EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

DISTANCES FROM CENTER OF RAILWAY 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

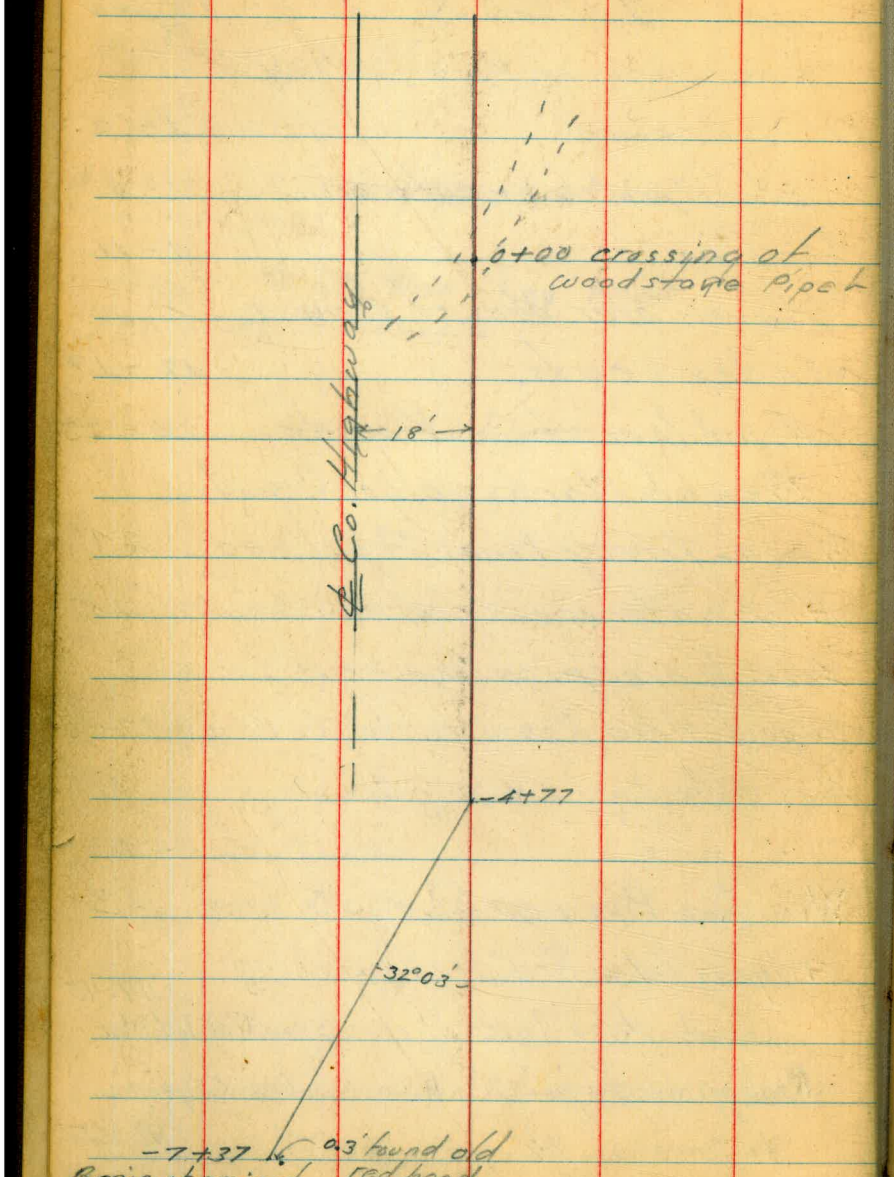
Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 30.6. For same slopes but other widths of roadbed, correct above figures by one-half difference in width of roadbed; thus in example above, for 20 ft. roadbed distance will be 30.6+(20—16)÷2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

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

INDEX

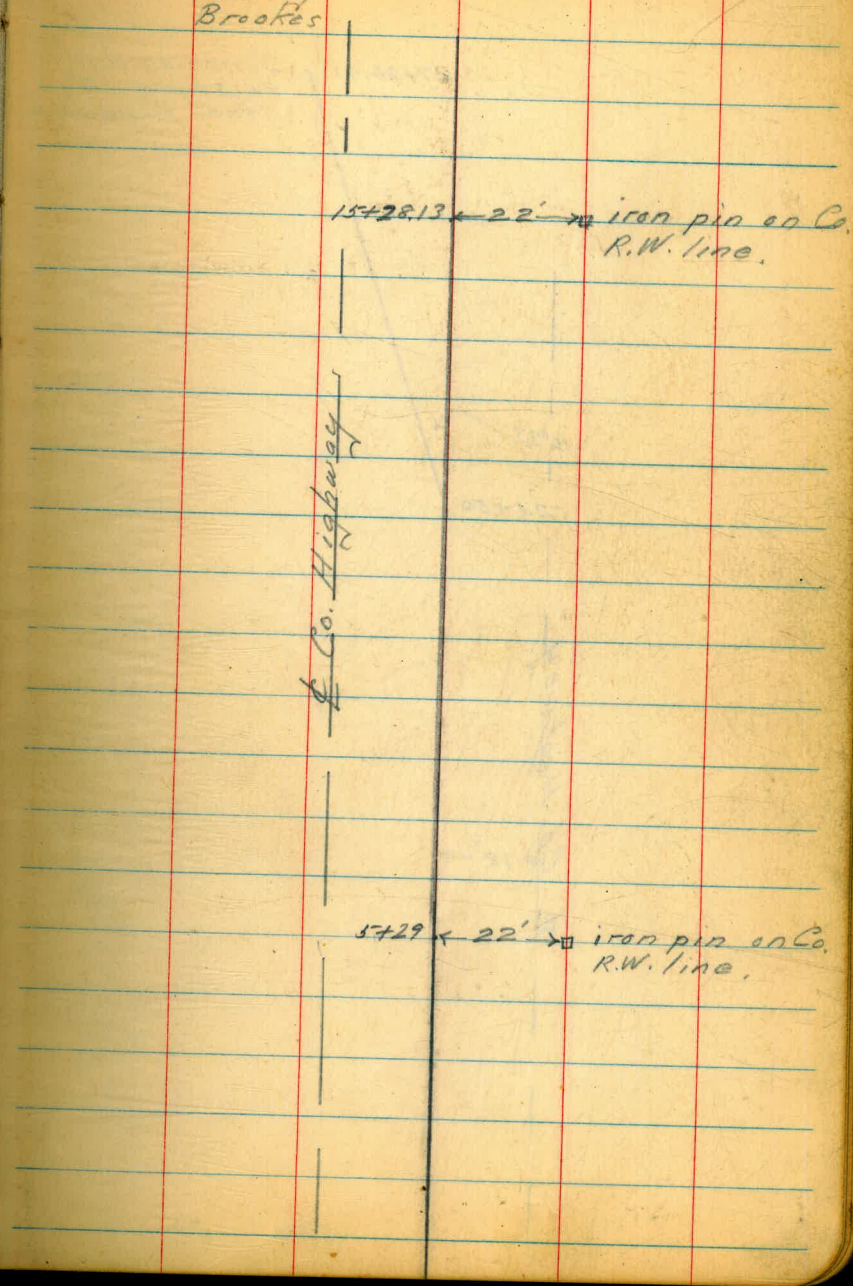
Pages

Loc. Lockwood Mesa - Torrey Pines
Pipe Line. New C.I. pipe const. at Fa[illegible]



7/20/38 Hill Osborne Isbell Leekey Brookes clear Grounds

1.



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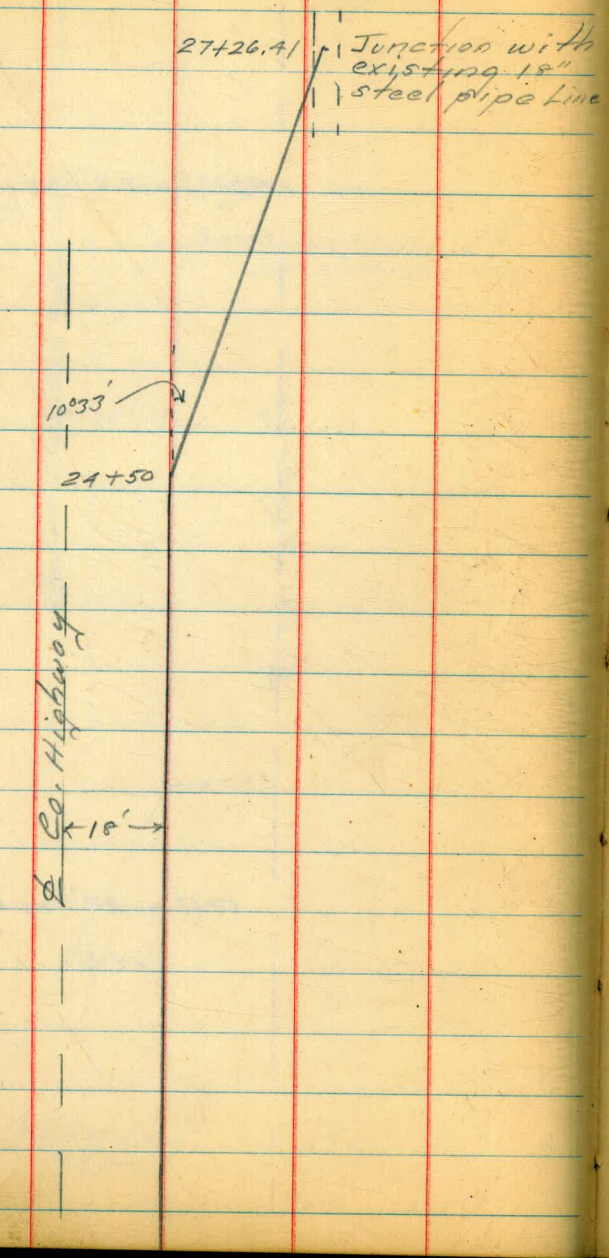

27+26.41
Junction with existing 18" steel pipe Line
10°33'
24+50
℄ Co. Highway
18'

Elev's on Pipeline. Lockwood Mesa-Torrey Pines 7/26/38 Hill Osborne Isbell Leckey Brookes

Sta.	+S	H.I.	-S	Elev.	Grade Elev.	Cut
BM.	3.50	13.32		9.82		
						Pow. pole "2305, 40' L. 22+50
27+26			5.7	7.6	5.20	2.4
27			5.6	7.7	5.18	2.5
+50			5.2	8.1	5.13	3.0
26			3.9	9.4	5.08	1.3
+50			4.6	8.7	5.03	3.7
25			5.0	8.3	4.98	3.3
+50			4.6	8.7	4.93	3.8
24			4.6	8.7	4.88	3.8
+50			4.9	8.4	4.83	3.6
23			5.3	8.0	4.78	3.2

		1332			Grade	Cut
22+50			4.9	8.4	4.74	3.7
22			5.0	8.3	4.69	3.6
+50			4.7	8.6	4.64	4.0
21			4.7	8.6	4.59	4.0
+50			4.7	8.6	4.54	4.1
20			4.8	8.5	4.49	4.0
+50			4.7	8.6	4.44	4.2
T.P.	4.83	1348	4.67	8.65		
19			4.4	9.1	4.39	4.5
+50			4.8	8.7	4.34	4.4
18			5.3	8.2	4.29	3.9

