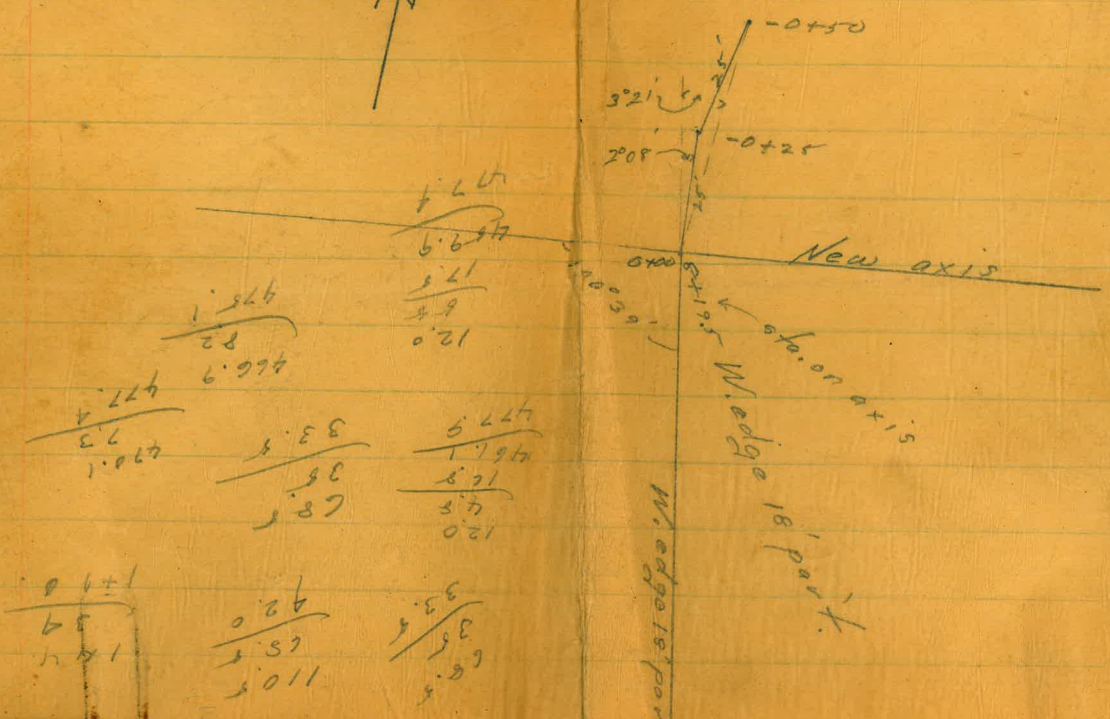
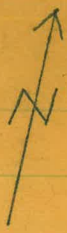
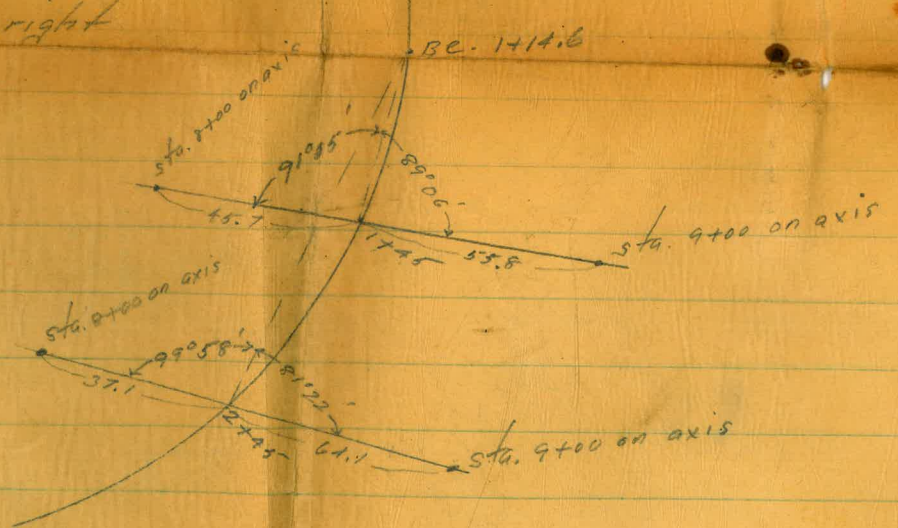


Loc. of part at San Vicente Dam



- Deflex to right
- 1+10 - 0°
 - 1+25 - 1°08'
 - 1+45 - 2°18'
 - 1+55 - 3°10'
 - 1+75 - 4°32'
 - 2+00 - 7°57'
 - 2+25 - 10°08'
 - 2+45 - 12°28'
 - 2+50 - 12°57'
 - 2+75 - 15°23'



EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and
SURVEYING INSTRUMENTS

Chicago **MICROFILMED** St. Francis 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 $30.6 + (20 - 16) \div 2$ or 2 ft. added to 30.6 = 32.6. For slopes of 1 on 1½ see inside of back cover.

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549

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of a high grade 50% Rag Paper
having a WATER RESISTING surface.

Tak
& from 14-13

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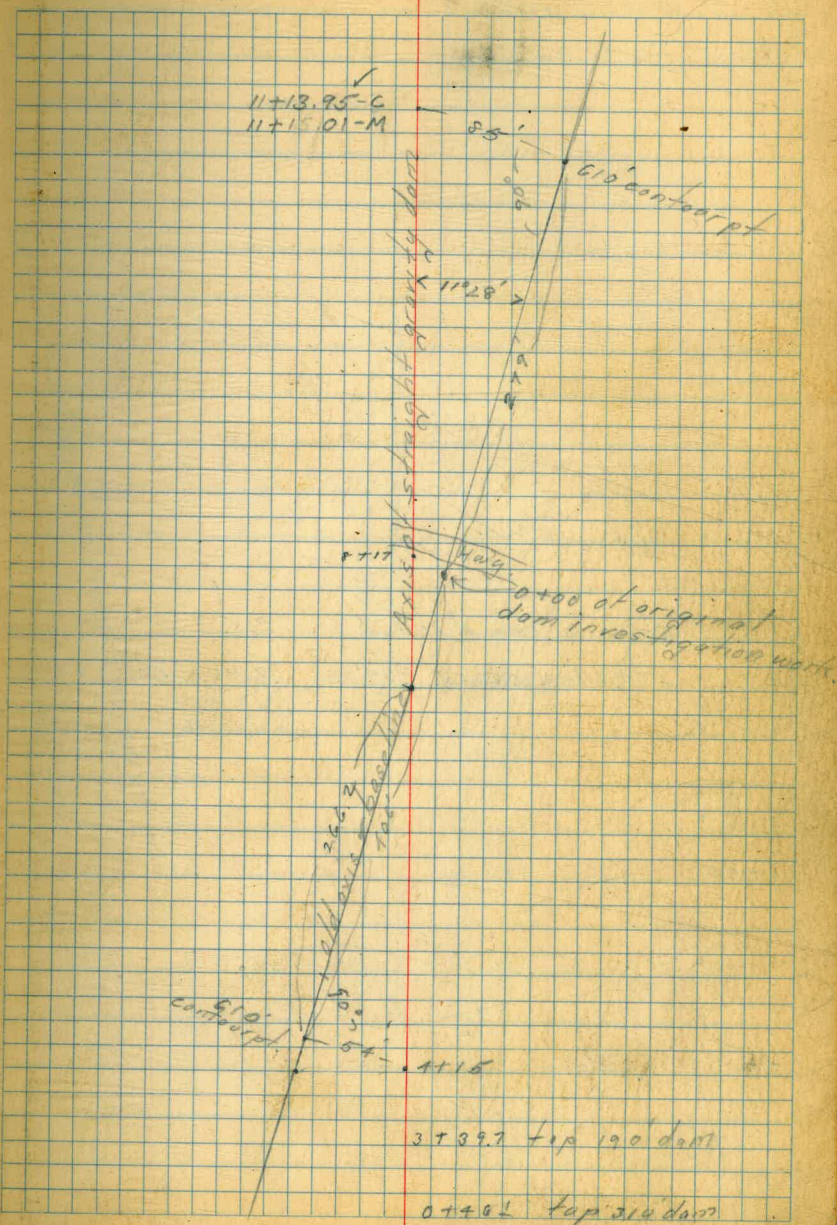
	Pages
• Loc. of axis for straight gravity dam - San Vicente	1-6 ✓
• P-line road location	6-14 ✓
• Loc. exist. Highway San Vicente Dam	16-21 ✓
• 7% stadia line for road thru dam	22-28 ✓
• Tie Points San Vicente Dam	29-30
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Loc of axis of straight gravity
dam - San Vicente

8+17.0 P.O.T.

4+150 P.O.T.

11/2/38 Hill
Isbell
Leckey
Brooks

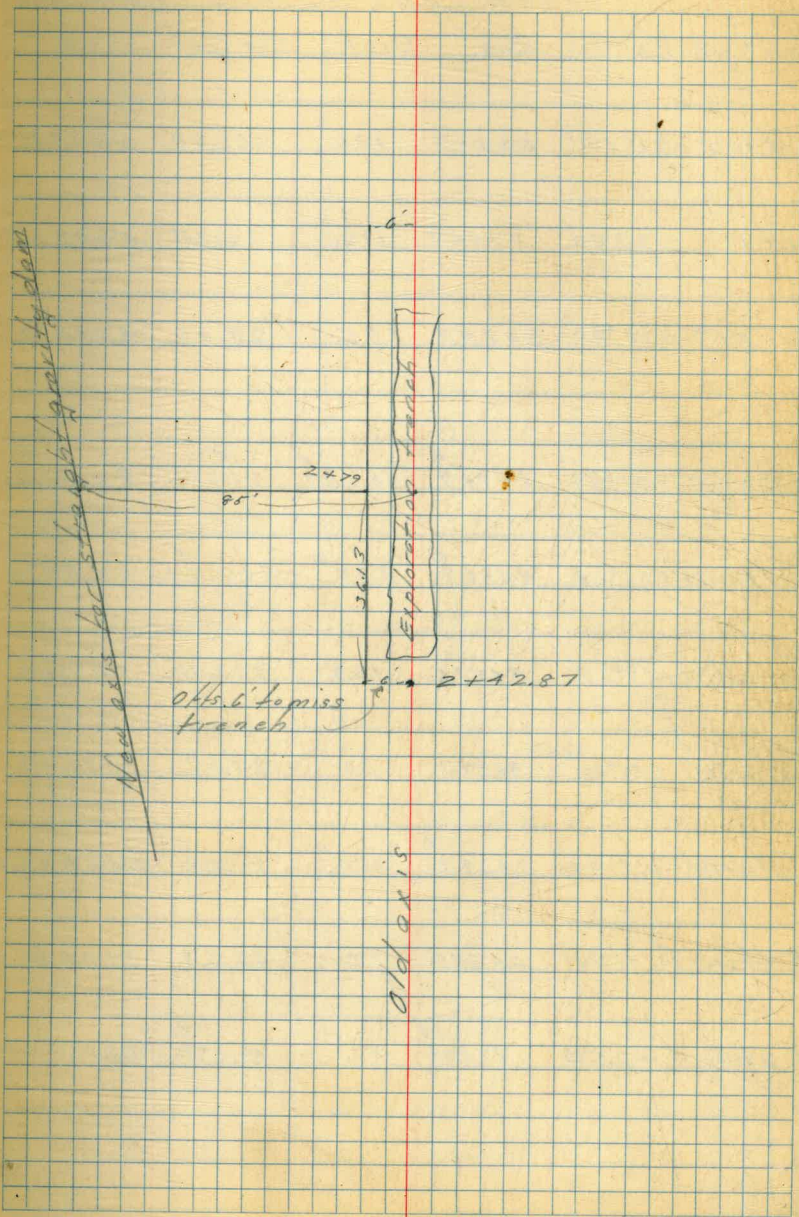


East abut

	dist	cor. dist	V, Δ	Pos
POT	179.27	142.87	-39.56'	81982 - Sta. 2+12.87

slipped back
to sta. 1+00

1+00



West abut - Slope reductions

Transit pt. Vert. Cos. Dist. Cor. Dist. Sta.

Kat 4+15 -31°54' .84897 190. 161.30 5+76.30

Kat 4+15 -33°00' .83867 110. 92.25 5+07.25

Kat 4+15 -36°38' .80247 35. 28.09 4+43.09

K pt. ahead -31°48' .84989 107.07 ✓ 91.00 ✓ 0-06.20 ✓

Kat 2+71.19 +21°18' .93169 200. 186.34 ✓ 0+84.80 ✓

Kat 2+71.19 +18°55' .94571 129. 122.00 1+49.14

Kat 2+71.14 +16°00' .96593 80. 77.27 1+93.87

Kat 2+88.61 +19°27' .94293 100. 94.29 ✓ 2+77.35 ✓ - 3.21 = 2+71.14 ✓

Kat 3+68.14 +17°41' .95275 70. 66.69 3+01.95

Kat 4+15 +29°32' .87007 50. 43.50 ✓ 3+71.50 ✓ - 2.86 = 3+68.64 ✓

11-3-38

Isbell
Looney
Brooks

4

Transt Pt.	Vert. L.	Cos.	Slope Dist.	Cor. Dist.	Sta.
Lat 11+14.01	+19°30'	.94264	90.00	84.84	11+99.85
P.O.T.					
Lat 11+14.01	+15°52'	.96653	40.00	38.66	11+52.67
					10+57.12
Lat 8+50	+24°33'	.9096	160.00	145.54	9+95.54
Lat 8+50	+20°46'	.93503	110.00	102.85	9+52.85
Lat 8+50	+17°12'	.95528	60.00	57.32	9+07.32
Lat 8+50	+25°24'	.90334	200.00	180.67	10+30.67
Lat 6+86.33	+6°17'	.99399	170.00	168.98	8+55.31
Lat 6+86.33	+6°34'	.99344	110.00	109.28	7+95.61
Lat 6+86.33	+21°59'	.92729	42.00	38.95	6+47.38
Lat 6+86.33	+24°12'	.91212	100.00	91.21	5+95.12
Lat P.O.T.+25°41'		.90045	122.20	110.03	6+86.33

P.O.T.

" "

Slope Ahead

Slope Back

Slope Back

Slope Back to Sta. 5+76.30

11-3-38
2:00 P.M.

Isbell
Leakey
Brooks

5

Transit Pt.	Vert. L.	Cos.	Slope Dist.	Hor. Dist.	Sta.	
					14+30	
Tot	12+60.54	+36°20'	.80558	200.00	161.12	14+21.66
Tot	12+60.54	+36°30'	.80386	170.00	136.66	13+97.20
Tot	12+60.54	+36°14'	.80662	100.00	80.66	13+41.20
P.O.T.						
Tot	12+60.54	+36°27'	.85911	50.00	42.96	13+03.50
Tot	11+4.01	+22°10'	.92609	150.00	138.91	12+52.92

End

P Line road loc cont. from book #548

11/23/38

Hill
Isbell
Leakey
Brooks

6

Sta. Detlec. C.C.

Curve
Data

229+10 P.O.T.

223+90.9 AL 2°14' N 8°37' W 927.4

219+70.3 AR 0°21' N 6°23' W 420.6

Heat
91.3
229+10

223+90.9 S.M. 3

Sta. Deltos C.C.

Curve
Data

+45.3	7°49'30" E.C.	
240	7°11'	
+50	6°28' N5°06' W 417.2	
239	5°45'	A 15°39' L
+50	5°02'	R 2000.
238	4°19'	T 274.9
+50	3°36'	L 596.3
237	2°53'	P1 237+229
+50	2°10'	
236	1°27'	
235+50	0°41'	
234+990	B.C.	
234+560	5°35' E.C.	
+50	8°33' N10°33' E 456.7	A 19°10' R
234	7°07'	R 1000.
+50	5°41'	T 166.8
233	4°15'	A 334.5
+50	2°49'	P1 233+20.3
232	1°23'	
231+515	B.C.	

P1. 233+20.3 - 8' - M2 (long extended)
from M3

Sta Deflec CC. Curve
Data

+345 90°44'30" EC

248 8°20' N14°17'E 365.7 Δ 19°29'R

+50 6°17' R 700'

247 4°14' T 120.2

+50 2°11' L 238.0

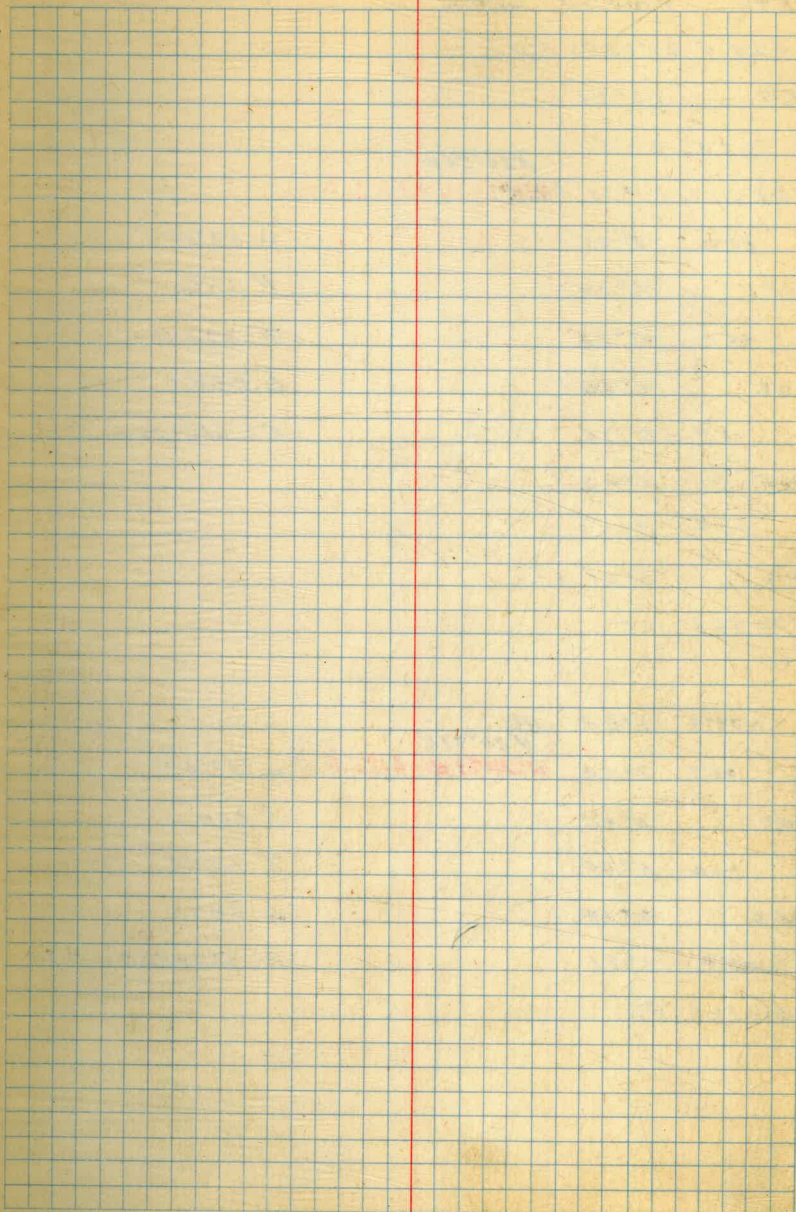
246 0°09' P1.297+16.65-M50

245+966 BC

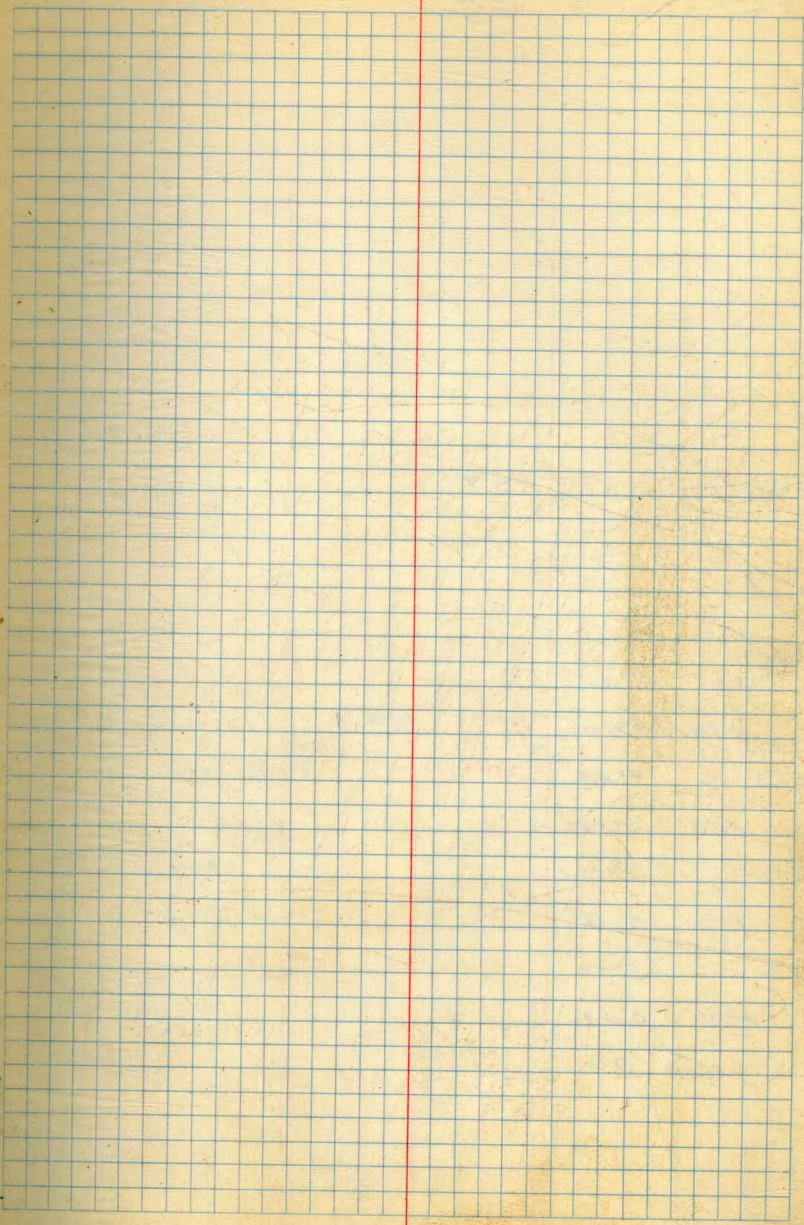
M50
241+876 Δ L 0°06' N5°12' W 529.05

Sta	Def/ce	CC	Curve Data
+60.2	10°05'30"	FC	
		N10°21'E	
+50	9°21'	N10°21'E	707.3 Δ 20°11'14"
256	7°38'		R 700
+50	5°35'	P.O.C.	T 124.6
255	3°32'		L 246.6
+50	1°29'		Pl. 255+79.2 = M 45
254+17.6 B.C.			

