
	26'	+67 ¹⁷		
8" Ap	17'	46+39		
10" W.Ch.	20'	+85		
#	21'	+79		
14" W.Ch.	18'	45+33		

House
House Drive
4 rails



	± 3 lengths 15" VSP	12'	+79	14.5'	15" Corr.
	‡	18'	73+49		New pipe advise.
End	✕	21.5'	+35		
	‡ ✓	17'	72+00		
	✕ ✓	17'	+79		
Gr. Drive			+55		
	←	21'	+44		
	M.B.	17'	+44		
House			70+25		
	±	90'	+66		
Begin lawn back of fence			+60		
	←	20.5'	+42		
	✕ ‡	16.5'	69+42		
	✕	16'	+77	11'	15" VSP. OK
Arail	←				
Begin	✕ ←	20'	+59		
	‡	17'	68+14		
8" Ash	✓ ✓	13'	+90		
13" Ap.	✓ ✓	12.5'	67+66		
	‡	16.5'	+92		
10" W. Ch.		25.5'	+73		
Begin brush	‡	7" Ch	21.5'	66+52	
	‡	16'	65+59		

	Drive	+95	17.5'	8" Ch.
		+92		(21)
	24'			
	‡	20.5'	+79	
	M.B.	9'	+77	
	✕		78+21	17.5'
			+81	20'
	←	24'	+57	
	✕ ‡	20'	+57	18.5'
			+35	16'
			+26	19.5'
			+14	19'
	12" Corr OK		+13.5	13.5'
	←	10'		
			77+10	18'
			+89	19'
	✕		+79	19.5'
	‡	18.5'	+24	
			+21	20.5'
	✕		+20	20'
			76+06	19'
			+99	20'
	✕		+90	20.5'
	4 rail		+39	20'
	←	22.5'	+32	
	20" Elm		+26	
	‡	18'	75+03	16.5' ✓
				Lg. Ap. clump.

85+00 ✓ 12.5' ✓ 10" Ch
 +83 ✓ 15.5' ✓ 10" Ch
 +48 ✓ 12.5' ✓ 10" Ap
 +37 ✓ 12' ✓ 11" Ch
 +30 ✓ 14' 8" Ch
 +19 15.5' 8" Ch
 +11 17' 10" Ch
 84+05 15.5' 10" Elm

≠ 19.5 +87
 +70 ✓ 14' ✓ 12" Elm
 +24 28' Will. Clump

11.5' 13'
 83+20.5' 15" VSP
 & Corr. OK

12" x 31' VSP

House Drive

≠ 20.5' 82+52

3" tarmac Ch 25'

≠ 22' 81+22

3" House drain 14.5' 50+86

≠ 21.5' +77

+49 19 9" Ash

Begin lawn 79+05

Light brush

* 14" Ap. 23 +89

12" Ap 23' +36

* ≠ 17.5' 90+06

Big. thorn hedge 23' +94

* 3 rail 12" Ap. 23' +94

± 31' ± 8" C.I.P. 11.5' +77 13' Fair cond.
 12" VSP

Will. stump 23' 11.5' +75

Will. Stumps } 13' +56

+53 16' ? 10" Elm

+34 ✓ 14' ✓ 7" Elm

89+26 ✓ 15.5' ✓ 12" Ch

≠ ↓ 18.5' +84

88+62 17.5' ✓ ≠ guy

≠ 18 +58

Will. Clump 19' +54

18" Corr. poor ± 2 lengths

15.5' 87+28 15' 18" VSP

Will. clump 25' +90

+58 14.5' 12" Elm?

≠ 18' +34

86+20 ✓ 14.5' ✓ 9" Ch

+58 ✓ 16.5' ✓ 11" Ch

+41 ✓ 13.5' ✓ 12" Elm

≠ 18.5 85+09

Gr. Drive

+70 17.5 #

+69

+ 37' ±
 15' Ap. 19' +42
 + 21 20.5' 10" will
 15" VSP both ends
 + 13' +15.5 16.5' corr ctr
 OK

Lg will clump 20' 93+15

Lg will. clump 19' +97

" " " 23' +86

Lg. will. clump 23.5' +69

+67 9' ✓ 12 Will

+64 10' ✓ 12 "

X End 23' +55

+49 11.5' ✓ 12" E/m

F 18.5' +48

+15 ✓ 13' ✓ 7" Ch

+08 ✓ 13.5' ✓ 10" E/m

+06 ✓ 12' ✓ 8" Ch.

92+01 ✓ 12.5' ✓ 12" Ch.

+93 ✓ 14.5' ✓ 10" ch

+88 ✓ 14.5' ✓ 10" Ch

+64 13.5' ✓ 10" Ap.

+56 14' ✓ ✓ 9" Ch.

F 18.5' ↓ 91+27

3 rail 23'

± 37'

thorn Hedges

21' +00

46

13" Map 17.5' 97+00

* 13" Map 17.5' +84

+69 18' F

10" Map Mg 17.5' +64

* 12" Map 17' +44

12" Map 17' +27

13" Bass'd 16' 96+08

* 12" Map 16' +90

14" Map 15.5' +71

Good. Surv. 13' ↓ +59

Mon +19

4 rail * 17' +17

18' F

15" Map 15' +17

End H +12

shrubs

back of wall - end wall 13.5' 95+09

S edge H ± 65' +38

15' stone wall 14.5' +59

End * 17.5' +58

+51 14.5' ✓ 11" Ch.

15" Map 13' +48

* F 17' +30



shrubs tight to fence * Lattice work 29' 94+07

17' +94

12" Ap 17' +94

* M.B. 8.5' 93+93

Δ rail

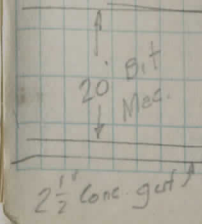
		+29	17'	‡
	19'	102+27		
		+93	12.5'	stop 
9 Map 22" to 12"	20'	103+20		
		+98	17.5'	Ash Cl.
		+77	16.5'	‡
12" Map	21.5'	+65		
26" Ash	24.5'	102+50		
28" Ch.	24.5'	+74		
		101+23	16.5'	‡
35 MPH	13'	+96		
10" Elm	14.5'	+74		
		+64	9.5'	7" Elm
				Looks OK
18 V.SP.	22.5'	+55	14'	12" V.SP.
		+44	10.5'	stop 
		100+11	16.5'	28" Elm
		+69	17'	‡
12" Map	21.5'	99+34		
6" Ap.	26'	+96		
End fence	25'	+32		
		98+19	17.5'	‡
7" Ash	19'	97+49		

beg. brush

M.H.

End fence

4 rail 2



No. Woodland ±15.5 Bit Mac.

±27'

+ H1

X SECTIONS Co. LINE

B.M.	0.95	1038.89 ✓		1037.94
T.P.	0.55	1026.66 ✓	12.78	1026.11 ✓
T.P.	0.60	1015.85 ✓	11.41	1015.25 ✓
B.M.	0.42	1008.65 ✓	7.62	1008.23 ✓

✓ 104+0 1004.2

✓ 103+0 997.4 ✓

T.P. 5.66 1002.17 12.14 996.51 ✓

✓ 103+0

T.P. 0.16 996.67 ✓ 996.51

✓ 102+0 993.0

✓ 101+0 991.7

100+55 Culvt 991.9

✓ 100+0 992.5

ROAD (M. Wood, South)

9+25 M. Woodland

Bent spike (washer) SE side 1st Map.
SW quadrant intersection M. Wood.

West East

2.0	4.6	5.3	4.5	4.9	4.4	2.5	2.0	2.4
16	11	9		11	13	16	20.5	30
30								

4.0	4.6	4.8	5.7	12.0	11.3
30	25.5	23.5	19	8	

996.9

5.3	6.2	5.3	2.9	2.3	3.1	4.0
8.5	12	13.5	16.5	20	23	30

10.4	0.8	3.4	3.9	4.5	4.2	3.7	4.1	4.9	4.5	4.8	4.5	1.8
30	22.5	16.5	13.5	9.5	6.5		7.5	10.5	15	20	25	30

4.5	4.8	4.5	5.9	5.3	5.0	5.4	6.0	5.8	6.3	5.9	6.2
30	17	14	10.5	8		6.5	9	11	15	18.5	30
	20.5										

10.47	4.8	9.09	5.7
Bot. M.H.		FL	± 100
F.L.			

4.9	4.3	5.2	4.4	4.2	4.5	4.2	4.5	4.7	5.7	5.4	1.6	1.8
25	21.5	18.5	16	12	9	5	9	10.5	12.5	25	30	

		H1 996.67		
✓ T.P.	5.27	999.45	2.49	994.18
✓ 99+0				994.4
T.P.	5.56	999.74		994.18
✓ 98+0				994.6
✓ 97+0				995.6
P.	6.73	1005.84	0.63	999.11
✓ 96+0				1000.3
T.P.	9.97	1009.08		999.11
✓ 95+25				1004.4
				1003.6
✓ 95+0				
T.P.	1.52	998.04	12.56	996.52
94+02	M.H.	9'	Filled	
✓ 94+0				995.2
Drive				
93+15 ^S		Eulst		992.6

1.6	1.7	6.4	5.4	5.1	5.3	5.8	6.5	1.3	0.4	1.0
30	20.5	13.5	11		5.5	8	10.5	16	20.5	30

86										
30										
7.6	6.6	6.5	6.7	6.3	5.5	5.1	5.6	6.2	5.6	5.6
24	20	16	14.5	12.5	10		8	10.5	12.5	30

4.8	4.0	4.3	5.6	4.7	4.1	4.8	5.4	4.8	4.2	3.8	3.5	3.8	3.7	3.5
30	21	14	11	9	9	9	10.5	12	14.5	18.5	21	22	25	30

5.0	4.2	4.3	4.8	6.4	6.0	5.5	6.2	6.0	2.4	1.8	1.6
30	22	17	13	9.5	7		9.5	11.5	16.5	18.5	30

2.9	2.0	2.1	2.8	3.9	5.4	4.7	5.3	4.5	1.5	1.3
30	20	17	13	9.5	7		11	12.5	16	30

4.2	3.0	5.4	4.8	6.1	5.5	6.1	5.5	2.3	2.2	2.7
15 top	11		8	5.5		11	12.5	17	25	30
30 well										
14	13.5									

0.0	4.0	3.0	4.2	3.1	5.2	2.8	3.1	2.8	1.7	2.4	3.1
30	17.5	14.5	11	top	7	5	12.5	14.5	17	25	30
				M.H.							