					Grade Elev.	Cut
		13.18				
17+50			5-3	8.2	4.24	1.0
17			5-4	8.1	4.20	3.7
+50			5-4	8.1	4.15	4.0
16			5.2	8.3	4.10	4.2
+50			4.9	8.6	4.05	4.5
15			4.8	8.6	4.00	4.6
+50			4.8	9.0	4.03	5.0
14			4.4	9.1	4.07	5.0
+50			4.2	9.3	4.10	5.2
T.P.	4.98	14.21	4.25	9.23		
13			5.3	8.8	4.13	4.8

		14.21			Grade	Cut
12+5-0			5-3	8.9	4.17	4.7
12			5-2	9.0	4.20	4.8
+5-0			5-1	9.1	4.23	4.9
11			5-0	9.2	4.27	4.9
+5-0			4.9	9.3	4.30	5.0
10			4.9	9.3	4.33	5-0
+5-0			4.8	9.4	4.37	5-0
9			4.9	9.3	4.40	4.9
+5-0			5-0	9.2	4.44	4.8
8			5-0	9.2	4.47	4.7

			14.21			Grade	c.f
12+	7+5-0			5-0	9.2	4.5-0	4.7
12	7			5.2	9.0	4.54	4.8
		4.72	14.18	4.75	9.16		
	+5-0			5.2	9.0	4.57	4.4
11	6			4.7	9.5	4.60	4.9
	+5.0			5-3	8.9	4.64	4.3
10	5			5.5	8.7	4.67	4.0
	+5-0			5.4	8.8	4.70	4.1
9	4			5.4	8.8	4.74	4.1
	+5.0			5.5	8.7	4.77	3.9
8	3			5.4	8.8	4.80	4.0

		14.18			Grade	Cut
2+50			5.1	9.1	4.84	4.3
2			4.9	9.3	4.87	4.4
+50			4.6	9.6	4.90	4.7
1			4.4	9.8	4.94	4.9
+50			4.5	9.7	4.97	4.7
T.P.	2.45	15.46	1.17	13.01		
0			5.2	10.3	5.00	5.3
-0+50			5.1	10.1	5.03 ~~5.10~~	5.1 ~~5.0~~
-1			5.1	10.1	5.07 ~~5.20~~	5.3 ~~4.6~~
+50			5.1	10.1	5.16 ~~6.20~~	1.9 ~~4.2~~
-2			4.8	10.7	5.85 ~~6.60~~	1.8 ~~4.1~~

Graderevision - 0+00 to - 7+00.

		1546			Grade	Cut
-2+50			4.7	10.8	6.23 ~~7.00~~	4.6 ~~3.8~~
-3			4.6	10.9	6.62 ~~7.40~~	4.3 ~~3.5~~
+50			4.6	10.9	7.00 ~~7.80~~	3.9 ~~3.1~~
+75					7.20 ~~8.08~~	
-4			4.4	11.1	7.39 ~~8.14~~	3.7 3.0
+50			5.2	12.3	7.78 ~~8.44~~	4.5 ~~3.9~~
4+77			2.1	13.4	7.99 ~~8.56~~	5.1 ~~4.8~~
	6.24	20.98	0.72	14.71		
5-			6.9	14.1	8.16 ~~8.68~~	5.9 ~~5.1~~
+50			6.2	14.8	8.56 ~~8.96~~	6.2 ~~5.6~~
6			5.1	15.6	8.94 ~~9.23~~	6.7 ~~6.4~~

		20.98			Grade.	Cut
6+50			4.6	16.4	9.33 ~~9.51~~	7.1 ~~6.9~~
7			3.9	17.1	9.71 ~~9.78~~	7.4 ~~7.3~~
+37			3.5	17.5	10.00	6.5
B.M.			4.97	16.01		
T.P.			6.69	14.29		
	1.49	15.78				
B.M.			8.30	7.18		
T.P.			6.37	10.41		
	3.58	13.99				
T.P.			4.50	9.49		
	4.73	14.22				
T.P.			1.30	8.92		
	4.67	13.59				
B.M.			3.74	9.85		

marked El. 15.84

Spike in tel. pole 20' R. of 6+30.

near sta. 0+00 El. 7.50

Spike in E. side of pow. pole "12311

Pow. pole "2305 starting B.M. El. 9.82

Levels over 3' offset points (shiners) on Torrey Pines-Lockwood Mesa Pipe Line

9/28/38 clear
Hill
Brachmann

				Ground	Grade	Cut				
B.M.	383	19.84		16.01		Spike in tel. pole 20' R of -6+30				
-7+37			2.14	17.70	10.00	7.70 ✓				
						7.67	× 37 × 2.67		757.72 ✓	Cu. Ft.
-7			2.49	17.35	9.71	7.64 ✓				
						7.47	50	2.67	997.25 ✓	✓
-6+50			3.21	16.63	9.33	7.30 ✓				
						7.02	✓	✓	937.17 ✓	✓
-6			4.16	15.68	8.94	6.74 ✓				
						6.54	✓	✓	873.09 ✓	
-5+50			4.93	14.91	8.56	6.35 ✓				
						6.12	✓	✓	817.02 ✓	
-5			5.78	14.06	8.16	5.90 ✓				
						5.65	23	✓	346.97 ✓	
-4+77 (back)			6.45	13.39	7.99	5.40 ✓				
-4+77 (ahead)			6.43	13.41	7.99	5.42 ✓				
						5.12	27	✓	369.10 ✓	
-4+50			7.23	12.61	7.78	4.83 ✓				
						4.33	50	✓	578.06 ✓	
-4			8.63	11.21	7.39	3.82 ✓				
						3.92	25	✓	261.66 ✓	
-3+75					7.20	4.01 ✓				

		19.84		Ground	Grade
-3+50			8.77	11.07	7.00
-3			8.84	11.00	6.62
-2+50			8.87	10.97	6.23
-2			9.05	10.79	5.86
T.P.			8.84	11.00	
	3.69	14.69			
-1+50			4.16	10.53	5.16
-1			4.12	10.57	5.07
-0+50			4.17	10.52	5.03
0+00			4.26	10.43	5.00
B.M.			7.22	7.47	
0+20 ℄			6.29	8.40	

Cut	4.04	25	2.67	269.67 ✓
4.07 ✓				
	4.22 ✓	50	✓	563.37 ✓
4.38 ✓				
	4.56	✓	✓	608.76 ✓
4.74 ✓				
	4.84	✓	✓	646.14 ✓
4.94 ✓				
	5.01	✓	✓	668.84 ✓
5.07 ✓				
	5.29	✓	✓	706.22 ✓
5.50 ✓				
	5.50	✓	✓	734.25 ✓
5.49 ✓				
	5.46	✓	✓	728.91 ✓
5.43 ✓				

Nail in pow. pole 30' L. 0+00

Top of wood stave pipe - O.D. stave pipe 21"

Note grade of C.I. pipe at wood stave xing = 4.99 = 1.66 below bot. of wood stave pipeline

		14.69		Ground	Grade	Cut	5.27	50	2.67	703.55 ✓
0+50			4.61	10.08	4.97	5.11 ✓				
							5.09	✓	✓	679.51 ✓
1			4.67	10.02	4.94	5.08 ✓				
							5.01	✓	✓	668.84 ✓
1+50			4.85	9.87	4.90	4.94 ✓				
							4.77	✓	✓	636.80 ✓
2			5.22	9.47	4.87	4.60 ✓				
							4.47	✓	✓	596.75 ✓
2+50			5.51	9.18	4.84	4.34 ✓				
							4.24	✓	✓	566.04 ✓
3			5.75	8.94	4.80	4.14 ✓				
							4.11	✓	✓	548.69 ✓
3+50			5.83	8.86	4.77	4.09 ✓				
							4.18	✓	✓	558.03 ✓
4			5.68	9.01	4.74	4.27 ✓				
T.P.			5.62	9.07						
	5.14	14.21					4.32	✓	✓	576.72 ✓
4+50			5.13	9.08	4.70	4.38 ✓				
							4.35	✓	✓	580.73 ✓
5			5.21	9.00	4.67	4.33 ✓				

		14.21		Ground	Grade
B.M.			6.96	7.25	
5+50			5.01	9.17	4.64
6			4.74	9.47	4.60
6+50			4.99	9.22	4.57
7			4.93	9.28	4.54
7+50			4.87	9.34	4.50
8			4.91	9.30	4.47
8+50			4.87	9.34	4.44
9			4.69	9.52	4.40
B.M.			5.20	9.01	
	5.22	14.23			
9+50			4.68	9.55	4.37

Cut	4.43	50	2.67	591.41 ✓
Nail in pow. pole 30' L. at sta. 5+25				
4.53 ✓				
	4.70	✓	✓	627.45 ✓
4.87 ✓				
	4.76	✓	✓	635.46 ✓
4.65 ✓				
	4.70	✓	✓	627.45 ✓
4.74 ✓				
	4.79	✓	✓	639.47 ✓
4.84 ✓				
	4.84	✓	✓	646.14 ✓
4.83 ✓				
	4.87	✓	✓	650.15 ✓
4.90 ✓				
	5.01	✓	✓	668.84 ✓
5.12 ✓				
Nail in pow pole 30' L. at sta 9+00				
	5.15	✓	✓	687.53 ✓
5.18 ✓				
	5.20	✓	✓	694.20 ✓

		19.23		Ground	Grade	Cut					
10			4.68	9.55	4.33	5.22 ✓					
							5.21	50	2.67	695.54 ✓	
10+50			4.71	9.49	4.30	5.19 ✓					
							5.20	✓	✓	694.20 ✓	
11			4.75	9.48	4.27	5.21 ✓					
							5.20	✓	✓	694.20 ✓	
11+50			4.82	9.41	4.23	5.18 ✓					
							5.16	✓	✓	688.86 ✓	
12			4.90	9.33	4.20	5.13 ✓					
							5.05	✓	✓	674.18 ✓	
+50			5.10	9.13	4.17	4.96 ✓					
							5.00	✓	✓	667.50 ✓	
13			5.06	9.17	4.13	5.04 ✓					
							5.15	✓	✓	687.53 ✓	
13+50			4.86	9.37	4.10	5.27 ✓					
B.M.			4.99	9.24		Nail in pow. pole 30' ± of sta. 13+50					
	4.27	13.51					5.23 ✓	✓	✓	698.21 ✓	
14			4.26	9.25	4.07	5.18 ✓					
							5.19	✓	✓	692.87 ✓	
14+50			4.28	9.23	4.03	5.20 ✓					

		13.51		Ground	Grade
15			4.66	8.85	4.00
15+50			4.85	8.66	4.06
16			4.25	8.56	4.10
16+50			5.08	8.43	4.15
17			5.13	8.38	4.20
17+50			5.04	8.47	4.24
18			5.01	8.50	4.29
BM.			5.60	7.91	
	5.86	13.77			
16+50			5.09	8.68	4.34
19			4.73	9.04	4.39
19+50			4.86	8.91	4.11