+78.4	8°07'30"	FC	
		N90°32'E	
+50	6°58'	N30°32'E	459.7 Δ 16°15'R
251	4°55'		R 700
+50	2°52'		T 99.9
250	0°49'		L 198.5
249+79.9 B.C.			
Pl. 250+79.8 = M 47			



Sta Dehloc CC. Curve
 +28.5 28°02'30" F.C. Rate
 269 26°34'
 +50 23°57'
 268 21°21' N26°34'W 563.3
 +50 18°45' Δ 56°05'
 267 16°09' R 550.
 +50 13°32' T 293.0
 266 10°56' L 538.4
 +50 8°20' P.O.C. Pl. 266+83.1
 265 5°43'
 +50 3°07'
 264 0°31'
 263+90.1 B.C.
 +75.4 9°35' EC
 +50 8°10' N29°31'E 442.8 Δ 19°10'R
 263 6°53' R 800.
 +50 5°06' T 135.1
 262 3°18' L 267.6
 +50 1°31' Pl. 262+42.9 = M'29
 261+07.5 B.C.



Sta. Deflec. C.C. Curve
Data

276+07.7

P.O.T.

+61.5 9°35' EC

+50 9°10' M7°24'W 759.7 $\Delta 190.0'R$

273 7°41' R 1000.

+50 6°18' T 168.8

272 4°52' L 834.5

+50 3°26' P.I. 271+98.8

271 2°00'

+50 0°34'

270+300 BC

Sta. Detloc. C.C. Curve Data

284

+56.6 24°43' EC

+50 24°20'

281 21°28' N42°02'E 1473.0

+50 18°37'

A=49°26' Rt

280 15°45'

R=500

T=230.20

L=431.4

+50 12°53'

P.I. 279+55.40

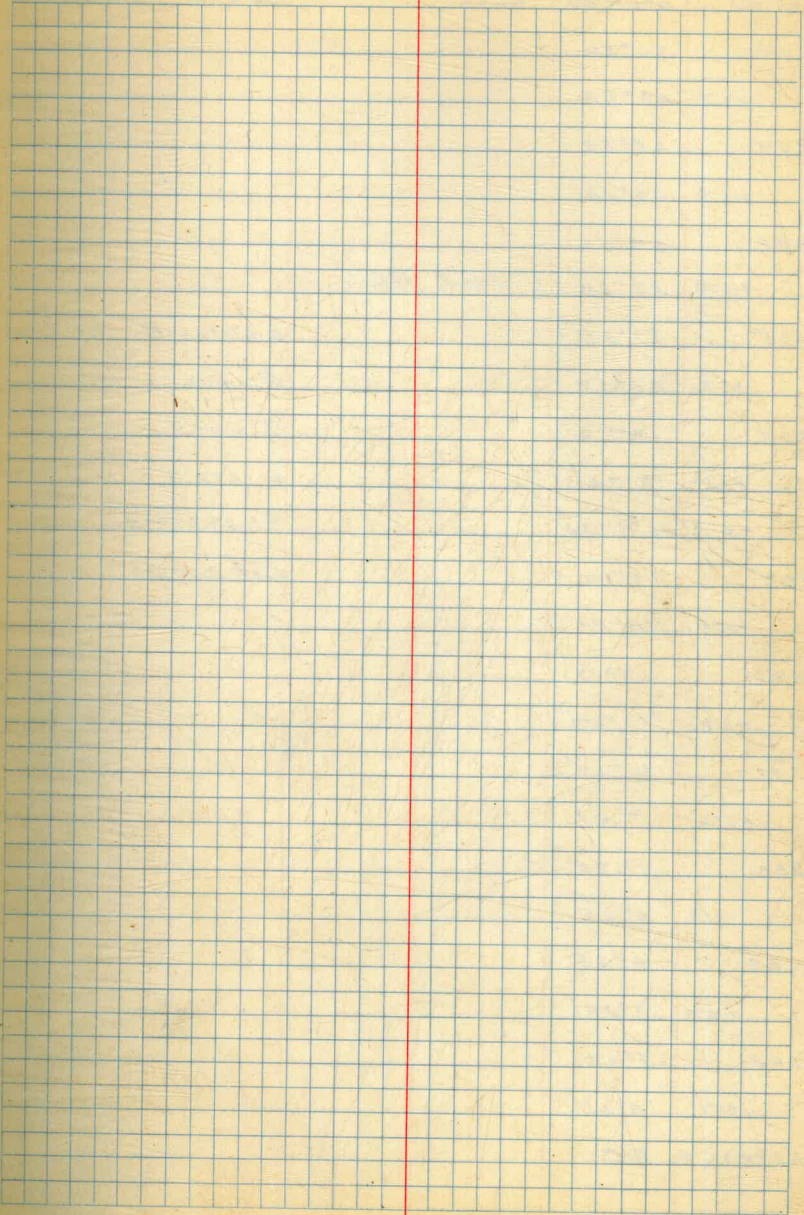
279 10°01'

+50 7°09'

278 4°17'

+50 1°25'

277+25.2 BC



Sta	Datlec	cc.	Curve Data
298	30°30'		
	+50	29°04'	
297	27°38'		
	+50	26°12'	
296	24°46'		
	+50	23°20' ✓	57°48'E 1826.5
295	21°54' ✓		Δ 67°10' P
	+50	20°28' ✓	R 1000.
294	19°02' ✓		T 6640
	+50	17°36' ✓	L 1172.3
Ext.	+21.5	16°47'30" ✓	P1. 293+99A
293	16°10' ✓		Ext. 200.36
	+50	14°45' ✓	
292	13°19' ✓		
	+50	11°53' ✓	
291	10°27' ✓		
	+50	9°01' ✓	
290	7°35' ✓		
	+50	6°09' ✓	
289	4°43' ✓		
	+50	3°17' ✓	
288	1°51' ✓		
	+50	0°25' ✓	
287+35.4	BC		

Sta.	Date.	Co.	Curve Data
------	-------	-----	---------------

cont. in book 1548

BC 313+10.2
EC 320+91.2

M3
= 310+70.2

307+77.9

P.O.T.

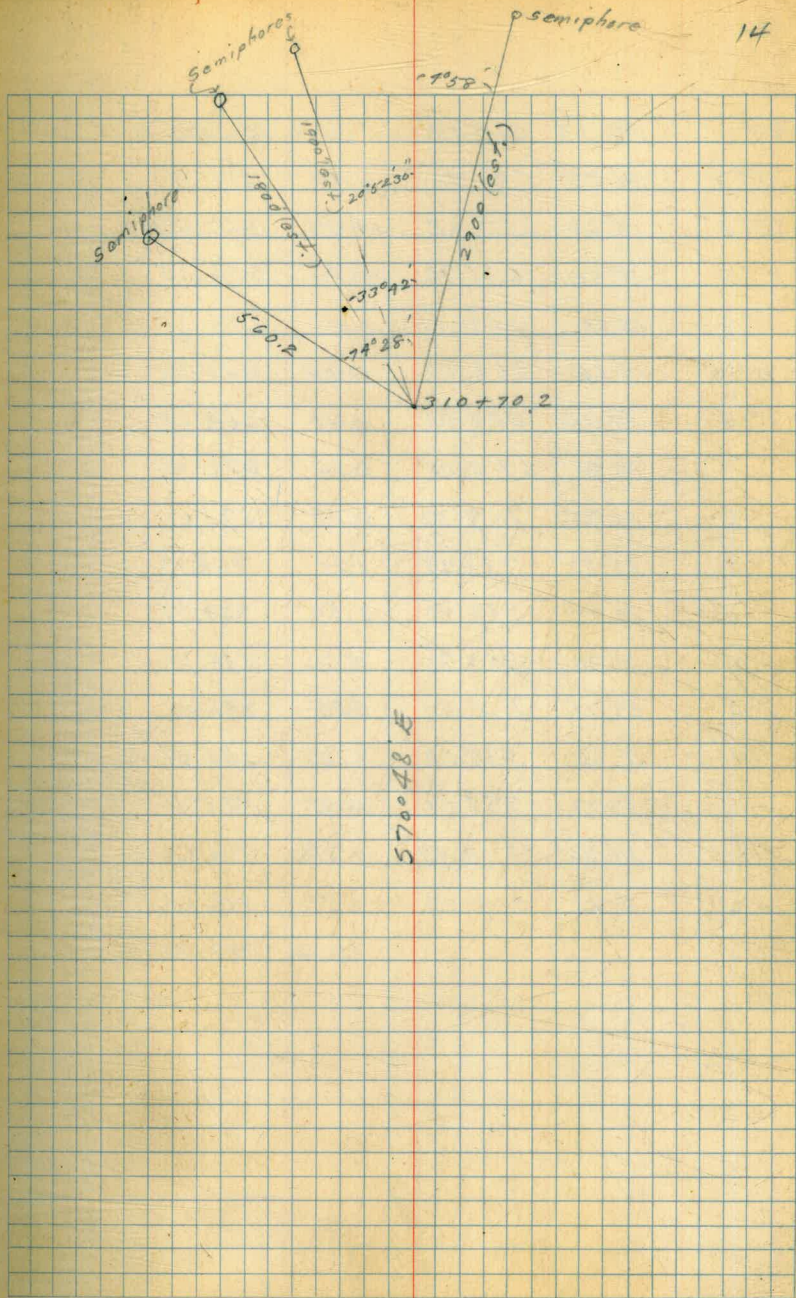
302+55

P.O.T.

407.7 33°35' EC.

299 33°22'

298+50 31°56'



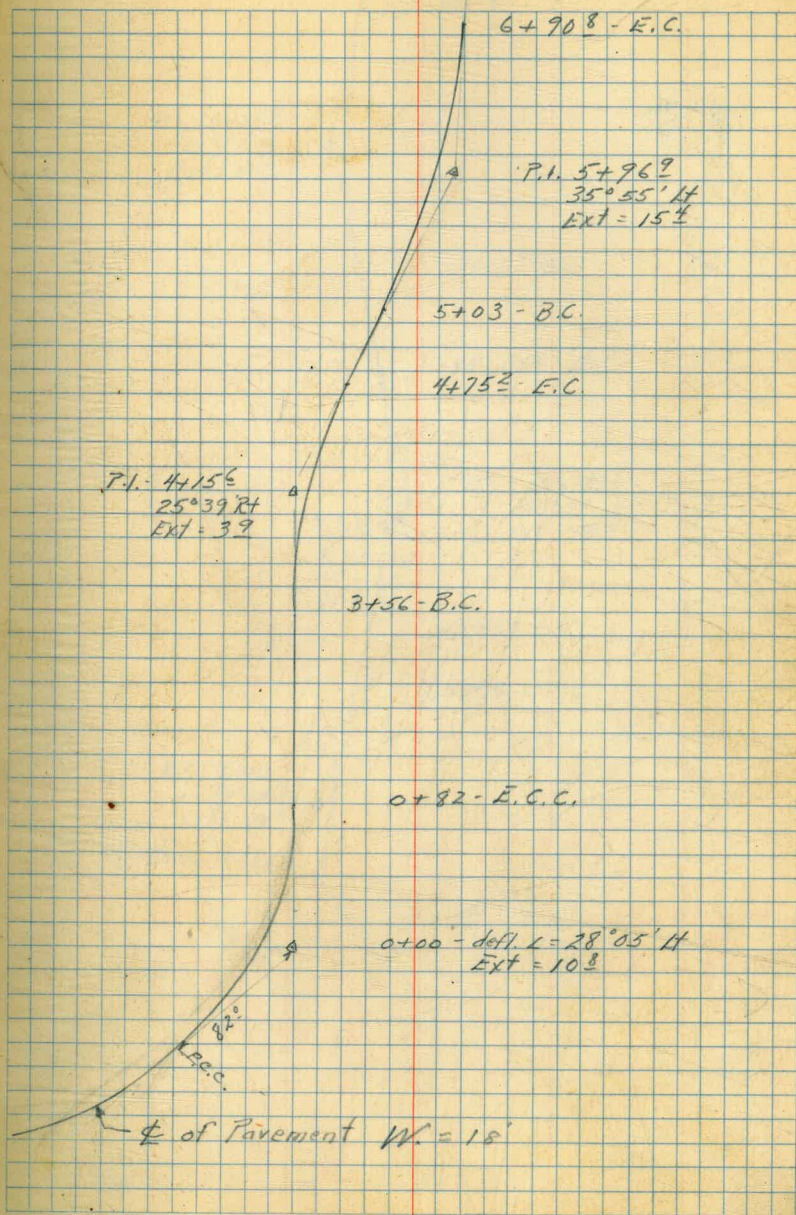
B.M.	13.55	619.55		606.0
TP ¹	14.75	631.90	2.40	617.15
TP ²	15.60	633.06	14.44	617.46
TP ³	15.60	633.96	14.70	619.36
TP ⁴	15.68	649.15	0.49	633.41
TP ⁵	14.66	663.57	0.24	648.91
" ⁶	15.30	678.45	0.42	663.15
7	15.86	694.16	0.15	678.30
8	15.75	709.37	0.54	693.62
9	15.84	723.97	1.24	708.13
10	15.94	739.41	0.50	723.41
11	15.20	753.91	0.70	738.71
12	15.75	768.83	0.83	753.08
13	16.06	784.63	0.26	768.57
14	13.90	797.61	0.92	783.71
15	15.96	812.87	0.70	796.71
16	8.88	815.53	6.22	806.65
			15.56	799.97

Sta 4400 on old dam axis

Loc of Hwy thru San Vicente Dam Site

E of Pavement →

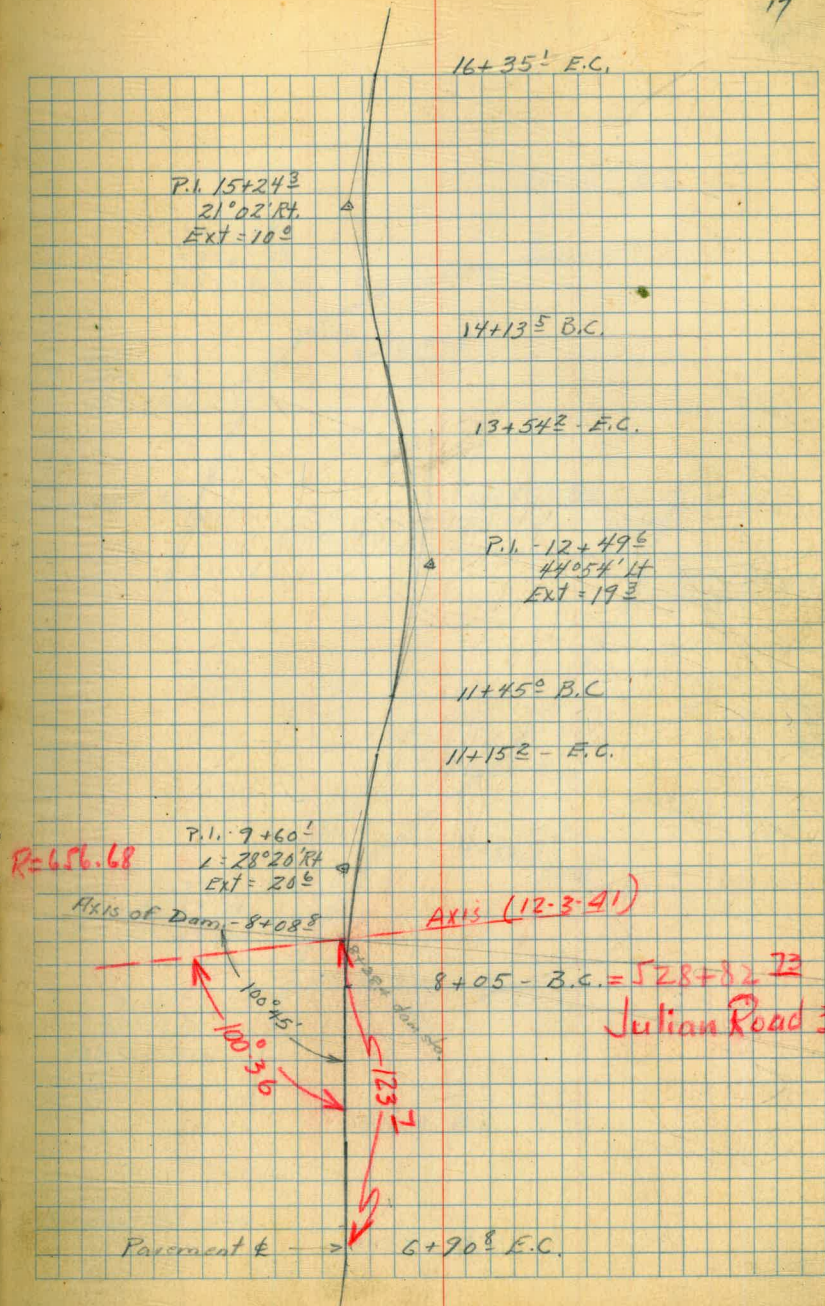
5/27/41
Hill
Super 16
Brooks
Hutgeson



(cont.)

8+08.8
6+90.8

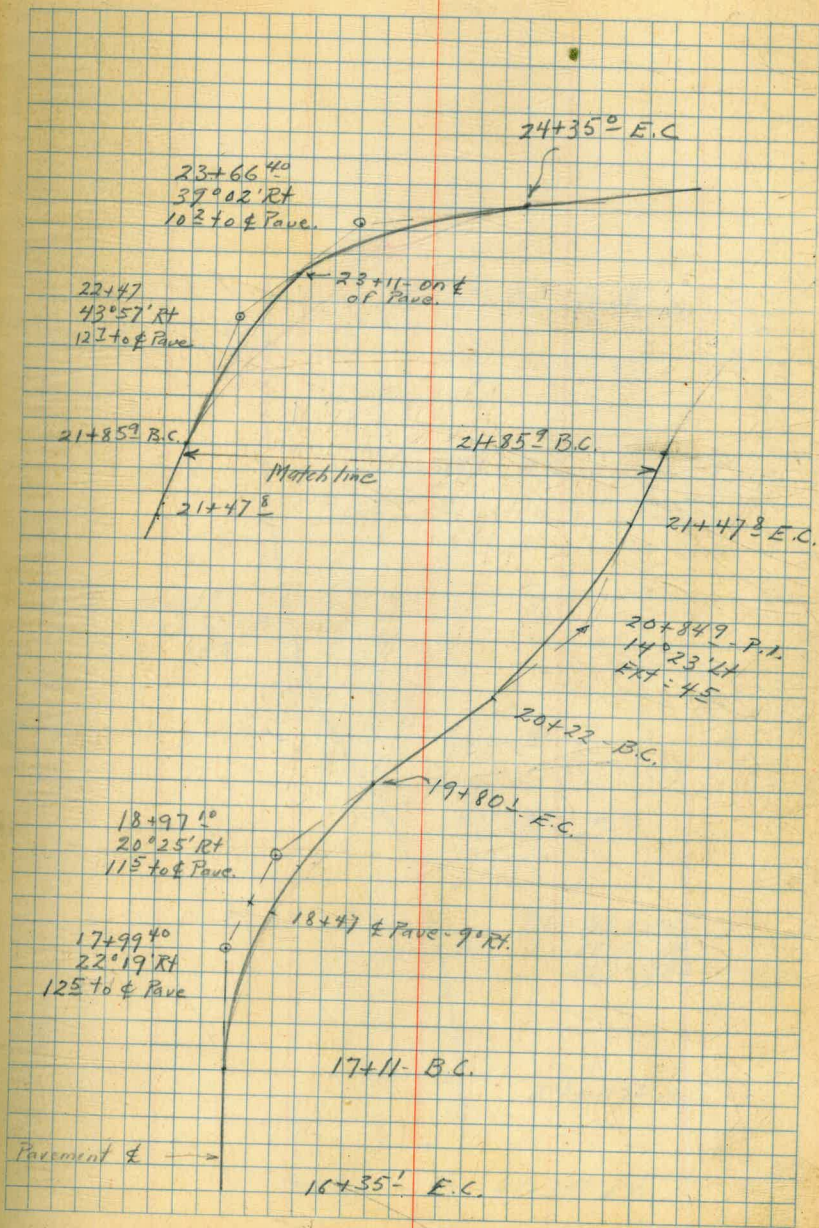
1180



(cont)

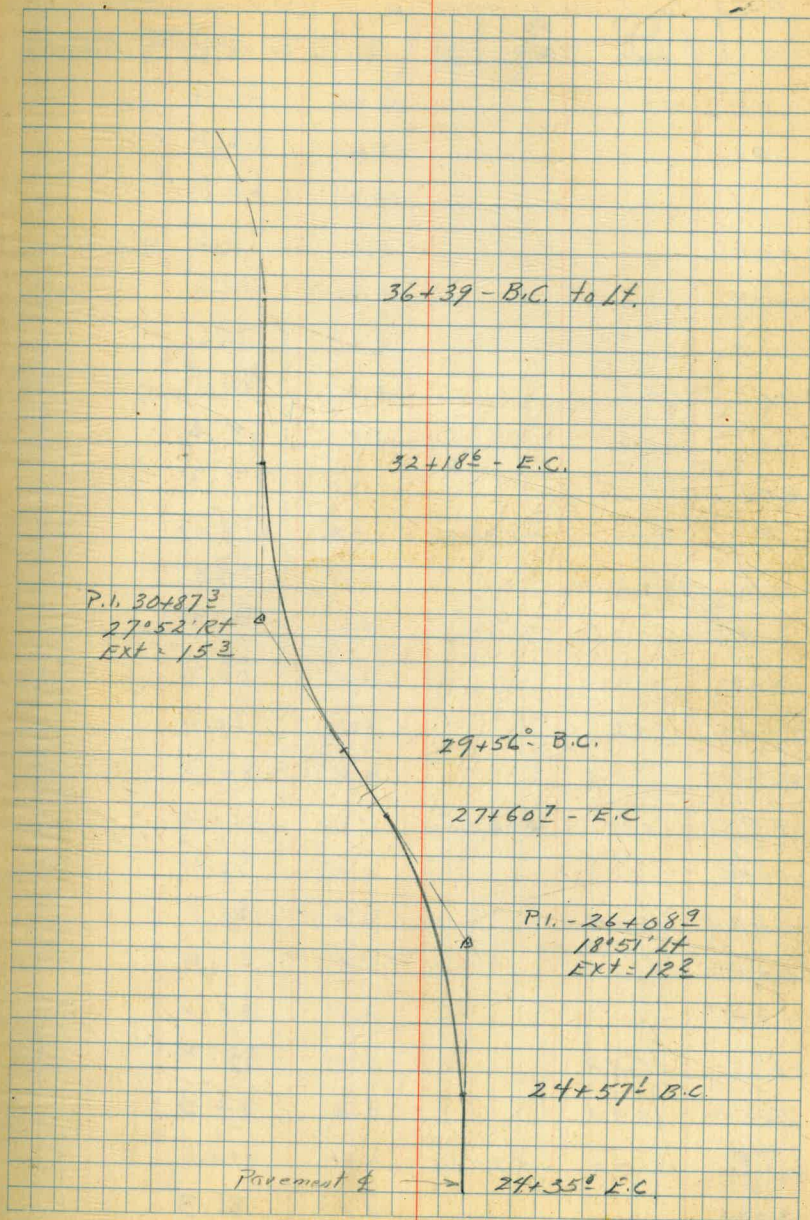
23+66.4
2 43
26 09

18



(cont.)

