

EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

502

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1.

For Single Track Embankment.

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

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

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Transit notes - El Capitan Pipe Line
copied from Books # 500 and 501

Reference points for Pier # 38	78
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" " " 6+77.26	79
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Sta	Angle	Bearing	Curve data	Lt	Rt
#5 1+37.24				8.86	9.16
#4 1+07.24				8.88	8.94
#3 0+77.24				8.90	8.82
#2 0+47.24				8.76	8.83
#1 0+17.24			Thrust Pier	9.89 Ld+K	9.70 Ld+K

0+00.12 flange face of Westerly 36" pipe (South line)
0+00 flange face of Easterly 36" pipe (North line)
0-2.35 = face of tunnel plug

Sta.	Angle	Bearing	Curve data.	Lt	Rt
#13 3+77.24				9.48	9.80
#12 3+47.24				9.35	9.76
#11 3+17.24				9.56	9.66
#10 2+87.24	23° 04'	Rt.	Thrust Pier	10.14	10.59
#9 2+57.24				7.67	9.51
#8 2+27.24				9.35	9.23
#7 1+97.24				9.21	9.20
#6 1+67.24				9.11 ld atk.	9.26 ld atk.

36" x 40"

Sta Angle Bearing

Curve data

Lt

Rt

#21
6+17.24

12.16 11.82

#20
5+87.24

11.94 11.97

#19
5+57.24

9.91 9.96

#18
5+27.24

9.95 9.93

#17
4+97.24

9.81 9.92

#16
4+67.24

9.72 9.86

#15
4+37.24

9.66 9.90

#14
4+07.24

9.62
Ld+tk.

9.82
Ld+tk.

38 x 48

Sta Angle Bearing Curve data

#29
8+57.24 12.24 12.40

#28
8+27.24 12.18 12.39

#27
7+97.24 12.20 12.26

#26
7+67.24 12.21 12.23

#25
7+37.24 12.19 12.16

7+11.14 ahead $2^{\circ} 36' 22''$ RT
7+11.56 back

#24
7+07.24 12.24 12.09

#23 26 $21^{\circ} 20' 38''$ RT
6+77.24 $21^{\circ} 57'$ RT

thrust Pier

Detail of R.P.s on page 79 - this book. 11.74 13.23
12.68 12.36 (90° to back tangent)

6+49.73 $2^{\circ} 00'$ LT
#22
6+47.24

12.32 11.73
Ld + K Ld + K

36" x 48"

Sta #38 Angle Bearing
11+08.86

Curve data

R.P. on page 38

#37
10+78.86

Latk 8.92

Nail in 8x8" sill

#36
10+61.38

9.19

33.20

#35 18°11'30"
10+31.32 +5°01'30"

Thrust Pier

Detail of points
set, on page 78

12.50

12.69 from actual k of
pipe to plug on split
of angle.

#34
10+07.24

12.41

12.28

#33
9+77.24

12.39

12.33

#32
9+47.24

12.34

12.36

#31
9+17.24

12.33

12.27

#30
8+87.24

Latk 12.30

12.14

Latk

318° 45'

Sta Deflec Bearing Curve data

Sta	Deflec	Bearing	Curve data
16+71.12 EC	5° 53 1/2'		PI = 16+26.93
+75	5° 50'		R = 480
+50	4° 20'		A = 11° 47' 14"
+25	2° 50'		T = 49.53
16+00	1° 21'		L = 98.72
15+77.40 BC			di = 3.581
			ds = 1° 29' 52.5"

13+54.17 P.O.T.

18° 25' 44"
12+47.034 21° 35' 44"

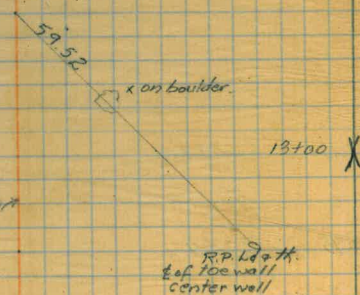
11+50.00 Anchor



RP 43.88
B 2x2
34.16
RP 34.18
B 2x2
60±
RP 4
B 2x2

RP 50±
B 2x2
RP 42.28
B 2x2

RP 35±
B 2x2
RP 37.95
B 2x2



Sta. Deflec. Bearing Curve data.

21472.66 EC. 12° 19' EC.

+50 10° 58'

+25 9° 28'

21+00 7° 59'

+75 6° 30'

+50 5° 00'

+25 3° 31'

20+00 2° 01'

+75 0° 31'

19+66.208 C.

P.I. = 20+71.04

A = 24° 38' 30" LT

R = 480

T = 104.84

L = 206.44

di = 3.581

des = 1° 29.525

RP RP
B 30.2 B 39.20
2+2 2+2

24.79

RP

B

1+2

RP

B

1+2

Horse River
in sport bank.

19+18.15 EC. 6° 29 1/2'

19+00 5° 24 1/2'

+75 3° 55'

+50 2° 25 1/2'

+25 0° 56'

18+09.388 C.

P.I. = 18+64.00

A = 12° 59' RT

R = 480

T = 54.62

L = 108.77

di = 3.581

des = 1° 29.525

RP RP
B 36.2 B 30.60
2+2 2+2

RP RP
B 35.2 B 36.00
2+2 2+2

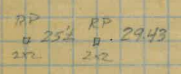
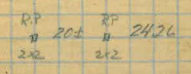
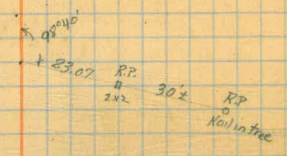
Sta Def/lec Bearing Curve data

29+39.62 EC 18° 44'
 +25 17° 42'
 29+00 14° 43'
 +75 11° 44'
 +50 8° 45'
 +25 5° 46'
 28+00 2° 47'
 27+76.66 PC

PI: 28+58.06
 Δ = 37° 28' RH
 R = 240
 T = 81.39
 L = 156.94
 d1 = 7.162
 d25 = 2° 59.049

27+13.23 EC 7° 07'
 27+00 6° 20'
 +75 4° 50'
 +50 3° 21'
 +25 1° 51'
 26+00 0° 22'
 25+93.99 PC

PI: 26+53.92
 Δ = 14° 14' LH
 R = 480
 T = 59.93
 L = 119.24
 d1 = 3.581
 d25 = 1° 29.525



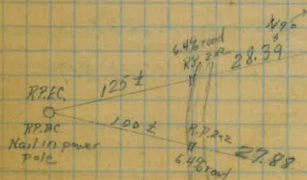
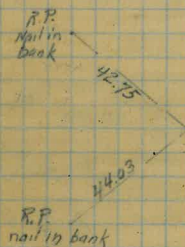
Sta Deflec. Bearing Curve data

34+87.34 EC. $6^{\circ} 11' 30''$ P.I. 34+10.39
 +75 $5^{\circ} 42'$ $a = 12^{\circ} 23' 14''$
 +50 $4^{\circ} 41\frac{1}{2}'$ R = 715
 +25 $3^{\circ} 41\frac{1}{2}'$ t = 77.58
 34+00 $2^{\circ} 41\frac{1}{2}'$ L = 154.53
 +75 $1^{\circ} 41\frac{1}{2}'$ di = 2.404
 +50 $0^{\circ} 41'$ dzs = $1^{\circ} 00.100$

33+32.81 BC

P.I. 30+32.00
 30+59.05 EC. $3^{\circ} 14'$ $\Delta = 6^{\circ} 28' 14''$
 +50 $2^{\circ} 41\frac{1}{2}'$ R = 480
 +25 $1^{\circ} 12'$ t = 27.12
 30+04.88 BC. L = 54.17
 di = 3.581
 dzs = $1^{\circ} 29.525$

RP 252 RP 29.44
 222 262



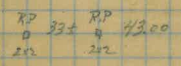
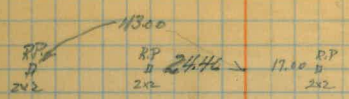
Sta Deflec Bearing Curve data

39+78.25 EC 3° 00'
 +50 2° 36' P.I. 38+72.95
 +25 2° 15' Δ 6° 00' Lt
 39+00 1° 53' R. 2013
 +75 1° 32' T 105.50
 +50 1° 11' L 210.80
 +25 0° 49' d_i 0.8539
 38+00 0° 28' d₂₅ 0° 21.3474
 +75 0° 06'

37+67.45 BC

37+32.52 BC 9° 52 1/2'
 +25 9° 31' P.I. 36+32.36
 37+00 8° 11' Δ 19° 45' Rt
 +75 7° 04' R. 587
 +50 5° 51' T 102.18
 +25 4° 38' L 202.34
 36+00 3° 24' d_i 2.9283
 +75 2° 11' d₂₅ 1° 13' 207
 +50 0° 58'

35+30.18 BC
 35+30.02 Equation



47.78

Sta Deflec Bearing Curve data

46+59.24 EC. 10° 06'
 +50 9° 25'
 +25 7° 34'
 46+00 5° 43'
 +75 3° 52'
 +50 2° 01'

P.I. 45+91.74

Δ 20° 12' Rt

R. 387

+ 68.94

L 136.44

d_i 4.4416

45+72.80 BC

d₂ 1° 51' 04"

43+94.49 EC. 3° 57 1/2'

+75 3° 36'

+50 3° 07'

+25 2° 38'

43+00 2° 08'

+75 1° 40'

+50 1° 11'

+25 8 42'

