W
S77

577

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.

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This Field Book is manufactured of a high grade **50%** Rag Paper having a **WATER RESISTING** surface.

MICROFILMED
JAN 13 1965

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Inst. at "A" Mean = 55°08'18"

"D" to "B" DIRECT

55°8'30"

110°16'30"

165°25'

220°33'

275°41'30"

330°50' ÷6

53°08'20"
6 | 330°50' | 120
30 | 48
30 | 2
30

"D" To "B" INVERTED

55°8'30"

110°16'30"

165°24'30"

220°33'

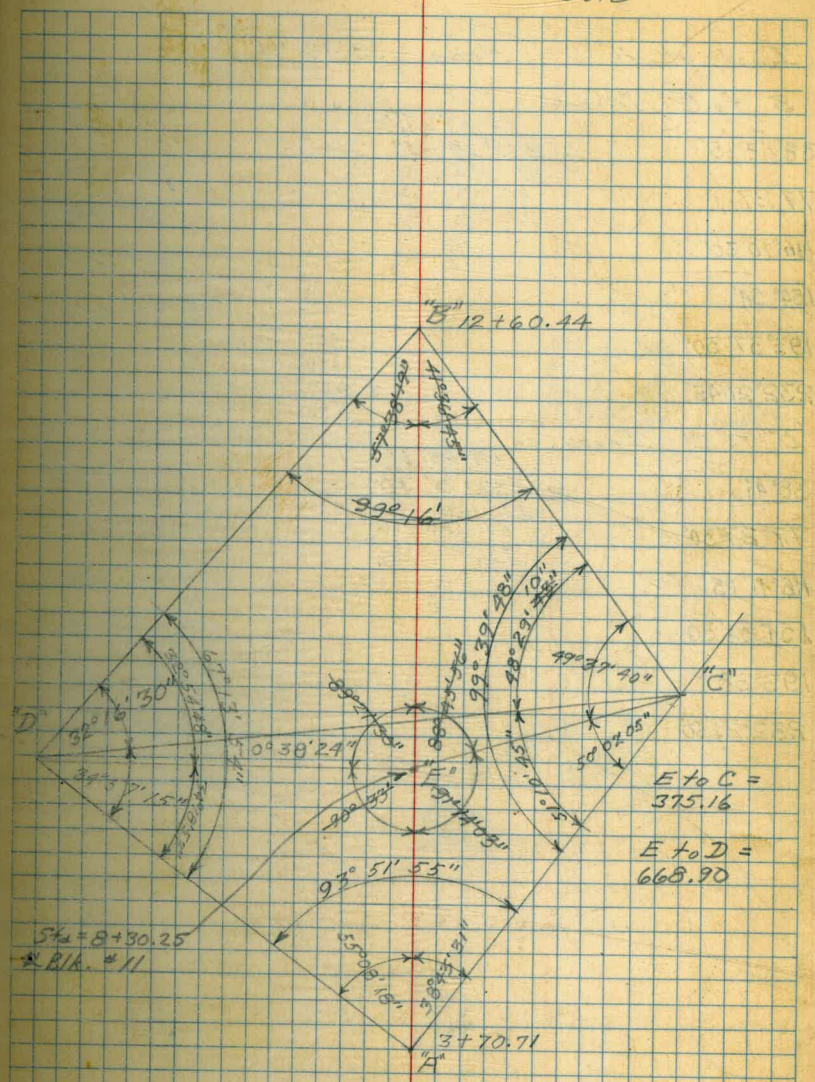
275°41'15"

330°49'30"

55°08'15"
6 | 330°49'30" | 90
30 | 48 | 6
30 | 1 | 30
30

Triangulation of Axis SAN VICENTE DAM

Sept. 29-1911
Isbell - Inst. 2
Poldk
Cole



Inst at "A" Mean = 38°43'31" ✓

"B" to "C" Direct

38°43'15"
77°27'
116°10'30"
154°54'
193°37'30"
232°20'45"

38°43'27.5"
6 | 232°20'45"
18 240 120
52 260 165
48 20 12
4 18 42
2 3

35
27.5
2 | 62.5
31.25

"B" to "C" Inverted

38°44'
77°27'30"
116°11'15"
154°54'30"
193°38'
232°21'30"

38°43'35"
6 | 232°21'30"
18 240 180
52 261 210
48 21 30
4 18
3

Inst at "A" Mean = 93°51'55" ✓

"D" to "C" Direct

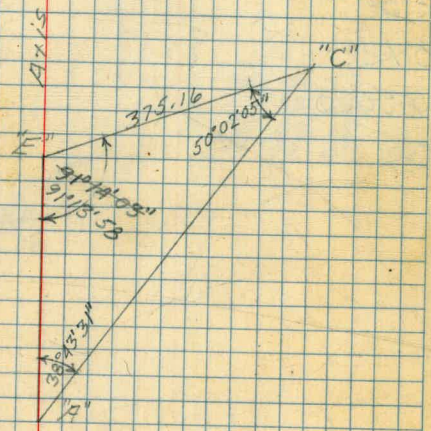
93°52'
187°44'
281°36'
375°28'
469°39'30"
563°11'30"

93°51'55"
6 | 563°11'30"
54 300 300
23 311 330
18 60 30
5 11
6
5

"D" to "C" Inverted

93°52'
187°44'
281°36'
375°27'45"
469°39'30"
563°11'30"

50 02 05
91 13 58
38 43 31
179 59 34 (26) -



Inst. at "D" Medn = 38' 24" ✓

"C" to "E" Direct.

0° 38' 30"
1° 16' 30"
1° 55' 30"
2° 33' 30"
3° 12'
3° 50' 30"

38' 25"
6 | 3° 50' 30"
180 | 120
230 | 150
18 | 12
50 | 30
48
2

25
22.5
2 | 47.0
23.75

"C" to "E" Inverted

0° 38' 30"
1° 16' 45"
1° 55' 30"
2° 34'
3° 12'
3° 50' 15"

38' 22.5'
6 | 3° 50' 15"
180 | 120
230 | 135
18 | 12
50 | 15
48 | 12
2 | 3

Inst. at "D" Medn = 32° 16' 30" ✓

"B" to "C" Direct

32° 16' 30"
64° 33'
96° 49' 30"
129° 5' 30"
161° 21' 45"
193° 38' 30"

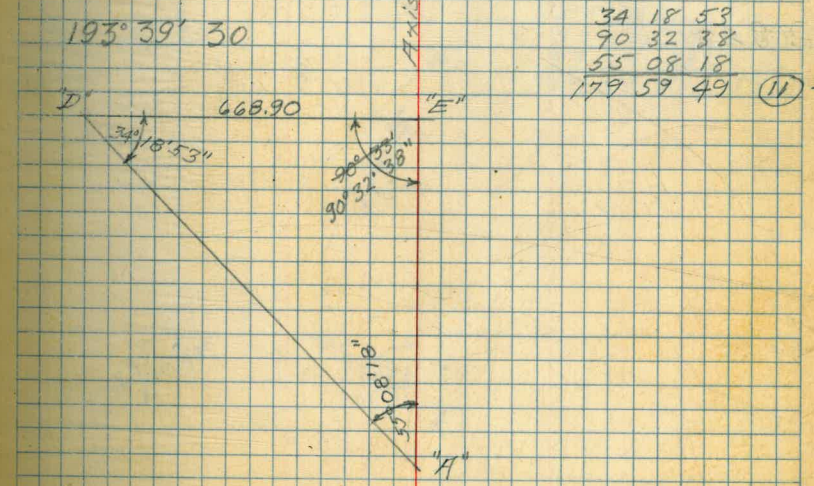
32° 16' 25"
6 | 193° 38' 30"
18 | 60 | 120
13 | 98 | 150
12 | 6 | 12
1 | 38 | 30
36
2

"B" to "C" Inverted

32° 17'
64° 33' 30"
96° 50' 15"
129° 7'
161° 23'
193° 39' 30"

32° 16' 35
6 | 193° 39' 30"
18 | 60 | 180
13 | 99 | 210
12 | 6 | 16
1 | 39 | 30
36
3

34 18 53
90 32 38
55 08 18
179 59 49 (11) –



Inst. at "D" Mean = 34° 57' 15"

"C" to "A" Direct

34° 57' 30"

69° 55'

104° 52'

139° 49'

174° 46'

209° 43' 30"

"C" to "A" Inverted

34° 57' 30"

69° 54' 30"

104° 51' 45"

139° 49' 15"

174° 46' 30"

209° 43' 30"

34° 57' 15"

6) 209° 43' 30"

18 — 300 — 60

29 — 343 — 90

24 — 30 — 6

5 — 43 — 30

42

1

Inst. at "D" Mean = 67° 13' 54"

"B" to "A" Direct

67° 14' 15"

134° 28'

201° 41' 30"

268° 55' 45"

336° 9' 30"

403° 23' 15"

"B" to "A" Inverted.

67° 14' 15" ...

134° 27' 45"

201° 41' 15"

268° 55' 15"

336° 9' 15"

403° 23' 30"

67° 13' 52.5"

6) 403° 23' 15"

36 — 60 — 300

43 — 83 — 315

42 — 6 — 30

1 — 23 — 15

18 — 12

5 — 3

55

52.5

2) 107.5

53.75

67° 13' 55"

6) 403° 23' 30"

36 — 60 — 300

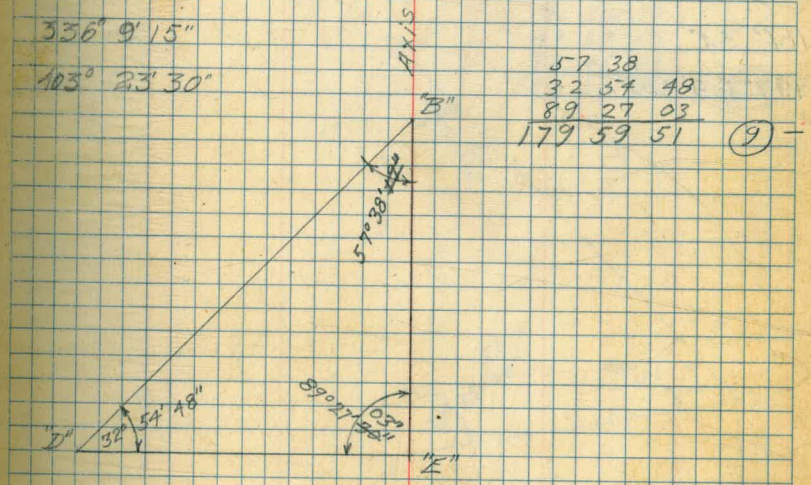
43 — 83 — 330

42 — 6 — 30

1 — 23 — 30

18

5



57 38

32 54 48

89 27 03

179 59 51 (9) —

Inst. at "D" Mean = 32° 54' 48"

"B" to "E" Direct

32° 54' 45"
65° 39' 30"
98° 44' 30"
132° 39' 30"
164° 34' 15"
197° 29'

32° 54' 50"
6) 197° 29'
18 306 300
17 329 30
12 30
5 29
24
5

"B" to "E" Inverted

32° 54' 45"
65° 39' 30"
98° 44' 15"
131° 39'
164° 34'
197° 28' 30"

32° 54' 45"
6) 197° 28' 30"
18 300 240
17 328 270
12 30 24
5 28 30
24
4

Sept. 30 - 1941
Isbell
Polak
Cole

6

Inst. at "D" Mean = 34° 18' 53"

"E" to "A" Direct

34° 19' 30"
68° 38'
102° 57'
137° 15' 45"
171° 34' 45"
205° 53' 30"

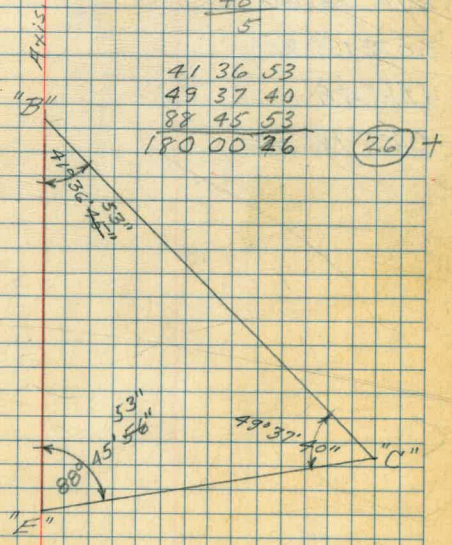
34° 18' 33"
6) 205° 53' 30"
18 60 300
25 113 330
24 6 30
1 53 30
48
5

"E" to "A" Inverted

34° 19'
68° 37' 30"
102° 56' 30"
137° 15' 15"
171° 34'
205° 53'

34° 18' 50"
6) 205° 53'
18 60 300
25 113
24 6
1 53
48
5

41 36 53
49 37 40
88 45 53
180 00 26 (26) +



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Inst. at "E"

"A" to "D" Direct

90° 33'

181° 05' 30"

271° 38'

362° 12'

452° 45'

543° 17' 30"

"A" to "D" Inverted

90° 33' 30"

181° 06'

271° 39' 30"

362° 12' 30"

452° 46'

543° 18' 30"

Mean = 90° 33'

90° 32' 55'
6 | 543° 17' 30
54
3 | 197 | 300 | 330
18 | 30 | 30
17
12
5

90° 33' 05
6 | 543° 18' 30"
54
3 | 198
18
18

Inst at E

"D" to "B" Direct

89° 28'

178° 55'

268° 22' 30"

357° 50'

447° 38'

536° 45' 30"

"D" to "B" Inverted

88° 27' 30"

178° 55'

268° 22' 15"

357° 50'

447° 17' 15"

536° 44' 30"

Mean = 89° 27' 30"

89° 27' 35"
6 | 536° 45' 30"
48
56 | 120 | 180
54 | 163 | 210
2 | 12 | 18
49 | 30
42
8

89° 27' 25"
6 | 536° 44' 30"
48
56 | 120 | 120
54 | 164 | 150
2 | 12 | 12
44 | 30
42
2

SEE Page 13

Inst. at "E" Mean 88° 45' 56"

"B" to "C" Direct.

88° 46'

177° 31' 30"

266° 17' 30"

355° 03' 30"

443° 41' 30"

532° 35'

$$\begin{array}{r} 88^\circ\ 45'\ 50'' \\ 6\overline{)532^\circ\ 35'\ 300} \\ 48 \quad 240 \\ \overline{52} \quad \overline{275} \\ 48 \quad 24 \\ \overline{4} \quad \overline{35} \\ \quad 30 \\ \quad \overline{5} \end{array}$$

$$\begin{array}{r} 45'\ 50'' \\ 46'\ 02.5'' \\ \overline{21^\circ\ 31'\ 52.5''} \\ 45'\ 56' \end{array}$$

"B" to "C" Inverted

88° 46' 30"

177° 32' 15"

266° 18'

355° 04' 15"

443° 50' 30"

532° 36' 15"

$$\begin{array}{r} 88^\circ\ 46'\ 02.5' \\ 6\overline{)532^\circ\ 36'\ 15''} \\ 48 \quad 240 \quad 12 \\ \overline{52} \quad \overline{276} \quad \overline{3} \\ 48 \quad 24 \\ \overline{4} \quad \overline{36} \\ \quad 36 \end{array}$$

Inst. at "E" Mean = 91° 14' 03'

"C" to "A" Direct.

91° 14' 30"

182° 28' 30"

273° 42' 30"

364° 57'

456° 11'

547° 25'

$$\begin{array}{r} 91^\circ\ 14'\ 10'' \\ 6\overline{)547^\circ\ 25'} \\ 54 \quad 60 \quad 60 \\ \overline{7} \quad \overline{85} \\ 6 \quad 6 \\ \overline{1} \quad \overline{25} \\ \quad 24 \\ \quad \overline{1} \end{array}$$

"C" to "A" Inverted

91° 14'

182° 28'

273° 41' 45"

364° 55' 30"

456° 10'

547° 23' 30"

$$\begin{array}{r} 91^\circ\ 13'\ 55' \\ 6\overline{)547^\circ\ 23'\ 30''} \\ 54 \quad 60 \quad 300 \\ \overline{7} \quad \overline{83} \quad 330 \\ 6 \quad 6 \quad 30 \\ \overline{1} \quad \overline{23} \quad 30 \\ \quad 18 \\ \quad \overline{5} \end{array}$$

See page 13

Inst. at "B" Mean = 41° 36' 45"

"C" to "A" Direct

41° 36' 30"
83° 13' 30"
124° 50' 30"
166° 27'
208° 03' 30"
249° 40'

41° 36' 40"
6) 249° 40'
24 180 240
9 220
6 18
3 40
36
4

"C" to "A" Inverted

41° 36' 30"
83° 13' 30"
124° 50' 30"
166° 27'
208° 04'
249° 41'

41° 36' 50"
6) 249° 41'
24 180 300
9 221
6 18
3 41
36
5

Inst. at "B" Mean = 57° 38' 19"

"A" to "D" Direct

57° 38'
115° 16' 30"
172° 54' 30"
230° 33'
288° 11' 45"
345° 50'

57° 38' 20"
6) 345° 50'
30 180 120
45 230
42 18
3 50
48
2

20
17.5
2) 37.5
18.75

"A" to "D" Inverted

57° 38' 30"
115° 15' 30"
172° 54' 30"
230° 32' 30"
288° 11'
345° 49' 45"

57° 38' 17.5
6) 345° 49' 45"
30 180 60
45 229 105
42 18 6
3 49 45
48 42
1 3

Inst. at "B" Mean = 99° 16'

"C" to "D" Direct

99° 16'
198° 32'
297° 48'
397° 04' 30"
496° 40' 30"
595° 37'

99° 16' 10"
6) 595° 37'
54 60 60
55 97
54 6
1 37
36
1

"C" to "D" Inverted

99° 16'
198° 31' 30"
297° 47' 30"
397° 03' 15"
496° 39' 30"
595° 35'

99° 15' 50"
6) 595° 35'
54 60 300
55 95
54 6
1 35
30
5

Inst. at "C" Mean = 50° 02' 05"

A" to "E" Direct

50° 02'
100° 04'
150° 06'
200° 08'
250° 10'
300° 12'

50° 02'

"A" to "E" Inverted

50° 02' 30"
100° 04' 30"
150° 06' 30"
200° 09'
250° 11'
300° 13'

50° 02' 10"
6) 300° 13'
12 60
1

INST AT "C" Mean = 49° 37' 40"

"E" TO "B" DIRECT

49° 37' 30"

99° 15' 30"

148° 53'

198° 30' 45"

248° 08' 30"

297° 46'

"E" TO "B" INVERTED

49° 38'

99° 16'

148° 53'

198° 31'

248° 08' 30"

297° 46'

$$6\overline{)297^\circ 46'} = 49^\circ 37' 40''$$

24 → 180 → 240

57 → 226

54 → 18

3 → 46

42

4

INST AT "C" Mean = 51° 10' 45"

"A" TO "D" DIRECT

51° 11'

102° 21'

153° 32'

209° 42'

255° 53'

307° 03' 30"

"A" TO "D" INVERTED

51° 11'

102° 21' 45"

153° 32' 30"

209° 43'

255° 54'

307° 05'

$$6\overline{)307^\circ 03' 30''} = 51^\circ 10' 35''$$

30 → 60 → 180

7 → 63 → 210

6 → 6 → 18

1 → 3 → 30

$$6\overline{)307^\circ 05'} = 51^\circ 10' 55''$$

30 → 60 → 300

7 → 65

6 → 6

1 → 5

Inst. at "C"

"D" to "B" Direct

48° 29' 15"
96° 58'
145° 26' 30"
193° 55' 30"
242° 24' 15"
290° 58'

"D" to "B" Inverted

48° 29'
96° 58'
145° 27'
193° 55' 30"
242° 24' 45"
290° 58' 30"

"D" to "B" Direct & Inverted

96° 58'
193° 56' 30"
290 55'
387° 53'
484° 52'
581° 50'

Mean = 48° 29' 43

48° 29' 40"
6) 290° 58'
24 120 240
50 178
48 12
2 58
59
4

48° 29' 45"
6) 290° 58' 30"
24 120 240
50 178 270
48 12 24
2 58 30
59
4

48° 29' 10"
12) 581° 50'
48 306 120
101 350
96 24
5 110
108
2

Inst. at "C"

"A" to "B" Direct & Inverted

199° 19' 30"
398° 39' 30"
597° 59'
797° 18' 30"
996° 38' 15"
1195° 57' 45"

99° 39' 48.75"
12) 1195° 57' 45"
108 420 540
115 477 585
108 36 48
7 117 105
108 96
9 9

Oct. 1-1941
Jackson - Inst.

Inst. at "E"

"A" to "D"
181° 05' - 2
2° 10' 30"
360
362° 10' 30" - 4
183° 15' 45"
360
543° 15' 45" - 6

90° 32' 37.5"
6) 543° 15' 45"
54 180 180
3 135 225
18 18
15 45
12 42
3 3

"D" to "B"
178° 14' - 2
357° 48' + - 4
176° 42' 15"
360
536° 42' 15" - 6

89° 27' 02"
6) 536° 42' 15"
48 120
56 162
54 12
2 42

"A" to "D"
90° 32' 45" - 1
181° 05' + - 2
362° 10' - 4
543° 14' 30" - 6

"A" to "D" Isbell - Inst.
181° 04' 45"
362° 09' 30"
183° 14'
345° 14'

Oct. 1-1941
Jackson - Inst.

Inst. at "E"

"D" to "B"

89° 27' 15" - 1

178° 54' 15" - 2

357° 47' 45" - 4

536° 41' 30" - 6

715° 41' 45" - 8

894° 35' 30" - 10

1073° 29' 12

"B" to "C"

88° 45' 15" - 1

177° 32' - 2

355° 03' 30" - 4

532° 35' 15" - 6

"C" to "A"

91° 14' - 1

182° 27' 45" - 2

364° 55' 30" - 4

547° 23' + - 6

729° 51' 15" - 8

912° 19' 30" - 10

1094° 47' 30" 12

"A" to "B"

180°

89° 27' 02.5"

12 | 1073° 29'

96 | 300 | 300

113 | 329

108 | 29

5 | 89

84

5

Jackson - Inst.

88 45 52.5

6 | 532° 35' 15"

48 | 240 | 300

52 | 275 | 315

48 | 24 | 30

4 | 35 | 15

30 | 12

5 | 3

Jackson - Inst.

91 13 57.5

12 | 1094° 47' 30"

108 | 120 | 660

14 | 167 | 690

12 | 12 | 60

2 | 47 | 90

36 | 84

11 | 6

Inst. at "B"

"A" to "D"

57° 37' 30" 1

115° 16' - 2

230° 31' 45" 4

345° 48' 6

"C" to "A"

41° 37' 1

83° 14' - 2

166° 27' 30" 4

249° 41' 15" 6

"C" to "D"

99° 15' 1

198° 30' - 2

396 59' 45" 4

595° 29' 15" 6

Jackson - Inst.

