

AVING GRADES OF
D, E, F, G, H, I, J, And, K Streets

9

TRANSIT

F.B. 635

635

Table showing the difference of latitude and departure in running 80 chains at any course from 1 to 60 minutes.

Minutes.	Lks.	Minutes.	Lks.	Minutes.	Lks.
1	2 $\frac{1}{2}$	21	49	41	95 $\frac{3}{4}$
2	4 $\frac{3}{4}$	22	51 $\frac{1}{2}$	42	98
3	7	23	53 $\frac{3}{4}$	43	100 $\frac{1}{2}$
4	9 $\frac{1}{2}$	24	56	44	102 $\frac{3}{4}$
5	11 $\frac{3}{4}$	25	58 $\frac{1}{2}$	45	105
6	14	26	60 $\frac{3}{4}$	46	107 $\frac{1}{2}$
7	16 $\frac{1}{2}$	27	63	47	109 $\frac{3}{4}$
8	18 $\frac{3}{4}$	28	65 $\frac{1}{2}$	48	112
9	21	29	67 $\frac{3}{4}$	49	114 $\frac{1}{2}$
10	23 $\frac{1}{2}$	30	70	50	116 $\frac{3}{4}$
11	25 $\frac{3}{4}$	31	72 $\frac{1}{2}$	51	119
12	28	32	74 $\frac{3}{4}$	52	121 $\frac{1}{2}$
13	30 $\frac{1}{2}$	33	77	53	123 $\frac{3}{4}$
14	32 $\frac{3}{4}$	34	79 $\frac{1}{2}$	54	126
15	35	35	81 $\frac{3}{4}$	55	128 $\frac{1}{2}$
16	37 $\frac{1}{2}$	36	84	56	130 $\frac{3}{4}$
17	39 $\frac{3}{4}$	37	86 $\frac{1}{2}$	57	133
18	42	38	88 $\frac{3}{4}$	58	135 $\frac{1}{2}$
19	44 $\frac{1}{2}$	39	91	59	137 $\frac{3}{4}$
20	46 $\frac{3}{4}$	40	93 $\frac{1}{2}$	60	140

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Table for Running on Slopes.

In the following table the first column shows the angle, the second, the number of links to be added to a chain on the slopes, to make one chain, horizontal measurement.

Angle.	Cor. in links.	Angle.	Cor. in links.	Angle.	Cor. in links.	Angle.	Cor. in links.
0		0		0		0	
4	0-24	11	1-88	18	5-14	25	10-54
5	0-38	12	2-24	19	5-76	26	11-26
6	0-55	13	2-63	20	6-42	27	12-24
7	0-76	14	3-06	21	7-11	28	13-37
8	0-98	15	3-53	22	7-85	29	14-34
9	1-24	16	4-02	23	8-64	30	15-47
10	1-55	17	4-56	24	9-47	35	22-07

MICROFILMED

DEC 14 1964

Est. Paving Grader

North

South

East	Center	Center	Center	West	Sta
47.33	47.42	46.83	47.50	0	
48.61	47.94	48.03	47.44	48.11	+25
49.23	48.56	48.65	48.06	48.73	+30
49.84	49.17	49.26	48.67	49.34	+75
50.45	49.78	49.67	49.28	49.95	1
51.06	50.39	50.48	49.89	50.56	+25
51.68	51.01	51.10	50.57	51.18	+50
52.29	51.62	51.71	51.12	51.79	+75
52.90	52.23	52.32	51.73	52.40	2
52.57		52.32		52.07	+40
52.90	52.23	52.32	51.73	52.40	0

East line of 4th St

West line of 5th St

Center of 5th St

East line of 5th St

0.6125

Est Paving Grader

North

South

cut	cut	cut	cut	cut	Sta
52.90	52.23	52.32	51.73	52.40	0
53.35	52.68	52.77	52.18	52.85	+25
53.80	53.13	53.22	52.63	53.30	+50
54.25	53.58	53.67	53.08	53.75	+75
54.70	54.03	54.12	53.53	54.20	1
55.15	54.48	54.57	53.98	54.65	+25
55.60	54.93	55.02	54.43	55.10	+50
56.05	55.38	55.47	54.88	55.55	+75
56.50	55.83	55.92	55.33	56.00	2

East line of 5th St

West line of 6th St

H St. Paving Grades

North		South		Sta
Left	Gutter	Center	Gutter	

44.50	43.83	43.77	43.03	43.70	0
44.91	44.24	44.16	43.41	44.08	+25
45.33	44.66	44.56	43.78	44.45	+50
45.74	45.07	44.95	44.16	44.83	+75
46.15	45.48	45.35	44.53	45.20	1
46.56	45.89	45.74	44.91	45.58	+25
46.98	46.31	46.13	45.28	45.95	+50
47.39	46.72	46.52	45.66	46.33	+75
47.80	47.13	46.92	46.03	46.70	2
47.47		46.92		46.37	+40
47.80	47.13	46.92	46.03	46.70	0

East line of 4th St

West line of 5th St

Center of 5th St

East line of 5th St

16 St. Paoming Gravel

4

North South

Level	Center	Center	Center	Level	Sta
47.80	47.13	46.92	46.03	46.70	0
48.20	47.53	47.35	46.51	47.18	+25
48.60	47.93	47.79	46.98	47.65	+50
49.00	48.33	48.23	47.46	48.13	+75
49.40	48.73	48.67	47.93	48.60	1
49.80	49.13	49.10	48.41	49.08	+25
50.20	49.53	49.54	48.88	49.53	+50
50.60	49.93	49.98	49.36	50.03	+75
51.00	50.33	50.42	49.83	50.50	2

East line of 5th St

West line of 5th St

Est. Paving Grades

5

North South

Lev. - gutter center gutter curb Sta

40.80	40.13	39.87	38.93	39.60	0
41.13	40.46	40.21	39.28	39.95	+25
41.45	40.78	40.55	39.63	40.30	+50
41.78	41.11	40.88	39.98	40.65	+75
42.10	41.43	41.22	40.33	41.00	1
42.43	41.76	41.56	40.68	41.35	+25
42.75	42.08	41.90	41.03	41.70	+50
43.08	42.41	42.23	41.38	42.05	+75
43.40	42.73	42.57	41.73	42.40	2

East line of 5th St

$$\begin{array}{r} 39.60 \\ 67 \\ \hline 39.93 \end{array}$$

$$\begin{array}{r} 40.88 \\ 39.98 \\ \hline .90 \end{array}$$

West line of 6th St

5th St. Paving Grades

North South

Lev	Gutter	Center	Gutter	Lev.	Sta
30.00	29.33	29.17	28.41	29.00	0
30.51	29.84	29.67	28.82	29.49	+25
31.03	30.36	30.17	29.31	29.98	+50
31.54	30.87	30.67	29.79	30.46	+75
32.05	31.38	31.17	30.28	30.95	1
32.56	31.89	31.67	30.77	31.44	+25
33.08	32.41	32.17	31.26	31.93	+50
33.59	32.92	32.67	31.74	32.41	+75
34.10	33.43	33.17	32.23	32.90	2
					+40
34.10				32.90	0