5/28/41
1451
Soper
Brooks 19



Hill 5/28/41
 Soper clear 2.0
 Brooks

Profile levels over & at part thru San Vicente Dam site

BM	2.19	479.08		476.89
0-82			13.2	65.9
0+82			12.9	66.2 ✓
2			10.3	68.8 ✓
3+56			5.6	73.5 ✓
4+76			4.6	74.5
5+03			4.6	74.5
5+97	15.1 L		4.6	74.5
6+91			3.7	75.4
8+09			1.9	77.2
T.P.	7.59	481.95	1.72	477.36
9+60	20.6 R		5.1	79.9
11+15			4.8	80.2
11+45			4.8	80.2
12+19	19.3 L		4.6	80.4
13+54			4.8	80.2
T.P.	6.77	486.72	5.00	479.95
14+19			6.5	80.2
15+24	10.0 R		6.4	80.3
16+35			5.9	81.3
17+11			4.5	82.2
18	12.5 R		3.5	83.2
18+97	11.5 R		2.4	84.3
T.P.	11.20	495.81	2.11	491.61
19+80			10.5	85.3

See F.B. 554/15 for B.M.

		1255.1		
20+22			10.0	85.8
21+48			8.4	87.4
21+86			7.9	87.9
22+47	12.7 R		6.8	89.0
23+66			4.5	91.3
24+35	10.2 R		3.2	92.6
24+57			2.7	93.1
26+09	12.2 L		0.1	95.7
TP	776	502.99	0.58	95.25
27+61			6.1	96.9
29+56			5.3	97.7
30+87	15.3 R		4.6	98.4
32+19			3.9	99.1
TP	703	506.76	3.26	99.73
34			5.6	501.2
36+39			3.1	503.7
TP	321	502.18	7.79	99.97
TP	016	990.97	11.37	990.81
TP	289	985.32	8.51	982.13
TP	170	985.15	4.51	980.78
B.M.			8.59	976.89

Grid area for calculations or notes.

Check on starting B.M.

Stadia Survey for road location, N.W. from
Sta 10+00 of San Vicente Dam

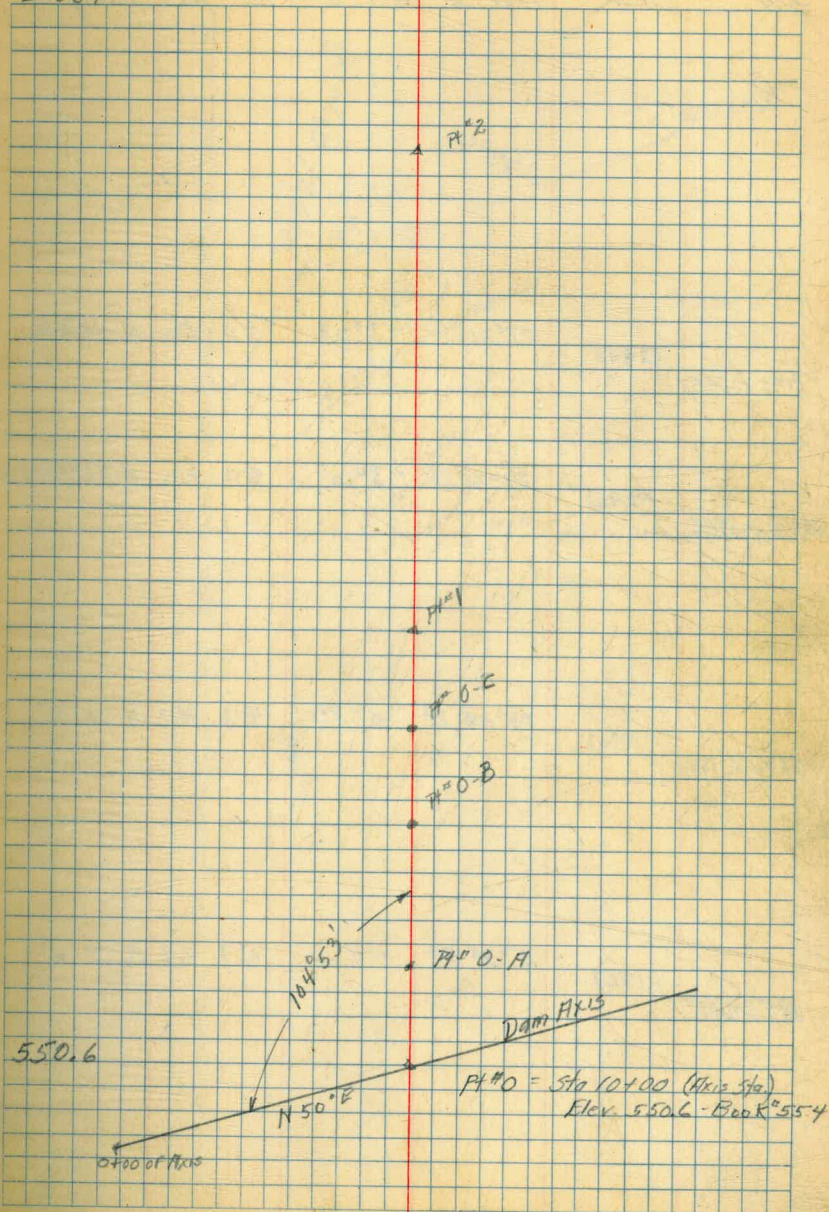
Sta.	Dist.	Hor. Δ	Vert Δ	H.I.	Ref.	Mag.
PI#2 to PI#3 (144)		18°15' RT	-4°00'	4.5	4.5	N58°30' W
PI#0-C (32)			-22°04'	4.5	4.5	
PI#0-B (60) X at PI#1 Backsight on PI#0			+4°20'	4.5	4.5	
PI#1 to PI#2 (75)		52°06' LT	-4°00'	4.5	4.5	N76°30' W
PI#0 to PI#0-A (28)		104°53' RT	-30°10'	4.4	4.4	
PI#0 to PI#4 (195)		104°53' RT	-4°00'	4.4	4.4	N25° W

N 50° E
(Vernier not
set off)

6/13/41
Sgt
Brooks
Hodgeson

22

Elev.



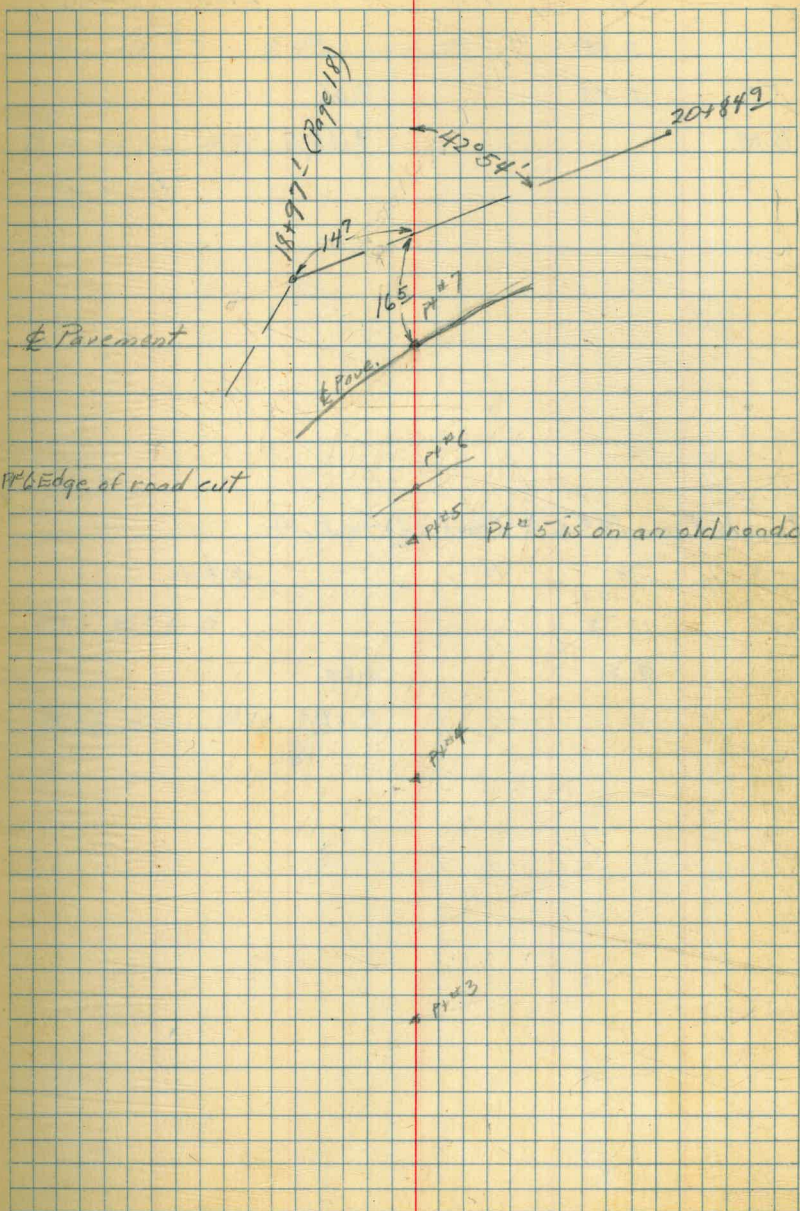
Sta	Dist	Hor. Δ	Vert. Δ	HI	Rod	Mag
-----	------	--------	---------	----	-----	-----

PI#5 to PI#7 (284)		27° 01' RT	-3° 08'	5.0	5.0	N 46° W
-----------------------	--	------------	---------	-----	-----	---------

PI#5 to PI#6 (246)		27° 01' RT	-3° 10'	5.0	5.0	N 46° W
-----------------------	--	------------	---------	-----	-----	---------

PI#4 to PI#5 (230)		24° 04' LT	-2° 25'	4.3	4.3	N 72° W
-----------------------	--	------------	---------	-----	-----	---------

PI#3 to PI#4 (176)		9° 34' RT	-4° 00'	4.7	4.7	N 49° W
-----------------------	--	-----------	---------	-----	-----	---------



Levels From PT[#] 7 (road location) to B.M.

	+	H.I.	-	Elev.
	2.35			
TP	5.54		7.06	
B.M.			8.16	

Levels from PT[#] 6-D (Page 28) to B.M.

	+	H.I.	-	Elev.
	12.72			
	9.21		0.69	
			3.14	

24

Elev. PT[#] 7 - ~~to~~ Paracment

B.M. - Elev. 476.89

Elev. PT[#] 6-D

B.M. Elev. 476.89

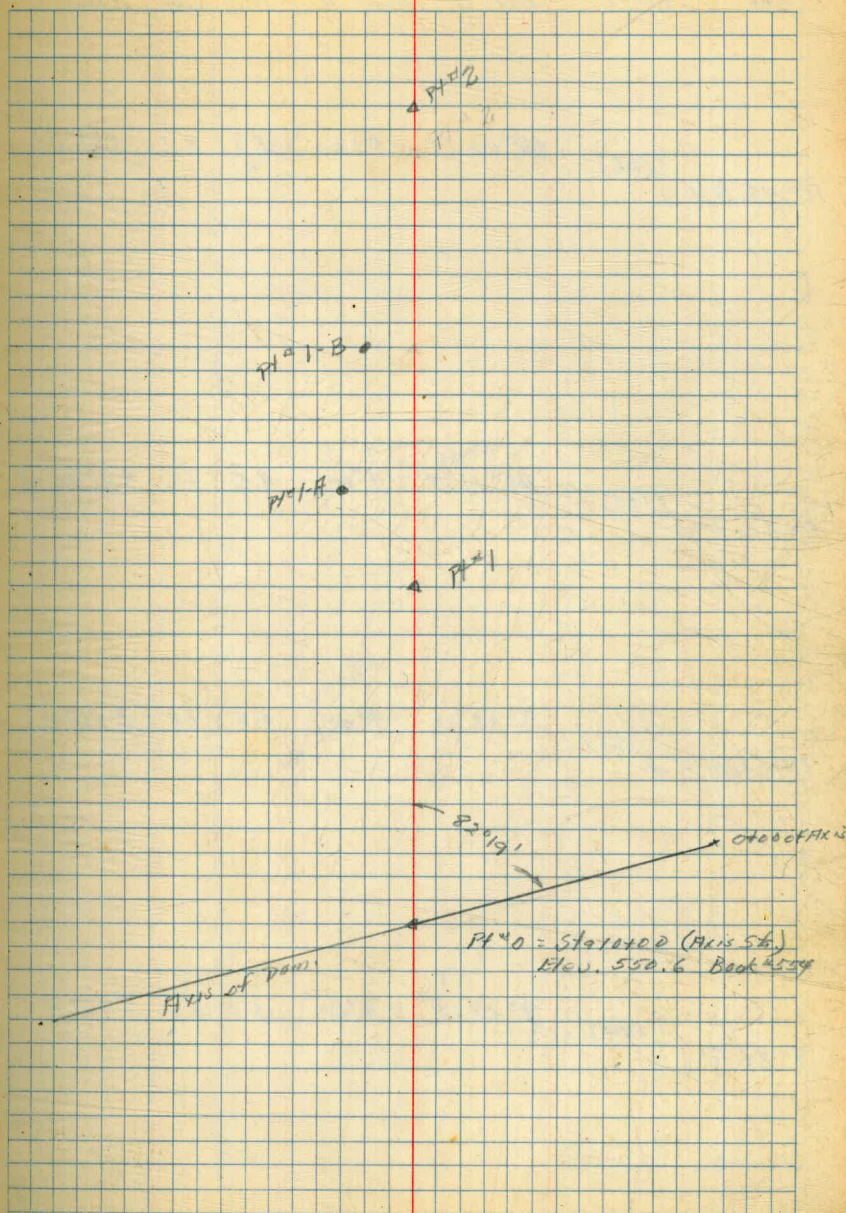
Stadia Survey for road location, S. E. from Sta
10+00 of San Vicente Dam.

Sta.	Dist.	Hor. Δ	Vert. Δ	H.L.	Red	Mag.
PI ^{#1} to PI ^{#2} (266)		5°00' Lt	-4°00'	4.5	4.5	537° E
PI ^{#1} to PI ^{#3} (186)		5°46' Lt	-4°00'	4.5	4.5	(538° E)
PI ^{#1} to PI ^{#4} (104)		15°08' Lt	-4°00'	4.5	4.5	(547° E)
PI ^{#0} to PI ^{#1} (17)		92°19' Lt.	-4°00'	3.8	3.8	532°30' E

6/16/41

Soper
Brooks
Madison

25



Sta	Dist	Hor. A	Vert. A	H.I.	Rod	Mag
P ¹⁰⁴ to P ¹⁰⁴ A	(106)	41° 01' 14"	-4° 00'	4.8	8.3	(532° E)
P ¹⁰³ to P ¹⁰⁴ A	(100)	45° 16' 14"	-4° 00'	4.5	1.0	58° 30' W
P ¹⁰³ to P ¹⁰³ A	(65)	9° 38' 14"	-4° 00'	4.5	4.5	(S 53° E)
P ¹⁰² to P ¹⁰³ A	(149)	9° 37' 14"	-4° 00'	5.0	5.0	547° E

P¹⁰⁴ AP¹⁰⁴ AP¹⁰³ AP¹⁰³ A

Sta	Dist	Hor. A	Vert A	H.I.	Red	Mag
-----	------	--------	--------	------	-----	-----

(141)		6°10'LT	-5°52'	5.0	9.0	
-------	--	---------	--------	-----	-----	--

PI⁶ to PI⁶-H

(179)		30°02'RT	-4°00'	4.9	7.9	510°W
-------	--	----------	--------	-----	-----	-------

PI⁵ to PI⁶

(96)		30°02'RT	-9°50'	4.9	7.9	(510°W)
------	--	----------	--------	-----	-----	---------

PI⁵ to PI⁵H

(162)		28°34'LT	-4°00'	4.8	8.3	519°30'E
-------	--	----------	--------	-----	-----	----------

PI⁴ to PI⁵

PI⁶PI⁵HPI⁵

Sta	Dist	Hor A	Vert A	H.I	Red	Mag.
-----	------	-------	--------	-----	-----	------

(381)		2°07' Rt	-4°00'	5.0	5.0	
-------	--	----------	--------	-----	-----	--

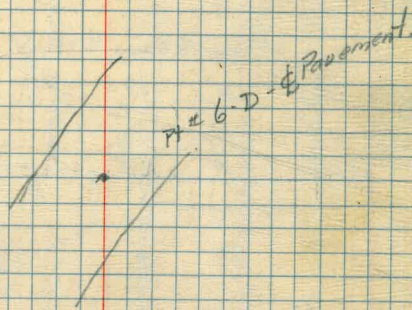
#6 to 6-D

(355)		1°05' Lt	-4°00'	5.0	5.0	
-------	--	----------	--------	-----	-----	--

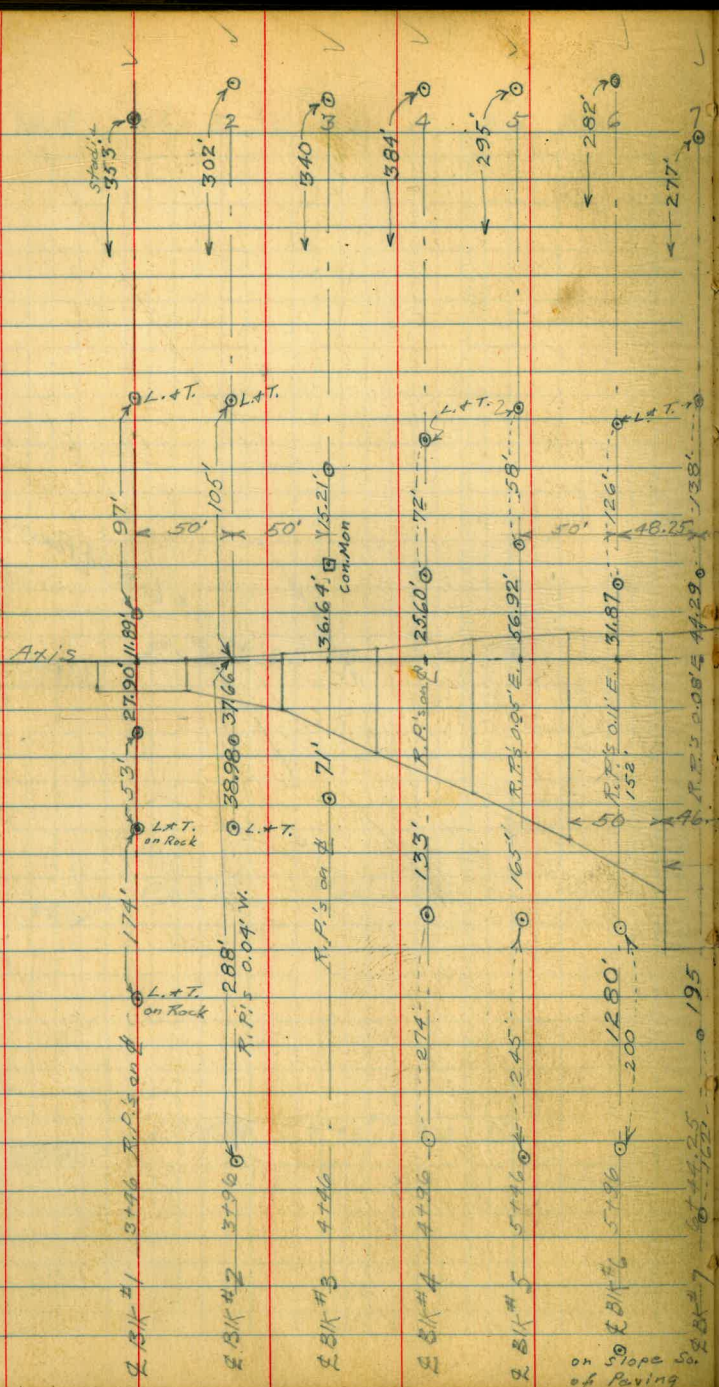
#6 to 6-C

(226)		6°10' Lt	-4°00'	5.0	5.0	
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#6 to 6-B