57° 38'

6 | 345° 48'

30 | 180

45 | 228

42 | 18

3 | 48

41° 36' 52.5"

6 | 249° 41' 15"

24 | 180 | 300

9 | 221 | 315

6 | 18 | 30

3 | 41 | 15

36 | 12

5

99 14 52.5

6 | 595 29 15

54 | 60 | 300

55 | 89 | 315

54 | 6 | 30

1 | 29 | 15

24

5

99 14 53

99 39 48

99 51 55

67 13 54

360 00 30

Oct. 20-1941 Isbell Jackson King Cole

⊼ at #10

Rain Cloudy

		"A"	"B"	Mean	Arc Passover	Mean Arc	Mean ∡	Mean Mean ∡	Correction	Final ∡
#12	0 D.	-1° 05'	181° 04' 45"	1° 04' 52.5"						
	1 D.	62° 56' 15"	242° 56'	62° 56' 07.5"	64° 01'					
#10	6 D.	22° 59'	202° 58' 30"	22° 58' 45"	384° 03' 37.5"					
P.O.T. S.B.M.	6 R.	-1° 05'	181° 05'	-1° 05'	384° 03' 45"	384° 03' 41.25"	64° 00' 36.875"			
#12	0 D	20° 15'	200° 15'	20° 15'		10/21/41 Same Party				
	1 D	84° 15' 45"	264° 15' 30"	84° 15' 37.5"	64° 00' 37.5"					
#10	6 D	44° 18' 30"	224° 18'	44° 18' 15"	384° 03' 15"					
S.B.M.	6 R.	20° 15'	200° 14' 45"	20° 14' 52.5"	384° 03' 22.5"	384° 03' 18.75"	64° 00' 33.125"			
#12	0 D.	41° 04' 30"	221° 04'	41° 04' 15						
	1 D.	105° 05'	285° 05	105° 05'	64° 00' 45"			64° 00' 31.875"	0° 00' 02.743"	64° 00' 34.618"
#10	6 D.	65° 07' 30"	245° 07' 15"	65° 07' 22.5"	384° 03' 07.5					
S.B.M.	6 R.	41° 04' 30"	221° 04' 15"	41° 04' 22.5"	384° 03'	384° 03' 03.75"	64° 00' 30.625"			
P.O.T. S.B.M.	0 D.	1° 04' 30"	181° 04' 30"	1° 04' 30"						
	1 D.	22° ~~23°~~ 43'	202° 42' 30"	22° ~~23°~~ 42' 45"	21° ~~22°~~ 38' 15"					
#10	6 D.	130° 54' 30"	310° 54' 30"	130° 54' 30"	129° 50' 00"					
#11	6 R.	1° 04' 15"	181° 04' 15"	1° 04' 15"	129° 50' 15"	129° 50' 07.5"	21° 38' 21.25"			
S.B.M.	0 D.	19° 49' 30"	199° 49'	19° 49' 15"						
	1 D.	41° 28'	221° ~~27' 30"~~ 28'	41° 28	21° 38' 45"					
#10	6 D	149° 39' 30"	329° 39' 15"	149° 39' 22.5"	129° 50' 07.5"					
#11	6 R.	19° 47'	199° 47' 30"	19° 47' 15"	129° 52' 07.5"	129° 51' 07.5"	21° 38' 31.25"	21° 38' 21.46"	0° 00' 02.742"	21° 38' 24.202"
S.B.M.	0 D.	39° 49' 45"	219° 49' 30"	39° 49' 52.5"						
	1 D.	61° 28'	241° 28'	61° 28'	21° 38' 07.5"					
#10	6 D.	169° 39'	349° 39' 15"	169° 39' 07.5"	129° 49' 15"					
#11	6 R.	39° 49' 30"	219° 49' 15"	39° 49' 22.5"	129° 49' 45"	129° 49' 30"	21° 38' 21.67			

Oct. 21-1941 — Δ at #10 — Cloudy

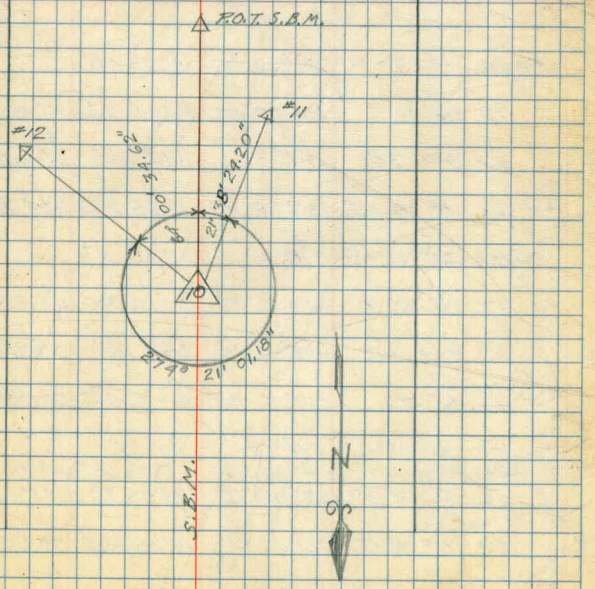
Isbell
Jackson
King
Cole

		"A"	"B"	Mean	Arc Passover	Mean Arc
#11	O.D.	0°29'45"	180°30'	0°29'52.5"		
	I.D.	274°50'45"	94°51'	274°50'52.5"	274°21'	
#10	G.D.	206°36'	26°35'45"	206°35'52.5"	206°06'	
#12	G.R.	0°29'30"	180°29'	0°29'15"	206°06'37.5"	1646°06'18.75"
#11	O.D.	19°43'45"	199°43'30	19°43'37.5"		
	I.D.	294°04'30"	114°04'30"	294°04'30"	274°20'52.5"	
#10	G.D.	225°49'	45°49'15"	225°49'07.5"	206°05'30"	
#12	G.R.	19°43'30"	199°43'15"	19°43'22.5"	206°05'45"	1646°05'37.5"
#11	O.D.	39°28'15"	219°28'	39°28'07.5"		
	I.D.	313°49'15"	133°49'30"	313°49'22.5"	274°21'15"	
#10	G.D.	245°34'	65°34'15"	245°34'07.5"	206°06'	
#12	G.R.	39°28'~~15~~	219°28'	39°28	206°06'07.5"	1646°06'03.75"

64°00'31.875"
21°38'24.46"
2 74°20'58.437"
359°59'51.772"

+ 1440

Mean Δ	Mean Mean Δ	Correction	Final Δ
274°21'03.125"			
274°20'56.25"			
	274°20'58.437"	0°00'02.743	274°21'01.18"
274°21'00.625"			



Oct. 21-1941 — Cloudy

Fisbell
Jackson
King
Cole

X at #12

		"A"	"B"	Mean	Arc Between	Mean Arc.
#13	O.D.	0° 37'	180° 37'	0° 37'		
	I.D.	28° 54' 15"	208° 54'	28° 54' 07.5"	28° 17' 07.5"	
#12	G.D.	170° 20' 30"	350° 20' 30"	170° 20' 30"	169° 43' 30"	
#14	G.R.	0° 36' 30"	180° 36' 30"	0° 36' 30"	169° 44'	169° 43' 45"
#13	O.D.	18° 46' 45"	198° 46' 30"	18° 46' 37.5		
	I.D.	47° 04' 15"	227° 03' 45"	47° 04'	28° 17' 22.5"	
#12	G.D.	188° 30'	8° 30'	188° 30'	169° 43' 22.5	
#14	G.R.	18° 46'	198° 46'	18° 46'	169° 44'	169° 43' 41.25"
#13	O.D.	40° 25' 30"	220° 25'	40° 25' 15"		
	I.D.	68° 42' 30"	248° 42'	68° 42' 15"	28° 17'	
#12	G.D.	210° 08' 30"	30° 08' 45"	210° 08' 37.5"	169° 43' 22.5"	
#14	G.R.	40° 24' 30"	220° 24'	40° 24' 15"	169° 44' 22.5"	169° 43' 52.5"
#14	O.D.	0° 29' 15"	180° 29' 15"	0° 29' 15"		
	I.D.	56° 10'	236° 09' 45"	56° 09' 52.5"	55° 40' 37.5"	
#12	G.D.	334° 33'	154° 33'	334° 33'	334° 03' 45"	
#11	G.R.	0° 28' 45"	180° 28' 30"	0° 28' 37.5"	334° 04' 22.5	334° 03' 53.75"
#14	O.D.	21° 12' 30"	201° 12'	21° 12' 15"		
	I.D.	76° 52' 30"	256° 52' 30"	76° 52' 30	55° 40' 15"	
#12	G.D.	355° 16'	175° 45' 30"	355° 16'	334° 03' 45"	
#11	G.R.	21° 12'	201° 11' 30	21° 11' 45"	334° 04' 15"	334° 04'
#14	O.D.	40° 13'	220° 13'	40° 13'		
	I.D.	95° 53' 30"	275° 53' 30"	95° 53' 30'	55° 40' 30"	
#12	G.D.	14° 16' 45"	194° 16' 30"	14° 16' 37.5"	334° 03' 37.5"	
#11	G.R.	40° 12'	220° 12'	40° 12	334° 04' 37.5"	334° 04' 07.5"

17

Mean ∠	Mean Mean ∠	Correction	Final ∠
28° 17' 17.5"			
.625	28° 17' 17.187"	0.141	28° 17' 17.328"
		0.32"	28° 17' 17.507
28° 17' 16.875"			
28° 17' 18.75"			
55° 40' 38.958"			
55° 40' 40"			
	55° 40' 40.625"	0.142"	55° 40' 40.767"
		0.31"	55° 40' 40.935"
55° 40' 41.25"			

Oct 22-41
Isabel
Jackson
KING
Cole

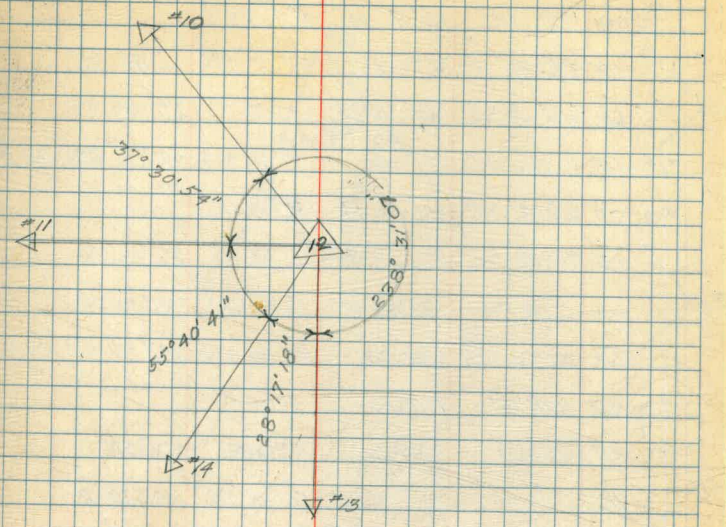
X at #12

Cloudy

		"A"	"B"	Mean	Arc Passover	Mean Arc
#11	OD.	0° 50'	180° 49' 45"	0° 49' 52.5"		
	ID.	38° 21'	218° 20' 30"	38° 20' 45"	37° 30' 52.5"	
#12	GD.	225° 55' 15"	45° 55'	225° 55' 7.5"	225° 05' 15"	
#10	GR.	0° 49' 30"	180° 49' 30"	0° 49' 30"	225° 05' 37.5"	225° 05' 26.25"
#11	OD.	20° 09' 30"	200° 09' 30"	20° 09' 30"		
	ID.	57° 40' 30"	237° 40' 30"	57° 40' 30"	37° 31'	
#12	GD.	245° 14' 30"	65° 14' 30"	245° 14' 30"	225° 5'	
#10	GR.	20° 09' 30"	200° 09'	20° 09' 15"	225° 5' 15"	225° 5' 07.5"
#11	OD.	40° 10'	220° 09' 45"	40° 09' 52.5"		
	ID.	77° 40' 45"	257° 40' 30"	77° 40' 37.5"	37° 30' 45"	
#12	GD.	265° 15' 15"	85° 15'	265° 15' 07.5"	225° 5' 15"	
#10	GR.	40° 9' 30"	220° 9' 45"	40° 9' 37.5"	225° 5' 30"	225° 5' 22.5"
#10	OD.	1° 6'	181° 5' 45"	1° 05' 52.5"		
	ID.	239° 37'	59° 37'	239° 37'	238° 31' 07.5"	
#12	GD.	352° 12' 30"	172° 12' 15"	352° 12' 22.5"	113° 06' 30"	
#13	GR.					
#10	OD.	VOID				
	ID.					
#12	GD.					
#13	GR.					
#10	OD.					
	ID.					
#12	GD.					
#13	GR.					

Mean ∠	Mean Mean ∠	Correction	Final ∠
37° 30' 54.375"	37° 30' 54.063"	~~0.142"~~	~~37° 30' 54.205"~~
		0.31	37° 30' 54.373
37° 30' 51.25"			
37° 30' 53.75"			

28° 17' 17.187"
55° 40' 40.625"
37° 30' 54.063"
2 38° 31' 06.875
359° 59' 58.750"



#10	O.D	0° 32'	180° 32'	0° 32'		
	I.D	239° 03'	59° 03'	239° 03'	238° 31'	
#12	G.D.	351° 38' 30"	171° 38'	351° 38' 15"	1431° 6' 15"	
#13	G.R.	0° 31'	180° 31'	0° 31'	1431° 07' 15"	1431° 06' 45"
#10	O.D	20° 10' 30"	200° 10' 15"	20° 10' 22.5"		
	I.D	258° 41' 15"	78° 41' 30"	258° 41' 22.5"	238° 31'	
#12	G.D	11° 16' 30"	191° 16' 15"	11° 16' 22.5"	1431° 06'	
#13	G.R	28° 9' 15"	200° 9'	20° 9' 07.5"	1431° 7' 15"	1431° 6' 37.5"
#10	O.D	41° 19' 45"	221° 19' 30"	41° 19' 37.5"		
#12	I.D	279° 50' 30"	99° 50' 30"	279° 50' 30"	238° 30' 52.5"	
	G.D	32° 26' 15"	212° 26' 15"	32° 26' 15"	1431° 06' 37.5"	
#13	G.R	41° 18' 45"	221° 18' 30"	41° 18' 37.5"	1431° 07' 37.5"	1431° 07' 07.5"

Correction Final ∠

238° 31' 07.5"

238° 31' 6.875"

.142" 238° 31' 07.047"
.31" 238° 31' 07.185"

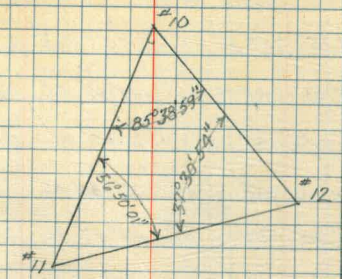
238° 31' 06.25"

238° 31' 11.25"

At #11

		"A"	"B"	Mean	Arc Passover	Mean Arc.
#10	OD	1°07'30"	181°07'15"	1°07'22.5"		
	ID	57°57'15"	237°57'	57°57'07.5"	56°49'45"	
#11	GD	342°05'30"	162°05'30"	342°05'30"	340°58'07.5"	
#12	GR	1°05'15"	181°05'	1°05'07.5"	341°0'22.5"	340°59'15"
#10	OD	20°08'15"	200°08'15"	20°08'15"		
	ID	76°58'30"	256°58'30"	76°58'30"	56°50'15"	
#11	GD	1°08'30	181°08'15"	1°08'22.5"	341°00'07.5"	
#12	GR	20°08'~~30~~15"	200°08	20°08'07.5"	341°00'15"	341°00'11.25"
#10	OD	40°15'	220°15'	40°15'		
	ID	97°05'	277°05'	97°05'	56°50'	
#11	GD	21°15'	201°14'30"	21°14'45"	340°59'45"	
#12	GR	40°14'45"	220°14'30"	40°14'37.5"	341°00'07.5"	340°59'56.25"
#12	OD	1°10'45"	181°10'30"	1°10'37.5"		
	ID	62°29'30"	242°29'15"	62°29'22.5"	61°18'45"	
#11	GD	9°02'30"	189°02'30"	9°02'30"	367°51'52.5"	
#13	GR	1°10'45"	181°10'30"	1°10'37.5"	367°51'52.5"	
#12	OD	20°52'~~30~~15"	200°52'	20°52'07.5"		
	ID	82°11'	262°11'	82°11'	61°18'52.5"	
#11	GD	28°44'15"	208°44'15"	28°44'15"	367°52'07.5"	
#13	GR	20°51'45"	200°51'30"	20°51'37.5"	367°52'37.5"	367°52'22.5"
#12	OD	40°09'30"	220°09'~~45~~30"	40°09'30"		
	ID	101°28'15"	281°28'00"	101°28'07.5"	61°19'37.5"	
#11	GD	48°01'45"	228°01'30"	48°01'37.5"	367°52'07.5"	
#13	GR	40°09'30"	220°09'15"	40°09'22.5"	367°52'15"	367°52'11.25"

Mean ∠	Mean Mean ∠	Correction	Final ∠
56°49'52.50"			
56°50'01.875"			
	56°50'00.625"	0.394"	56°50'01.019"
56°49'59.875"			
61°18'38.75"			
05"			
61°18'43.75"			
	61°18'42.812"	0.394"	61°18'43.206"
61°18'41.875"			



		"A"	"B"	Mean	Arc Passover	Mean Arc
#13	OD	0° 34' 30"	180° 34' 30"	0° 34' 30"		
	ID	27° 51' 45"	207° 51' 30"	27° 51' 37.5"	27° 17' 07.5"	
#11	GD	164° 15' 45"	344° 15' 45"	164° 15' 45"	163° 41' 15"	
#14	GR	0° 35' 15"	180° 35'	0° 35' 07.5"	163° 40' 37.5"	163° 40' 56.25"
#13	OD	20° 36'	200° 35' 30"	20° 35' 45"		
	ID	47° 52' 30"	227° 52' 30"	47° 52' 30"	27° 16' 45"	
#11	GD	184° 16' 30"	4° 16' 30"	184° 16' 30"	163° 40' 45"	
#14	GR	20° 36' 15"	200° 36'	20° 36' 07.5	163° 40' 22.5"	163° 40' 33.75"
#13	OD	40° 16' 30"	220° 16' 15"	40° 16' 22.5		
	ID	67° 33' 15"	247° 33' 15"	67° 33' 15"	27° 16' 52.5"	
#11	GD	203° 57' 30"	23° 57' 30"	203° 57' 30"	163° 41' 07.5"	
#14	GR	40° 16' 45"	220° 16' 30"	40° 16' 37.5"	163° 40' 52.5"	163° 41'
#14	OD	0° 25'	180° 25'	0° 25'		
	ID	214° 59' 30"	34° 59' 30"	214° 59' 30"	214° 24' 30"	
#11	GD	207° 51° 30"	27° 51' 30"	207° 51' 30"	1287° 26' 30"	
#10	GR	0° 25'	180° 25'	0° 25'	1287° 26' 30"	
#14	OD	20° 14' 30"	200° 14' 15"	20° 14' 22.5"		
	ID	234° 48' 45"	54° 49'	234° 48' 52.5"	214° 34' 30"	
#11	GD	227° 41'	47° 41'	227° 41'	1287° 26' 37.5"	
#10	GR	28 14' 30"	200° 14' 30"	20° 19' 30"	1287° 26' 30"	1287° 26' 33.75"
#14	OD	40° 36' 30"	220° 36' 30"	40° 36' 30"		
	ID	255° 11'	75° 11'	255° 11'	214° 34' 30"	
#11	GD	248° 03'	68° 03'	248° 03'	1287° 26' 30"	
#10	GR	40° 36' 30"	220° 36'	40° 36' 15"	1287° 26' 45"	1287 26' 37.5"

Mean ∠	Mean Mean ∠	Correction	Final ∠
27° 16' 49.375"			
	27° 16' 49.677"	0.394	27° 16' 50.071"
27° 16' 45.625"			
27° 16' 50"			
214° 34' 25"			
	214° 34' 25.31"	0.394"	214° 34' 25.704"
214° 34' 25.62"			
214° 34' 26.25"			

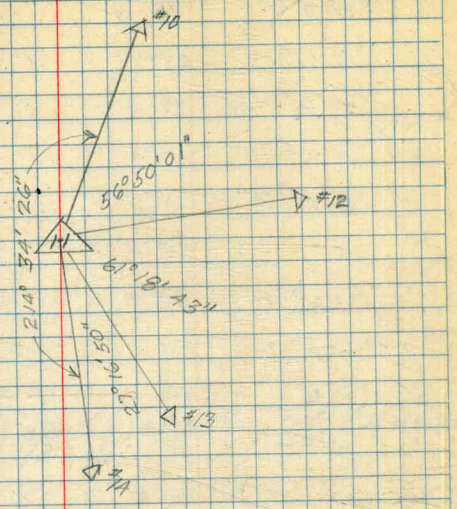
56° 50' 00.625"

61° 18' 42.812"

27° 16' 49.677"

214° 34' 25.310"

359° 59' 58.424"



Oct. 23
Isobel
Jackson
King
Cole

π At 13

Rain - Cloudy

		"A"	"B"	Mean	Arc Passover	Mean Arc	Mean L	Mean Mean L	Correction	Final L
#1	0D	0° 9'	180° 9'	0° 09'						
#13	1D	67° 03'	247° 3'	67° 03'	66° ~~52~~ 54'					
	6D	41° 34' 30"	221° 34' 30"	41° 34' 30"	401° 25' 30"					
#14	6R	0° 9' 15"	180° 09'	0° 9' 07.5"	401° 25' 22.5"	401° 25' 26.25"	66° 54' 14.375"			
#1	0D	20° 29'	200° 23' 45"	20° 23' 52.5"						
#13	1D	87° 18' 15"	269° 18' 15"	87° 18' 15"	66° 54' 22.5"					
	6D	61° 49' 30"	241° 49' 30"	61° 49' 30"	401° 25' 37.5"					
#14	6R	20° 24'	200° 24'	20° 24'	401° 25' 30"	401° 25' 33.75"	66° 54' 15.625"			
#1	0D	40° 11'	220° 11'	40° 11'						
#13	1D	107° 5' 30"	287° 5' 30"	107° 5' 30"	66° 54' 30"			66° 54' 14.06"	+01.77"	66-54-15.83
	6D	81° 36' 30"	261° 36' 15"	81° 36' 22.5"	401° 25' 22.5"					
#14	6R	40° 11'	220° 11'	40° 11'	401° 25' 22.5"	401° 25' 22.5"	66° 54' 13.75"			
#14	0D	0° 46'	180° 46'	0° 46'						
#13	1D	53° 45'	233° 44' 45"	53° 44' 52.5"	52° 58' 52.5"					
	6D	318° 36' 30"	138° 36' 30"	318° 36' 30"	317° 50' 30"					
#11	6R	0° 46'	180° 46'	0° 46'	317° 50' 30"	317° 50' 30"	52° 58' 25"			
#14	0D	20° 5' 30"	200° 5' 30	20° 5' 30"						
#13	1D	73° 04' 30"	253° 04' 15"	73° 04' 22.5"	52° 58' 52.5"			52° 58' ~~25.51~~ 29.6875"	+01.77"	52° 58' 31.46"
	6D	337° 56' 30"	157° 56' 15"	337° 56' 22.5"	317° 50' 52.5					
#11	6R	20° 5' 30"	200° 5' 30"	20° 5' 30"	317° 50' 52.5"	317° 50' ~~56.5~~ 52.5"	52-58-28.75 ~~52° 58' 27.41"~~			
#14	0D	40° 10' 30"	220° 10' 15"	40° 10' 22.5"						
#13	1D	93° 09'	273° 09'	93° 09'	52° 58' 37.5"					
	6D	358° 01'	178° 01'	358° 01'	317° 50' 37.5"					
#11	6R	40° 9' 30"	220° 9' 30"	40° 09' 30"	317° 51' 30"	317-51-03.75 ~~317° 50' 37.5"~~	52° 58' ~~25.62~~ 30.625			

Oct. 24

Jackson
Cole
KING

Clear-Hot

⊼ At 13

		"A"	"B"	Mean	Arc Passover	Mean Arc	Mean L	Mean Mean L	Correction	Final L
#11	0D	0° 28' 45"	180° 28' 30"	0° 28' 37.5"						
#13	1D	35° 12'	215° 11' 45"	35° 11' 52.5"	34° 43' 15"					
	6D	208° 47' 30"	28° 47' 30"	208° 47' 30"	208° 18' 52.5"					
#12	6R	0° 28' 30"	180° 28'	0° 28' 15"	208° 19' 15"	208° 19' 03.75"	34° 43' 10.625"			
#11	0D	20° 17'	200° 16' 30"	20° 16' 45"						
#13	1D	55° 0' 0"	234° 59' 45"	54° 59' 52.5"	34° 43' 07.5"			34° 43' ~~09.932~~ 09.0625	+01.77	34° 43' 10.83
	6D	228° 35' 30"	48° 35' 30"	228° 35' 30"	208° 18' 45"					
#12	6R	20° 16' 30"	200° 16' 30"	20° 16' 30"	208° 19'	208° 18' 52.5"	34° 43' 08.75"			
#11	0D	40° 14' 45"	220° 14' 30"	40° 14' 37.5"						
#13	1D	74° 58' 0"	254° 57' 30"	74° 57' 45"	34° 43' 07.5"					
	6D	248° 33' 30"	68° 33' 30"	248 33' 30	208° 18' 52.5"					
#12	6R	40° 14' 30"	220° 14' 30"	40° 14' 30°	208° 19' 0"	208° 18' 56.25"	34° 43' 09.37"			
#12	0D	0° 16'	180° 16'	0° 16'						
#13	1D	155° 21' 30"	335° 21' 30"	155° 21' 30"	155° 05' 30"					
	6D	210° 48'	30° 48'	210° 48'	930° 32'					
#5	6R	0° 16'	180° 15' 30'	0° 15' 45"	930° 32' 15"	930° 32' ~~15~~ 07.5"	155° 05' ~~20.25~~ 21.25"			
#12	0D	20-18	200-18	20-18						
#13	1D	175-23-30	355-23-30	175-23-30	155-05-30					
	6D	230-50	50-50	230-50	930-32					
#5	6R	20-19	200-19	20-19	930-31	930-31-30	155-05-15			
#12	0D	40-06	220-06	40-06						
#13	1D	195-11	15-11	195-11	155-05			155° 05' ~~14.75"~~ 14.6875	+01.77	155-05-16.46
	6D	250-37-30	70-37-30	250-37-30	930-31-30					
#5	6R	40-06-15	220-06	40-06-075	930-31-225	930-31-26.25	155-05-14.~~75~~ .375			

T At 13

		"A"	"B"	Mean	Arc Passover	Mean Arc
#15	OD	0° 6' 45"	180° 6' 45"	0° 6' 45" ✓		
#13	ID	28° 02' 30"	208° 02' 30"	28° 02' 30" ✓	27° 55' 45" ✓	
	6D	167° 42' 15"	347° 42'	167° 42' 07.5" ✓	167° 35' 22.5" ✓	
#1	6R	0° 7'	180° 7'	0° 7' ✓	167° 35' 07.5" ✓	167° 35' 15" ✓
#15	OD	20° 39'	200° 39'	20° 39' ✓		
#13	ID	48° 35'	228° 35'	48° 35' ✓	27° 56' ✓	
	6D	188° 15'	8° 15'	188° 15' ✓	167° 36' ✓	
#1	6R	20° 39' 30"	200° 39' 15"	20° 39' 22.5" ✓	167° 35' 37.5" ✓	167° 35' 48.75"
#15	OD	40° 37' 15"	220° 37'	40° 37' 07.5" ✓		
#13	ID	68° 33' 15"	248° 33'	68° 33' 07.5" ✓	27° 56' ✓	
	6D	208° 13' 15"	28° 13' 15"	208° 13' 15" ✓	167° 36' 07.5" ✓	167° 35' 52.5" ✓
#1	6R	40° 36' 45"	220° 36' 30"	40° 36' 37.5" ✓	167° 35' 37.5"	~~167° 36' 22.5"~~
#5	OD	0° 44' 45"	180° 44' 30"	0° 44' 37.5" ✓		
#13	ID	23° 07' 30"	203° 07' 30"	23° 07' 30" ✓	22° 22' 52.5" ✓	
	6D	135° 01'	315° 01'	135° 01' ✓	134° 16' 22.5" ✓	
#15	6R	0° 44' 30"	180° 44' 30"	0° 44' 30" ✓	134° 16' 30" ✓	134° 16' 26.25" ✓
#5	OD	20° 33'	200° 33'	20° 33' ✓		
#13	ID	42° 56'	222° 55' 45"	42° 55' 52.5" ✓	22° 22' 52.5" ✓	
	6D	154° 49' 45"	334° 49' 45"	154° 49' 45" ✓	134° 16' 45" ✓	
#15	6R	20° 33'	200° 33'	20° 33' ✓	134° 16' 45" ✓	134° 16' 45" ✓
#5	OD	40° 32' 30"	220° 32' 30"	40° 32' 30" ✓		
#13	ID	62° 55' 15"	242° 55'	62° 55' 07.5" ✓	22° 22' 37.5" ✓	
	6D	174° 48' 45"	354° 48' 45"	174° 48' 45" ✓	134° 16' 15" ✓	
#15	6R	40° 32' 30"	220° 32' 30"	40° 32' 30" ✓	134° 16' 15" ✓	134° 16' 15" ✓

Mean L	Mean Mean L	Correction	Final L
27° 55' ~~52.5"~~ 52.50"			
	27° 55' ~~52.5"~~ 58.4375" ✓	+01.71	27° 56' 00.21" ✓
27° 55' ~~58.125"~~			
27° 55' ~~58.75"~~			
22° 22' 44.38" ✓			
	22° 22' 43.44" ✓	+01.71	22° 22' 45.21" ✓
22° 22' 47.5" ✓			
			360° 00' 00.00"
22° 22' 42.5" ✓			