East line of 4th St

5.55

17
31.28
30.89

6.57
89
6.68

32.17
31.26
.91

5.33
91
4.68

West line of 5th St

Center of 5th St

East line of 5th St

Dist. Paving Grader

North

South

Leub	Gutter	Center	Gutter	Leub	Sta
34.10	33.43	33.17	32.23	32.90	0
34.44	33.77	33.55	32.66	33.33	+25
34.78	34.11	33.93	33.08	33.76	+50
35.11	34.44	34.31	33.51	34.18	+75
35.46	34.78	34.70	33.93	34.60	1
35.79	35.12	35.08	34.36	35.03	+25
36.13	35.46	35.46	34.78	35.45	+50
36.46	35.79	35.84	35.21	35.88	+75
36.80	36.47 36.43	36.22	35.97 35.68	36.30	2

East line of 5th St

West line of 6th St

St. Pauling Guide

North South

curb gutter center gutter curb Sta

23.00 22.33 22.17 21.33 22.00 0

East line of 4th St

23.63 22.96 22.86 22.08 22.75 +25

24.25 23.58 23.55 22.83 23.50 +50

24.88 24.21 24.23 23.58 24.25 +75

25.50 x 24.83 x 24.92 x 24.33 x 25.00 1 X

25.95 25.28 25.31 24.66 25.33 +25

26.40 25.73 25.70 24.98 25.65 +50

26.85 26.18 26.08 25.31 25.98 +75

27.30 26.63 26.47 25.63 26.30 2

West of 5th St

+40

center of 5th St

27.30 26.63 26.47 25.63 26.30 0

East of 5th St

St. Paving Grades

North South

Left	Gutter	Center	Gutter	Right	Sta.
27.30	26.63	26.47	26.63	26.30	0
27.89	27.22	27.06	26.22	26.89	+25
28.48	27.81	27.65	26.81	27.48	+50
29.06	28.39	28.23	27.39	28.06	+75
29.65	28.98	28.82	27.98	28.65	1
30.24	29.58	29.41	28.57	29.24	+25
30.83	30.16	30.00	29.16	29.83	+50
31.41	30.74	30.58	29.74	30.41	+75
32.00	31.33	31.17	30.33	31.00	2

East line of 5th St

2.2
2.1
1.10
2.2
1
1.7
1.7
1.1

West line of 6th St

H St Paving Grades

9.

North		South			
Level	Water	Center	Water	Level	Sta
16.50	15.83	15.67	14.83	15.50	0
17.13	16.46	16.29	15.44	16.11	+25
17.75	17.08	16.91	16.06	16.73	+50
18.38	17.71	17.53	16.67	17.34	+75
19.00	18.33	18.15	17.28	17.95	1
19.63	18.96	18.76	17.89	18.56	+25
20.25	19.58	19.38	18.51	19.18	+50
20.88	20.21	20.00	19.12	19.79	+75
21.50	20.83	20.62	19.73	20.40	2
					+40
21.50				20.40	0

East line of 4th St

West line of 5th St

Center of 5th St

East line of 5th St

H St Paving Grades

North South

Sub	Gutter	Center	Gutter	Sub	Sta.
-----	--------	--------	--------	-----	------

21.50	20.83	20.62	19.73	20.40	0
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22.00	21.33	21.13	20.24	20.91	+25
-------	-------	-------	-------	-------	-----

22.50	21.83	21.63	20.76	21.43	+50
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23.00	22.33	22.14	21.27	21.94	+75
-------	-------	-------	-------	-------	-----

23.50	22.83	22.65	21.78	22.45	1
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24.00	23.33	23.15	22.29	22.96	+25
-------	-------	-------	-------	-------	-----

24.50	23.83	23.66	22.81	23.48	+50
-------	-------	-------	-------	-------	-----

25.00	24.33	24.16	23.31	23.99	+75
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25.50	24.83	24.67	23.83	24.50	2
-------	-------	-------	-------	-------	---

East line of 5th St

West line of 6th St

2 St - Paving Grades

North

South

curb	gutter	center	gutter	curb	Sta
11.90	10.33	10.17	9.33	10.00	0
11.63	10.96	10.80	9.96	10.68	+25
12.25	11.58	11.42	10.58	11.25	+50
12.88	12.21	12.06	11.21	11.88	+75
13.50	12.83	12.67	11.83	12.50	1
14.13	13.46	13.30	12.46	13.13	+25
14.75	14.08	13.92	13.08	13.75	+50
15.38	14.71	14.55	13.71	14.38	+75
16.00	15.33	15.17	14.33	15.00	2
15.67		15.17		14.67	+40
16.00	15.33	15.17	14.33	15.00	0

14.26
13.92
 34
3.68
 7.02

East line of 4th St

17.94
13.92
 4.02

17.94
12.67
 5.27

West line of 5th St

Center of 5th St

East line of 5th St

Silt Paving Grades

15

	North		South		
Leak	Gutter	Center	Gutter	Leak	Sta

16.00	15.33	15.17	14.33	15.00	0
16.38	15.71	15.55	14.71	15.38	+25
16.75	16.08	15.92	15.08	15.75	+50
17.13	16.46	16.30	15.46	16.13	+75
17.50	16.83	16.67	15.83	16.50	/
17.88	17.21	17.05	16.21	16.88	+25
18.25	17.58	17.42	16.58	17.25	+50
18.63	17.96	17.80	16.96	17.63	+75
19.00	18.33	18.17	17.33	18.00	2

East line of 5th St

West line of 6th St

1st Paving Grades

North South

Cent	Gutter	Center	Gutter	Cent	Sta
------	--------	--------	--------	------	-----

5.80	5.13	5.07	4.33	50.0	0
6.35	5.68	5.61	4.87	5.54	+25
6.90	6.23	6.16	5.41	6.08	+50
7.45	6.78	6.70	5.94	6.61	+75
8.00	7.33	7.25	6.48	7.15	1
8.55	7.88	7.79	7.02	7.69	+25
9.10	8.43	8.33	7.56	8.23	+50
9.65	8.98	8.88	8.09	8.76	+75
10.20	9.53	9.42	8.63	9.30	2
9.87		9.42		8.97	+40
10.20	9.53	9.42	8.63	9.30	0

East line of 4th St

West line of 5th St

Center of 5th St

East line of 5th St

St Paving Grades

North		South			
Lev	Height	Lev	Height	Lev	Sta
10.20	9.53	9.42	8.63	9.30	0 East line of 5th St
10.53	9.88	9.76	8.97	9.64	+25
10.90	10.23	10.11	9.31	9.98	+50
11.25	10.58	10.45	9.64	10.31	+75
11.60	10.93	10.80	9.98	10.65	1
11.95	11.28	11.14	10.32	10.99	+25
12.30	11.63	11.48	10.66	11.33	+50
12.65	11.98	11.83	10.99	11.66	+75
13.00	12.33	12.17	11.33	12.00	2 West line of 6th St

