Burton town line to
Burton Village

79

DIETZGEN

TRADE MARK

ENGINEERS'
FIELD BOOK
No. 400

EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

Distances from Center of Roadway for Cross-Sectioning
Roadway 16 feet wide. Side Slopes 1 on 1
For Single Track Embankment

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	0
1	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	1
2	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	2
3	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	3
4	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	4
5	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	5
6	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	6
7	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	7
8	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	8
9	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	9
10	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	10
11	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	11
12	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	12
13	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	13
14	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	14
15	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	15
16	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	16
17	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	17
18	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	18
19	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	19
20	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	20
21	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	21
22	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	22
23	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	23
24	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	24
25	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	25
26	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	26
27	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	27
28	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	28
29	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	29
30	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	30
31	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	31
32	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	32
33	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	33
34	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	34
35	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	35
36	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	36
37	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	37
38	46.0	46.1	46.2	46.3	46.4	46.5	46.6	46.7	46.8	46.9	38
39	47.0	47.1	47.2	47.3	47.4	47.5	47.6	47.7	47.8	47.9	39
40	48.0	48.1	48.2	48.3	48.4	48.5	48.6	48.7	48.8	48.9	40

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 30.6. For same slopes but other widths of roadbed, correct above figures by one-half difference in width of roadbed; thus in example above, for 20 ft. roadbed distance will be 30.6+(20—16)÷2 or 2 ft. added to 30.6 =32.6. For slopes of 1 on 1½ see inside of back cover.

Burton Town Line to Burton Vill
Hiram Rapids Rd #1 Sec E, F, G, H & I Pg. 2.

S.W. Burton Rd (CR No 23)
Georgia Rd

T.R. 124 GEORGIA RD (BURTON) Pg 28 & 49
DATA ON BRIDGE AT W. BRANCH CUYAHOGA & CR #1 Pg. 35

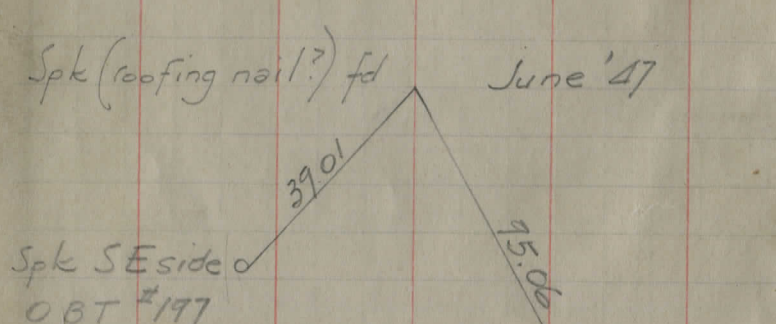
White Road Random Line Pg 46

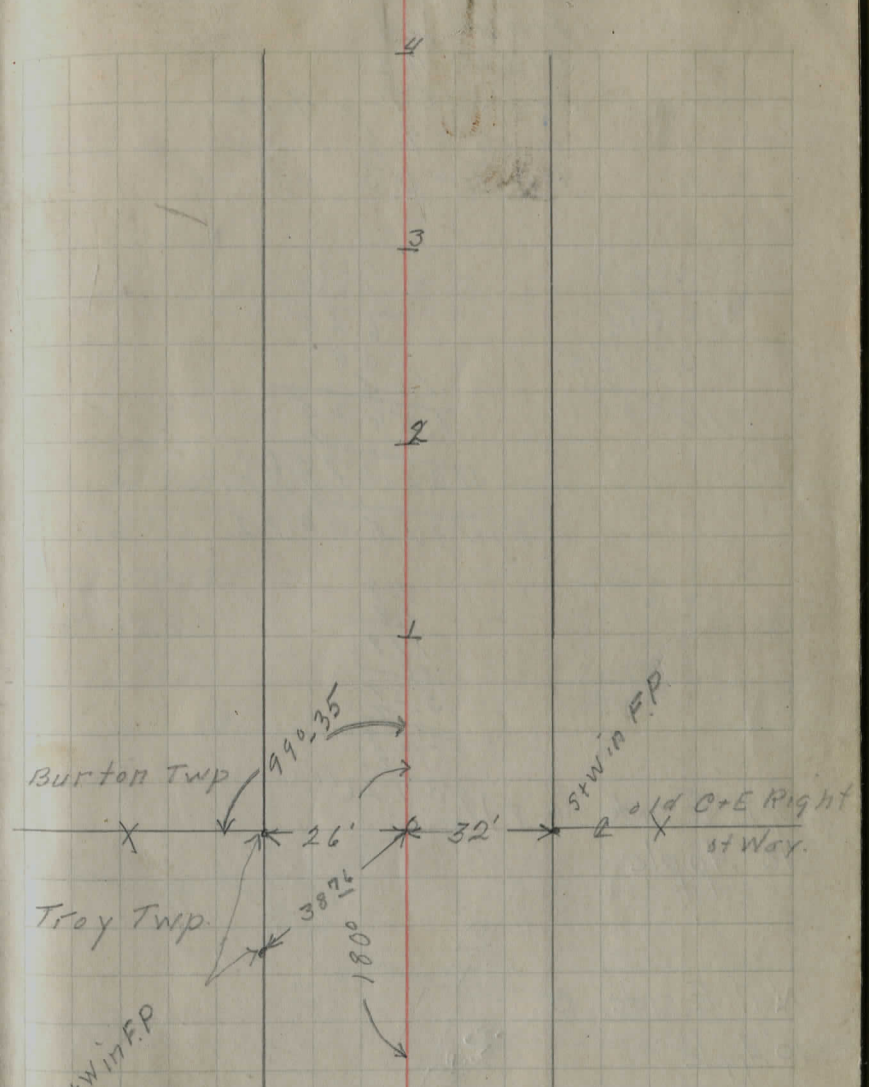
Chipmonk Lane Pg 50
TR 124 GEORGIA RD (MISC.) Pg 52/A80

79

All Stakes Set 25' Rt

HIRAM RAPIDS RD.





All stks set ± 12' 6-47

Sta 4 = .03
Sta 5 = 4.2
Sta 5+56.9 = 11.02
" 6 = 4.2
" 7 = 0.3

1.25
25
125
50
.0425
8 / .4375 (5
4
8 / 1.7500 (

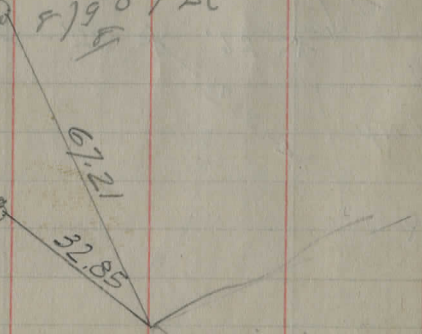
1.25
1.25
625
250
125
1.5625
7
10.9375 (
4
8 / 437500 (2

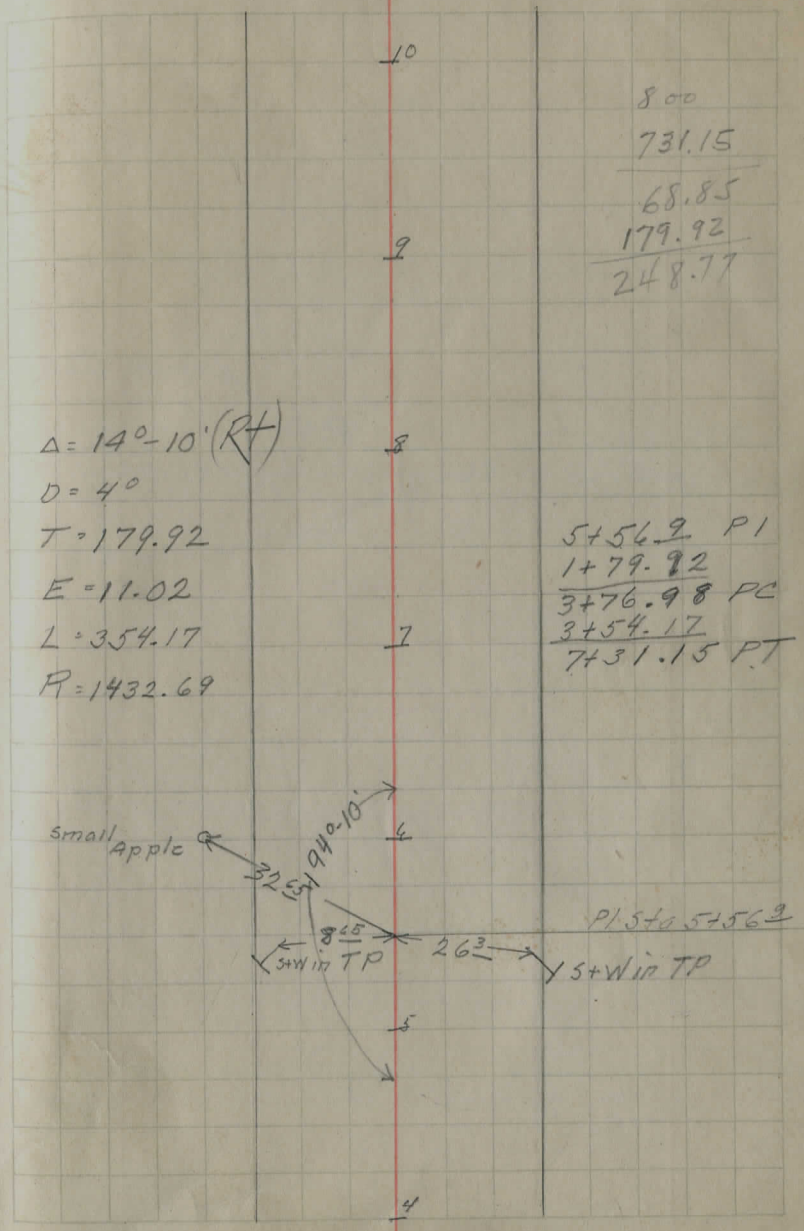
1.8
1.8
144
18
3.24
7
22.68
4
8 / 90720 (1

Spk E side @ 8
10" Apple

Nail E side @
10" Apple

Spk fd & replaced with I.P.
(in W. berm)



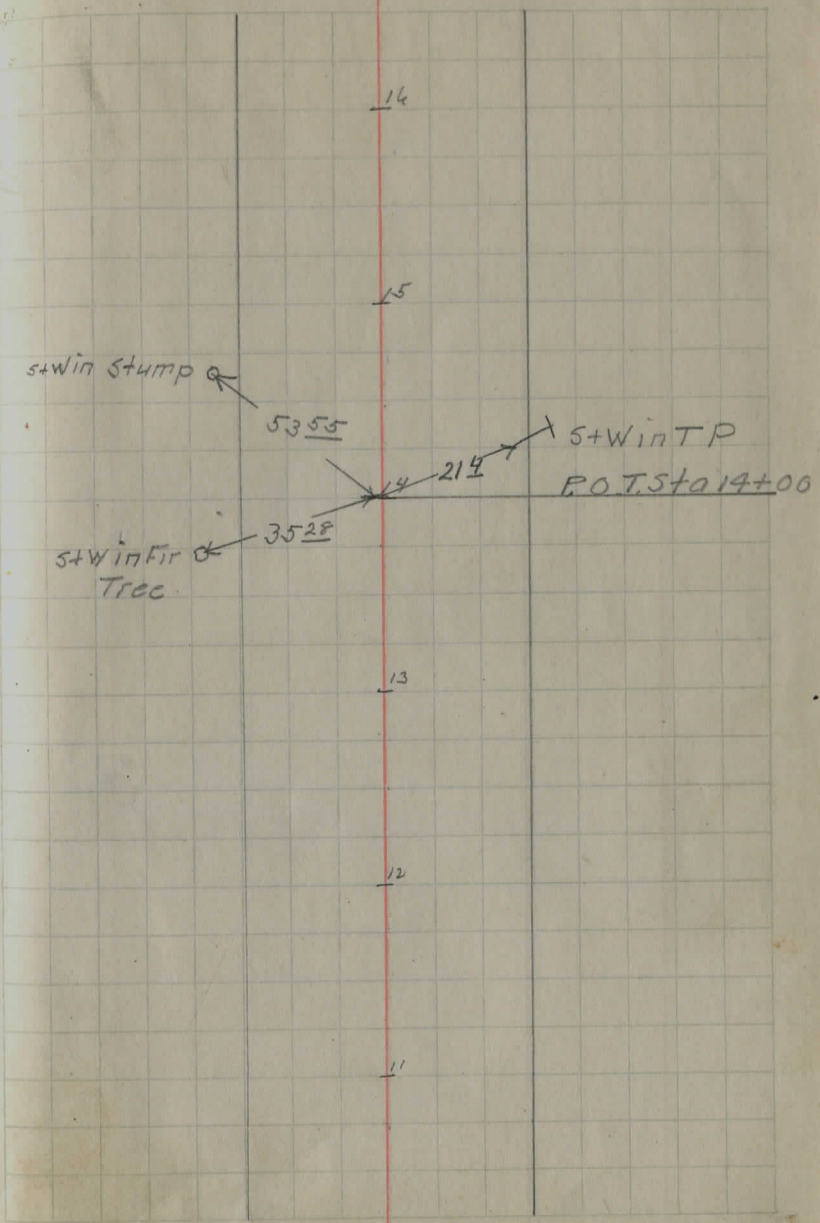


800
731.15
68.85
179.92
248.77

Δ = 14°-10' (Rt)
D = 4°
T = 179.92
E = 11.02
L = 354.17
R = 1432.69

5+56.9 PI
1+79.92
3+76.98 PC
3+54.17
7+31.15 PT

Small Apple
94°-10'
32.57
8.45
26.3
5+W in TP
5+W in TP
PI Sta 5+56.9


14
15
5+Win Stump
53 55
5+Win TP
21 4
P.O.T. Sta 14+00
35 28
5+Win Fir Tree
13
12
11

22

21

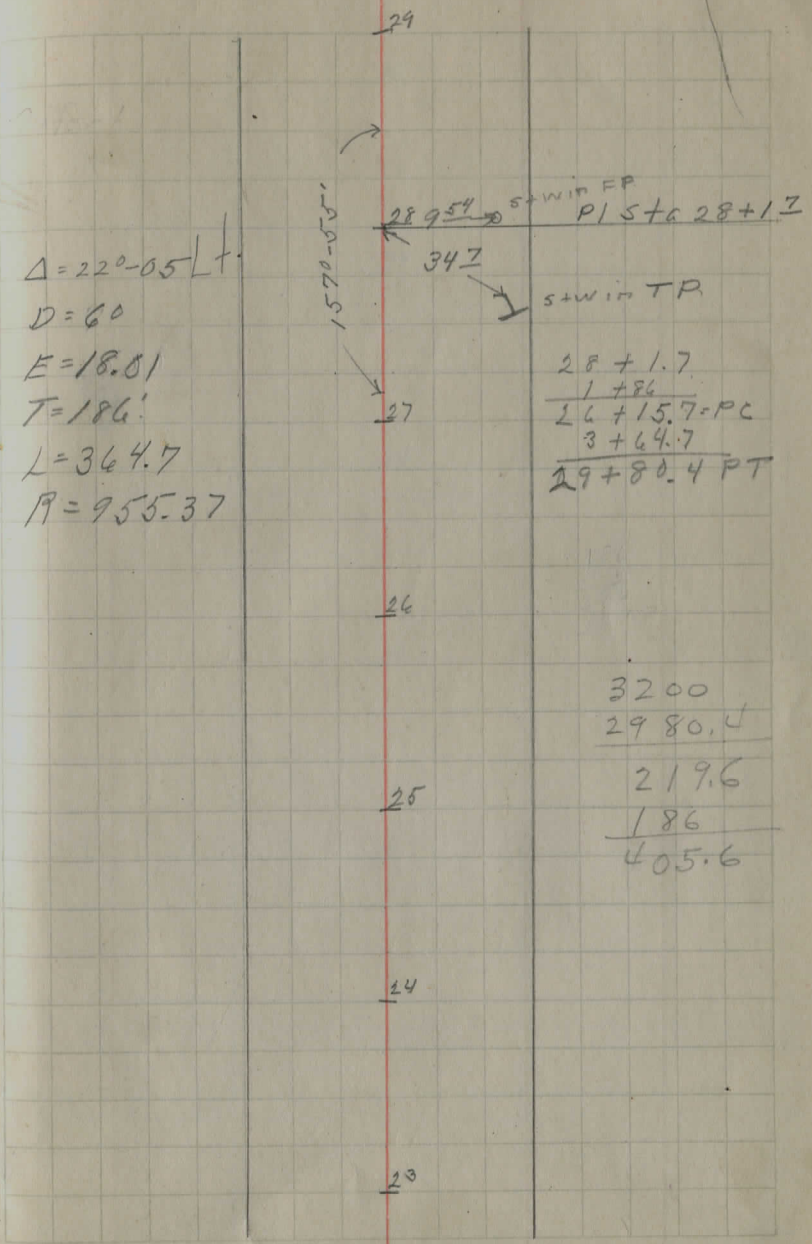
20

19

18

17

Offset on 100 cord = 5'