Oct 28 '41. ⊼ Jackson Laing Polak

⊼ at #14

		"A"	"B"	Mean	Arc Passover	Mean Arc	Mean L	Mean Mean L	Correction	Final L
#14 #11	0D	0-04-45	180-04-30	0-04-375						
	1D	35-48-15	215-48	35-48-075	35-43-30					
	6D	214-25-30	34-25-30	214-25-30	214-20-525					
#12	6R	0-04	180-03-30	0-03-45	214-21-45	214-21-18.75	35°-43'-33125"			
#14 #11	0D	20-04-45	200-04-30	20-04-375						
	1D	55-49-15	235-49-15	55-49-15	35-44-375					
	6D	234-26-45	54-27	234-26-525	214-22-150					
#12	6R	20-04-30	200-04-30	20-04-30	214-22-225	214-22-18.75	35°-43'-43125"			
#14 #11	0D	40-29	220-29	40-29						
	1D	76-12-30	256-12-30	76-12-30	35-43-30			35° 43' 41.25"	+01.70	35° 43' 42.95"
	6D	254-50	74-50	254-50	214-21-00					
#12	6R	40-27-15	220-27	40-27-075	214-22-525	214-21-56.25	35°-43'-39375"			
#14 #12	0D	0-01-30	180-01-30	0-01-30						
	1D	64-03	244-03	64-03	64-01-30					
	6D	24-08-45	204-08-45	24-08-45	384-07-15					
#13	6R	0-01-30	180-01-30	0-01-30	384-07-15	384-07-15	64°-01'-125"			
#14	0D	20-26	200-26	20-26						
	1D	84-27	264-27	84-27	64-01					
	6D	44-32	224-32	44-32	384-06					
	6R	20-24-30	200-24-45	20-24-375	384-07-225	384-06-41.25	64°-01'-06875"			
#14	0D	40-22	220-22	40-22						
	1D	104-23-30	284-23	104-23-15	64-01-15			64° 01' 08.125"	+01.70"	64° 01' 09.83
	6D	64-28-30	244-28-15	64-28-225	384-06-225					
	6R	40-21	220-20-45	40-20-525	384-07-30	384-06-56.25	64-01-09375			

↑ at #14 — Oct. 28 '41

		A	B	Mean	Arc Passover	Mean Arc
#13	OD	0-11	180-10-30	0-10-45		
#14	ID	41-11-30	220-11-30	41-11-30	41-00-45	
	6D	246-13-45	66-13-30	246-13-375	246-02-525	
#15	6R	0-10-46	180-10-30	0-10-375	246-03	246-02-56.25
#13	OD	20-13-45	200-13-15	20-13-45		
#14	ID	61-14-30	241-14-15	61-14-225	41-00-375	
	6D	266-16-15	86-16-15	266-16-15	246-02-30	
#15	6R	20-12-30	200-12-15	20-12-225	246-03-525	246-03-11.25
#13	OD	40-08	220-07-45	40-07-525		
#14	ID	81-08-15	261-08-15	81-08-15	41-00-225	
	6D	286-10-30	106-10-30	286-10-30	246-02-375	
#15	6R	40-07	220-07	40-07	246-03-30	246-03-0375
#15	OD	0-08-15	180-08	0-08-075		
#16	ID	219-22-30	39-22-30	219-22-30	219-14-225	
	6D	235-32-30	55-32-30	235-32-30	1315-21-225	
#16	6R	0-05	180-01-30	0-04-45	1315-27-45	1315-26-0375
#15	OD	20-10-15	200-10	20-10-075		
#16	ID	239-21-30	59-21-30	239-21-30	219-14-225	
	6D	255-36-30	75-36-30	255-36-30	1315-26-225	
#16	6R	20-08	200-07-45	20-07-525	1315-28-375	1315-27-30

Mean Δ	Mean Mean Δ
41°00'29.375"	
41°00'31875"	
41°00'3125" +01.70"	
	41°00'32.95"
41°00'30625"	
219°14'20625"	
219°14'35"	

∠ at #14 — Oct 28 '41

		A	B	Mean	Arc Passover	Mean Arc
#15	OD	40-13-30	220-13-15	40-13-225		
	1D	259-27-45	79-27-30	259-27-375	219-14-150	
#14	6D	275-39-30	95-39-30	275-39-30	1315-26-075	
		40-11-30	11-15	40-11-225	1315-28-075	
#11	6R	~~40-11~~	220-10-45	~~40-10-525~~	~~1316-28-375~~	1315-27-075

Mean ∠ — Mean Mean ∠

219°-14'-32.5625 ✓ + 01.71

219°14'34.27 ✓

219°-14'-~~33.56~~ 30.125 ✓

359°59'53.1875

4) 6.8125

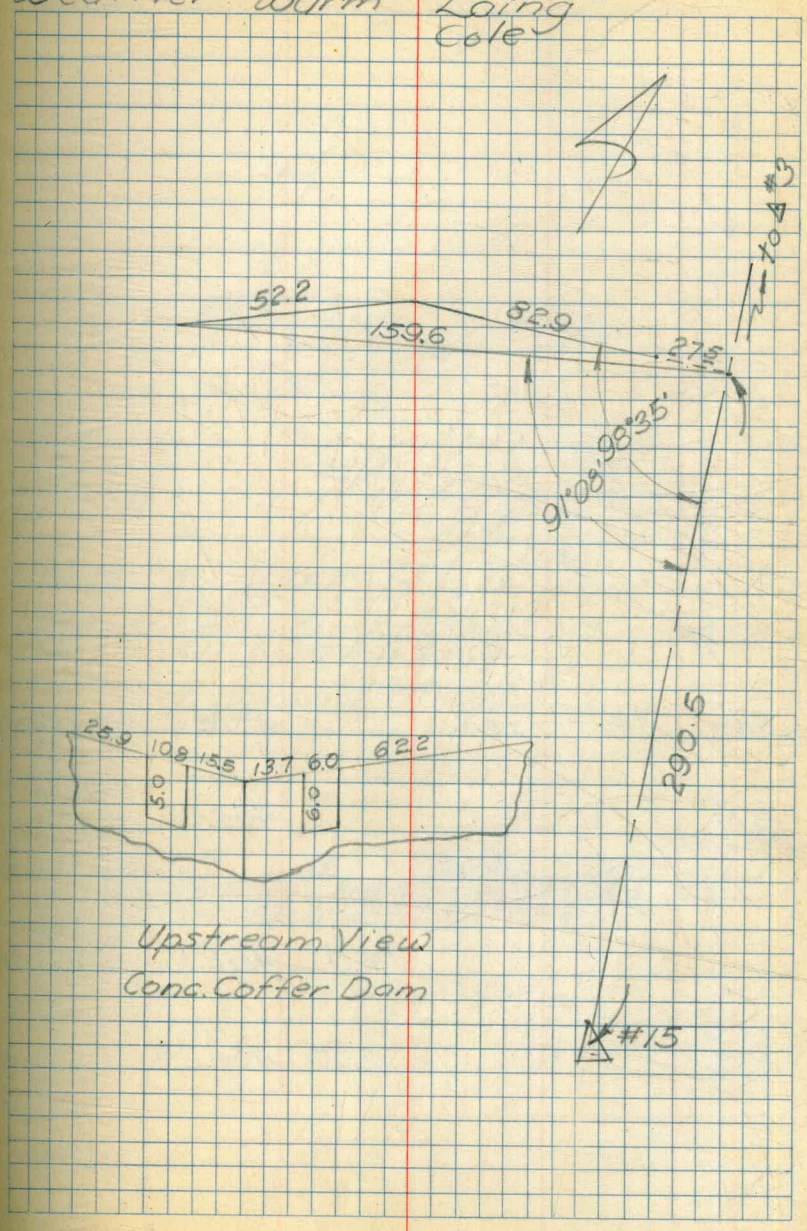
1.70

Ties to Coffer Dam - North of Axis

Sta	+	H.I.	-	Elev.	
A-5 B.M.				480.39	
	1.80	482.19			
			11.29	470.9	Top of Coffer dam
A-5 B.M.			1.80	480.39	

Average Width of top Conc. Coffer Dam = 1.0'

Date:- 11/6/41 Jackson
Weather:- Fair King
Warm Polak
Laing
Cole



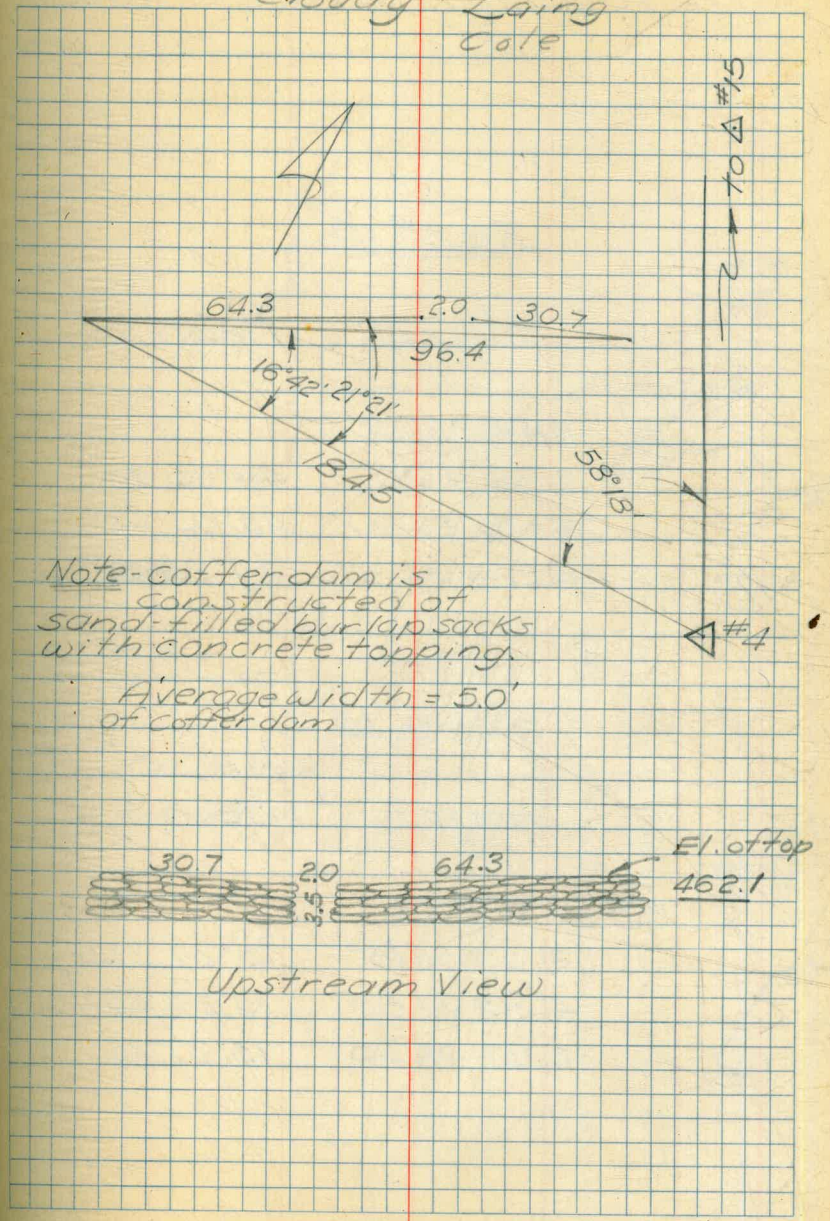
Upstream View
Conc. Coffer Dam

Date - 11/17/41 Jackson
King
Polak
Laing
Cole

Weather - Cool Cloudy

Ties to Coffer Dam - S. of Axis

Sta.	+	H.I.	−	Elev.	Remarks
A-9 B.M.				464.29	Steel pin on rock & Blk. #8 200'± S. of Axis
	2.70	466.99			
			4.9	462.1	Top of coffer dam
A-9 B.M.			2.70	464.29	



Tie to Contractor's Water Tank

T @ Δ #15

	Horiz Δ	Mean
1)	44°05'45"	
2)	88°11'30"	44°05'45"
4)	176°23'00"	44°05'45"
6)	264°34'30"	44°05'45"

#13 / #15 / Water Tank

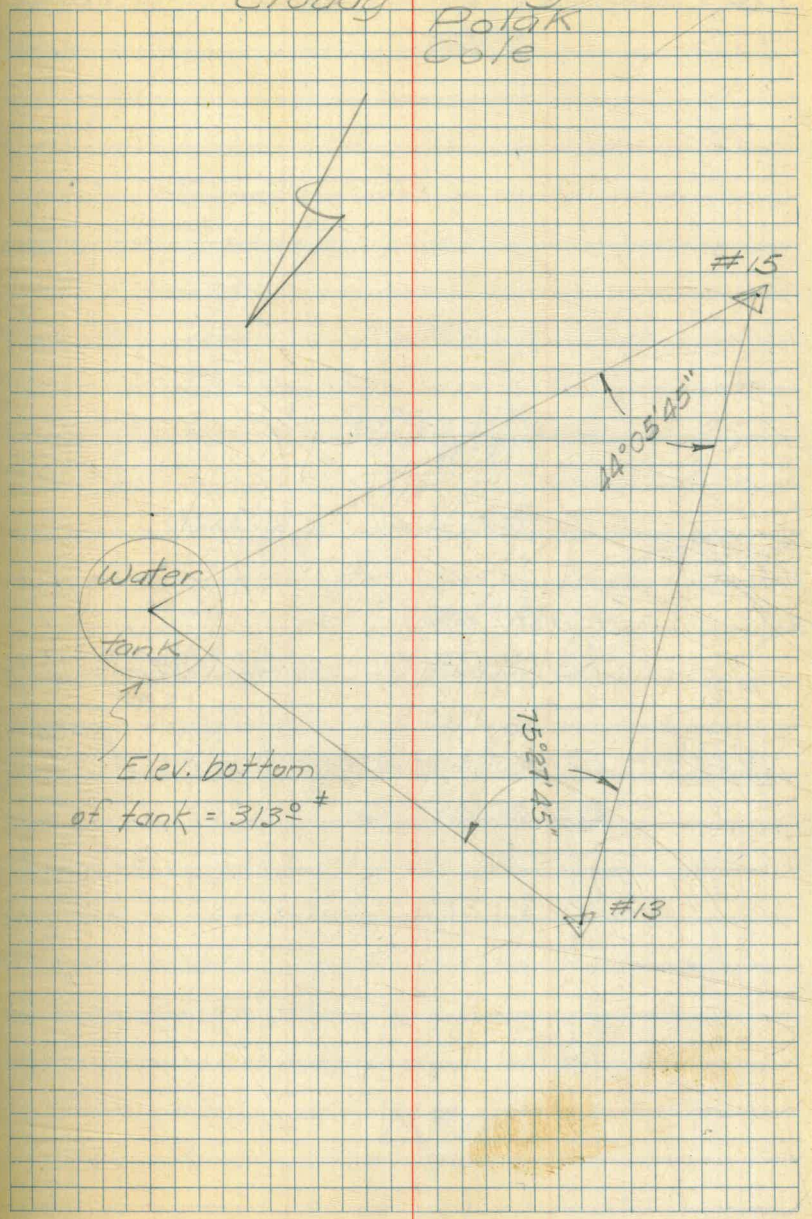
T @ Δ #13

	Horiz Δ	Mean
1)	75°27'30"	
2)	150°55'15"	75°27'37.5"
4)	301°51'00"	75°27'45"
6)	92°46'30"	75°27'45"

Water Tank / #13 / #13

Date - 11/17/41 Cool
Weather - Cloudy

Jackson
King
Laing
Polak
Cole



Tie to Contractor's Powder Magazine #1

Δ@Δ#13

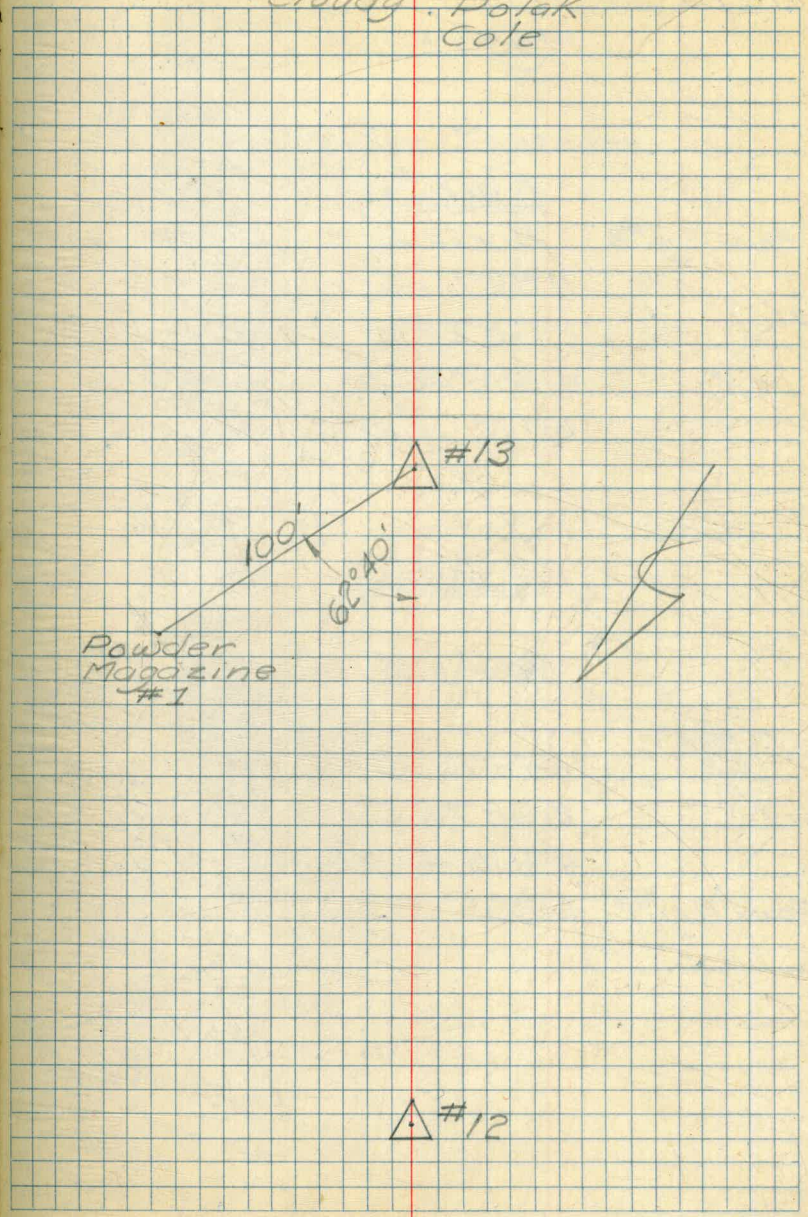
	Horiz. ∠	Mean
1/	62°40'	
2/	125°20'	62°40"

Powd. Mag. #1
#13
#12

Note - Distance measured by stadia

Date - 11/17/41 Jackson King Laing Polak Cole

Weather - Cool Cloudy



Tie to Contractor's Powder Magazine #2

Δ @ Δ #12

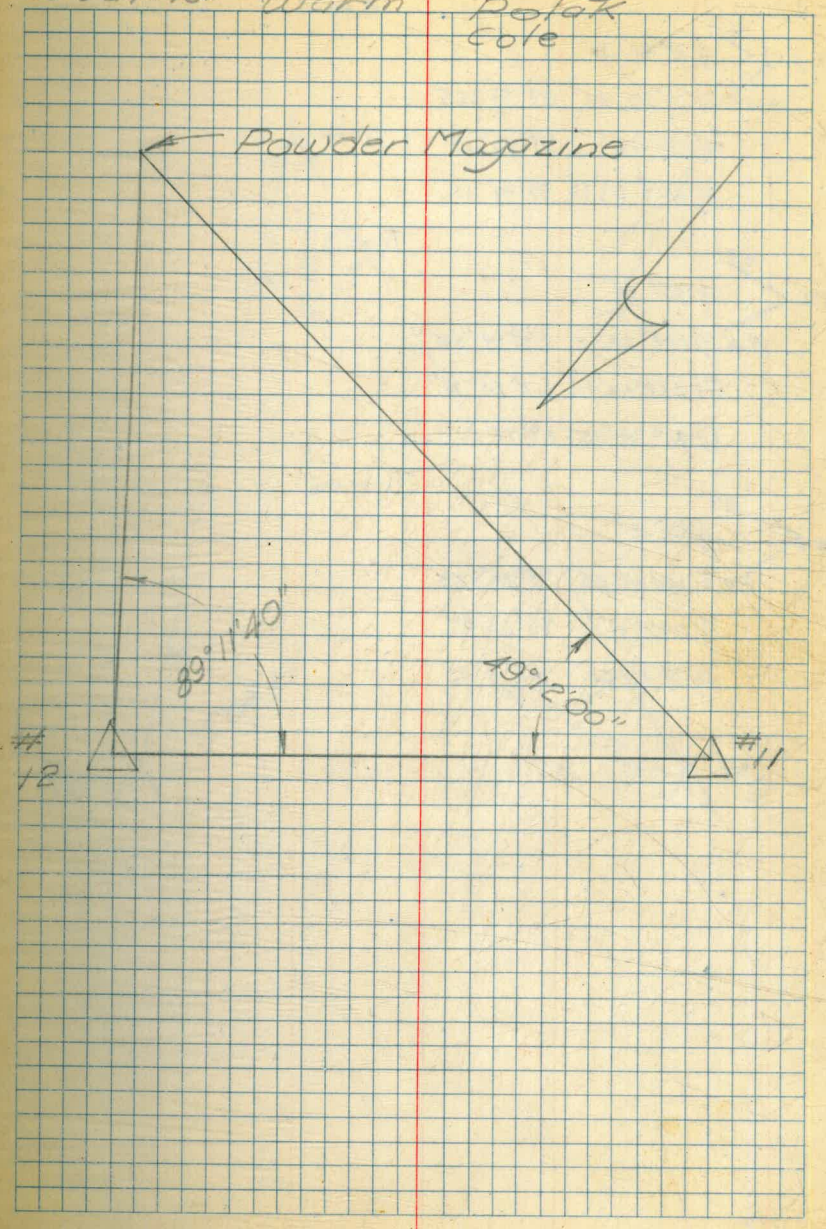
	Horiz. ∠	Mean
Powd. Mag. #2		
#12	1) 89°11'45"	
	2) 178°23'15"	89°11'30"
#11	4) 356°46'30"	89°11'37.5"
	6) 175°10'00"	89°11'40"

Δ @ Δ #11

	Horiz. ∠	Mean
#12		
#11	1) 49°12'00"	
	2) 98°24'00"	49°12'00"
	4) 196°48'00"	49°12'00"
Powd. Mag. #2	6) 295°12'00"	49°12'00"

Date - 11/18/41 — Jackson, King, Laing, Polak, Cole — 34

Weather - Fair Warm



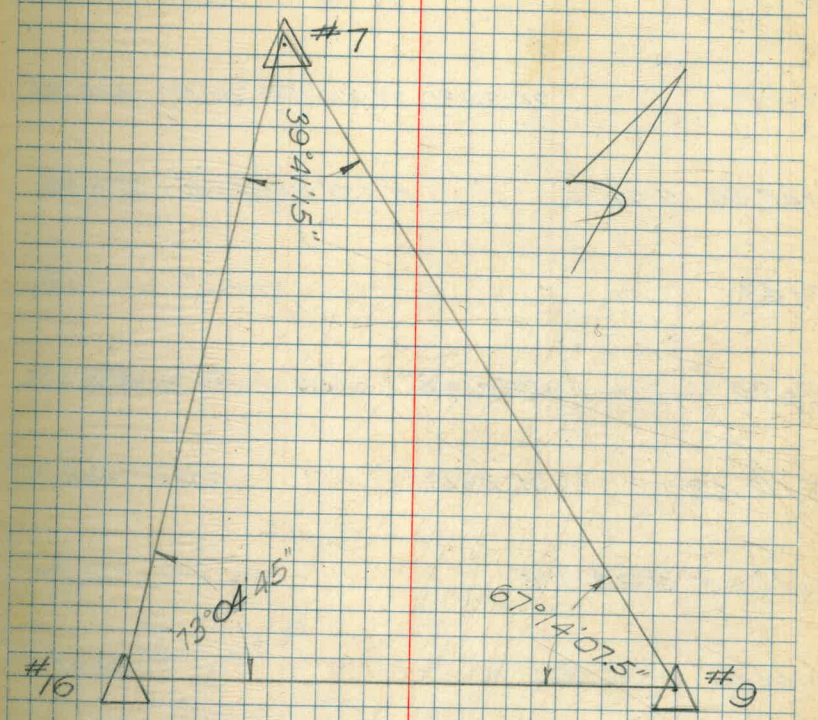
Triangulation of Dam Area

			⊼ at #7
#7	#9		
	1) 39° 41' 30"		
	#16 2) 79° 22' 45"	39° 41' 22.5"	
	4) 158° 45'	39° 41' 15"	
	6) 238° 07' 30"	39° 41' 15"	
			⊼ at #9
#9	#7		
	1) 67° 14'		
	#16 2) 134° 28' 15"	67° 14' 07.5"	
	4) 268° 56' 45"	67° 14' 11"	
	6) 43° 24' 45"	67° 14' 0.75"	
			⊼ at #16
#16	#7		
	1) 73° 05'		
	#9 2) 146° 09' 45"	73° 04' 52.5"	
	4) 292° 19'	73° 04' 45"	
	6) 78° 28' 30"	73° 04' 45"	

Date - 11-19-41

Weather - Fair warm

Jackson
King
Cole
Laing
Polack



TOPO TRAVERSE (For Map of City Camp)

Sta	Deflection ∠ LT.	∠ Rt	Bearing	Dist
El Cajon Cor.			N 0°08'00"E	274.76
0+00		20-20-30	N 20°28'30"E	420.86
4+20.86	5-07-30		N 15°21'00"E	338.14
7+43				
7+59.00		10°16'45"		453.68
12+12.68		95°25'37.5"		144.57
13+57.25	28°08'32.5"			152.18
15+09.43	76°09'37.5"			88.31
15+97.74	92°25'30"			Comp. by △
△ #16		78-57-15		
△ #17			(N 5°23'36.5E)	

11-18-41
Dickinson
Ecker
Polak
Laing
Cole

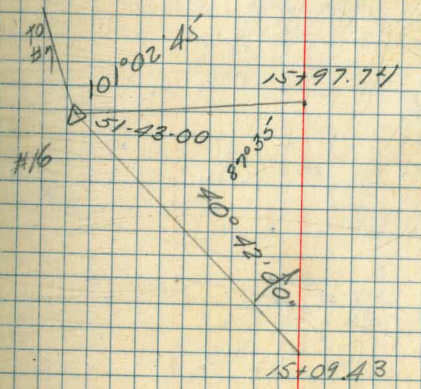
P.I. E ∠ of State Hwy.