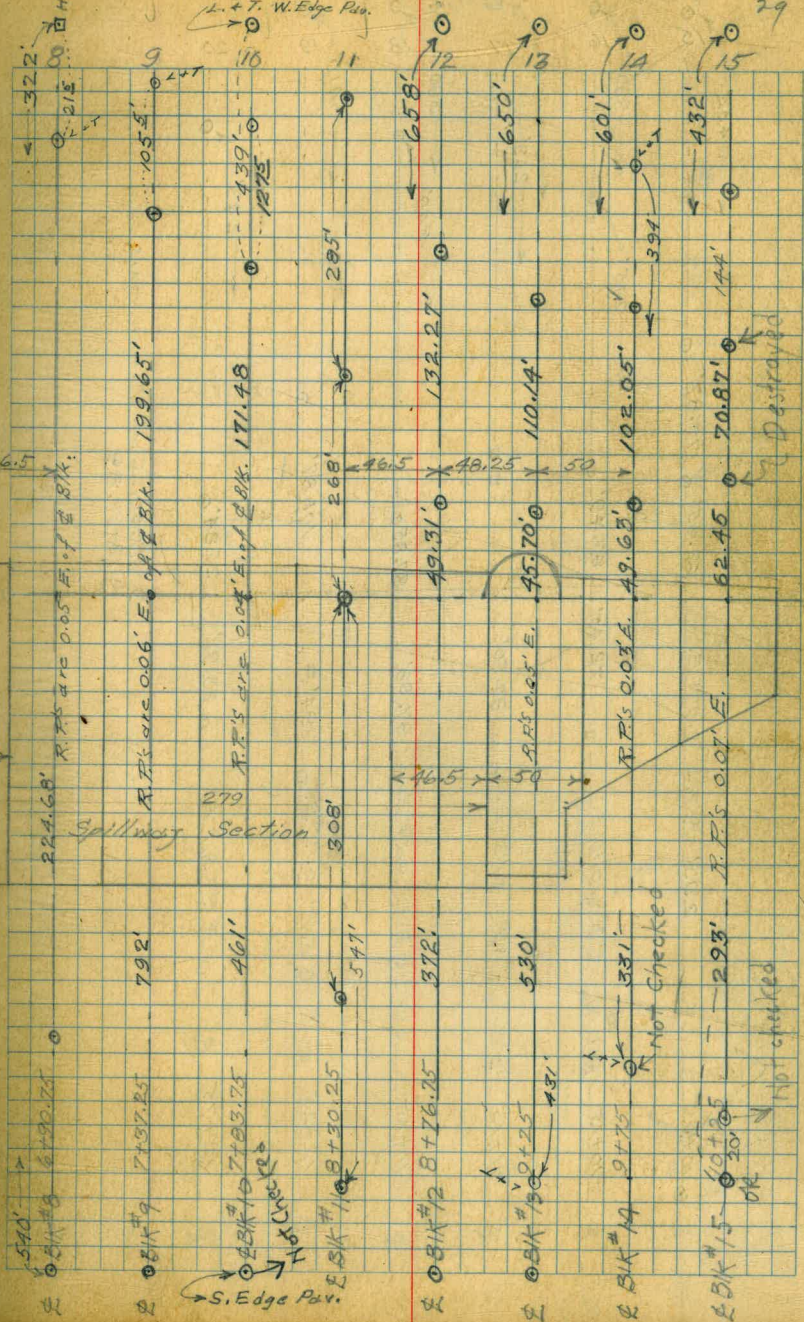


O 0700 Lead & Tack on Axis
 O 1750.25 Lead & Tack on Axis
 O 2+84.54 on Axis Iron Pin on Rock
 Tied Dam = 3405



on slope of paving

TIE POINTS SAN VICENTE DAM



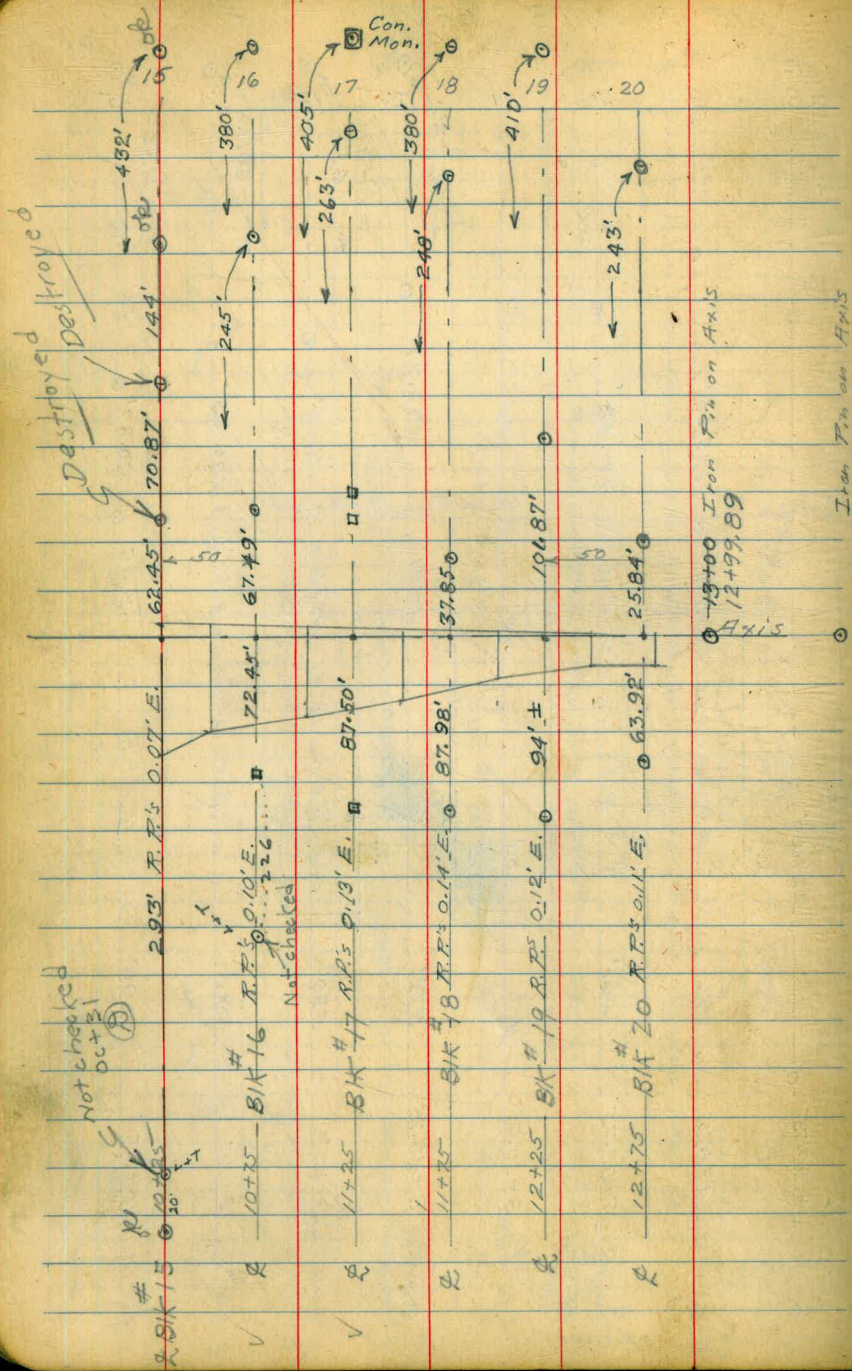
Destroyed

Spilling Section

S. Edge Pav.

Not Checked

Not checked



412
 110
 3

Description of R. P's
For San Vicente Dam Axis

21

0+00 Lead & Tack on Axis

1+50.25 Lead & Tack on Axis

2+84.54 Iron Pin on Axis

3+46 353' N. Stadia Iron Pin in Rock

3+46 97' N. Stadia Lead & Tack in Rock

3+46 11.89' N. Iron Pin in Rock

1

3+46 27.90' So. Iron Pin in Rock

3+46 81' So. Stadia Lead & Tack in Rock

3+46 255' So Stadia Lead & Tack in Rock

- { 3+96 302' N. Stadia Iron Pin in Rock
- 3+96 105' N. Stadia Lead + Tack in Rock
- 2 { 3+96 37.66' So. Iron Pin in Rock
- 3+96 76.64' So. Lead + Tack in Rock
- 3+96 288' So. Stadia Iron Pin in Rock

- { 4+46 340' N. Stadia Iron Pin in Rock
- 4+46 51.85' N. Lead + Tack in Rock
- 3 { 4+46 36.64' N. Con. Mon.
- 4+46 71' So. Stadia Iron Pin in Rock

- { 4+96 384' N. Stadia Iron Pin in Rock
- 4+96 97' N. Stadia Lead + Tack in Rock
- 4 { 4+96 25.60' N. Iron Pin in Rock
- 4+96 407' (stadia) So. E is Ld + Tk
- 4+96 133' So. Stadia Iron Pin in Rock

- { 5+46 295' N. Stadia Iron Pin in Rock
- 5+46 115' N. Stadia Ld + Tk in rock outcrop
- 5 { 5+46 56.92' No. Iron Pin in Rock
- 5+46 165' So. Lead + Tack in Rock (Stadia)
- 5+46 410' So. E is Ld + Tk in rock (Stadia)

(30.112 com.)

Remove small punch mark

- { 5+96 282' N. Stadia Iron Pin in Rock
 5+96 158' N. Stadia Lead & Tack in Rock
 6 { 5+96 31.87 N. Iron Pin in Rock
 5+96 152' So. & Ld & Tk in rock outcrop.
 5+96 352' 50' E. is Ld & Tk in rock outcrop
 5+96 1280' So. Stadia Iron Pin in Rock on Slope

South of Highway

- { 6+44.25 277' N. Stadia Iron Pin in Rock
 6+44.25 183' N. Stadia Lead & Tack in Rock
 7 { 6+44.25 44.29 N. Iron Pin in Rock
 6+44.25 357' So. Stadia Ld & Tk in rock outcrop.
 6+44.25 195' S. Stadia Iron Pin in Rock

- { 6+90.75 322'-N. Stadia 2"x2" R.W. Hub Base of Oak
 6+90.75 300.5' No. 2 Stadia Tk & Ld in top of Coffin Dam
 8 { 6+90.75 224.68'-So. Iron Pin in Rock
 6+90.75 540' So. Stadia Iron Pin in Rock

- { 7+37.25 199.65'-N. Wood Peg in Rock
 9 { 7+37.25 306' No. Stadia E. is Ld & Tk in Coffin Dam
 7+37.25 792'-S. Stadia Iron Pin in Rock South
 { 7+83.75 610'-N. Stadia Lead & Tack West Edge Paving
 7+83.75 171.48'-N. Iron Pin in Rock
 10 { 7+83.75 2992' No. 2 Ld & Tk in Coffin Dam
 7+83.75 461'-So. Stadia Iron Pin S. Edge. Pav.

of Paving

- 11 { 0+30.25 553' N. Lead + Tack on East Edge of Paving
 8+30.25 268' N. Lead + Tack on West Edge of Paving
 8+30.25 308' S. Lead + Tack on So. Edge of Paving
 8+30.25 574' S. Lead + Tack in Rock So. of Paving
 8+30.25 Iron Pin in Pav. on Axis

8+76.75 658' -N. Stadia Iron Pin in Rock

8+76.75 181.58' -N. Iron Pin in Rock

12

8+76.75 49.31' -N. Iron Pin in Rock

8+76.75 372' -So. Stadia Iron Pin in Rock

9+25 650' -N. Stadia Iron Pin in Rock

9+25 155.84' -N. Iron Pin in Rock

13

9+25 45.70' N. Iron Pin in Rock

9+25 431' So. Stadia is Id + Tk in rock

9+25 530' So. Stadia Iron Pin in Rock

9+75 601' -N. Stadia Iron Pin in Rock

9+75 394' N. stadia Id + Tk in rock

14 { 9+75 151.68' -N. Iron Pin in Rock

9+75 331' So. & (Stadia) Id + Tk in rock shell.

9+75 49.63' -N. Iron Pin in Rock

49.63
 102.05
 151.68

45.70
 110.14
 155.84

49.31
 132.27
 181.58

- 15 {
- 10+25 432'-No. Stadia Iron Pin in Rock
 - 10+25 273' So. (Approx) is Ld. + Tk in rock
 - 10+25 133.32'-N. Iron Pin in Rock
 - 10+25 62.45'-N. Hor. Dist. Slope Chained Iron
 - 10+25 277.5 N. Sta. Ld + Tk. in rock
 - 10+25 293'-So. Stadia Iron Pin in Rock
- 16 {
- 10+75 380'-No. Stadia Iron Pin in Rock
 - 10+75 243'-No. Stadia Pine Peg in Rock
 - 10+75 67.49-No. Hor. Dist. Slope Chained Iron
 - 10+75 298.5 (stadia) ^{So.} is Ld + Tk in large rock
 - 10+75 72.45'-So. Hor. Dist. Slope Chained 2" x 2"
- 17 {
- 11+25 405'-No. Stadia Iron Pin in Con. Man.
 - 11+25 263'-No. Stadia Iron Pin in Rock
 - 11+25 No. 2-2" x 2" R. W. Hubs 3.44 Apart
 - 11+25 87.50'-So. Hor. Dist. Slope Chained 2" x 2"

Pin in Rock

Pin in Rock

R. W. Hub

R. W. Hub

- 18 { 11+75 380'-No. Stadia Iron Pin in Rock
 11+75 248'-No. Stadia Iron Pin in Rock
 11+75 37.85-No. Iron Pin in Rock
 11+75 87.98-Sa. Hor. Dist. Slope Chained Iron Pin in Rock
- 19 { 12+25 410'-No. Stadia Iron Pin in Rock
 12+25 101.87-No. Iron Pin in Rock
 12+25 94'-So. Stadia Iron Pin in Rock
- 20 { 12+75 243'-No. Stadia Iron Pin in Rock
 12+75 25.84-No. Iron Pin in Rock
 12+75 63.92-Sa. Hor. Dist. Slope Chained Iron Pin in Rock
- 12+99.89
 13+00 True Station Iron Pin in Rock on Axis
- 14+00 ± Iron Pin in rock on Axis

Slope Chaining West Axis Isbell

Point.	Slope Dist.	Elev.	Diff. Elev.	Hor. Dist.	Station
"A"		474.87			6+52.44
	79.76		39.31	69.40 ✓	
"B"		514.18			5+83.04
	44.71		23.62	37.9 ⁶ X ✓	
"C"		537.80			5+45. ⁰⁸ 07
	98.55		49.84	85.7 ⁰² ✓	
"D"		587.64			4+59.97
	71.25		40.06	58.92 ✓	
"E"		627.70			4+01. ⁰⁵ 05
	29.95		14.34	26.29 ✓	
"F"		642.04			3+74. ⁸⁵ 76
	24.05		3.01	23.86 ✓	
"G"		645.05			3+50. ⁹⁹ 99
EAST ABUTT.					
"A"		479.86			8+59.18
	75.12		25.86	70.53 ✓	
"B"		505.72			9+24.71
	81.23		42.51	69.22 ✓	
"C"		548.23			9+93.93
	51.60		24.50	45.41 ✓	
"D"		572.73			10+39.94
	99.44		20.94	97.21 ✓	
"E"		593.67			11+36.55
	99.42		39.28	91.33 ✓	
"F"		632.95			12+27.88
	82.68		14.44	29.32 ✓	
"G"		647.39			

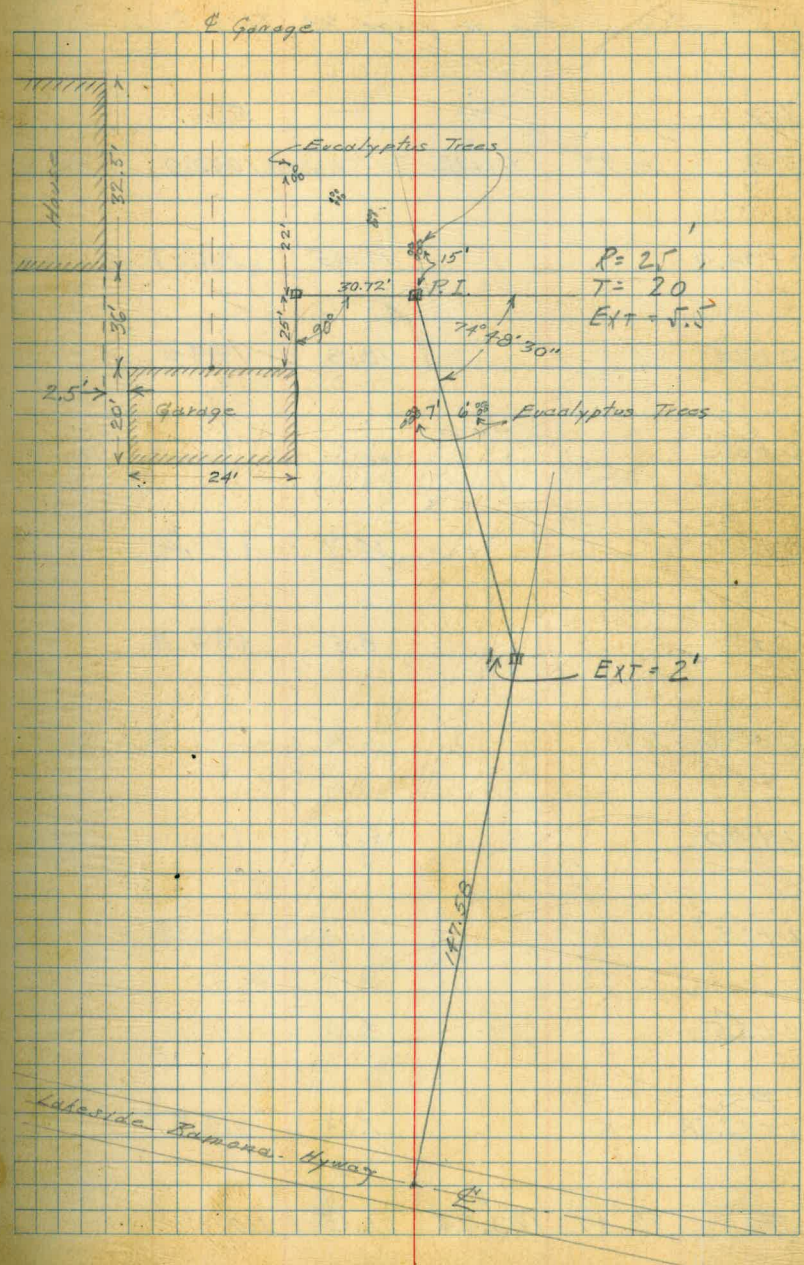
6+52.44 Chained by Isbell & Ecker		
6+52. 44 Orig. Chaining By Isbell, Paluk & Beck		
.35		
	$6361.6576 = (4+8)^2$	
	<u>1545.2761</u>	
	4816.3815	
	$1998.9841 = (8+0)^2$	
	<u>557.9044</u>	
	1441.0797	
	$9772.1025 = (6+0)^2$	
	<u>2484.0256</u>	
	7228.0769	
W. -1.23' to 4+00 on Orig. Chaining		
3+51 Orig. Chaining		
8+59.18 Chained by Isbell & Ecker		
8+59.18 Orig. Chaining by Beck, Isbell & Paluk		
	$5643.0000 = (4+8)^2$	
	<u>468.7336</u>	
	4974.2748	
	$6598.3129 = (8+0)^2$	
	<u>1807.1001</u>	
	4791.2128	
	$2462.5600 = (6+0)^2$	
	<u>600.2500</u>	
	2062.3100	
	$9888.9136 = (10+0)^2$	
	<u>488.4836</u>	
	9449.8300	
	$9884.3364 = (4+8)^2$	
	<u>1585.6324</u>	
	8298.7040	

3.36 12+60.56 By Isbell & Ecker
~~3.34~~ E. to Δ Sta. B = 12+60.44 Orig. Chaining

Alignment of Road
to Williams House

Sept. 26-1941
Isbell
Eckert
King
Cote

Sta.	Def.
3+56.54	S. E. Cor. Garage Floor.
3+25.54	2" x 2" Pine Hub. 90° Lt.
P.I.	
2+94.82	2" x 2" Pine Hub. 74° 48' 30" Lt.
2+48	7' Lt. Eucalyptus tree
2+40	6' Rt. Eucalyptus tree
1+59.58	P.T.
P.I.	
1+47.58	2" x 2" Pine Hub. 27° 38' 15" Lt.
1+35 ⁵⁸	PC
0+00	φ Paving. x in Paving



Profile of Road To
Williams House
See Sketch on page 38 This Book

Sta.	+	∓	-	Elev.
B.M.	11.92	111.92		100.00
0+08.9			12.05	99.87
0+25			12.3	99.6
0+32				
0+50			10.7	101.2
0+75			8.5	103.4
0+86				
1+00			5.9	106.0
1+13				
1+25			3.6	108.3
P.I. 1+47.58			1.15	110.77
TP	12.47	123.24	1.15	110.77

Isbell
Ecker
Polak
Cole
King

39

Q. Paving = Elev. 100.00 Assumed

East Edge Paving

10' Lt. = Eucalyptus Tree

11' Rt. = Eucalyptus tree

15' Rt. = Pepper Tree

Sta.	+	π	-	Elev.
		123.24		
1+75			9.8	113.4
2+00			6.8	116.4
2+25			3.8	118.4
2+40				
2+48				
2+50			0.1	123.1
TP	12.56	135.02	0.78	122.46
2+75			8.2	126.8
P.I. 2+94.82			5.4	129.6
2+94.82			5.1	129.9
2+94.82			5.2	128.8
P.I. 3+25.54			3.2	131.8
3+25.54 12' East			2.8	132.2

6' Rt. = Eucalyptus Tree

7' Lt. = Eucalyptus Tree

10' Lt. on Split of L

10' Rt. on Split of L

Sta.	+	-	Elev.
		135.02	
TP	5.66	137.30	131.64
3+50.54		4.67	132.63
		5.0	132.3
		4.69	132.61
		5.1	132.2
From ϕ of Garage			
East to 60'			
0+00	on Con.	4.68	132.60
0+00	on Ground	4.9	132.4
0+07		5.1	132.2
0+16		4.9	132.4
0+20		5.1	132.1
0+31		4.7	132.6
0+36		4.3	133.0
0+50	10' Lt.	3.4	133.9
0+50		4.0	133.3
0+50	10' Rt.	3.7	133.6
0+60		3.4	133.9