35

34

33

32

31

30

29

41

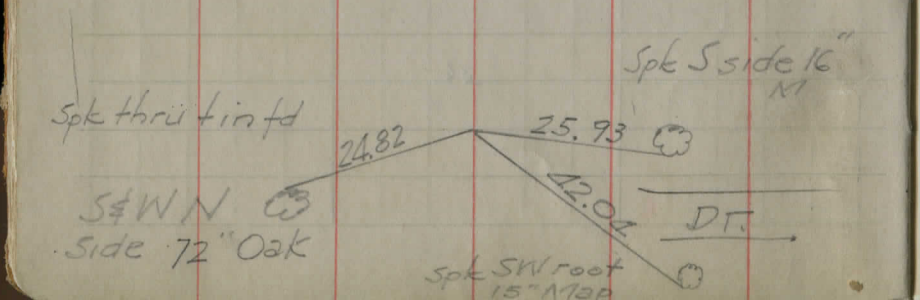
40

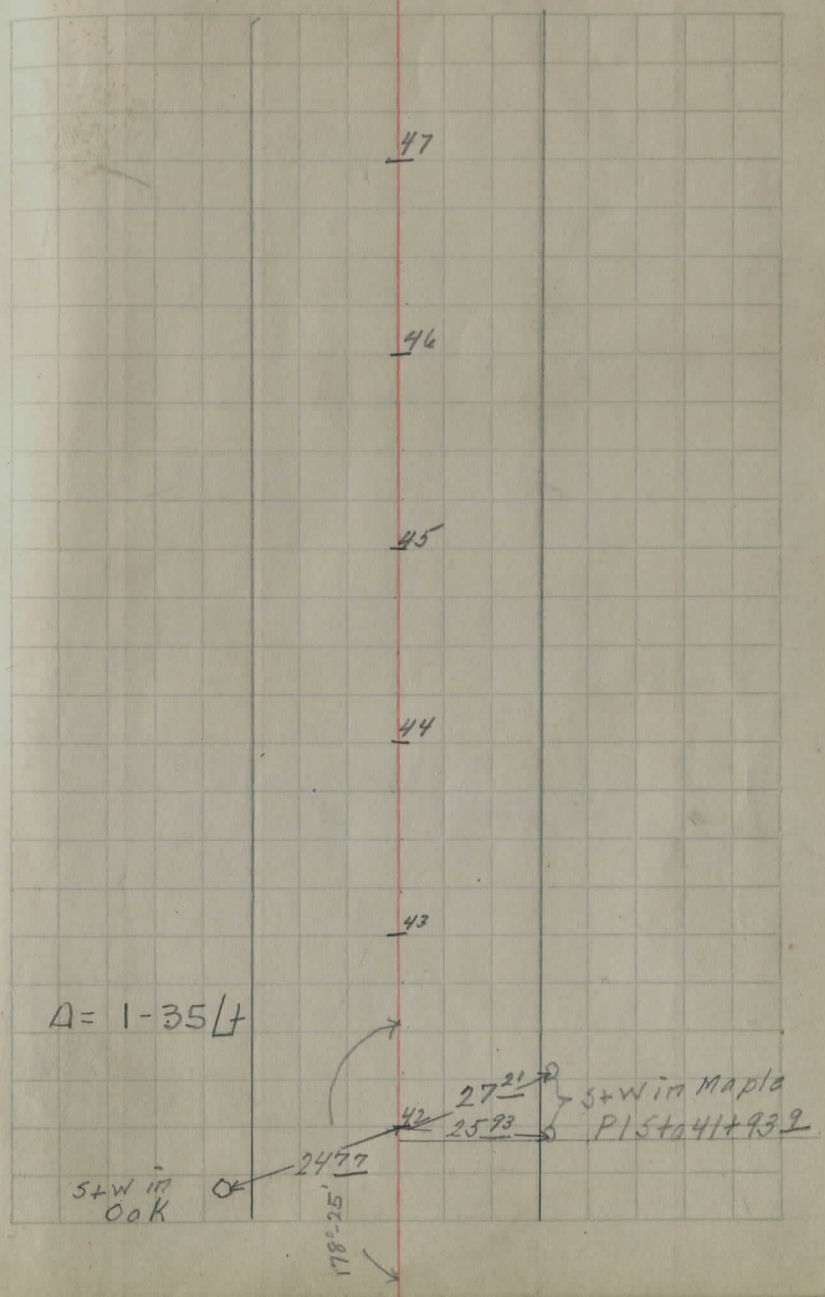
39

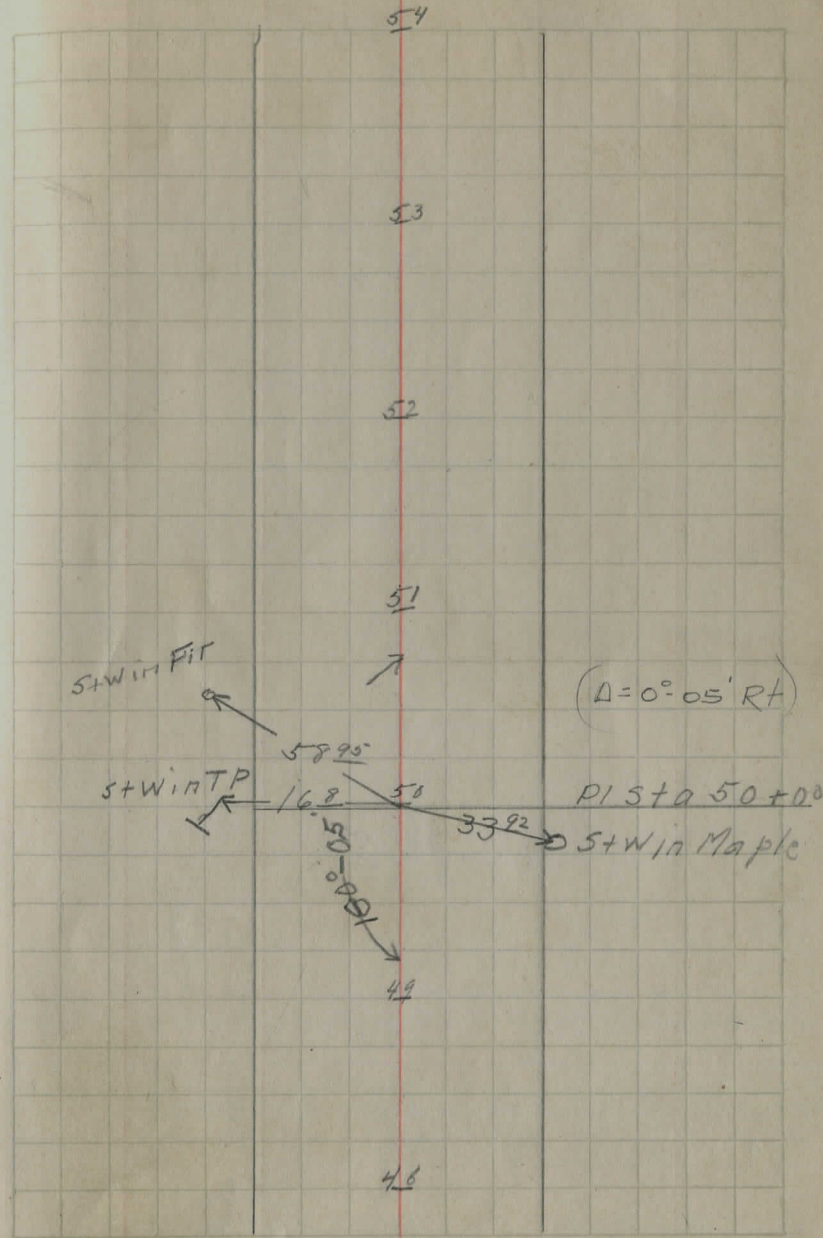
38

37

36


Spk thru tin fd
24.82
25.93
Spk S side 16"
N1
S&W N
Side 72" Oak
42.0
DT
Spk SW root
15" Maple


47
46
45
44
43
A = 1-35 Lt
27
25.93
S+W in Maple
Pl Sta 41+93.9
24.77
S+W in
Oak
178°-25'


54
53
52
51
50
49
46
St W in Fir
58 95
St W in TP
16.8
Pl Sta 50+00
33 92
St W in Maple
(Δ=0°-05' Rt)
0°-05'

60

59

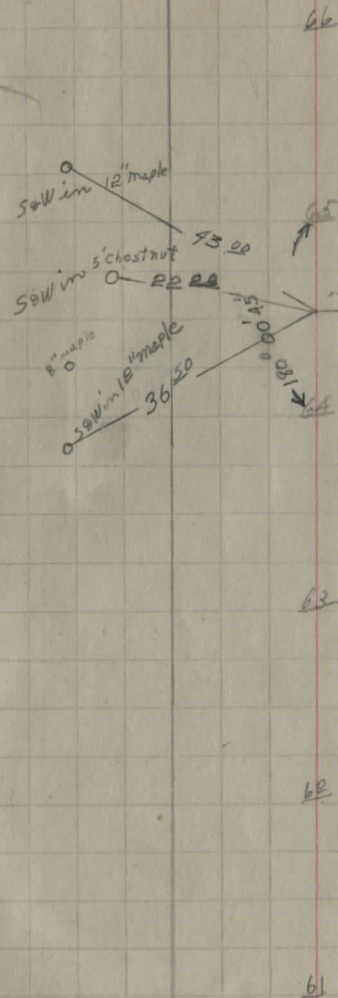
58

57

56

55

54



PI Sta 64+52.17

$\Delta = 0°\text{-}0'\text{-}45''$ Rt

72

71

70

69

68

67

11) 132.5 (11.1
11
13
11
29
22
77

Δ = 24° - 25' Rt
E = 11.1
T = 112.7
D = 11°
L = 221.97
Eq = 3.4

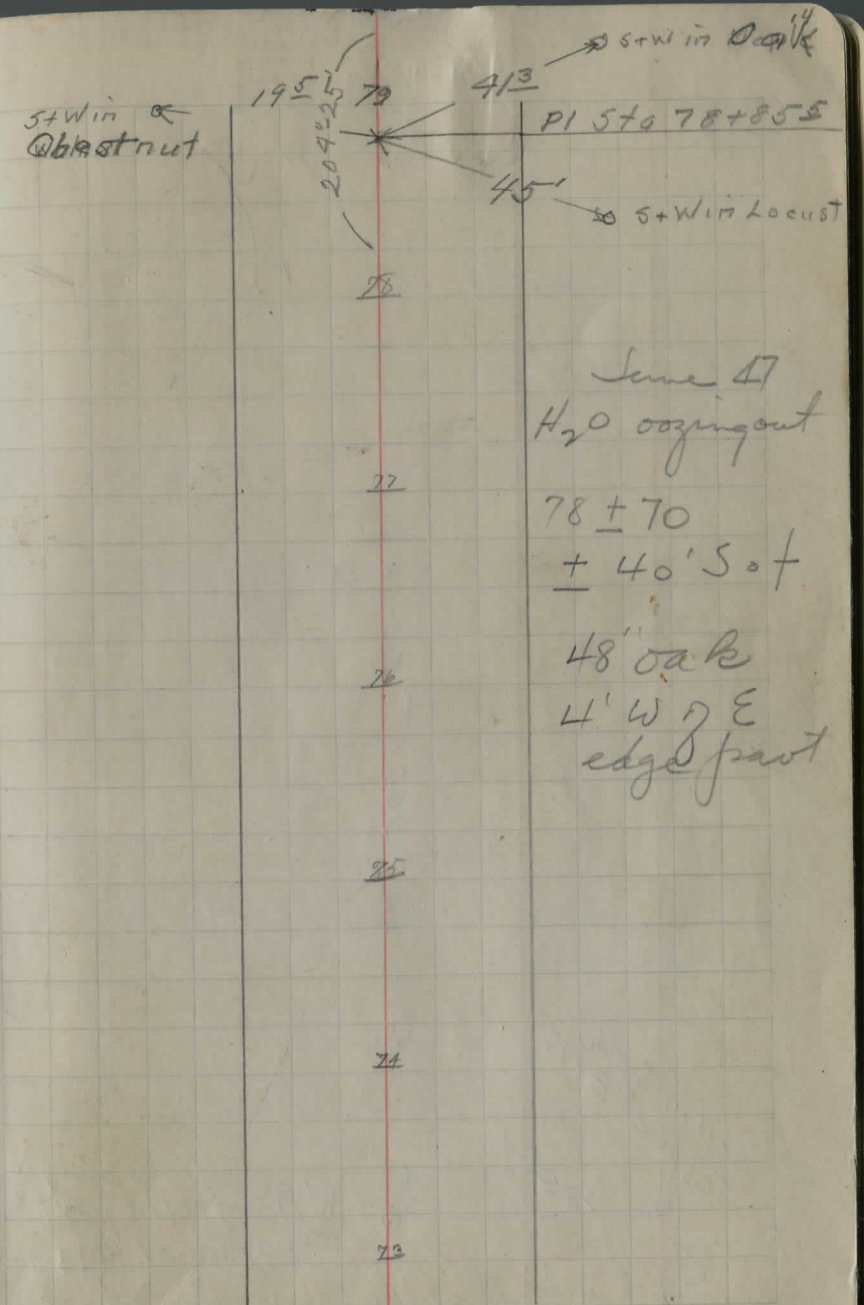
11) 244167 (22197
22
24
22
21
11
104
99
57

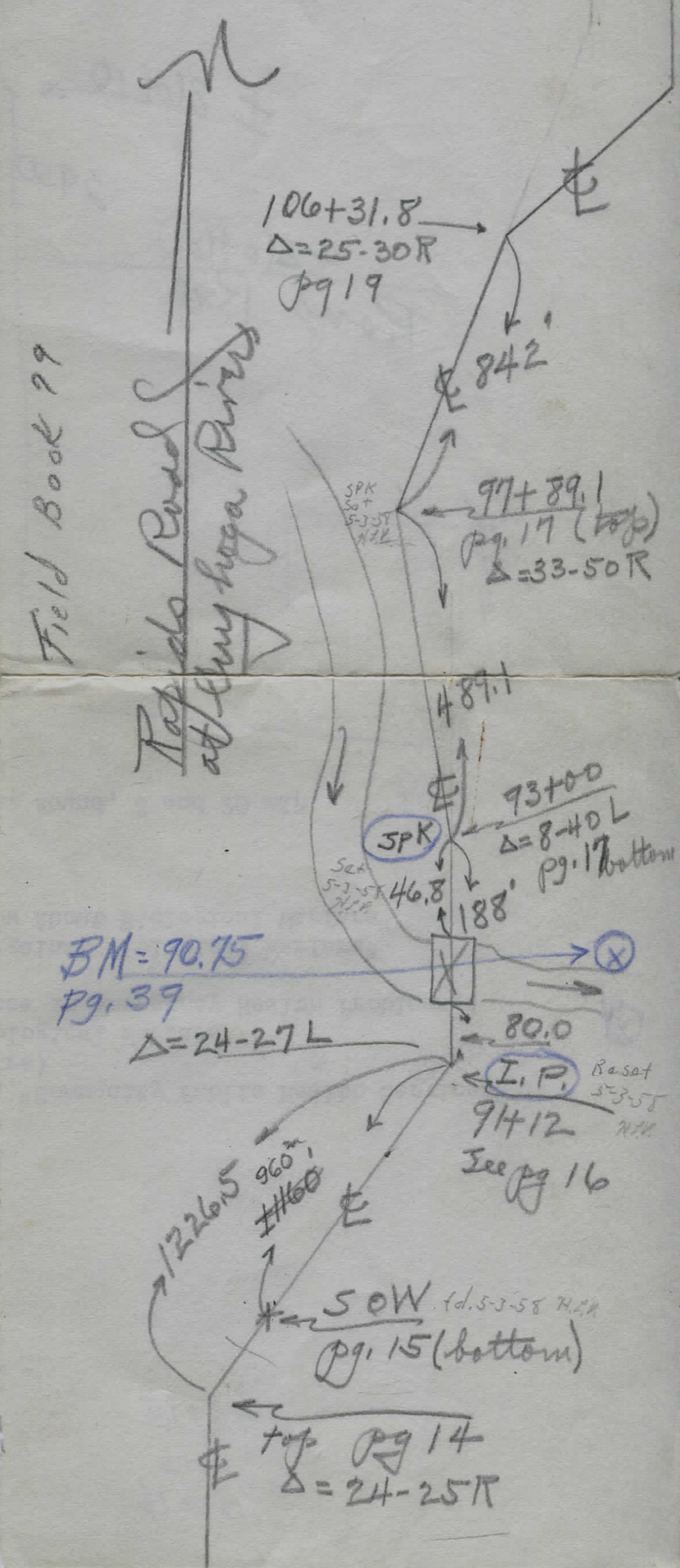
112.7
2
225.4
222.0
3.4 Eq.