42+00 0° 12'

41+89.03 BC

P.I. 42+91.93

Δ 7° 55' Rt

R. 1487

+ 102.90

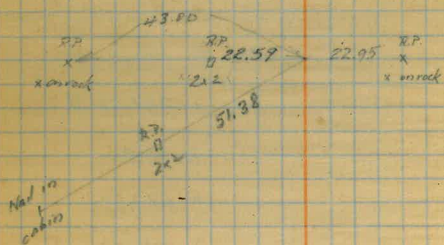
L 205.46

d_i 1.1559

d₂ 0° 28.9"

RP
 272
 2x2
 Nail
 RP
 43.00

RP
 322
 2x2
 RP
 43.00



RP
 43.00
 2x2
 RP
 17.00
 2x2
 RP
 access pool

48° 48'

Sta Deflec Bearing Curve data

55+04.94 EC
 55+54.94 EC. } Equation
 +25 5° 48'
 55+00 4° 35'
 +75 3° 22'
 +50 2° 09'
 +25 0° 55'
 54+06.21 BC

P.I. 54+80.97
 Δ 14° 31' RT
 R 587
 T 74.76
 L 148.73
 di 2.9283
 ds 1° 13.207

51+28.39 EC 17° 15'
 51+00 15° 29'
 +75 13° 57'
 +50 12° 24'
 +25 10° 51'
 50+00 9° 18'
 +75 7° 45'
 +50 6° 13'
 +25 4° 40'
 49+00 3° 07'
 +75 1° 34'
 48+49.60 BC

P.I. 49+93.37
 Δ 34° 30' LT
 R 463
 T 143.77
 L 278.19
 di 3.7125
 ds 1° 32.813

RP
 43.00
 2x2
 RP
 Kulin tree

RP
 43.00
 2x2
 RP
 202
 2x2

RP
 43.00
 2x2
 RP
 262
 2x2

RP
 43.00
 2x2
 RP
 352
 Nail

Sta Deflec Bearing Curve data

+50 3° 58'
+25 3° 14'
62+00 2° 31'
+75 1° 47'
+50 1° 04'
+25 0° 20'

61+13.47 PCC 4° 05' 45"

61+00 3° 52'
+75 3° 28'
+50 3° 04'

P.I 59+87.98

+25 2° 39'
60+00 2° 15'
+75 1° 30'

A 8° 11' 30" RA

R 1761.25

13' offset
50' = 50.37
80' = 38.42
60' = 13.52

+50 1° 26'
+25 1° 02'

T 126.12

L 251.61

d₁ 0.97595

59+00 0° 37'
+75 0° 13'

d₂ 0° 24.399

58+61.86 BC

RP 402 D 43.00
2x2 2x2

RP 352 D 43.00
2x2 2x2

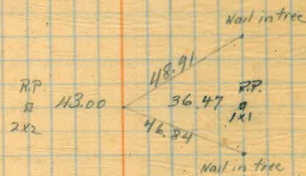
61+13.47

Sta. Deflec. Bearing Curve data

P.O.T.

64+31.15 EC.	9° 13 1/2'	
+25	9° 03'	PI 62+73.70
64+00	8° 19'	A 18° 26' 30" R
+75	7° 35'	R 987
+50	6° 52'	+ 160.23
+25	6° 08'	L 317.68
63+00	5° 25'	d _i 1.7415
62+75	4° 41'	d _{ss} 0° 43.538

13 offset
 50' = 50.66
 B.C. = 37.01
 E.C. = 31.56



14° x 48"

Sta	Deflec	Bearing	Curve data
73+68.96 EC	23° 21'		
+50	22° 18'		
+25	20° 54'		
73+00	19° 30'		P.I. 71+72.23
+75	18° 07'		A 46° 43' 14"
+50	16° 43'		R 513
+25	15° 19'		T 221.55
72+00	13° 55'		L 418.28
+75	12° 32'		d _i 3.3507
+50	11° 08'		d ₂₅ 1° 23' 767
+25	9° 44'		
71+00	8° 20'		
+75	6° 56'		
+50	5° 33'		
+25	4° 09'		
70+00	2° 45'		
+75	1° 21'		

69+50.68 BC

13' offset
 25' = 24.36
 B.C. = 23.51
 E.C. = 18.48

RP
 D 32+ 0 43.00
 2x2 2x2

RP
 D 27+ 0 44.98
 2x2 2x2

14' x 48'

Sta Deflec Bearing Curve data

82+19.47 P.C.	6° 29'		
+03.70	6° 01 1/2'		
82+00	5° 56'	P.I. 81+08.26	
+75	5° 12'	A 12° 58' Rt	13' offset R.C. = 3.95 E.C. = 19.71 S.O. = 5.66
+50	4° 28'	R 987	
+25	3° 44'	+ 112.16	
81+00	3° 01'	L 223.37	
+75	2° 17'	d. 1.7414	
+50	1° 34'	d ₂₅ 0° 43.538	
+25	0° 50'		
80+00	0° 07'		

79+96.10 P.C.

76+00 P.C.T.

RP
□ 43.00 17.00 □
2x2 2x2

RP RP RP
□ 47.93 17.00 □ 40x
1x1 2x2 2x2

RP RP
□ 40x x 43.00
2x2 x on rock

14" x 48"

Sta Deflec Bearing Curve data

75+91.43 BC 3° 32' 45"
 +50 2° 46'
 95+00 1° 49'
 +50 0° 52'
 94+03.67 BC
 PI 94+97.68
 Δ 7° 05' 30"
 R = 1517
 T = 94.01
 L = 187.76
 di = 0° 01.133
 ds = 0° 56.655

+48.34 BC 8° 08' 30"
 89+00 7° 16'
 +50 6° 22'
 88+00 5° 28'
 +50 4° 33'
 87+00 3° 39'
 +50 2° 45'
 86+00 1° 50'
 +50 0° 56'
 85+00 0° 01'
 84+98.62 BC
 PI 87+25.04
 Δ 16° 17' RA
 R = 1582.66
 T = 226.42
 L = 449.79
 di = 0° 01.086
 ds = 0° 54.363

15' offset
 B.C. = 1.39
 E.C. = 42.74
 S.C. = 50.41

Left sight RP 15' offset
 57.84 RP
 2x2 100' 2x2

RP 13' offset
 RP 29.51
 Nail in tree Nail in bank
 RP 2x2 across river.

RP 20' x 64.86
 Nail in tree crosscut
 20.00 RP
 2x2 2x2

RP 30' x 36.75
 2x2 2x2

1/2" x 48"

Sta Deflec. Bearing Curve data

157.82 EC. $10^{\circ} 50' 15''$
 +50 $10^{\circ} 27'$ PI 97+48.86
 +25 $9^{\circ} 13\frac{1}{2}'$ A $21^{\circ} 40' 30''$ RT
 96+00 $8^{\circ} 00'$ R 583
 +75 $6^{\circ} 46'$ T 111.61
 +50 $5^{\circ} 32\frac{1}{2}'$ L 220.55
 +25 $4^{\circ} 18\frac{1}{2}'$ di $0^{\circ} 02' 948$
 97+00 $3^{\circ} 05'$ dso $2^{\circ} 27' 415$
 +75 $1^{\circ} 51'$
 +50 $0^{\circ} 38'$
 96+37.27 BC

Lothsegt. RP 13' offset
 RP 25' D 55.76
 2x2 3x2

84 x 48

RP 13' offset
 RP 55.70 V
 0 2x2
 No. 1 in oak

Sta Deflec Bearing Curve data

104+39.82 EC	3° 42' 15"	
+25	3° 25'	P.I. 103+42.98
104+00	2° 57'	Δ 7° 24' 30" LT
+75	2° 28'	R. 1500
+50	1° 59'	T. 97.11
+25	1° 31'	L. 193.95
103+00	1° 02'	d. 1.146
+75	0° 33'	ds. 0° 28.65
+50	0° 05'	
102+45.87		
=	PC	
102+44.05	5° 00'	
102	4° 17'	P.I. 100+89.42
+50	3° 29'	Δ 10° 00' LT
101	2° 41'	R. 1776.35
+50	1° 52'	T. 155.41
100	1° 04'	L. 310.03
+50	0° 15'	d. 0° 00' 9678
99+34.02 BC		ds. 0° 48' 3875

RP 262
222

RP 49.07
242

103+54
Begin of S.D. Cont.

13' offset RP.