S.E. Cor. Garage Floor

on Ground, S.E. Cor. Garage

N.E. Cor. Garage Floor

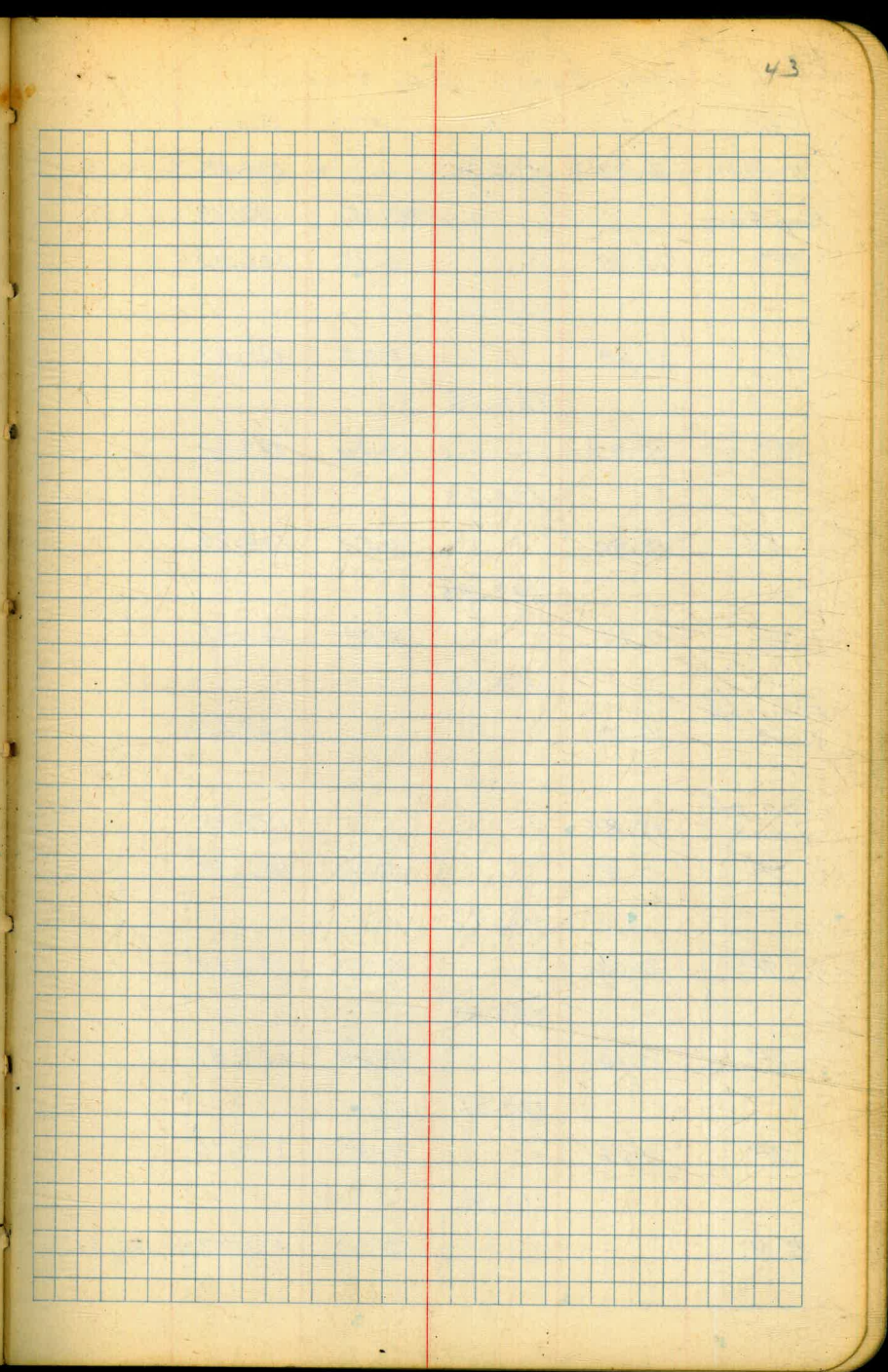
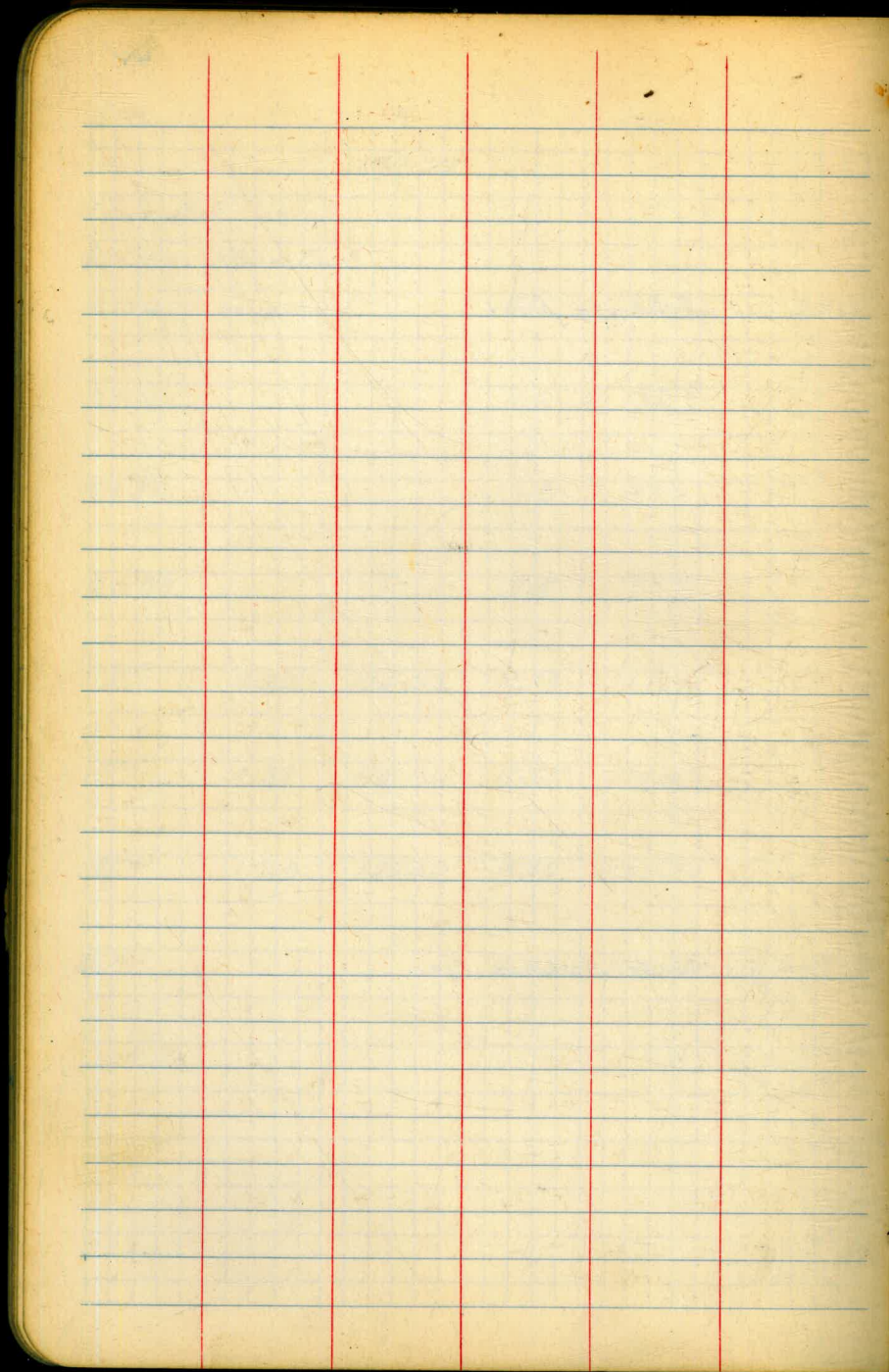
on Ground, N.E. Cor. Garage

East Edge Garage floor

Std.	+	X	-	Elev.
		137.30		
From N.E. Cor. of Garage Floor, East.				
0+00	on ground.		5.0	132.3
0+11			4.5	32.8
0+32			3.8	33.5
0+40			3.5	33.8
TP	0.75	126.32	11.73	125.57
TP	0.39	115.36	11.35	114.97
TP	1.20	106.50	10.06	105.30
B.M.			6.48	100.02
				100.00

= N.E. Cor. of Garage floor

4 Paving = 100.00 Assumed Elev.



Levels from Well to Tank
City Camp San Vicente

Sta.	+	-	Elev.
B.M.	2.92	102.92	100.00
Pump House		10.15	92.77
TP	12.10	2.92	100.00
		112.10	
TP	11.69	0.23	111.87
		123.56	
TP	12.27	0.56	123.00
		135.27	
TP	12.80	0.54	134.73
		147.53	
TP	11.83	0.04	147.49
		159.32	
Floor of Tank	10.10		169.42
Top of Tank	19.83		179.15
TP	0.37	12.73	146.59
		146.96	
TP	0.68	12.77	134.19
		134.87	
TP	0.14	13.06	121.87
		122.01	
TP	0.66	11.85	110.16
		110.82	
B.M.		10.80	100.02

X in Φ Paving + Line of Road to Williams House
Top of Flange on Pump

X in Φ Paving

CHAINING FROM Township Cor.

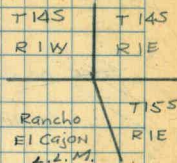
North Along S.B.M. to Δ sta. in San Vicente Creek

Point	Slope Dist.	Mean Slope Dist.	Diff. Elev.	Hor. Dist.	Sta.
"A"					0+00
	<6.77>	6.77	1.08	6.683	
"B"					0+06.683
	<99.110>	99.097	0.26	99.097	
	99.085				
"C"					1+05.780
	<30.270>	30.267	2.08	30.196	
	30.265				
"D"					1+35.976
	<66.055>	66.052	0.52	66.050	
	66.05				
"E"					2+02.026
	<50.410>	50.402	3.25	50.297	
	50.395				
"F"					2+52.323
	<99.502>	99.496	2.15	99.473	
	99.49				
"G"					3+51.796
	<93.774>	93.762	0.48	93.759	
	93.75				
"H"					4+45.555
	<99.077>	99.062	0.74	99.062	
	99.055				
"I"					5+44.617
	<99.482>	99.471	0.42	99.471	
	99.46				
"J"					6+44.088
	<99.119>	99.107	0.69	99.107	
	99.095				
"K"					7+43.195
	<88.053>	88.051	0.94	88.046	
	88.05				
"L"					8+31.241

Township Cor.

S.W. Cor. T14S, R1E S.B.M.
S.W. Cor. Sec 31 T14S, R1E S.B.M.
stamped

Cor is brass cap in Conc. Mar.
Wit. Cor. is 3" pipe with cap.



10/19/14
Label #
Ecker - Rec.
Cole #
Lairg #

#8

	A	B	MEAN	ARC POSSEVER	MEAN ARC
#8	1/4 COR OD 02-44-30	182-44-45	02-44-37.5		
	10 30-20-00	210-20-00	30-20-00	27-35-22.5	
	60 168-18-00	348-17-30	168-17-37.5	165-33-00	
#7	6R 02-45-15	182-45-30	02-45-22.5	165-32-15	165-32-37.5
#8	1/4 COR OD 24-20-45	204-21-00	24-20-52.5		
	10 51-56-30	231-56-15	51-56-22.5	27-35-30	
	60 189-52-30	09-52-30	189-52-30	165-31-37.5	
#7	6R 24-20-30	204-20-45	24-20-37.5	165-31-52.5	165-31-45
#8	1/4 COR OD 45-15-00	225-15-15	45-15-07.5		
	10 78-50-30	258-50-45	78-50-37.5	27-35-30	
	60 210-48-30	36-48-15	210-48- 22 ^{22.5}	165-33-15	
#7	6R 45-15-15	225-15-15	45-15-15	165-33-07.5	165-33-11.25
#8	#7 00 2° 16'	182° 15' 45"	2° 15' 52.5"		
	10 34° 22' 45"	214° 23' 15"	34° 23' 07.5"	32° 07' 15"	
	60 194° 58'	14° 57' 30"	194° 57' 45"	192° 41' 52.5"	
#9	6R 2° 16' 45"	182° 17'	2° 16' 52.5"	192° 40' 52.5"	192° 41' 22.5"
#8	#7 00 24° 13' 15"	204° 13' 30"	24° 13' 22.5"		
	10 56° 20'	236° 20'	56° 20'	32° 06' 37.5"	
	60 216° 55'	36° 54' 45"	216° 54' 52.5"	192° 41' 30"	
#9	6R 24° 13' 30"	204° 13' 45"	24° 13' 37.5"	192° 41' 15"	192° 41' 22.5"

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MEAN #	MEAN MEAN #	CORR	FINAL #
27° 35' 26.25"			
27° 35' 17.5"			
27° 35' 29.06"	-03.59"		27° 35' 25.47
27-35-31.875"			
32° 06' 53.75"			
32° 06' 53.75"	-03.59"		32° 06' 50.16
32° 06' 53.75"			

10/14/21

Table # 8

	A	B	Mean	Arc	Passover	Mean Arc
#7	OD	45° 26' 30"	225° 27'	45° 26' 45"		
	1D	77° 33' 30"	257° 33' 45"	77° 33' 37.5"	32° 06' 52.5"	
	6D	238° 8'	58° 07' 45"	238° 07' 52.5"	192° 41' 07.5"	
	#9 6R	45° 26' 30"	225° 26' 45"	45° 26' 37.5"	192° 41' 15"	192° 41' 11.25"
#8	#9 OD	02-02-04-30	182-04-30	02-04-30		
	1D	122-21-30	302-21-30	122-21-30	120-17-00	
	6D	03-48-30	183-49-00	03-48-45	721-44-15	
	TWINSHP COR 6R	02-05-30	182-05-30	02-05-30	721-43-15	721-43-45
#8	#9 OD	21-04-30	201-04-45	21-04-37.5		
	1D	141-21-30 ³⁰	321-21-30	141-21-30	120-16-52.5	
	6D	22-47-30	202-48-00	22-47-45	721-43-07.5	
	TWINSHP COR	6R 21-05-00	201-05-30	21-05-15	721-42-30	721-42-48.75
#8	#9 OD	42-32-45	222-33-00	42-32-52.5		
	1D	162-50-15	342-50-00	162-50-07.5	120-17-15	
	6D	44-16-30	224-16-30	44-16-30	721-43-37.5	
	TWINSHP COR 6R	42-34-00	222-34-15	42-34-07.5	721-42-22.5	721-43-00
#8	TWINSHP COR	01-38-15	181-38-45	01-38-30		
	1D	181-38-45	01-38-30	181-38-37.5	180-00-07.5	
	6D	01-40-00	181-40-00	01-40-00	1080-01-30	
	TWINSHP COR 6R	01-38-30	181-38-45	01-38-37.5	1080-01-22.5	1080-01-26.25

Mean A	Mean Mean A	CORR.	FINAL A
32° 06' 51.875"			
120° 17' 17.5"			
120° 17' 08.125"			
	120° 17' 09.06"	- 03.59"	120° 17' 05.47"
120° 17' 10.00"			
180-00-14.375			

10/19/81

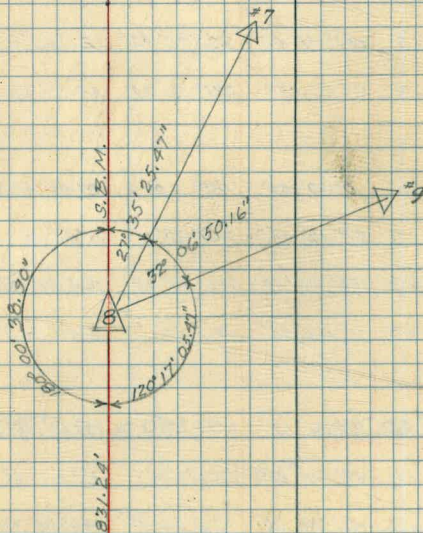
at #8

	A	B	Mean	ARC	POSSIBLE	MEAN ARC
TWN 5ND COR	00 23-25-00	203-25-15	23-25-07.5			
#8	10 203-25-45	23-25-30	203-25-37.5	180-00-30		
	60 23-29-30	203-29-30	23-29-30	1080-04-22.5		
	1/4 COR 60 23-24-45	203-25-00	23-24-52.5	1080-04-47.5	3 1080-04-30	
TWN 5ND COR	00 41-41-15	221-41-30	41-41-22.5			
#8	10 221-42-00	41-42-00	221-42-00	180-00-37.5		
	60 41-45-00	221-45-00	41-45-00	1080-03-37.5		
	1/4 COR 60 41-40-30	221-40-45	41-40-37.5	1080-04-22.5	1080-04-00	

27° 35' 29.06
 32° 06' 53.75
 120° 17' 09.06
 180° 00' 42.50
 360.00 -14.37

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MEAN	MEAN MEAN	CORR.	FINAL
180° 00' 45.833			
180° 00' 42.5	-03.60"		180° 00' 38.90"
180° 00' 40.00			
360° 00' 14.37	-14.37		360° 00' 00"



T.M.S.
R.A.M.
Rancho
El Cajon
L.L.M.

T.M.S.
R.I.E.
T.I.S.S.
R.I.E.

at #6

Oct. 20-1941

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	"A"	"B"	Mean	
#6	*9 O.D. 1° 11' 45"	181° 11' 30"	1° 11' 37.5"	Arct. Passover Mean Arc.
	1 D. 74° 36' 30"	254° 37'	74° 36' 45"	73° 25' 07.5"
	*7 6 R. 81° 44'	261° 43' 45"	81° 43' 52.5"	440° 32' 15" 73° 25' 22.5"
#6	*9 O.D. 21° 8'	201° 8' 15"	21° 08' 07.5"	
	1 D. 94° 33' 15"	274° 33' 30"	94° 33' 22.5"	73° 25' 15"
	*7 6 R. 101° 40' 30"	281° 40' 15"	101° 40' 22.5"	440° 32' 15" 73° 25' 29.375"
#6	*9 O.D. 41° 13' 45"	221° 14'	41° 13' 52.5"	
	1 D.			
	*7 6 R. 121° 45' 45"	301° 45' 45"	121° 45' 45"	440° 31' 52.5" 73° 25' 26.25"
#6	*7 O.D. 0° 49' 45"	180° 50'	0° 49' 52.5"	
	1 D. 21° 42' 15"	201° 42' 15"	21° 42' 15"	20° 52' 22.5"
	*1 6 R. 126° 04' 45"	306° 04' 45"	126° 04' 45"	125° 14' 52.5" 20° 52' 20.75"
#6	*7 O.D. 21° 16' 15"	201° 16'	21° 16' 07.5"	
	1 D. 42° 08' 30"	222° 09'	42° 08' 45"	20° 52' 37.5"
	*1 6 R. 146° 30' 30"	326° 30' 45"	146° 30' 37.5"	125° 14' 30" 20° 52' 26.25"

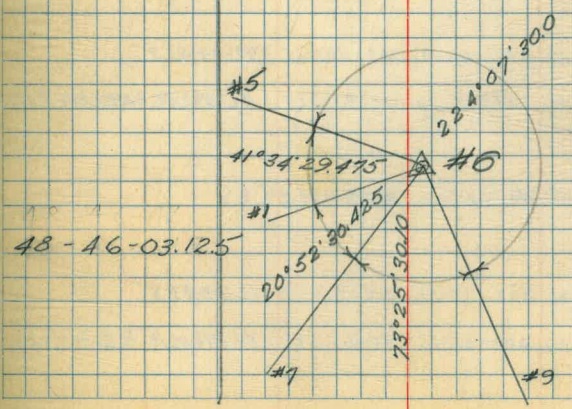
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Mean X	Mean Mean X	Correction	Final X
73° 25' 29.375"			
73° 25' 29.375" ✓	+0.725"		<u>73° 25' 30.10</u>
73° 25' 29.375" ✓			
73° 25' 26.25" ✓			
20° 52' 20.75" ✓			
20° 52' 29.6975	+0.7275		<u>20° 52' 30.4250</u>
20° 52' 26.25" ✓			

	A	B	Mean	Arc Passage	Mean Arc	
#5	00 21-35-30	201-35-15	21-35-22.5 ✓			
	10 245-42-45	65-43	245-42-52.5 ✓	221-07-30 ✓		
	6D 286-20-30	106-20-30	286-20-30 ✓	1344-45-07.5 ✓		
#6	9 0R 21-36	201-35-45	21-35-52.5 ✓	1344-44-37.5 ✓	1344-44-52.5 ✓	
	#5	00 41-43-30	221-43-45	41-43-37.5 ✓		
		10 265-51	85-50-45	265-50-52.5 ✓	221-07-15 ✓	
#6	6D 306-29	126-29	306-29 ✓	1344-45-22.5 ✓		
	9 6R 41-43-45	221-43-45	41-43-45 ✓	1344-45-15 ✓	1344-45-18.75 ✓	
					224° 07' 29.275	
					41° 34' 28.75	
					20° 52' 29.6975	
					73° 25' 29.375	
					359-59-57.0975	
#7	00 1-19-00	181-19-00	1-19-00 ✓			
	10 50-04-30	230-04-30	50-04-30 ✓	49-45-30 ✓		
	6D 293-54-45	113-55-00	293-54-52.5 ✓	292-35-52.5 ✓		
#6	#3	6R 1-18-00	181-18-15	1-18-07.5 ✓	292-36-450 ✓	
					292-36-18.75 ✓	

725 + 0025
4 | 2.9025

Mean #	Mean/Mean #	Corr	FINAL #
			221-07-28.75 ✓
	224° 07' 29.275	+ 0.725"	224-07-30.0
			224-07-33.75 ✓
		359-59-57.0975 + 02.9025	360° 00' 00.0"



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π at #6

	A	B	Mean	Arc Passover	Mean Arc
#7	OD 21-09-00	201-09-15	21-04-07.5		
	ID 69-50-15	249-50-30	69-50-22.5	48-46-15.0	✓
#6	6D 313-40-45	133-41-00	313-40-52.5	292-36-45.0	✓
	6R 21-04-15	201-04-15	21-04-15	292-36-37.5	292-36-41.25
#3					
#7	OD 41-28-45	221-29-00	41-28-52.5		
	ID 334-05-00	154-05-15	334-05-07.5	292-36-15.0	
#6	6D 334-05-00	154-05-15	334-05-07.5	292-36-15.0	✓
	6R 41-28-00	221-28-15	41-28-07.5	292-37-00.0	292-36-37.5
#3					
#3	OD 1-29-15	181-29-00	1-29-07.5		
	ID 15-09-45	195-10-00	15-09-52.5	13-40-45.0	✓
#6	6D 83-34-15	263-34-30	83-34-22.5	82-05-15.0	✓
	6R 1-29-00	181-29-15	1-29-07.5	82-05-15.0	82-05-15.0
#5					
#3	OD 21-35-15	201-35-15	21-35-15		
	ID				
#6	6D 103-40-00	283-40-15	103-40-07.5	82-04-52.5	
	6R 21-35-15	201-35-00	21-35-07.5	82-05-00	82-04-56.25
#5					
#3	OD 41-24-45	221-25-00	41-24-52.5		
	ID				
#6	6D 123-30-00	303-30-00	123-30-00	82-05-07.5	✓
	6R 41-25-00	221-25-15	41-25-07.5	82-04-52.5	82-05-00
#5					

Mean X	Mean Mean X	CORR	FINAL X
48°-46'-06.875"			
	48°-46'-06.5625	+ 01.72	<u>48-46-08.2825</u>
48-46-06.25			
13-40-52.50			
13°-40'-49.375			
	13°40'49.6875	+ 01.930	<u>13°40'51.6175</u>
13-40-50.00			

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	A	B	MEAN	Avg. PASSES	MEAN Avg
#1	OD 1-26-45	181-27-00	1-26-52.5		
	ID 29-20-15	209-20-15	29-20-15	27-53-22.5	
#6	6D 168-48-15	348-48-15	168-48-15	167-21-22.5	
#3	6R 1-26-30	181-27-00	1-26-45	167-21-30	167-21-26.25
#1	OD 21-25-45	201-25-30	21-25-37.5		
	ID 49-19-30	229-20-00	49-19-45	27-54-07.5	
#6	6D 188-48-00	8-48-00	188-48-00	167-22-22.5	
#3	6R 21-26-01	201-26-00	21-26-00	167-22-00.00	167-22-11.25
#1	OD 41-32-15	221-32-30	41-32-22.5		
	ID				
#6	6D 208-54-00	28-53-45	208-53-52.5	167-21-30.0	
#3	6R 41-31-45	221-32-00	41-31-52.5	167-22-00.0	167-21-45
#1	OD 1-34-15	181-34-15	1-34-15		
	ID 16-10-15	196-10-30	16-10-22.5	14-36-07.5	
#6	6D 89-11-30	269-11-15	89-11-37.5	87-37-22.5	
#3	6R 1-34-15	181-34-30	1-34-22.5	87-37-15	87-37-18.75
#1	OD 21-27-45	201-28	21-27-52.5		
	ID				
#6	6D 109-05-30	289-05-45	109-05-37.5	87-37-45	
#3	6R 21-27-45	201-28	21-27-52.5	87-37-45	87-37-45

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MEAN *	MEAN MEAN *	CORR	FINAL *
27°-53'-34.375"			
	27°-53'-35.9225"	+01.930	<u>27°-53'-37.8575"</u>
27°-53'-41.875"			
27°-53'-37.5"			
14-36-13.125			
	14°36'14.0625"		
14-56-17.5			

#6 #9

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	A	B	Mean	ARC PASSENER	Mean ARC
#1	OD 41-28-45	221-29	41-28-52.5		
	ID				
#6	GD 129-06-30	309-06-45	129-06-37.5	87-37-45	
	#14 69-1-29-15	221-29-30	41-29-22.5	87-37-15	87-37-30
#8	OD 1-25-45	181-26-00	1-25-52.5		
	ID 87-18-00	267-18-00	87-18-00.0	85-52-07.5	
#9	GD 156-38-45	336-39-00	156-38-52.5	515-13-00.0	
	#7 GR 1-26-00	181-26-15	1-26-07.5	515-12-45.0	515-12-52.5
#8	OD 21-25-00	201-25-15	21-25-07.5		
	ID				
#9	GD 176-38-15	356-38-00	176-38-07.5	515-13-00.0	
	#7 GR 21-25-00	201-25-15	21-25-07.5	515-13-00.0	515-13-00
#8	OD 41-25-45	221-26-00	41-25-52.5		
	ID				
#9	GD 196-39-00	16-39-00	196-39-00	515-13-07.5	
	#7 GR 41-25-45	221-26-00	41-25-52.5	515-13-07.5	515-13-07.5
#7	OD 4-30-15	184-30-30	4-30-22.5		
	ID 65-35-00	245-35-15	65-35-07.5	61-04-45.0	
#9	GD 10-58-15	190-58-15	10-58-15.0	366-27-52.5	
	#6 GR 4-30-30	184-30-45	4-30-37.5	366-27-37.5	366-27-45.0