1.5	3.2
60	30

10.4	9.1	5.4	8.3
4.5	FL		FL

87428 Culot 7Ac 988.1

✓ 8740 987.8
= 13.5 11.5
30 19.5

T.P. 10.45 998.73 7.67 988.28
✓ 8640 990.5

✓ +40 994.0

✓ 8540 992.8
T.P. 5.54 995.99 8.28 990.45

✓ 8440 990.5

+20⁵ Culot 2Ac 990.4

✓ 8340 990.7

✓ 82 991.9

12.3 7.9 11.7
FL FL

10.7 9.4 8.1 8.4 8.0 7.7 8.2 8.4 8.3 8.8 8.6 9.1 8.4 8.2
16.5 14.5 11.5 10 7 7 7 9 11 13 15.5 19.5 25 30

7.4 6.4 7.2 8.2 8.9 8.3 8.2 8.7 8.1 6.3 4.4 3.7 3.7
30 21.5 17 14 12 7 7.5 10 13.5 17.5 25 30

3.2 2.7 2.9 5.0 4.8 5.8 4.7 5.6 4.6 2.0 1.6 1.1
30 24 18 15 13 12 7.5 11.5 16 21 30

4.4 4.0 4.4 5.9 6.7 6.4 5.9 6.5 6.9 6.0 3.7 3.4 3.0 3.0
30 22.5 17 14.5 11.5 8.5 6.5 9 12 15.5 19 25 30

6.6 6.2 6.4 6.0 6.2 5.8 5.5 5.9 6.1 5.5 4.0 3.7 4.0
30 24 18 13.5 10.5 7.5 10.5 12 14.5 20.5 25 30
7.5

9.2 8.8 5.6 8.3
50 FL FL

7.6 7.5 7.2 6.3 7.9 5.9 5.3 5.4 5.5 5.2 5.1 5.0
26.5 22 18 14.5 11 8 6 15.5 18.5 25 30
10

5.1 drive
50

10.0 0.6 1.8 4.5 4.3 5.0 4.5 4.1 4.5 4.8 3.6 4.6 3.9 3.1
30 21 16.5 12 10 8.5 5 6 9.5 13 15.5 19 30

T.P. 11.20 1005.91 1.28 994.71
 81+0 995.4

80+0 999.8
 T.P. 7.07 1011.06 1.92 1003.99

79+0 1005.4

+80

78+0 1006.8
 1005.5

77+13.5 culvt 3/4 Ac 1005.4

77+0 1005.2
 T.P. 6.75 1012.03 5.78 1005.28

76+0 1005.7

+35 1006.5

3.3 5.0 6.2 8.7 12.0 11.1 10.5 10.7 10.9 11.3 9.8 10.4 10.7
 3.0 2.5 1.7 1.2 5 8 5.5 9 12.5 15.5 17 22 30
 10.5

1.4 2.2 4.9 5.7 7.0 6.6 6.1 6.6 6.9 6.6 6.8 5.7 6.1 6.2
 2.5 1.9 1.1 9 7.5 5.5 8.5 10.5 12 13 15.5 19 30
 3.0

4.1 3.1 3.4 5.0 5.8 5.7 6.0 3.6 3.8
 3.0 1.8 1.2 5 8 4 11.5 17 30

46 drive
 60

4.3

7.1 6.3 5.9 5.3 6.0 5.6 5.9 6.3 4.8 3.9 3.3 2.4
 2.7 1.6 1.2 9 6.5 9 12 15 18.5 21.5 3.0
 2.3 2.5

8.4 5.7
 FL

7.25
 FL

8.8 7.8 7.3 7.0 6.3 5.9 6.2 6.8 5.8 5.4 5.1
 3.0 2.1 1.5 5 9 6 11 14 18 25 30

7.3 6.5 6.6 6.4 5.9 6.9 6.3 6.6 6.9 4.3 3.9 3.4 3.3
 3.0 2.2 1.4 11.5 9 6 8.5 11.5 16.5 17.5 25 30
 19.5

5.8 4.9 4.6 6.2 5.8 5.5 5.8 6.2 3.1 2.4
 3.0 1.3 9 6 3 8.5 12 17.5 30
 22.5

BM. 3.84 1008.19
 75+0 1004.6

74 1001.8

T.P. 8.39 1010.32 10.10 1001.93 ✓
 73+79 culvt 1 1/2 Ac 1001.8

73 1002.2

72 1004.4
 T.P. 7.12 1016.97 0.47 1009.85 ✓

71 1009.6

+55 1011.2

70 1008.9
 T.P. 8.99 1015.60 10.36 1006.61

69 1005.9 13.9
 23

Spike SE root 20" Elm 75+26 Lt 24

6.4 5.5 5.6 5.8 7.2 8.1 7.4 7.4 7.8 7.2 5.7 5.0 4.6 3.5
 30 19.5 16.5 10.5 7 5.5 8 11.5 13.5 15 17 19 30

2.6 13.0 12.3 12.0 11.4 10.5 10.6 10.2 10.1 10.6 10.1 11.0 10.3
 20 25 16 13.5 9 6.5 5 9 13.5 17.5 21 30
 17.5
 23

plenty fall 11.4 8.5 10.4
 F.L. FL

11.1 10.2 10.1 9.1 8.2 8.4 8.1 8.2 8.3 8.9 7.9 8.2 7.8 7.3 6.9
 25 20 15 10 7.5 6.5 7 10.5 12.5 15.5 17 18.5 25 30
 22

3.4 3.7 4.2 5.4 6.7 6.3 5.9 6.1 6.3 5.7 6.1 5.1 5.3 4.9 4.6
 21 18 14.5 11 9 5.5 4 6.5 8.5 11.5 13.5 18.5 21 25 30
 30

4.9 6.7 7.0 7.6 - 7.4 7.5 7.7 5.1 4.4 3.8 4.0
 21 15.5 13 9.5 8 2.5 5.5 10 18.5 25 30
 30

drive 5.9 4.6 5.1 5.2 5.8 6.1 3.3 2.4 2.1 1.9
 60 30 14.5 9 4 9 16 23.5 30

7.7 7.8 8.0 8.7 9.2 - 9.0 9.2 7.6 7.4 5.8 5.3 5.6
 30 25 20.5 15 12.5 9.5 5.5 9 14.5 20 25 30

12.8 12.0 10.5 10.1 9.7 9.4 9.5 9.7 9.9 10.4 10.5 10.1 6.7 8.1 8.3
 19 14.5 12 10 6.5 4 7.5 10.5 11.5 14 17 20.5 25 30

68+77

1015.60
culvert

3/4 Ac

1006.2

68+0

1006.9

67

1010.5

66

1010.8

65

1012.6

T.P.

7.29

1020.89

2.00

1013.60

64

1015.9

63

1015.2

62

1014.6

61+91

Culvert

1014.7

61

1014.9

BM

5.13

1015.76

flinty fall

13.1

9.4

12.1

FL

FL

7.6 7.0 7.6 9.1 9.5 9.2 8.7

9.0 9.2 8.1 7.6

30 20 14 10.5 9 5

6 9 18 30

13

5.7 5.3 4.8 4.5 4.6 5.7 5.1

5.6 5.8 4.0 3.7 3.2

26.5 23 18 13.5 12 8.5

6 9 13.5 19.5 30

7.7 7.8 6.8 6.7 5.8 5.2 5.4 4.8

5.1 5.3 4.8 5.2 4.6

26 23.5 20.5 16 12.5 10 7.5

7 10 13 17 30

1.7 1.6 2.0 3.3 5.8 3.4 3.0 3.3 3.7 3.2 1.9 1.8 1.2 0.9

20 16 11.5 9.5 8 4.5 7 10.5 12.5 15 19.5 25 30

30

5.9 6.0 5.6 5.4 5.6 5.0

5.2 5.8 4.9 5.0 4.5 4.3

31 24.5 19 8.5 6.5

8 12.5 15.5 18 25 30

13

5.2 5.1 5.8 6.5 6.2 5.7

5.7 6.4 5.3 5.0 4.8

16.5 12 9 7.5 4

7 11.5 18.5 25 30

30

14

8.7 8.3 8.4 7.9 7.5 7.3 6.7 6.3 6.4 6.7 6.6 6.9 7.4 7.1 7.0 6.8

30 24 21 18 11.5 9 6 6 10 13 16.5 17.5 20 25 30

8.2

6.2

7.6

top tile

FL

6.0 5.9 6.1 6.2 6.4 6.2 6.0 6.2 5.6 6.0 6.2 6.0 5.6

30 19 14.5 11 8.5 6 8 11 13 16.5 21 30

Geodetic Survey Mon. inter. Dines
on Dines & Survey 45

6040

T.P.

3.62

1021.32

3.19

1017.1

1017.70

59

1017.6

58

1016.4

57

1015.4

56

1011.6

T.P.