K St. Paving Grades

North South

Center	Quota	Center	Center	Center	Sta
2.00	1.33	1.42	0.83	1.50	0
2.46	1.79	1.87	1.27	1.94	+25
2.93	2.26	2.32	1.71	2.38	+50
3.39	2.72	2.77	2.14	2.81	+75
3.85	3.18	3.22	2.58	3.25	1
4.31	3.64	3.67	3.02	3.69	+25
4.78	4.11	4.12	3.46	4.13	+50
5.24	4.57	4.57	3.89	4.56	+75
5.70	5.03	5.02	4.33	5.00	2
					+40
5.70	5.03	5.02	4.33	5.00	0

East line of 4th St

West line of 5th St

Center of 5th St

East line of 5th St

K St. Passing Gender
 North South

14

East	Center	West	East	Center	West
5.70	5.03	5.02	4.33	5.00	?
5.93	5.26	5.23	4.52	5.19	+25
6.15	5.48	5.43	4.71	5.38	+50
6.38	5.71	5.64	4.89	5.56	+75
6.60	5.93	5.85	5.08	5.75	+100
6.83	6.16	6.05	5.27	5.94	+125
7.05	6.38	6.26	5.46	6.13	+150
7.28	6.61	6.46	5.64	6.31	+175
7.50	6.83	6.67	5.83	6.50	+200

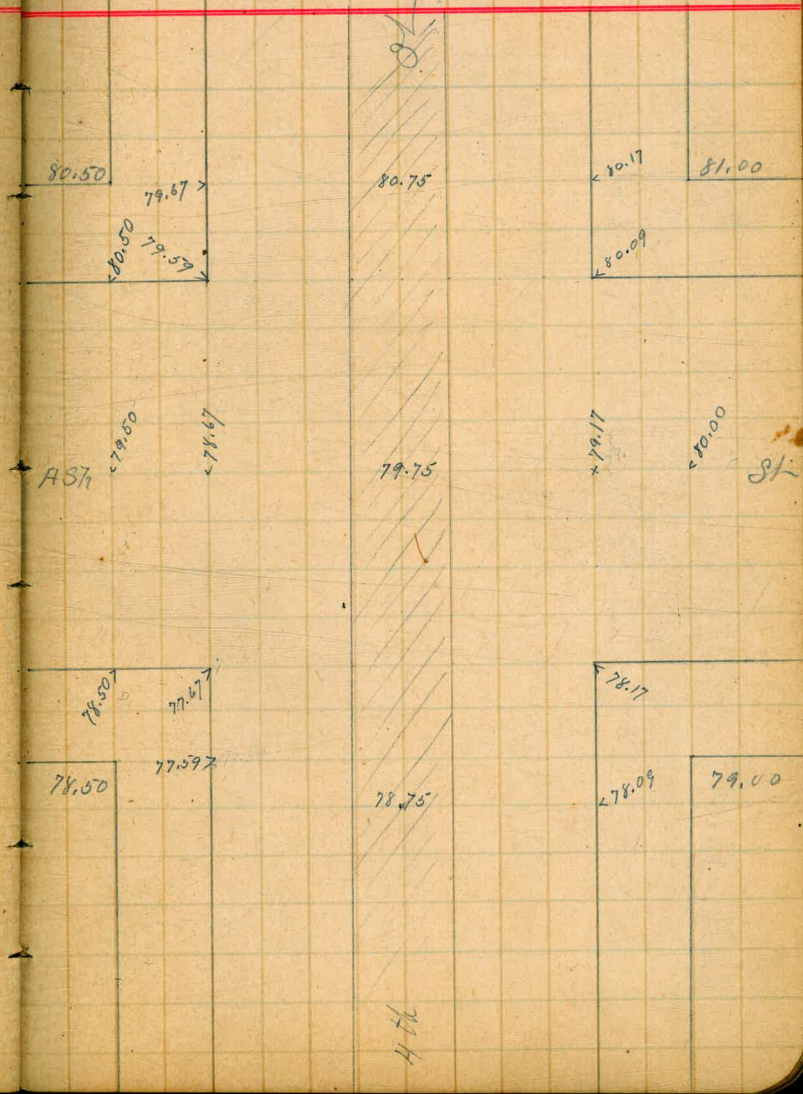
East line of 3th St

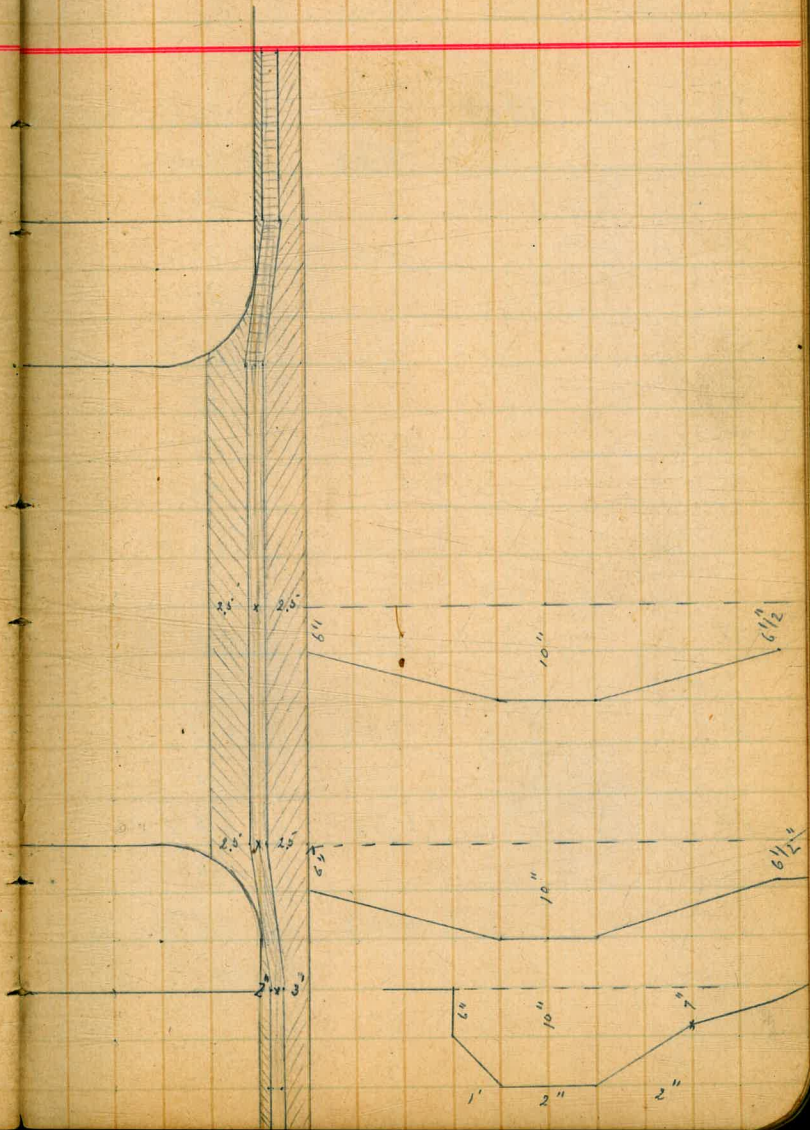
West line of 4th St

Grade at intersection of 4th and
 Oak Street

17

Sta	+	HO	Grade	Rod	Elev
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Sta	+	H9	Grade	Road	Elev
B9m	1.34	12.77			11.43
0			5.07	7.70 ✓	
				.54	
+25			5.61	7.16 ✓	
				.53	
+50			6.16	6.61 ✓	
				.54	
+75			6.70	6.07 ✓	
				.52	
1			7.25	5.52 ✓	
				.54	
+25			7.79	4.98 ✓	
				.54	
+50			8.33	4.44 ✓	
				.55	
+75			8.88	3.89 ✓	
of				.54	
2			9.42	3.35 ✓	
				6.60	6.17