Mean α	Mean Mean α	CORR.	FINAL α
	15.00		
14-36-20			
85°-52'-08.75"			
	85°52'10.0"	0.141"	85°52'11.141"
85-52-10.00			
85°-52'-11.25"			
61-04-37.50"			

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at #9

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	A	B	Mean	ARC POSSIBLE	Mean ARC
#7	00	12-31-45	192-32-00	12-31-52.5	
	10				
	60	18-59-15	198-59-30	18-59-22.5	366-27-30.0
#6	60	12-31-15	192-31-30	12-31-22.5	366-28-00.0 366-27-45.00
#7	00	23-24-20	203-24-15	23-24-07.5	
	10				
	60	29-51-30	209-51-45	29-51-37.5	366 27 30P
#6	60	23-23-30	203-24-00	23-23-45	366-27-52.5 366-27-41.25
#6	00	3-47	103-47-15	3-47-07.5	
	10	216-50-30	216-50-15	216-50-22.5	213-03-15
	60	200-53-15	200-53	200-53-07.5	1278-18-15
#8	60	2-33-30	182-33-45	2-33-37.5	1278-19-30 1278-18-52.5
#6	00	2-34-15	182-35	2-34-52.5	
	10	215-38	35-37-45	215-37-52.5	213-03
	60	200-53-15	20-53	200-53-07.5	1278-18-15
#8	60	2-33-30	182-33-45	2-33-37.5	1278-19-30 1278-18-52.5
#6	00	22-53-15	202-53-30	22-53-22.5	
	10				
	60	22-53-15	202-53-30	22-53-22.5	1278-18-37.5
#8	60	22-52-30	202-52-45	22-52-37.5	1278-19-22.5 1278-19

Mean	Mean	Mean	Corr.	FINAL
61°04'37.5"			+ 01.141"	61°04'38.641"
61°04'37.5"				
61-04-36.875				
213-03-0875				
213°03'09.075"			+ 01.143"	213°03'10.218"
213-03-10				

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Oct 23, 1941

	A	B	Mean	Sec. Passover	Mean Age
#7	#8 00 1-31-15	181-31	1-31-075		
	10 196-16-30	16-16-45	196-16-375	194-45-30	
	#5 60 90-03-15	270-03-30	90-03-225	168-32-15	
	#5 6R 1-31-15	181-31-15	1-31-15	168-32-075	168-32-11.25
#7	#8 00 21-29	201-29-15	21-29-075		
	10				
	#5 60 110-01-15	290-01-30	110-01-225	168-32-15	
	#5 6R 21-29-15	201-29-30	21-29-225	168-32	168-32-075
#7	#8 00 41-30-15	221-30-15	41-30-15		
	10				
	#5 60 130-02	310-02-15	130-02-075	168-31-525	
	#5 6R 41-30-45	221-30-45	41-30-45	168-31-225	168-31-375
#7	#5 00 1-48-15	181-48-30	1-48-225		
	10 59-32-45	239-32-45	59-32-45	57-44-225	
	#5 60 348-12-15	168-12-30	348-12-225	346-24	
	#5 6R 1-47-30	181-47-45	1-47-375	346-24-45	346-24-225
#7	#5 00 21-48-15	201-48-15	21-48-15		
	10				
	#5 60 8-12-15	188-12-15	8-12-15	346-24	
	#5 6R 21-47-15	201-47-30	21-47-225	346-24-525	346-24-268

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Mean \bar{x}	Mean	Mean \bar{x}	CORR	FINAL \bar{x}
194-45-21.875				
	194°45'21.5625			
194-45-21.25				
194-45-16.25				
57-44-03.75				
	57°44'04.0625			
57-44-04.375				

	A	B	Mean	Arc Distance	Mean Arc
#5	00 42-28-45	222-29	42-28-52.5		
#7	10				
	60 28-53-15	208-53-30	28-53-22.5	346-24-30	
#6	6R 42-28-15	222-28-30	42-28-22.5	346-24-25	346-24-45
#6	00 2-54-45	182-55-00	2-54-52.5		
#7	10 42-24-15	228-24-30	42-24-22.5	45-39-30.0	
	60 275-51-45	95-52-00	275-51-52.5	272-57-00.0	
#9	6R 2-54-30	182-54-45	2-54-37.5	272-57-15.0	272-57-07.5
#6	00 23-23-15	203-23-30	23-23-22.5		
#7	10				
	60 296-20-45	116-21-00	296-20-52.5	272-57-30.0	
#9	6R 23-23-00	203-23-15	23-23-07.5	272-57-45.0	272-57-37.5
#6	00 42-12-15	222-12-00	42-12-07.5		
#7	10				
	60 315-09-15	135-09-30	315-09-22.5	272-57-15.0	
#9	6R 42-11-45	222-12-00	42-11-52.5	272-57-30.0	272-57-22.5
#9	00 1-46-00	181-26-00	1-46-00		
#7	10 63-46-45	243-47-00	63-46-52.5	62-00-52.5	
	60 13-51-45	193-52-00	13-51-52.5	372-05-52.5	
#8	6R 1-45-00	181-45-15	1-45-07.5	372-06-45.0	372-06-19.25

Mean \pm	Mean Mean \pm	CORR.	FINAL \pm
57-44-07.5			
45-29-31.25"			
45-29-32.50"			
45-29-36.25"			
45-29-33.75"			
62-01-03.125"			

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	A	B	Mean	Arc	Passover	Mean Arc
# 6	OD 0-29-45	180-29-45	0-29-45			
	ID 20-26-00	200-26-30	20-26-15	19-56-30		
# 5	GD					
# 9	GR					
AXIS	OD 1-32-45	181-33-00	1-32-52.5			
	ID 16-36-15	196-36-30	16-36-22.5	15-03-30.0		
	GD 91-54-45	271-54-45	91-54-45.0	90-21-52.5		
# 5	GR 1-31-45	181-32-00	1-31-52.5	90-22-52.5	90-22-22.5	
AXIS	OD 21-18-15	201-18-15	21-18-15			
	ID 36-21-30		36-21-30	15-03-15		
	GD 111-20-00	291-20-15	111-20-07.5	90-21-52.5		
# 5	GR 21-17-15	201-17-15	21-17-15	90-22-52.5	90-22-22.5	
AXIS	OD 40-52-15	220-52-30	40-52-22.5			
	ID 55-55-45	235-56-00	55-55-52.5	15-03-30.0		
	GD 131-16-00	311-16-00	131-16-00.0	90-23-37.5		
# 5	GR 40-51-15	220-51-45	40-51-30.0	90-24-30.0	90-24-03.75	
# 5	OD 1-27-15	181-27-30	1-27-22.5			
	ID 41-49-30	221-49-45	41-49-37.5	40-22-15.0		
	GD 243-40-00	63-40-15	243-40-07.5	242-12-45.0		
# 6	GR 1-26-30	181-26-45	1-26-37.5	242-13-30.0	242-13-17.5	

Mean Δ	Mean-Mean Δ	CORR.	FINAL Δ
15°-03'-43.75"			
15°-03'-43.75"			
15°-03'-43.75"			
15°-09'-00.625"			
40°-22'-11.25"			

Λ - Jackson

♂ Laing
♂ Polak

Oct. 24, 1941

Λ OT # 1

	A	B	Mean	Arc Passover	Mean Arc
# 5	OD 21-28-30	201-29-00	21-28-45		
	ID				
	GD 263-41-15	83-41-30	263-41-22.5	242-12-37.5	
# 6	GR 21-28-15	201-28-30	21-28-22.5	242-13-00.0	242-12-48.75
# 5	OD 40-51-15	220-51-15	40-51-15		
	ID 81-13-45	261-13-50	81-13-37.5	40-22-22.5	
	GD 285-04	103-04-15	283-04-07.5	242-12-52.5	
# 6	GR 40-50-30	220-51	40-50-45	242-13-22.5	242-13-07.5
# 6	OD 0-15-15	180-15-15	0-15-15		
	ID 259-20-30	79-20-30	259-20-30	259-05-15.0	
	GD 114-47-15	294-47-15	114-47-15	1554-32-00.0	
# 13	GR 0-15-15	180-15-00	0-15-07.5	1554-32-07.5	1554-32-03.75
# 6	OD 20-04-00	200-04-00	20-04-00		
	ID 279-09-30	99-09-30	279-09-30	259-05-30	
	GD 134-35-30	314-35-30	134-35-30	1554-31-30	
# 13	GR 20-04-30	200-04-30	20-04-30	1554-31-00	1554-31-15
# 6	OD 40-02-45	220-02-45	40-02-45		
	ID 299-07-45	119-07-45	299-07-45	259-05-00	
	GD 154-33-45	334-33-45	154-33-45	1554-31-00	
# 13	GR 40-03-00	220-02-45	40-02-52.5	1554-30-52.5	1554-30-56.25

Cor. or 65

Oct 28, 1941

61

Mean A	Mean Mean A	Corr.	Final A
			40° 22' 09.6875"
			40° 22' 03.125"
			40° 22' 11.25"
			259° 05' 20.625"
			259° 05' 12.5"
			259° 05' 10.9375"
			259° 05' 09.375"

Oct 24 1941

π at # 5

62

	A	B	Mean	Arc	Passage	Mean Arc
#6	001-29-15	181-29-30	1-29-225			
#5	1061-18-15	241-18-30	61-18-225	59-49-00		
#7	600-23-30	180-23-45	0-23-375	358-54-15		
#6	691-28-15	181-28-45	1-28-375	358-55	358-54-375	
#6	0021-33-	201-33-15	21-33-075			
#5	10					
#7	6020-27-30	200-27-45	20-27-375	358-54-30		
#6	6821-32-15	201-32-45	21-32-375	358-55	358-54-45	
#6	0041-27-45	221-28	41-27-525			
#5	10					
#7	6040-22-15	220-22-15	40-22-15	358-54-225		
#6	6841-26-45	221-27	41-26-525	358-55-225	358-54-525	
#7	1001-45-15	181-45-15	1-45-15			
#5	1039-59-15	219-59-45	39-59-30	38-14-15		
#7	60231-10-30	51-10-45	231-10-375	229-25-225		
#6	681-44-45	181-45	1-44-525	229-25-45	229-25- 350 ^{33.75}	
#7	0021-41-15	201-41-45	21-41-30			
#5	10					
#7	60251-07-30	71-07-15	251-07-225	229-2 ⁵ 4 -525		
#6	6821-41-30	201-41-45	21-41-375	229-2 ⁵ 4 -4875		

Mean A	Mean Mean A	Corr	Final A
59-49-0625			
59-49-075	59-49-075 [✓]		59-49-07.50 [✓]
59-49-0875			
38-14-15.625			
38°-14'-15.625			38-14-15.63 [✓]
38°-14'-18.125			

	A	B	Mean Arc	Passover	Mean Arc
#7	00 41-28-45	221-28-45	41-28-45		
	10				
	60 270-53-45	90-54	270-53-525	229-25-075	
#1	6R 41-27-45	221-28	41-27-525	229-26	229-25-3375
#5	#1 00 1-26-45	181-27	1-26-525		
	10 42-04-30	222-04-45	42-04-375	40-37-45	
	60 245-13-45	65-14	245-13-525	243-47	
	#14 6R 1-26	181-26-15	1-26-075	243-47-45	243-47-225
#5	#1 00 21-31	201-31-15	21-31-075		
	10 265-18-15	85-18-30	265-18-225	243-47-15	
	60 265-18-15	85-18-30	265-18-225	243-47-15	
	#14 6R 21-30-30	201-30-45	21-30-525	243-47-30	243-47-225
#5	#1 00 41-37-30	221-37-45	41-37-375		
	10				
	60 285-24-15	105-25	285-24-525	243-47-15	
	#14 6R 41-37-30	221-37-30	41-37-30	243-47-225	243-47-1075
#5	#14 00 1-20-45	181-21	1-20-525		
	10 17-42-15	197-42-30	17-42-225	16-21-30	
	60 99-30-45	179-31	99-30-525	98-10	
	#14 6R 1-20-15	181-20-30	1-20-225	98-10-30	98-10-15

Mean \bar{x}	Mean Mean \bar{x}	Corr.	FINAL \bar{x}
38-14-15.625			
40-37-5375			
40-37-5375			
40-37-53.75			40-37-53.75
40-37-5375			
40-37-53125			
16-21-42.50			

A - Jackson
 C - Polak
 L - Laing

AT # 5

Oct. 27, 1941

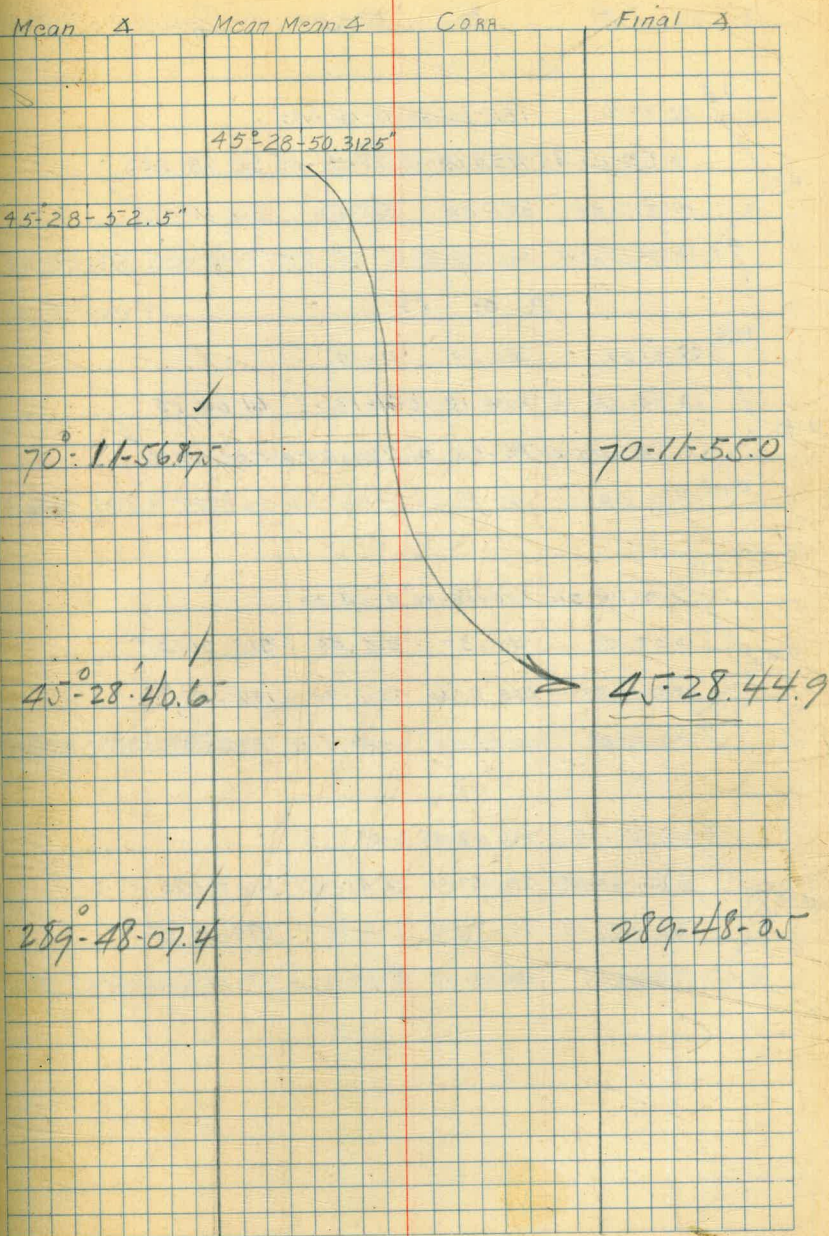
64

	A	B	Mean	Arc	Passover	Mean Arc
#5	#11 OD	22-33-15	202-33-30	22-33-22.5		
	ID					
	#5 WD	120-42-45	300-42-45	120-42-45	98-09-22.5	
#5	#3 WR	22-32-15	202-32-30	22-32-22.5	98-10-22.5	98-09-52.5
	ID					
	#14 OD	42-13-15	222-13-45	42-13-30		
#5	ID					
	#5 WD	140-22-45	320-22-30	140-22-37.5	98-09-07.5	
	#3 WR	42-12-45	222-13	42-12-52.5	98-09-45	98-09-26.25
#5	#3 OD	0-33-00	180-33-00	0-33-00		
	ID	12-42-00	122-42-00	12-42-00	12-09-00	
	#5 WD	73-27-30	253-27-30	73-27-30	72-54-30	
#5	#13 GR	0-34-00	180-34-00	0-34-00	72-53-30	72-54-00
	ID					
	#3 OD	20-02-00	200-01-30	20-01-45		
#5	ID	32-10-45	212-10-30	32-10-37.5	12-08-52.5	
	#5 WD	72-55-30	272-55-30	72-55-30	72-53-45.0	
	#13 GR	20-01-30	200-01-15	20-01-22.5	72-54-07.5	72-53-56.25
#13	#3 OD	40-11-15	220-11-00	40-11-07.5		
	ID	52-20-30	232-20-15	52-20-22.5	12-09-15.0	
	#5 WD	113-05-00	293-05-00	113-05-00	72-53-52.5	
#13	#13 GR	40-11-00	220-10-45	40-10-52.5	72-54-17.5	72-54-00

Mean A	Mean Mean A	Corr.	FINAL A
	16-21-40.675		16-21-40.68 ✓
	16-21-38.75		
	16-21-34.375		
	12-09-00"		
	12-08-59.375"	12-09-00"	12-09-00 ✓
	12-09-00"		

Oct. 28, 1941

	A	B	Mean	Arc	Passover	Mean Arc
#13	DD	40-12-30	220-12-15	40-12-22.5		
	10	85-41-15	265-41-15	85-41-15.0	45-28-52.5	
#3	GD	313-05-30	133-05-30	313-05-30.0	272-53-07.5	
#15	GR	40-12-15	220-12-00	40-12-07.5	272-53-22.5	272-53-15
(AXIS)						
Nov 4						
#3	DD	0-12-15	180-12-15	0-12-15		
	10	70-24-15	250-24-15	70-24-15	70-12-00	
#1	GD	61-23-45	240-23-30	61-23-37.5	61-14-22.5	
#5	GR	0-11-45	180-11-30	0-11-37.5	61-12-00	421-11-41.25
#13	DD	0-31-45	180-31-30	0-31-37.5		
	10	46-00-30	226-00-15	46-00-22.5		
#1	GD	273-23-30	93-23-30	273-23-30	272-51-52.5	
Axis	GR	0-31-15	180-31-15	0-31-15	272-52-15.00	272-52-03
#5	DD	0-16-00	180-15-45	0-15-52.5		
	10	290-04-00	110-04-00	290-04-00		
#1	GD	299-04-30	119-04-30	299-04-30	298-48-37	
	GR	0-15-45	180-15-30	0-15-37.5	298-48-52.5	298-48-44
#3						



3

A B Mean Arc Passover Mean Arc

#5	00 0-16	180-15-45	0-15-52.5	
	1D 53-04-45	253-04-45	53-04-45	52-48-52.5
#5	6D 317-06	137-06	317-06	316-50-07.5
#1	6R 0-15-45	180-15-30	0-15-37.5	316-50-22.5
				316-50-15

15

Nov. 5:41

#14	0D 0-09	180-09	0-09	
	1D 44-18-15	224-18-15	44-18-15	44-09-15
#12	6D 265-05-30	85-05-30	265-05-30	264-56-30
#13	6R 0-08-50	180-08-30	0-08-30	264-57
				264-57-45

Clear-Hot

67

Mean Δ Mean Mean Δ Corr Final Δ

52°-48'-22.5"

44°-09'-27.5"

44°-09'-37.5"

315°-50'-30.625"

106° 34' 35.625"

Location of Points on Axis

0+00

Ld & tack in rock with
circle painted white

1+50[±]

Ld & tack in rock with
circle painted white

2+84⁵⁴

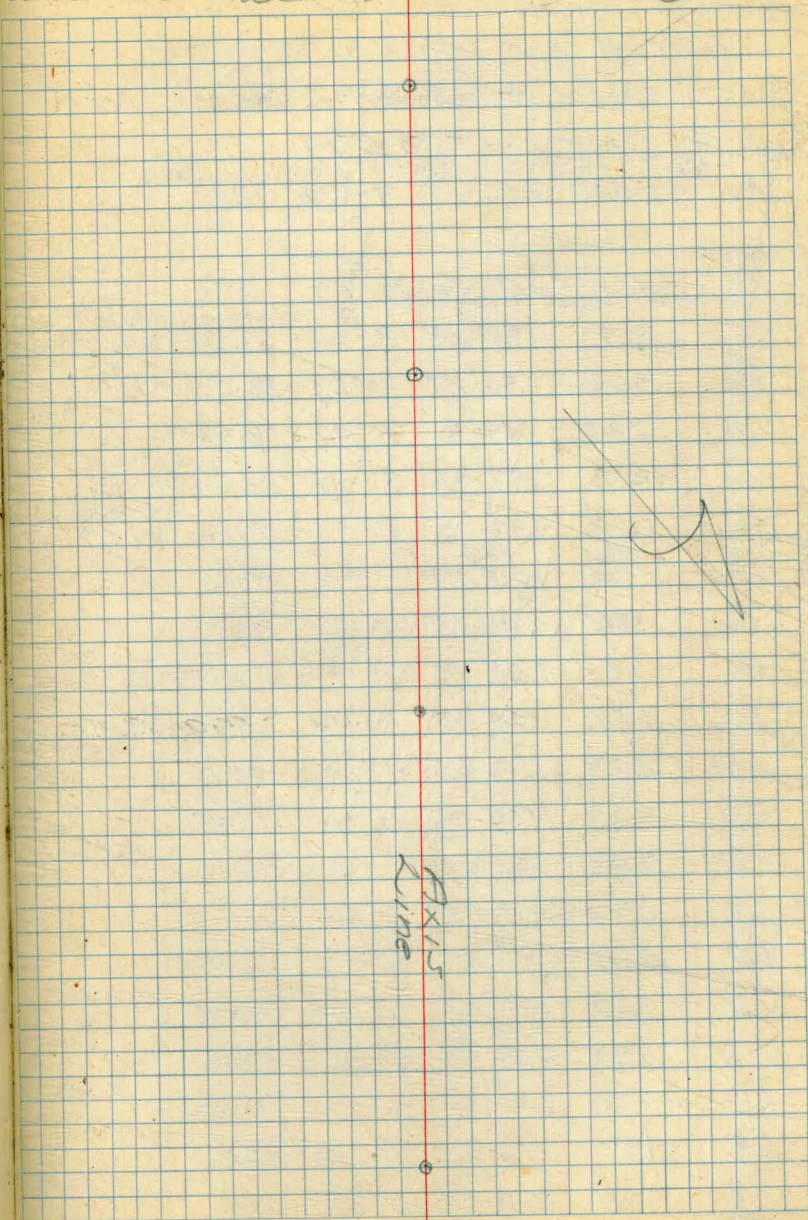
Center punch mark on
steel pin in rock with
circle painted white