B.C. of Curve

P.I. Board fence line ∠ = 83°15' / B.T. LT.

P.I. Winn Rd.

P.I. on Winn Rd.



51-43-00
87-35-
40-42
180-00-00

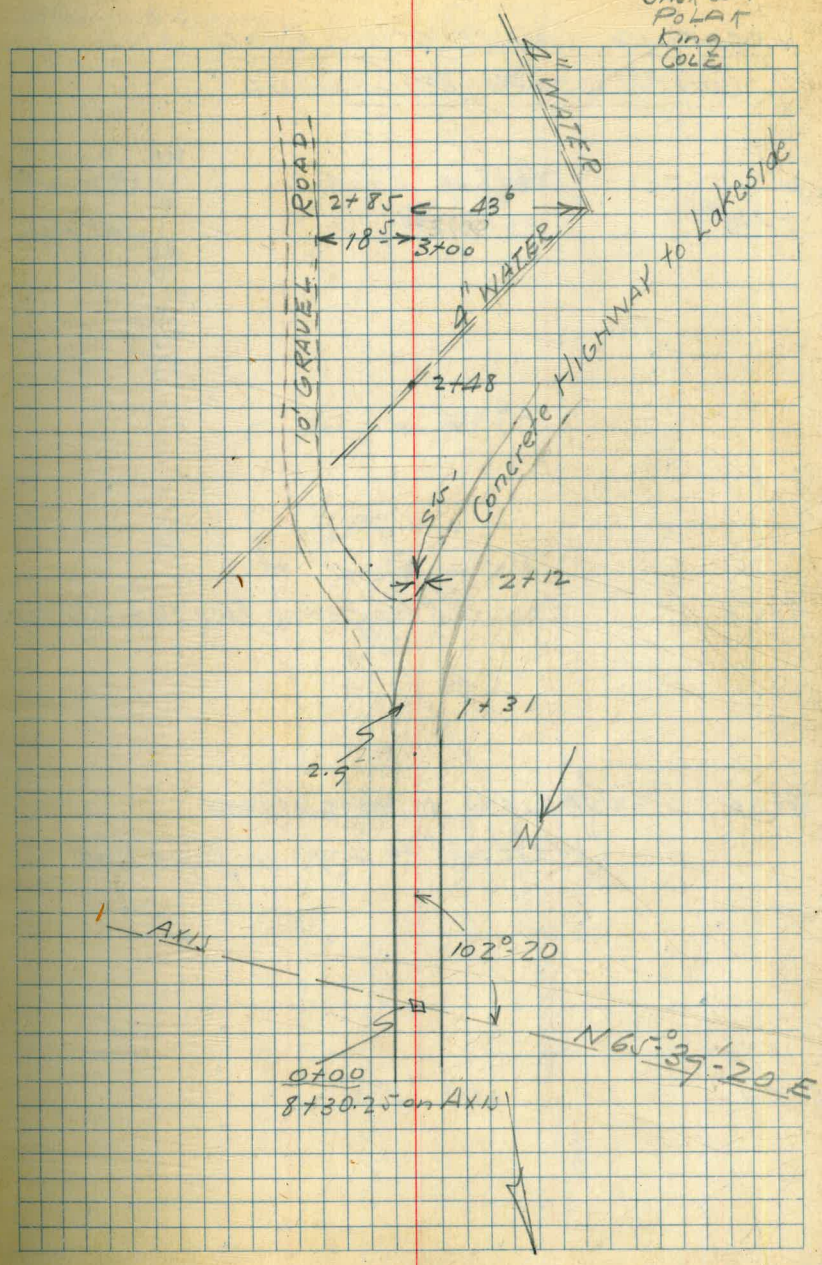
~ CHAIN TRAVERSE ~

LOCATING CONSTRUCTION ROADS AND CONTRACTORS BUILDINGS

3+00	West edge of 10' gravel road 18.5 east
2+85	Intersection of 4" pipe lines 43.6 west
2+48	
2+12	West edge gravel road 15' west
1+31	East edge of gravel road 2.9 East
0+00	
8+30.25 (AXIS) = Δ #15	

Bearing: S 36°-40-40 E

Dec 4th
Dickinson
Jackson
Polak
King
Cole



CHAIN TRAVERSE

LOCATING CONSTRUCTION ROADS AND CONTRACTORS BUILDINGS

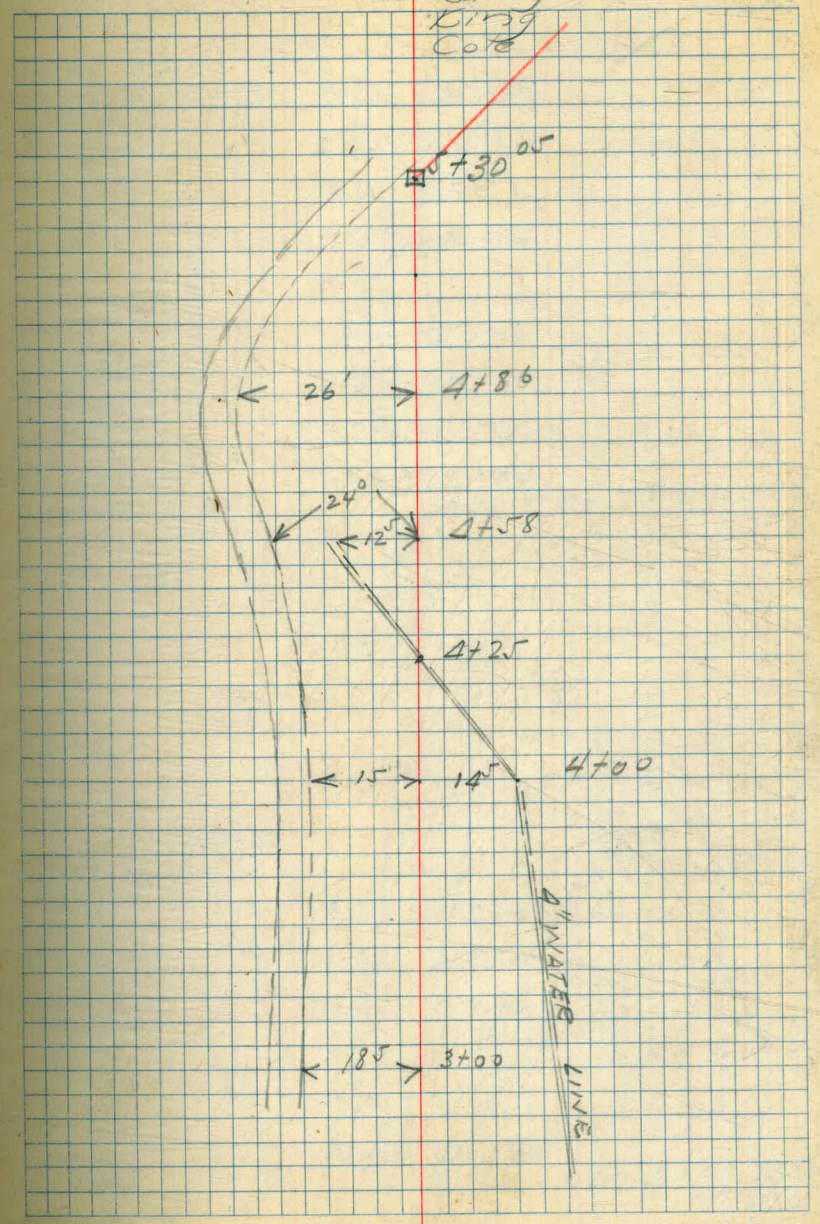
Sta.	Defl. ∡ Dist.	Remarks
P.I. 5+30.05	35°09' Rt	set nail
4+58	EAST 12.5 to pipeline, EAST 24' to edge road	
4+00	{EAST 15' to edge of road {West 14.5 to angle in pipe line	
3+00		

Bearing: S36°40'40"E

12/5/41

Fair-Warm

Dickinson
Jackson
Polak
Laing
King
Cole



Chain Traverse

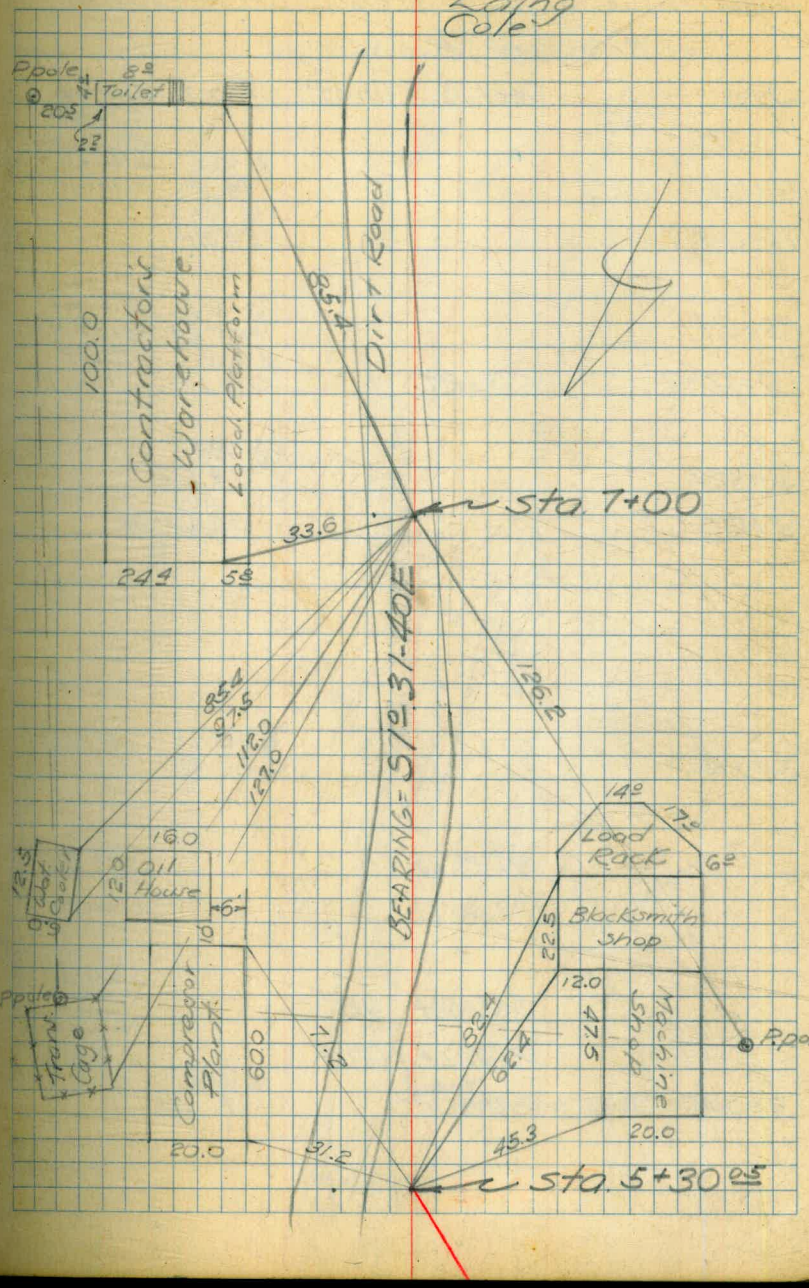
12/5/41

Fair - Warm

Jackson
Polak
King
Laing
Cole

Location of Construction Roads & Contractor's Buildings

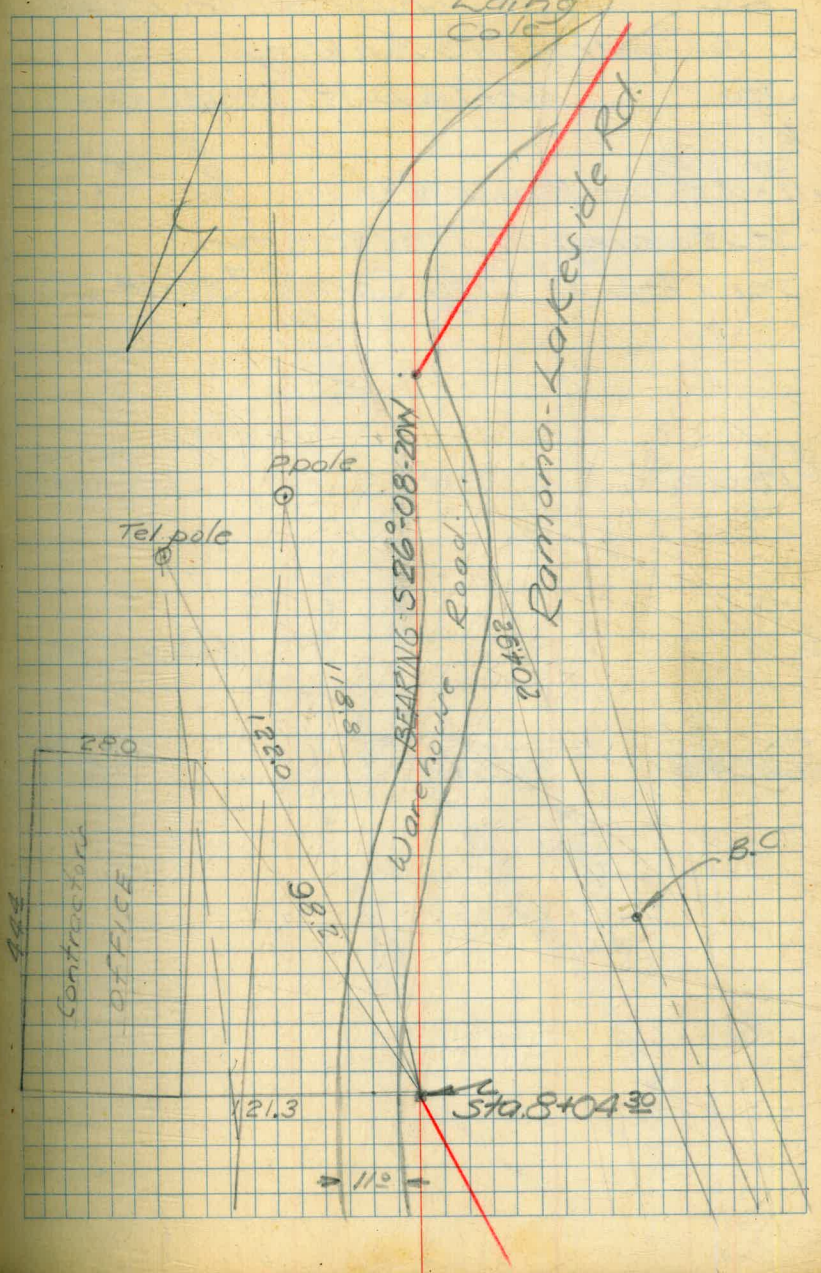
Sta		Defl. ∠	Dist.		Remarks
1		153°04' Rt	126.2		P. Pole @ back of Machine Shop
2		24°57' Lt	85.4		S.W. cor of Warehouse
3		130°40' Lt	33.6		N.W. cor of Warehouse
4		157°51' Lt	127.0		N.W. Cor of Trans. Fence
5		154°36' Lt	112.0		S.W. cor of Trans. Fence
6		150°31' Lt	97.5		N.W. Cor of Water Cooler
7		148°18' Lt	85.4		S.W. cor of Water Cooler
P.O.T. 7+00				℄ Rd. 6° Lt.	set nail
6+50				℄ Rd 0°	
6+00				℄ Rd. 2° Lt.	
		69°39' Rt	45.3		
		16°26 Rt	62.4		N.E cor of Mach. Shop
		8°18' Rt	82.4		S.E cor of Blacksmith Shop
		11°06' Lt	71.2		S.W. cor of Comp Plant
		68°02' Lt	31.2		N.W. Cor Compressor Plant
P.I. 5+30°5				℄ Rd. 14° Lt.	



Location of Construction Roads & Contractors Buildings

Sta.	Defl. Δ.	Dist.	offset	Remarks
11+91.5				℄ Traverse & ℄ Conc. Pav.
			℄ Rd 7± Lt.	℄ Dirt Road meets hiway
11+83				
			℄ Rd. 12.5 Lt.	
11+00				
			℄ Rd. 14° Lt.	E.C. of Dirt Road
10+61				
P.I. 9+97.39	9°39' Rt.		℄ Rd 0.5 Lt.	set nail
			℄ Rd 11± Rt.	
9+32±				
			℄ Rd 8° Rt.	
9+00				
			℄ Rd. 2° Rt.	
8+54±				
1	48°28' Lt.			Tel. pole
2	27°40' Lt.			P. pole
3	65°28' Lt.	98.2		S.W. cor. of Contract. Office
4	90°49' Lt.	121.3		N.W. cor. of Contractors Office
P.I. 8+04.39	27°40' Rt.		℄ Rd. 9° Lt.	

Fair - Warm



Chain Traverse

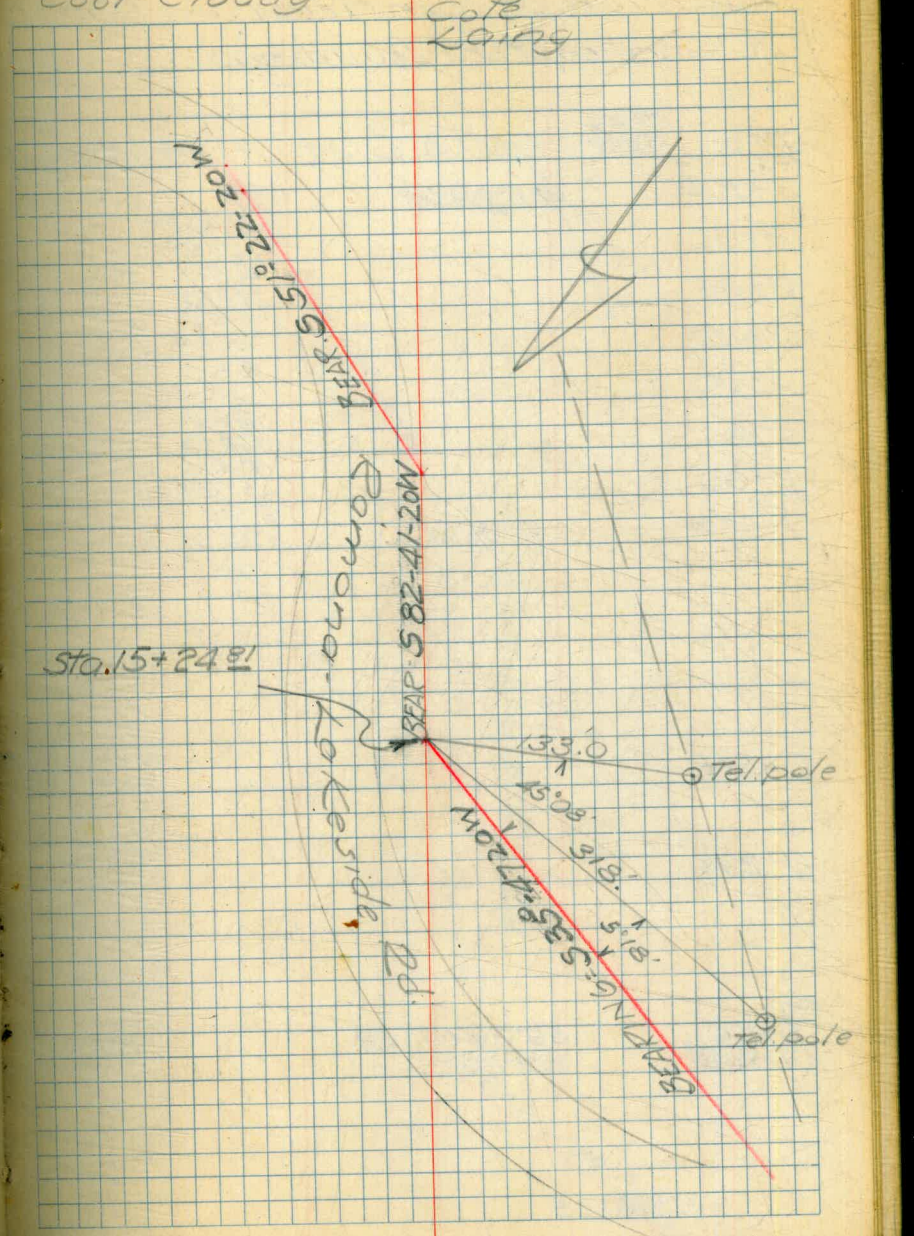
Location of Construction Roads & Contractor's Buildings.

Sta.	Defl. ∡	Dist.	Offset	Remarks
P.I. 19+79.13 = 12+12.68 = Int. RAMONA Rd & Williams Rd.				Chis + on Pav.
Stationing of Traverse run for Map of City Camp #SV-M-200				
P.I. 17+61.92	31°19' Lt			Set nail N. edge pav.
P.I. 15+24.81	46°54' Rt			Chis + on East side [illegible]

12/8/41

Cool-Cloudy

Jackson
Polak
King
Cole
Laing



Chain Traverse

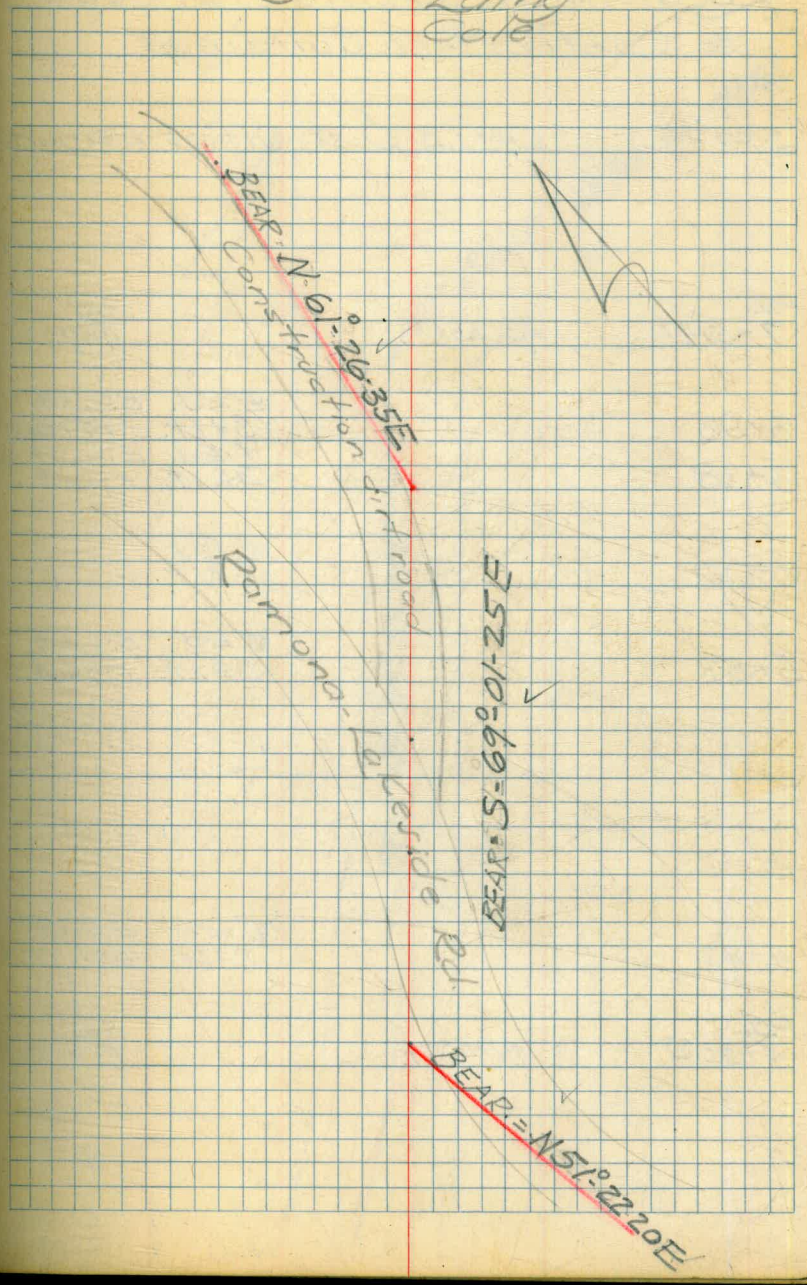
12/8/41

Cool - cloudy

Jackson
Polak
King
Laing
Cole

Location of Construction Roads & Contractor's Buildings.