77

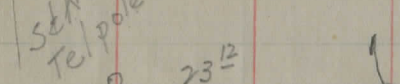
78+85.5
1+12.7
77+72.8 PC
2+21.97
79+94.77 PT

8000
7944.77
05.23
112.7
117.93




Field Book 79
Rapids Road at Cuyahoga River
106+31.8
Δ=25-30R
pg 19
842'
SPK Set 5-3-58 HLK
97+89.1
pg. 17 (top)
Δ=33-50R
489.1
93+00
Δ=8-40L
pg. 17 bottom
SPK
Set 5-3-58 HLK
46.8
188'
BM = 90.75
pg. 39
80.0
Δ=24-27L
I.P.
Reset 5-3-58 HLK
91+12
See pg 16
1226.5
960'
#160
SOW fd. 5-3-58 HLK
pg. 15 (bottom)
top pg 14
Δ=24-25R

fd to ba 960.0' in 5-3-58



C 2nd pole N of 40" Oak E side of curve ± 79+0

85

June 17

84

84+20 Spring in West berm

83

82

81

80

79

$\Delta = 24° 27' Lt \quad R = 358.10$

$D = 16°$

$E = 8.4$

$T = 77.7$

$L = 153.2$

$Eq = 2.2$

88
2.2
85.8

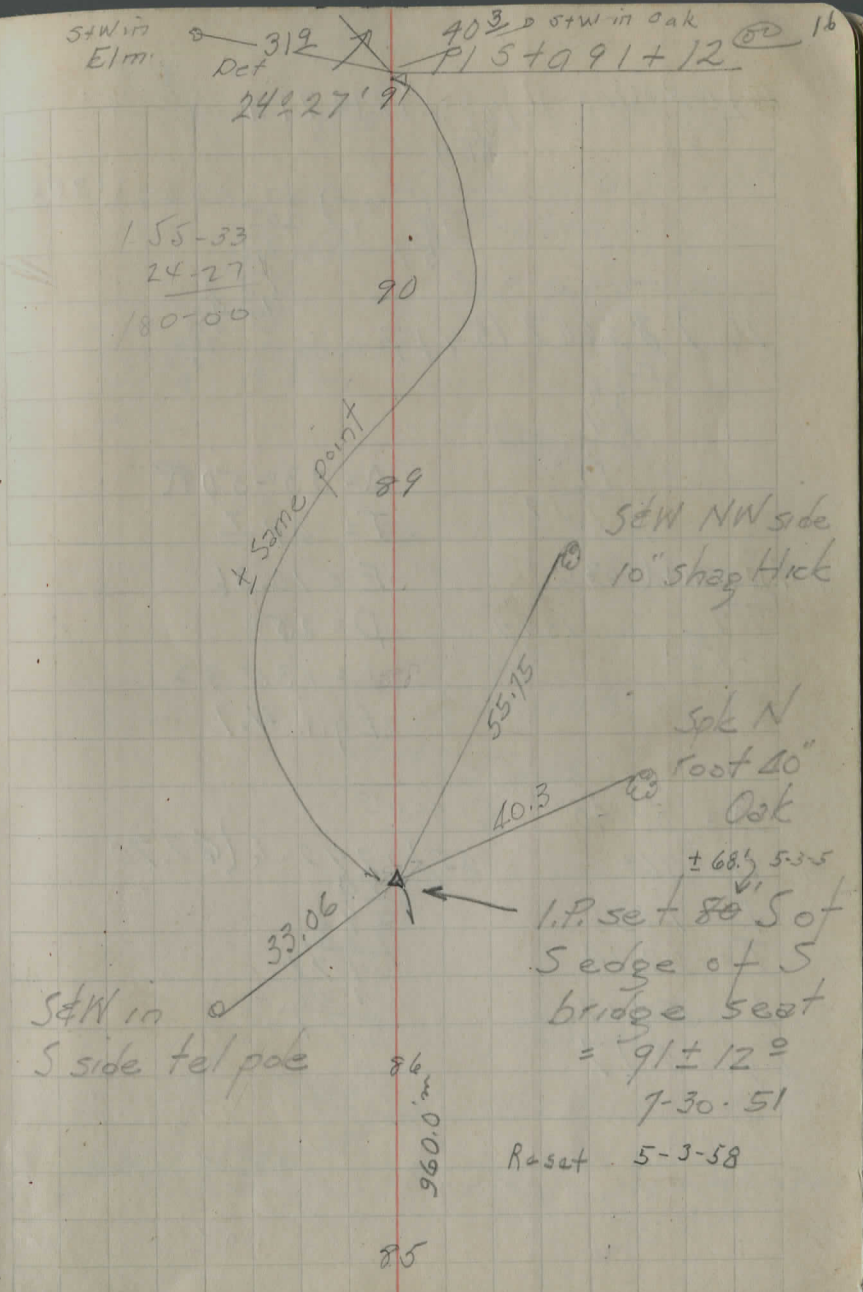
81) 1244 (14
81
434

16) 24.50 (1532
16
85
80
52
48

14) 1244.00 (77.7
112
124 155.4
112 153.2
120 2.2

14) 133.5 (8.4
128
5.5

91+12
77.7
90+34 3
1 53.2
91+87.5



16) 14.43003 (.43
16) 434.17(27.14

25) 33.8333(1353

16) 8.6667(54.17

25) 25.91(10.36

139.4
135.3
4.1

Δ = 33°-50 R
T = 69.7
E = 10.36
D = 25°
L = 135.32
Equ. 4.1

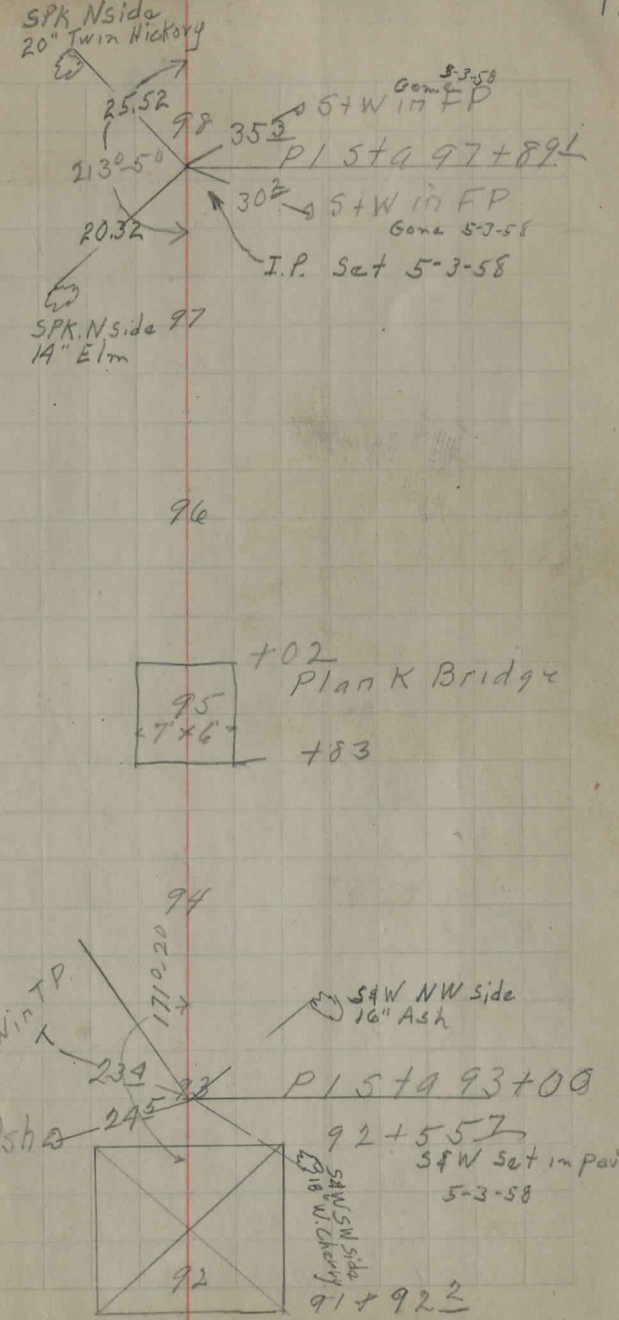
Δ = 8°-40
D = 16°
E = 1.03
T = 27.14
L = 54.17
Equ: 0.17

E = 358.10

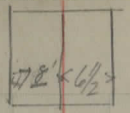
25) 1742.6(69.70

9300
27.14
72.86

9755.7
92.2
63.5



100 00
9789.1
210.9
4.1
215



old Wood Bridge
No good.

109

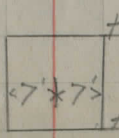
103

102

101

100

99



Wood Floor
Steel Bridge

162.06
159.38
2.68

16)25.5 (159.38
16
95
80
150
144
60
48
120

16)1296.5 (81.03
128
16
16
5

16)144.85 (9.05
144
.85

Δ = 25°-30
D = 16°
E = 9.05
T = 81.03
L = 159.38
Equ 2.68

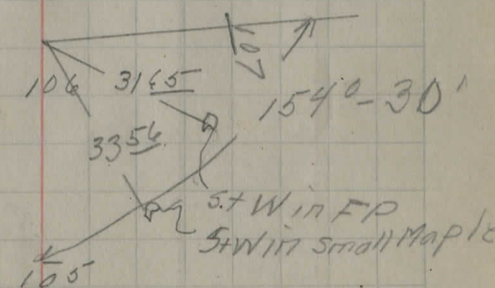
110

10800
10631.8
168.2
2.68
170.9

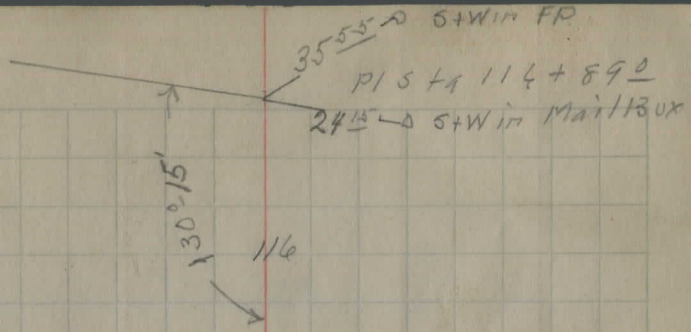
109

108

PI Sta 106+31.8
Use 75' Rad
and Tangents on
out side



Δ 49°-45' Use 100' Radius
T= in going around
E= 10.54 Curve and
D= 58° Widen 2'
L=
Equ=



123

122

121

120

119

118

117

131

130

129

128

127

126

125

124

139

138

137

136

135

134

133

132

10/16/45 Hiram Rapids Rd ±2000 ft
Sth of Hotchkiss Rd.

± location of CEI 572869 X
on W. side Hiram Rapids Rd
± Sta 127+00

= ± 1000 ft ← 116+89 north of ℄ in Rd

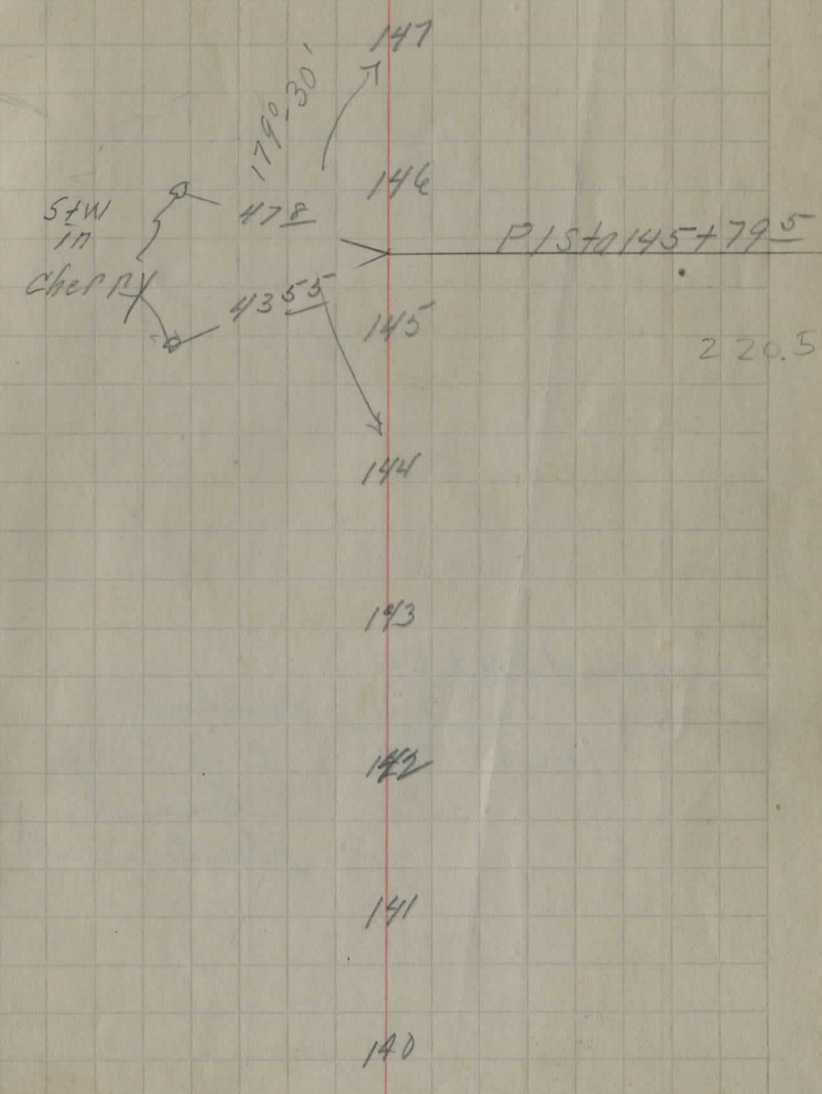
= ± 600 to 700 ft sth of City of Akron's
N. prop line V186 p18

Low Depression = ±200 N Eo here
= ± 1.7 ft lower than Rd ℄

Ground elev. ± 150 ft W of Rd ℄
= 5.1 below ℄ Elev.
= natural drainage flow

6.5
4.8
1.7

10.1
4.8
5.3



150 + 80
6 20 sealed
144 + 60 = ± S Corp line Burton Vill

155

154

153

152

151

+80 a/2/2104. ℄ Hotchkiss Rd

150

149

146

163

162

180°-25'

161

St Wm Apple

22'

PI Sta 160 + 14 ^{73}

160

18'

St W in F.P.