RP 302
222

40.45

Left sight

RP 50±
222

RP 13' offset
140.15
222

Sta Deflec. Bearing Curve data

10

102

10

102

10

10

106+40.44 EC 3° 42' 15"

10 +25 3° 25'

P.I. = 105+43.60

106+00 2° 56'

Δ = 7° 24' 30" RT

10 +75 2° 27'

R = 1500

+50 1° 59'

T = 97.11

9 +25 1° 30'

L = 193.95

105+00 1° 01'

d₁ = 1.146

+75 0° 33'

d₂ = 0° 28' 65"

+50 0° 04'

104+46.49 BC

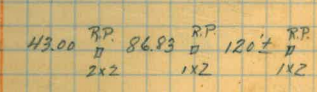
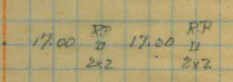
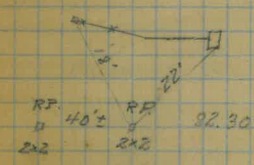
RP 40.47 RP 16.97 RP
 * on rock 23 13' off

RP 41.11
 (RP for 104+39.83) = 2

Sta.	Deflec	Bearing	Curve data
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119+50.93 EC	12° 15' 15"		
+25	11° 01'	P.I. - 118+24.60	
119	9° 49'	Δ = 24° 30' 30" Lt	
+75	8° 38'	R = 600	
+50	7° 26'	T = 130.32	
+25	6° 14'	L = 256.65	
118	5° 03'	d ₁ = 2.865	
+75	3° 51'	d ₂ = 1° 11' 619	
+50	2° 40'		
+25	1° 28'		
117	0° 16'		

116+94.28 BC



14' 14"

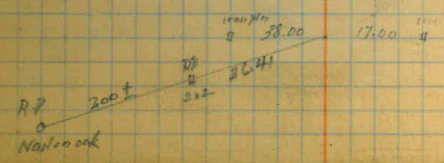
Sta.	Deflec.	Bearing	Curve data
128+11.14 EC	8° 47' 15"		
128	8° 35'		
+75	8° 06'		
+50	7° 38'		
+25	7° 09'		
127	6° 41'		
+75	6° 13'		
+50	5° 44'		PI 125+80.93
+25	5° 16'		Δ 17° 34' 30" H
126	4° 47'		R 1513
+75	4° 19'		T 233.89
+50	3° 50'		L 464.10
+25	3° 22'		di 1.1361
125+00	2° 54'		ds 0° 28' 40"
+75	2° 25'		
+50	1° 57'		
+25	1° 29'		
124	1° 00'		
+75	0° 31'		
+50	0° 03'		
123+47.04 BC			



7" x 1/2" x 1/8"

125+25 X

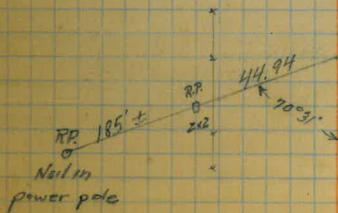
1/4" x 1/2"



Sta	Deflec.	Bearing	Curve data
+75	23° 24'		
+50	22° 13½'		
+25	21° 03½'		PI-135+23.75
132	19° 53½'		D=59° 21' 30" Lt
+75	18° 43'		R=613'
+50	17° 33'		T=349.35
+25	16° 23'		L=635.07
135	15° 13'		d=2.8042
+75	14° 03'		dis 1° 10.105
+50	12° 53'		
+25	11° 43'		
134	10° 32½'		
+75	9° 22½'		
+50	8° 12½'		
+25	7° 02'		
133	5° 52'		
+75	4° 42'		
+50	3° 32'		
+25	2° 22'		
132	1° 12'		

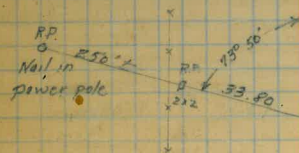
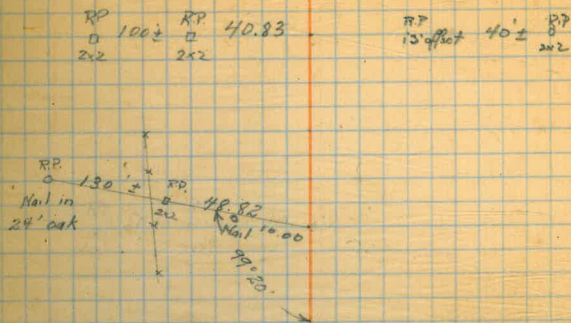
131+74.408C

13' offset
 BC=25.06
 EC=9.27
 ES=24.47



Sta	Deflec.	Bearing	Curve data
146+94.68 EC. $1^{\circ}33'30''$			PI = 146+12.74
+50	$1^{\circ}08'$		$\Delta = 3^{\circ}07'14''$
146	$0^{\circ}39\frac{1}{2}'$		R = 3013
+50	$0^{\circ}11'$		T = 81.95
145+30.79 BC			L = 163.89
			di = 57.05
			d50' = 28.5250

138+09.47 EC. $29^{\circ}40'45''$		
138	$29^{\circ}14'$	
+75	$28^{\circ}04'$	
+50	$26^{\circ}54'$	
+25	$25^{\circ}44'$	
137	$24^{\circ}34'$	



93 x 48

Sta	Deflec.	Bearing	Curve data
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P.O.T.

82° 148'

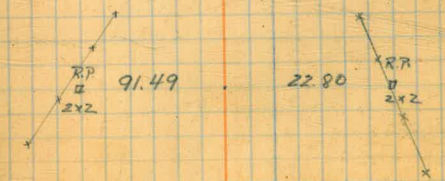
Sta Deflec Bearing Curve data

159+62.76
= Equation
159+54.35 EC. 12°55'45"

159	12°48'	
125	12°04'	
159	11°21'	
	10°37'	PI=157+35.48
+50	9°54'	Δ=25°51'30" RH
	9°10'	R=987
158	8°27'	T=226.58
175	7°43'	L=445.45
+50	7°00'	d ₁ '=1.7414
125	6°16'	d ₅₀ '=1°27'.070
157	5°33'	
175	4°49'	
+50	4°06'	
125	3°22'	
156	2°39'	
175	1°55'	
+50	1°11½'	
	0°44'	

155+08.90 BC.

RP 50'2
2x2
RP 52.70
2x2
(slope 54'-12035')



91.49

Sta Deflec. Bearing Curve data

166+22.33 P.O.T.

8 1/2" x 48"

Sta Deflec. Bearing Curve data

171+40.21 EC. 12° 04' 50"

+25 11° 38'

171 10° 55'

+75 10° 11'

+50 9° 27'

+25 8° 44'

170 8° 01'

+75 7° 17'

+50 6° 34'

+25 5° 50'

169 5° 06'

+75 4° 23'

+50 3° 39'

+25 2° 56'

168 2° 12'

+75 1° 29'

+50 0° 45'

167+24.00 BC

P.I. 169+35.24

Δ 24° 09' 40" RH

R 987

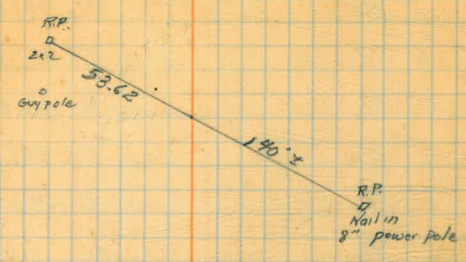
T 211.24

L 416.21

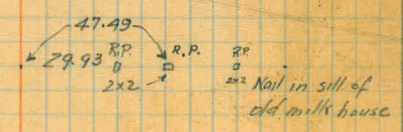
d_i 1.7415

d₂₅ 0° 43' 538

10' offset
20'
30'
40'
50'



9' x 48"



Sta	Deflec.	Bearing	Curve data
+75	5° 48'		P.I. = 179+88.47
+50	5° 12'		Δ = 32° 57' Lt
+25	4° 37'		R = 1213
178	4° 01'		T = 358.73
+75	3° 26'		L = 697.58
+50	2° 50'		di' = 1.417
+25	2° 15'		ds' = 35.426
177	1° 40'		
+75	1° 04'		
+50	0° 29'		
176+29.74 BC			

RP 56.4
 □
 2x2
 RP 66.79
 1000 pins

292 x 118"

Sta	Deflec.	Bearing	Curve data
183+27.32 EC		16° 28' 30"	
183		15° 50'	
+75		15° 14'	
+50		14° 39'	
+25		14° 03'	
182		13° 28'	
+75		12° 53'	
+50		12° 17'	
+25		11° 42'	
181		11° 06'	
+75		10° 31'	
+50		9° 55'	
+25		9° 20'	
180		8° 45'	
+75		8° 09'	
+50		7° 34'	
+25		6° 58'	
179		6° 23'	

*
 *
 RP
 II
 242
 *
 *

RP
 a 37.67
 242

242 x 45"

Sta Deflec. Bearing Curve data

194+00 P.O.T.

190+02.58 BC	1° 30'	
+75	1° 16'	P.I. 189+11.31
+50	1° 04'	A 3° 00' RT
+25	0° 51'	R 34.87
189	0° 39'	T 91.31
+75	0° 27'	L 182.58
+50	0° 15'	d _i 0.4929
+25	0° 02'	d ₂₅ 25.3236

188+20.00 BC

nail in
post-pile 0

54.11

RP
P 35.89
2x2

nail in
post-pile 0

49.17

RP
B 37.24
2x2

RP 35.54

P
2x2

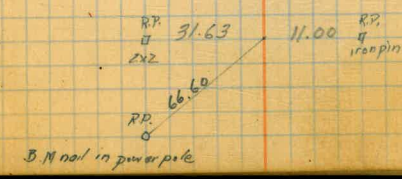
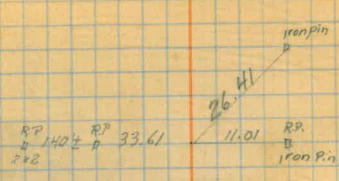
65.67

Nail in
post-pile 0

9 1/2 x 4 1/2

Sta.	Deflec.	Bearing	Curve data
211+39.42 EC	23° 41'		
+25	22° 59'		
211	21° 46'		
+75	20° 33'		
+50	19° 20'		
12	18° 06'		P.I. 209+11.61
210	16° 53'		A 47° 22' RH
+75	15° 40'		R. 587
+50	14° 26'		T 257.47
+25	13° 13'		L 485.28
12	12° 00'		d ₁ 2.9283
+75	10° 47'		d ₂ 1° 13' .201
+50	9° 33'		
125	8° 20'		
1208	7° 07'		
+75	5° 54'		
+50	4° 41'		
+25	3° 27'		
18	2° 14'		
207	1° 01'		
+75			
206+54.14 BC			

13' offset
 25' chord = 25.55
 BC = 21.32
 EC = 14.74



26.41

Sta.	Deflec.	Bearing	Curve data
222+43.22 EC.	19° 29'		
+25	18° 36'		
222	17° 22'		P.I. 220+51.68
+75	16° 09'		Δ 38° 58' RT
+50	14° 56'		R 587
+25	13° 43'		T 207.68
221	12° 30'		L 399.22
+75	11° 16'		d' 2.9283
+50	10° 03'		deg 1° 13.207
+25	8° 50'		
220	7° 37'		
+75	6° 24'		
+50	5° 10'		
+25	3° 57'		
219	2° 44'		
+75	1° 31'		
+50	0° 18'		
218+44.00 BC.			