2.37

1012.96

10.73

1010.59

inlet drive pipe

4.9

1008.1

outlet "

5.9

1007.1

Drive

3.3
3.6

1009.7

55

1008.7

54+11

Culvert $\frac{1}{2}$ Ac

1007.8

T.P.

2.77

1013.36

1010.59

54

1007.6

53

1008.6

52

1009.1

31 3.5 4.4 4.3 3.8

4.3 3.9 3.2 2.5 2.6

30.5 12.5 10.5 7.5

5 7 9 17 25
30 12 30

5.6 4.9 4.6 4.3 4.5 4.3 3.7

3.7 4.2 3.6 3.3 3.5

30 20.5 16.5 12 9.5 6.5

5.5 9 10.5 16 22
30

4.7 4.5 4.6 5.2 5.5 5.3 4.9

5.2 5.7 5.2 4.7 4.2 3.9

30 21.5 16.5 12 9.5 6.5

6.5 10 11.5 15 20 25
30

6.3 6.5 6.2 6.4 6.2 5.9

6.3 6.9 6.5 6.6 7.0 6.9

24 18 13.5 10.5 8

6 9.5 11 14 19.5 25
30

6.3 6.8 7.1 7.8 10.5 10.1 9.7

9.9 10.3 8.4 6.5 6.2 6.5 6.4

30 24.5 22.5 19.5 14.5 10

4.5 7.5 11 13.5 16 20.5 25
30

4.2 4.7 4.5 4.3 4.8 4.1 4.0 2.5 1.9 1.8

30 18.5 11 6 8 9.5 13 25 30

6.9 5.2

7.1 Plenty fall

FL

F.L.

5.5 5.7 5.5 6.7 6.0 5.8 5.9 6.6 7.7 8.6 8.8

30 22.5 18 15.5 11.5 6 9.5 16.5 25 30

1.3 2.0 5.6 5.2 4.8 5.1 2.3 3.3 3.4 3.7

25 14.5 10 8.5 7.5 12 20 25 30

30

3.5 4.0 4.3 4.7 4.3 4.7 5.2 4.7 6.6 7.2 7.0

25.5 21.5 12 10 6 9 10.5 25 27 30

30

51 1009.4
 T.P. 4.44 1014.29 3.51 1009.85
 50 1010.1
 BM. 4.04 1010.25
 49 1010.2

48 1008.1

47 1005.0

T.P. 1.97 1003.11 13.15 1001.14

46 997.8

45 993.4

T.P. 2.72 995.81 10.02 993.09

44 991.0

991.0

2.6 3.4 4.8 4.0 4.4 4.0 5.0 5.3 5.7
 22 13 10.5 7.5 10.5 25 26 30
 30

3.7 4.5 4.9 4.2 4.9 5.0 6.4 6.8 7.0
 23 13.5 11 7.5 11.5 25 26 30
 30

Spike Wroot 12" Maple 49+35 16' Rt

31 2.8 3.9 4.9 4.7 4.1 4.7 4.0 4.2 4.9 5.1
 30 25 13 10.5 9 7 10 20 24 30

drive 48 5.8
 24 40

4.3 4.9 5.0 6.6 6.3 6.2 6.7 5.2 6.4
 25.5 20.5 16 12 8.5 6 10.5 25
 30 30

6.0 6.7 10.0 9.5 9.3 9.9 7.9 7.4
 26.5 19.5 13 7 5.5 11.5 25
 30 30

drive 10.3 9.6
 8 30

1.6 1.2 1.6 5.8 - 5.3 5.6 6.3 1.8 1.2 1.1
 30 23.5 20 13 9 4 6.5 14 18.3 25
 30

6.9 6.1 6.4 9.8 10.6 9.8 9.7 10.4 9.9 9.6 8.4 8.8 9.1
 30 23 21 14.5 12 8.5 6 7.5 10 12 25 30

drive 5.8 3.7
 9 30

4.1 4.5 6.0 5.2 - 4.8 - 5.2 6.7 7.9
 22.5 14.5 12.5 11.5 10 7.5 13 17 25
 30 30

7.3 4.8 8.9 plenty fall
 FL FL

33				995.6
B.M.		2.87		997.09
32				997.5
32+60	drive			
T.P.	4.61	1002.38	2.19	997.77
31+30				998.7
31+0				997.5
	drive			
30				988.9
T.P.	0.18	989.86	12.70	989.68
29				981.8
T.P.	1.78	981.07	10.55	979.31
28				978.3
27				975.7
26+78	culvt			976.0

3.6 4.5 4.8 6.2 4.9 4.4 5.1 4.7 4.5 5.2 6.6 8.0
30 24.5 14.5 12 10 9 10 17 21 25 30

Spike NE root 26" Maple 32+94 30' Pt
+0.2 1.5 3.5 2.5 3.5 3.0 4.6 5.0
30 14 10 9.5 11 25 30

1.5 3.3
50 15

1.4 3.1 4.1 3.7 4.2 2.6 3.8
30 10 8 8 11 25
30

1.8 1.6 1.9 5.4 4.9 5.6 2.7 3.5
30 25 18.5 8.5 7.5 11.5 20.5
30

+ 5.8 6.8 8.2 9.1
50 33 12

994.0 992.8 993.4 993.8 994.2
8.4 7.6 9.0 8.6 8.2
2.5 1.6 12.5 21 30
30

1.5 1.0 1.5
10 5.5

3.8 4.4 4.7 8.7 8.1 8.7 4.7 2.8
2.5 2.1 17.5 10.5 6.5 11.5 18
3.5 30

3.4 3.6 3.8 3.4 3.1 2.8 3.2 1.9 1.3 0.5
40 25 17.5 10.5 7.5 9.5 21 22 30

2.3 5.1 5.4 5.6 5.4 4.3 5.4 5.9 6.0 5.7 5.9
4.2 2.5 10 5 13 15.5 17.5 18.5 21 24.5

6.5 5.1 7.2 Lots Fall
7.1

26 ✓
T.P. 11.03 991.37 0.75 980.34

25 983.9

+50 986.6

24
T.P. 2.46 984.62 9.21 982.16

23 980.8

22+04 Culvt 2.5 Ac 980.0

22 ✓
T.P. 5.96 986.91 3.67 980.95

21 982.1

+70 982.4

20 976.8

T.P. 0.66 974.68 12.89 974.02

19 968.7

+0.8 0.3 0.6 4.1 4.3 4.9 4.2 4.1 4.7 5.4
40 25 21 12 8 7 11 13.5 23

16 20 3.1 8.0 7.5 8.0 4.5 4.6
30 25 15.5 7.5 9 16 20.5
40 30

0.6 0.2 0.6 1.9 4.0 5.4 4.8 4.9 5.4 3.8 3.9 4.2
28 25 23 12 8 6 7 10 13.5 20.5 30
35

2.3 2.1 3.1 7.4 6.9 7.3 4.4
25 20.5 12 6 10.5 16
30 21.5
30

2.2 3.4 3.8 4.3 3.8 4.2 3.7 4.0
17.5 11.5 7.5 7 9.5 10 21
30 30

6.6 4.6 7.0 7.0
FL FL Plenty fall

5.3 5.2 4.6 5.0 4.7 5.1 6.6 7.2
30 8.5 6.5 6 10 21 30
15

1.8 1.2 1.5 1.9 4.8 5.6 4.8 5.4 4.2 3.2
25 22 17.5 13 8 7 8.5 10 20.5
30 30

1.2 1.4 4.4 5.4 4.5 5.0 2.5
15.5 12.5 8 7.5 8 13
30 30

6.5 6.1 5.8 5.7 10.6 10.1 10.0 10.7 6.6
30 25 18.5 14.5 5.5 3 11 18
21 30

4.7 2.8 5.8 6.3 6.0 6.5 5.8 4.8 4.1
30 17 7 4 13 15 20 25.8
12 7

18+25	Culvt + 4.5 Ac	967.4
T.P.	4.88 972.23 7.33	967.35
18		967.1
B.M.	7.08 975.54 5.77	966.46
17		970.3
T.P.	11.47 986.68 0.33	975.21
16		977.9

+50		980.6
15		978.4
T.P.	4.14 980.44 10.38	976.30
14		975.5

13+78	Culvt 1 1/2 Ac	975.7
T.P.	7.26 987.67 2.03	978.41
13		978.1

12		983.5
T.P.	8.77 996.02 0.42	987.25
11		987.4

9+90		991.4
------	--	-------

11.9	7.3	15.4	21.2
FL		FL	gd below FL
25 29 30 26 31 41 55 51 4.7 51 59 9.4 11.3			
30 25 21 18 15.5 9 4		5 12.5 17.5 26.5 35	
Spike S.W. root + 8" Elm 17+88 20' Rt			
0.0 0.4 0.5 2.4 5.6 5.2 5.0 5.2 5.6 2.1 1.6			
30 25 15.5 9.5 3.5		4 9 11.5 17 25	
4.7 5.0 4.6 9.3 8.8 8.7 8.8 8.4 6.1			
40 25 12.5 5.5		4 11 12.5 17	
		8.5	23.5
1.2 2.2 6.0 6.6 6.1 5.3 5.6 4.8 4.9			
50 14 5 3.5		6 15 18 25	
25			
1.4 2.2 2.5 8.2 9.0 8.3 8.4 5.6 5.9			
50 25 19 9 8		8.5 14 20.5	
5.3 6.2 6.0 6.6 5.2 4.9 5.2 5.7 6.5 10.6 13.1			
35 25 18.5 15 12		5 8.5 13.5 22.5 27.5	
8.4 4.7 13.1 17.7			
FL		FL	gd under FL
4.7 4.5 8.3 10.3 10.1 9.6 10.0 9.8 6.4 6.9			
30 20.5 13 10 6.5		7.5 10 16 30	
25		25	
0.1 4.9 1.9 5.3 4.2 4.6 4.4 3.3 4.1 4.8 5.2			
30 25 12 6.5		8 9.5 11.5 16 21.5 30	
3.3 2.8 4.3 9.4 9.0 8.6 9.1 6.2 6.5 7.5 7.9			
30 25 13.5 6.5 5		7.5 12 18 25 30	
2.4 2.0 2.4 3.6 4.6 5.1 4.6 4.7 4.4 4.9 5.3 6.1			
30 25.5 23.5 17 12.5 11		4 6 11 17 30	