Cut	5.03	50	2.67	671.51	
4.83					
	4.73	"	"	631.46	
4.61					
	4.54	"	"	606.09	
4.46					
	4.37	"	"	583.40	
4.28					
	4.23	"	"	564.71	
4.18					
	4.21	"	"	562.04	
4.23					
	4.27	"	"	563.37	
4.31					
Nail in pow. pole 30'	sta. 18+00				
	4.28	"	"	571.38	
4.34					
	4.50	"	"	600.75	
4.65					
	4.56	"	"	608.76	
4.47					

				Ground	Grade
		13.77			
20+00			4.95	8.82	4.49
20+50			4.95	8.82	4.54
21			5.01	8.76	4.59
21+50			4.99	8.78	4.64
22			5.18	8.59	4.69
22+50			5.20	8.57	4.74
B.M.			3.94	9.83	
	5.26	15.09			
23			6.76	8.33	4.78
23+50			6.49	8.60	4.83
24			6.19	8.90	4.88
24+50			6.18	8.91	4.93

Cut	44°	50	2.67	87.40
4.33 ✓ Opp. main gate at fair grounds				
	4.31	✓	✓	575.39
4.28 ✓ VALVE-CHAMBER				
	4.23	✓	✓	564.71
4.17 ✓				
	4.16	✓	✓	555.36
4.14 ✓				
	4.02	✓	✓	536.67
3.90 ✓				
	3.87	✓	✓	516.65
3.83 ✓				
Nail in pow. pole 30' L sta. 22+50				
	3.69	✓	✓	492.62
3.55 ✓				
	3.66	✓	✓	488.61
3.77 ✓				
	3.90	✓	✓	520.65
4.02 ✓				
	4.00	✓	✓	534.00
3.98 ✓				

			Ground	Grade
	15.09			
25		6.50	8.59	4.98
25+50		under pipe		5.03
26		5.81	9.28	5.08
26+50		5.04	10.05	5.13
27		5.75	9.34	5.18
27+26		6.00	9.09	5.20

Cut	3.79	50	2.67	505.97 ✓
3.61 ✓				
	3.91	100	✓	1043.97 ✓
4.20 ✓				
	4.56	50	✓	608.76 ✓
4.92 ✓				
	4.54	✓	✓	606.09 ✓
4.16 ✓				
	4.03	26	✓	279.76 ✓
3.89 ✓				

44,021.13 ✓ C.F.

$\frac{44021.13}{27} = 1630.42$ ✓ Cu. Yds.

7% Line South from Saddle

Sta.	For. dist.	Hor. Δ	Vert. Δ	H.I.	Rod
7 to 6	(177')	P.O.T.	- 0° 40'	5.1	15.1
3 to 5	(370')	55° 05' 27° 32' L	- 4° 01'	5.1	5.1
3 to 4	(185')	P.O.T.	- 11° 05'	5.1	8.1
2 to 3	(142')	50° 45' 25° 22' L	- 4° 01'	5.1	5.1
1 to 2	(680')	45° 58' 22° 59' R	- 6° 03'	5.1	5.1
0 to 1	(429')	85° 54' 42° 57' R	- 5° 30'	5.3	5.3

Backsite on N-4

N-4

Transferred to Sag

Transferred to book

4° 01'

Osborne
Isbell
Leckey
Brooks

Sept. 13, 1938
Cloudy - Hot.

20

Mag. B. ℄

Wash at 90° to line

200' +45% -29% 100' = sta. 6

S. 5° 30' W. 100' +38% -38% 150' = sta. 5

Wash at 90% to line

200' +27% -39% 200' = sta 4

200' +23% -20% 100' = sta. 3

S 33° W +20% 100' +25% 75' -18% 150' = sta. 2

Grade

S. 57° 30' W. 200' +20% 30' -4% = 300' + 14% = sta 1

C - 24.0

S 34° 30' W. 100' +30% 75' +5% +7% 150' = For sta. 0

sta.	Cor. dist.	Hor. Δ	Vert. Δ	H.I	Rod	Mag. B.	Left ℄ Right.
12 to 13	(104')	15° 24' 7° 41' L	-4° 01'	5.0	5.0	S. 27° W	100' +28% -35% 150'
10 to 12	(465')	32° 22' 16° 10' 30" R	- 4° 01'	5.2	5.2	S. 35° W	100' +21% -31% 200' = #12
10 to 11	(193')	P.O.T.	-11° 55'	5.2	9.2		wash 90° to line 100' +49% -27% 300' = #11
9 to 10	(282')	27° 16' 13° 37' 30 L	- 4° 01'	6.7	6.7	S 17° 30' W	200' +45% -39% 100' = 10
7 to 9	(399')	52° 51' 30" 26° 25' 30" R	- 4° 01'	5.1	C-2.0 3.1	S. 31° W	200' +31% -50% -100' 20% 100' = 9
9 to 8	(170')	P.O.T	- 6° 20'	6.7	6.7	S. 31° W	Left Right going South. 200' -43% -30% 150' = sta. 8
5 to 7	(590')	0° 30' 00" 0° 14' 30" L	- 4° 01'	5.1	5.1	S. 5° W.	200' +30% -16% 200' = sta. 7

sta.	Cor. dist.	Hor. Δ	Vert. Δ	H.I.	Rod	Mag B.	℄
30 to 31	(810')	24° 09' 12° 04' 30" L		5.2	5.2	S. 55° 30' E.	
29 to 30	(157')	41° 00' 30" 20° 30' L	- 2° 52'	5.1	5.1	S. 43° 30 E.	150' +3% -3% -150'
28 to 29	(144)	17° 04' L	- 2° 52'	5.2		S. 23° E	150' + 3% - 3% - 125'
See Book A							
16 to 17	(136')	45° 27' 30" 22° 43' 45" L	- 4° 01'	4.8	4.8	S. 28° 30' E.	125' +4% -3% 200'
15 to 16	(100')	52° 08' 26° 04' L	- 4° 01'	5.0	5.0	S. 6° E	100' +8% 50' +23% 100' +4% -3% 100'
13 to 15	(680')	13° 19' 6° 39' L	- 4° 01	5.0	5.0	S. 20° W	180' +7% 75' +4% -4% 75' -7% 50'
13 to 14	(240')	25° 20' 12° 40' 30" L	- 4° 01'	5.0	5.0	S. 14° W	200' 3% 3% 200'

B-5 to #57 inc		41° 01' 30" 20° 30' 30"			
B-5 to B-6 = #56 Foster line	(313')	29° 03' 14° 31' 30" L	-3° 25'	5.1	5.1
B-3 to B-4	(190')	P.O.T.	-3° 39'	5.2	9.2
B-3 to B-5	(488')	11° 12' 30" 5° 36' L	0° 00'	5.2	5.2
B1 to B-3	(875')	60° 06' 30" 30° 03' L	+2° 51'	5.0	5.0
B1 to B2	(630')	P.O.T.	-0° 03'	5.0	5.0
point at Hwy on Foster line = 64 to B1	(3.90)		+0°13	4.8	

N. 67° 30' W

N. 55° W.

N. 50° W.

N. 19° 30' W.

Lockwood Mesa - Torrey Pines Pipe Line - New C.I. pipe constr.

BM's

Elev.	Location
16.01	Spike in tel. pole 20'R of sta. -6+30
7.47	Nail in power pole 30'L of sta. 0+00.
7.25	Nail in power pole 30'L of sta. 5+25.
9.01	Nail in power pole 30'L of sta. 9+00.
9.24	Nail in power pole 30'L of sta. 13+50.
7.91	Nail in power pole 30'L of sta. 18+00
9.83	Nail in power pole 30'L of sta. 22+50.

Levels to determine high tide elev. near Fair-Grounds

+S	H.I.	-S	Elev.
1.9	10.8		8.91
		6.7	4.1

Gate Valve & Chamber
Sta. -7+10

6" Main to Fair Grounds
Sta. 20+23

Gate Valve & Chamber
Sta. 20+50

Std 2" Plug in top of Pipe
Sta. 26+13

Flange Connection to Existing Pipe Sta. 27+23.5

Hill
Brachmann

9/29/38

Shiner at 23+50
Elev. at high tide mark

Grade change 0+00 to -3+75
" " -3+75 to -7+37

This information given by
Fred Brachmann, Inspector
11/2/38.
#

4204
4202
354

4203
3536
.667

Hill
Soper
Brooks

3/29/40

Levels over Lockwood Mesa-Tarry-Pines Pipe Line from Lockwood Mesa Res. to sta. 184+63

BM	1.48	207.98		206.50	
0+00			1.51	206.5	206.47
0+00			12.8	195.2	
0+00			7.6	200.4	
T.P.	0.18	195.69	12.47	195.51	
1+00			4.1	191.6	
T.P.	0.46	183.64	12.51	183.18	
2+00			4.1	179.5	
3+00			9.9	173.7	
T.P.	0.39	171.09	12.94	170.70	
4			4.2	166.9	
T.P.	0.42	158.75	12.76	158.33	
5			1.3	157.5	
6			8.5	150.5	
7			11.5	147.3	
T.P.	1.05	147.73	12.07	146.68	
8			4.6	143.1	
9			8.0	139.7	
10			11.7	136.0	
T.P.	0.34	135.16	12.91	134.82	

Top of res. wall at pumphouse-Lockwood Mesa

Top of conc. well at pipe outlet. " " "

Fl. of pipe " " "

Ground

(cont.)

		135-16		
11			4.7	130.5
12			11.4	123.8
T.P.	0.60	122.86	12.90	122.26
13			5.0	117.9
14			13.5	109.4
TP	0.33	110.38	12.81	110.05
T.P.	0.66	98.33	12.71	97.67
15			2.7	95.6
T.P.	0.78	86.09	13.02	85.31
15+87			5.5	80.6
16			5.1	81.0
T.P.	0.62	73.79	12.92	73.17
17			2.9	70.9
TP	0.08	60.90	12.97	60.82
18			8.8	52.1
TP	0.51	48.79	12.62	48.28
TP	0.58	36.63	12.74	36.05
19			11.0	25.6
TP	0.84	24.47	13.06	23.63
20			6.0	18.5

Top of meter at power house

(cont.)

24.47

20+38			11.6	13.0	Top of stem of 18" gate valve S. side Rancho Santa Fe road
21			7.6	16.9	
BM.			8.15	16.32	Co. B.M. Nail in pow. pole 20' L of sta 21+20 El. 16.01
22			9.4	15.1	
T.P.	0.98	15.87	9.58	14.89	
23			3.3	12.6	
24			4.5	11.4	
25			4.8	11.2	
26			5.1	10.8	
27			4.9	11.0	
28			5.7	10.2	
29			5.7	10.2	
T.P.	3.85	14.06	5.66	10.21	
30			4.6	9.5	
31			5.1	9.0	
32			5.0	9.1	
32+89-50'R			6.0	8.1	Top of water meter on 6" line to Fair grounds
33			4.7	9.4	
34			4.6	9.5	
35			4.5	9.6	

		(cont.)			
		14.06			
36			4.4	9.7	
T.P.	4.62	14.42	4.26	9.80	
37			4.5	9.9	
38			4.6	9.8	
39			5.1	9.3	
40			5.1	9.3	
41			4.7	9.7	
42			5.0	9.4	
42+50-40'L			10.4	4.0	Top of 6" pipe from blowoff valve.
43			5.5	8.9	
44			5.8	8.6	
TP	5.05	13.85	5.62	8.80	
45			4.9	9.0	
46			4.9	9.0	
47+80-45'R			6.9	7.0	Top of meter at Fair ground entrance
48+01			6.1	7.8	Grounds entrance Top of stem of 18" gate valve at Fair
49			4.9	9.0	
50			4.5	9.4	
51			4.9	9.0	
52			4.7	9.2	

(cont.)