RP 33± RP 30.29
 Δ 212 Δ 212

55.64
 RP 32.36 10.57 RP
 Δ 212 Δ 212

Sta	Deflec.	Bearing	Curve data
226 + 65.81 AC	16° 30'		
+50	15° 37'		
+25	14° 13'		
226	12° 50'		PI = 225 + 22.30
+75	11° 26'		$\Delta = 33^\circ 00' 11''$
+50	10° 02'		R = 513
+25	8° 38'		T = 151.96
225	7° 14'		L = 295.47
+75	5° 51'		d ₁ = 3.3507
+50	4° 27'		d ₂₅ = 1° 23' 7.67
+25	3° 03'		
224	1° 39'		
+75	0° 16'		
223 + 70.34 BC			

RP	RP
□ 37.4	□ 50.57
2x2	2x2

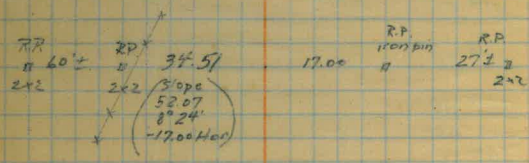
3/8" x 4/8"

225 + 35.8

RP	RP
□ 29.2	□ 41.93
2x2	2x2

3/8" x 4/8"

Sta.	Defec.	Bearing	Curve data
	+25	6° 38'	
233	6° 10'		P.I. 232+97.56
	+75	5° 42'	A = 24° 07' 30" H
	+50	5° 13'	R = 1513
	+35.16	4° 56'	
	+25	4° 45'	T = 323.32
232	4° 16'		L = 637.06
	+75	3° 48'	d _i = 1.1361
	+50	3° 19'	d ₂₅ = 28.402
	+25	2° 51'	
231	2° 23'		
	+85.81	2° 06'	
	+75	1° 54'	
	+50	1° 26'	
	+25	0° 58'	
230	0° 29'		
	+76.24	0° 25'	
	229+74.24 BC.		



34° 48'

Sta. Deflec. Bearing Curve data

236+11.30 EC 12° 03' 45"

236 11° 51'

+75 11° 22'

+50 10° 54'

+33.88 10° 36'

+25 10° 26'

235 9° 57'

+75 9° 29'

+50 9° 00'

+25 8° 32'

+14.41 8° 20'

234 8° 04'

+75 7° 35'

233+50 7° 07'

RP 22.70 RP 43.00 RP 17.00 RP 20'± RP
2x2 iron pin iron pin iron pin 2x2

5/16" x 48"

237+332 Y

5/16" x 48"

Sta. Deflec. Bearing Curve data

253+98.59 P.O.T.

RP # 50± RP # 56.53
20 22

248+00.00 P.O.T.

RP # 43.00 RP # 17.00
20 22

244+50.00 P.O.T.

RP # 90.91 RP # 44.35
20 22

5/16" x 1/8"

Sta. Deflec. Bearing Curve data

269+60.16 EC. 4° 21' 15"

+50 4° 04'

+75 3° 22'

269 2° 39'

+75 1° 57'

+50 1° 14'

+25 0° 32'

268+06.20 BC.

PI 268+83.33

A 8° 42' 30" L

R 1013

T 77.13

L 153.96

d_i 1.6968

d_o 0° 42' 42"

13 offset
50' chord = 49.36
BC = 43.24
EC = 10.03

258+59.17 P.O.T

RP 22.31 17.00 RP 30± RP
P 2x2 2x2 2x2
(40.05
11° 00')
(17.00
Hor. Mean)

17.00 inorn P 49.97 inorn P 100± RP
2x2 2x2 2x2

RP 40±
P 2x2
Sect

28.51 RP 32.99 RP
P 2x2 2x2 2x2

576' x 48'

Sta. Deflec. Bearing Curve data.

285+20.12 P.O.T.

17.00 RP 40± RP
212 212 212

278+62.97 EC. 8° 50' 15"

(Slope 41.00 RP 22.65
14° 43' 212
(-17.00 Hor)

17.00 RP 25± RP
212 212 212

+50 8° 20'

P 1277+53.88

+25 7° 19'

Δ 17° 40' 30" / 17

278 6° 18'

R 713

+75 5° 18'

T 110.86

+50 4° 18'

L 219.95

+25 3° 18'

d 2.4108

277 2° 17'

ds 1° 00.27

+75 1° 17'

+50 0° 17'

(13' offset
25' chord = 24.54
B.C. = 6.95
E.C. = 12.73)

276+43.02 BC.

(Slope 35.00 RP 32.12
23° 25' 212

17.00 RP 30± RP
212 212 212

5/16" x 18"

Sta	Deflec	Bearing	Curve data
292	9° 59'		
+75	9° 19'		P.I. 292+45.08
+50	8° 40'		Δ 42° 37' RT
+25	8° 01'		R 1087
291	7° 21'		+ 423.99
+75	6° 41'		L 808.51
+50	6° 02'		d ₁ 1.5813
+25	5° 22'		d ₂ 39.5325
290	4° 43'		
+75	4° 03'		
+50	3° 24'		
+25	2° 44'		
289	2° 05'		
+75	1° 25'		
+50	0° 45'		
+25	0° 06'		

288+21.09 BC.

RP.		RP.	
B	40.2	B	30.84
242		242	242

5/16" x 48"

Sta Deflec. Bearing Curve data

302+50 P.O.T.

R.P. 20.91 50± R.P. 242

296+2960 EC 21° 18' 30"

R.P. 29.32 17.00 R.P. 50± R.P. 242
II (30.50)
242 (15° 59')

+25 21° 01'

296 20° 22'

+75 19° 52'

+50 19° 13'

+25 18° 33'

295 17° 54'

+75 17° 14'

+50 16° 34'

+25 15° 55'

294 15° 15'

+75 14° 36'

+50 13° 56'

+25 13° 17'

293 12° 37'

+75 11° 58'

+50 11° 18'

292+25 10° 39'

5/16 x 48"

Sta Deflec. Bearing Curve data

311+98.437 15° 00' RT (Wye)

311+77.96 BC 17° 32' 15"

+75 17° 20'

+50 15° 32'

+25 13° 45'

311 11° 57'

+75 10° 10'

+50 8° 22'

+25 6° 35'

310 4° 47'

+75 3° 06'

+50 1° 13'

309+33.09 BC

Pt. 310+59.50

A 35° 04' 30" LT

R. 400

+ 126.41

L 244.87

di 4.297

dis 1° 47' 42.9"

RP 60± RP 50.81
D 222 D 222

311 X

1/4" x 36"

5/16" x 48"

RP 48.00 52.62 RP 60± RP
D 122 D 122 D 122

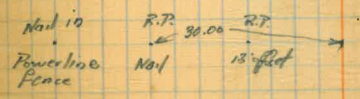
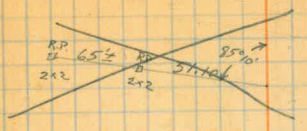
Sta	Deflec.	Bearing	Curve data
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314+05.343	3°50' Lt		
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314+04.76 A			
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	3°05'30" Lt		
--	------------------------	--	--

312+10.03A	15° 00' Lt		
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1/4" x 3/4"

St. Sta. Deflec. Bearing Curve data.

3
34

318+50 P.O.T.

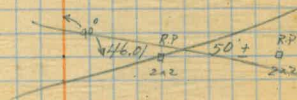
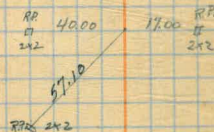
316+06.41 Hbd.
= Equation
316+11.775 Bk. 3050' RT

316+00.00 Ret. old line
= Equation
316+05.19 A

3°05'30" RT

31

44



1/4" x 26"

Sta.	Deflec.	Bearing	Curve data
333+45.65 EC	11° 04'		
+25	10° 29'		
333	9° 46'	P.I 331+52.46	
+75	9° 04'	A 22° 08' LT	
+50	8° 22'	R. 1013	13' offset
+25	7° 39'	T 198.13	50' = 49.56
332	6° 57'	L 391.32	B.C. 45.08
+75	6° 14'	d _i 1.6968	E.C. 45.06
+50	5° 32'	d ₂₅ 42.42	
+25	4° 50'		
331	4° 07'		
+75	3° 25'		
+50	2° 42'		
+25	2° 00'		
330	1° 17'		
+75	0° 35'		
329+54.33 EC			

R.P. 402 1000
 # 242 P.I. 42.00

13' offset
 50' = 49.56
 B.C. 45.08
 E.C. 45.06

14' x 96'

R.P. 2270 1600 R.P.
 # 242 # 242

Sta.	Deflec.	Bearing	Curve data
------	---------	---------	------------

341+94.64 P.O.T. = B.C. line thru Lingo Park

RP	43.00	17.00	RP
□			□
Irenpa			Irenpin

4 x 36"

Sta.