BM. 5.13 990.89
 drive
 T.P. 6.71 1000.73 2.00 994.02
 9 993.6
 T.P. 4.13 998.15 994.02
 8 993.6
 7+40 culvt 99.4 % ord H₂O 993.4
 7 993.5
 T.P. 5.13 1000.01 3.27 994.88
 6 995.2
 T.P. 2.03 996.91 994.88
 5 992.1
 4+19.5 culvert 991.9
 T.P. 4. 992.1
 T.P. 10.17 1002.73 4.35 992.56
 3 994.4
 2 998.4
 +50 998.5

Spike A root 14" Maple 10+57 RH15

47
 34
 3.2 2.9 3.6 4.0 6.3 7.2 7.1 7.2 4.7 4.2 4.9 5.4
 30 25 21.5 16.5 12 10.5 4.5 7.5 14.5 19.5 30
 0.9 2.7 4.3 4.8 5.4 4.6 5.1 5.9 ± 8.9
 24 15.5 12 10.5 9 7 14 30
 30
 6.2 4.8 7.4 plenty fall
 FL FL
 1.0 1.3 2.6 3.5 4.7 4.6 5.4 4.7 5.4 5.2 5.9 7.4 8.0
 30 25 20 14.5 11.5 10 8 8 9.5 13 20 30
 2.0 2.7 3.2 4.3 5.4 4.8 5.7 5.4 5.7 9.7
 25 19 13.5 9.5 8 7.5 9.5 15 30
 30
 +0.4 0.0 1.2 2.1 4.2 5.4 4.8 5.6 6.6 7.8 10.3
 30 25 20 14.5 9 6 9 11.5 17 25
 6.8 5.0 7.4 plenty fall
 FL FL
 2.4 3.4 4.2 4.4 5.1 4.8 5.5 4.8 5.5 6.4 10.4
 24 21 17 13 11 9.5 7 8.5 11 30
 30
 4.3 3.8 4.3 4.4 8.7 8.3 8.6 4.0 3.4 4.2
 25 21.5 4.7 12.5 6.5 7 12 18 30
 30
 4.8 4.7 4.8 4.5 5.0 4.3 5.0 4.9 4.8 4.1 5.1
 25 20 12 8 7 8 10 14.5 18 25
 30 16.5 30
 4.0 4.1 5.1 4.2 4.7 4.3 4.2 3.7 4.3
 20 8.5 7.5 8 11 15.5 18.5 25
 30 30

T.P.	5.30	1002.73 ✓	6.16	996.57
1+0		1001.87 ✓		996.6 ✓
T.P.	1.12	997.69 ✓		996.57 ✓
B.M.			3.89	993.80 ✓
0+0				992.0 ✓

0-100				989.0 ✓
0-200			± 10.2	987.5 ✓
0-300			± 11.3	986.4 ✓

Sections taken on tangent at Co line

B.M.	3.60	1011.83 ✓		1008.23 ✓
104+51 ²⁶				1006.3
✓ 10.5+0				1008.8
T.P.	3.58	1014.71 ✓	0.70	1011.13 ✓
✓ +50				1010.9
✓ 106+0				1007.3

(H) Lt Rt (S) 62

3.4	3.2	2.8	3.2	5.8	5.3	5.8	3.0	2.4
30	22	17.5	12	8.5	6	10	18	30

Horiz. Spike S root 36" Elm Lt 0+0

56	52	56	55	60	61	5.7	5.4	6.6	6.7	6.2	5.1	4.7
30	22	18	12	8	3		5	13	16	18.5	21	25.5
										4.2	4.0	
										30.5	36	

8.3	7.3	7.1	7.6	8.8	8.7	9.1	6.2	6.0	5.4	5.1
30	19	15.5	12	9.5		5.5	10	16	23	30

7.4	6.3	5.5	7.0
150	100		100

1.9	1.4	1.6	1.2	3.4	3.0	3.7	2.6	2.5	1.1	0.2	10.1
27	24	18.5	13	9		8.5	11	14	18.5	25	30
4.4	4.5	3.6	3.5	4.2	3.8	4.4	3.9	3.6	2.7	1.9	
30	25.5	21.5	14.5	10.5		7	8.5	10.5	15.5	30	
5.5	6.5	7.8	7.6	7.4	7.1	7.7	4.6	4.3	2.5		
26.5	18	13	10			4.5	6	13.5	20	30	

+ 1014.71 ✓ -
 T.P. on 30 1007.11 ✓ 7.90 1006.81 ✓
 Drive

✓ 107 1001.2

+40 culut 3 A₂ 1000.9
 TP 4.80 1005.91 ✓ 6.00 1001.11 ✓

✓ 108 1001.8

T.P. 10.02 1015.41 ✓ 0.52 1005.39 ✓

✓ 109 1005.2

T.P. 5.56 1020.15 ✓ 0.82 1014.59 ✓

✓ 110 1013.0

T.P. 11.05 1025.64 ✓ 1014.59 ✓

✓ 111 1119.6

✓ 111+50 1022.8

10.6 + 1.4
 20 40
 6.7 6.6 5.9 6.4 6.8 6.2 5.3 4.7 4.4
 30 10 8 11 12 19 21 30

9.1 6.2 9.1
 FL inlet FL inlet

7.90
 inlet

outlet from H pipe 9.6
 Bottom M.H. 11.9

outlet from S ± 10⁰⁰
 " from across rd 11.8

outlet ± 15"

4.9 4.9 4.1 4.7 4.8 5.2 5.2
 30 7 11 16 20 30

Stk 109 ± 03 Lt ditch

50 51 58 8.2 11.2 10.7 10.2 10.6 11.0 10.6 7.1 7.2 7.3
 30 21 17 13 8 4.5 7.5 9 11 18 25 30

27 28 3.2 8.1 7.7 7.1 7.5 8.0 6.2 4.3 3.9 4.5
 30 21.5 15.5 8.5 6.5 6 9.5 12 18.5 22.5 25 30

28 3.2 3.9 5.0 6.5 6.0 6.3 6.8 4.2 4.1 4.5
 30 20 14 10 8 5 10.5 14 20 25 30

3.0 2.8 3.0 3.5 2.8 3.6 2.0 1.8 1.9
 20 5 18.5 11.5 9 9.5 13 20 30

	+	1025.64 H1	-	E
✓ T.P.	4.64	1027.22	3.06	1022.58
✓ 112+0				1022.5
T.P.	1.21	1023.79		1022.58
✓ 113+0				1020.2
✓ 114+0				1018.3
✓ 115+0				1018.0
T.P.	1.28	1018.89	6.18	1017.61
✓ 116+0				1015.8
BM.			2.54	1016.35
culot + 85				1013.6
✓ 117				1013.8
T.P.	12.98	1031.72	0.15	1018.74
✓ 118				1021.4
✓ 119				1030.1
T.P.	10.09	1041.42	0.39	1031.33
✓ 120				1034.4
✓ 121				1036.5

5.4 4.9	4.5	4.6	5.3	4.9	4.5	4.7	5.1	4.9	5.4	3.8	3.8	3.9		
30	23	21	17.5	16	13	8	6	7.5	10.5	13.5	20	25		
												30		
5.1	4.8	4.2	4.0	3.6			4.0	3.9	4.4	4.1	4.0	3.6		
20.5	16.5	13.5	9				8.5	12	15	17.5	25	30		
23														
7.1	6.8	6.3	5.5				6.0	6.3	5.8	5.6	5.5			
17	12	9					10.5	12.5	14	19.5	25	30		
23							7.5							
30														
7.7	7.3	7.0	6.3	5.9	6.1	5.8	6.3	6.7	6.0	4.5	3.9	3.5	3.0	
26	21	16	13.5	10.5	9		9.5	11.5	13.5	15.5	20.5	25	30	
5.4	5.1	4.5	3.8	3.2	3.5	3.1	3.0	3.4	3.9	3.4	2.1	1.7	1.2	
24	20.5	14	9.5	7.5	6		5	12.5	15	17	19.5	25	30	
Spike W root 34" Maple Sta 116±45 R-26'														
							9.60	5.3		8.56				
							FL			FL				
8.4	8.2	5.5	5.2	5.1			5.3	7.6	7.8	7.9				
24.5	18.5	13	9.5				9	13.5	17.5	25				
30												30		
9.7	10.0	11.6	10.7	11.1	10.6	10.3	10.5	11.3	11.1	11.2	11.5	12.2	11.6	11.8
25	19.5	16	13	12	8		8	10	14	17.5	21	23	25	30
30														
2.0	1.9	1.6	1.5	2.9	2.2	1.6	1.7	1.7	2.0	2.2	1.4	1.4		
30	26	20	15	12	10		5	9.5	13	14.5	17.5	25	30	
8.5	7.9	7.5	8.1	7.8	7.0		7.3	7.7	5.9	5.3	5.1	4.6		
30	23	17	15.5	12			10.5	14	16	20	25	30		
6.1	5.8	5.4	6.0	5.4	4.9		5.1	5.4	3.8	3.5	3.2			
26	21	15.5	13.5	8			7	16.5	20	25	30			