159

158

+04 [illegible] & Continue

157

156

11.75
11.72
53
26

11) 11.43 (1.04
11
4

347.17
358.81
8.36
4.18
358.81
11) 342.99 (33.9
33
32
22
109
99
109

$\Delta = 7° - 15'$

$D = 11°$

$E = 1.04$

$T = 33'$

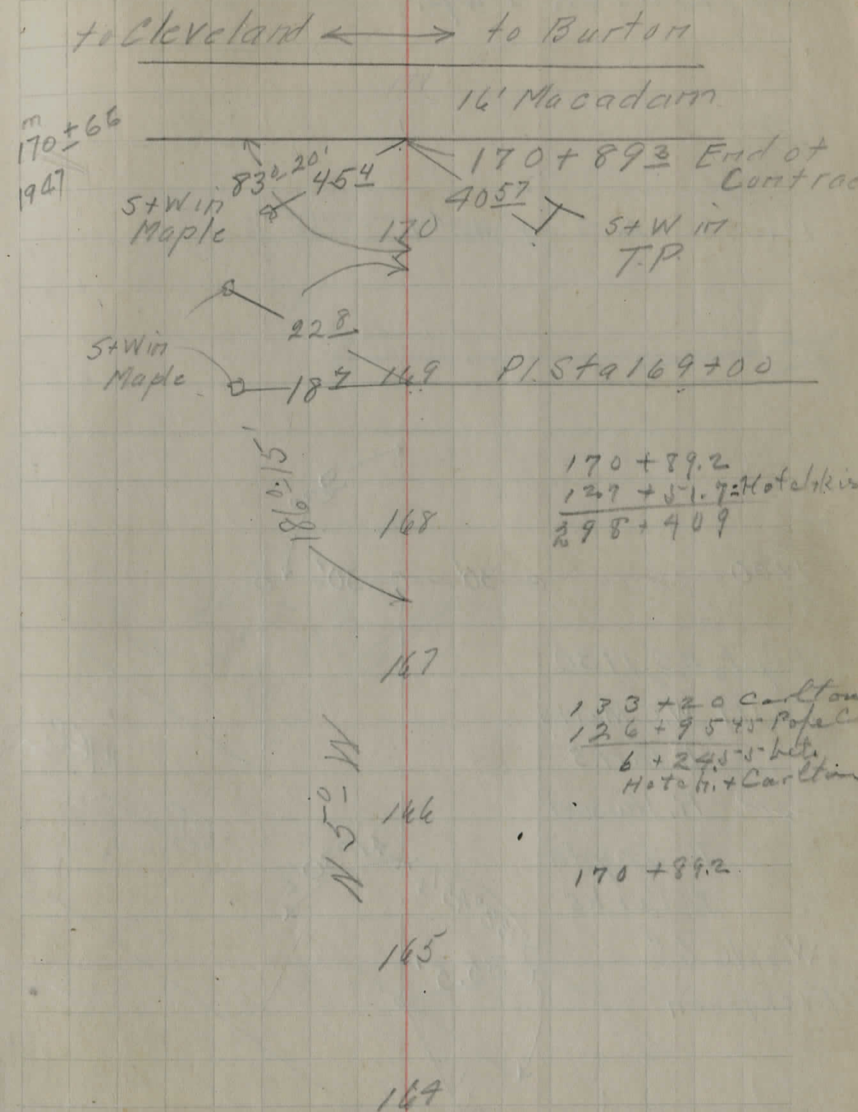
$L = 66'$

Equ OC

11) 7.25 (.66
66
65

170 + 89.2
20 + 09.55
150 + 79.65 Hotchkiss Rd. int. by McCarey. Cefferaub.

5280
17089.2 (3.24
15840 38
12492 2.86
10560
19320



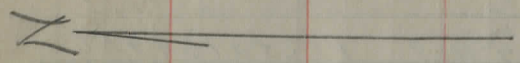
170 + 89.2
127 + 51.7 = Hotchkiss Rd.
298 + 40.9

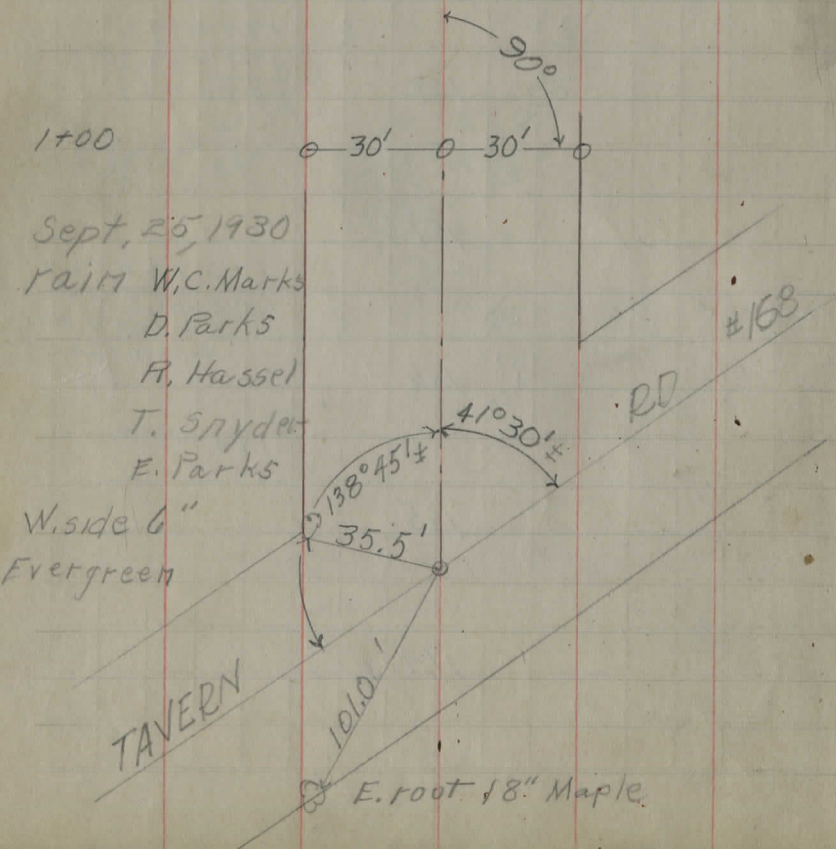
133 + 20 Carlton
126 + 95.45 Pope Cr.
6 + 24.55 bet. Hotchkiss + Carlton

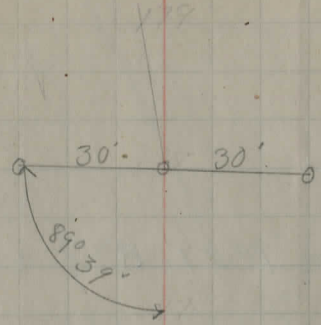
170 + 89.2

GEORGIA ROAD
Burton Twp.

10+55.8 Δ = ~~0° 42' L~~ 0° 0.0'







Note: new lots & 1964 Data see Pg. 48

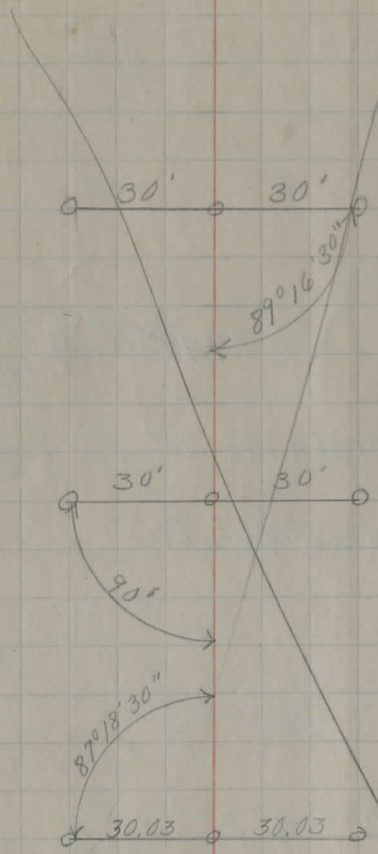
35+00 $\Delta = 1^\circ 27' R$

31+30 $\Delta = 0^\circ 00'$

stopped Sept. 26. 1930
showers 75°

D. Parks
A. Hassel
T. Snyder
E. Parks

14+26.95 $\Delta = 5^\circ 23' L$



Stopped Oct. 3, 1930 D. Parks
R. Hassel
T. Snyder

40+47

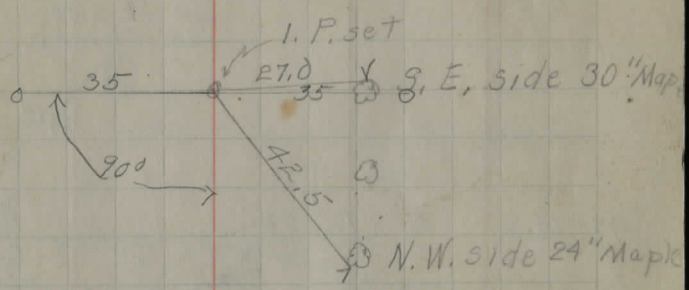
Stopped Sept. 27, 1930 D. Parks
R. Hassel
T. Snyder

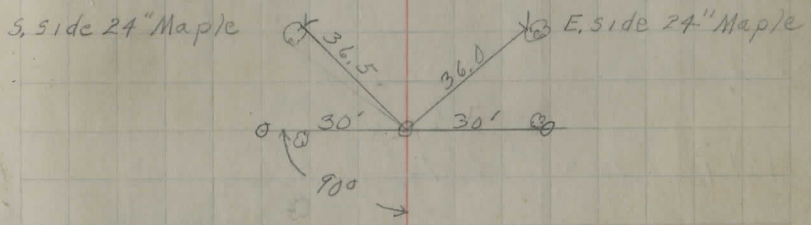
Cold. West Wind 70°

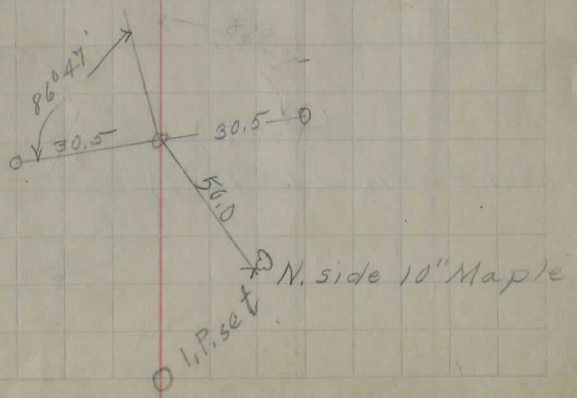
31+31.05 Δ = 1°26' R

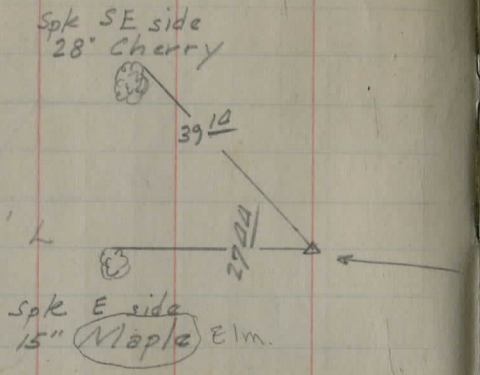
14+80 Δ = 6°26' L

10+55.8 Δ = 0°00'





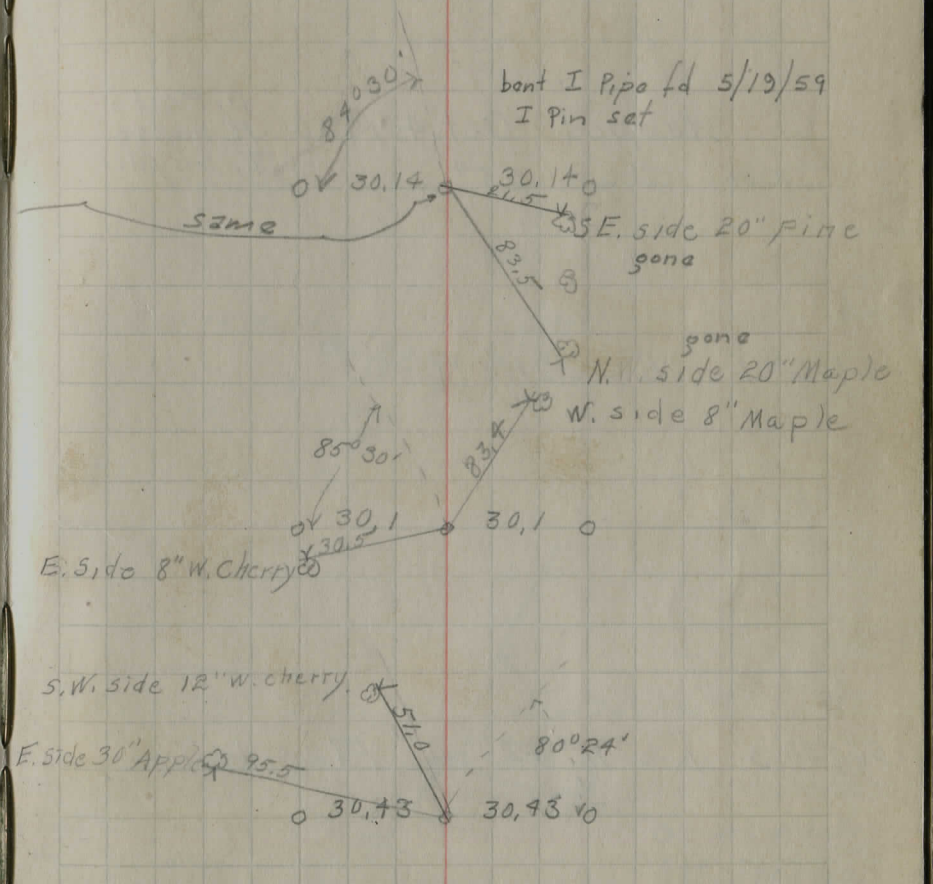




49+74.2 Δ = 11°00' L

45+64.1 Δ = 9°00' L

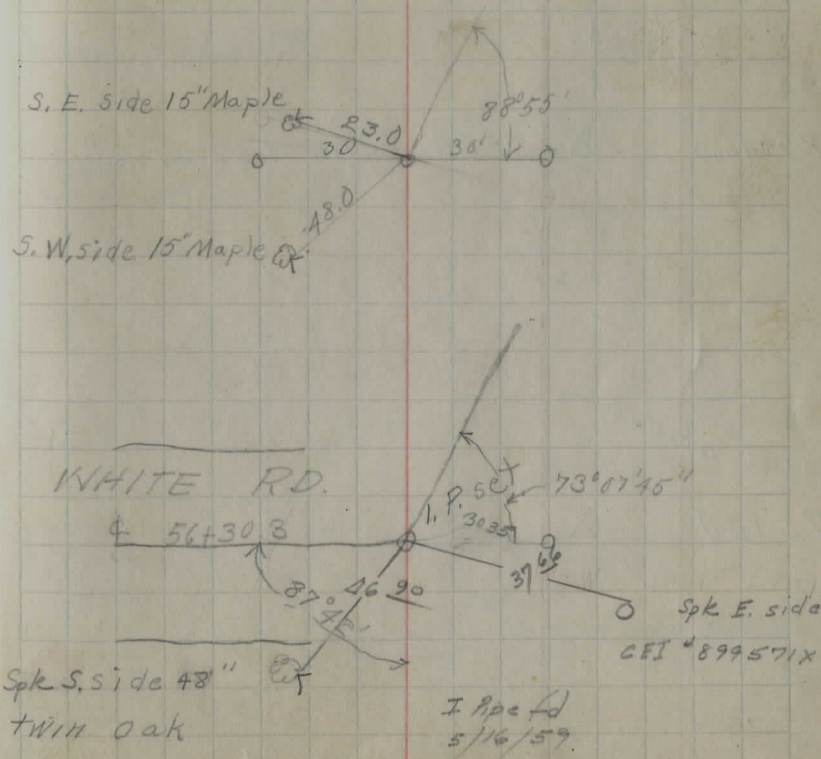
43+10.8 Δ = 19°12' R



Stopped Oct. 4, 1930 D. Parks
R. Hassel
T. Snyder
cool clear 65°

63+63.1 Δ = 2° 10' R

56+30.3 Δ = 16° 52' 30" R Side Rd. ℄



83+36 ± 12/22/64

83+45.3 Δ = 0°00' end of Project.