Sta.	Mag. Bear.	Defl. & Dist	Offset	Remarks
P.I. 4+30.3		21°29' Lt.		
4+00			℄ Rd 2° Lt	
3+84			℄ Rd. 1° Rt	B.C. of dirt road
3+15.9			℄ Rd. 9° Rt	E.C. of dirt road
3+00			℄ Rd. 10½ Rt	
2+50			℄ Rd. 10° Rt	
2+00			℄ Rd. 3° Rt.	
P.I. 1+52.84		49°32' Lt.	℄ Rd 12° Lt.	
0+51.4				E Edge pav. & ℄ dirt rd
0+29.4				℄ Conc. paving
P.I. 0+00		59°36'15" Rt.		Found Nail
17+61.9		~~60°24'R~~.		
	N50°00'E			



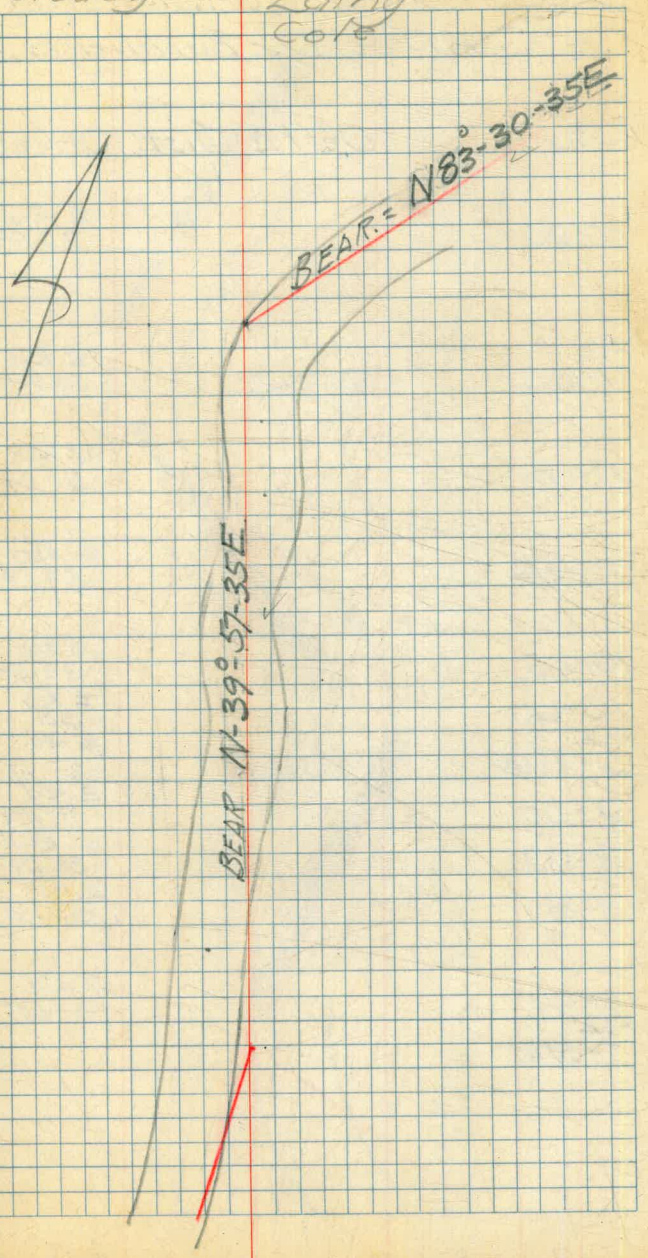
Chain Traverse

12/8/41
Cool-cloudy

Jackson
Polak
King
Laing
Cole

Location of Construction Roads & Contractor's Buildings

Sta.	Defl. Δ	Dist.	Offset	Remarks
P.I. 7+51.87	43°33' Lt.			set nail
6+96			℄ Rd. 3° Lt.	B.C. of dirt road
6+38			℄ Rd. 25 Lt.	E.C. of road
6+00			℄ Rd. 6° Lt.	
5+53			℄ Rd. 55 Lt.	B.C. of road
4+83			℄ Rd. 2° Lt.	E.C. of dirt road
P.I. 4+30.73	21°29' Lt.			set nail



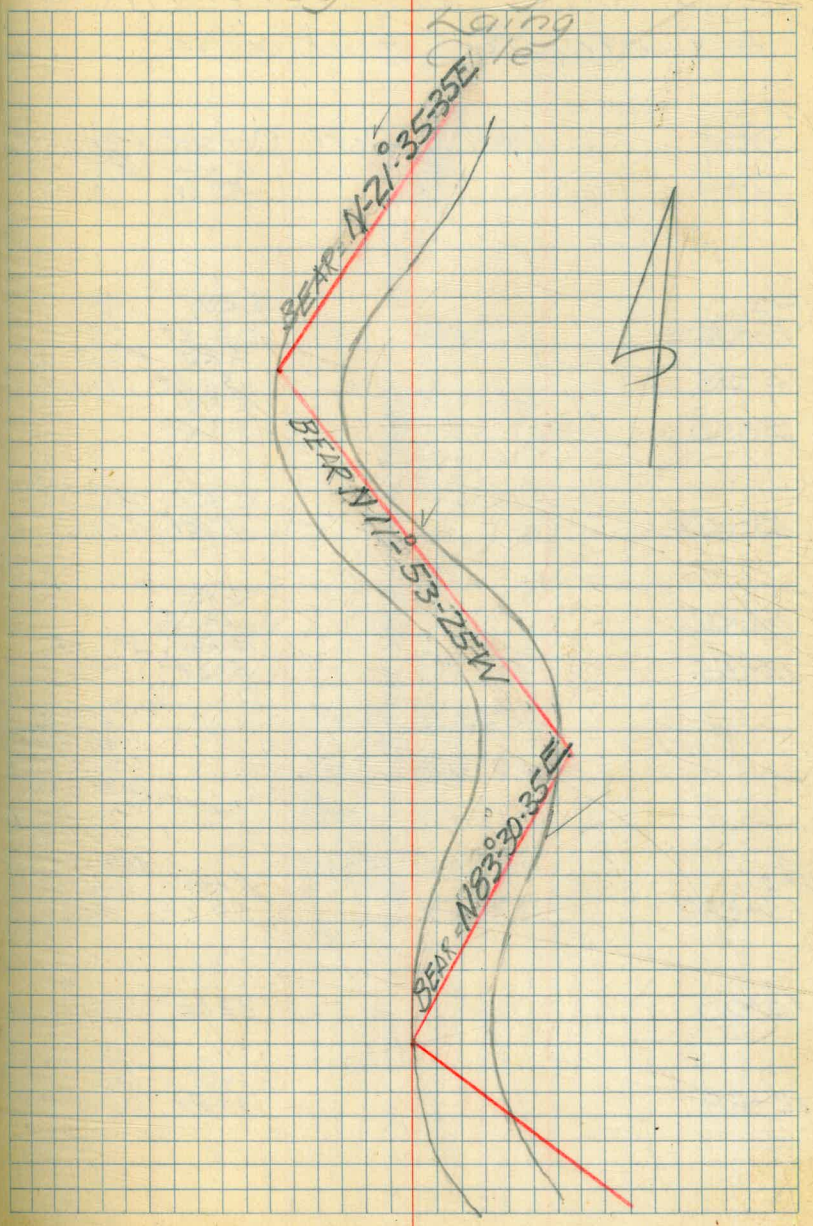
12/8/41

Cool-cloudy

Jackson
Polak
King
Kaing
Cole

Location of Construction Roads & Contractor's Buildings

Sta.	Defl. Δ	Dist.	Offset	Remarks
11+90			℄ Rd. 75 Rt.	EC & BC Comp Curve
P.I. 11+36.57	33°29' Rt.		℄ Rd. 6° Rt.	
11+00			℄ Rd. 5° Lt.	
10+64			℄ Rd. 3° Lt.	B.C. of dirt rd.
10+25			℄ Rd. 3.5 Rt.	E.C. of dirt rd.
10+00			℄ Rd. 9°	
P.I. 9+77.96	95°24' Lt.		℄ Rd. 13° Lt.	
9+00			℄ Rd. 2° Rt.	B.C. of dirt rd.
8+63			℄ Rd. 3° Lt.	E.C. of dirt rd.
8+50			℄ Rd. 6° Lt.	
8+00			℄ Rd. 6° Lt.	
P.I. 7+51.87				set nail

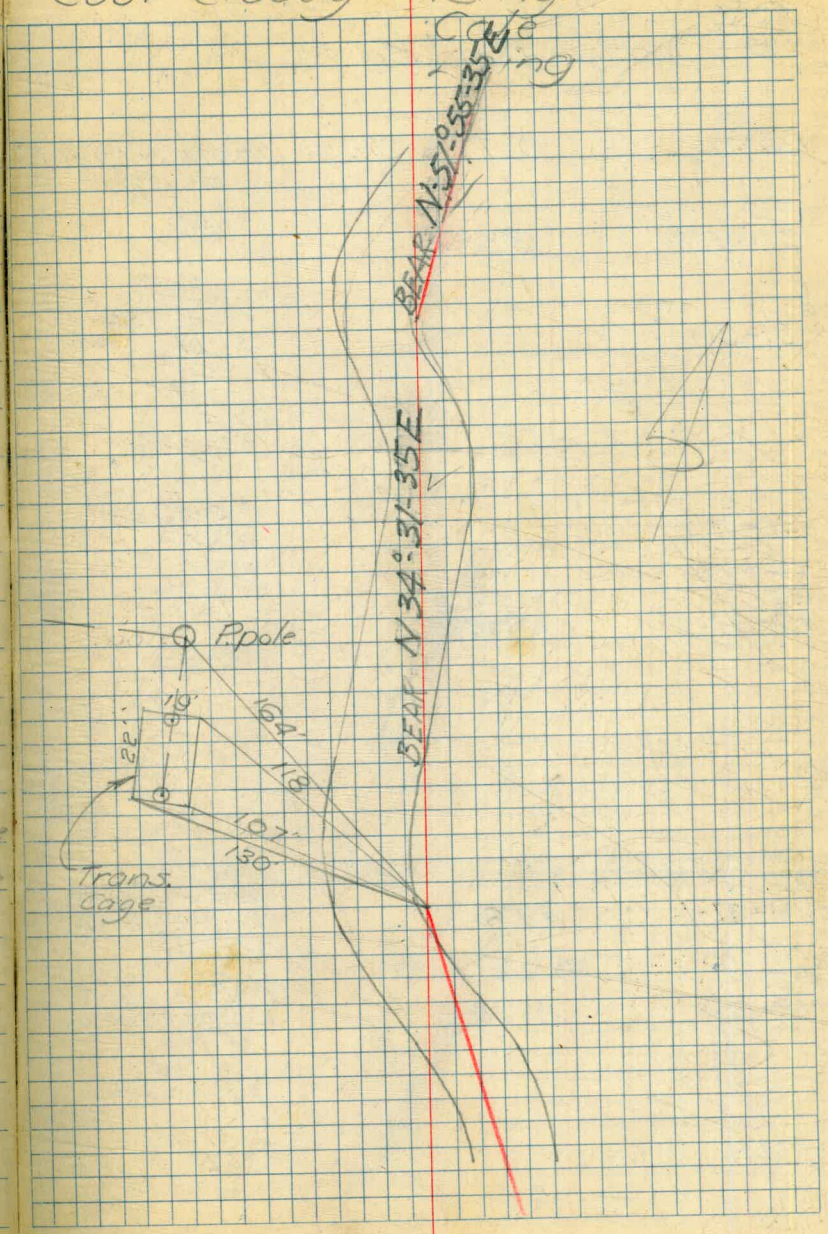


12/9/41
Cool - cloudy

Jackson
Polak
King.

Location of Construction roads & Contractors Buildings.

Sta	Defl. Δ	Dist	Offset	Remarks
17+00			℄ Rd. 5° Lt.	E.C. of curve
PI 16+53.43	17°24' Rt.		℄ Rd. 6 Lt.	set nail
15+95			℄ Rd. 3° Lt.	P.C.C. of curves
15+50			℄ Rd. 5° Rt.	
15+00			℄ Rd. 2° Rt.	B.C. of curve
14+00			℄ Rd. 1° Lt.	
13+55			℄ Rd. 5° Lt.	E.C. of curve
	46°33' Lt.	164'		P.pole
	50°01' Lt.	118'		N.E. cor. Trans. Cage
	59°24' Lt.	107'		S.E. cor. Trans. Cage
	64°46' Lt.	130'		S.W. cor Trans. cage
PI 13+25.21	12°56' Rt.		℄ Rd. 5° Lt.	set nail
13+00			25 Lt.	
12+68			℄ Rd. 3° Rt.	B.C. of dirt rd



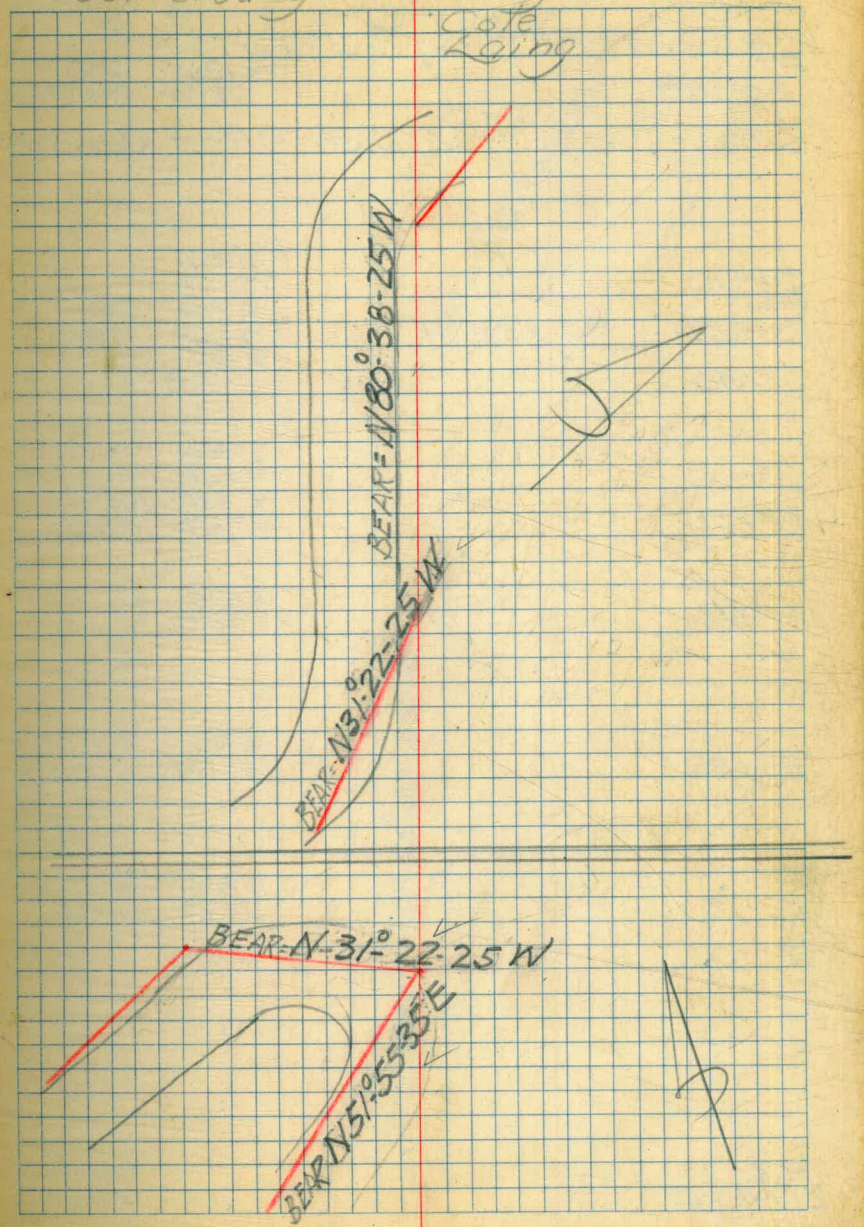
12/9/41

Jackson
Polak
King
Cote
Laing

Cool-cloudy

Location of Construction roads & Contractor's Buildings

Sta.	Defl Δ	Dist. Offset	Remarks
P.I. 21+45.48	13°58' Rt	℄ Rd. 5½ Lt.	set nail
21+00		5° Lt.	B.C. of curve
20+00		℄ Rd. 3° Lt.	
19+76		℄ Rd. 2° Lt.	E.C. of curve
P.I. 19+37.27	49°16' Lt.		
P.I. 19+37.27	49°16' Lt.	℄ Rd 9.3 Lt.	set nail
19+00		℄ Rd 15 Rt.	
P.I. 18+51.16	83°18' Lt.	℄ Rd. 17.3 Lt.	set nail
		℄ Rd. 3.5 Lt.	
17+41		℄ Rd 3.5 Lt	B.C. of curve



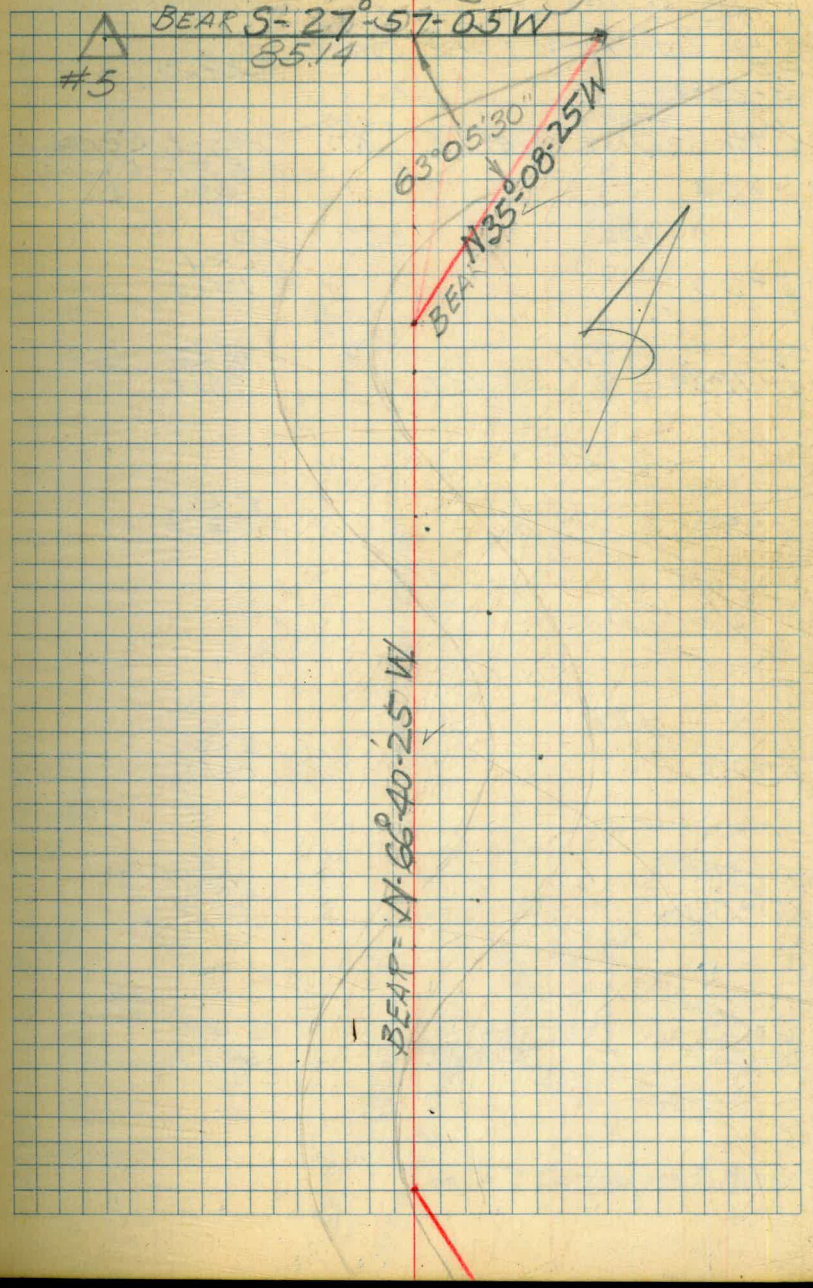
12/13/41

Fair-Warm

Jackson
King
Laing

Location of Construction Roads & Contractor's Buildings.

Sta.	Defl. Δ	Dist.	Offset	Remarks
P.I. 24+56.74			℄ Rd. 9° Rt.	set 2"x2" hub
24+00			℄ Rd. 8° Lt.	
P.I. 23+68.33	31°32' Rt.		℄ Rd 6° Lt.	set nail
23+50			℄ Rd 8° Lt.	
23+00			℄ Rd. 4° Lt.	
22+77			℄ Rd 4° Rt.	B.C. of curve
22+60			℄ Rd. 10 Rt.	E.C. of curve
22+35			℄ Rd. 15° Rt.	Mid Pt. of curve
22+12			℄ Rd. 9° Rt.	P.C.C. of curve
22+00			℄ Rd 4° Rt.	
P.I. 21+45.48				set nail



Location of Construction Roads & Contractor's Buildings

P.I. 3+24.3

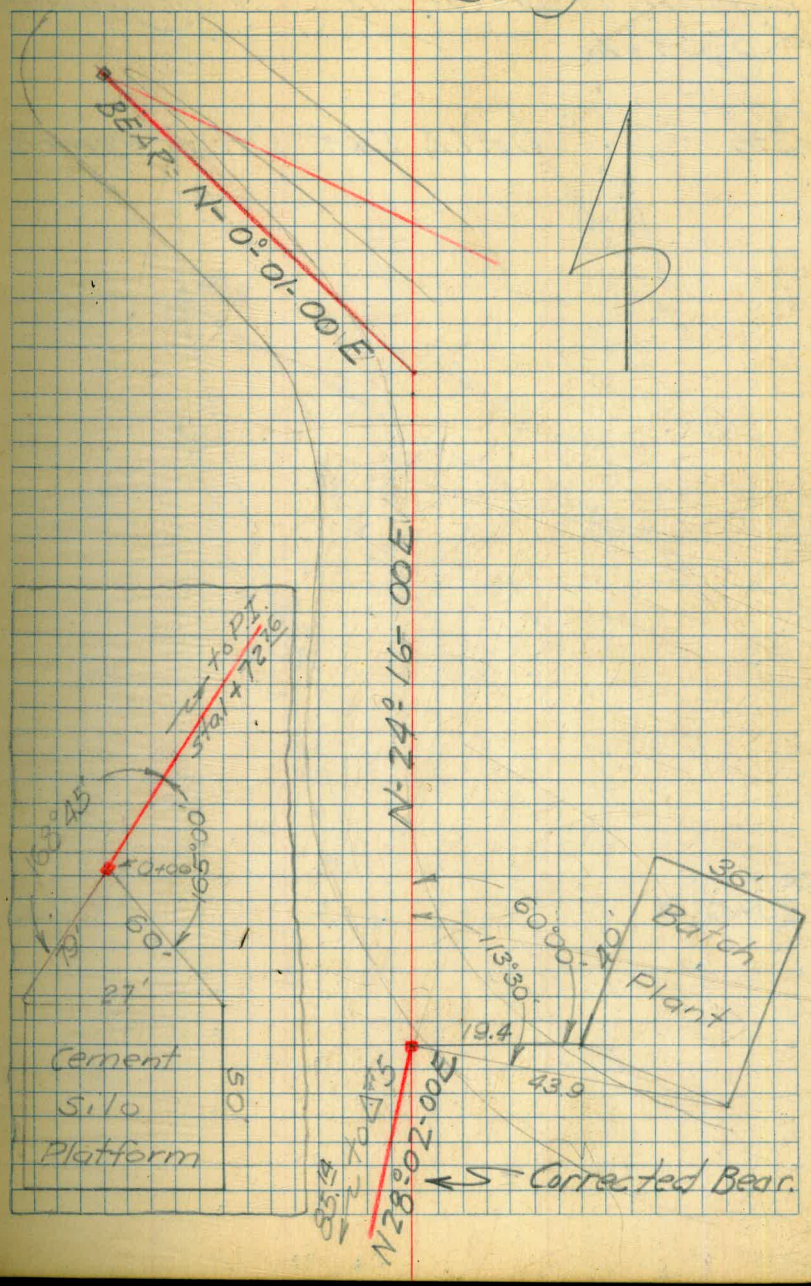
Sta.	Stadia Dist.	Defl. Δ	Rt. Vert. Δ	℄ of Rd. Offset	Remarks
2+24				℄ Rd. 0°	E.C. of Curve
	152'		+8°01'		
2+00				℄ Rd. 1° Lt.	
P.I. 1+72.76		24°15' Lt.		℄ Rd 7° Lt.	set nail
1+50				℄ Rd. 7° Lt.	
	175'				
1+00				℄ Rd. 6° Lt.	
0+50				℄ Rd. 2° Lt.	
0+00 = 24+56.74		3°46' Lt.		℄ Rd. 9° Rt.	

12/13/41

Fair - Warm

Jackson
King
Laing

48

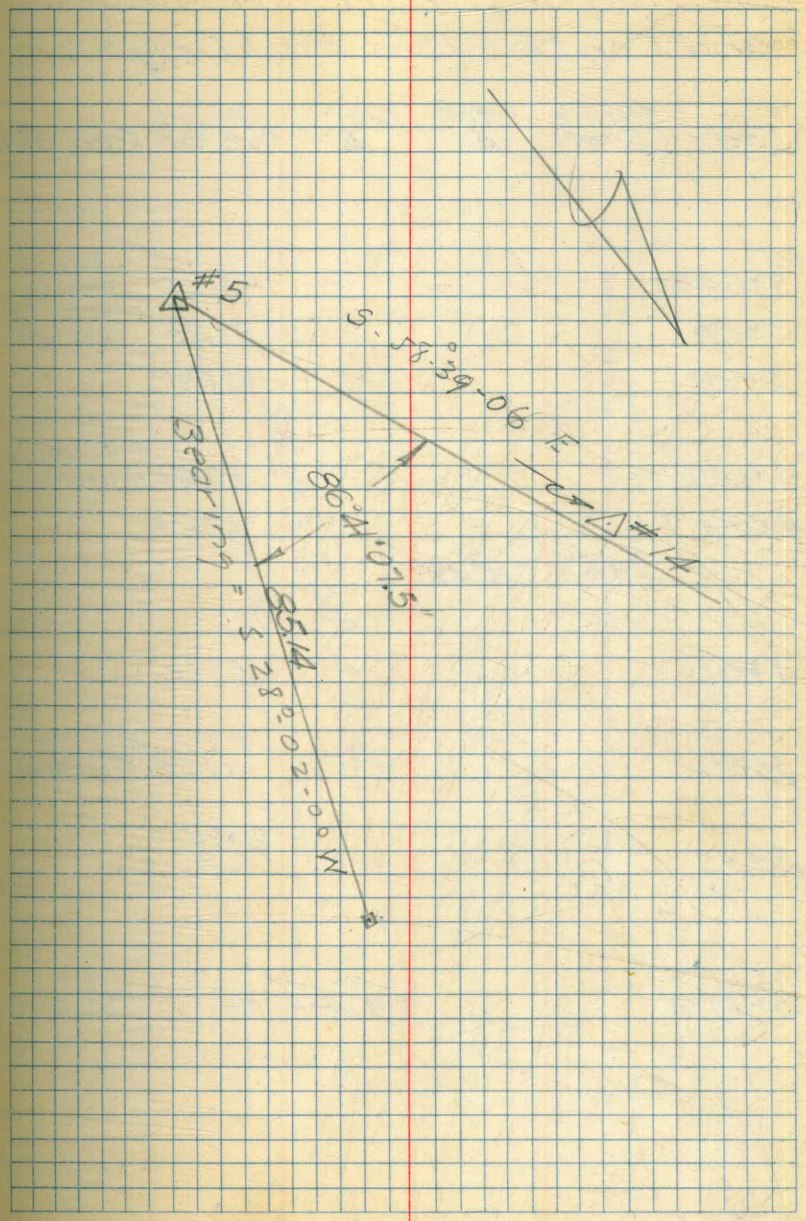


Chain Traverse tie to Triangulation System

Sta.	Defl. Δ	Dist.	Offset	Remarks
P.I. 24+56.74				2"x2" hub

12/15/41
Fair - Warm

Jackson
Polok



Location of Construction Roads and Contractor's Buildings.