✓ 122 H.I. 1036.0
 ✓ 123 1033.1
 1033.3
 T.P. 6.48 ✓ 1040.16 ✓ 7.74 1033.68 ✓

✓ 124 1035.4
 T.P. 5.65 1039.33 ✓ 1033.68
 ✓ 125 1034.5

colut 1032.8

✓ 126 1032.7 ✓
 Drive 1034.1

✓ 127 1036.9 ✓
 T.P. 13.12 1051.41 1.04 1038.29 ✓

✓ 128 1032.2

✓ 129 1035.8

✓ +50 1036.6

All elev.
 10⁰⁰ high
 from here
 Add 10⁰⁰

5.9 5.4 6.7 5.8 6.0 5.4 5.6 5.7 6.0 4.2 4.0
 30 19 15.5 11 10 6 10 13 17 25
 30

12.1 8.3 10.7
 FL FL

10.6 10.4 10.0 8.9 8.7 8.1 8.5 8.6 9.5 8.7 8.6 8.3 7.4
 30 18.5 15 12 9 9.5 12.5 14.5 17 20 25 30

6.4 5.9 5.5 5.0 5.2 4.8 5.2 5.4 2.8 2.4
 30 22.5 15.5 9.5 8.5 9.5 14 19 25
 30

6.8 6.4 6.1 5.2 4.8 5.0 5.1 5.7 4.2 3.8 3.4
 30 22 15.5 11.5 6.5 11.5 15 18 25 30

Ample fall 10.3 6.5 9.36
 FL

10.3 10.0 9.6 9.3 7.0 6.6 6.8 7.2 8.7 8.8
 30 24 20.5 14.5 10 9.5 13.5 17 25
 30

6.6 5.2 5.2
 15.5 30

2.4 2.3 3.8 2.8 2.4 2.4 2.6 3.0 3.2 3.4 3.8
 22.5 17 14 9 7 11 13.5 20.5 25 30
 30

10.5 10.4 10.2 9.6 9.9 9.2 9.5 9.9 7.7 7.3 7.2
 30 20 14 10.5 9 11.5 14 18 25 30
 24.5

3.8 4.2 6.2 6.4 5.6 5.7 5.6 6.1 5.3 5.2
 26.5 17.5 14.5 10 10 12 15 17 25
 30

4.0 3.5 5.7 4.5 5.0 4.6 1.8 1.6
 25 13 17.5 25 30
 13 11.5 11.5

✓ 130				1034.8	
	culot			1032.5	
✓ 131				1032.5	
T.P.	7.33	1051.87	6.87	1044.54	
✓ 132				1036.0	
+50			± 5.0		
✓ 133				1036.3	
✓ 134				1033.2	
T.P.	0.30	1040.06	12.11	1039.76	✓
✓ 135				1025.3	
B.M.			3.48	1036.58	
	culot.			1023.9	
✓ 136				1023.7	
T.P.	7.56	1041.45	6.17	1033.89	stk 13670
✓ 137				1025.6	
✓ +50				1026.8	

6.9	6.5	8.0	7.6	6.6	7.0	6.7	6.9	5.5	5.2	5.0
27	20	16	15		6	7.5	12.5	15.5	25	30
Plenty fall				12.3	8.9		11.0			
				FL			FL			
11.9	11.6	10.9	10.0	9.1	8.9	8.8	8.9	8.4	7.8	
30	24.5	19	12	7.5		11	17.5	19	25	30
7.1	6.4	6.9	6.0	6.5	5.9	6.2	4.5	4.1	3.9	
30	15	13	9	8		14	18.5	25	30	
7.4	7.1	6.6	7.1	6.4	6.1	5.6	5.6	4.6	4.0	3.9
30	25	16.5	15	13	9		14	16.5	25	30
5.9	2.8	6.7	9.6	9.0	9.3	8.7	8.7	7.3	7.6	7.5
30	25	17.5	15	13	9	7.5	10	13.5	17	25
										30
4.8	4.5	5.0	4.8	5.1	4.8	4.7	5.0	3.3	3.2	
30	12.5	11	9	8		11	12.5	15.5	25	30
Spike W root twid Flm						Sta. 135+12 R+ 25'				
9.9	8.9	8.15		6.2		8.6				
50	28	FL				FL				
8.9	8.3	6.5	7.3	6.9	6.4	6.6	6.8	5.3	5.3	4.5
30	23	11.5	9.5	7.5		6.5	9	12	15.5	25
										30
5.1	5.1	5.3	6.9	5.9	6.2	6.4	4.5	4.9	4.1	
27	20	14.5	10		4.5	7.5	10.5	16	25	30
30										
3.5	3.6	3.9	5.6	4.7		4.9	3.5	3.8	3.5	3.7
30	21	13.5	9.5			8	10.5	13	25	30

98987
 T.P. 6.28 992.57 3.58 986.29
 ✓ 157 974.7
 ✓ +50 977.4
 ✓ 158 974.4
 ✓ 159 975.1
 T.P. 5.88 992.08 6.37 986.20
 ✓ 160 977.1
 T.P. 4.45 989.04 7.49 984.59
 ✓ 161 974.1
 T.P. 2.85 987.44 984.59
 ✓ 162 972.8
 B.M. 364 983.80
 Colvert
 ✓ 163 972.5

69

0.4	9.3	8.3	8.4	8.0	8.2	7.8		7.3	7.3	6.7	6.3
30	19.	14	10	5	3			7	11	19	30
	25										25
9.3	9.1	8.7	8.4	7.6	6.2	5.1	5.0	5.7	6.3		
35	30	24	21	13	6		20	29	35		
		8.4	8.6	8.7	8.1			7.6	6.9	6.6	
		25	17	8				14	22	35	
		30									
10.8	10.6	9.9	8.7	7.6	7.4		7.0	7.7	7.2	6.2	6.7
29	25.5	22	19	10			5	12	17	25	35
5.8	6.5	5.9	6.5	5.4	5.0			4.8	4.5	4.3	
22	19.5	10.5	3.5	1.5				11	22	35	
21		4.00									
6.0	5.5	4.6	5.2	4.9				5.4	4.3	3.4	2.3
30	23	12	10.5					4.5	7	15	30
3.8	3.7	3.1	5.2	5.0	4.7		5.1	2.7	3.0	2.5	
26	19	11.5	9	6			7	10.5	15	25	30
29											
Spike Foot 10" Maple 161 ± 95 Lt 30'											
	8.2	7.9	5.0					7.4			
	± 22	± L						± L			
7.0	6.4	5.8	5.3	5.5	5.0	5.4	4.0	4.5	3.8	3.4	2.9
30	19.5	14	10	8		7.5	10	14	17	24	30

981.44

T.P. 5.51 989.52 3.43 984.01

✓ 163+75 975.1

✓ 164 974.6

T.P. 4.68 987.40 6.80 982.72

Culvert

✓ 165 972.6

TP 8.76 991.48 982.72

+85

4.8¢

✓ 166 976.6

Culvert

✓ T.P. 4.57 991.45 4.60 986.88

✓ 167 976.1

T.P. 7.94 994.82 986.88

✓ 168+01²¹ 979.6

169 3.0 981.8

169+78 +0.7 984.1

B.M. 4.68 990.14

70

4.9 4.2 3.7 5.2 4.4

4.8 2.7 2.9 2.0

3.0 1.8 11.5 8.5

6.5 9.5 14 27

4.3 4.2 3.6 4.1 5.8 4.9

5.3 2.8 3.0 2.1 1.7

2.5 1.9 14.5 11 8.5

7 10 14 25 30

Mon 4' N of Eend culvert

9.3

9.0

5.2

6.9

FL

F.L.

FL

inlet

6.1 5.7 5.2 5.3 5.0 4.8 4.9 5.3 4.9 5.1 4.8 5.1

3.0 1.6 10.5 8.5 6.5 4 7.5 9.5 16 25 30

4.6 4.3 4.0 3.6 4.1 5.5 4.9 5.2 5.5 3.0 2.6 2.3 2.0

3.0 2.3 1.8 1.5 1.1 9 4 7.5 11.5 17 25 30

9.6

9.6

5.9

8.3

F.L.

FL

F.L.

inlet

5.0 6.5 6.3 4.4 5.6 - 5.3 5.6 5.7 4.7 4.2 4.3 3.8 3.5 3.3

25.5 22.5 19 11.5 10 6.5 4 7 8.5 11.5 15 19 25 30

3.0 14.5

6.3 6.1 6.3 5.3 5.2 5.5 6.1 5.6 5.7 5.5 5.2

3.0 2.4 20.5 9 5.5 8.5 10.5 16 25 30

Spike NE root 10" Soft Maple 51 ± 51

Lt ± 33'

Willow clumps

+19 16.5 #
15.5 107 +10
+45 20.5

Borb. Wise

12" Stump 21

26.5 +36

12" x 20' Corr.

Slag drive

12" Map

+29

+14 20.5

+09

3" House drain

Garage 16" Map

20.5 +95

25.5 +93

+70 16.5

15" Map

20.5 +67

14" Map

20.5 +52

Main drive or N. Wood

Drive

+40

#

18.5 +33

+30

16" Map

20 +14

Stop

12 105 +10

12" Map

+20 +88

+83 16.5 ✓ #

+71 14.5 ✓ Geod. Sur. Mon.

12" Map

20.5 104 +71

+71 2.5 # 71

10" Ch 28 +65

+42 16.5 9" Ch.

+26 18' 8" Ch.