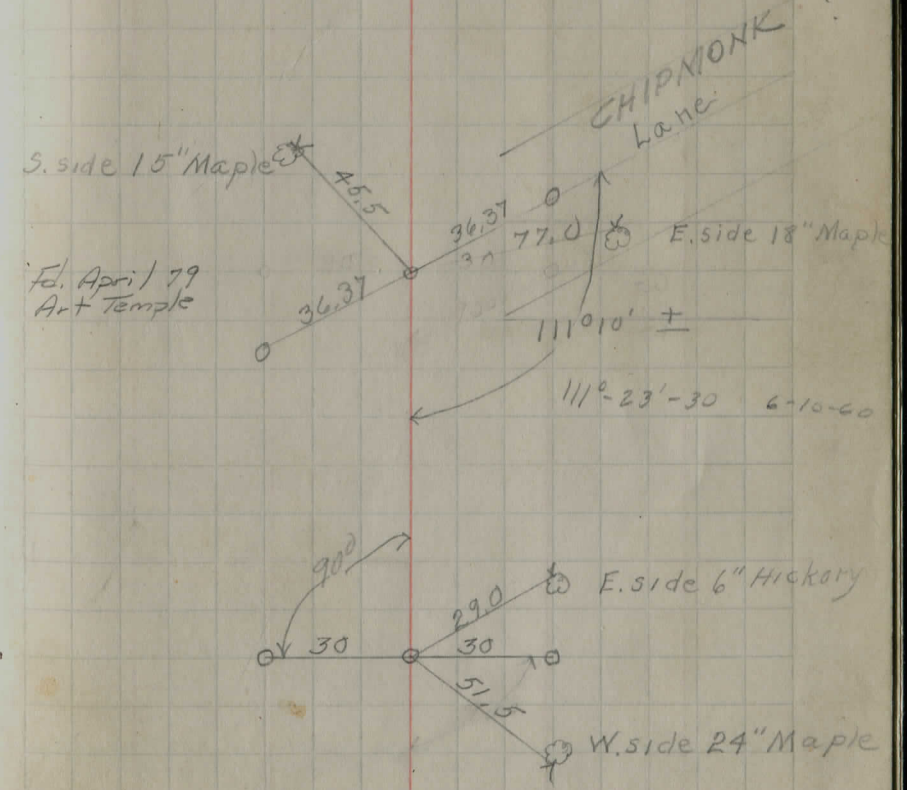
71+91 ± 12/22/64

72+00 Δ = 0°00'

Oct. 10, 1930

Cloudy

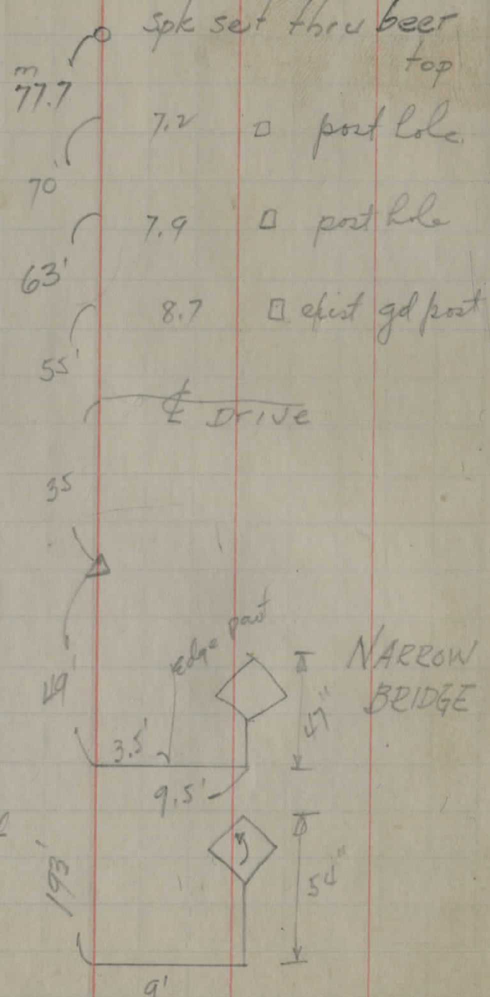
D. Parks
R. Hassel
T. Snyder



7-30-51
Pom
Ed B
Art T

West Branch Cuyahga River
Bridge & Rapids Rd

91+87.5



PI 91±12

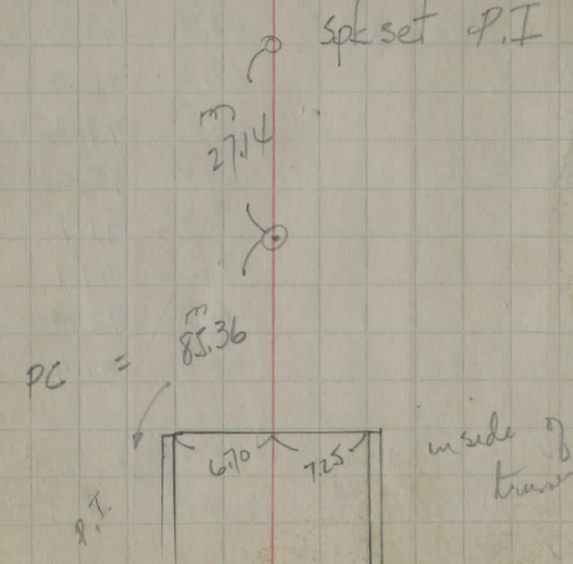
90+63

10' Bit. Mac. pav't
4' berms

87+0 with eye at 4-6
can see top 2'' "Narrow bridge" sign

88+0 can read both words of
Narrow Bridge sign at 4'-6"
up

80±35 on ℄ can see) sign



BM	7.16	107.16		100.00
T.P	I.P. of PI		11.13	96.03
91			10.26	96.90
90			3.7	103.5
+50			1.8	105.4
89			1.0	106.2
88			0.3	106.9
T.P.	8.5 v	115.4	0.47	106.69
87			7.3	107.9
86			6.3	108.9
85			7.6	110.6
84			1.1	114.1
T.P	v.63	98.66		96.03
91+87.5	P.T.		5.0	93.7
H_2O top			14.7	84.0
FL ±			17.3	81.4
92 +56			5.5	93.2
92+72.8	PC		6.2	92.5
93+0			7.0	91.7
94			7.6	91.1
95			6.3	92.4
96			6.8	91.9

94+42 Narrow Bridge sign
West side road
± 10' off ℄

Spk SE side 1st tel pole S
of Bridge

Levels Rocky Rd in
vicinity of Cuyahoga River
7-30-51

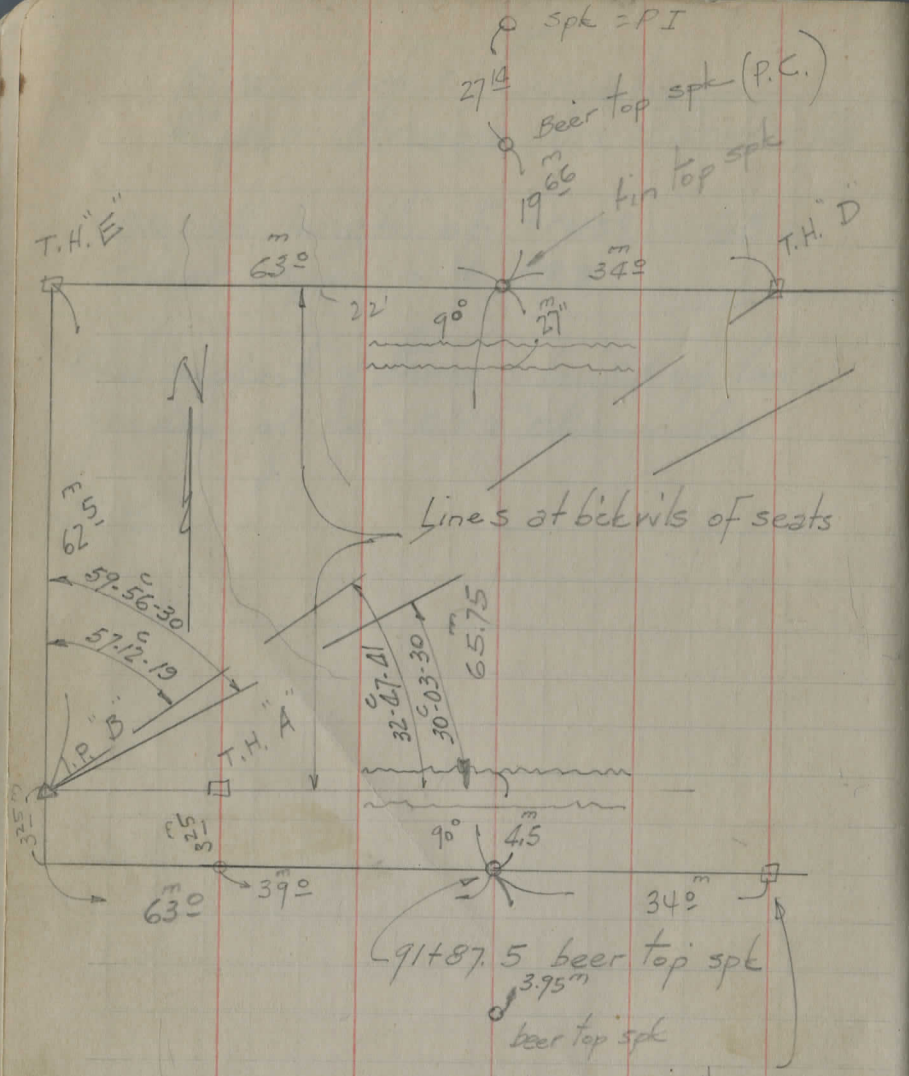
Variety Iron Works
Cleve O

Misc. infor Cuyahoga River Bridge on Rapids Rd

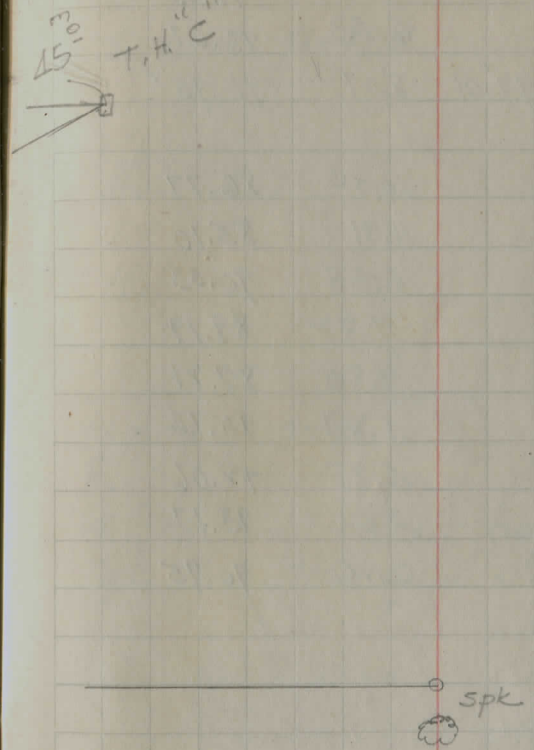
Over all length of truss = 63.0
Clear span = ± 59.3

End support of truss = built up bol girder of 2 - 6" x 2" channels

S.E.



Cuyahoga River Bridge
Rapids Rd
8-8-51
Pom
Art



BM	0.00	100.00		100.00
			7.87	92.13
			8.07	91.93
			6.33	93.67
T.P.	5.08	97.01 ✓	8.07	91.93 ✓
			10.24	86.77
Temple Pom ↑ rod			11.91	85.10
			6.68	90.33
			7.82 ✓	89.19
			9.80	87.21
			4.87	92.14
			4.95	92.06
			3.84	93.17
BM set			6.76	90.75

Spk SE side 1st tel. pole S of bridge
W end S bridge seat
E " " " "
℄ pavt 91+87.5

Hub A
~~T.P.~~ B
Hub C
D
E
W end N seat
E " " "
℄ rd on line of backwall seat
Spk NW side quad. elm N bank of Cuyhog
± 40' E of bridge

8-20-51 Ch 01

	∠	H	ES	ELV
BM,	8.01	98.76		
Hub C		93.00	9.61	89.15
	∠	Sta		
	00°	115'	8.6	84.4
	25-57	116'	5.0	88.0
	345-05	117'	6.2	86.8
	339-01	125'	9.1	83.9
	309-01	83'	3.2	89.8
	309-01	96'	6.4	86.6
	309-01	102'	6.4	86.6
	309-01	112'	3.8	89.2
	309-01	136'	3.6	89.4
	309-01	141'	9.1	83.9
	267-24	147'	3.0	90.0
	267-24	160	3.8	89.2
	267-24	162	9.1	83.9
	25-33	41	5.4	87.6
	215-40	61	4.7	88.3
	215-40	86	5.8	87.2
	215-40	135	4.5	88.5
	177-38	186	4.0	89.0
	177-38	142	5.6	87.4
	164-39	115	5.6	87.4
	164-39	192	4.3	88.7
	152-26	192	5.4	87.6
	152-26	171	4.1	88.9

Spk N.W. side Quad Elm W Bank River 40' Ef Bridge (Pg 39)

H.I above Hub C + 45"

pt on BS on W edge of Bay in Chnl.

S. Bank

N side of Bay - West Bank of River

Water Level @ Bay Entrance - West Bank of River

W Bank of River

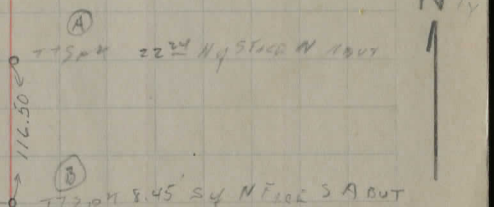
Water level River

W. Bank River

Water level " - pt. River ℄'s to East

± Prolongs. of West Bank S'ly ℄ ± Prolongs. of Chnl W'ly ⊥ to Bridge

edge of Brush



∠	HI 93.00 Std	Rod.	ELV
152-26	88'	5.8	87.2
152-26	61'	5.3	87.9
129-01	64'	6.6	86.4
129-01	140'	5.2	87.8
121-42	133	6.4	86.6
42-09	46'	5.1	87.9
52-30	95'	4.3	88.7
52-30	140	3.5	89.5

Bridge levels S abut 9-12-51

BM	7.88	98.63 ✓	90.75	
top wheel stone				93.75
seat level				92.08

Wet Weather from S.W.

Grnd up fast S & E
marsh land Westerly & Northerly

UP Steep South

98.63
93.75
4.88 ✓

98.63
92.08
6.55 ✓

3 log jams
100' riffles
three short
more jams

18" Frontg on river

BM	2.09	92.84	90.75
			92.84
	truss bearings		92.10
			0.74.

West bear	0.73	92.11
East "	0.73	92.11
Intermediate steps (conc)	0.75	92.09

21.0 ℄

92.84
92.08
0.76

BEARING PLATES
So ABUT.
9-18-51

10-11-51 Cuyahoga Bridge CH#1 Merritt & Maynard

BM.	6.81	97.56		90.75
			5.50	92.06
			5.49	92.07
			5.50	92.06
			5.51	92.05

Spk NW Side Quad Elm N. Bank Cuyahoga & 40' E of Bridge

N E ℄ Bridge SEAT
S E ℄ " "
S W ℄ " "
N W

H. Patterson
P. Young
D. Parks

Rapids Rd X Sec. 5-10-58

	+	HI	−	Elev
B.M.	5.57	96.32		90.75
T.P.	4.22	96.53	4.01	92.31
97+0				92.90
96+0				92.08
95+0				92.38
T.P.	3.48	95.84	4.17	92.36
94+0				91.33
93+0				91.71
92+0				94.03
B.M.	11.11	101.88	5.07	90.77
91+0				96.61
T.P.	9.66	110.73	0.81	101.07
90+0				102.68
89+0				106.13
T.P.	6.09	113.15	3.67	107.06
88+0				104.06
87+0				107.95
86+0				109.00

Occ ℄ ○ T ℄ □

SPK. N.W. Side Quad. Elm N. Bank River -40 E. Bridge

Water		W 7.9/30	7.70/26	3.80/14	(3.63) □	3.64/5	E 4.05/9	6.74/15	4.65/20	out
Water	10.60/29	5.12/24	4.60/11	(4.48/1.5)	4.45	4.41/6	7.14/13	5.93/22		out
out/50	7.29/32	4.93/19	4.36/12	(4.11/3)	4.15 □	4.41/12	6.10/18	7.21/25		out
Water	8.70/38	6.73/33	5.45/22	4.83/12	(4.46/2)	4.51 □	4.66/7	4.41/14	7.50/20	7.65/25 out
Water	10.40/25	5.21/22	4.50/14	(4.13/4)	4.13 □	4.36/8	4.70/11	8.65/20	7.20/25	W ℄ out
			1.83/7	Bridge 1.81		1.34/8				
	12.70/50	9.32/32	7.72/19	6.10/12	(5.52/6)	5.27 □	5.52/7	7.79/14	8.58/19	6.32/25 up steep
	out/50	2.88/28	2.92/8	8.70/6	8.05 □	(8.01/5)	8.31/14	9.66/19	3.16/30	out
	out/50	2.27/25	6.30/11	4.96/6	4.60 □	(4.55/4)	4.78/12	6.90/18	2.77/30	out
		5.85/50	5.50/30	7.26/10	6.30/6	6.09 □	(6.08/3)	6.40/12	7.82/16	7.12/19 5.31/30
		7.03/50	6.83/25	6.30/12	5.42/4	5.20 □	(5.14/2)	5.54/10	6.65/14	6.67/30
		6.89/50	6.86/28	5.15/13	4.57/5	(4.15) □	4.23/8	5.40/13	5.93/30	

	+	HI	−	Elev
		113.15		
85+0				110.50
T.P.	11.40	124.53	0.02	113.13
84+0				113.59
83+0				118.39
T.P.	10.88	135.10	0.31	124.22
82+0				124.54
81+0				130.60
T.P.	0.27	124.95	10.42	129.68
T.P.	0.57	119.05	11.47	113.48
T.P.	0.08	102.84	11.29	102.76
~~B.M.~~ T.P	9.78	102.60	10.02	92.82
B.M.			11.84	90.76

Stakes were set 25' off Tang ℄ on E. S. de Rd.