Deflec.

Bearing

Curve data

350+00

P.O.T.

RR	252	AV	256
252		Sh...	

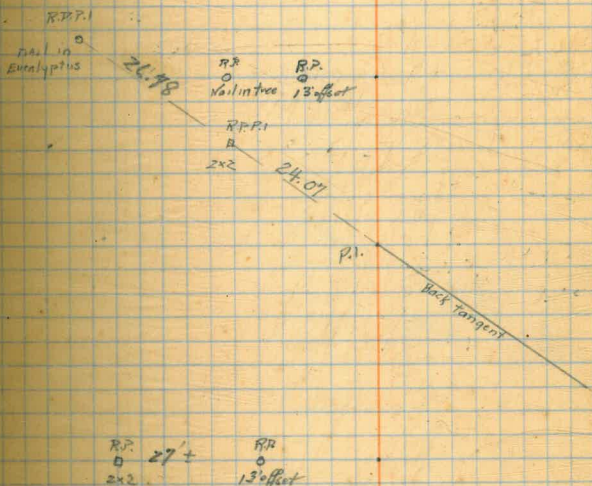
14" x 26"

Sta. Deflec. Bearing Curve data

358+01.86 EC 27° 29' 30" 25° 19'
 +87.5
 +75 23° 26' 21° 33'
 +62.5
 +50 19° 40' 17° 47'
 +37.5
 +25 15° 54' 14° 01'
 +12.5
 357 12° 08' 10° 15'
 +87.5
 +75 8° 22' 6° 29'
 +62.5
 +50 4° 36' 2° 42'
 +37.5
 +25 0° 49'

P.I. 357+18.40
 Δ 54° 59' RT
 R. 190
 + 98.87
 L 182.33
 di 9.047
 d22 3° 46.168

356+19.53 BC



Sta.

Deflec.

Bearing

Curve data

119

368+36.82 P.O.T

RP
H
242

45.74

40'4"

100'18"

RP
D
242

119

Sta.	Deflec	Bearing	Curve data
------	--------	---------	------------

378+00	P.O.T.		
--------	--------	--	--

35.65	R.P.	50%	R.P.
212	D	D	212

376+35+ X

1/4" x 3/8"

1/4" x 3/8"

Sta.	Deflec.	Bearing	Curve data
------	---------	---------	------------

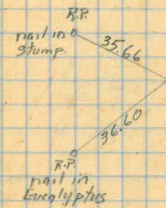
388+52.40	P.O.T.	(Pt. of Palm & Julian)	
-----------	--------	------------------------	--

R.P.	145.7	R.P.	31.46
2x2	2x2	2x2	2x2

9/32 x 36"

Sta.	Deflec.	Bearing	Curve data
------	---------	---------	------------

393+99.92 P.O.T



391+352 X

1/32" x 36"

1/4" x 36"

Sta.	Deflec.	Bearing	Curve data
------	---------	---------	------------

Cont'd on page 74

400+00 P.O.T.

R.P. □ 2x2	50.2	R.P. □ 2x2	40.15
------------------	------	------------------	-------

14" x 36"

Sta.	Deflec.	Bearing	Curve data
411+38.79 EC	39° 11'		
+75	35° 35'		P.I. 410+78.00
411	29° 05'		Δ 78° 22' RT
+75	22° 34'		R. 110
+50	16° 03 1/2'		t. 89.66
+25	9° 33'		L. 150.45
410	3° 02'		d. 15.626
409+88.34 BC			d. 6° 30' 653

RP 50± RP
 D 28.63
 2x2

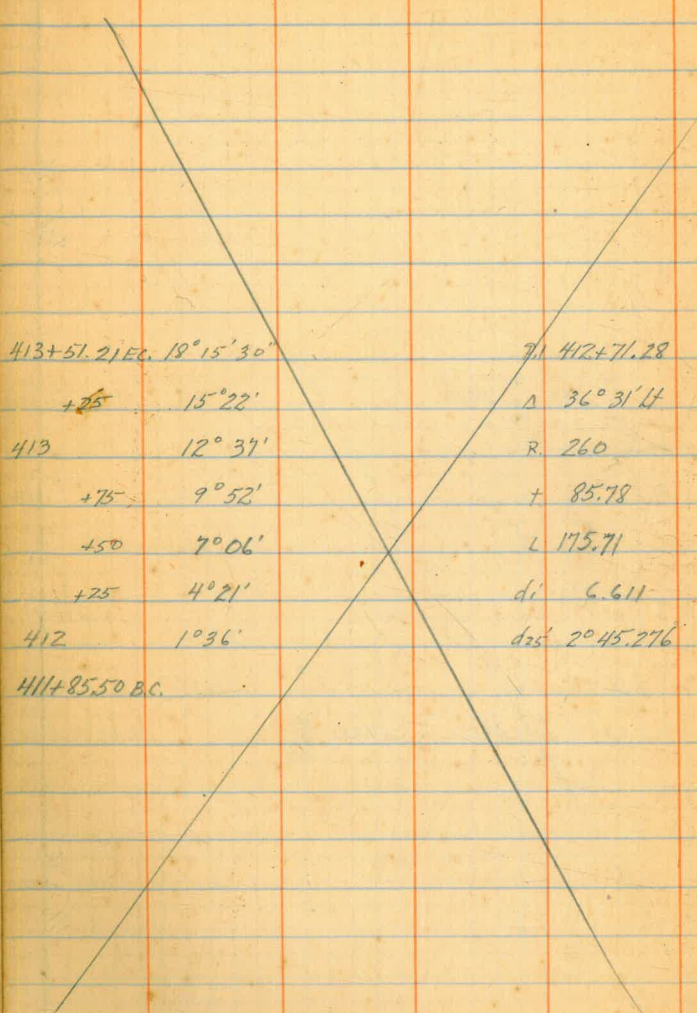
410+395 X

RP 29.21 27.65 RP
 D 2x2

9/32" x 3/16"

1/4" x 3/16"

Sta Deflec. Bearing Curve data.



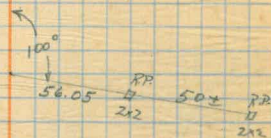
413+51.21 EC.	18° 15' 30"	71	412+71.28
+25	15° 22'	Δ	36° 31' 44"
413	12° 31'	R	260
+75	9° 52'	T	85.78
450	7° 06'	L	175.71
+25	4° 21'	di	6.611
412	1° 36'	dst	2° 45.276
411+85.50 B.C.			

40.67 RP
 202 452 RP
 202 202

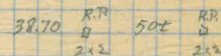
49.42 RP
 202 252 RP
 108° 23' 202

9/32" x 7/16"

Sta.	Deflec.	Bearing	Curve data.
415+29.14EG.	14°18'30"		
41 +25	13°48'		PI 414+51.62
415	11°34'		Δ 28°21' Lt
41 +75	9°20'		R 320
+50	7°05'		+ 80.82
+25	4°51'		L 158.34
414	2°37'		d1 5.371
+75	0°23'		d2 2°14.287
413+70.80BC.			



91.92 x 1.96"



Sta	Deflec.	Bearing	Curve data
-----	---------	---------	------------

419+91.55 E.C.	18° 30'		
+75	18° 05'		
+50	16° 30'	P.I. 418+38.41	
+25	14° 59'	Δ 36° 59' 30" RT	
419	13° 25'	R. 460	
+75	11° 52'	T 153.92	
+50	10° 19'	L 297.06	
+25	8° 45'	d _i 3.737	
418	7° 12'	d _o 1° 33.417	
+75	5° 36'		
+50	4° 05'		
+25	2° 31'		
417	0° 58'		
416+84.49 B.C.			

29.69	RP	50±	RP
	11		11
	2x2		2x2

35.37	RP	50±	RP
	11		11
	2x2		2x2

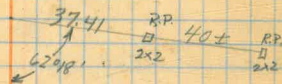
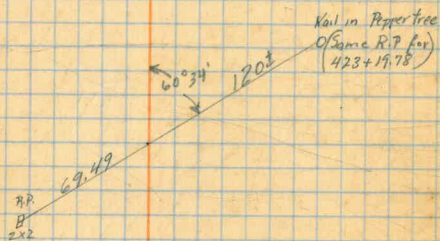
9/16" x 3/16"

Sta Deflec. Bearing Curve data

472+36.68 EC	11° 43' 30"	P.I. 421+50.94
+25	10° 56'	Δ 23° 27' RT
477	9° 15'	R. 425
+75	7° 34'	+ 88.20
+50	5° 53'	L 173.94
+25	4° 12'	di 4.044
421	2° 31'	ds 1° 41' 111

420+62.74 BC

58

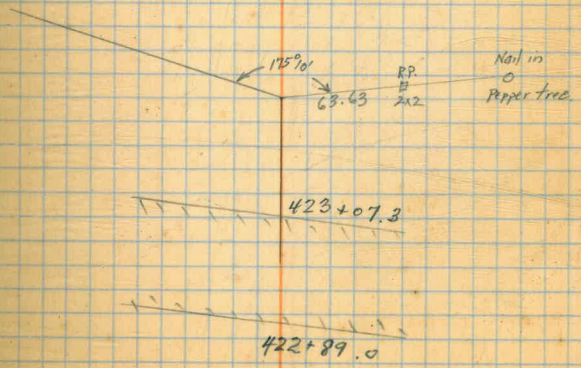


Sta Deflec. Bearing Curve data

423+27.25 Pchd. } Equation due to special
 EC = 423+25.45 Bck.