11+11 23' →

12" W. Ch. ✓ ✓ 12.5 +68

110+19 ✓ 16' ✓ #

+84 20' 14" W. Ch

11" W. Ch 14' ✓ ✓ +67

8" W. Ch 15' ✓ ✓ +29

109+16 18' 10" W Ch

Note: Os. hedge very scattered

+69 16' # x

stop ahead

8.5' +38

Begin Os. hedge 24.5' +05

+ Brush

108+0 21.5

11 +62

brick & Conc inlet

12" Vit. → 12.5 +54

Willows → 11' +40

dr 19.5' +40 14.5

12" V. S.P.

11' +39

brick inlet

125+89 ← 15' → 18" Conc. 125+95
 125+65 to 75 9 bad spring
 End brush 124+50 hole tile reqd
 23 123+96
 122+80
 15.5' → 17.5' 12" Conc. New
 Beg. light brush 119+00 both sides
 16.5 116+85 15' 18" Conc New
 +36 25.5 30" Kap
 +21
 116+0 26 →
 115+0 23.5 →
 Gr. Drive 114+20
 19' +19
 113+0 24' →
 End brush 112+20 End brush
 Drive along tangent
 10' Ch. 29' +85
 18" Elm 24.5' +83
 10' Ch. 29' +76
 111+74 15' 8" Ch.

10" pop. ✓ 11' ✓ +77
 10" pop. ✓ 10' ✓ +71
 14.5' +69
 9" V.S.P. 13' +64
 8" C.I.P. Replace with 12"
 8" Elm 12.5' +57
 36" Pop. ✓ 9' ✓ +55
 10" Elm 13.5' +51
 9" Ash ✓ 10.5' ✓ +49
 Begin brush +42 17.5' 10" Elm
 +40 21 8" Elm
 +26 20' 16" Elm
 135+09 23.5' 10" Elm
 +50 Begin brush
 +41 30' 14" W.Ch
 +36 26' 10" Ash
 28' 134+20
 CEI Guy 19.5' 134+20
 130+53
 17' 19' 12" Conc. (New)
 20' 128+68
 20' +89
 Gr. Drive +58
 12" Corr.
 21' 126+32

Topo taken on tang

#	17.5'	+70		one
		+28	12'	Plane by
		143+14	18'	Elm (lump)
		+98	17.5'	10" Ash
		+74	14'	8" Ash
		+10	18'	#
		142+03	20'	9" Map.
Endbrush		+87		
8" Ap	8.5'	+87		
10" Ch.	13'	141+14		
#	16.5'	140+50		
		+83	17.5'	8" Elm.
10" Ap.	14.5'	+58		
		+46	22'	8" Ash
8" Map.	10'	+28		
		139+27	21'	12" Ash
#	16'	+91		
		+97	22'	7" Bass
		+81	21'	8" Bass
		+35	13'	8" Ch.
12" Elm	10.5'	138+02		
8" Elm	10'	+92		
#	15.5'	+32		
8" Elm	13.5'	+13		
		137+0	25'	Netr. old rail fence
		135+80	12'	12" Elm

73

26' +40' 146+07 → 12.5'

12" Map

14' +78 +76

9' 5' 18.5'

20'

10" Pop.

15' +38

" 12.5' +30

" 16' +25

7.5' +31

+25

10' +24

+11

17'

#

Conc Post 12' +08

12" Map. 14' 145+03

6" Sq. Conc. post 12.5' +92

22" Elm 13' +91 77

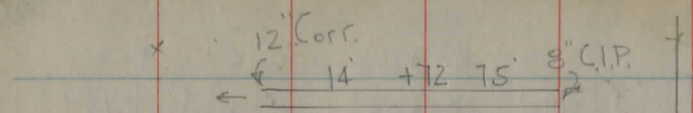
10" Beech 19.5' +77 63

15" Map 18.5' +65 51

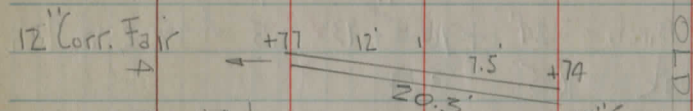
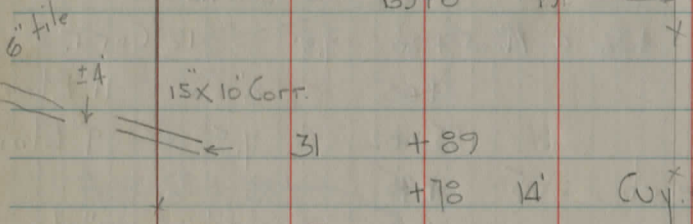
144+47 9' ✓ ✓ 9" Elm

	9' Beech	23.5	+91	43'	#
	18" Beech	2.5	+27		
	28" Map	26	151+19		
	8" Beech	22	+66		CEI & Tel
	10" Birch	19	+59		comb'd
I	10" Map	19	+54	43'	# I
	10" Ch	18	150+30		
	28" Oak	19.5	+87		
	9" Map	22	+71		
		12	149+59		
U	Gd rail 1/2	9'	149+0	32.5	# U
	13" Map	9	9.5 +89		
	24" Chest. dead	20.5	+67		
	10" Hem	18.5	+62		
J	9" Hem	13	+54		
	9" Ch	17	+12		
			+21	14'	✓ 7" Ash
			148+02	15'	✓ 2 Ash (lump)
	9" Hem.	23.5	+91		
	12" Hem	20	+91		
N	20" Ch.	15	+72		
	7" Done	10	+66		
	12" Hemlock	24	+49	too	rose trail
	10" Birch	19.5	+48		9" brush
			+45	22.5'	#
	10" Ch.	16	147+38		
M	18" Map	34.5	146+41		

		160+05	6	✓✓	#
	#	20.5	159+08	157+76	20' #
			157+18	E ✓	Ch End brush
			+28	✓ 26	✓ #
			+23	✓ 6.5	✓ 8" Ch
			156+10	✓ 12.5	✓ 10" Ch
	Gd rail	9	114	+75	
	steep down		+16	+42	
	from G.R.			+3 Ac	
		+36	12.5+20	7.5	12" Corr.
			+05	✓ 8	✓ 11" Elm
			155+02	✓ 9.5	✓ 9" Elm
	12" Beech	25	+95	+85	32.5 #
			+91	✓ 7.5	✓ 9" Ch
	9" Birch	24	+70	+73	✓ 7.5 ✓ 2-10" Ash
	12" Oak	16.5	+54		
			+52	21.5	10" Ash
	8" Ch.	18	154+24		
	11" Map	25.5	+54		
	9" Ch	23.5	153+00	+35	38' #
	9" Ch.	21.5	+68		18' 9" Map
	9" Birch	23.5	+36		
	10" Birch	25	+35		
	9" Birch	22	+05		
			152+03	✓ 7	✓ 9" Ch



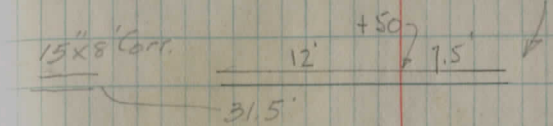
Ash Cl. x	15.5	+67	
2-8" Ch	18.5	+52	x
7" ch	14.5	164+52	
		+79	20' =
Ash Cl. x	18.5	+67	x
Map. Cl.	21	+47	
Ch Clump	19.5	+38	
	63+0	19'	x



12" Corr. Fair	12'	+77	
	7.5'	+74	
	20.5'		
10" Ash	30'	+73	15" Corr. x
12" Elm	24.5'	+69	
Ash Clump	18'	+60	
7" Ash	15.5'	+38	
	162+36	19'	+
	40'	163+50	19'
8" Ash	19'	+37	
8" Elm	24'	+19	
Begin brush	161+0		
both sides	160+98	23.5'	=

Cuy. Co. Mon. Drain. Str.

OLD RAIL FENCE



15" Elm	16'	+44	
		+43	21.5' =
12" Map	16'	+33	
9" Ch	16'	+31	
10" ch	20'	+26	
Comp. sign	13'	+21	
10" Ch	18'	+17	
8" Ch	19'	166+0	
9" Ch	16.5'	+91	
8" Ch	16'	+85	
7" Ash	18.5'	+82	
10" Map	23.5'	+74	
18" Ch	20.5'	+44	
		+23	21.5' =
10" Ch	21.5'	+18	
7" Ch	18.5'	+99	
9" Map	22'	165+03	
8" Pop	15'	+98	
9" Pop	16.5'	+96	
		+74	8' ✓ Cuy. Co. Mon.
15" V.P.	15" x 8" Corr		
	30.5'	164+74	

+ 14 Bit Mac

x

x

x

+ 14 Rd Sign post

+ 78 #

+ 72

35 MPH

14.5

8" Elm 18' + 71

8" Ch. 22' + 54

12" Ash 18.5' + 44

8" Map 17.5' + 19

12" Ch 22' + 09

167 + 00 19' → x

11" Map 17.5' + 90

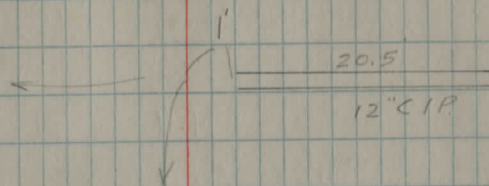
12" Map 18.5' + 82

+ 74 13.5' ✓ 9" Ash

11" Map 15.5' + 57

166 + 53 9.5' ✓ Cuy Co Mon

x



105

P.I. 0

3705 76

Rec 3706 20

Blank lined page with four vertical red margin lines.

Blank grid page with a vertical red margin line on the left side.