East of 4th St

West of 6th St

230
380

20

Sta	f	HO	-	Elv
B.M.	2.92	28.97		26.05
			1 inch	
			24.87	4.30
			24.92	4.05
			24.83	4.14
			25.17	3.80
B.M.	1.78	24.84		23.06
			20.62	4.22
	1.80	24.86		23.06
			20.62	
			4.24	
		HO	1 inch	Elv
B.M.	2.57	20.20		17.60
			15.67	4.53
B.M.	2.72	20.21		17.49
			15.67	4.54
	2.52	20.15		17.63
			15.33	4.82
			15.67	4.99

6 1/2 ft
 West line
 Center
 gutter on East side
 East side

6 1/2 ft
 East line of 6 ft

Stadia & Levels Survey

Morena dam to Hook Ranch

Hook vs City of San Diego

Nov. 10, 1941.

J.W. Williams, Eng.
 S. Moore, Inst.
 H. Rand, Rod
 G. S. V. Moore, Ch.

30+18 = Δ 79°17' RT

T.P.	+ H.I.	-	El.	Hub A
4.30	177.30	2.55	173.02	30+18

29+98.5 max. Δ 20' Pile Bridge

T.P.	3.90	175.67	0.30	171.77
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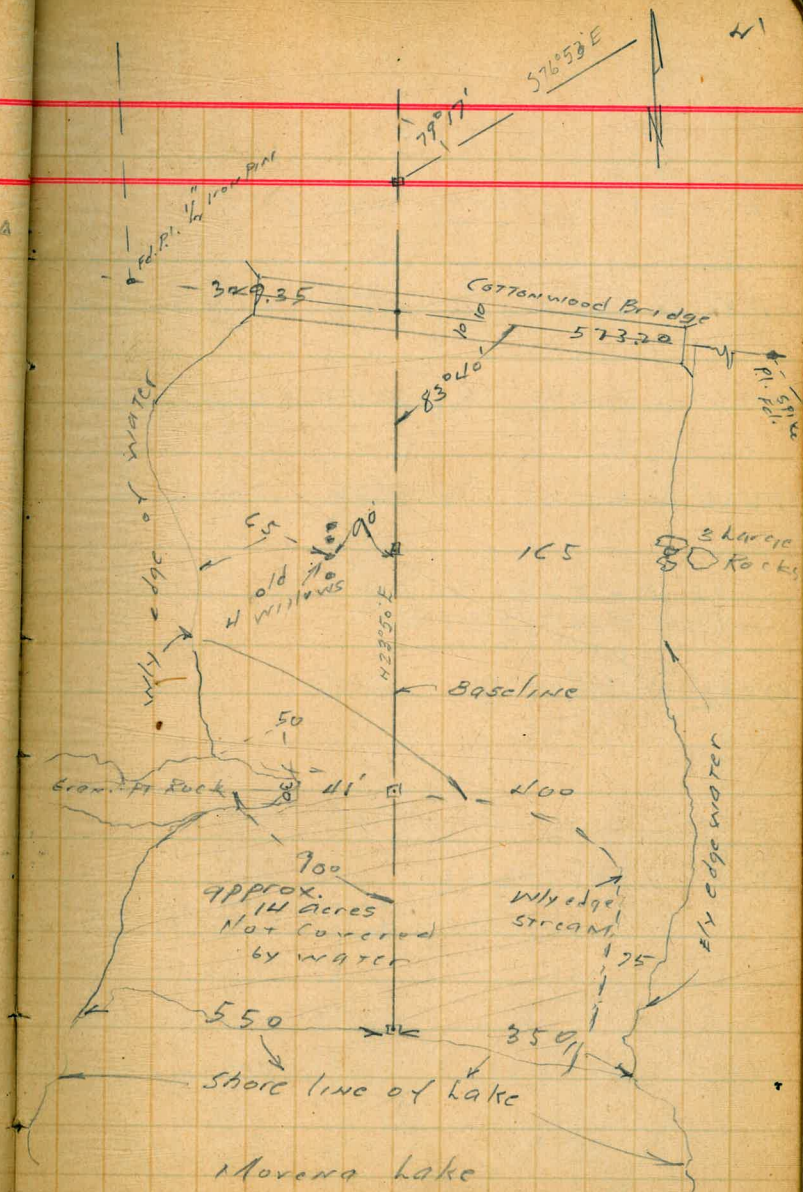
I.P. - POT	4.58	172.07	1.60	167.49
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I.P. POT	4.60	169.09	2.05	164.49
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6' x 10' ledge rock
 120' → STREAM Bed El.

0+00	H.C.V	166.54	161.92
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Gauge reading at
 Morena Dam
 Nov. 10, 1941.



45+60 P.O.T.

T.P. 5.85 188.00 0.90 182.15

31° 30' Lt. End T. 70, 3.80

117° 14' Lt. End T. 102, 4.75

152° 25' Lt. End T. 103, 5.70

52° 0.8' Rt. of End T. 75, 3.10

These 4 shots from

Here

40+53 Δ 34° 09' RT 4.9

= Near

Rock outcrop where current was meas.

= El. Sand

34+93 T.P. 7.35 183.05 1.64 175.70

177.34 = End. from P. 21

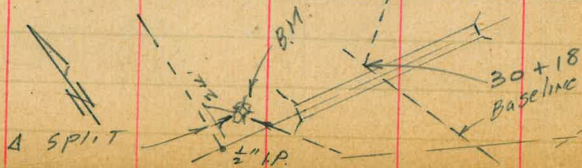
U.S.G.S. B.M. 6.39 3063.89

9.95 3053.94 ON 1 1/2" I.P.

3057.50 = Elev

Hub Δ 30+18

chiseled Top Rock



Sely end duck dam

approx. center duck dam

North end duck dam

576° 53' E

Baseline

79° 17'

1 1/2" x 1/2" Hub

3050.50

Contd. P. 45

47+10 Δ 28° 24' RT.