		13.85			
T.P.	7.11	16.55	4.41	9.44	
5-3			7.1	9.5	
5-4			7.6	9.0	
5-5			6.6	10.0	
5-6			3.6	13.0	
5-6+69			5.2	11.4	Top of pipe on N. side of river
T.P.	3.45	17.46	2.54	14.01	
5-9+37			4.6	12.9	Pet cock of air valve near S. end of bridge
5-9+38			5.1	12.4	" " " " " " " " " "
5-9+50			13.2	4.3	Stem of 18" gate valve " " "
5-9+90	-75'L		13.0	4.5	Top of west meter in chamber " " "
60			5.4	12.1	
61			5.0	12.5	
62			2.6	14.9	
T.P.	6.48	23.47	0.47	16.99	
63			5.1	18.4	
64			4.7	18.8	
65			4.8	18.7	
65+48			3.4	20.1	Pet. cock of air valve
66			4.7	18.8	

(cont.)

		23.47			
67			6.2	17.3	
68			7.6	15.9	
69			7.8	15.7	
T.P.	5.98	21.65	7.80	15.67	
70			5.3	16.4	
71			10.3	11.4	
72			7.0	14.7	
73			5.8	15.9	
74			3.6	18.1	
T.P.	10.78	29.17	3.26	18.39	
74+79 - 20' ± L			9.60	19.57	Pet-cock at air-valve (near Santa Fe section house)
75			10.5	18.7	
76			8.9	20.3	
77			5.7	23.5	
78			0.6	28.6	
T.P.	10.88	39.42	0.63	28.54	
79			4.8	34.6	
80			2.6	36.8	
80+78			7.0	32.42	Pet-cock at air valve 30' N. of Hwy RR. xing.

(cont.)

		39.42			
80+85			6.3	33.1	Top of stem 18" gate valve - 23' N. Hwy. RR. Xing
T.P.	3.44	38.01	1.85	34.57	
81			5.6	32.4	
81+18			2.8	35.21	Pet-cock of air valve at N. side Hwy RR. Xing
82			6.0	32.0	
83			9.4	28.6	
84			13.0	25.0	
85			11.5	26.5	
T.P	8.37	34.23	12.15	25.86	
86			5.3	28.9	
87			3.3	30.9	
87+72			2.9	31.33	Pet cock of air valve - 650' S. of Hwy RR. Xing
88			3.6	30.6	
89			4.4	29.8	
T.P.	3.36	34.20	3.39	30.84	
90			5.9	28.3	
91.			4.7	29.5	
92			6.7	27.5	
TP	1.49	28.60	10.09	24.11	
93			9.4	19.2	

		(cont.)		
		28.60		
93+07 - 5' R			10.9	17.7
94			4.6	24.0
T.P.	11.09	38.42	1.27	27.33
95			9.4	29.0
96			4.0	34.4
T.P.	5.20	43.57	0.05	38.37
97			7.1	36.5
98			5.6	38.0
99			5.3	38.3
100			3.0	40.6
T.P.	11.73	52.98	2.82	40.75
101			9.0	43.5
102			8.8	43.7
103			2.0	50.5
T.P.	12.84	65.21	0.11	52.37
104			7.6	57.6
T.P.	12.06	77.23	0.04	65.17
105			11.8	65.4
106			6.3	70.9
107			1.4	75.8

Top of meter (opp. Santa Fe underpass)

(cont.)

		77.23		
T.P.	12.95	90.01	0.17	77.06
108			12.7	77.3
109			11.9	78.1
110			11.3	78.7
111			8.4	81.6
112			3.8	86.2
TP	12.37	102.16	0.22	89.79
113			10.4	91.8
113+21			9.1	93.06
114			8.0	94.2
115			6.2	96.0
116			6.0	96.2
117			5.3	96.9
118			7.2	95.0
T.P.	5.57	100.42	7.31	94.85
119			5.1	95.3
120			5.0	95.4
121			4.8	95.6
122			3.6	96.8
123			2.6	97.8

Petcock air valve at 13th St

		(cont.)		
		100.42		
124			0.9	99.6
T.P.	13.06	113.11	0.37	100.08
125			9.7	103.4
126			7.1	106.0
127			4.3	108.8
128			1.3	111.8
T.P.	10.50	123.24	0.37	112.74
129			9.0	114.2
130			6.6	116.6
130+05			5.8	117.44
131			5.4	117.8
132			5.5	117.7
133			4.5	118.7
134			3.6	119.6
135			3.1	120.1
T.P.	5.99	126.13	3.10	120.14
136			6.0	120.1
137			5.2	120.9
138			5.5	120.6
139			4.5	121.6

Petcock at air valve at 9th St

(cont.)

		126.13		
140			3.0	123.1
T.P.	9.00	133.90	1.23	124.90
141			10.2	123.7
142			8.1	125.8
143			7.2	126.7
144			5.7	128.2
145			3.8	130.1
146			1.6	132.3
T.P.	13.04	146.22	0.72	133.18
147			12.1	134.1
148			9.8	136.4
149			7.6	138.6
150			5.4	140.8
151			3.2	143.0
152			1.1	145.1
T.P.	12.25	157.41	1.06	145.16
153			10.4	147.0
154			8.8	148.6
155			6.5	150.9
156			4.0	153.4

(cont.)

		157.41		
157			1.5	155.9
T.P.	12.13	168.79	0.75	156.66
158			12.0	156.8
159			10.7	158.1
160			9.4	159.4
161			9.6	159.2
161+90			10.9	157.9
162			5.4	163.4
T.P	2.77	164.41	7.15	161.64
163			5.0	159.4
164			6.3	158.1
165			7.3	157.1
166			8.8	155.6
T.P	0.13	156.53	8.01	156.40
167+10			2.1	154.4
168			6.6	149.9
169			11.6	144.9
T.P.	0.37	144.19	12.71	143.82
T.P			2.63	141.56
170			7.4	139.8

Top of 8" pipe at tee at surge line

On top of bank (for later use)

		(cont.)		
		144.19		
171			9.6	134.6
T.P.	0.15	131.45	12.89	131.30
172			1.7	129.8
173			6.7	124.8
174			11.8	119.7
T.P.	5.35	123.78	13.02	118.43
175			9.0	114.8
T.P.	2.86	144.42		141.56
175+31			5.4	139.02 ✓
176			6.7	137.7
177			8.0	136.4
178			10.1	134.3
179			10.3	134.1
TP	1.24	133.18	12.48	131.94
180			3.1	130.1
181			5.3	127.9
182			6.4	126.8
183			8.6	124.6
TP	2.50	127.09	8.59	124.59

4.3 in s.e.

E. face Hwy.

Base of cliff - pipe makes 90° bend up cliff.

Set on top of bank - from page 38

Pet cock of air valve - top of bank above Hwy

(cont.)

127.09

183+64	3.9	123.2	Top of 1" air valve - 4' Rt Sta 183+64
"	4.5	122.6	Top of meter - 6' Rt Sta 183+64
184	4.6	122.5	
184+53	3.2	123.9	Top of stem on 18" G.V.
184+63	5.4	121.7	Top of pet cock on top of pipe

Pressure readings on Torrey Pines pipe line.

Hill
Soper

5/24/40

Sta.	Elev. of petcock	Elev. of gauge	gauge reading	Cor. gauge reading	Time
74+79	19.57	19.42	70.50	70.25	10:05 A.M.
80+88	32.42	31.78	64.70	64.45	10:20 "
81+18	35.21	34.14	63.40	63.15	10:30 "
87+72	31.33	30.86	63.95	63.70	10:50 "
113+21	93.06	92.84	34.05	33.80	11:10 "
130+05	117.44	117.14	21.80	21.55	11:25 "
175+31	139.02				
184+63	121.70	121.87	3.50	3.25	11:55 "

N.B. res. gauge Lockwood-Mesa
3.7 = El. 201.8.

Leak at petcock might have affected pressure.

Petcock not threaded - Opened however but no pressure

Station	Flow	Res. water level	Time
Lockwood Mesa	3.25 MG.	3.70'	9 AM
"		3.70	10 "
"		3.65	11 "
"		3.60	12 M
Torrey Pines	Simplex meter 26,187,000		8:30 AM.
"		4.00'	9 AM
"		4.00	10 "
"		3.11	11 "
"		3.10	12 M

Above info. from Fred Lauterbach.

Pressure gauge readings Torrey Pines Pipe Line

Sta.	Elev. of petcock	Elev. of gauge	Gauge Reading	Cor. gauge reading	Time
20+38	13.4	13.2	80.00	79.75	9:15 AM
48+01	7.8 ortega st.	10.17	78.10	77.85	9:35 "
59+37	12.9	13.85	75.10	74.85	9:45 "
65+48	20.1	19.70	71.80	71.55	9:53 "
80+88	32.4	31.55	64.80	64.55	10:00 "
81+18	35.2	34.15	63.50	63.25	10:05 "
87+72	31.3	31.80	63.60	63.35	10:15 "
74+79	19.6	19.40	70.80	70.55	10:30 "
113+21	93.1	92.90	34.10	33.85	10:35 "
130+05	117.4	117.10	22.00	21.75	10:45 "
160+00	ground at 160+00 159.9	158.0 petcock (water just blows 157.8 top of pipe			11:00 "

Lockwood Mesa

Gauge (Res.) 5.45 9 A.M.

" " 5.40 10 "

" " 5.30 11 "

" " 5.20 12 M

Meter 3.16 M.G.D. 9 A.M.

" 3.08 " 12 M.

Torrey Pines

Res. Gauge 4.92 9 A.M.

" " 4.83 10 "

" " 4.75 11 "

" " 4.67 12 M.

Simplex Meter 5-5,922,000 8:00 A.M.