□ = Tang ℄

○ = Occ. ℄

W E

4.98/50	4.65/28	3.52/12	3.01/9	(2.65/□)	2.68/8	3.36/13	3.30/19	out
out	10.90/29	12.30/13	11.02/8	(10.94/□)	11.10/8	12.20/12	10.15/18	9.90/24 out
3.36/50	3.30/18	5.00/12	6.58/8	(6.14/□)	6.30/7	7.15/12	2.20/20	2.5/30
9.63/50	9.15/20	12.60/15	11.60/8	(10.56/□)	10.80/7	11.95/12	8.67/19	7.53/28 out
3.00/56	3.28/30	3.70/17	6.20/19	4.55/7	(9.56/□)	4.90/9	5.60/13	2.25/19	1.25/30 out

Final Alignment White Rd

Side Stakes Set 30' off ℄

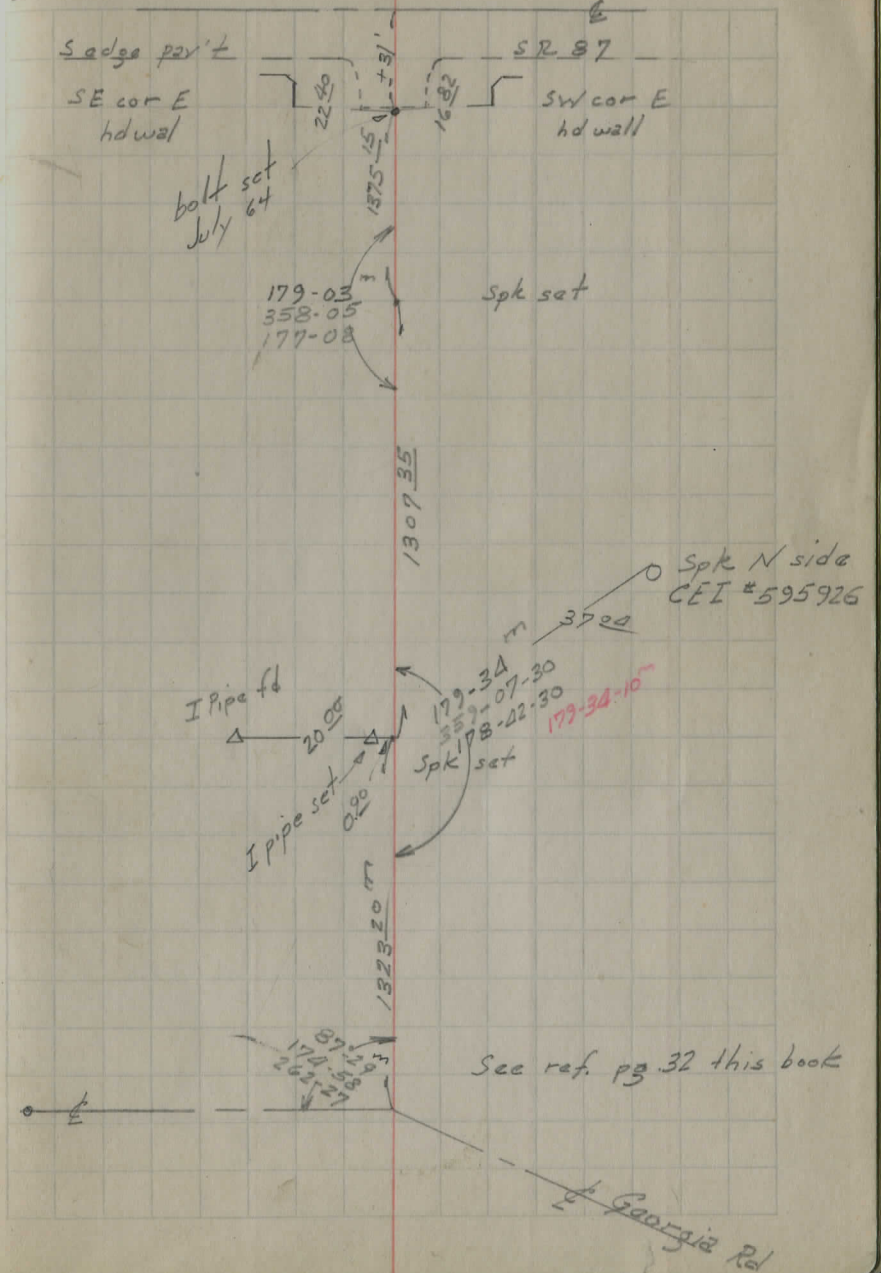
40+05.70 East Side Rd.

26+30.55 Spk Set .10 ft west of Random point P.O.T. June 1959

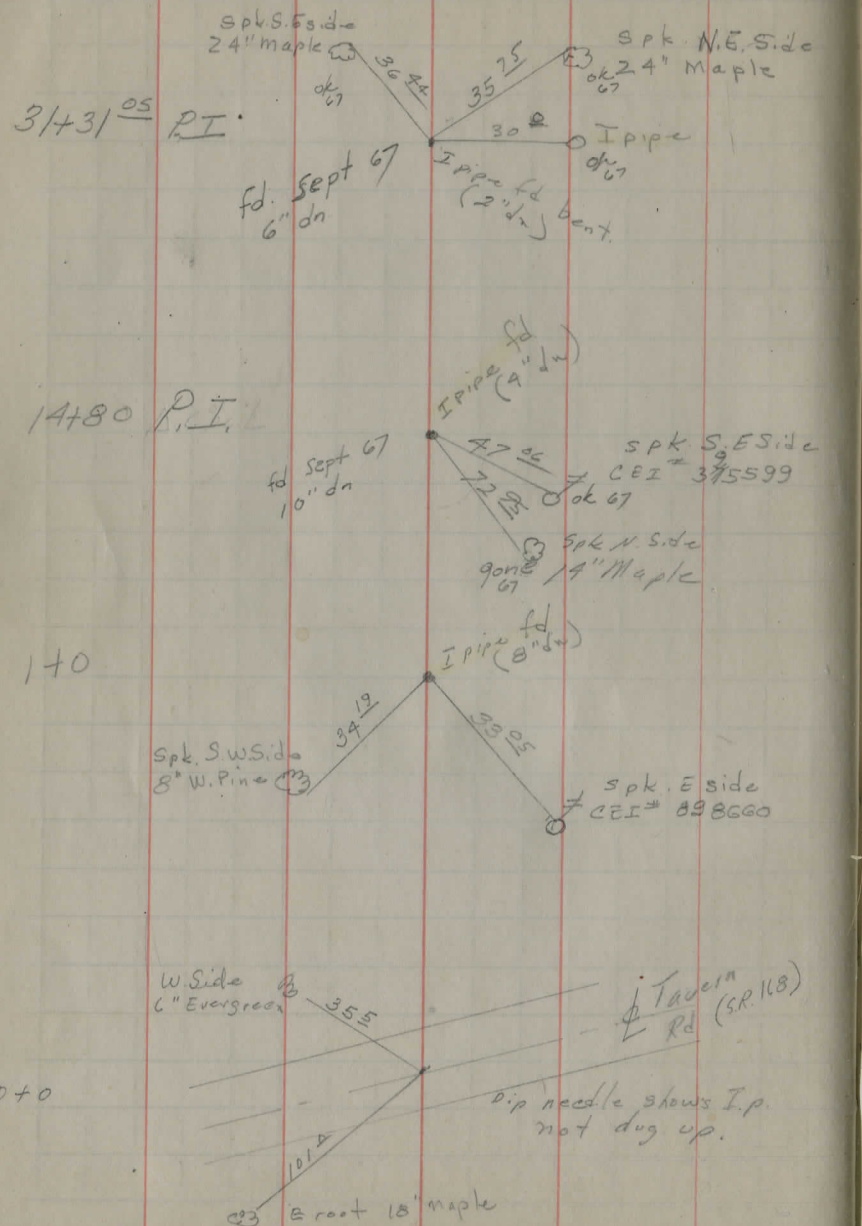
13+23.20 I pipe set July 64 SPK Set .90 ft west of Random point P.O.T. June 1959

1375.15
1307.35
1323.20
4005.70 0+0

Temple Patterson Diedrich — Random Line White Road — May 18, 1959 46

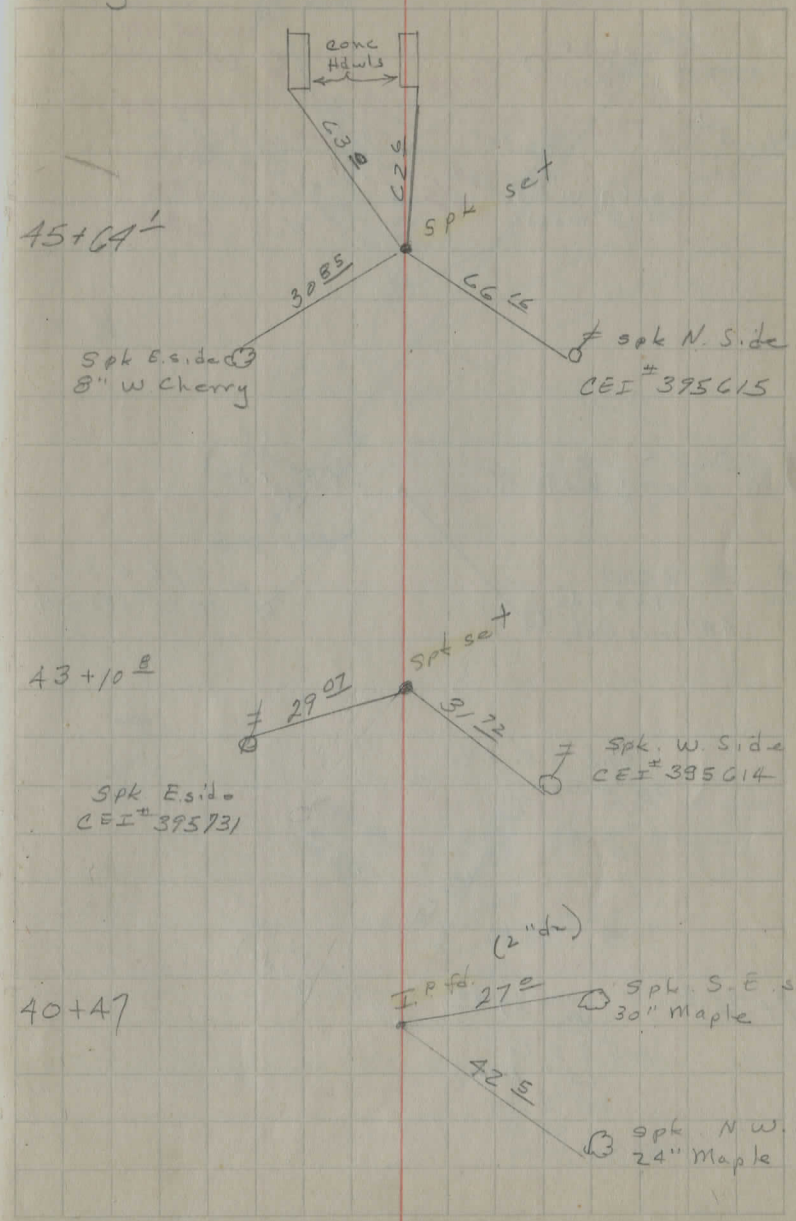


Georgia Rd



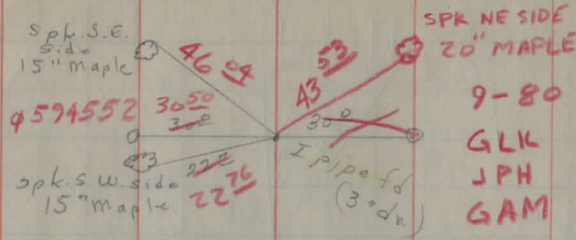
Davidson
Ranney
Young

12/22/64 cldy - cool -

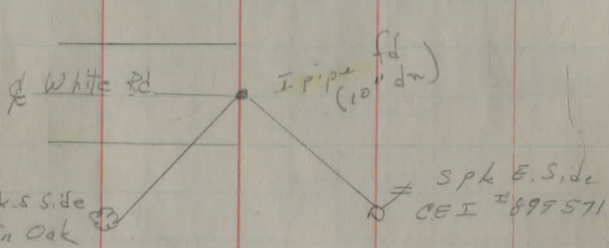


Georgia Rd.

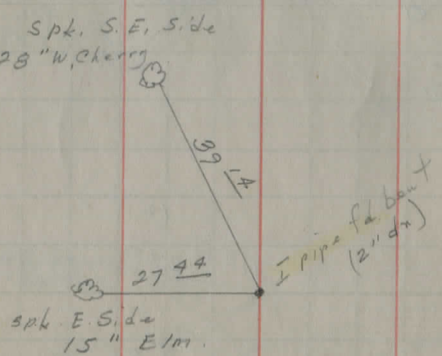
63+63[1]



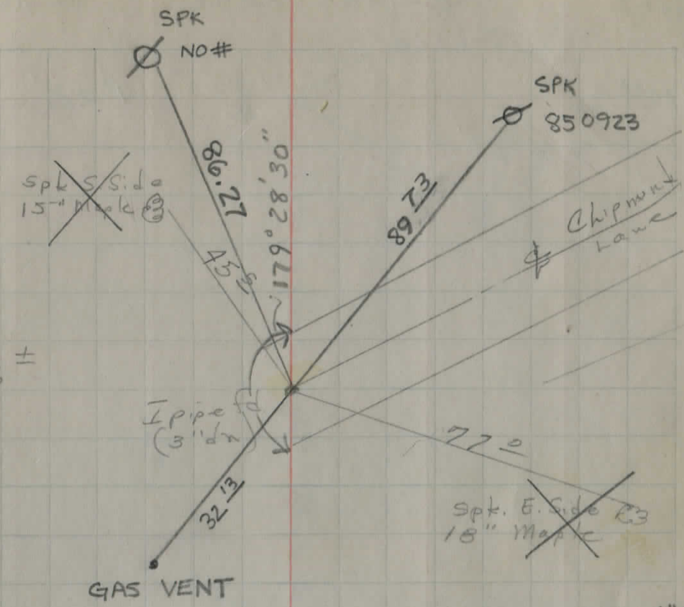
56+30[3]



49+74[2]

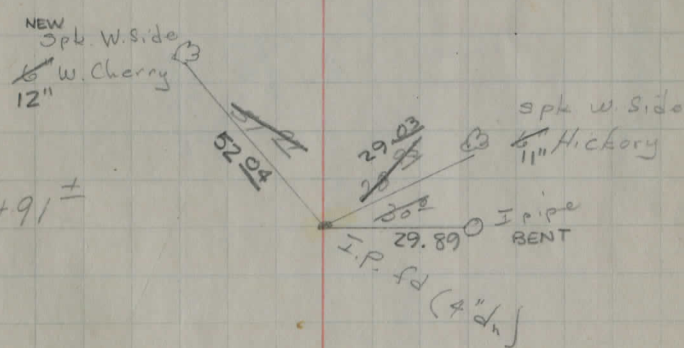


83+36±



FND 8-80 6" DN
WEN, GAM, GLK

71+91±



FD 9" DN
8-80
WEN, GLK, GAM

H. Patterson
P. Young

Chipmonk #133 Lane

7-6-60

(Vol "D" Pg 32 Rd. Records)

60' wide

22+00.00

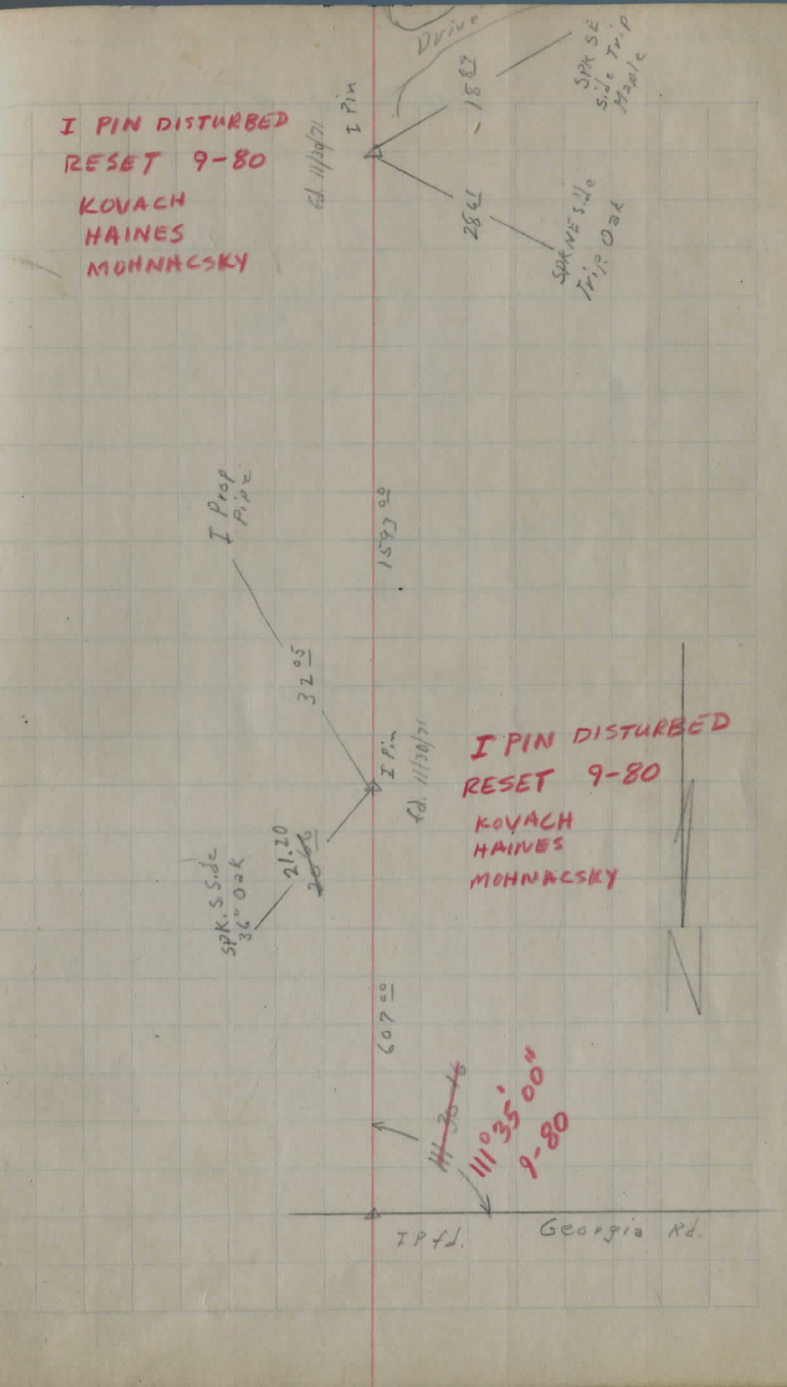
P.O.T.