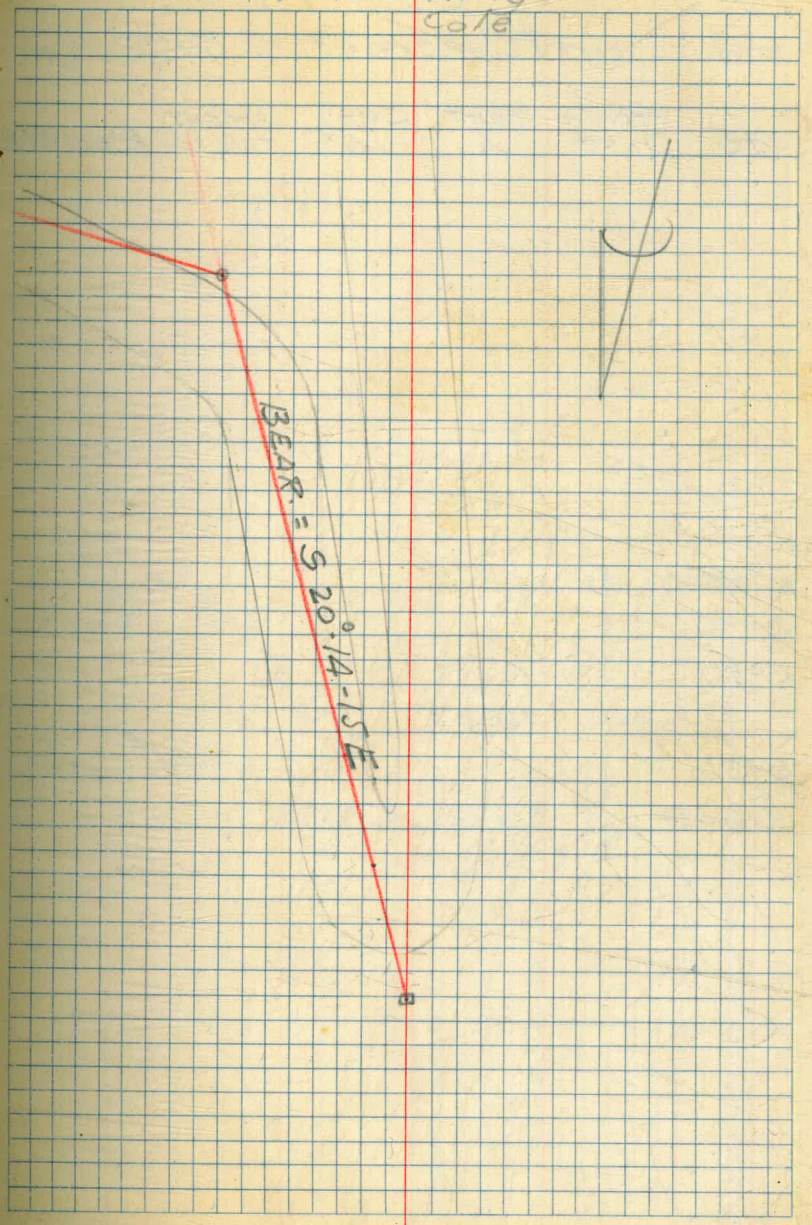
Sta	Stadia Dist.	Vert. ∠.	Defl. ∠	Offset to ℄ Rd.	Remarks
P.I. 5+64.50	I			10°-Lt.	set nail
5+20				3°-Rt	P.C.C. of curve
5+00				3°-Rt.	
4+60				2.5°-Rt.	P.C. of curve
4+50				2°-Rt.	
	244'	+8°49'			
4+00				5°-Lt.	
3+60				℄ Rd. 11°-Lt.	E.C. of Curve
3+35				℄ Rd. 0°	
P.I 3+24.03	I		159°-44-45 Rt		set 2"x2"

1/29/42

Fair-Warm

Jackson
Polak
Laing
King
Cole

50.



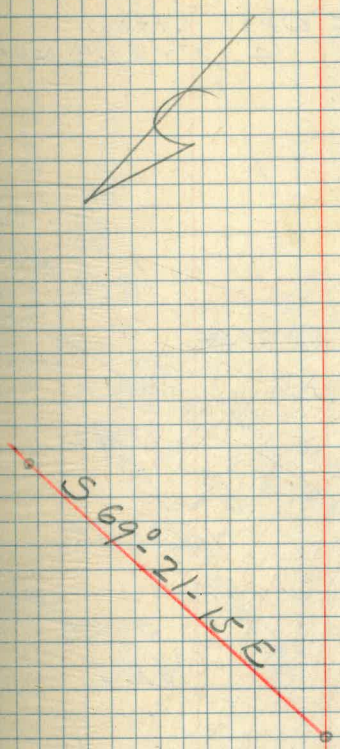
1/29/42

Fair - Warm

Jackson
Polak
Laing
King
Cole

Location of Construction Roads and Contractor's Buildings

Sta.	Stadia Dist.	Vert ∠	Defl. ∠	Offset to ℄ Rd.	Remarks
P.I. 6+83.57					set nail P.C. of curve
6+70					
6+50					
	120'	+9°00'			
6+00				15 Lt.	E.C. of curve.
P.I. 5+64.59		+9°00'	49°07½ Lt.		



Location of Construction Roads and Contractor's Buildings

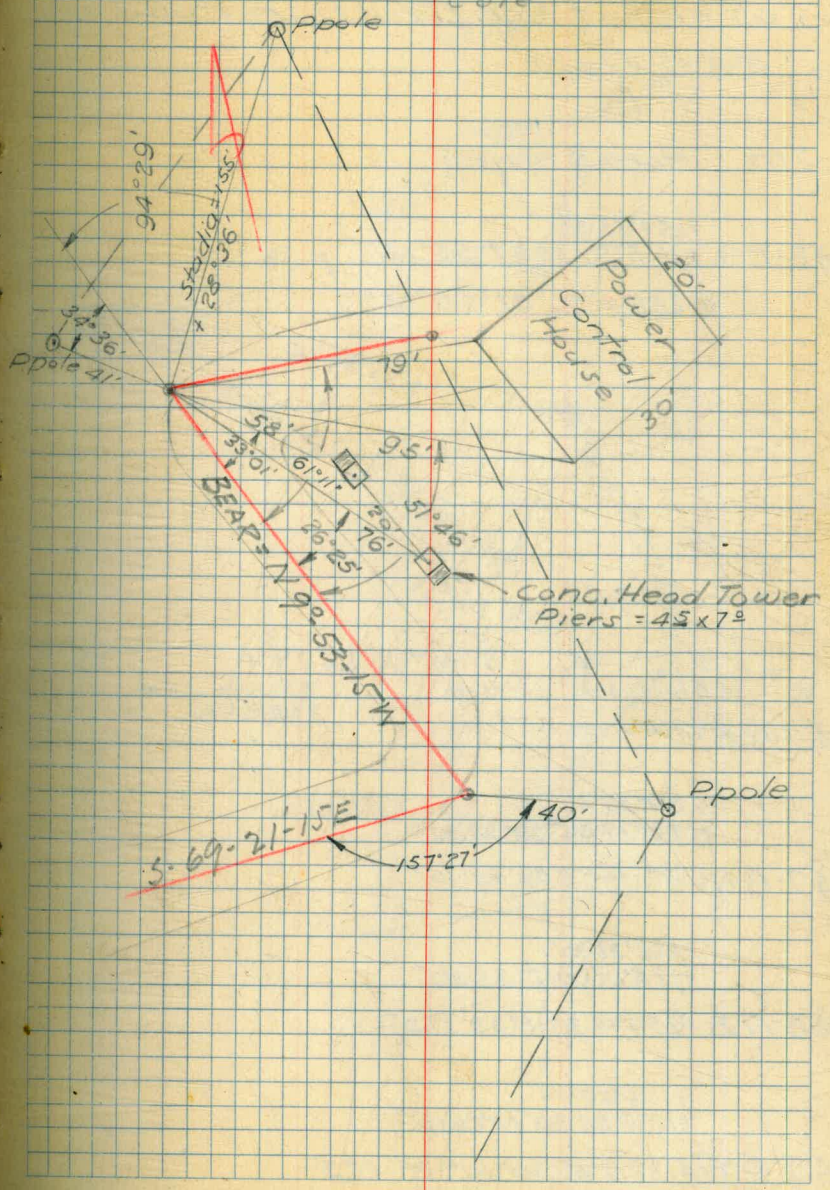
Sta.	Stadia Dist	Vert ∠	Def'l ∠	Offset to ℄ Rd.	Remarks
End Pt 9+18.9					set nail
8+74	68'	+15°10'		15 Lt.	E.C. of curve
P.I. 8+52.6			112°37' Rt.		set nail
8+25				5° Rt.	P.C. of curve
8+00				7° Rt.	
7+50				5° Rt.	
	177'	+13°56'			
7+00				3° Rt.	E.C. of Curve
6+92				℄ Rd.	
P.I. 6+83.5			120°32' Lt.		

11/29/42

Fair - Warm

Jackson
Polak
Laing
King
Cole

52



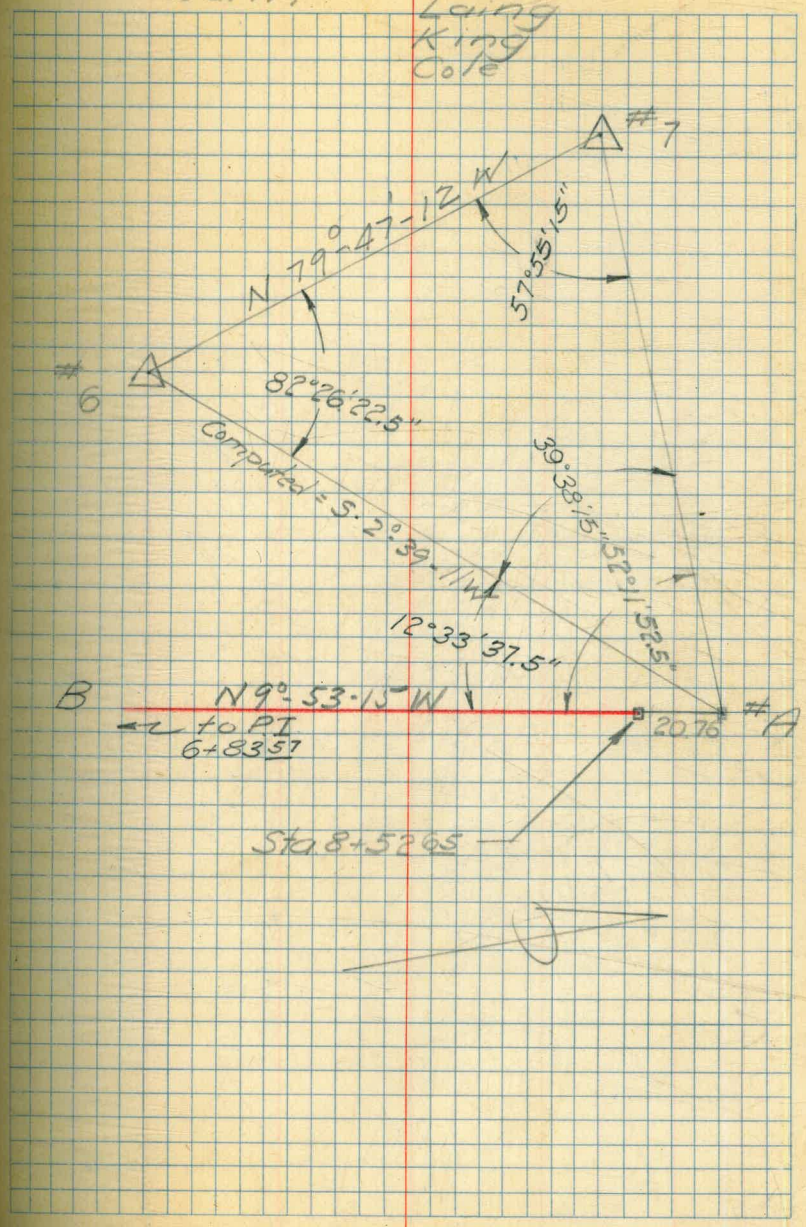
1/29/42

Fair - Worm

Dickinson
Jackson
Polak
Laing
King
Cole

Triangulation tie to Chain Traverse at end of Construction Road on East Slope.

Sta.	Horiz. ∠	Mean Horiz. ∠
∠6-7-A	1) 57°55'30"	
	2) 115°50'30"	57°55'15"
	4) 231°41'00"	57°55'15"
∠7-A-B	1) 52°11'45"	
	2) 104°23'30"	52°11'45"
	4) 208°47'30"	52°11'52.5"
∠7-A-64	1) 39°38'30"	
	2) 79°17'00"	39°38'30"
	4) 158°33'00	39°38'15"
∠6-A-B	1) 12°33'30"	
	2) 25°07'00"	12°33'30"
	4) 50°14'30"	12°33'37.5"
∠7-6-A	1) 82°26'00"	
	2) 164°52'30"	82°26'15"
	4) 329°45'30"	82°26'22.5"



LOCATION TRAVERSE Δ #13 to ST. HWY

π Ecker
ϕ Polak
ϕ Cole
12-6-41
Bright Cool

4+91 16 P.I. Lt. 9°51'30" 170°08'30"

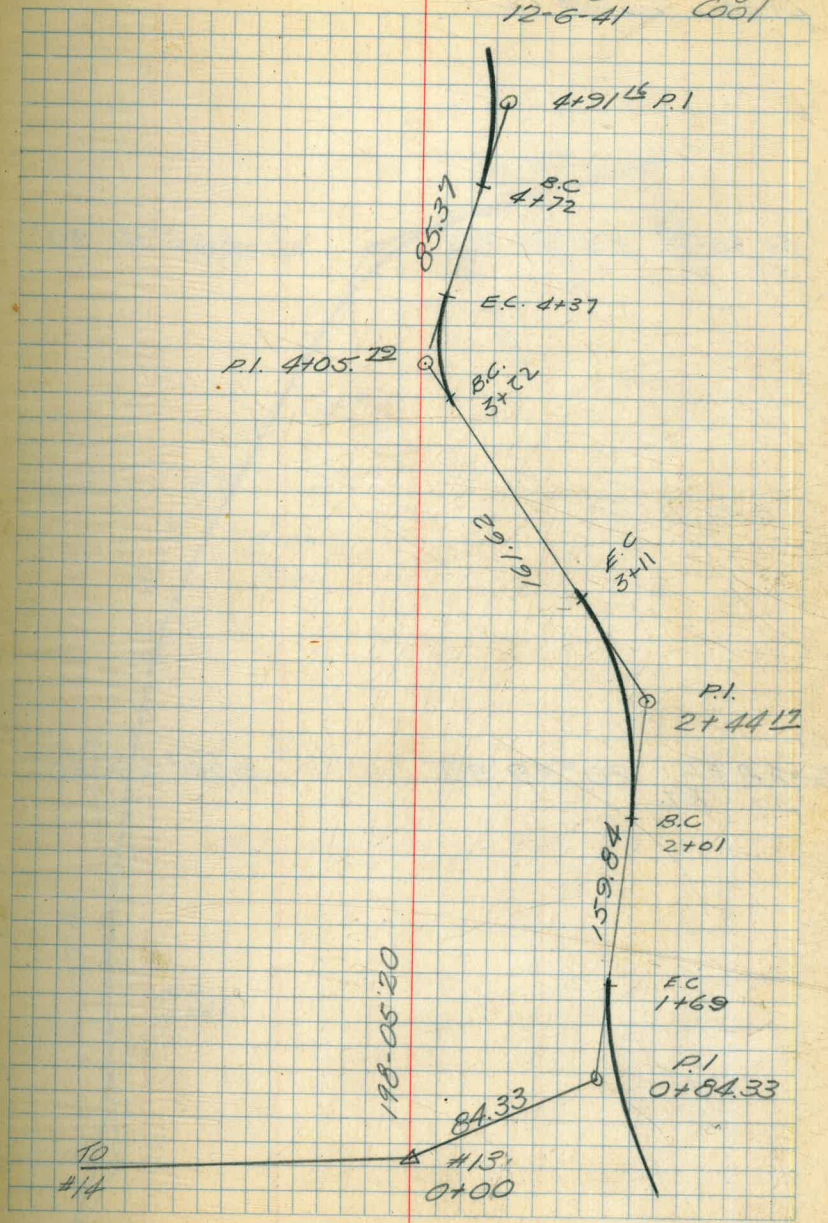
4+05 72 P.I. Rt. 17°29'00" +197°29-00

2+44 17 P.I. Lt. 39-59-00 -140°01'00"

0+84 33 P.I. Lt 76°38'15" 103°21'45"

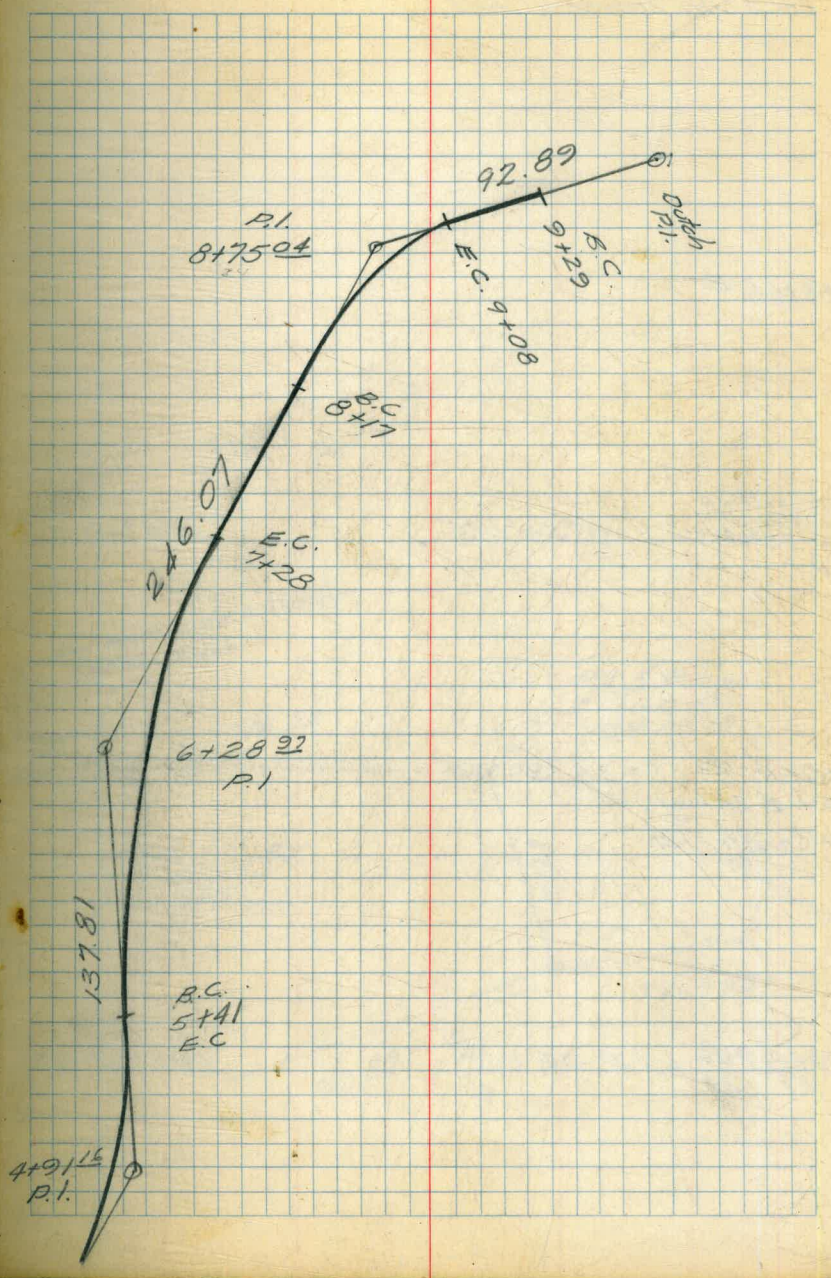
Δ #13 is 0+00 Rt 18°05'20

Δ #13 - Backsighting Δ #14, turning the angle clockwise to Mag. Bear #13-#14 S88°W



Location Traverse Con't.

8+75.04 P.I. Rt.	24°41'30"	204°41'30"
6+28.97 P.I. Rt.	20°39'30"	200°39'30"



Location Traverse Cont

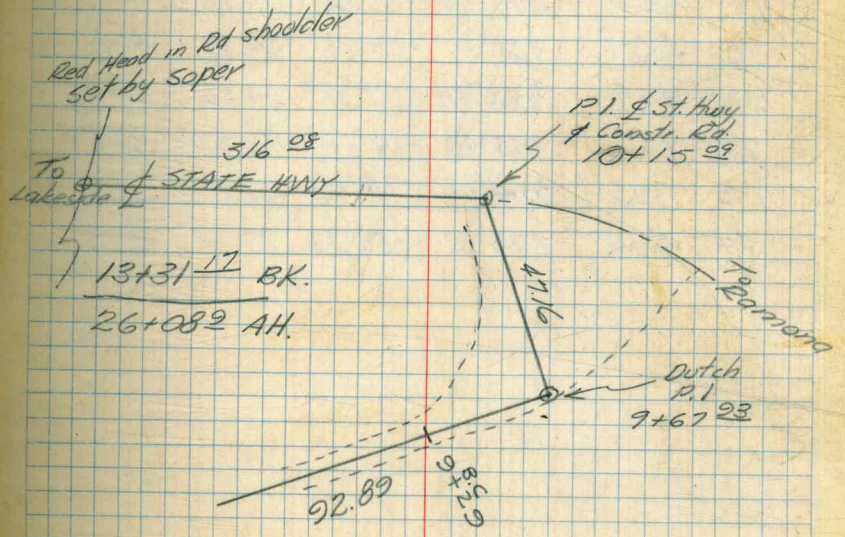
23+66 40

13+31 17 Bk
26+08 2 AKRT = 18°50'00" 198°50
P.I.

10+15 09 Lt. = 85°30'00" 94°30'
P.I. ℄ St. Hwy
+ Constr. Rd.

9+67 23 = 74°06'00" 105°54'00"
P.I. Lt

See F.B. 54 9 19 98 6



Stadia Survey Locating State Hwy
To Romona From Williams Rd to Lower
Coffer Dam

Sta	Dist	Hor. A.	Vert. A	Hor. Corr. ~~Rod~~	Corr'd Hor. D ~~Elev.~~
⊼ @ Δ 7, BS = Δ 9			All angles clockwise		
1	895	~~65°28'~~ 54°32'	-7°24	98.34	~~782~~ 881
2	815	52°14'	-8°00	98.06	801
3	740	46°53'	-8°47'	97.67	722
4	~~710~~ 705	39°09'	-9°13'	97.44	688
5	685	30°14'	-9°31'	97.27	668
6	645	21°00'	-10°08'	96.90	624
7	597	11°43'	-10°56'	96.40	576
8	545	1°35	-11°58'	95.70	520
9	497	348°59'	-12°23'	95.40	475
10	465	338°34'	-12°56'	94.99	442
11	443	324°40'	-13°37'	94.46	419
12	415	309°40	-14°46'	93.50	388
13	395	294°00	-15°02	93.27	369
14	400	278°10	-14°26'	93.79	375

Warm
Partly clowdy

2-7-41
⊼ Dickinson
Ø Cole
⊡ Lovell

Remarks

Intersect. Wm's rd & state Hgwy

Near end of rd. to batching plant

Stadia Survey Locating Gravel Plant Conveyor & Construction Rd Gravel Plant to Keyway

Sta.	Dist	Hor. A.	Vert. L.	Hor. Corr.	Corr'd Hor. D
T@ Intersect. Wm's Rd & Hwy, BS. A #7					
A	240	343-52	0-0		
T@ A, B.S. Wm's Rd & Hwy Intersection					
1.	605	53°14'	0-0	0	
2	505	55°40'	0-0	0	
3.	348	58°45'	0-0	0	
4	161	70°30'	0-0		
5	230	92°34'	0-0		
6	337	105°44'	0-0		
7	360	103°00	0-0		
8	340	98°51'	0-0		
9	317	102°43'	0-0		
10	294	106°14'	0-0		
11	301	111°15'	0-0		
12	144	117°40'	0-0		
13	103	127°25'	0-0		
14	114	137°40'	0-0		
15	275	136°05'	+6°-57'	98.54	271
16	253	148°05'	+7°37'	98.25	249
17	235	152°32'	+7°31'	98.29	231
18	225	167°20'	+8°50'	97.64	220
19	112	163°52	0-0		
20	118	172°40	0-0		
21	78	78°10'	0-0		

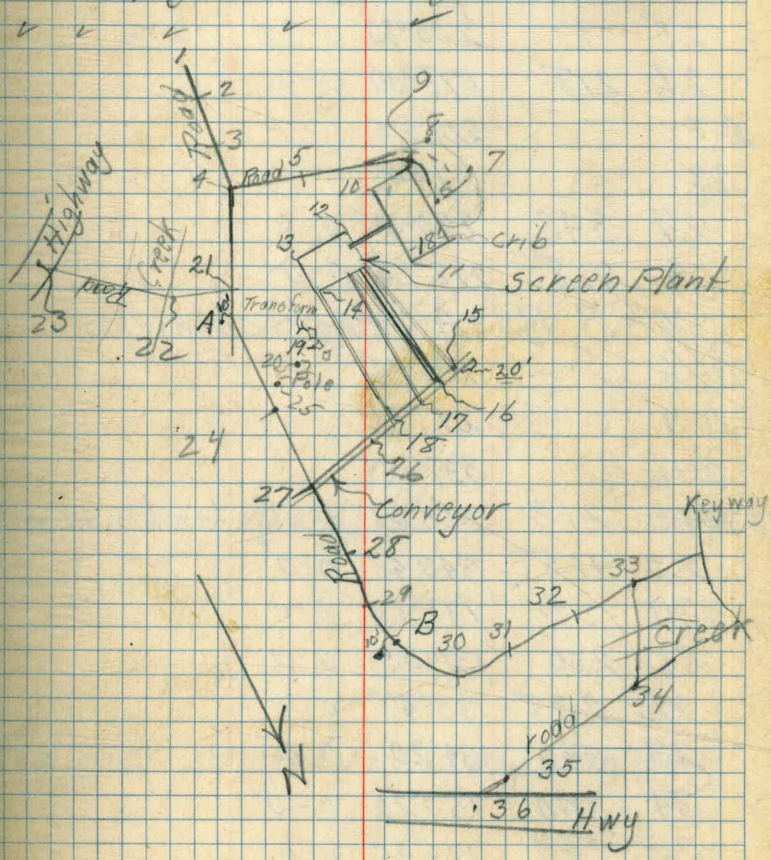
Warm
clear

2 ~~10~~ 7-42
T Dickinson
ϕ Cole
La Lovell

65.