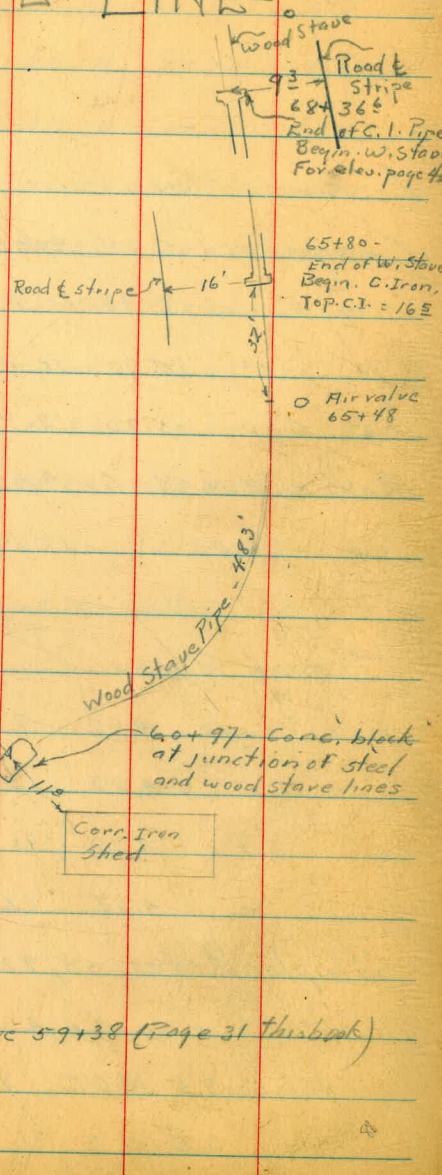
" " 5-6,410,000 11:25 A.M.

Flow 3.5 M.G.D. 8 A.M.

" 3.6 " 11:25 "

4/3/41
Soper
Brooks
Hodgeson

SAN DIEGUITO PIPE LINE



Profile and Alignment of existing Wood Stave Pipe. at Hwy overpass, North of Del Mar.

B.M	9.20	30.29		21.09
"	11.30	37.32	4.27	26.02
80+30 P.L. Sta				
18.5 Rt of 121+06 State Hwy. & Sta.			8.6	28.7
"			12.2	25.1
80+35			3.6	33.7
80+70			4.1	33.2
80+78			7.1	30.2
80+85 P.L.				
20.5 Rt of 120+50 S. Hwy.			7.9	29.4
"			7.1	30.2
81+18			4.8	32.5
81+35 P.L.				
21.3 Rt of 120+00 S. Hwy			7.4	29.9
"			6.6	30.7
81+70			7.2	30.1

U.S.C. & G.S.B.M. "V-131. Brass plate in Hwy overpass
Elev. given by a State Hwy Engineer

Top of 16" W. Stave P.L. Pipe exposed here. (inside diameter)

ground (in wash

Sketch of ℄ of Hwy & P.L.

ground

ground

ground.

Top 16" W.S.

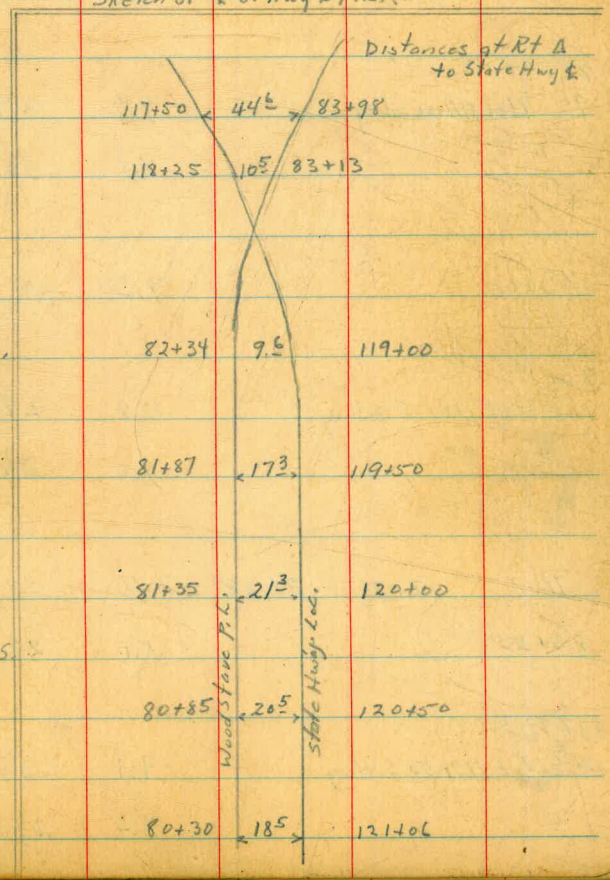
ground.

ground

Top of 16" W.S.

ground

ground



		37.32			
		7.6			
		30.72			
81+87 P.L.					
173 Rt of S. Hwy 119+50			7.6	29.7	Top 16" W.S.
"			6.1	31.2	ground
82+00			6.1	31.2	
125			4.6	32.7	
82+34 P.L.					
96 Rt of 119+00 S. Hwy			7.9	29.4	Top of 16" W.S
"			7.1	30.2	ground
83+00			9.3	28.0	
83+13					
105 Lt of 118+25 S. Hwy			12.8	24.5	Top 16" W.S.
"			10.0	27.3	ground
II	2.12	31.28	8.16	29.16	
83+50			5.1	26.2	ground
83+98 P.L.					
44 Lt of 117+50 S. Hwy			9.1	22.2	Top of 16" W.S.
"			7.3	24.0	ground

Elev. of top of 16" C.I. Pipe at Sta 68+36 ℄

B.M.	4.67	25.76		21.09
TP	2.74	21.11	7.39	18.37
Set B.M.	3.41	17.17	7.35	13.76
			8.37	8.80
B.M.	8.22	21.98		13.76
			2.5	19.5

7/3/42
Soper
King
Davis

4C

U.S.C.&G.S. B.M.

Nail in power pole.

Top of 16" C.I.P. Sta 68+36 ℄

Pet cock on air valve, 65+48. Rec 20.1 (page 31)

San Dieguito P.L.

Pipeline relocation from end of C.I.P. for 2000'

70+48.79 E.C.

Δ = 20°36'.24	70+48.79 =		10°03'.0
R = 600'		70+00	7°43'.2
T = 106.34		450	5°20'.0
L = 210.49		69+00	2°59.9
def 1' = 0°02.86	68+50 -		0°33.5
def 50 = 2°23.239			

Void see p. 72

68+38.3 B.C.

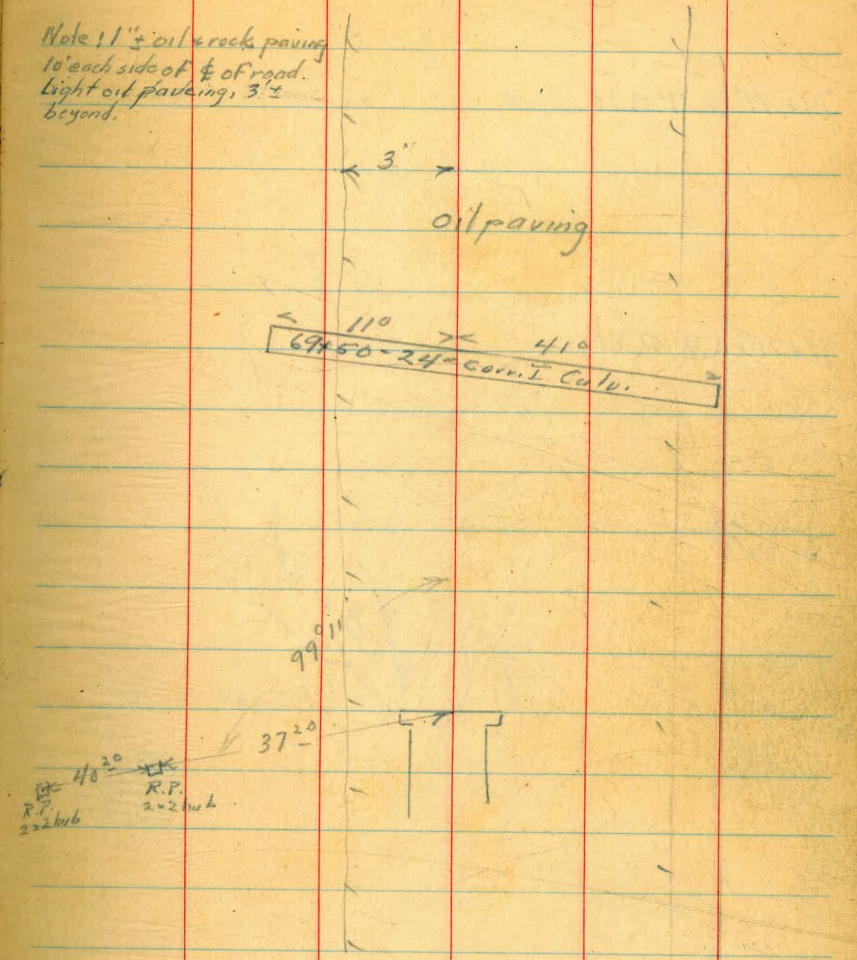
68+36.6 End of C.I. Beginning of wood stave

7/6/42
Hill
Soper
King
Davis

47

℄

Note: 11'± oil & rock paving 10' each side of ℄ of road. Light oil paving, 3'± beyond.



○ Air valve, 65+48

℄

79+41 — Δ 9°52' Lt

78+50 — Δ 9°51' Rt

old

℄

oilpaving

79+41

73+76 ← 10° → Sewer M.H.

900

127+51 15/55

73+71.65

127+41.42 54

P.O.T. St. Hwy.

Wood Stave

10°

℄

℄

81+18 P.V.

80+85 C.V.

80+78 P.V.

℄

void

For ties to State Hwy page 44

80+30 ahead
80+18.93 back

88+48 End of Loc.

87+33

Void

87+73 ⊙ Air valve

	8.22	21.98		13.76
68+36 E			7.6	14.4
"				8.80
68+50			7.7	
69+00			7.8	
			14.2	7.8
			?	
69+50			8.1	
70+00			7.7	
PI	6.87	21.14	7.71	14.27
70+48.79 E.C.			6.7	
71+00			6.4	
72+00			5.3	

Void

Top of 6" C.I. Pipe (page 46)

Flow of 24" Corr. F. Culv. No Lt 69+50

" " " " " " 41° Rt 69+50

		21.14		
73+00			4.7	
74			4.3	
75			3.4	
76			1.7	
TP	12.91	32.95	1.16	20.04
77			10.5	
78	Void		5.2	
+50 Δ			2.0	
TP	8.17	40.72	0.40	32.55
79+41			3.6	
+50			3.1	

		40.72			
79+60			3.0		edge of road fill
80+00			6.8		
+16			8.3		
TP	4.97	32.90	12.79	27.93	
ck on B.M.			11.85	21.05	Rec. 21.09
80+30 R.L.				28.7	Top 16" I.D. wood stave (copied from page 44)
"				25.1	ground
+35				33.7	gr.
+70				33.2	gr.
+78				30.2	gr
80+85				29.4	Top W.S.
"				30.2	gr.
81+18				32.5	gr
81+35				29.9	Top W.S.
"				30.7	gr.

Void

		32.90			
81+70				30.1	gr.
TP	6.84	34.13	5.61	27.29	
81+87				29.7	Top W.S.
"				31.2	gr.
82+00				31.2	gr.
+25				32.7	gr.
82+34		Void		29.4	Top W.S.
"				30.2	gr.
83+00				28.0	
83+13				24.5	Top W.S.
"				27.3	gr.
83+58				26.2	
83+98				22.2	Top W.S.
"				24.0	gr.

	34.13			
85+00		8.2		
86		5.7		
87		3.8		
88		4.0		
+48		3.7		
Sc+B.M.		2.09	32.04	Top of 3/4" plug, top of A.V. 87+73

Void

Lockwood Mesa Torrey Pines Pipe Line

San Dieguito P.L. A.H. 1111.