423+19.78 Δ (Special angle) Δ 73° 46' Lt.
 R = 10'
 T = 7.50
 L = 12.87

Cont'd. from page 76



9/32" x 3/16"

Sta.	Deflec.	Bearing	Curve data.
------	---------	---------	-------------

427+05.58 = Beginning of existing 36" Pipe
 477+06.85

R.P. 1x2

50'±

R.P. 1x2

28.78

↑
 9'22" x 36"

Line change at Chestnut and Julian streets

410+53.39 3° 53' RT

410+23.58 3° 53' RT

409+93.77 3° 53' RT

409+63.95 3° 53' RT

409+34.14 3° 53' RT

Aug 25 1936

Saper
13 Bell
Remmen

62

RP
0
12 offset

35'

RP
0
13'

RP
0
13 offset

Cont'd from page 62

63

H10+71.00 2°35' RT

H10+69.00 E.C.

H10+61.00 B.C.

P.I. = H10+65.23

$\Delta = 48^{\circ}00'$

R = 9.5156

$t = 4.23$

L = 8.00

RP

47±

RP

0

13.0 ft ±

Const'd from page 63

64

412+50

=

412+45.75

412+20.82 2° 57' 14"

RP

35'

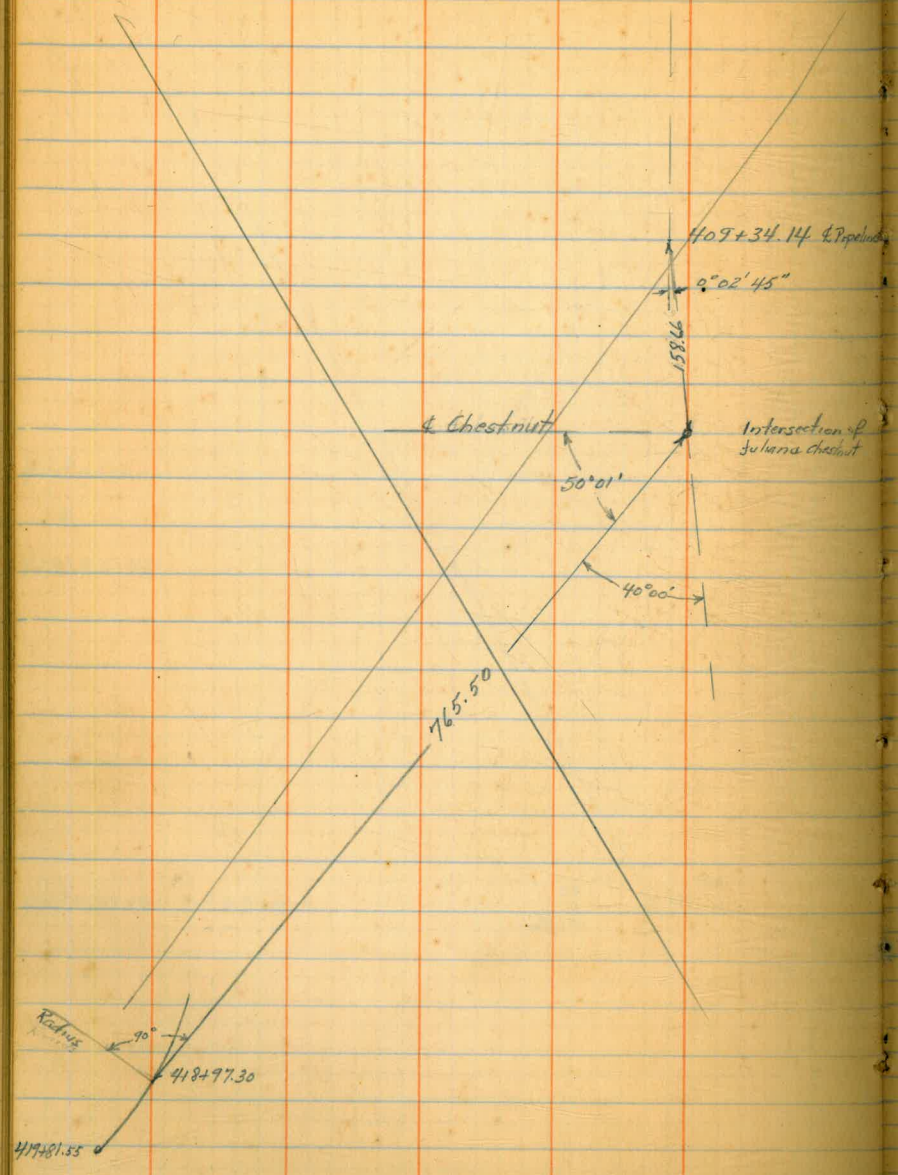
RP

12' offset

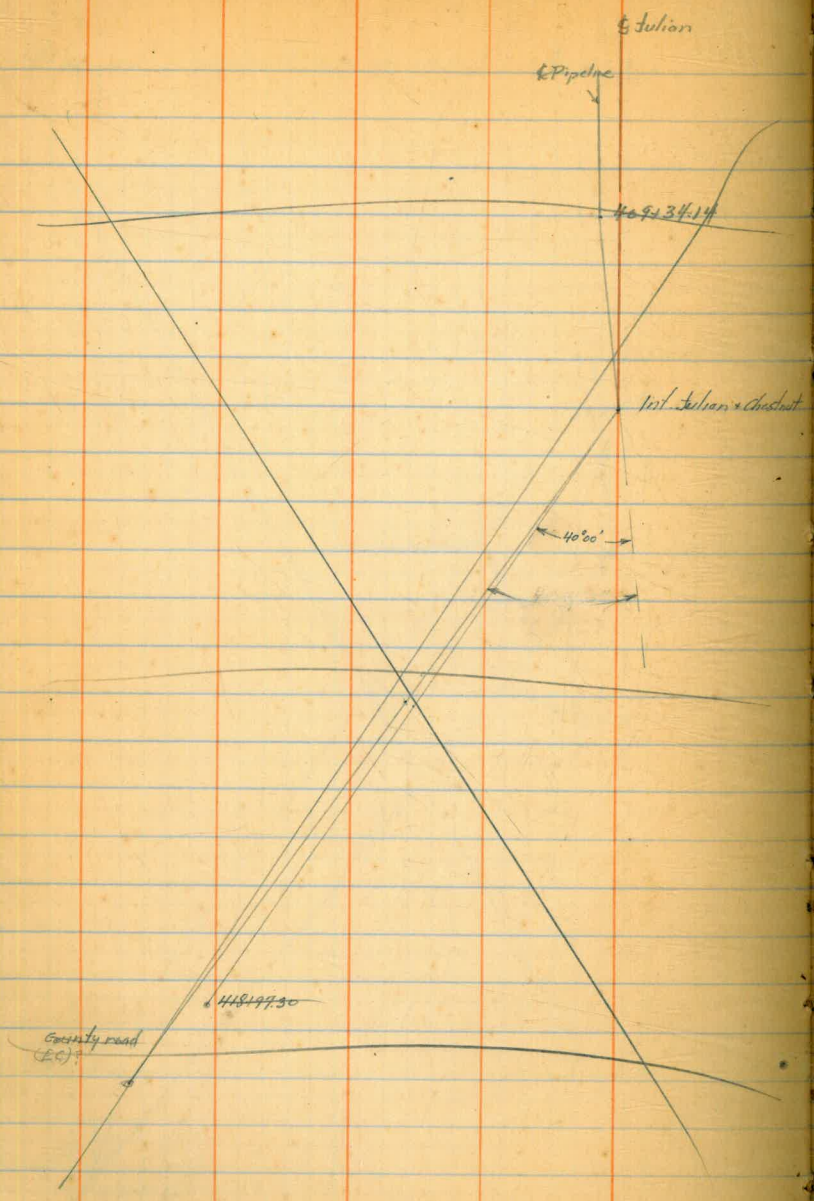
Sept. 5 1936
Soper
Isbell
Moore

Ties of Chestnut and Julian.