T.P. 67+34	8.40	<u>201.59</u>	7.01	193.19
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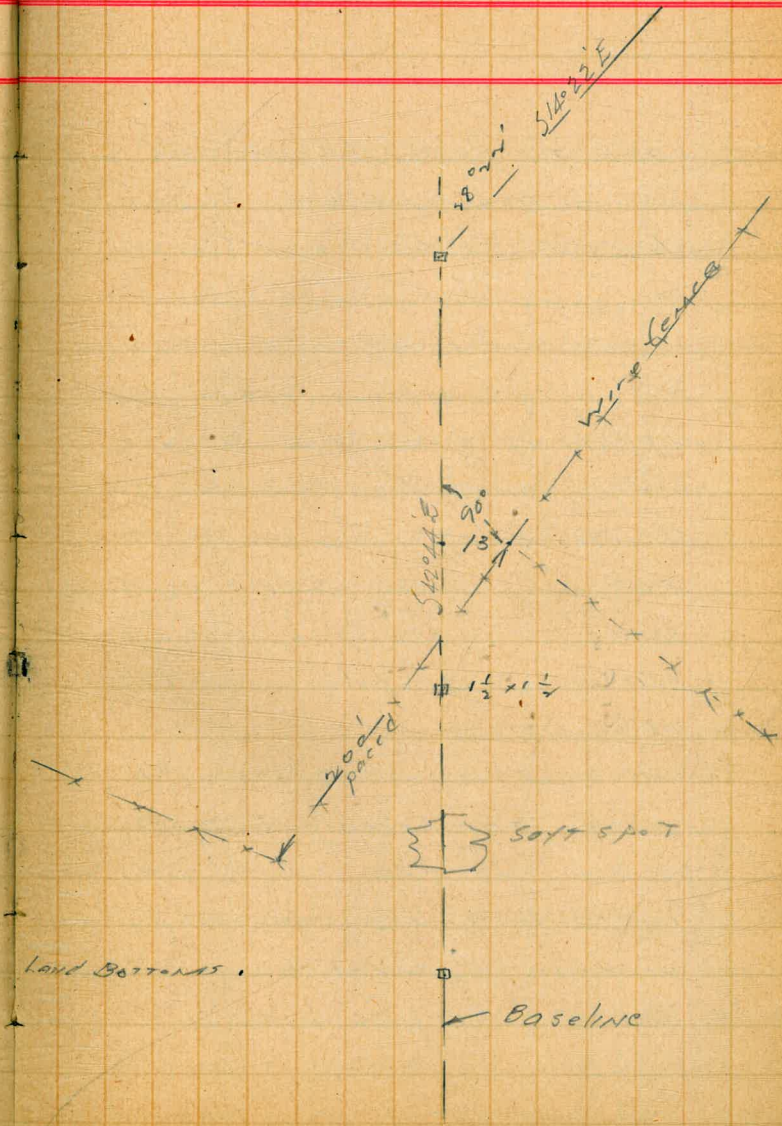
58+75

58+30 P.O.T.			5.1	
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T.P. 50+90	8.09	<u>195.20</u>	0.85	187.15
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45+60 = P.O.T.	5.30		Reg. Grass	Land Bottoms
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188.00 = H.I. P. 20



Side Notes - CSM.

0+00 to 7+80 = shaded area
not covered by water flow
Note at 7+80 on the left of
baseline = solid granite ridge
rising from wly edge of flowing
stream at approx. + 8% grade.
Apparent here that granite
ridge continues across and
slightly below river sands,
making a natural subterranean
dirt, for on the RT. a solid granite
hill rises abruptly from the
river's edge.

This is what apparently
causes the stream to suddenly
be diverted from full width,
(7+80 to 30+18) to approx.
width 75' width as it
enters Morena Lake.

24

at approx. 90' left of STA. 17+37
are 4 old willow trees that
might possibly be 20 or 30 year old.

From 0+00 to approx. 45+60
river bed is of a coarse dis-
integrated granite formation.
and we did not sink in the
sand at any place more than
4 inches. water crosses ground
along stream's edge here.

Beginning about 45+60
noticed a quite heavy growth
of salt grass growing which
usually denotes the presence of
alkali or salt, ground here is
of a fine silt composition and
where grass is growing is fairly
firm, but in one spot, Sta. 50+70
silt was soft and sank to a depth
of about 14" but below that was
solid footing of sand.