N&V 18" Beech

Points at Co. LINE

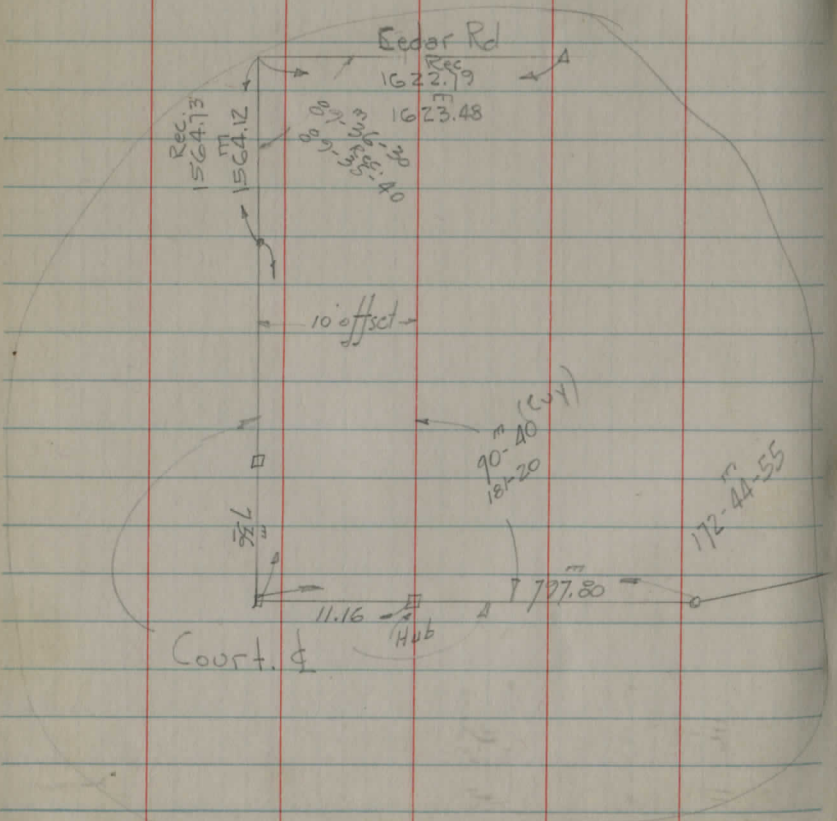
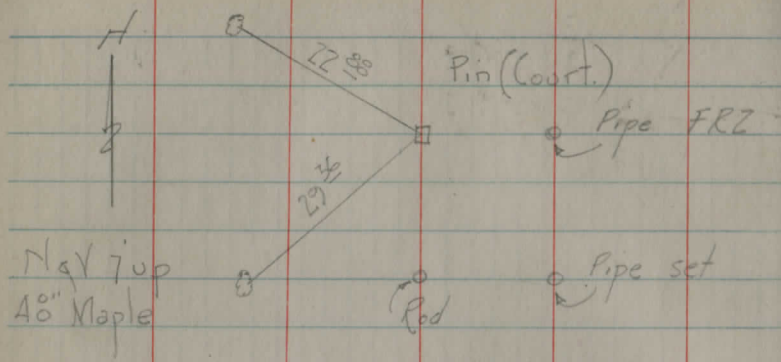


TABLE FOR SLOPE STAKES

Bottom of ditch = base elevation

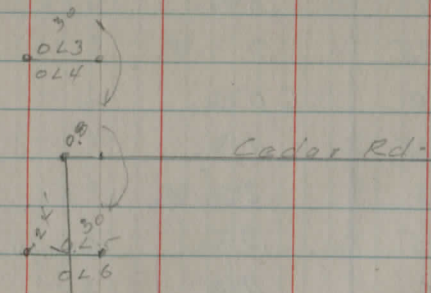
Approx. existing grade - 1.33' = bottom ditch

Cuts	Fills	Cuts	Fills
01-	18.3	22.6	+ 2.4 - 25.2
02-	-.6	.75	.5 - .5
03-	-.9	.9	.6 .8
04-	19.2	23.05	.7 26.1
19.75	+ 0.5 -	-.5	.2 .8 26.4
-.9	+ 0.6 -	-.8	.35 .9 .7
20.05	+ 0.7 -	20.1	23.5 3.0 27.0
-.2	+ 0.8 -	-.4	.65 .1 .3
-.35	+ 0.9 -	-.7	.8 .2 .6
20.5	+ 1.0 -	21.0	.95 .3 .9
-.65	+ .1 -	-.3	24.1 .4 28.2
-.8	+ .2 -	-.6	.25 3.5 .5
-.95	+ .3 -	-.9	.4 .6 .8
21.1	+ .4 -	22.2	24.55 .7 29.1
-.25	+ 1.5 -	-.5	.7 .8 .4
-.4	+ .6 -	-.8	.85 .9 .7
21.55	+ .7 -	23.1	25.0 4.0 30.0
.7	+ .8 -	-.4	.15 .1 .1
.85	+ .9 -	-.7	.3 .2 .2
22.0	+ 2.0 -	24.0	.45 .3 .3
-.15	+ .1 -	-.3	25.6 .4 .4
-.3	+ .2 -	-.6	.75 4.5 .5
-.45	+ .3 -	-.9	.9 .6 .6

FULLERTOWN ROAD D E & F

Cuts			
26.05	4.7	29.65	7.1
.2	.8	.8	.2
.35	.9	.95	.3
26.5	5.0		
.65	.1		
.8	.2		
.95	.3		
27.1	.4		
.25	5.5		
.4	.6		
27.55	.7		
.7	.8		
.85	.9		
28.0	6.0		
.15	.1		
.3	.2		
.45	.3		
28.6	.4		
.75	6.5		
.9	.6		
29.05	.7		
.20	.8		
.35	.9		
29.5	7.0		

22-10
 18-36-30
 3-33-30
 10-30
 14-03-30



CURVE TABLES.

Published by KEUFFEL & ESSER CO.

HOW TO USE CURVE TABLES.

Table I. contains Tangents and External to a 1° curve. Tan. and Ext. to any other radius may be found nearly enough, by dividing the Tan. or Ext. opposite the given Central Angle by the given degree of curve.

To find Deg. of Curve, having the Central Angle and Tangent: Divide Tan. opposite the given Central Angle by the given Tangent.

To find Deg. of Curve, having the Central Angle and Tangent: Divide Ext. opposite the given Central Angle by the given External.

To find Nat. Tan. and Nat. Ex. Sec. for any angle by Table I.: Tan. or Ext. of twice the given angle divided by the radius of a 1° curve will be the Nat. Tan. or Nat. Ex. Sec.

EXAMPLE.

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

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

Tan. in Tab. I opp. 23° 20' = 1183.1
 1183.1 ÷ 10 = 118.31.

Correction for A. 23° 20' for a 10° Cur. = 0.16
 118.31 + 0.16 = 118.47 = corrected Tangent.

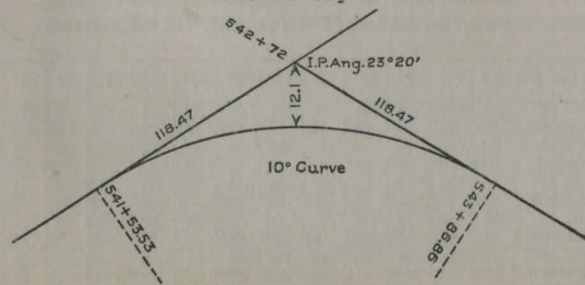
(If corrected Ext. is required find in same way)
 Ang. 23° 20' = 23.33° ÷ 10 = 2.3333 = L. C.

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

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

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

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



IP fd

17.0

955.5 ϕ

275
- 177

258

269.4

IP. ser

71

Bench Mark
DINES Coes Rd
Cleve. Reg. Surv.
Mon.

$$\Sigma = 1015.45$$

$$\begin{array}{r} 6.3 \\ 4.5 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 5.2 \\ 4.8 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 3.5 \\ 1.6 \\ \hline 1.9 \end{array}$$