Stakes Set 30' Offset Both Sides every 100'

6+07.00

P.O.T.

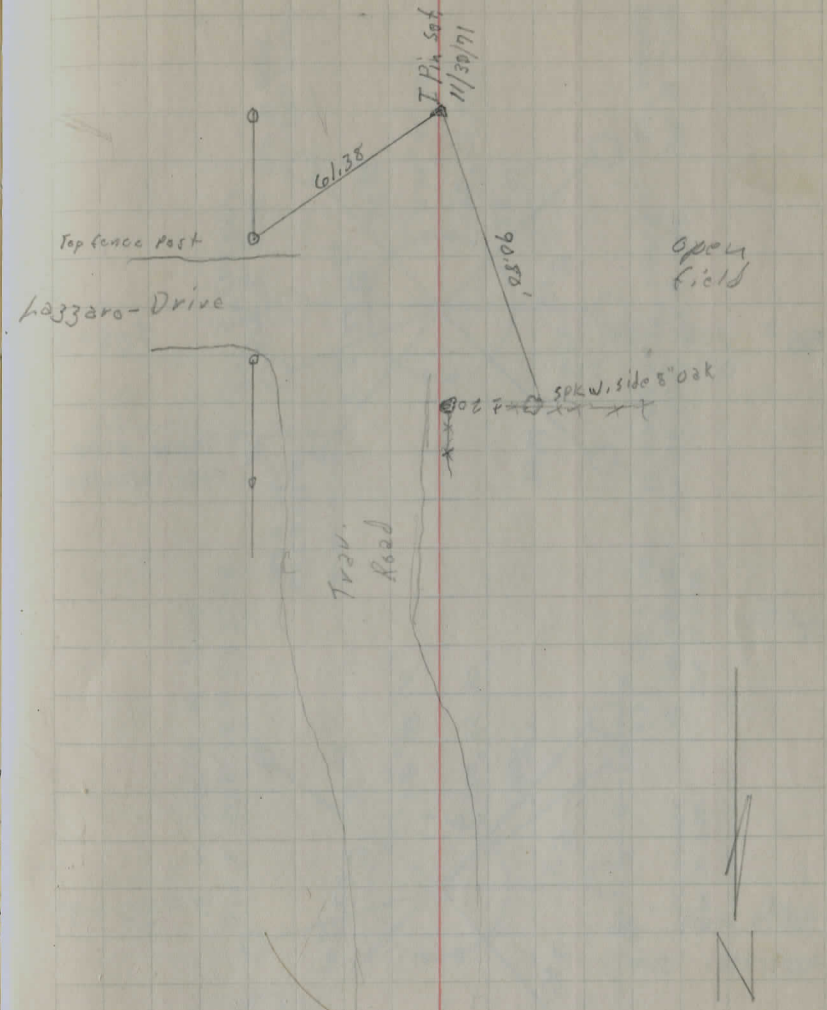
Otto



H. Patterson
D. Wenzel
J. Schuster

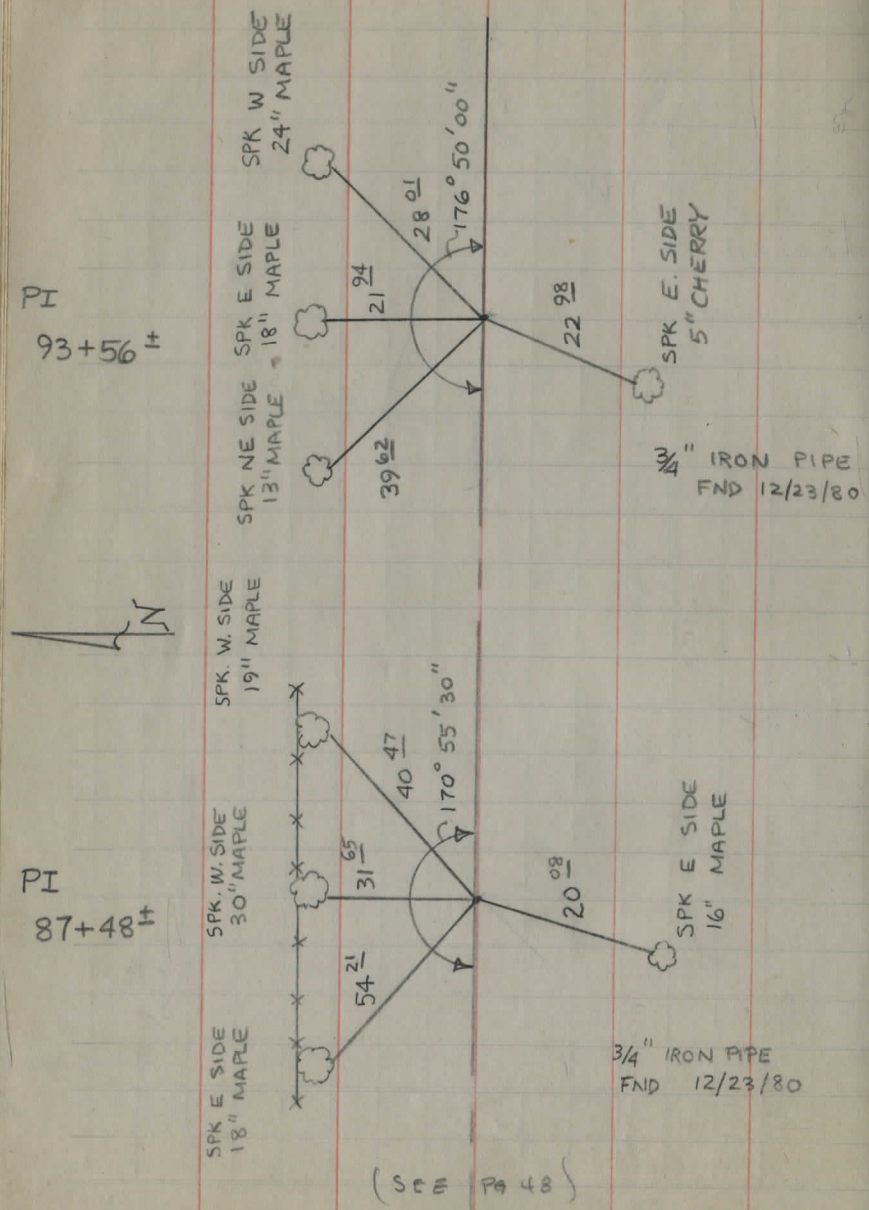
11/30/71 Snow 32°

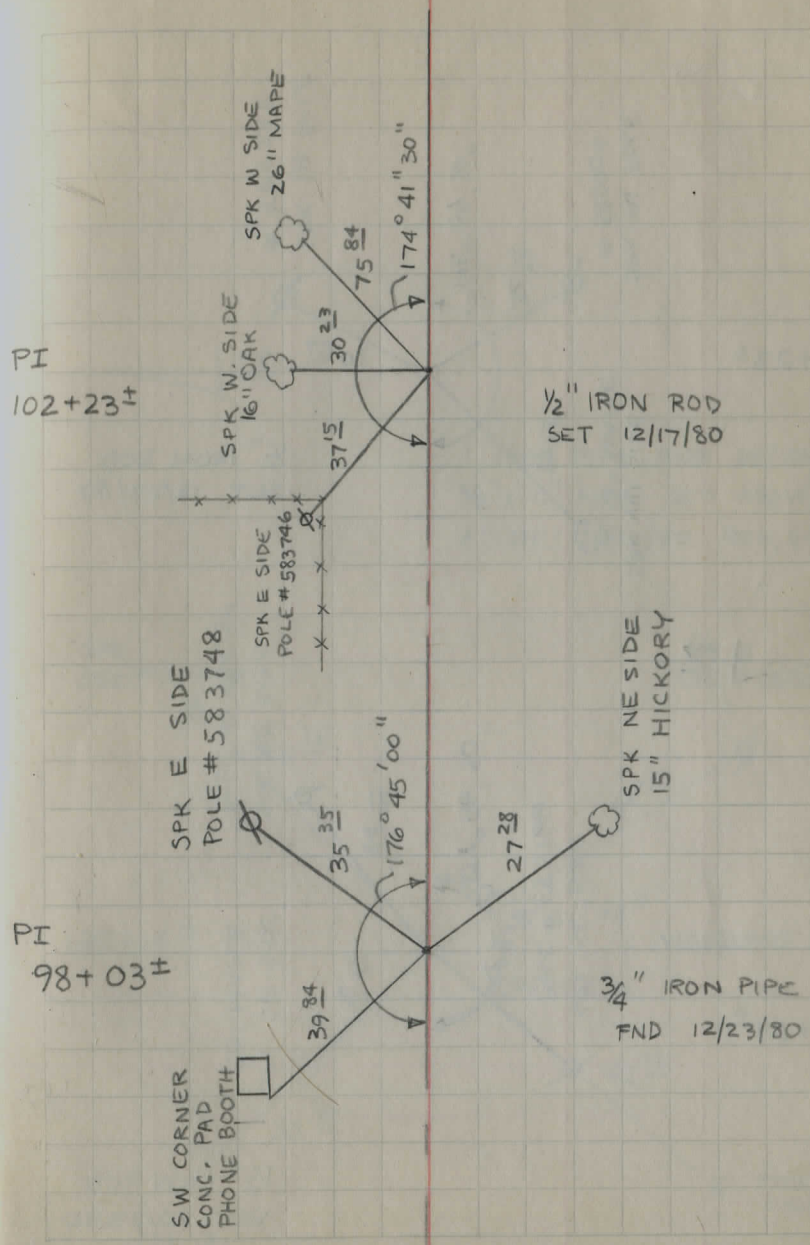
38+00 P.O.T.

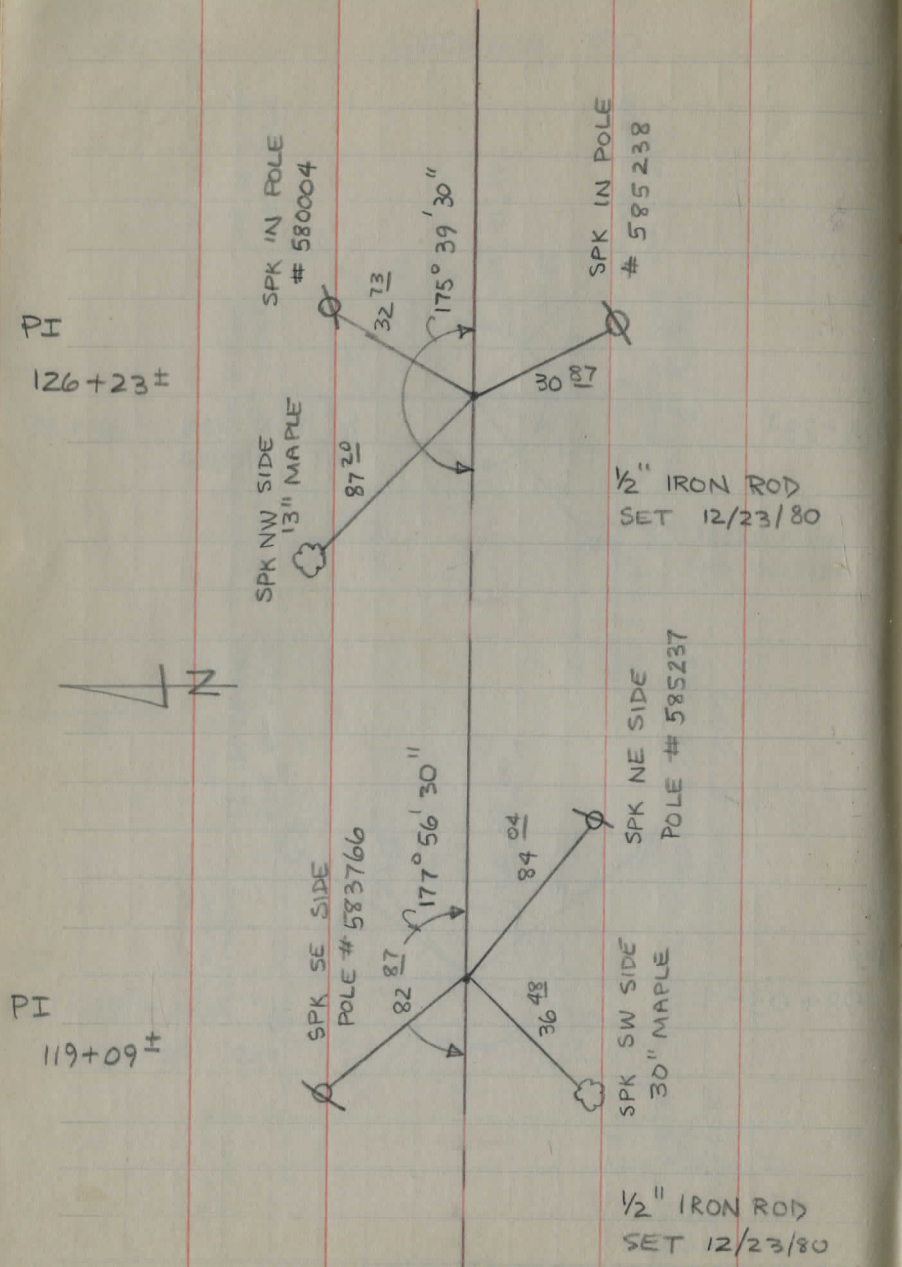


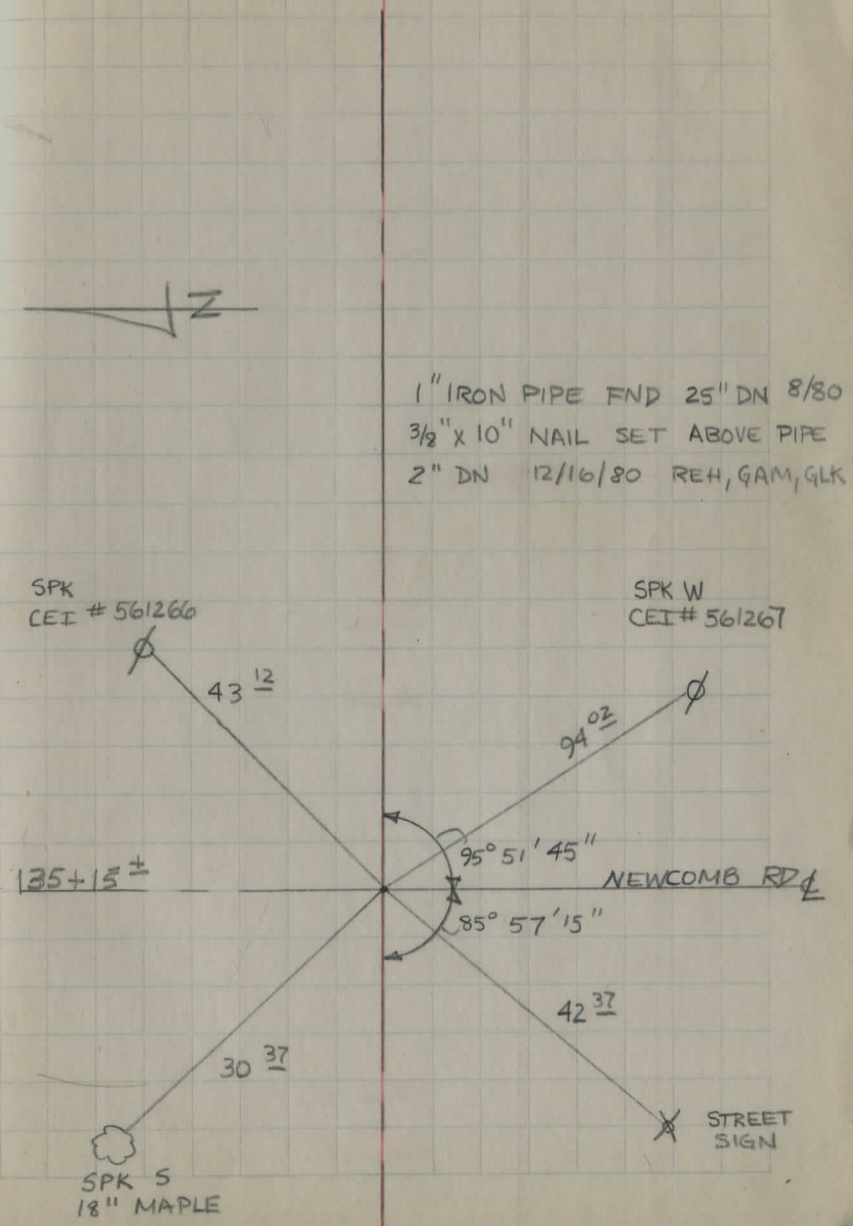
W. NYMAN 12/26/80
G. MOHNACSKY
J. VARANESE