Contd. from P 22

Nov. 25, '41

190' LT & 12' opening 3.25

86' LT & 10' opening 4.45

50' LT end Rock dam 4.50

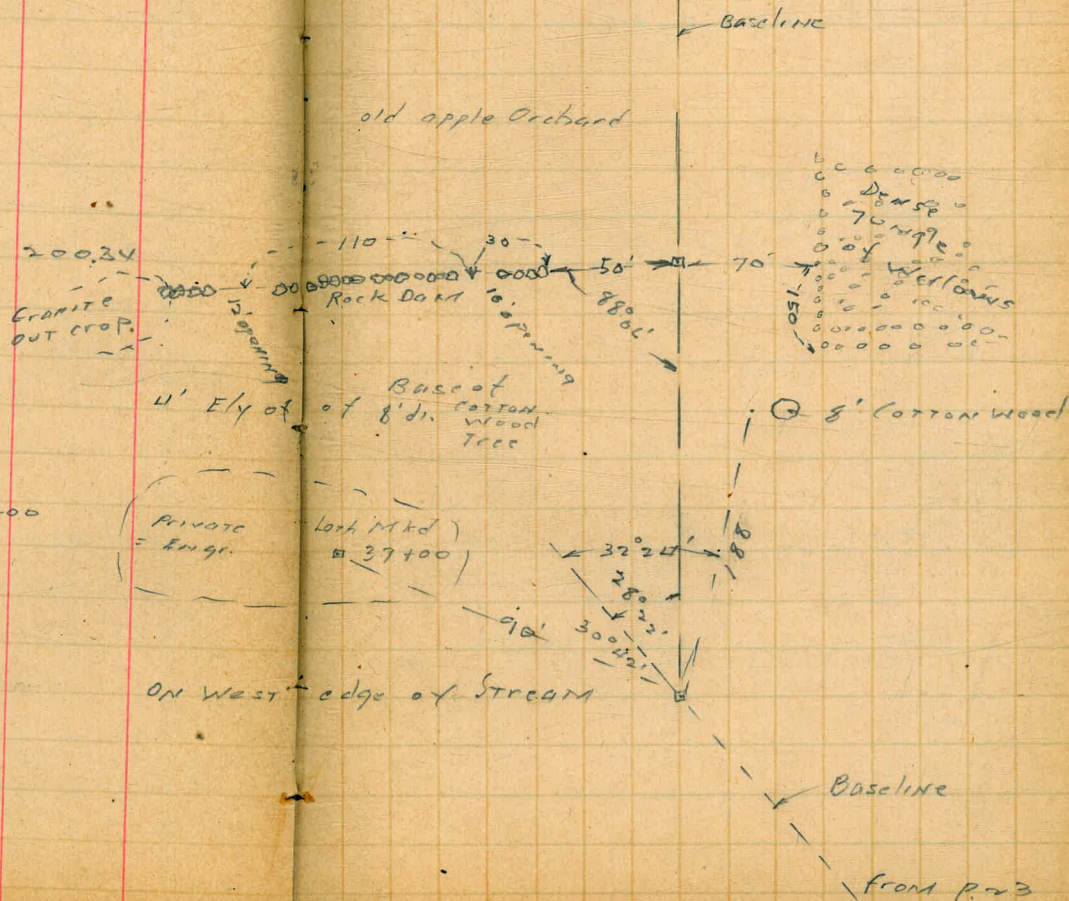
72+80
T.P.
Lath 4.70 205.04 1.25 200.34

188 - B 32' x 24' 4.5

37+00 90' LT to Lath 37+00
Δ 30° 42' LT 5.5

67+10 Δ 78° 21' Pt. 5.10

201.59



83479 $\Delta = 7^{\circ} 21' \text{ LT.}$
 T.P. 4.77 214.88 2.71 210.11

81412 P.O.T.
 T.P. 4.65 214.32 2.00 207.67

78457 = $\Delta = 21^{\circ} 03' \text{ RT.}$
 T.P. 4.05 209.67 2.70 205.64

414 RT. to $1\frac{1}{2} \times 1\frac{1}{2}$ 1.85 206.47

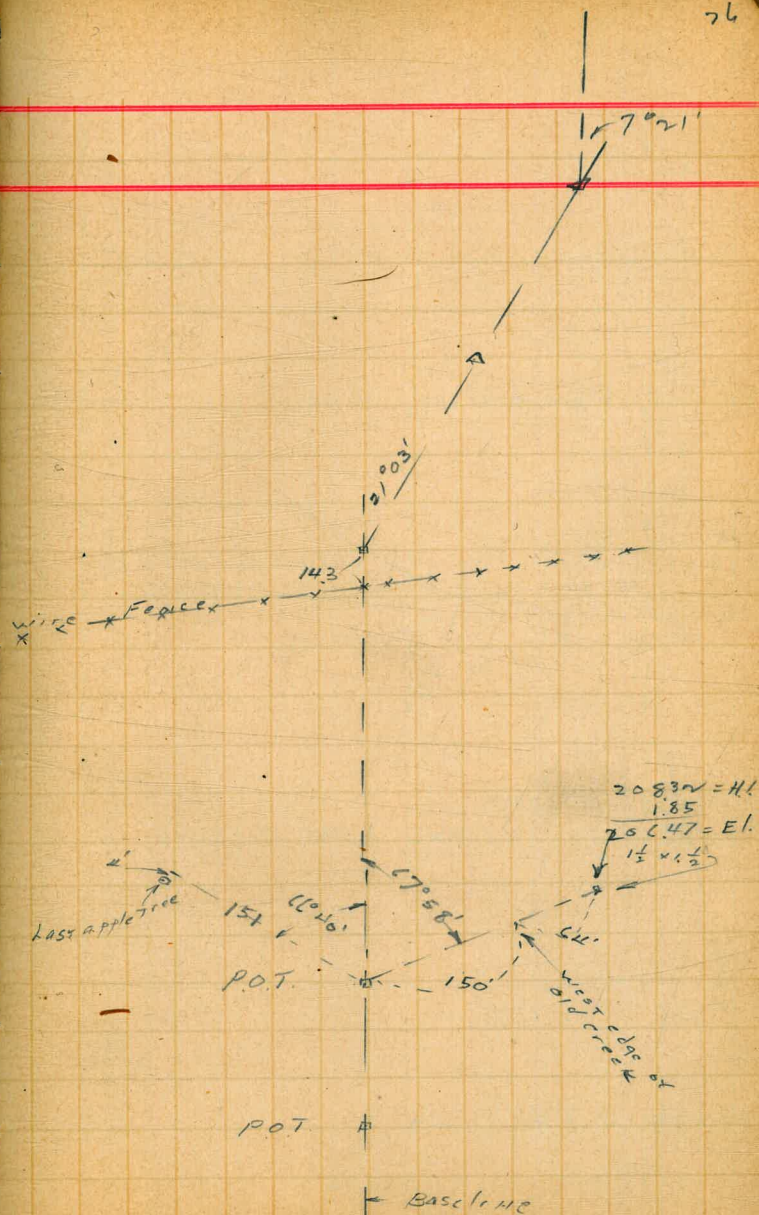
150 RT. west edge
 old creek 5.60

151 Lt. to Last
 apple tree 4.10

T.P.
 76419 4.90 208.37 1.68 203.36

72 + 80

205.04



85' slope V.A. = + 6'00" 4.00.

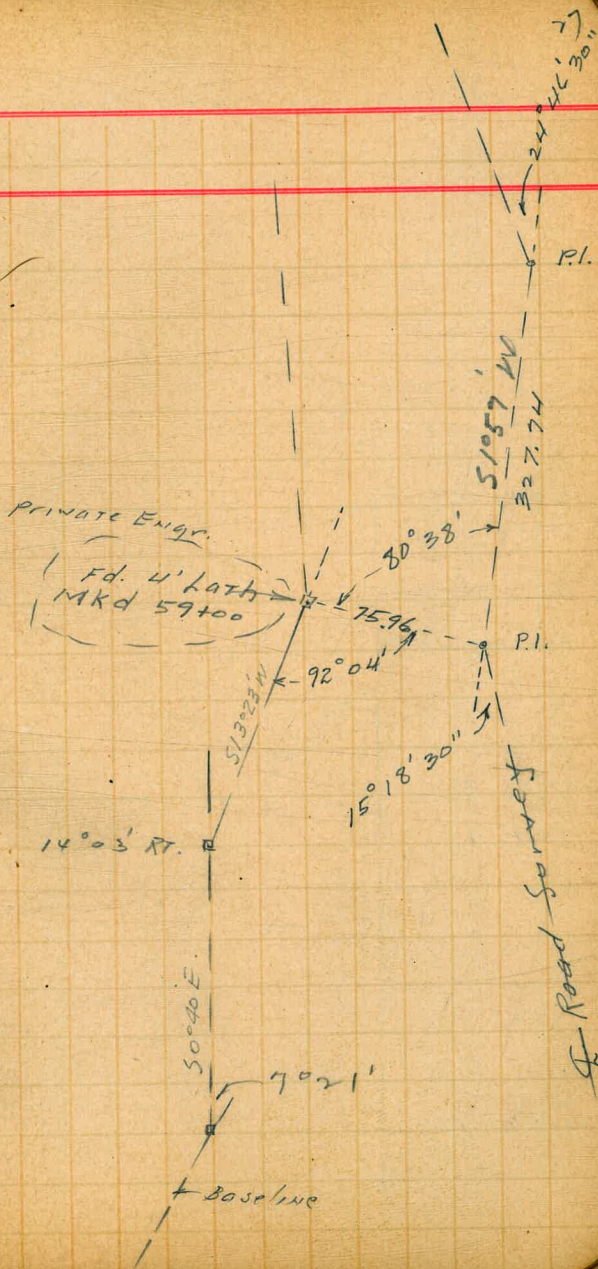
on E Pav. Rd.