Pipeline revision, 2000' South from end of C.I.P. ("H" line)

Δ = 20°06'24"

R = 800'

T = 141.78

L = 280.65

defl' = 2.149

def 50' = 1°47.429

141.75 E.C.	10°03.0
71+00	8°33.3
+50	6°45.8
70+00	4°58.4
+50	3°11.0
69+00	1°23.5

68+61 - B.C.

68+36.6 End of C.I.P. Beginning of wood stave

Void See P. 12

7/8/42
Soper
King
Davis

56

69+50

Approx. ℄ wood stave

oil paving

99.91'

37.20

40.20

R.P. 2x2 hub

R.P. 2x2 hub

Note: 1" ± oil & rock paving 10' each side of road & 3' ± light oil pave. beyond

Air valve 65+48

℄

73+74 $\frac{62}{}$ Δ 2°08' Rt

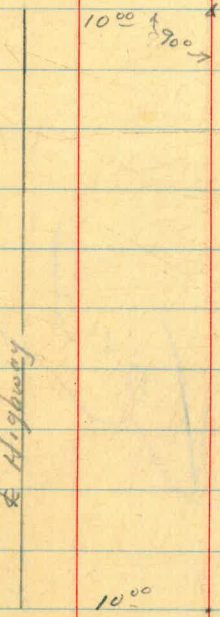
Void

71+41 $\frac{25}{}$ E.C.

127+51 $\frac{15}{55}$

127+41 $\frac{82}{54}$ P.O.T.

State Hwy Sta.



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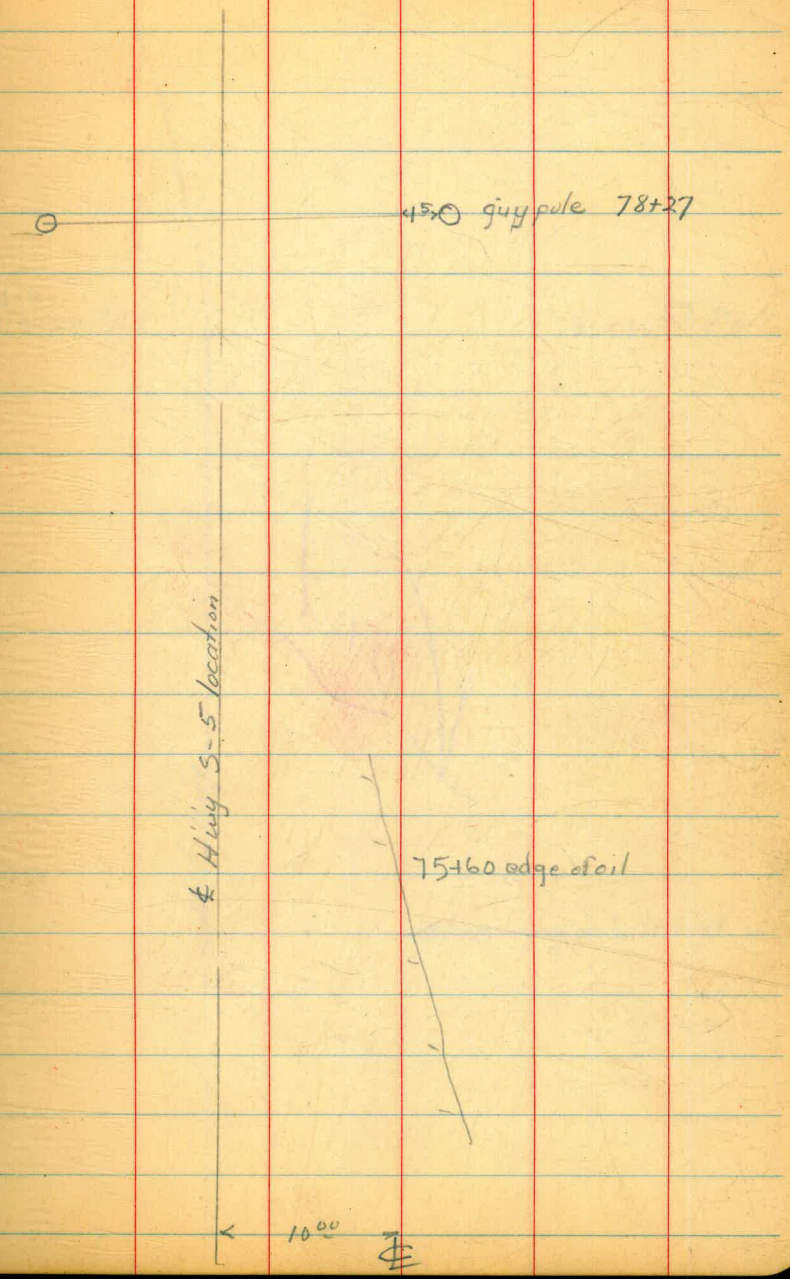

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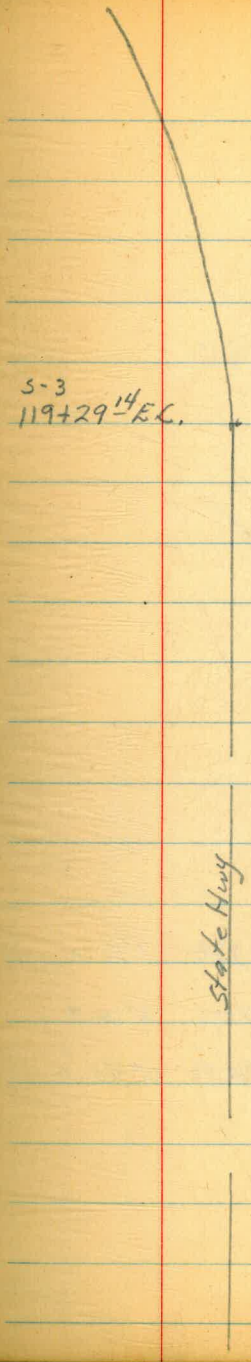


88+49.4 Previous Loc.
88+37 "A" line (end of loc.)

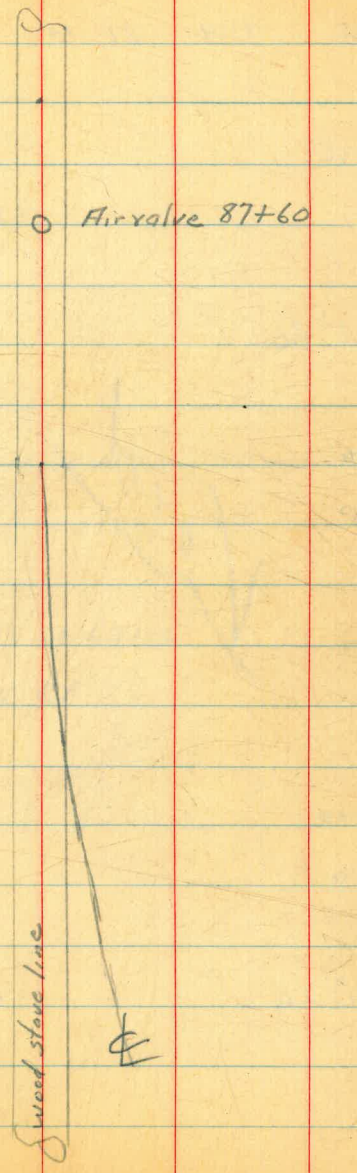
Void

84+37.95 E.C.

Δ = 6°32' Rt
R = 1000'
T = 57.08
L = 114.10
def i' = 1.719
def 50 = 1025.944

83+23.85 B.C.

+37.95	3°16.0
84+00	2°10.9
83+50	0°45.0



7/8/42
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King
Davis

61

℄ Profile of "A" line.

B.M.	7.39	21	15	13.76
68+36			6.8	14.4
"				8.80
68+61 - BC.			6.9	14.3
69+00			6.8	14.4
+50			6.6	14.6
			13.3	7.9
70+00			6.1	15.1
+50			5.6	15.6
71			5.2	16.0
+41.75 EC.			4.8	16.4
72			4.5	16.7

Top 16" C.I.P. (page 46)

Fl line 24" Corr. I. Culv. 17' Lt 69+50

" " " " " " 35' Rt "

		21.15		
73+00			4.0	17.2
73+74.62 Δ			3.7	17.5
PI	13.00	30.56	3.59	17.56
74+00			13.0	17.56
75+00			12.4	18.16
76+00			11.2	19.36
7+36			11.5	19.06
+69			8.2	22.36
77			8.6	21.96
78			6.4	24.16
79			5.3	25.26

Void

		30.56		
TP	8.81	33.22	6.15	24.41
79+50			9.8	23.4
80			5.9	27.3
+11			10.2	23.0
+23			6.8	26.4
81	Void		7.7	25.5
82			4.9	28.3
+30			3.9	29.3
83			6.2	27.0
TP	7.70	34.04	6.88	26.34
+23 85 Bk.			8.0	26.0
+50			8.3	25.7

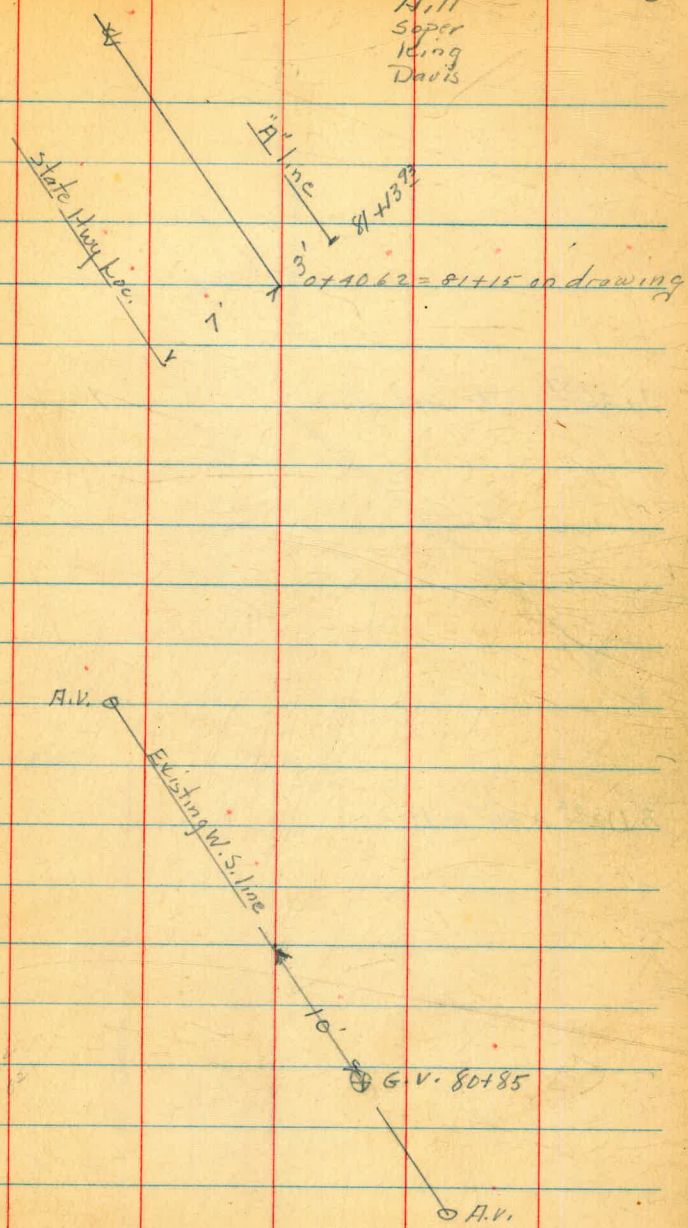
drain ditch

		34.04		
83+85		10.0	24.0	
84		9.6	24.4	
+37.5		9.7	24.3	
85		8.2	25.8	
86	Void	4.6	29.4	
87		3.7	30.3	
88		3.1	30.9	
88+37		3.7	30.3	
ck on B.M.		1.99	32.05	Rec. 32.04