GEORGIA RD






PI
126+23±
SPK IN POLE
580004
32 73
175° 39' 30"
SPK IN POLE
585238
30 87
SPK NW SIDE
13" MAPLE
87 20
½" IRON ROD
SET 12/23/80
N
SPK SE SIDE
POLE # 583766
82 87
177° 56' 30"
84 04
SPK NE SIDE
POLE # 585237
36 48
SPK SW SIDE
30" MAPLE
PI
119+09±
½" IRON ROD
SET 12/23/80


N
1" IRON PIPE FND 25" DN 8/80
3/8" X 10" NAIL SET ABOVE PIPE
2" DN 12/16/80 REH, GAM, GLK
SPK
CEI # 561266
SPK W
CEI # 561267
43 12
94 02
95° 51' 45"
135+15±
NEWCOMB RD ℄
85° 57' 15"
42 37
30 37
STREET
SIGN
SPK S
18" MAPLE

6)10 (1.6667
6
40

4)44.07(11.02
4
4
4
07

4)711.97 (179.92
4
31
28
39
36
37
36

4)14.16667(354.17
12
21
20
16
16
6
4
26

43.1
100.0
143.1
36.

179.92
143.10
36.82

7/? x 1/16

7/128 x 4 =

7 = 25.2
6 = 32.0

1.25
1.25
625
246
125
1.5526
7
8)10.85(1.36
8
28
24
45

4
5.44

1.8
1.8
144
18
3.24
7
8

100
56.9
43.1

359.88

3.5
3.5
175
105
12.25
7
5

7/8 x 4 = 28
8)14(2
4

7/8 x 2 = 14
4
8)56(

36.82

7+31.15
68.85
36.82
104.67

179-40
22-05
157°-55'

108-90
107-24
1.66
83

1007.24
16) 108.07 (18.01
6
48
48
01

1113-7
1122.4
13

1122-4
1113-7
4-7
2.3

1113.7
6) 111 60 (186
6
57
48
36

372

6) 5600 (0826
48
20
16
40

6) 22.082 (3.68
18
40
36
28
24
42
42

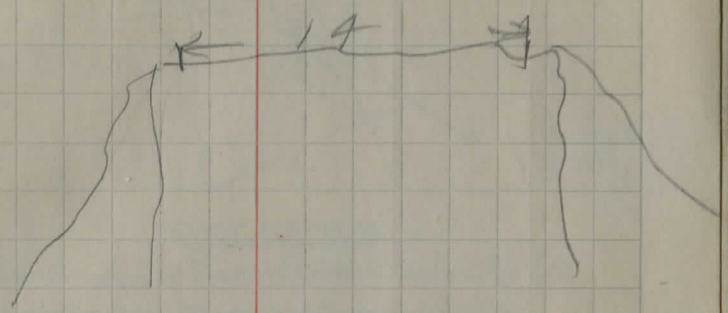
7/8 7 6 8)42(5

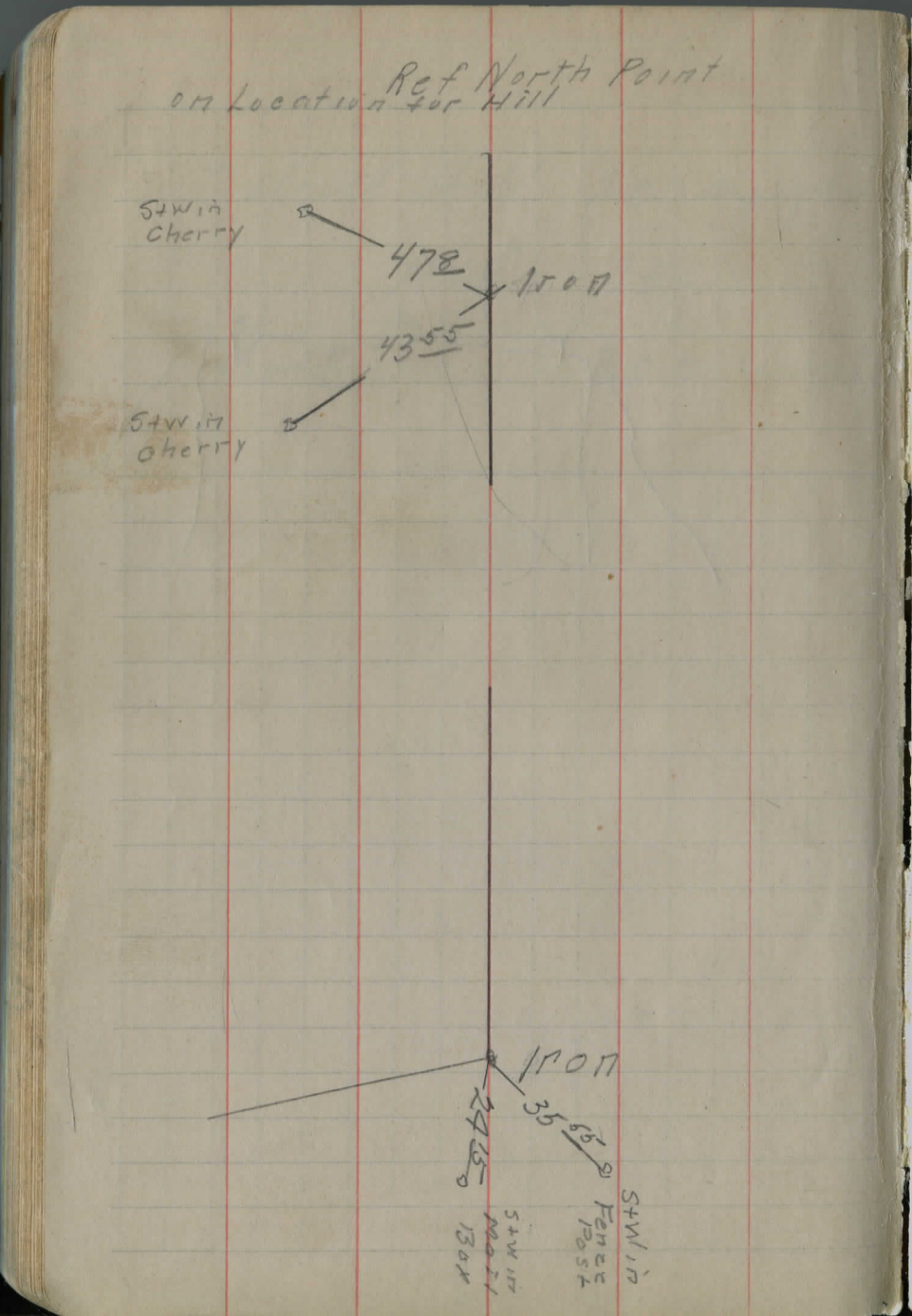
overall length of truss = 63.0'
clear span 59.3
End support of truss = 2 6"x2" channels
Lower base and webb completly broken ± 1/3 up from bottom
upper base bent approx 180°
Remaining guard rail post = 4½" x 15½"

Talcott Hill 200 cuyds.

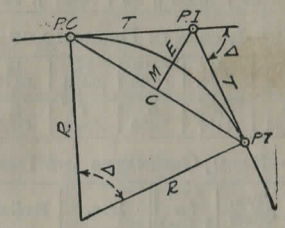
Hill 350 " "

Bottom 300 cuyds.





DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES



CURVE FORMULAS

Radius=R=$\frac{50}{\text{sin. } D/2}$ (1) Degree of Curve=D and sin. $\frac{D}{2}=\frac{50}{R}$ (2)

Tangent=T=Rtan$\frac{\Delta}{2}$ (3) Length of Curve=L=100$\frac{\Delta}{D}$ (4)

Middle ordinate=M= R(1—cos. $\frac{\Delta}{2}$) (5) =Rvers $\frac{\Delta}{2}$ (6)

External=E=Ttan$\frac{\Delta}{4}$- (7) =R÷cos.$\frac{\Delta}{2}$—R (8)=Rexsec$\frac{\Delta}{2}$ (9)

Long Chord=C=2 R sin.$\frac{\Delta}{2}$ (10) Δ=Central Angle

EXPLANATION AND USE OF TABLES

Stations.—Given P. I.=Sta. 161 +60.35 to find Sta. of P. C. and P. T. Δ=62° 10′ D=8° 20′. From Table IV for 1° curve T=3454.1 and÷8⅓=414.49 ft. From Table V correction=.36 or T=414.85 ft. P. C.=Sta. P.I.—T=157 +45.50. Also from (4) L=746.00 and P. T.=Sta. P. C. +L=164 +91.50.

Offsets.—Tangent offsets vary (approximately) directly with D and with square of the distance. Thus tangent offset for Sta. 158 on above curve is 2.16 ft. found as follows. From Table III tangent offset for 100 ft.=7.27 ft. Distance=158—Sta. P. C.=54.50, hence offset=7.27 (54.50÷100)²=2.16 ft. Also square of any distance divided by twice the radius equals (approximately) the distance from tangent to curve. Thus (54.50)²÷(2 x 688.26)=2.16 ft.

Deflections.—Deflection angle=½ D for 100 ft., ¼ D for 50 ft., etc. For c ft.=(in minutes) .3 x C x D° or=defl. for 1 ft. from Table III x C. For Sta. 158 of above curve=.3 x 54.5 x 8⅓=136.2′ or 2° 16.2′, or=2.50 x 54.5=136.2′ from Table III. For Sta. 159 deflection angle=2° 16.2′ +8° 20′÷2=6° 26.2′, etc.

Externals.—May be found in similar manner to tangents. Thus E for curve above is 91.37. For from Table IV for 1° curve E=960.6 for 8° 20′=960.6÷8⅓=91.27 and from Table V correction=.10 or E=91.37 ft. Or suppose Δ=32° and E is measured and found to be 42 ft. What is D? From Table IV E=230.9 and÷42=5.5 or D=5° 30′.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1.

For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.2	8.3	8.4	8.6	8.8	8.9	9.1	9.2	9.4	0
1	9.5	9.7	9.8	10.0	10.1	10.3	10.4	10.6	10.7	10.9	1
2	11.0	11.2	11.3	11.5	11.6	11.8	11.9	12.1	12.2	12.4	2
3	12.5	12.7	12.8	13.0	13.1	13.3	13.4	13.6	13.7	13.9	3
4	14.0	14.2	14.3	14.5	14.6	14.8	14.9	15.1	15.2	15.4	4
5	15.5	15.7	15.8	16.0	16.1	16.3	16.4	16.6	16.7	16.9	5
6	17.0	17.2	17.3	17.5	17.6	17.8	17.9	18.1	18.2	18.4	6
7	18.5	18.7	18.8	19.0	19.1	19.3	19.4	19.6	19.7	19.9	7
8	20.0	20.2	20.3	20.5	20.6	20.8	20.9	21.1	21.2	21.4	8
9	21.5	21.7	21.8	22.0	22.1	22.3	22.4	22.6	22.7	22.9	9
10	23.0	23.2	23.3	23.5	23.6	23.8	23.9	24.1	24.2	24.4	10
11	24.5	24.7	24.8	25.0	25.1	25.3	25.4	25.6	25.7	25.9	11
12	26.0	25.2	26.3	26.5	26.6	26.8	26.9	27.1	27.2	27.4	12
13	27.5	27.7	27.8	28.0	28.1	28.3	28.4	28.6	28.7	28.9	13
14	29.0	29.2	29.3	29.5	29.6	29.8	29.9	30.1	30.2	30.4	14
15	30.5	30.7	30.8	31.0	31.1	31.3	31.4	31.6	31.7	31.9	15
16	32.0	32.2	32.3	32.5	32.6	32.8	32.9	33.1	33.2	33.4	16
17	33.5	33.7	33.8	34.0	34.1	34.3	34.4	34.6	34.7	34.9	17
18	35.0	35.2	35.3	35.5	35.6	35.8	35.9	36.1	36.2	36.4	18
19	36.5	36.7	36.8	37.0	37.1	37.3	37.4	37.6	37.7	37.9	19
20	38.0	38.2	38.3	38.5	38.6	38.8	38.9	39.1	39.2	39.4	20
21	39.5	39.7	39.8	40.0	40.1	40.3	40.4	40.6	40.7	40.9	21
22	41.0	41.2	41.3	41.5	41.6	41.8	41.9	42.1	42.2	42.4	22
23	42.5	42.7	42.8	43.0	43.1	43.3	43.4	43.6	43.7	43.9	23
24	44.0	44.2	44.3	44.5	44.6	44.8	44.9	45.1	45.2	45.4	24
25	45.5	45.7	45.8	46.0	46.1	46.3	46.4	46.6	46.7	46.9	25
26	47.0	47.2	47.3	47.5	47.6	47.8	47.9	48.1	48.2	48.4	26
27	48.5	48.7	48.8	49.0	49.1	49.3	49.4	49.6	49.7	49.9	27
28	50.0	50.2	50.3	50.5	50.6	50.8	50.9	51.1	51.2	51.4	28
29	51.5	51.7	51.8	52.0	52.1	52.3	52.4	52.6	52.7	52.9	29
30	53.0	53.2	53.3	53.5	53.6	53.8	53.9	54.1	54.2	54.4	30
31	54.5	54.7	54.8	55.0	55.1	55.3	55.4	55.6	55.7	55.9	31
32	56.0	56.2	56.3	56.5	56.6	56.8	56.9	57.1	57.2	57.4	32
33	57.5	57.7	57.8	58.0	58.1	58.3	58.4	58.6	58.7	58.9	33
34	59.0	59.2	59.3	59.5	59.6	59.8	59.9	60.1	60.2	60.4	34
35	60.5	60.7	60.8	61.0	61.1	61.3	61.4	61.6	61.7	61.9	35
36	62.0	62.2	62.3	62.5	62.6	62.8	62.9	63.1	63.2	63.4	36
37	63.5	63.7	63.8	64.0	64.1	64.3	64.4	64.6	64.7	64.9	37
38	65.0	65.2	65.3	65.5	65.6	65.8	65.9	66.1	66.2	66.4	38
39	66.5	66.7	66.8	67.0	67.1	67.3	67.4	67.6	67.7	67.9	39
40	68.0	68.2	68.3	68.5	68.6	68.8	68.9	69.1	69.2	69.4	40

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 41.9. For same slopes but other widths of roadbed correct above figures by one-half difference in width of roadbed; thus in example above for 20 ft. roadbed distance will be 41.9 + (20—16) ÷ 2 or 2 ft. added to 41.9 = 43.9. For slopes of 1 on 1 see inside of front cover.

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