Pipeline



Sept 15, 1936
Super
1st Bell
Moore



Line Revision - sta. 409+34.14 - 418+58.30

~~Relocation page 71~~

409+34.14a

0°02'45" Lt

Sept 15, 1936
Soper
Isbell
Moore

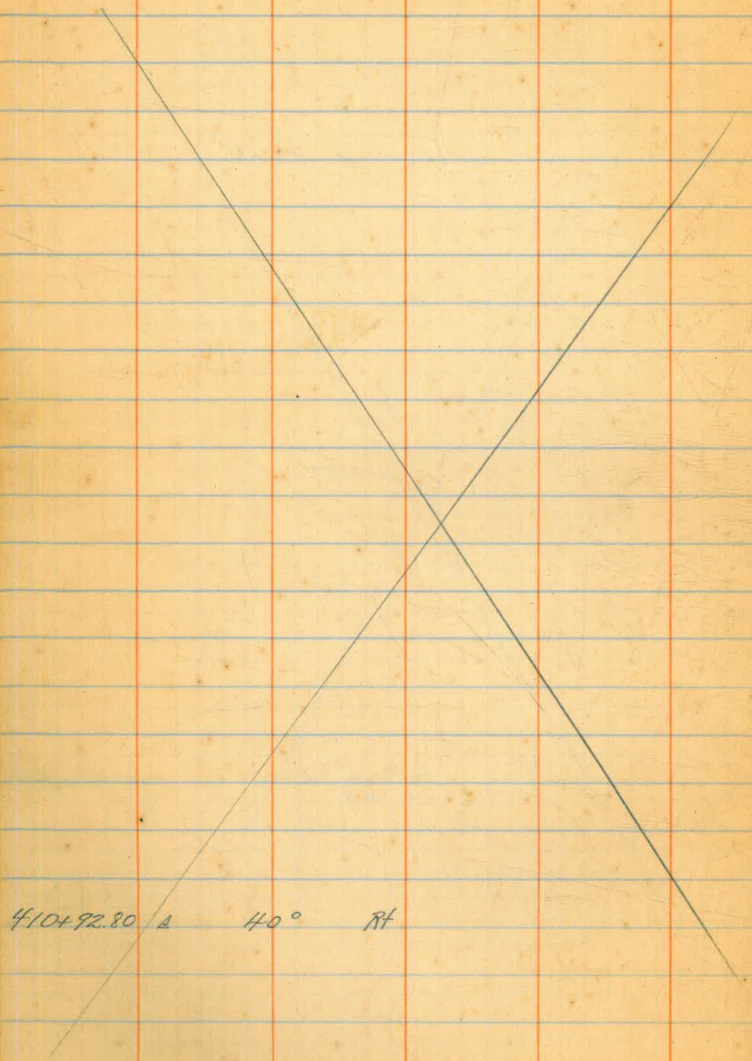
67

||||| 410+88

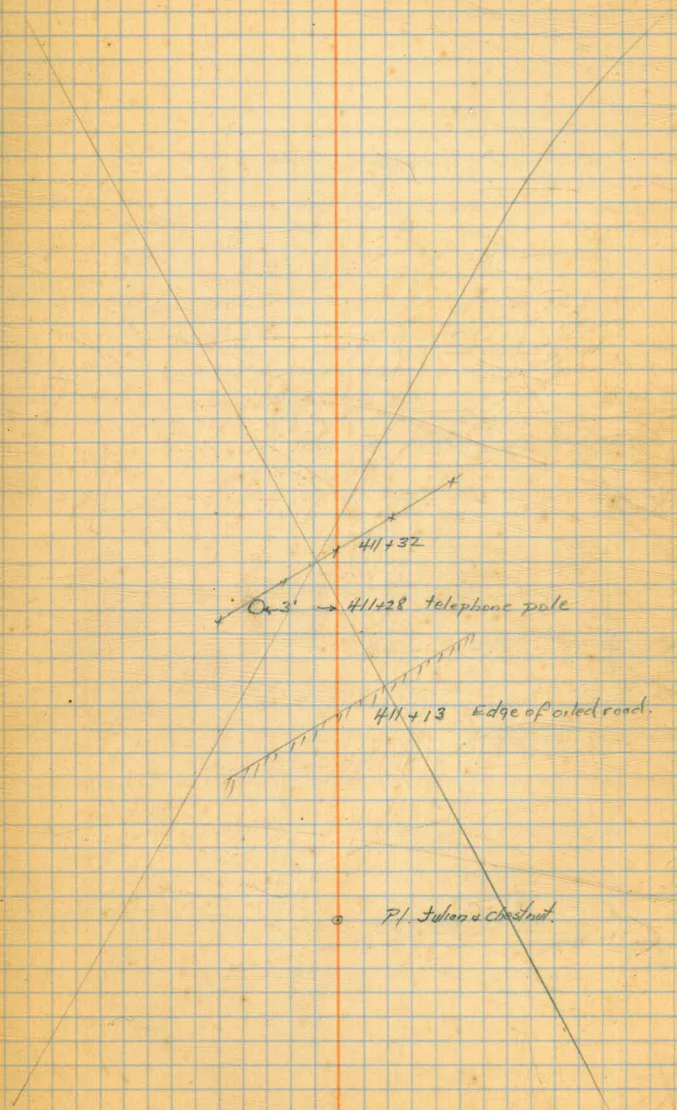
410+47

12.2

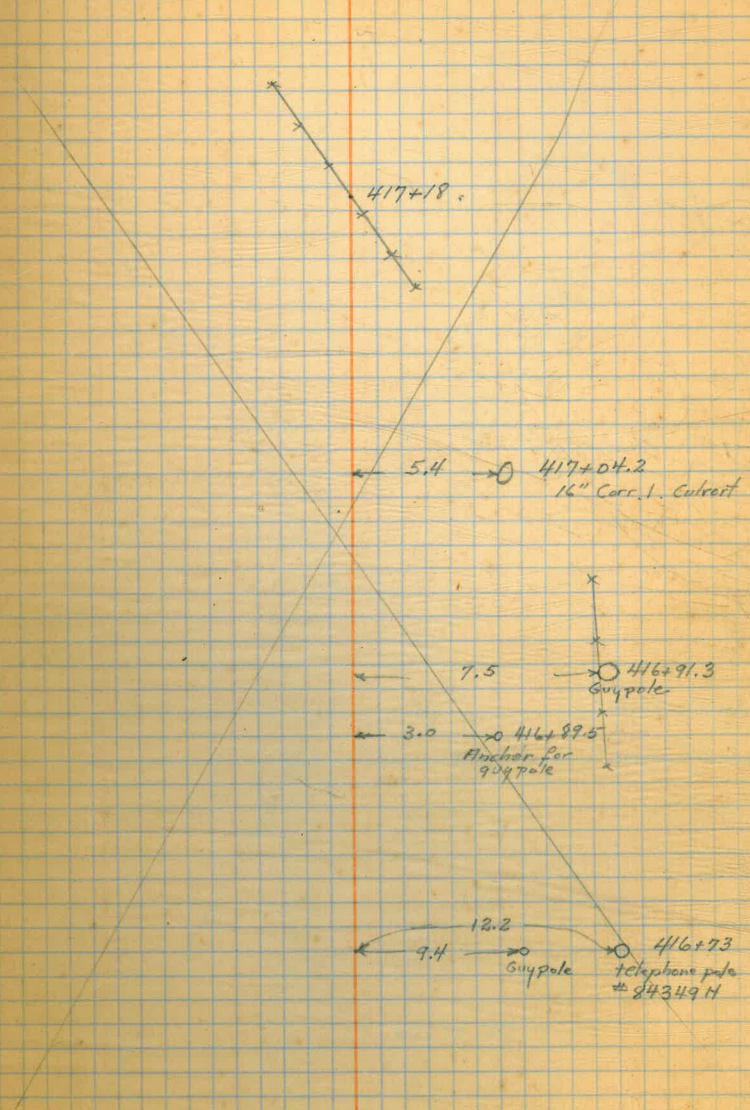
6.8



410492.80 A 40° Rt



411432
 On 3' → 411428 telephone pole
 411413 Edge of posted road.
 P. Julian a Chestnut



418+97.30 ahead.

418+58.30 Back

120° 25' 15"

417+81.55 EC

5° 15'

8.5

12.0

418+97.30

418+58.30

417+75 Edge of poled road.

Wholesale Fly

85.10

239.5

Man

A=39° 30'

R=95'

T=34.11

1046'

155.92

Old County road B.C.

Relocation Sta 409+34.14 - 419+04.15 = 419+25.30

Relocation page 74

410+92.80 P.O.T. (P.I. of Julian & Chestnut)

409+34.14 A

$0^{\circ} 02' 45''$ Lt

Sept 23 1936

Soper
Isbell
Moore

71

x x x x Fence 411+22.8

Edge of road 411+10

410+88

410+87

12.2

6.8

411+62.80

43° 32' 30" Rt.

R.P. 13.70

40.00

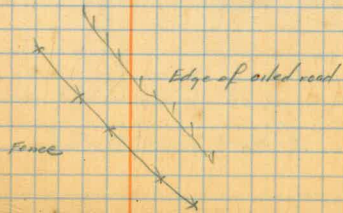
R.P.

20.0

R.P.

20.0

419125.30
=
419104.15



411+81.07 Hhd } Equations - due to special
= 411+80.65 Bch }

Special Angle

411+77.21 43° 57' 30" Rt.

P.I. = 411+77.21
Δ = 43° 57' 45" Rt
R = 9.5156
t = 3.86
L = 7.30
B.C. = 411+73.35
E.C. = 411+80.65
411+81.07

411+62.80 P.O.T. (E. of relocated County Road)

410+92.80 P.O.T. (P.L. Julian & Chestnut)

409+34.14 0° 02' 45" Lt

From page 53.

Sept 24 1934

Super
Isbell
Morris

(Note: H.O.C. working at
sta 410+50)

74
R.F. 100 ± P.P.
85.59 Spike spike

x ← x → x → x → Fence 411+22.8

||||| 411+10

411+88 oiled road.

12.2 6.8

oiled road

Cont'd on page 59

422+36.68 Bld.

=
422+21.02 Bld.