7/20/42
H.H.
Soper
King
Davis

Relocation under Del Mar overpass - "B" line

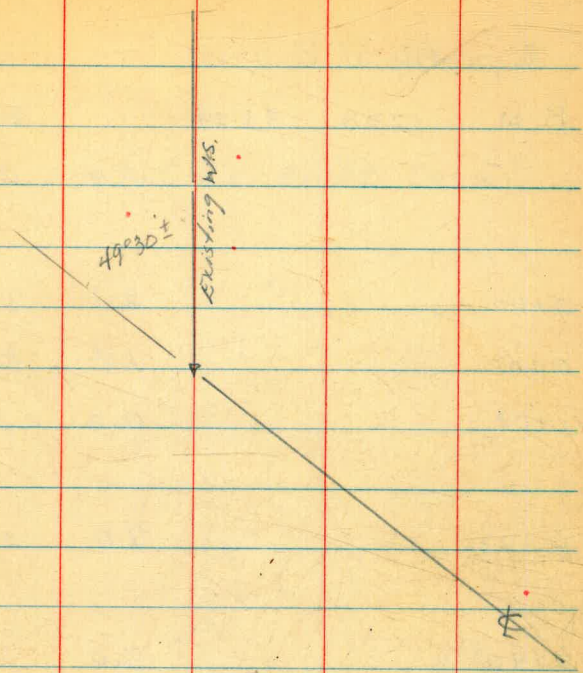
0+40.62 Δ 39°54' Lt

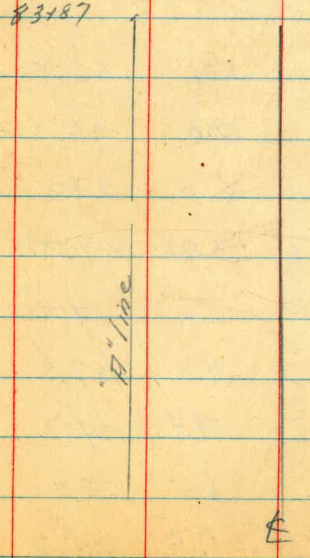


0+00 Δ 45°00' Rt (from existing line)

3+26.37 = ℄ wood stake

3+12.82 Δ 45°00' Lt





℄ profile of "B" line

B.M.	12.20	33.29		21.09	U.S.C.& G.B.M.
			3.9	29.4	Top of 16" W.S. pipe at G.V. 80+85 (0-10)
0+00			2.1	31.2	
0+05			1.4	31.9	
0+08			0.0	33.3	
0+22			7.0	26.3	
0+40 62 A			8.0	25.3	
0+82			6.4	26.9	
1+00			7.0	26.3	
1+03			6.0	27.3	
TP	2.35	31.72	3.92	29.37	
1+50			2.6	29.1	
2+00			4.4	27.3	
3+00			7.7	24.0	
3+12 82 A			8.5	23.2	
+26 37			7.4	24.3	
			9.7	22.0	Top W.S. at 3+26 37

Profile of 6' (to left) offsets A-1-line

B.M.	11.66	32.75		21.09	U.S.C. + G. B.M.
81+15 Δ (0+46.3 "A" line)			6.9	25.8'	23.92	1.9'
+50			5.8	26.9'	24.13	2.8'
82+00			4.3	28.4'	24.43	4.0'
+50 ×			4.1	28.6'	24.73	3.9'
83+00			3.7	29.0'	23.32	5.7' (83+00 - 6' Rt - Elev. 26.5, Grade 23.3, cut 3.2
+60			7.7	25.0'	21.7	3.3'
+87 ×			8.7	24.0'	21.0	3.0'
Top of pipe 3+26.37			10.7	22.0'	Rec. 22.0	

℄ Profile of Relocation made in office

B.M.	8.60	29.69		21.09
73+74.63			12.2	17.5
74+00			12.1	17.6
+50			12.0	17.7
75			11.5	18.2
+50			11.0	18.7
76			10.2	19.5
+42			9.9	19.8
+72			7.3	22.4
77			7.1	22.6
+50			5.9	23.8
78			4.7	25.0
+50			2.9	26.8
79			3.9	25.8
+50			6.0	23.7
80			2.4	27.3
+08			3.0	26.7
+14			6.6	23.1
+23			3.0	26.7

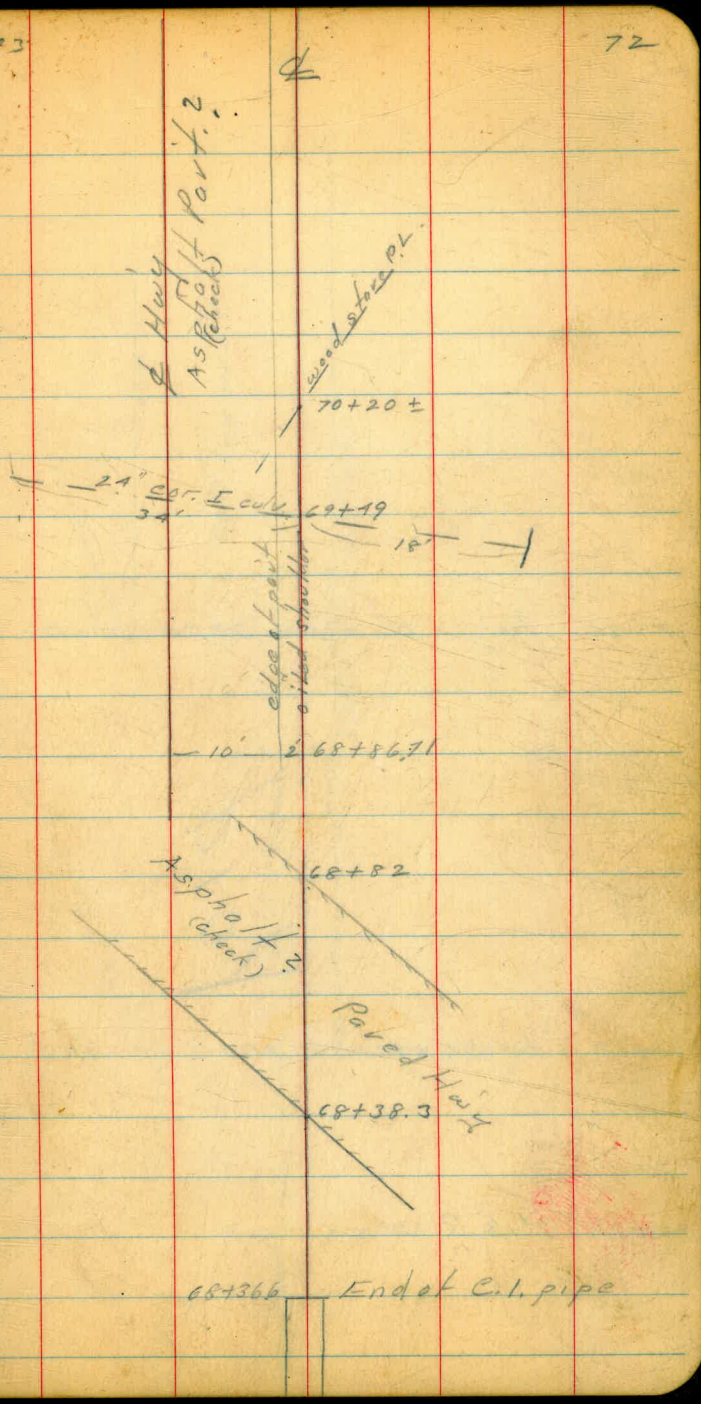
	29.69			
80+50	~~Void~~	3.5	26.2	
81		4.0	25.7	
81+15		4.3	25.4	
B M.		8.60	31.09	21.09

Pipeline loc. from S. end of C.I. to N. end of steel lined concr. pipe at Delmar after completion of State Hwy. one way road.

3/8/43
Hill
King
Otten

68+48.1	9°03' EC		
70	6°18'	Δ 18°06' Lt	
		R. 600'	
68+0	3°26'	L 157.95'	
		T. 79.61	
69	0°31'		
68+90.9	BC.		
68+86.71	Δ 21°30' L		
68+38.3	Δ 22°30' R.		
68+36.6	Backsight on air valve 360° ±		