$$\begin{array}{r} 3.5 \\ 13 \\ \hline 16.5 \end{array}$$

$$\begin{array}{r} 8.5 \\ 7.4 \\ \hline 15.9 \end{array}$$

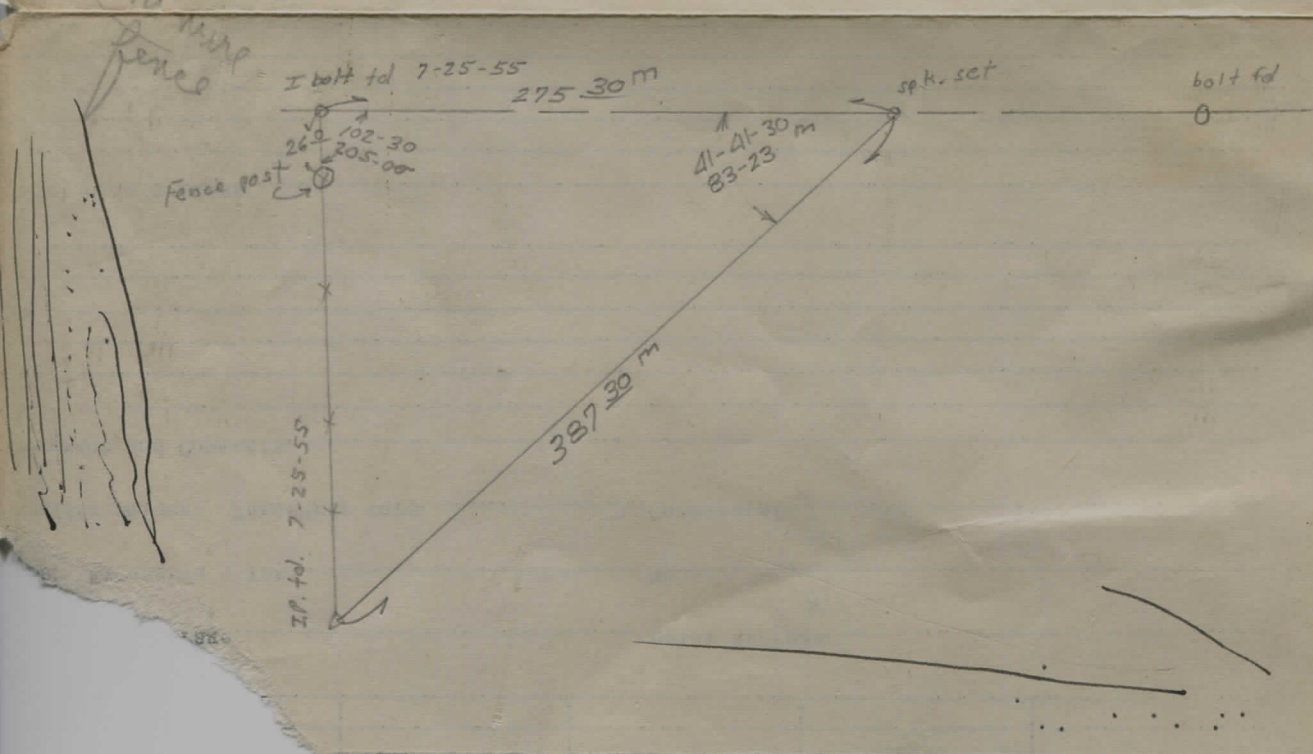
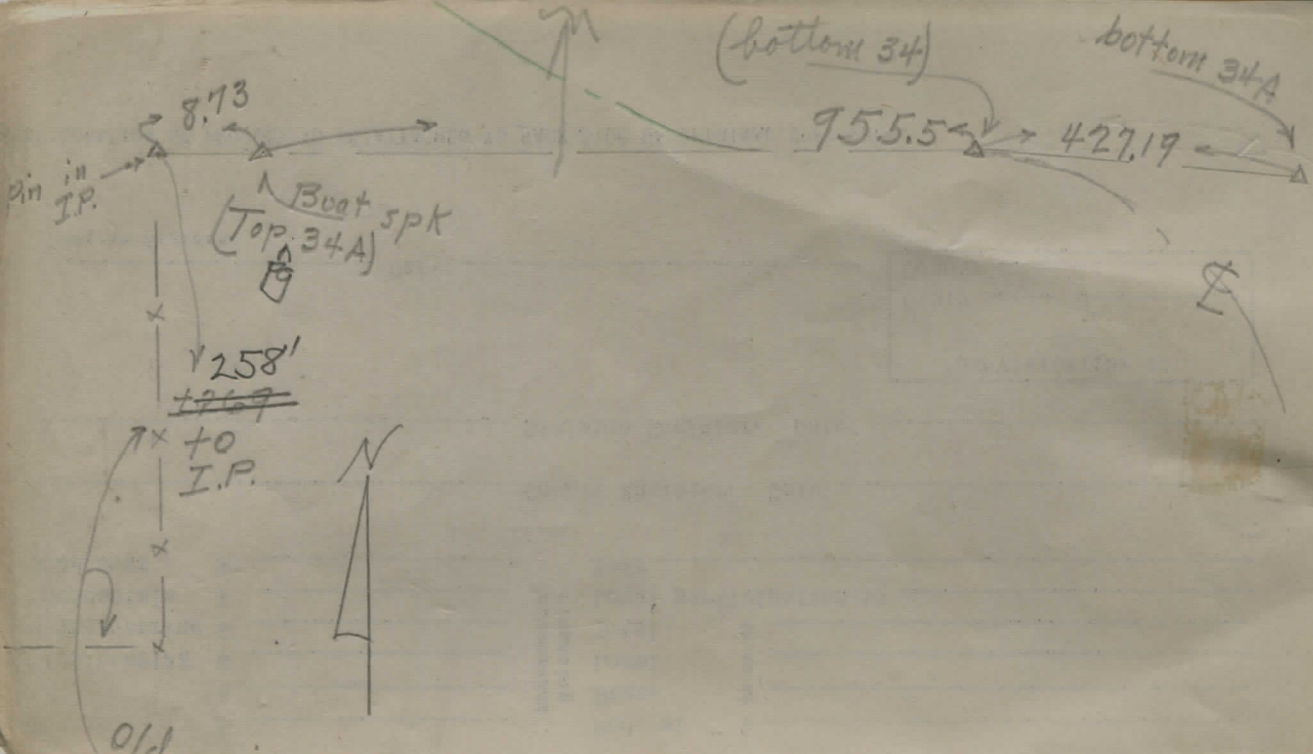
$$\begin{array}{r} 1.6 \\ 18.5 \\ \hline 20.1 \end{array}$$

$$\begin{array}{r} 10.7 \\ 5.1 \\ \hline 15.8 \end{array}$$

$$\begin{array}{r} 5.1 \\ 12.5 \\ \hline 17.6 \end{array}$$

$$\begin{array}{r} 4.4 \\ 16 \\ \hline 20.4 \end{array}$$

$$\begin{array}{r} 4.7 \\ 30 \\ \hline 34.7 \end{array}$$



7.67

3.5

T.P. 4.79

T.P.

93.6
88.6
27 5.00
27
230
216

1.18

8.73
14
27
41
75
41
34

98.66
9.54
89 x 12

14601.63
8.73
14392.90
8.8
8.7
6.5
2.8
12773.03
3.713203.19

1142.15
1030.75
111.20

95.00
89.55.05
544.95
7.2
3.5
3.7 = 30

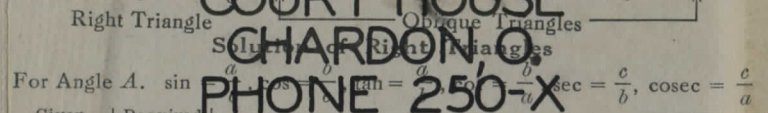
45.07
134.53

1.2
155.7
544.95
529.80
15.15

7.95
2.05
95.00
15.15
74484.85

PLEASE RETURN TO
GEAUGA COUNTY ENGINEER

COURT HOUSE
CHARDON, OH.
PHONE 250-X



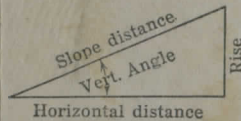
Solution of Right Triangles
For Angle A. $\sin A = \frac{a}{c}$, $\cos A = \frac{b}{c}$, $\tan A = \frac{a}{b}$, $\cot A = \frac{b}{a}$, $\sec A = \frac{c}{b}$, $\csc A = \frac{c}{a}$

Given	Required	Formulas
a, b	A, B, c	$\tan A = \frac{a}{b} = \cot B$, $c = \sqrt{a^2 + b^2} = a \sqrt{1 + \frac{b^2}{a^2}}$
a, c	A, B, b	$\sin A = \frac{a}{c} = \cos B$, $b = \sqrt{(c+a)(c-a)} = c \sqrt{1 - \frac{a^2}{c^2}}$
A, a	B, b, c	$B = 90^\circ - A$, $b = a \cot A$, $c = \frac{a}{\sin A}$
A, b	B, a, c	$B = 90^\circ - A$, $a = b \tan A$, $c = \frac{b}{\cos A}$
A, c	B, a, b	$B = 90^\circ - A$, $a = c \sin A$, $b = c \cos A$

Solution of Oblique Triangles

Given	Required	Formulas
A, B, a	b, c, C	$b = \frac{a \sin B}{\sin A}$, $C = 180^\circ - (A + B)$, $c = \frac{a \sin C}{\sin A}$
A, a, b	B, c, C	$\sin B = \frac{b \sin A}{a}$, $C = 180^\circ - (A + B)$, $c = \frac{a \sin C}{\sin A}$
a, b, C	A, B, c	$A + B = 180^\circ - C$, $\tan \frac{1}{2}(A - B) = \frac{(a - b) \tan \frac{1}{2}(A + B)}{a + b}$, $c = \frac{a \sin C}{\sin A}$
a, b, c	A, B, C	$s = \frac{a + b + c}{2}$, $\sin \frac{1}{2}A = \sqrt{\frac{(s - b)(s - c)}{bc}}$, $\sin \frac{1}{2}B = \sqrt{\frac{(s - a)(s - c)}{ac}}$, $C = 180^\circ - (A + B)$
a, b, c	Area	$s = \frac{a + b + c}{2}$, $\text{area} = \sqrt{s(s - a)(s - b)(s - c)}$
A, b, c	Area	$\text{area} = \frac{bc \sin A}{2}$
A, B, C, a	Area	$\text{area} = \frac{a^2 \sin B \sin C}{2 \sin A}$

REDUCTION TO HORIZONTAL



Horizontal distance = Slope distance multiplied by the cosine of the vertical angle. Thus: slope distance = 319.4 ft. Vert. angle = 5° 10'. From Table, Page IX, $\cos 5^\circ 10' = .9959$. Horizontal distance = $319.4 \times .9959 = 318.09$ ft. Horizontal distance also = Slope distance minus slope distance times (1 - cosine of vertical angle). With the same figures as in the preceding example, the following result is obtained. $\text{Cosine } 5^\circ 10' = .9959$. $1 - .9959 = .0041$. $319.4 \times .0041 = 1.31$. $319.4 - 1.31 = 318.09$ ft.

When the rise is known, the horizontal distance is approximately: — the slope distance less the square of the rise divided by twice the slope distance. Thus: rise = 14 ft. slope distance = 302.6 ft. Horizontal distance = $302.6 - \frac{14 \times 14}{2 \times 302.6} = 302.6 - 0.32 = 302.28$ ft.