Stadio
15+00

Ld & tack on rock

Date: 10/29/41
Weather: ^{Fair} Warm

Notes: Jackson
Chain - Polak 68
Chain - Laing



STADIA SURVEY - LOCATING

WATER TANK, WATER & AIR LINES

STATION Stod. Dist. Azimuth Vert. \angle Hor. Cor. Corrd. Mark D

π Δ #13 BACKSIGHT TO Δ #14

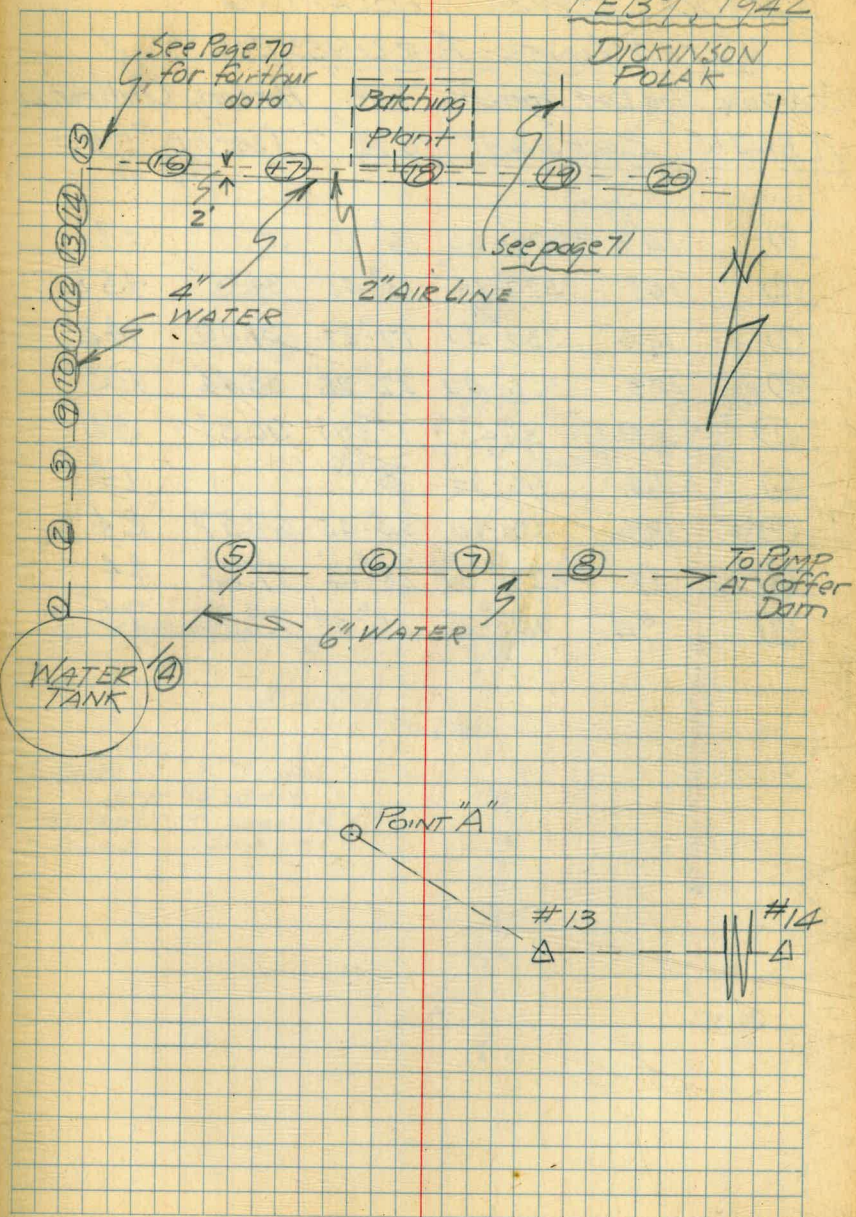
"A" 340 212°-11 9°-33 97.25 331

π "A" BACKSIGHT TO Δ #13

Station	Stod. Dist.	Azimuth	Vert. \angle	Hor. Cor.	Corrd. Mark D
①	317	133°-43	21°-04	87.08	OUTLET AT WATER Tank
②	306	136°-27	21°-29	86.59	Outlet Pipe
③	285	149°-31	19°-49	88.51	"
④	313	132°-38	21°-14	86.88	INLET AT WATER Tank
⑤	272	137°-10	21°-02	87.12	Inlet Pipes
⑥	176	144°-47	17°-15	91.37	"161"
⑦	94	160°-15	10°-02	96.96	"91"
⑧	85	248°-15	17°-30	90.96	"77"
⑨	282	154°-15	18°-04	90.38	Outlet Pipes
⑩	293	166°-25	12°-40	95.19	"293"
⑪	300	174°-00	9°-10	97.46	"336"
⑫	342	184°-08	8°-00	98.06	"384"
⑬	390	189°-55	7°-35	98.26	"436"
⑭	452	193°-18	10°-49	96.48	"521"
⑮	540	197°-05	10°-43	96.54	"521"
⑯	533	202°-50	8°-18	97.92	"550"
⑰	552	212°-15	5°-00	99.24	"556"
⑱	557	216°-30	2°-03	99.87	"562"
⑲	565	228°-30	4°-25	99.41	"572"
⑳	580	231°-05	5°-54	98.94	"

FEB 9TH 1942

DICKINSON POLAK



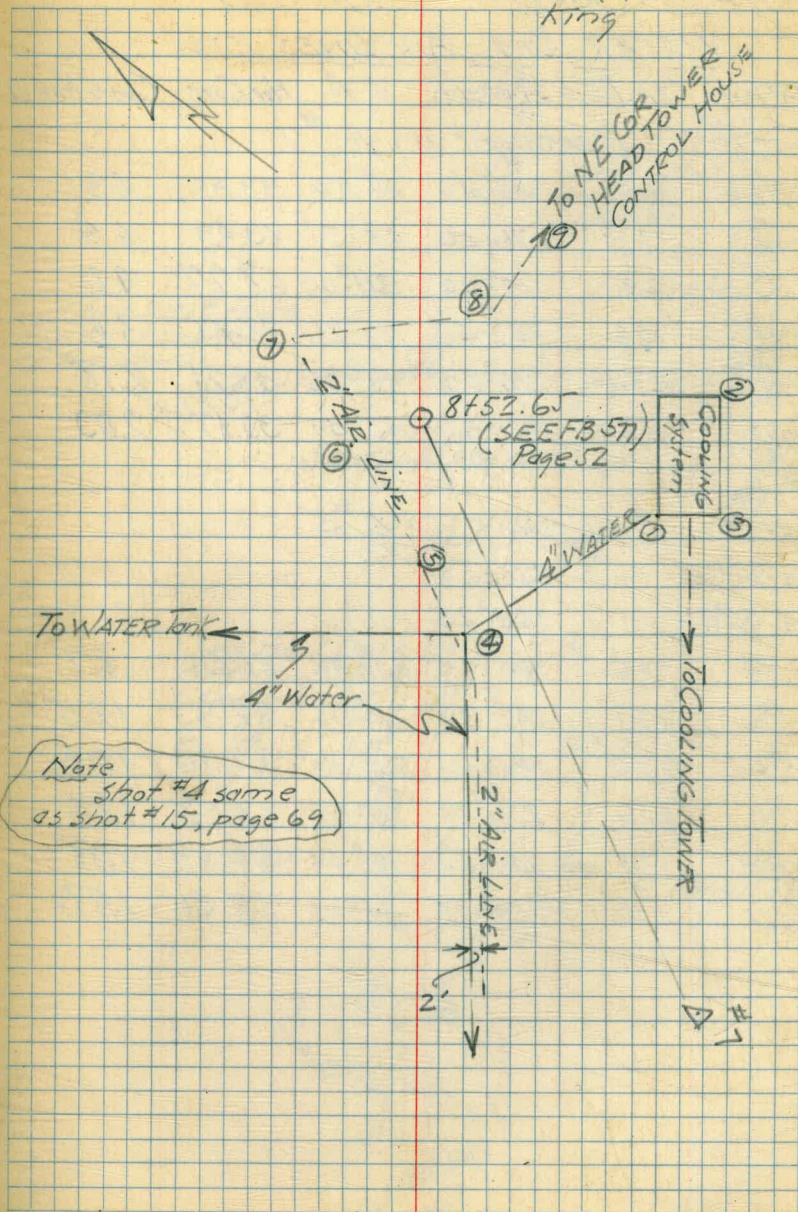
STADIA SURVEY - LOCATING

WATER LINES - AIRLINES ETC

STATION Stod. Dist Azimuth V.A. Hor. Corr. Corrd Hor. D
 T 8752.65 BACKSIGHT TO Δ # 7 (See F.B. # 577)
 Page 52

①	143	328°-00	16°-15	92.17	132
②	168	322°-15	13°-45	94.35	158
③	156	330°-40	17°-27	91.00	142
④	123	356°-40	22°-25	85.46	105
⑤	55	3°-45	18°-08	90.31	50
⑥	14	66°-00	0°		14
⑦	35	150°-10	34°-45	67.57	24
⑧	57	230°-50	28°-14	77.62	44
⑨	94	245°-25	26°-39	79.88	75

FEB 10, 1922
 Dickinson (70)
 Jackson
 Folat
 King



FEB. 10, 1942
 Dickinson
 Jackson

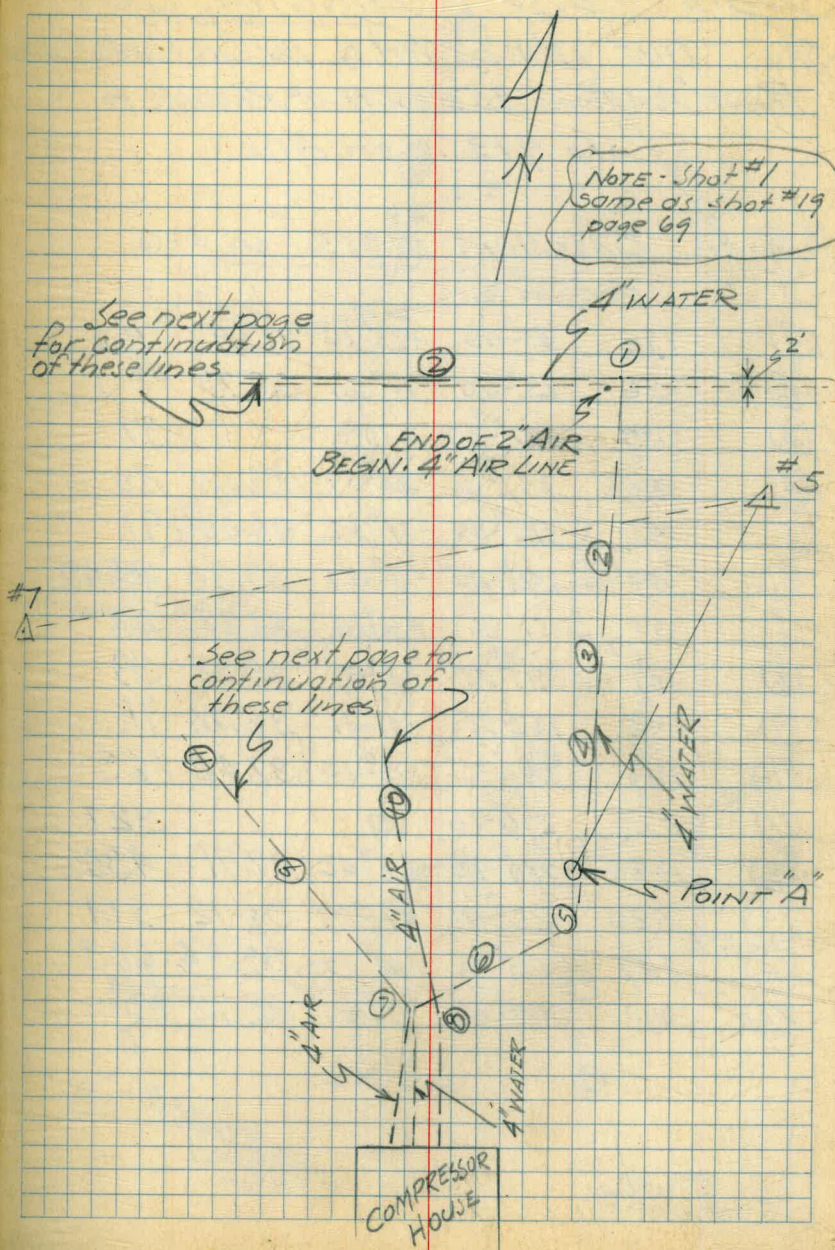
71

STADIA SURVEY - LOCATING
 WATER LINE, AIR LINES ETC.

STATION	Sta. Dist.	Azimuth	V. A	Hor. Corr.	Corrd. Hor. D.
Tot A [#] Backsight on A [#] 7					
①	63	103°-40	4°-30	99.38	63
②	71	76°-20	18°-55	89.49	64
③	29	13°-00	34°-00	68.77	20
④	46	342°-40	27°-26	78.77	36
⑤	234	310°-50	15°-06	93.21	218
POINT A [#]	224	311°-35	15°-09	93.17	209

Tot A[#] BACKSIGHT TO A[#] 5

LINE TO #7A	241°-50				
LINE TO #6A	164°-25				
⑥	82	190°-30	25°-33	81.40	67
⑦	151	196°-20	24°-26	82.89	125
⑧	126	196°-25	24°-35	82.70	104
⑨	156	236°-00	26°-52	79.58	124
⑩	128	281°-50	23°-05	84.63	108
⑪	180	254°-15	24°-00	83.46	150



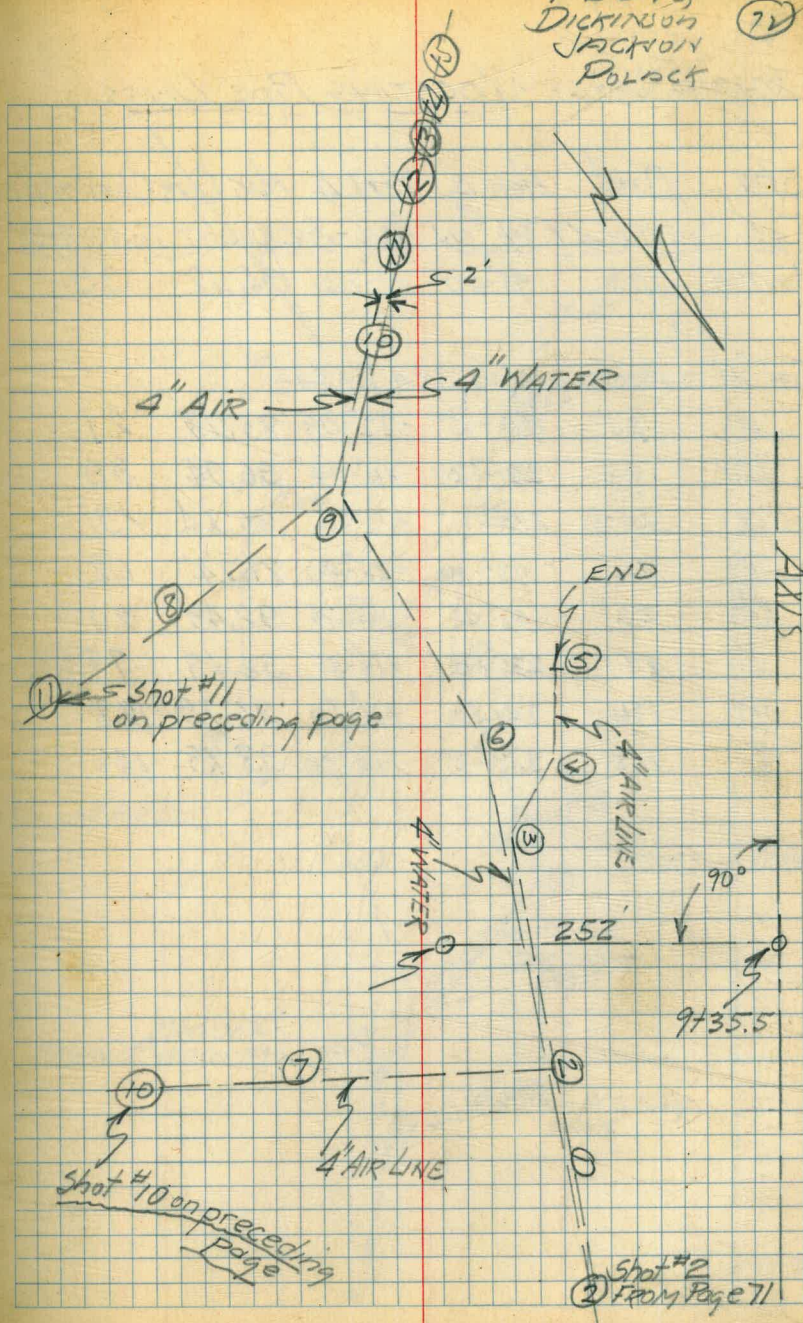
STADIA SURVEY LOCATING PIPE LINES

Sta Dist Hor. Δ Vert. Δ Hor. Corr. Cor'd Hor. D.
 Point "A" = Point 252 south at Rt. angle to
 sta 9+35.5 on Axis

Point "A" BACKSIGHT to 9+35.5 on Axis

Station	Dist	Hor. Δ	Vert. Δ	Hor. Corr.	Cor'd	Hor. D.
①	130	45°-00	+25°-20	81.69	106	
②	56	23°-50	11°-50	95.79	54	J
③	37	345°-30	0		37	
④	61	332°-05	-24°-37	82.65	50	
⑤	95	325°-00	-11°-32	96.00	91	
⑥	49	296°-45	-4°-47	99.30	48 49	
⑦	51	151°-25	+21°-14	86.88	44	
⑧	101	1215°-55	-5°-31	99.08	99	
⑨	95	252°-35	-11°-11	96.24	91	J
⑩	167	261°-35	-9°-10	97.46	163	
⑪	327	276°-10	0		327	
⑫	440	280°-30	+8°-42	97.71	430	
⑬	520	282°-40	+11°-22	96.12	501	
⑭	647	283°-15	+14°-57	99.34	603	
⑮	695	283°-00	+15°-35	92.78	644	AIR

FEB 10,
 DICKINSON
 JACKSON
 POLLOCK (72)



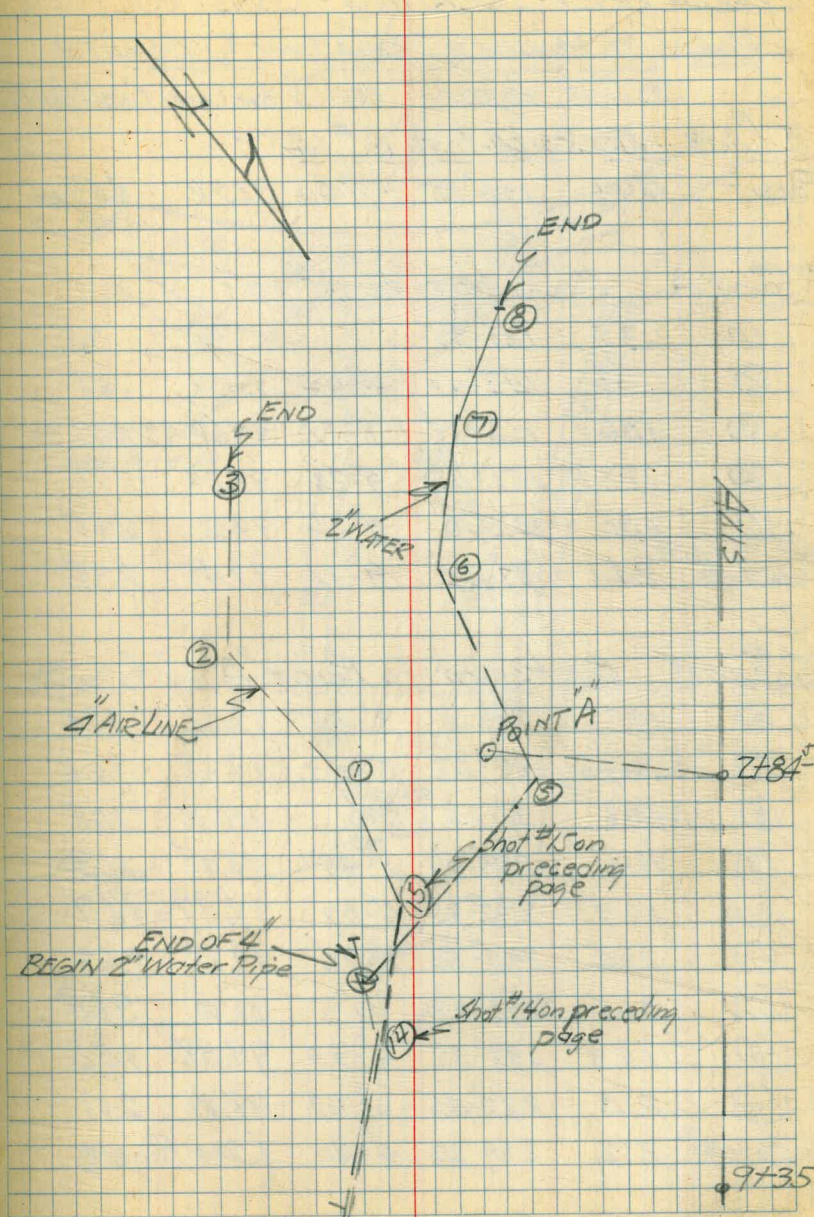
FEB 10, 1942
 DICKINSON 23
 JACKSON

STADIA SURVEY - LOCATING PIPE LINES

Sta. Dist. Hor. Δ Vert. Δ Hor. Corr. Corr'd Hor. D
 Net STATION 2+84⁵⁰ ON AXIS - BACKSIGHT TO STA 9+35⁵⁰
 POINT "A" 103 95°00 11°22 96.12 99

Net "A" - Backsight to STA 2+84⁵⁰

①	25	169°-15	-22°-09	85.78	21
②	93	227°-20	10°-04	96.94	90
③	137	239°-15	+12°-01	95.66	131
④	76	98°-10	-25°-40	81.24	62
⑤	22	41°-45	-15°-54	92.49	20
⑥	81	235°-50	+10°-35	96.63	78
⑦	134	241°-50	+11°-50	95.79	128
⑧	158	255°-35	+14°-30	93.73	148



FEB 13, 1942
 DICKINSON (74)
 JACKSON
 POLACK

STADIA SURVEY - LOCATING - CONSTRUCTION
 ROADS TO POWDER MAGAZINE & VICINITY

Sta. Dist. Azimuth Vert. Δ Hor. Corr. Corr'd Hor. D

π #13 Backsight to Δ #14

POINT	461	109°55'	-7°40'	98.22	453
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π Point "A" Backsight to Δ #13