Remarks
All Hor. A.s are clockwise
Temporary Sta. on Rd to Gravel Plant

Rd. to Slaughter House Canyon and to date



Stadia Survey Locating Gravel Plant
Conveyor & Const. Road. Gravel Plant to keyway (Cont.)

Sta	Dist	Hor. A	Vert. L	
22	62	354°50'	0-0	
23	161	326°57	0-0	
Wms Rd & Hwy	241	0-0	0-0	
24	110	219°45'	0-0	
25	97	205°32	0-32'	99.99
26	218	178°00	0-0	
A7		201°54'		
A9		273°45'		
27	342	220°55'	0-0	
B	718	218°24'	0-0	
		π@B, BS=A Angles clockwise		
A 6		234°34'		
A 9		293°21		
A 16		337°23		
28 ~~A 13~~	213	355°28'	0-0	
29	115	349°45	0-0	
30	98	138°50	0-0	
31	200	137°33'	0-0	
32	295	135°47'	0-0	
33	380	134°20'	0-0	
34	340	150°20'	0-0	
35	243	166°45'	0-0	
36	258	172°55'	0-0	

Remarks

Road Gr. Plant to keyway ℄

Rd goes straight to keyway from here

Stadia Survey Gravel Plant, Conveyor & Road B'twn Gr. Plant & Keyway (cont.)

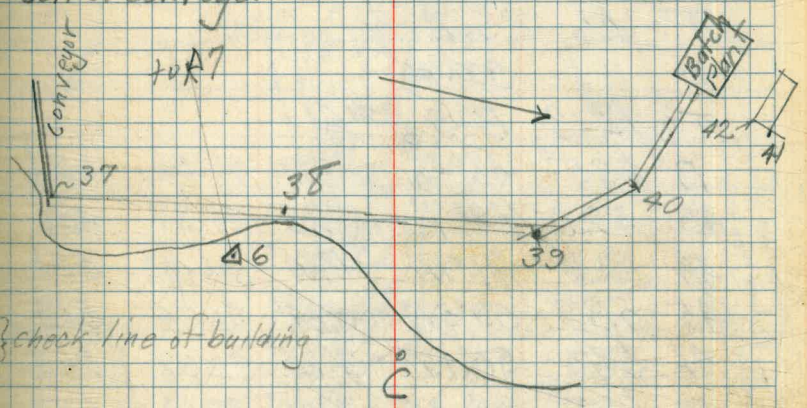
Sta	Dist	Hor. ∠	Vert ∠	Hor. Corr.	Corr'd Hor. □
⊼ @ ∆#6, B.S. ∆#7 Angles Clockwise					
37	300	311°40'	-14°56'	93.36	270
38	137	57°10'	-9°20'	97.37	133
C	167	93°29'	0-0		
⊼ @ C, B.S. ∆#6					
∆#7		74°30'			
39	227	183°00'	0-0		
40	525	164°20	+9°00	97.55	511
41	700	157°38'	+10°05	96.93	679
42	693	156°40'	+10°16'	96.82	671

2-7-42

67

Remarks

Cor. of conveyor



Stadia Survey of Spur Roads On West Slope

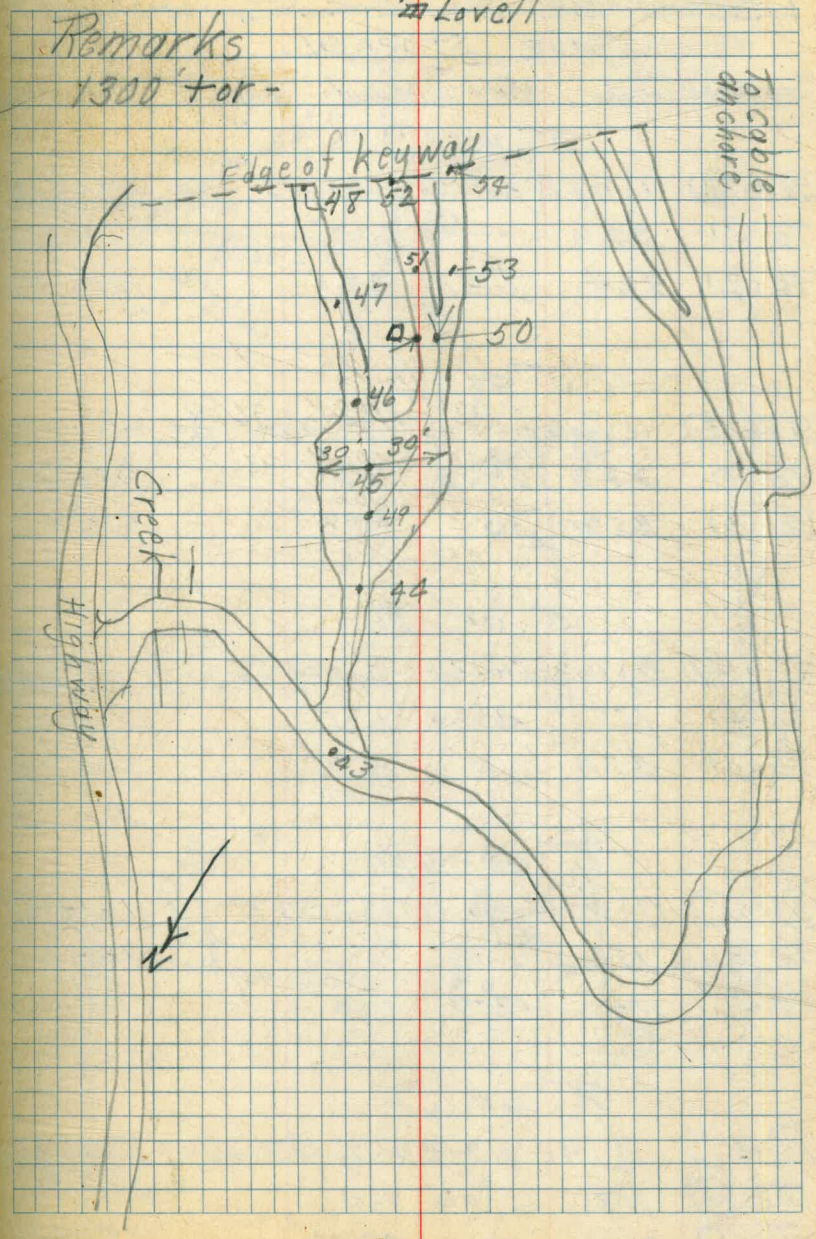
Sta	Dist.	Hor. A.	Vert. A	Hor. Corr.	Corr'd Hor. D
℄ @	A#6, B.S. A#7		Angles Clockwise		
D		34°14'	3°14'	99.68	
℄ @	A6 B.S. A13				
D		338°40'			
℄ @	A#13, B.S. A#6				
D	635	48°48'	-6°59	98.52	626
43	520	89°07'	-12°25	95.37	496
44	520	71°12'	-11°24'	96.09	501
45	537	59°50'	-10°14'	96.84	519
46	583	50°17'	-9°25'	97.32	569
47	675	40° 45'	-8°55'	97.60	659
48	760	32°55'	-8°52'	97.62	741
℄ @	D, B.S. A#6				
49	145	207-35	-6°47'	98.60	143
50	35	119°-30'	0-0		
51	110	25°00	0-0		
52	210	18°00	0-0		
53	103	43-25	+5°00	99.24	102
54	230	30°25'	5°30	99.08	228
A13		250°09			

Warm
Clear

2-7-42
↑ Dickinson
Ø Cole
Lovell

68.

Remarks
1300' for -



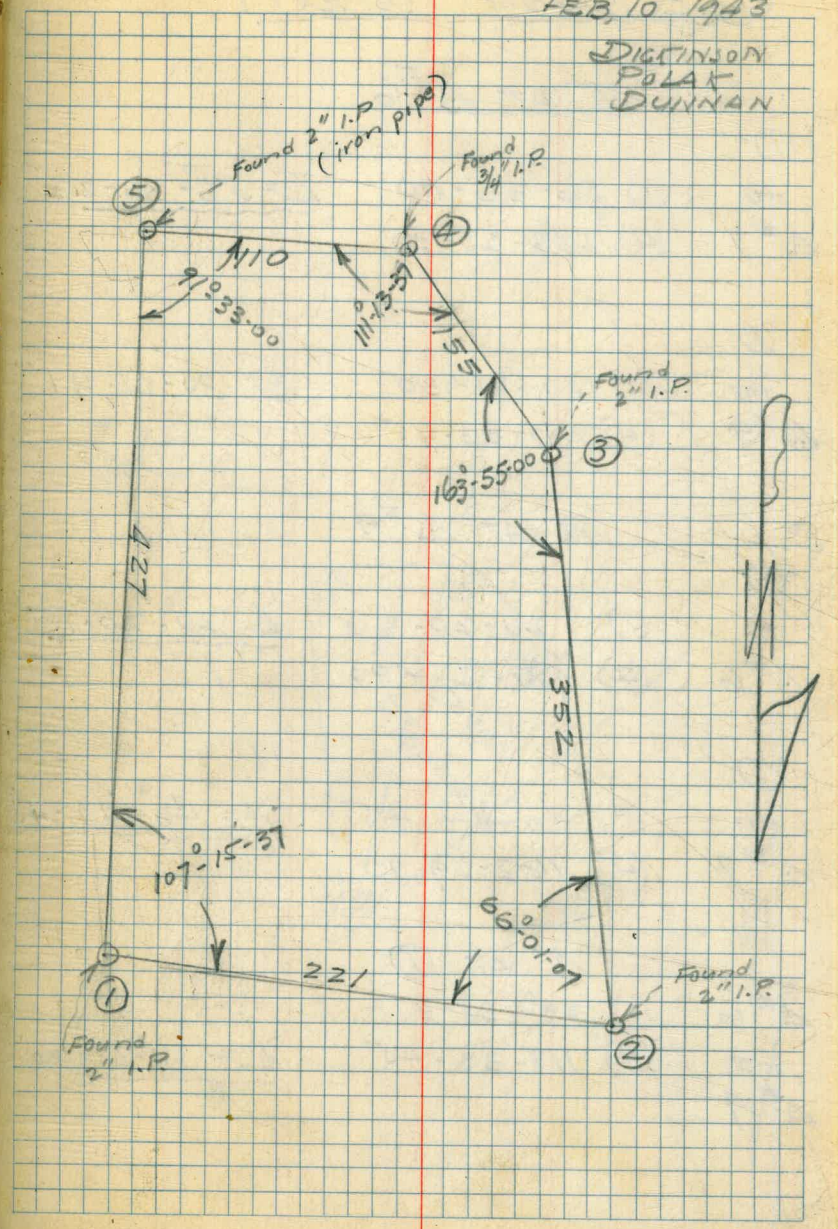
SURVEY OF

PROPERTY TO BE USED BY L.E. DIXON FOR STORAGE

FEB. 10th 1943

DIGITIZED BY POLAK DUNNAN

STATION	S.I.	Vert ∠	Dist.	Horz ∠	Bearing
		⊥ AT ①			
⑤ to ②	(1) 107-15-30	(2) 214-31-15		∠ =	107-15-37
To ⑤	5.26	—	327'		S9°-30E
To ②	224	7°-41	221'		N82°-30W
		⊥ at ②			
① to ③	(1) 66-01	(2) 132-02-15		∠ =	66°-01-07
To ①	223	6°-53	221'		S82°E
To ③	352	0	353'		S16°E
		⊥ at ③			
② to ④	(1) 163-54-30	(2) 327-50-00		∠ =	163°-55-00
To ④	155	4°-29	155'		S32-30E
To ②	351	0	352'		N16°-30W
		⊥ at ④			
③ to ⑤	(1) 111-14-00	(2) 222-27-15		∠	111-13-37'
To ③	156	6-19	155'		N33-30W
To ⑤	114	13°-0	109'		S77-30E
		⊥ at ⑤			
④ to ①	(1) 91-33-30	(2) 183-06-00		∠	91-33-00
To ④	117	15°-06	110'		N77°-30W
To ①	426	—	427'		N9-0W



TRIANGULATION TO L.E. DIXON PROPERTY

FEB 10th 1943

DICKINSON
POLAK
DUNNAN

∠ AT △ #6

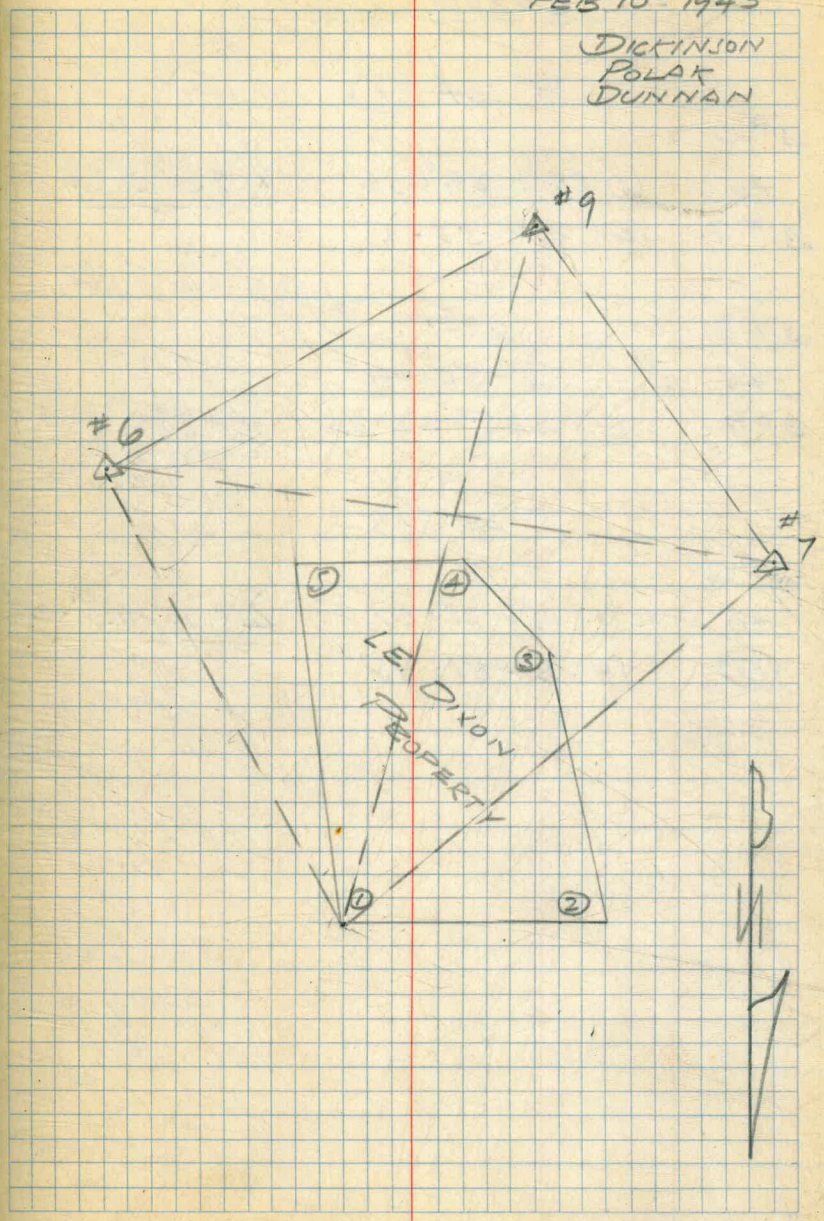
①		
to	(1) 56-36-00	∠ = 56°-36-22"
△ #7	(4) 226-25-30	
①		
to	(1) 130-01-30	∠ = 130-01-41"
△ #9	(4) 160-06-45"	

∠ AT △ #9

①		
to	(1) 20-20-30	∠ 20°-20-15"
△ #6	(4) 81-21-00	
①		
to	(1) 40°-44-45"	∠ = 40°-44-45"
△ #7	(4) 162-59-00	

∠ AT ①

△ #6	(1) 29°-38-45	
to	(4) 118-33-45"	∠ = 29°-38-26"
△ #9		



TRIANGULATION TO

L.E DIXON PROPERTY

T at (1)

△#6		
to	(1) 88° 29° 00	∠ 88-28-48"
△#7	(4) 353-55-N	
△#9		
to	(1) 58° 50-45	
△#7	(4) 235° 22-30	∠=58-50-37"

T AT (1)

△#6		
to	(1) 15° 25-30	∠=15-25-26"
(5)	(4) 61-41-45	

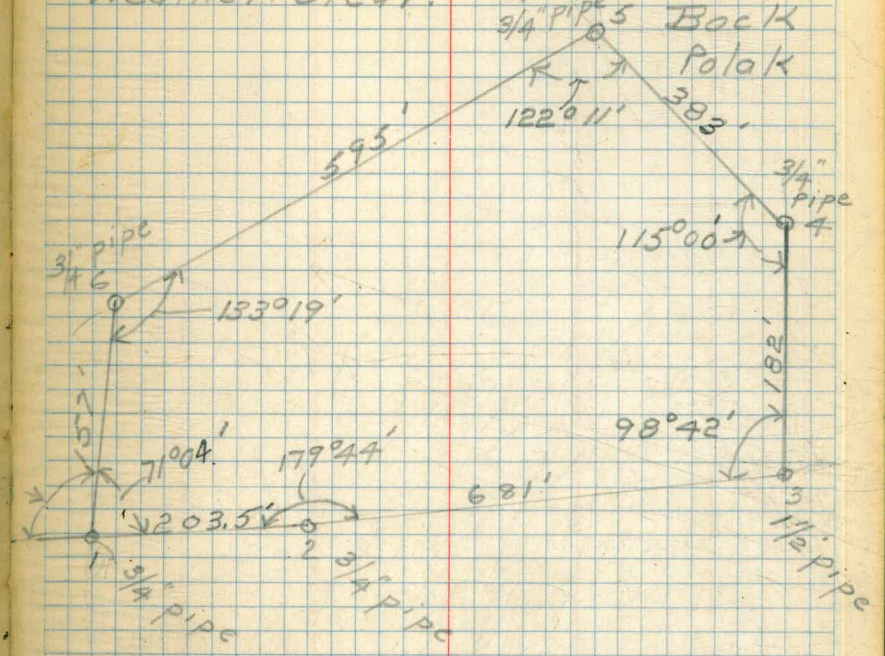
FEB-10th 1943

SEE PAGE #70

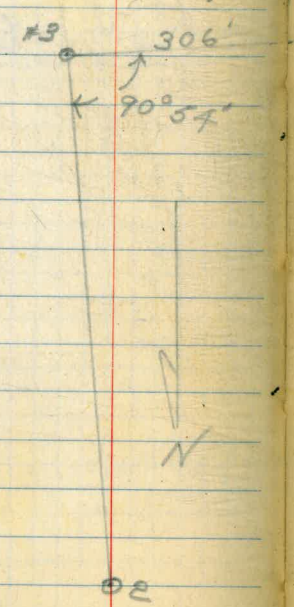
Survey of additional Property to be used by L. E. Dixon Co. For storage.

April 2, 1943

Weather: Clear.



For location of points #2 and #3 see page # 69



Sketch showing Rock Fault on East Abutement and Elevations along Fault Line

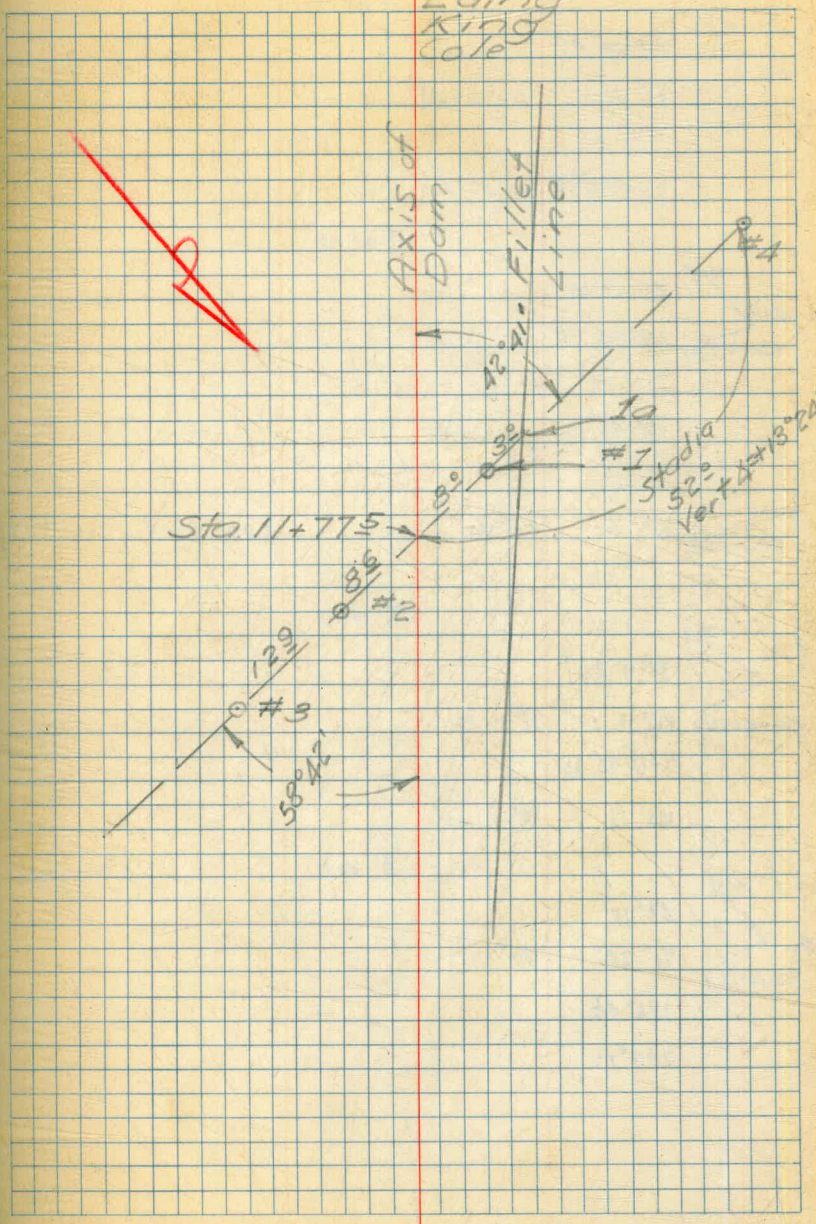
Sta.	+	H.I.	-	Elev.	
T.B.M.				544.42	
	12.73	557.15			
T.P.			0.00	557.15	
	12.46	569.61			
#1			4.5	565.1	
1a			5.4	564.2	
T.P.			0.21	569.40	4.5 / 1.3 / 5.2
	12.65	582.05			
#2			7.5	574.5	574.5 / 3.2 / 571.3
#3			4.5	577.5	
T.P.			0.06	581.99	
	13.00	594.99			
#4			9.0	586.0	
A-33 B.M.				594.72	594.72

1/29/42

Fair-Cool

Dickinson
Jackson
Polak
Laing
King
Cole

79



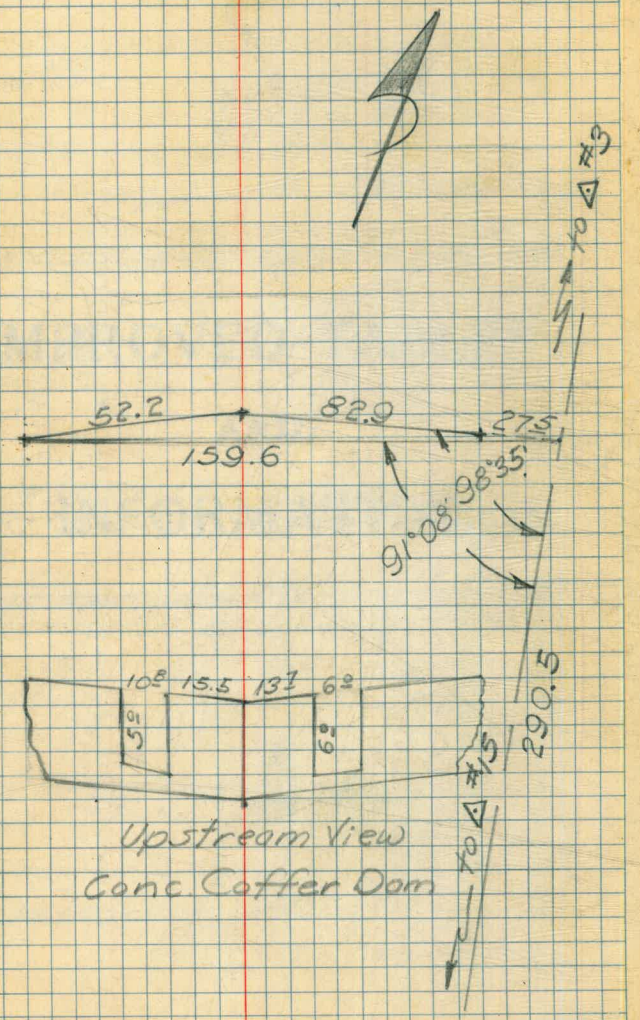
			⊼ at 15		
#13 / #15 / Water tank	44° 05' 45"				
	88° 11' 30"	44° 05' 45"			
	176° 23'				
	264° 34' 30"	44° 05' 45'			
			⊼ at 13		
#15 / #13 / Water tank	75° 27' 30"				
	150° 55' 15"	75-27-45			
	301° 51'				
	92° 46' 30	75-27-45			
#12 / #13 / Powder #2	62° 40'				
	125° 20'	62° 40'		100' Stadia from #13	
			⊼ #12		
#11 / #12 / Powder #1	89° 11' 45"				
	178° 23' 15"	89° 11' 30"			
	356° 46' 30"				
	175° 10'	89° 11' 40"			
			⊼ #11		
#12 / #11 / Powder #1	49° 12'				
	98° 24'	49° 12'			
	196° 48'				
	295° 12'				

⊼ at baseline -

#15 0°		98-35-30	∡ from #15 to ∡ point		
		197-11-0	in concrete coffer dam		
0°		91°-08'-30	∡ From #15 to West end		
		182-16-30	Coffer Dam		

chaining on Conc. Coffer Dam

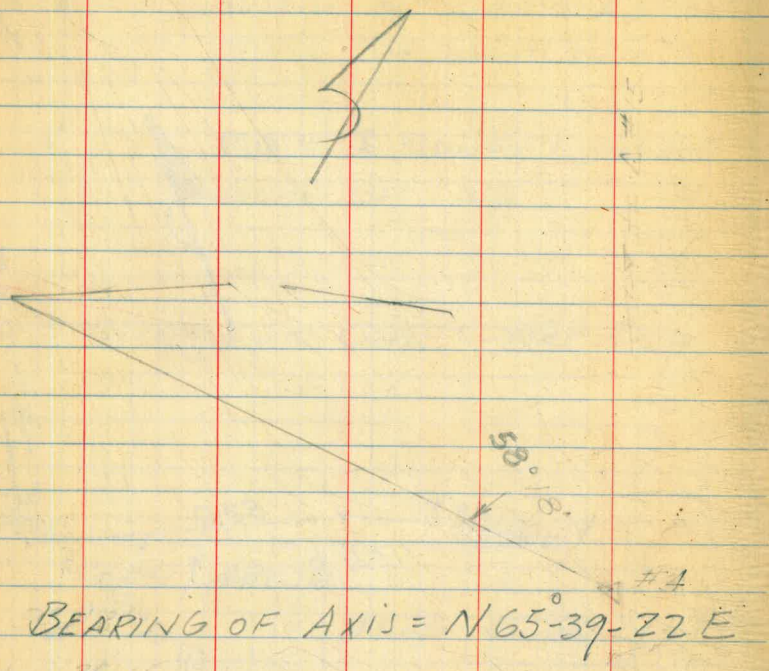
A-5 B.M.				480.39	
	1.80	482.19			
			11.29	470.90	El. of top of Conc. Coffer-dam
A-5 B.M.			1.80	480.39	



Upstream View
Conc. Coffer Dam

11/17/41

5. coffer dam



BEARING OF AXIS = N 65°-39-22 E

IMPROVED TABLES
AND
INFORMATION

DIRECTIONS FOR USE OF TABLES

TABLE No. 1.