old
88+61 Δ END Survey = LATH 59400
T.P. 4.52 219.77 N. 85 215.20
= 86+23.7 NEW

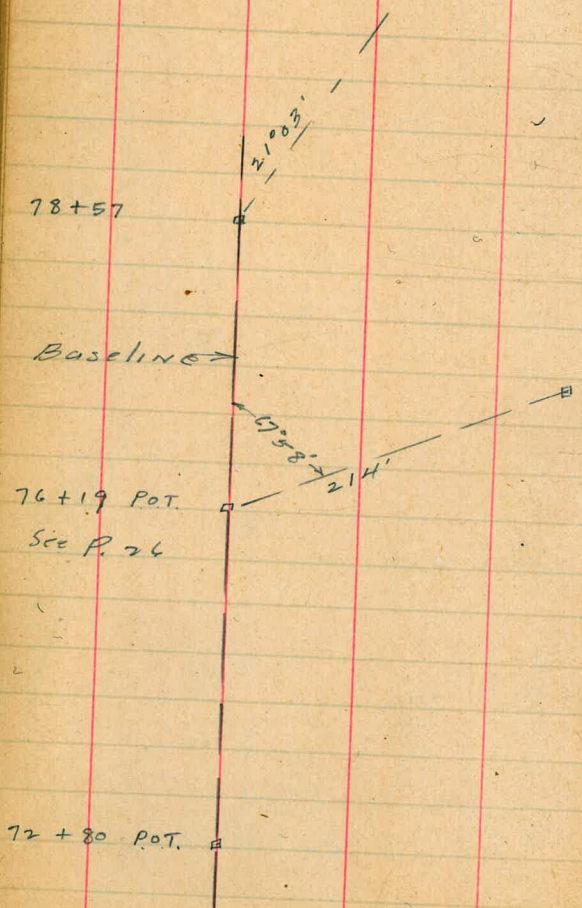
T.P. Δ = 14°03' RT.
86+89 4.60 218.06 1.42 213.46

83+79 Δ 7°21' LT

214.88



Location of Hook Ranch Bldgs.



Morris
Rand
Suelmo

12-22-41.

29

Chain Meas. check

of Stadia Survey P. 21

STA 30+18 at Cottonwood Creek Bridge
to " 88+61

48+49.0 Fd. $1\frac{1}{2} \times 1\frac{1}{2}$ hub POT T.P.

306.0

45+23 Fd. $1\frac{1}{2} \times 1\frac{1}{2}$ hub POT T.P.

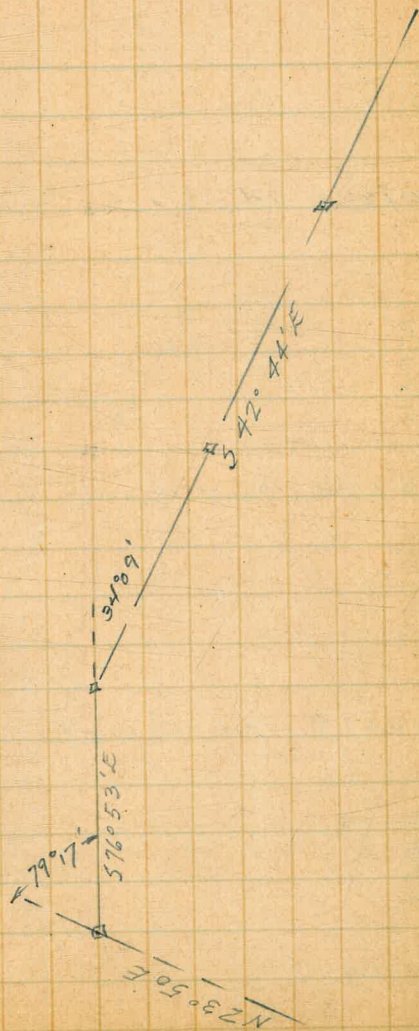
186.2

40+36.8 = A $34^{\circ}09'$ RT Fd. $1\frac{1}{2} \times 1\frac{1}{2}$ hub

1018.8

34+93 NOT FOUND

7 30+18 A Fd. $1\frac{1}{2} \times 1\frac{1}{2}$ hub of 11-10-41.



64+63.3 A 48° RT. Fd. $1\frac{1}{2} \times 1\frac{1}{2}$

475.0

59+88.3 Fd. $1\frac{1}{2} \times 1\frac{1}{2}$ T.P.

404.3

55+84 POT $1\frac{1}{2} \times 1\frac{1}{2}$ found

366.2

52+17.8 Fd. $1\frac{1}{2} \times 1\frac{1}{2}$

388.8

48+29



78+00

253.5

76+18.9 A = 27°03' RT Fd. $1\frac{1}{2} \times 1\frac{1}{2}$

229.7

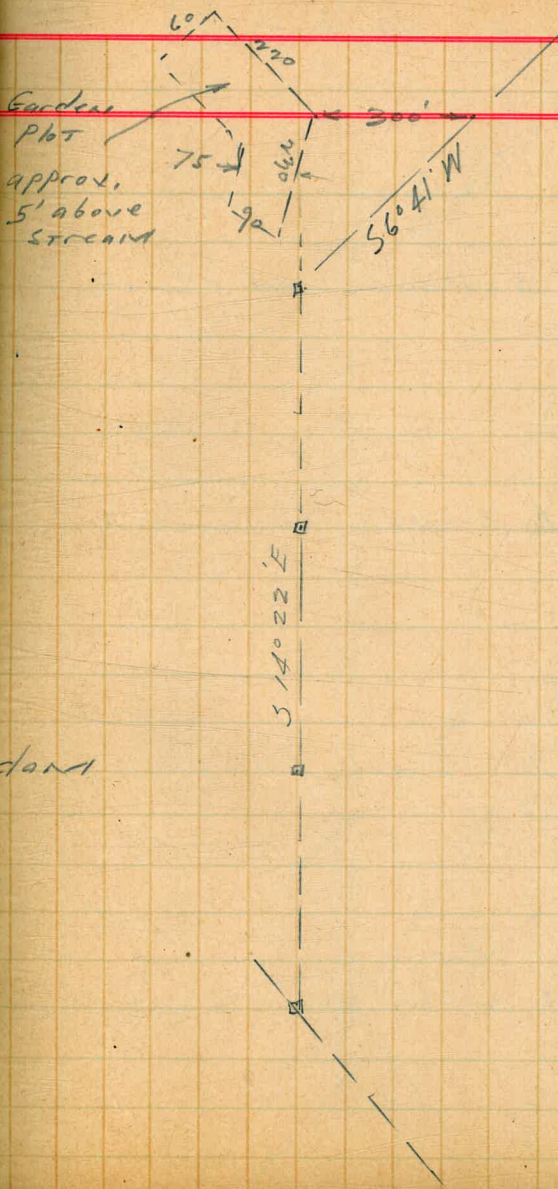
73+79.4 P.O.T. tie to old Creek

434.4

70+35.8 POT T.P. fd. kark opp. Rock dam

572.5

64+63.3 A 28°22' RT.