421+99.32 B.C. $11^{\circ} 38' 45''$

+75 $9^{\circ} 45\frac{1}{2}'$

+50 $7^{\circ} 49\frac{1}{2}'$

+25 $5^{\circ} 53'$

421+00 $3^{\circ} 57'$

+75 $2^{\circ} 01'$

+50 $0^{\circ} 04'$

420+48.93 B.C.

$P1 = 421 + 25.19$

$A = 23^{\circ} 17' 30''$ RT

$R = 370$

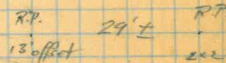
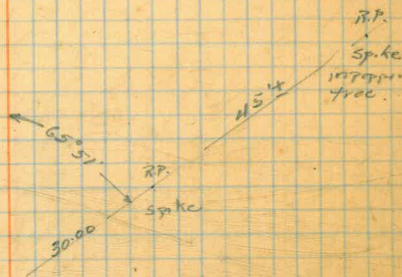
$T = 76.26$

$L = 150.44$

$d_1 = 4.646$

$d_2 = 1^{\circ} 56' .140$

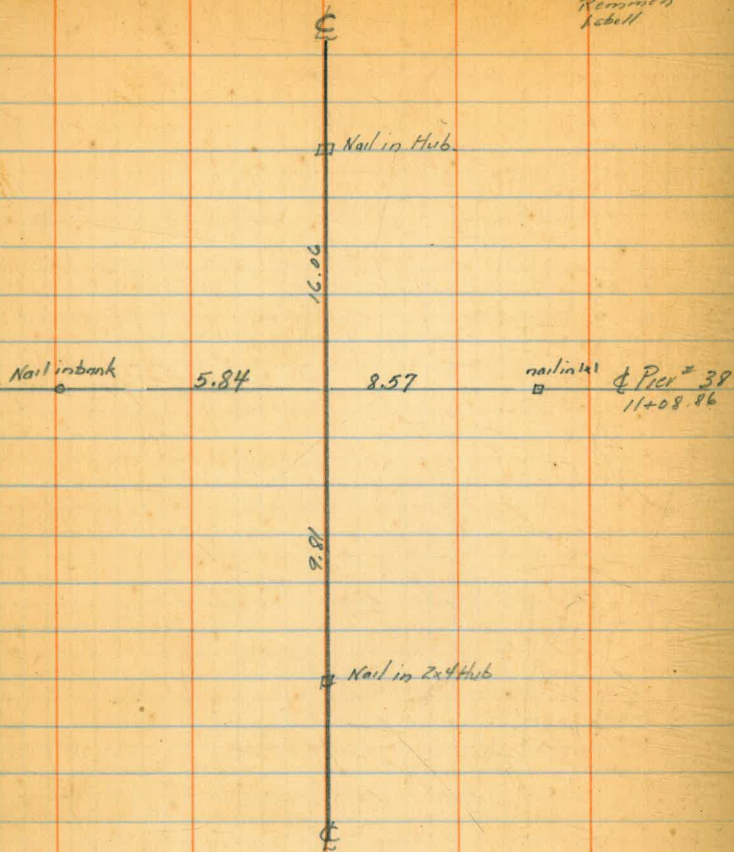
External $7.78'$



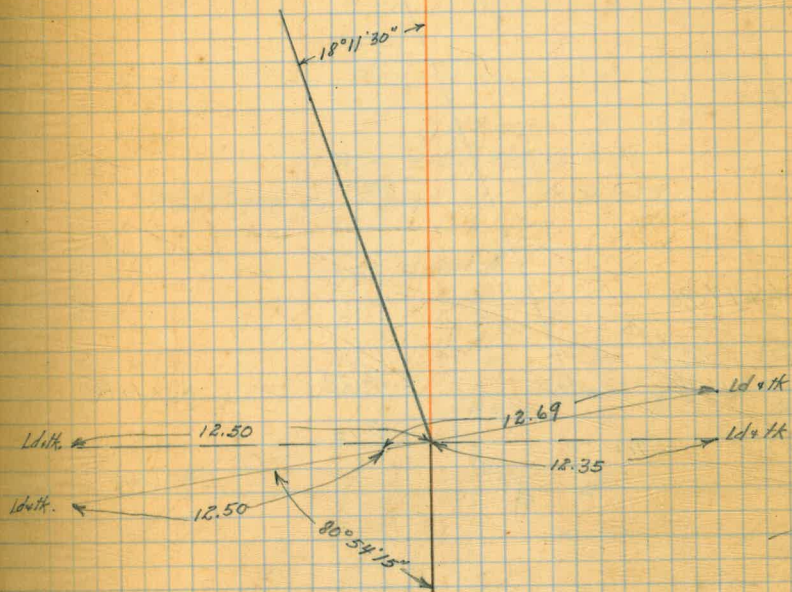
R.P.S. set for Pier # 38

May 23 1936
Saper
Remondin
Schell

78



Detail of plugs set at Sta. 10+31.38



Reference points for Pier "A"

April 21 1936
Soper Isbell
Remmen

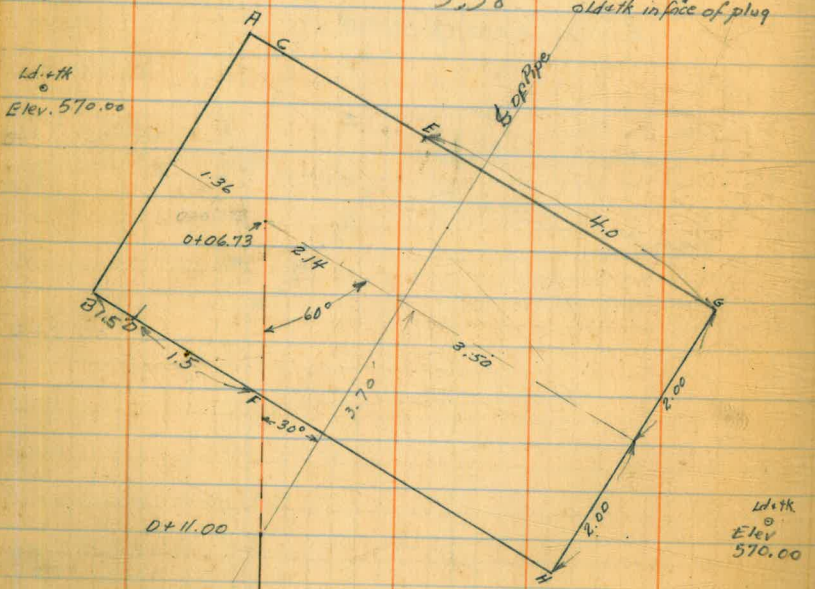
Elev. plug on Pier #1 \pm 1.0 above Top Conc.

567.27

0.34 567.61

"A"	6.01	561.60
"B"	5.97	561.64
"C"	6.12	561.49
"D"	6.19	561.42
"E"	5.95	561.66
"F"	6.29	561.32
"G"	4.65	562.96
"H"	5.58	562.03

old thk in face of plug



of tunnel

$$\frac{a}{3.70} = \tan 30^\circ$$

5.773503
2.1196
5.64 to Sand Pier
1.36 to N " "

TABLE No. 1
Distance of slope stake from side or shoulder stake for any width roadway, slope 1N to 1. If ground is nearly level, the cut or fill at side stake is located by the double entry method in last column and top row. The number in body of table in same row and column gives distance level estimate the difference in elevation between cut or fill and distance in table. Set up rod at this point, of sight should cut target. If it does not make the slight adjustment necessary.

IMPROVED TABLES AND INFORMATION

TABLE No. 2
To find tangent and external for curve in any other degree, divide by degree of curve and add connection found in column of connection. Degree of curve with a given I may be found by dividing tangent (or external) opposite I by given tangent (or external).
The distance from a point on the tangent to the curve is very nearly the square of the tangent length divided by twice the radius.

570.57

291+00 13' out
 291+50 - 10' out
 292+00 10' out
 292+50 13' out

43560

19750
 16064
 243.6

22121.02
 21197.37
 23.65

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.
 Roadway 16 feet wide. Side Slopes 1 on 1½
 For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.2	8.3	8.5	8.6	8.8	8.9	9.1	9.2	9.4	0
1	9.5	9.7	9.8	10.0	10.1	10.3	10.4	10.6	10.7	10.9	1
2	11.0	11.2	11.3	11.5	11.6	11.8	11.9	12.1	12.2	12.4	2
3	12.5	12.7	12.8	13.0	13.1	13.3	13.4	13.6	13.7	13.9	3
4	14.0	14.2	14.3	14.5	14.6	14.8	14.9	15.1	15.2	15.4	4
5	15.5	15.7	15.8	16.0	16.1	16.3	16.4	16.6	16.7	16.9	5
6	17.0	17.2	17.3	17.5	17.6	17.8	17.9	18.1	18.2	18.4	6
7	18.5	18.7	18.8	19.0	19.1	19.3	19.4	19.6	19.7	19.9	7
8	20.0	20.2	20.3	20.5	20.6	20.8	20.9	21.1	21.2	21.4	8
9	21.5	21.7	21.8	22.0	22.1	22.3	22.4	22.6	22.7	22.9	9
10	23.0	23.2	23.3	23.5	23.6	23.8	23.9	24.1	24.2	24.4	10
11	24.5	24.7	24.8	25.0	25.1	25.3	25.4	25.6	25.7	25.9	11
12	26.0	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.