Distance of slope stake from side or shoulder stake for any width roadway, slope 1½ to 1. If ground is nearly level, the cut or fill at side stake is located by the double entry method in left column and top row. The number in body of table in same row and column gives distance from side stake to slope stake. If ground is not level estimate the difference in elevation between the side stake and slope stake, lower target by this amount if cut, elevate if fill. Add this amount to cut or fill and find distance in table. Set up rod at this point, and line of sight should cut target. If it does not make the slight adjustment necessary.

TABLE No. 9.

To find Tangent and External for curve of any other degree, divide by degree of curve and add correction found in column of corrections.

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 lenth divided by twice the radius.

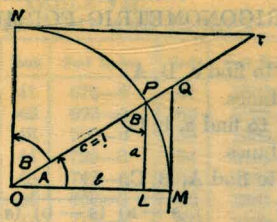


TABLE II

TRIGONOMETRIC FORMULÆ.

$\angle A = \angle MOP \qquad \angle B = \angle PON = \angle OPL$

$R = OB = c = 1$

$$\sin A = \frac{a}{c} = \frac{a}{1} = a = \cos B = LP$$

$$\cos A = \frac{b}{c} = \frac{b}{1} = b = \sin B = OL$$

$$\tan A = \frac{a}{b} = \frac{MQ}{OM} = \frac{MQ}{1} = MQ = \cot B = MQ$$

$$\cot A = \frac{NT}{ON} = \frac{NT}{1} = NT = \tan B = NT$$

$$\sec A = \frac{OQ}{OM} = \frac{OQ}{1} = OQ = \csc B = OQ$$

$$\csc A = \frac{OT}{ON} = \frac{OT}{1} = OT = \sec B = OT$$

$$\text{vers } A = \frac{LM}{OP} = LM = \text{covers } B \#$$

$$\text{covers } A = \frac{OP - LP}{OP} = OP - LP = \text{vers } B$$

$$\text{exsec } A = PQ = \text{coexsec } B$$

$$\text{coexsec } A = PT = \text{exsec } B$$

$$\sin \tfrac{1}{2} A = \sqrt{\frac{1 - \cos A}{2}} \qquad \cos \tfrac{1}{2} A = \sqrt{\frac{1 + \cos A}{2}}$$

$$\sin 2A = 2 \sin A \cos A \qquad \cos 2A = \cos^2 A - \sin^2 A$$

$$\text{Law of Lines} \quad \frac{\sin A}{a} = \frac{\sin B}{B} = \frac{\sin C}{C}$$

$$\text{Law of Cosines} \quad c^2 = a^2 + b^2 - 2ab \cos C$$

$$\text{Law of Tangents} \quad \frac{a+b}{a-b} = \frac{\tan \tfrac{1}{2}(A+B)}{\tan \tfrac{1}{2}(A-B)}$$

Table II—Continued
TRIGONOMETRIC FORMULAE (continued)

In any triangle:

Given a, b, C; to find c, B, A.

Use Law of Lines.

Given A, B, c; to find a, b, C.

Use Law of Lines.

Given a, b, c; to find A, B, C.

$$\text{Let } \frac{a+b+c}{2} = s, \sqrt{\frac{(s-a)\ (s-b)\ (s-c)}{s}} = y$$

$$\cos \tfrac{1}{2} A = \sqrt{\frac{s(s-a)}{bc}}$$

$$\tan \tfrac{1}{2} A = \frac{r}{s-a}$$

$$\tan \tfrac{1}{2} B = \frac{r}{s-b}$$

$$\tan \tfrac{1}{2} C = \frac{r}{s-c}$$

Area of a triangle:

$$\text{Area} = \tfrac{1}{2} ab \sin C$$

$$\text{Area} = \sqrt{s\,(s-a)\,(s-b)\,(s-c)}$$

PRISMOIDAL FORMULA.

$$\text{Vol.} = \frac{h}{6}(B+b+4M)$$

h = altitude; b, B = bases; M = midsection

Table III
INCHES AND FRACTIONS OF AN INCH IN DECIMALS OF A FOOT

	0	1	2	3	4	5	6	7	8	9	10	11	
1/16	.0052	.0885	.1719	.2552	.3385	.4219	.5052	.5885	.6719	.7552	.8385	.9219	1/16
1/8	.0104	.0938	.1771	.2604	.3438	.4271	.5104	.5938	.6771	.7604	.8438	.9271	1/8
3/16	.0156	.0990	.1823	.2656	.3490	.4323	.5156	.5990	.6823	.7656	.8490	.9323	3/16
1/4	.0208	.1042	.1875	.2708	.3542	.4375	.5208	.6042	.6875	.7708	.8542	.9375	1/4
5/16	.0260	.1094	.1927	.2760	.3594	.4427	.5260	.6094	.6927	.7760	.8594	.9427	5/16
3/8	.0313	.1146	.1979	.2813	.3646	.4479	.5313	.6146	.6979	.7813	.8646	.9479	3/8
7/16	.0365	.1198	.2031	.2865	.3698	.4531	.5365	.6198	.7031	.7865	.8698	.9531	7/16
1/2	.0417	.1250	.2083	.2917	.3750	.4583	.5417	.6250	.7083	.7917	.8750	.9583	1/2
9/16	.0469	.1302	.2135	.2969	.3803	.4635	.5469	.6302	.7135	.7969	.8802	.9635	9/16
5/8	.0521	.1354	.2188	.3021	.3854	.4688	.5521	.6354	.7188	.8021	.8854	.9688	5/8
11/16	.0573	.1406	.2240	.3073	.3906	.4740	.5573	.6406	.7240	.8073	.8906	.9740	11/16
3/4	.0625	.1458	.2292	.3125	.3958	.4792	.5625	.6458	.7292	.8125	.8958	.9792	3/4
13/16	.0677	.1510	.2344	.3177	.4010	.4844	.5677	.6510	.7344	.8177	.9010	.9844	13/16
7/8	.0729	.1563	.2396	.3229	.4063	.4896	.5729	.6563	.7396	.8229	.9063	.9896	7/8
15/16	.0781	.1615	.2448	.3281	.4115	.4948	.5781	.6615	.7448	.8281	.9115	.9948	15/16
1	.0833	.1667	.2500	.3333	.4167	.5000	.5833	.6667	.7500	.8333	.9167	1.000	1
	0	1	2	3	4	5	6	7	8	9	10	11	

TABLE VII
RODS IN FEET AND INCHES

Rods	Feet Inches	Rods	Feet Inches	Rods	Feet Inches	Rods	Feet Inches	Rods	Feet Inches
1	16—6	21	346—6	41	676—6	61	1006—6	81	1336—6
2	33—0	22	363—0	42	693—0	62	1023—0	82	1353—0
3	49—6	23	379—6	43	709—6	63	1039—6	83	1369—6
4	66—0	24	396—0	44	726—0	64	1056—0	84	1386—0
5	82—6	25	412—6	45	742—6	65	1072—6	85	1402—6
6	99—0	26	429—0	46	759—0	66	1089—0	86	1419—0
7	115—6	27	445—6	47	775—6	67	1105—6	87	1435—6
8	132—0	28	462—0	48	792—0	68	1122—0	88	1452—0
9	148—6	29	478—6	49	808—6	69	1138—6	89	1468—6
10	165—0	30	495—0	50	825—0	70	1155—0	90	1485—0
11	181—6	31	511—6	51	841—6	71	1171—6	91	1501—6
12	198—0	32	528—0	52	858—0	72	1188—0	92	1518—0
13	214—6	33	544—6	53	874—6	73	1204—6	93	1534—6
14	231—0	34	561—0	54	891—0	74	1221—0	94	1551—0
15	247—6	35	577—6	55	907—6	75	1237—6	95	1567—6
16	264—0	36	594—0	56	924—0	76	1254—0	96	1584—0
17	280—6	37	610—6	57	940—6	77	1270—6	97	1600—6
18	297—0	38	627—0	58	957—0	78	1287—0	98	1617—0
19	313—6	39	643—6	59	973—6	79	1303—6	99	1633—6
20	330—0	40	660—0	60	990—0	80	1320—0	100	1650—0

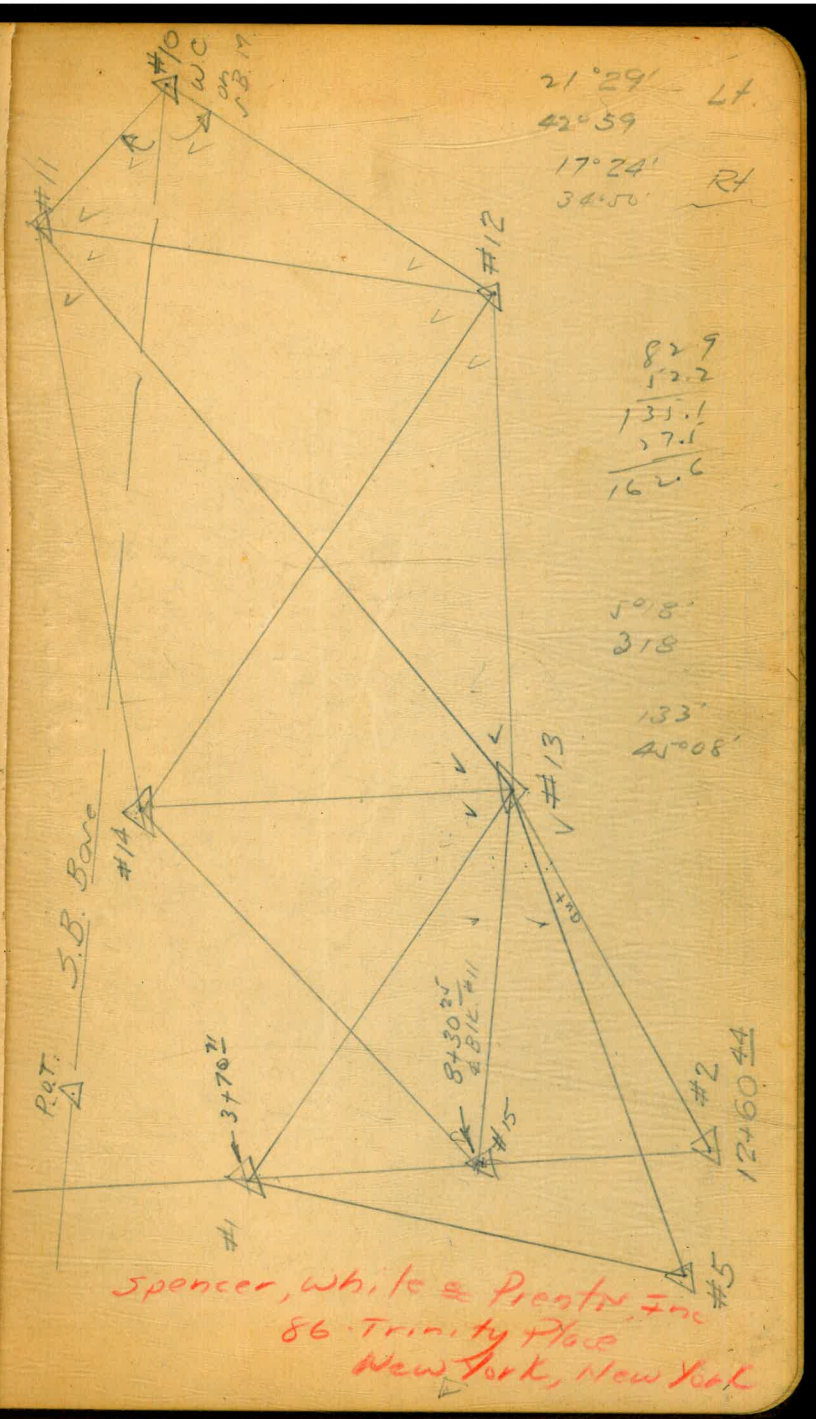
Table VIII
LINKS IN FEET AND INCHES

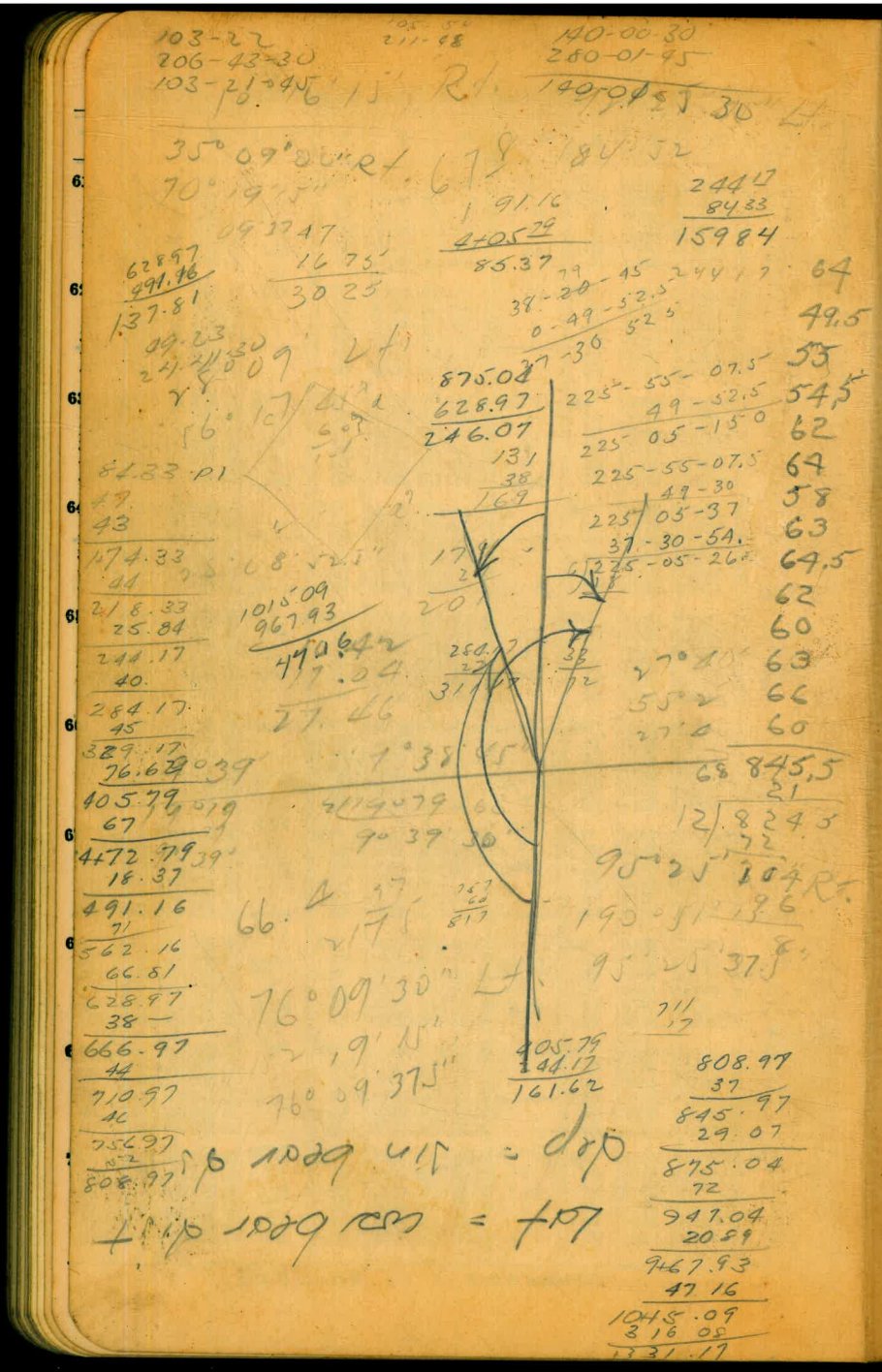
Links	Feet Inches	Links	Feet Inches	Links	Feet Inches	Links	Feet Inches	Links	Feet Inches	Links	Feet Inches
1	0- 7.92	18	11-10.56	35	23- 1.20	52	34- 3.84	69	45- 6.48	86	56- 9.12
2	1- 3.84	19	12- 6.48	36	23- 9.12	53	34-11.76	70	46- 2.40	87	57- 5.04
3	1-11.76	20	13- 2.40	37	24- 5.04	54	35- 7.68	71	46-10.32	88	58- 0.96
4	2- 7.68	21	13-10.32	38	25- 0.96	55	36- 3.60	72	47- 6.24	89	58- 8.88
5	3- 3.60	22	14- 6.24	39	25- 8.88	56	36-11.52	73	48- 2.16	90	59- 4.80
6	3-11.52	23	15- 2.16	40	26- 4.80	57	37- 7.44	74	48-10.08	91	60- 0.72
7	4- 7.44	24	15-10.08	41	27- 0.72	58	38- 3.36	75	49- 6.00	92	60- 8.64
8	5- 3.36	25	16- 6.00	42	27- 8.64	59	38-11.28	76	50- 1.92	93	61- 4.56
9	5-11.28	26	17- 1.92	43	28- 4.56	60	39- 7.20	77	50- 9.84	94	62- 0.48
10	6- 7.20	27	17- 9.84	44	29- 0.48	61	40- 3.12	78	51- 5.76	95	62- 8.40
11	7- 3.12	28	18- 5.76	45	29- 8.40	62	40-11.04	79	52- 1.68	96	63- 4.32
12	7-11.04	29	19- 1.68	46	30- 4.32	63	41- 6.96	80	52- 9.60	97	64- 0.24
13	8- 6.96	30	19- 9.60	47	31- 0.24	64	42- 2.88	81	53- 5.52	98	64- 8.16
14	9- 2.88	31	20- 5.52	48	31- 8.16	65	42-10.80	82	54- 1.44	99	65- 4.08
15	9-10.80	32	21- 1.44	49	32- 4.08	66	43- 6.72	83	54- 9.36	100	66- .000
16	10- 6.72	33	21- 9.36	50	33- 0.00	67	44- 2.64	84	55- 5.28	101	66 -7.92
17	11- 2.64	34	22- 5.28	51	33- 7.92	68	44-10.56	85	56- 1.20	102	67- 3.84

TABLE IX. TANGENTS AND EXTERNALS TO A 1° CURVE

I	T	E	I=70°	I	T	E	I=80°	I	T	E	I=90°
61°	3375.0	920.2	+	71°	4086.9	1308.2	+	81°	4893.6	1805.3	+
10′	3386.3	925.9	5° C.	10′	4099.5	1315.6	5° C.	10′	4908.0	1814.7	5° C.
20′	3397.5	931.6	T	20′	4112.1	1322.9	T	20′	4922.5	1824.1	T
30′	3408.8	937.3	.25	30′	4124.8	1330.3	.30	30′	4937.0	1833.6	.36
40′	3420.1	943.1	E	40′	4137.4	1337.7	E	40′	4951.5	1843.1	E
50′	3431.4	948.9		50′	4150.1	1345.1		50′	4966.1	1852.6	
62°	3442.7	954.8	.080	72°	4162.8	1352.6	.110	82°	4980.7	1862.2	.149
10′	3454.1	960.6		10′	4175.6	1360.1		10′	4995.4	1871.8	
20′	3465.4	966.5		20′	4188.5	1367.6		20′	5010.0	1881.5	
30′	3476.8	972.4		30′	4201.2	1375.2		30′	5024.8	1891.2	
40′	3488.3	978.3		40′	4214.0	1382.8		40′	5039.5	1900.9	
50′	3499.7	984.3		50′	4226.8	1390.4		50′	5054.3	1910.7	
63°	3511.1	990.2	10° C.	73°	4239.7	1398.0	10° C.	83°	5069.2	1920.5	10° C.
10′	3522.6	996.2	T	10′	4252.6	1405.7	T	10′	5084.0	1930.4	T
20′	3534.1	1002.3	.51	20′	4265.6	1413.5	.61	20′	5099.0	1940.3	.72
30′	3545.6	1008.3	E	30′	4278.5	1421.2	E	30′	5113.9	1950.3	E
40′	3557.2	1014.4	.159	40′	4291.5	1429.0	.220	40′	5128.9	1960.2	.299
50′	3568.7	1020.5		50′	4304.6	1436.8		50′	5143.9	1970.3	
64°	3580.3	1026.6		74°	4317.6	1444.6		84°	5159.0	1980.4	
10′	3591.9	1032.8		10′	4330.7	1452.5		10′	5174.1	1990.5	
20′	3603.5	1039.0		20′	4343.8	1460.4		20′	5189.3	2000.6	
30′	3615.1	1045.2		30′	4356.9	1468.4		30′	5204.4	2010.8	
40′	3626.8	1051.4		40′	4370.1	1476.4		40′	5219.7	2021.1	
50′	3638.5	1057.7	15° C.	50′	4383.3	1484.4	15° C.	50′	5234.9	2031.4	15° C.
65°	3650.2	1063.9	T	75°	4396.5	1492.4	T	85°	5250.3	2041.7	T
10′	3661.9	1070.2	.76	10′	4409.8	1500.5	.91	10′	5265.6	2052.1	1.09
20′	3673.7	1076.6	E	20′	4423.1	1508.6	E	20′	5281.0	2062.5	E
30′	3685.4	1082.9	.240	30′	4436.4	1516.7	.332	30′	5296.4	2073.0	.450
40′	3697.2	1089.3		40′	4449.7	1524.9		40′	5311.9	2083.5	
50′	3709.0	1095.7		50′	4463.1	1533.1		50′	5327.4	2094.1	
66°	3720.9	1102.2		76°	4476.5	1541.4		86°	5343.0	2104.7	
10′	3732.7	1108.6		10′	4489.9	1549.7		10′	5358.6	2115.3	
20′	3744.6	1115.1		20′	4503.4	1558.0		20′	5374.2	2126.0	
30′	3756.5	1121.7		30′	4516.9	1566.3		30′	5389.9	2136.7	
40′	3768.5	1128.2	20° C.	40′	4530.4	1574.7	20° C.	40′	5405.6	2147.5	20° C.
50′	3780.4	1134.8	T	50′	4544.0	1583.1	T	50′	5421.4	2158.4	T
			1.02				1.22				1.45
67°	3792.4	1141.4	E	77°	4557.6	1591.6	E	87°	5437.2	2169.2	E
10′	3804.4	1148.0	.321	10′	4571.2	1600.1	.445	10′	5453.1	2180.2	.603
20′	3816.4	1154.7		20′	4584.8	1608.6		20′	5469.0	2191.1	
30′	3828.4	1161.3		30′	4598.5	1617.1		30′	5484.9	2202.2	
40′	3840.5	1168.1		40′	4612.2	1625.7		40′	5500.9	2213.2	
50′	3852.6	1174.8		50′	4626.0	1634.4		50′	5517.0	2224.3	
68°	3864.7	1181.6		78°	4639.8	1643.0		88°	5533.1	2235.5	
10′	3876.8	1188.4		10′	4653.6	1651.7		10′	5549.2	2246.7	
20′	3889.0	1195.2	25° C.	20′	4667.4	1660.5	25° C.	20′	5565.4	2258.0	25° C.
30′	3901.2	1202.0	T	30′	4681.3	1669.2	T	30′	5581.6	2269.3	T
40′	3913.4	1208.9	1.28	40′	4695.2	1678.1	1.53	40′	5597.8	2280.6	1.83
50′	3925.6	1215.8	E	50′	4709.2	1686.9	E	50′	5614.2	2292.0	E
69°	3937.9	1222.7	.403	79°	4723.2	1695.8	.558	89°	5630.5	2303.5	.756
10′	3950.2	1229.7		10′	4737.2	1704.7		10′	5646.9	2315.0	
20′	3962.5	1236.7		20′	4751.2	1713.7		20′	5663.4	2326.6	
30′	3974.8	1243.7		30′	4765.3	1722.7		30′	5679.9	2338.2	
40′	3987.2	1250.8		40′	4779.4	1731.7		40′	5696.4	2349.8	
50′	3999.5	1257.9		50′	4793.6	1740.8		50′	5713.0	2361.5	
70°	4011.9	1265.0	30° C.	80°	4807.7	1749.9	30° C.	90°	5729.7	2373.3	30° C.
10′	4024.4	1272.1	T	10′	4822.0	1759.0	T	10′	5746.3	2385.1	T
20′	4036.8	1279.3	1.54	20′	4836.2	1768.2	1.84	20′	5763.1	2397.0	2.20
30′	4049.3	1286.5	E	30′	4850.5	1777.4	E	30′	5779.9	2408.9	E
40′	4061.8	1293.6	.485	40′	4864.8	1786.7	.671	40′	5796.7	2420.9	.910
50′	4074.4	1300.9		50′	4879.2	1796.0		50′	5813.6	2432.9	

$T = R \tan \frac{1}{2} I$ $E = R \operatorname{exsec} \frac{1}{2} I$





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.

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