$86 + 23.7 = A = \text{Tie to Road.}$

173.3

$84 + 50.4 \triangle 14^{\circ}03' \text{ RT. Fd. } \frac{1}{2} \times \frac{1}{2}$

308.7

$81 + 44.4 \triangle 7^{\circ}21' \text{ LT Fd. } \frac{1}{2} \times \frac{1}{2}$

269.8

$78 + 77.4 \text{ Fd } \frac{1}{2} \times \frac{1}{2} \text{ T.P.}$

253.5

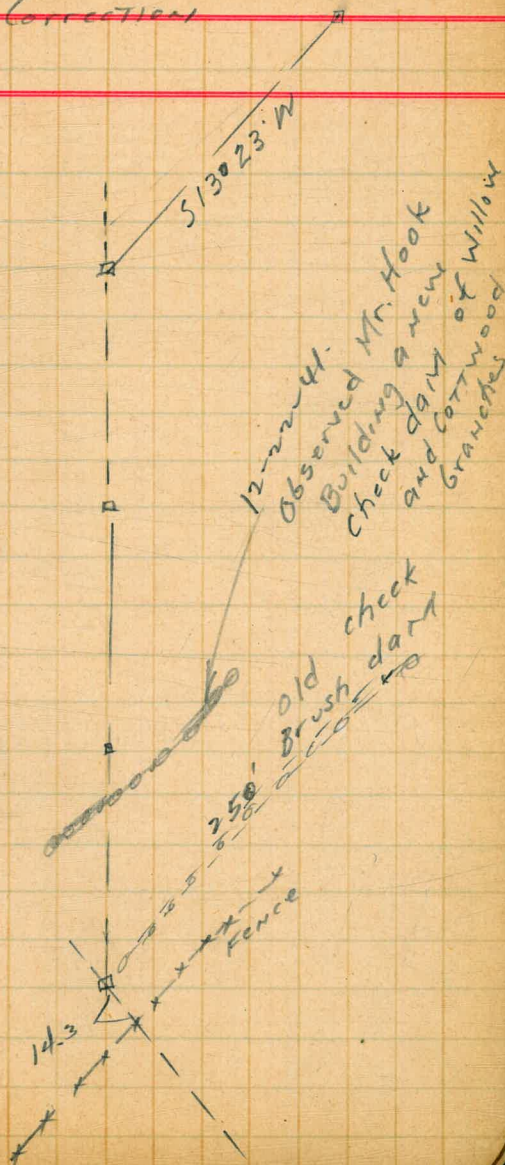
$76 + 18.9 \triangle 21^{\circ}03' \text{ RT. } \frac{1}{2} \times \frac{1}{2}$

88 + 61

86 + 23.7

$\frac{137.3 = \text{Correction}}$

P. 27



161.90
4.62
166.52

27.38

24.67

2.71

27.38

24.34

3.04

27.38

24.67

2.71

2.04

24.67

33

24.34

5.14

3.17
3.45
6.62
1.42
5.20
33
5.93

3.17
3.45
6.63
1.42
5.21
33
5.54

Degrees	
88	88
87	87
86	86
85	85
84	84
83	83
82	82
81	81
80	80
79	79
78	78
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49	49
48	48
47	47
46	46
45	45

at.
E.E.
Materials

W. B. King C.B. R&E

Marshfield

Oregon

1332

0 7.41 ✓
 +50 6.23 ✓
 1 5.06 ✓
 +50 3.88 ✓

183.25

Stewart's book

161.92

TRAVERSE TABLE FOR TRANSIT BOOK,
 From 1° to 90° for a distance of 100.

Degrees.	DEGREES.		¼ DEGREE.		½ DEGREE.		¾ DEGREE.		Degrees.
	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	
0			100.00	0.44	100.00	0.87	99.99	1.31	81
1	99.98	1.75	99.98	2.18	99.97	2.62	99.95	3.05	80
2	99.94	3.49	99.92	3.93	99.91	4.36	99.88	4.80	79
3	99.86	5.23	99.84	5.67	99.81	6.10	99.79	6.54	78
4	99.76	6.98	99.73	7.41	99.69	7.85	99.66	8.28	77
5	99.62	8.72	99.58	9.15	99.54	9.58	99.50	10.02	76
6	99.45	10.45	99.41	10.89	99.36	11.32	99.31	11.75	75
7	99.25	12.19	99.20	12.62	99.14	13.05	99.09	13.49	74
8	99.03	13.92	98.97	14.35	98.90	14.78	98.84	15.21	73
9	98.77	15.64	98.70	16.07	98.63	16.50	98.56	16.93	72
10	98.48	17.36	98.40	17.79	98.33	18.22	98.25	18.65	71
11	98.16	19.08	98.08	19.51	97.99	19.94	97.90	20.36	70
12	97.81	20.79	97.72	21.22	97.63	21.64	97.53	22.07	69
13	97.44	22.50	97.34	22.92	97.24	23.34	97.13	23.77	68
14	97.03	24.19	96.92	24.62	96.81	25.04	96.70	25.46	67
15	96.59	25.88	96.48	26.30	96.36	26.72	96.25	27.14	66
16	96.13	27.56	96.00	27.98	95.88	28.40	95.76	28.82	65
17	95.63	29.24	95.50	29.65	95.37	30.07	95.24	30.49	64
18	95.11	30.90	94.97	31.32	94.83	31.73	94.69	32.14	63
19	94.55	32.56	94.41	32.97	94.26	33.38	94.12	33.79	62
20	93.97	34.20	93.82	34.61	93.67	35.02	93.51	35.43	61
21	93.36	35.84	93.20	36.24	93.04	36.65	92.88	37.06	60
22	92.72	37.46	92.55	37.86	92.39	38.27	92.22	38.67	59
23	92.05	39.07	91.88	39.47	91.71	39.87	91.53	40.27	58
24	91.35	40.67	91.18	41.07	91.00	41.47	90.81	41.87	57
25	90.63	42.26	90.45	42.66	90.26	43.05	90.07	43.44	64
26	89.88	43.84	89.69	44.23	89.49	44.62	89.30	45.01	63
27	89.10	45.40	88.90	45.79	88.70	46.17	88.50	46.56	62
28	88.29	46.95	88.09	47.33	87.88	47.72	87.67	48.10	61
29	87.46	48.48	87.25	48.86	87.04	49.24	86.82	49.62	60
30	86.60	50.00	86.38	50.38	86.16	50.75	85.94	51.13	59
31	85.72	51.50	85.49	51.88	85.26	52.25	85.04	52.62	58
32	84.80	52.99	84.57	53.36	84.34	53.73	84.10	54.10	57
33	83.87	54.46	83.63	54.83	83.39	55.19	83.15	55.56	56
34	82.90	55.92	82.66	56.28	82.41	56.64	82.16	57.00	55
35	81.92	57.36	81.66	57.71	81.41	58.07	81.16	58.42	54
36	80.90	58.78	80.64	59.13	80.39	59.48	80.13	59.83	53
37	79.86	60.18	79.60	60.53	79.34	60.88	79.07	61.22	52
38	78.80	61.57	78.53	61.91	78.26	62.25	77.99	62.59	51
39	77.71	62.93	77.44	63.27	77.16	63.61	76.88	63.94	50
40	76.60	64.28	76.32	64.61	76.04	64.94	75.76	65.28	49
41	75.47	65.61	75.18	65.93	74.90	66.26	74.61	66.59	48
42	74.31	66.91	74.02	67.24	73.73	67.56	73.43	67.88	47
43	73.14	68.20	72.84	68.52	72.54	68.84	72.24	69.15	46
44	71.93	69.47	71.63	69.78	71.33	70.09	71.02	70.40	45
45	70.71	70.71							
Degrees.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Degrees.
	DEGREES.		¼ DEGREE.		½ DEGREE.		¾ DEGREE.		

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 Mathematical Instruments, Etc., San Francisco.

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