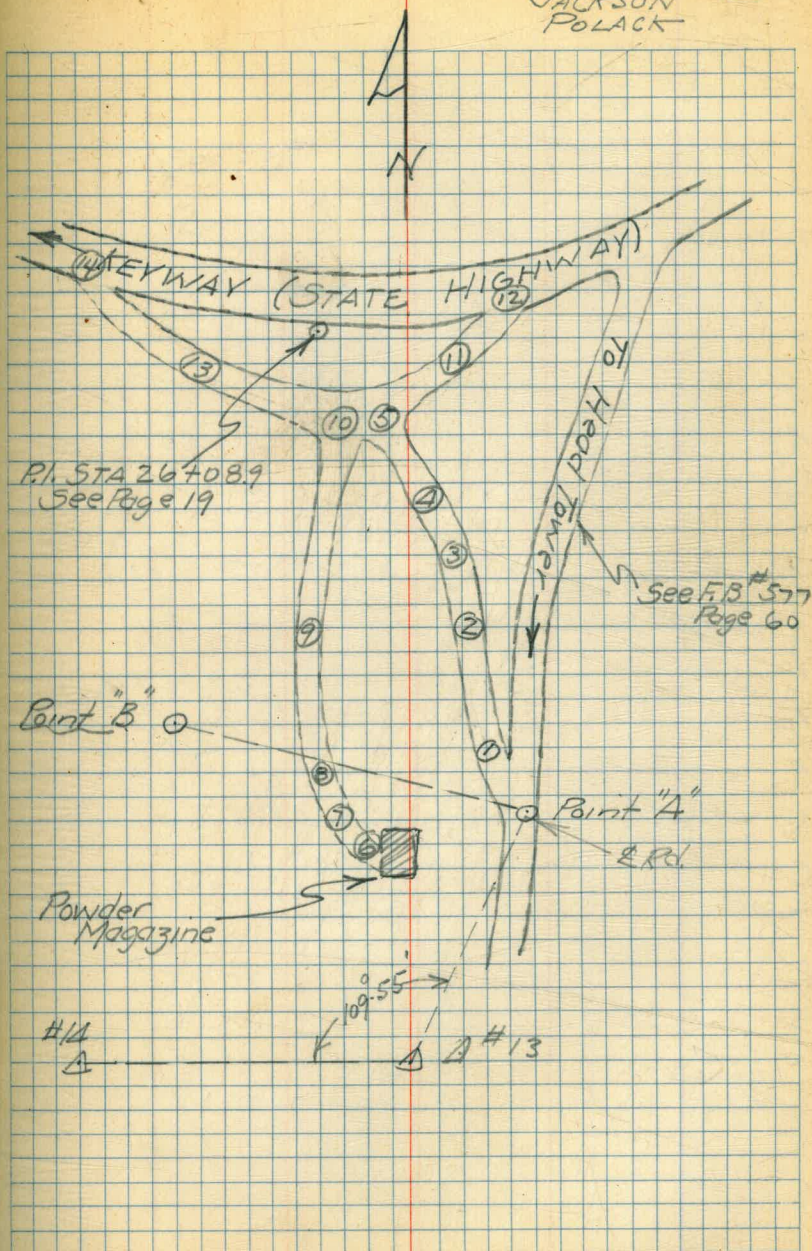
①	35	128°30'			35
②	68	142°00'	4°02'	99.51	68
③	136	152°15'	-8°52'	97.62	133
④	183	151°55'	9°28'	97.29	178
⑤	255	142°10'	9°56'	97.02	248

POINT "B"	244	87°32'	9°11'	97.45	238
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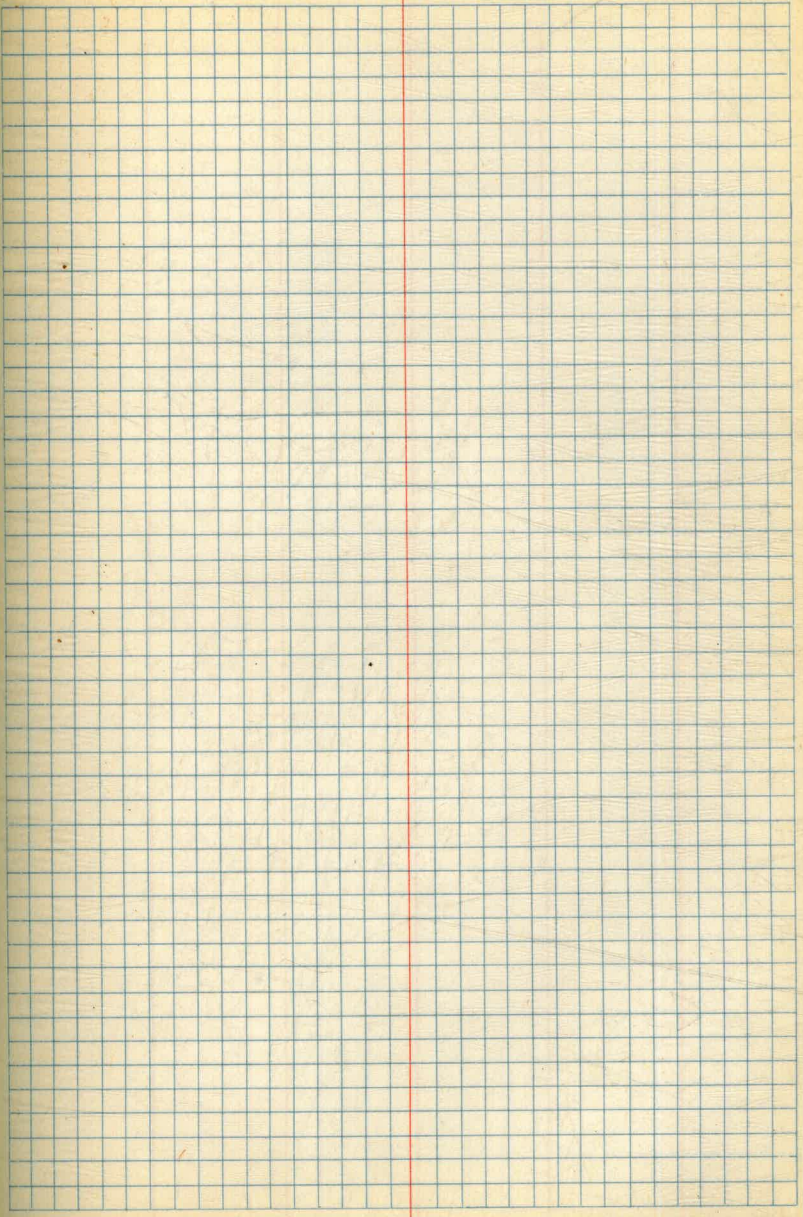
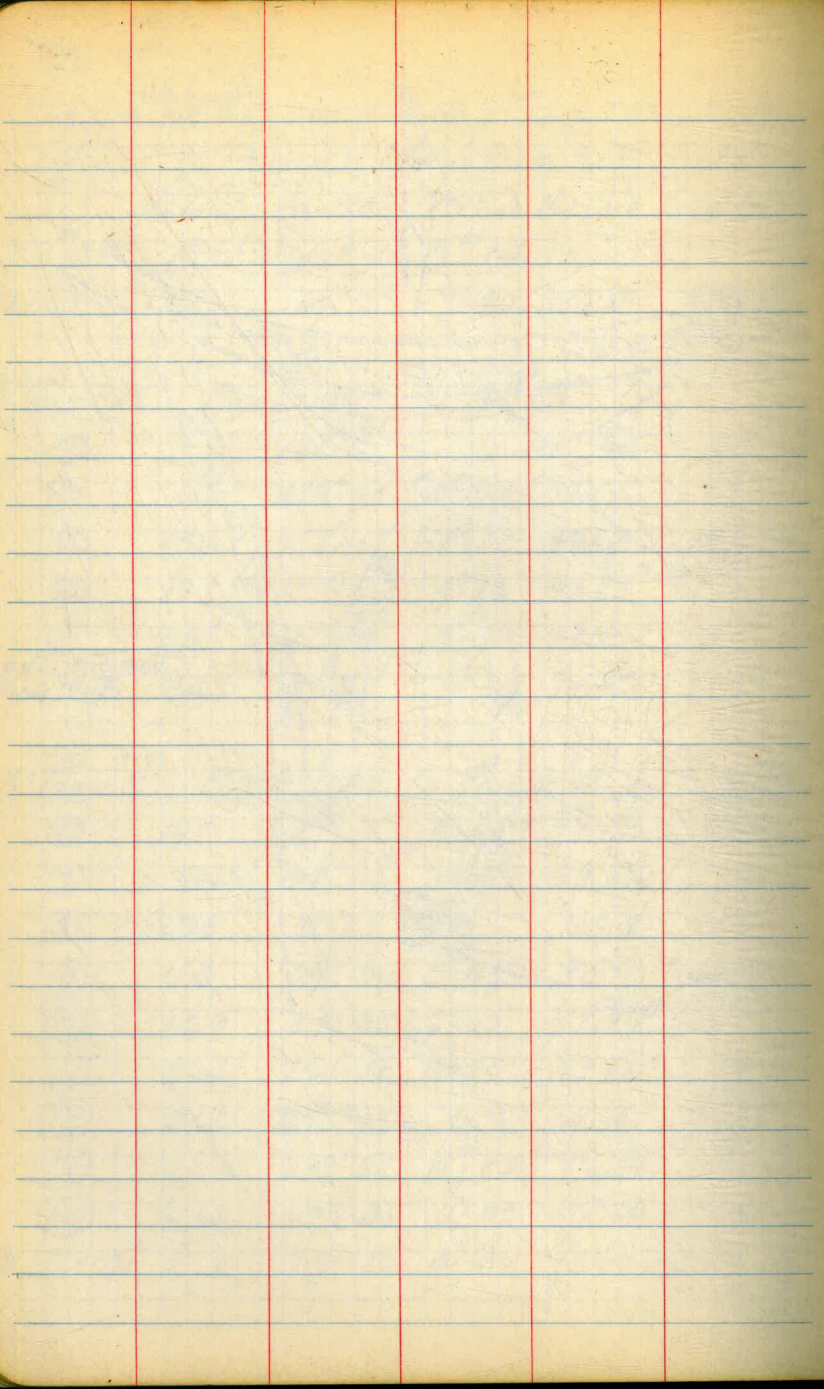
π Point "B" Backsight To Point "A"

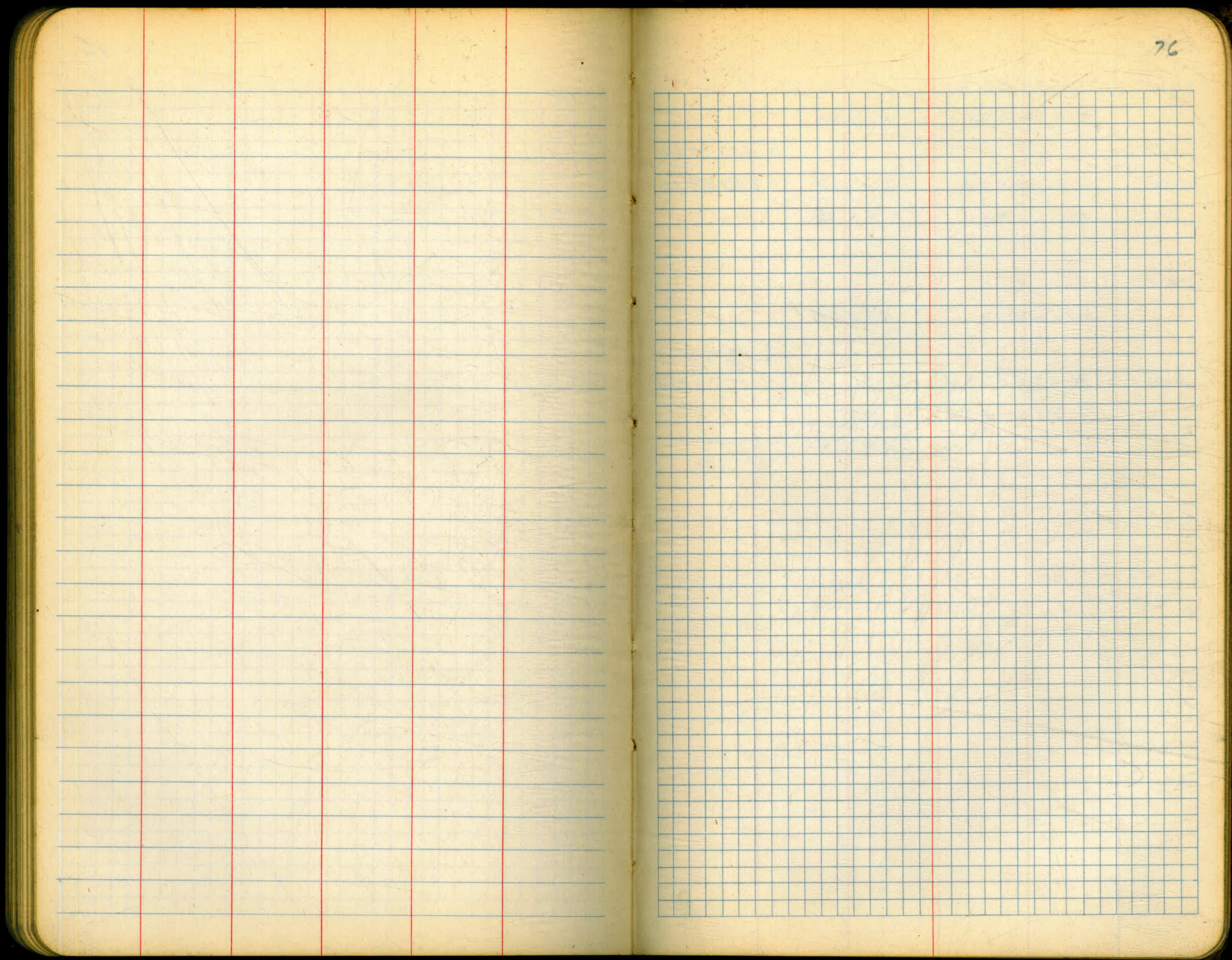
⑥	195	21°15'	3°35'	99.62	194
⑦	167	22°02'	3°33'	99.62	166
⑧	108	3°25'	0	100.00	108
⑨	114	293°00'	5°49'	98.98	113
⑩	169	272°35'	6°07'	98.87	167
⑪	264	294°50'	3°16'	99.68	263
⑫	365	292°05'	0	100.00	365
⑬	153	238°35'	4°33'	99.38	152
⑭	214	222°45'	6°03'	98.89	211

P.I. 26+08.9	212	269.20	4°40'	(See Page 19)	
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25





29.95 1.4763968

2.9527936 897.00

2.8397042

14.34 1.1565492 205.64 1.4198521

2.3130984 691.30

26.29

24.05 1.3811151

2.7622302 578.40

2.7553717

3.01 0.4785665 1.3776858

0.9571330 906

569.34

23.86

50.15

72.76	1.907851		
636.66	3.8035702	636.66	
		<u>1545.27</u>	<u>6827135</u>
			81
3931	1.5945020	4811.39	3.4827216
1545.27	3.1890060		1.8413608
4471	1.6504047		
1998.98	3.3008094	1998.98	
		<u>1557.91</u>	
		<u>1441.07</u>	
23.62	1.3732799		3.1586640
5579.05	2.7465598		+ 211
			<u>6851</u>
			1.5793425
98.55	1.9936566 ✓		
	3.9873132 ✓	9712.10 ✓	
		<u>- 2484.03 ✓</u>	3.8590181 ✓
			+ 43
49.84	1.6975780 ✓	7228.07 ✓	<u>0224 ✓</u>
	3.3951560 ✓		1.9295112
71.25	1.8527849		
	3.7055698	5076.57	
		<u>1604.80</u>	<u>3.5405422</u>
			88
40.06	1.6027109	3471.77	<u>5510</u>
	3.2054218		1.7702755

50.15

69.40#

37.96

85.028

301.45

0

Row pole		
BM	3.68	
18+70		2.7
19		3.1
+40.7 gwt		4.8
+40.7 curb		4.1
+50		4.0
+75		4.3
+93		5.8
+94		7.3
20		7.5
+10		5.9
T.P.	0.52	12.83
T.P.		12.81

109-54-45
2

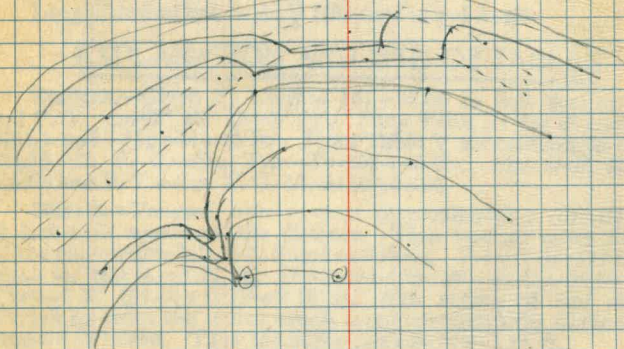
79

2 / 219-49

109.

60
~~49~~
109
54
#5
Δ

#1
Δ

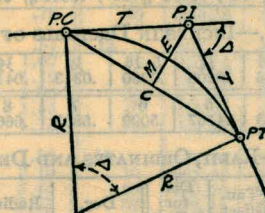


Δ #6

B.M. 414.73 E. of Dorn

DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES

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CURVE FORMULAS

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

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

$$\text{Middle ordinate} = M = R \left(1 - \cos \frac{\Delta}{2}\right) = R \text{vers} \frac{\Delta}{2} \quad (6)$$

$$\text{External} = E = T \tan \frac{\Delta}{4} \quad (7) = R \div \cos \frac{\Delta}{2} - R \quad (8) = R \text{exsec} \frac{\Delta}{2} \quad (9)$$

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

EXPLANATION AND USE OF TABLES

Stations.—Given P. I. = Sta. 161 + 60.35 to find Sta. of P. C. and P. T. $\Delta = 62^\circ 10'$ $D = 8^\circ 20'$. From Table IV for 1° curve $T = 3454.1$ and $\div 8\frac{1}{3} = 414.49$ ft. From Table V correction = .36 or $T = 414.85$ ft. P. C. = Sta. P. I. - $T = 157 + 45.50$. Also from (4) $L = 746.00$ and P. T. = Sta. P. C. + $L = 164 + 91.50$.

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

Deflections.—Deflection angle = $\frac{1}{2} D$ for 100 ft., $\frac{1}{4} D$ for 50 ft., etc. For c ft. = (in minutes) $.3 \times C \times D^\circ$ or = defl. for 1 ft. from Table III $\times C$. For Sta. 158 of above curve = $.3 \times 54.5 \times 8\frac{1}{3} = 136.2'$ or $2^\circ 16.2'$, or = $2.50 \times 54.5 = 136.2'$ from Table III. For Sta. 159 deflection angle = $2^\circ 16.2' + 8^\circ 20' \div 2 = 6^\circ 26.2'$, etc.

Externals.—May be found in similar manner to tangents. Thus E for curve above is 91.37. For from Table IV for 1° curve $E = 960.6$ for $8^\circ 20' = 960.6 \div 8\frac{1}{3} = 91.27$ and from Table V correction = .10 or $E = 91.37$ ft. Or suppose $\Delta = 32^\circ$ and E is measured and found to be 42 ft. What is D ? From Table IV $E = 230.9$ and $\div 42 = 5.5$ or $D = 5^\circ 30'$.

Stadia 1026 - 9'35"



826.
826
1653
150
1503

405

87

518

293

226

13

12

11

10

9

8

7

6

5

4

3

2

1

To be painted
439 North on 12
101.5 North on 13
Repaint 226 south on 16
South on 15

76-48
1480
784
174
26 996 + 21° 11'

155 - 13
360
515

8689
01.975
01.25
3.125
13 2 1.5625 782.7 ✓
323 78.3
977 4.38 ✓

2

1300
210
986
6

.9
846.25

782.7
69.6
7.0
858.3

π at #9

8-7 ✓

7-6

1 - East Axis (20.5)

6-8

π at #11

8-9 ✓

9-6

6-5

5-8 cut into #4

π at #5

6-7

7-1

1-14

14-3

3-13

13-6

507

213

171

156-38-52.5
126-0.55
15512 450
360
515.12



$$\sin A = \frac{\sin B}{c}$$

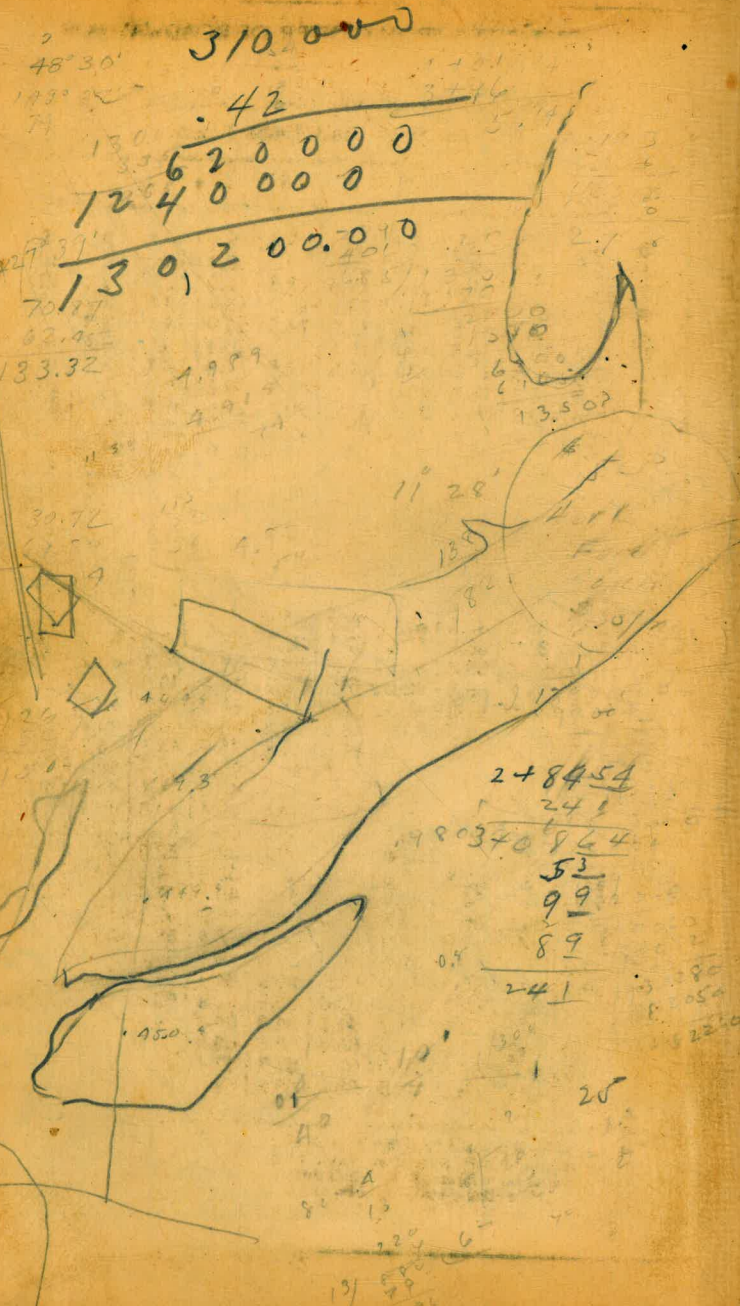
π at #1

13-Axis

A-5

5-6

(97)



DISTANCES FROM CENTER OF ROADWAY FOR
CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on $1\frac{1}{2}$.
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	26.2	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 $41.9 + (20 - 16) \div 2$ or 2 ft. added to 41.9 = 43.9. For slopes of 1 on 1 see inside of front cover.

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