VOID

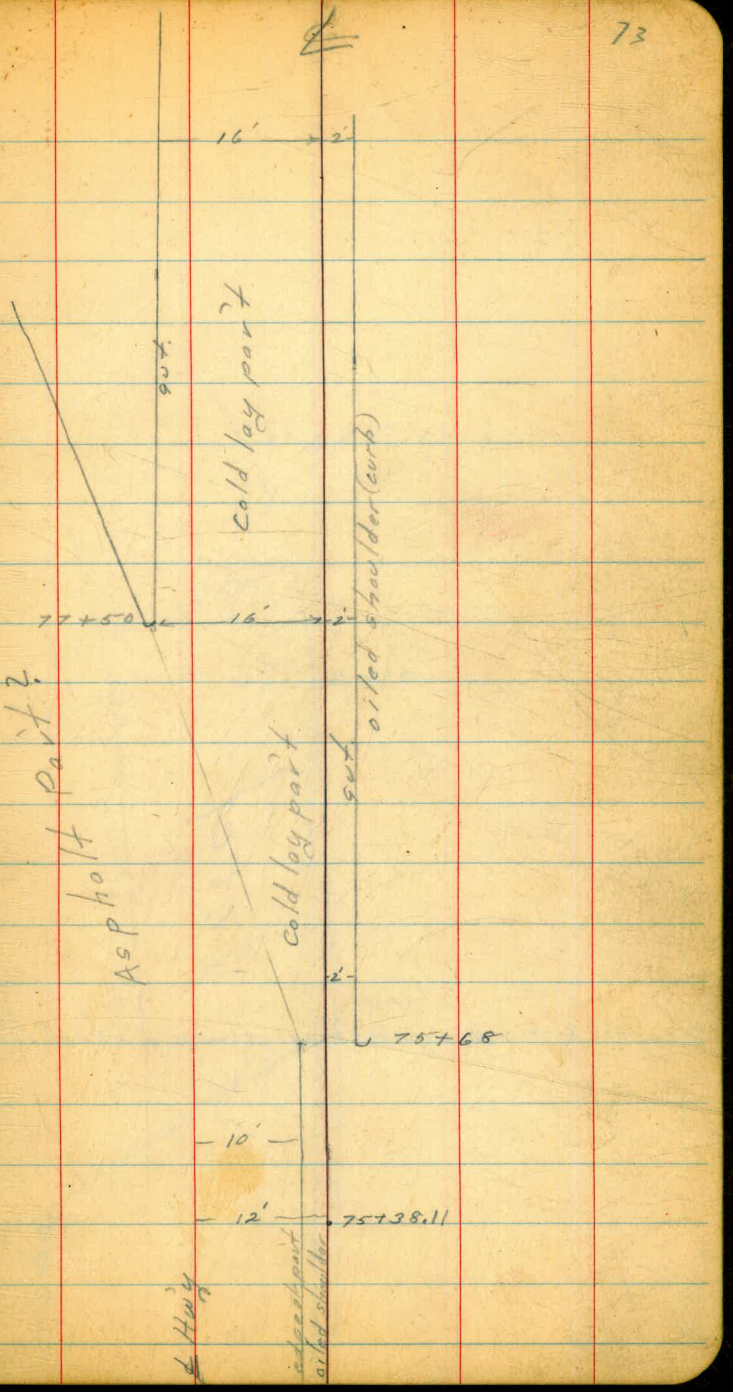


77+50 begin of road separation

Void

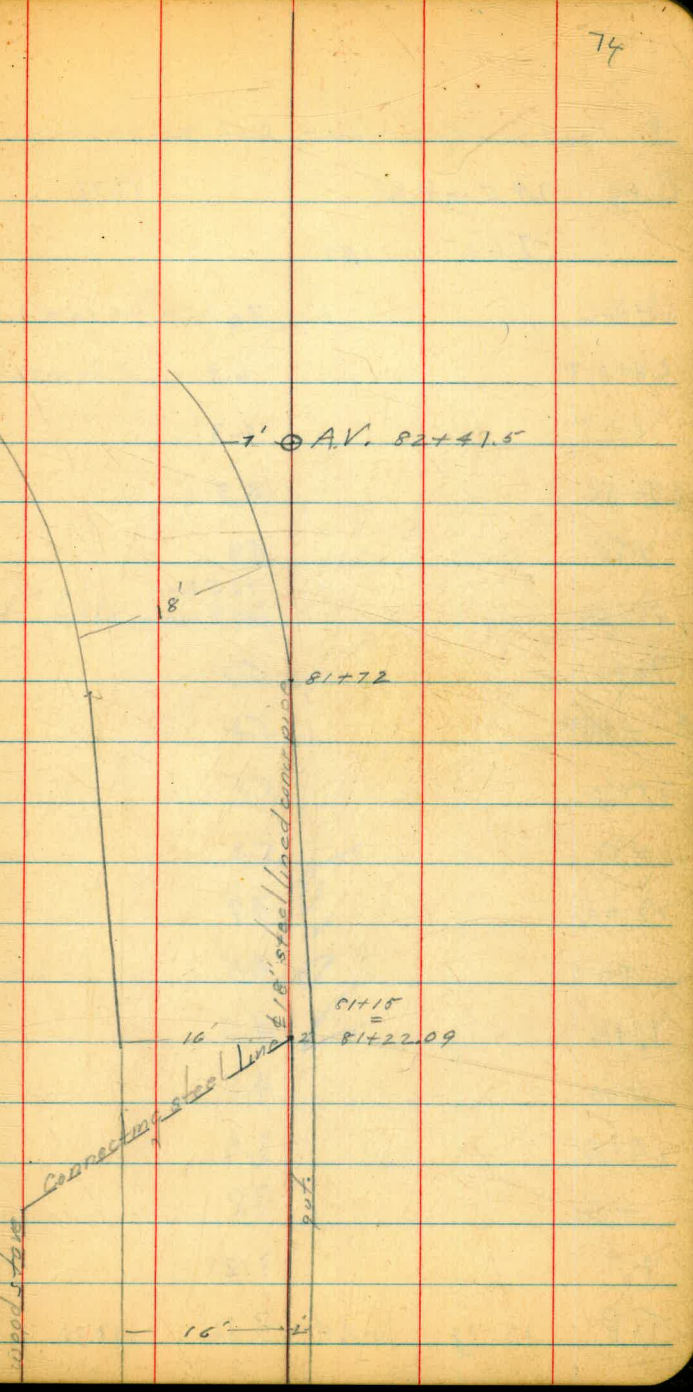
76+68 begin of new oneway road

75+38.11 2°13' R



Void

81+22.09 Δ 3°19' R. junction concr. & steel lines



King
Otten
7-10-97

& Profile - Revision - Del Mar overhead

B.M.	Lt. King Pole			13.74	
	7.66	2142			
68+36.6			7.0	14.4	5.6' lower to top of exist C.I. pipe
68+81.7'			6.3		Edge Pavement
+86.7'			6.3		
69+00			6.3		
+50			5.9		
69+58			13.5 East 14.7 West		Ft. 24" C.M.P.
70+00			5.7		
EC. +48.04			5.8		
71+00			5.6		
+50			5.2		
72+00			4.9		
+50			4.5		
73+00			4.3		
+50			4.1		
74+00			3.9		
+50			3.8		
75			3.2		
T.P.	12-73	3064	3.11	18.31	

Void

	30.64			
△ 75+38.11		11.9		
+50		11.7		
76+00		10.8		
+50		9.3		
77+00		7.6		
+50		5.8		
78+00		4.3		
+50		3.8		
79+00		3.5		
+50		3.3		
80+00		3.3		
+50		2.9		
81+00		2.8		
+22.09		2.7	27.9	4' lower to bot. of 18" steel lined concr. pipe.
B.M.		9.55	21.09 21.09	U.S.C.&G.S. B.M.

Void

King
Ward
Klinger
Leonard

1-12-46

Levels From Lockwood Mesa P.I. to Del Mar Res.

B.M.	7.76	21.52		13.76
TP	12.61	33.94	0.19	21.33
T.P.	13.09	46.69	0.34	33.60
T.P	12.15	58.77	0.07	46.62
TP	12.98	71.19	0.56	58.21
TP	12.55	83.41	0.33	70.86
TP	12.57	95.97	0.01	83.40
TP	13.00	108.50	0.47	95.50
TP	12.35	120.41	0.44	108.06
TP	12.49	132.01	0.89	119.52
TP	11.92	142.47	1.46	130.55
TP	12.43	154.70	0.20	142.27
TP	12.51	166.29	0.92	153.78
TP	6.84	171.94	1.19	165.10
			2.10	169.84
			4.51	167.43
			4.36	167.58
			4.25	167.69
			4.31	167.63

Na. / IN T. Pole See page 46. USC+GS

Top INLet Tower ✓

Top wall - N.E. Cor.

" " N.W. Cor.

" " S.W. Cor.

" " S.E Cor.

		171.94		
			12.97	158.97
			12.89	159.05
			12.74	159.20
			12.47	159.47
			12.46	159.48
			8.05	163.89
			5.60	166.34
B.M.	0.77	168.07	3.64	168.30
T.P.	0.41	157.07	12.41	156.66
T.P.	0.10	146.94	10.23	146.84
T.P.	1.53	137.89	10.58	136.36
T.P.	0.54	126.09	12.34	125.55
T.P.	1.49	115.58	12.00	114.09
T.P.	0.22	102.71	13.09	102.49
T.P.	0.32	90.27	12.76	89.95
T.P.	0.42	78.42	12.27	78.00
T.P.	0.24	65.56	13.10	65.32
T.P.	0.42	53.50	12.48	53.08
T.P.	0.61	42.85	11.26	42.24
T.P.	0.65	30.62	12.88	29.97

Bottom Res. N.E. Cor.

Center North side - Think this is outlet

Bottom Res. N.W. Cor.

" " S.W. Cor.

" " S.E. Cor.

Water level - Jan. 12-1946 1 P.M.

Bottom 10" over Flow Pipe - thru conc. Wall

North side inlet Tower

		30.62			
T.P.	2.45	20.82	12.25	18.37	
B.M.			7.04	13.78	13.74

Nail in T. Pole · See page 46

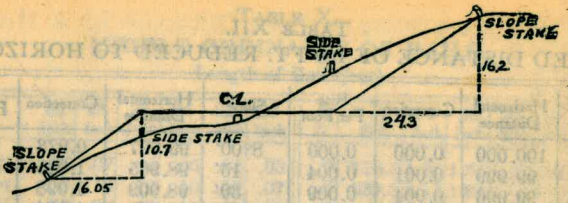
10' from G. valve

to 83+87 = 10' W. of P2 -

IMPROVED TABLES

AND

INFORMATION



DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING.

SLOPE 1½ TO 1. ROADWAY OF ANY WIDTH.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0 00	0 15	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	0
1	1.50	1 65	1 80	1.95	2.10	2.25	2.40	2.55	2.70	2.85	1
2	3.00	3.15	3.30	3 45	3.60	3 75	3.90	4.05	4.20	4 35	2
3	4.50	4 65	4.80	4.95	5.10	5 25	5 40	5.55	5.70	5.85	3
4	6.00	6 15	6.30	6.45	6.60	6.75	6.90	7.05	7.20	7.35	4
5	7 50	7.65	7.80	7.95	8.10	8.25	8.40	8.55	8.70	8.85	5
6	9 00	9 15	9.30	9.45	9.60	9.75	9.90	10.05	10.20	10.35	6
7	10.50	10 65	10.80	10.95	11.10	11.25	11.40	11.55	11 70	11.85	7
8	12.00	12 15	12.30	12.45	12.60	12.75	12.90	13.05	13.20	13.35	8
9	13 50	13.65	13 80	13 95	14.10	14.25	14.40	14 55	14.70	14.85	9
10	15.00	15 15	15 30	15 45	15.60	15.75	15.90	16.05	16.20	16 35	10
11	16 50	16 65	16 80	16.95	17 10	17.25	17.40	17.55	17.70	17.85	11
12	18 00	18.15	18.30	18 45	18.60	18 75	18.90	19.05	19.20	19.35	12
13	19 50	19 65	19.80	19.95	20.10	20.25	20 40	20.55	20.70	20.85	13
14	21.00	21 15	21.30	21.45	21 60	21.75	21.90	22 05	22 20	22 35	14
15	22 50	22 65	22 80	22 95	23.10	23.25	23.40	23.55	23.70	23.85	15
16	24.00	24 15	24 30	24 45	24.60	24.75	24 90	25 05	25.20	25.35	16
17	25.50	25 65	25.80	25 95	26.10	26 25	26 40	26.55	26.70	26.85	17
18	27.00	27 15	27.30	27 45	27.60	27.75	27.90	28.05	28 20	28.35	18
19	28 50	28 65	28 80	28.95	29.10	29.25	29.40	29.55	29.70	29.85	19
20	30 00	30.15	30.30	30.45	30.60	30.75	30.90	31.05	31.20	31.35	20
21	31 50	31 65	31.80	31.95	32 10	32 25	32.40	32.55	32 70	32 85	21
22	33 00	33 15	33 30	33 45	33.60	33 75	33.90	34.05	34.20	34.35	22
23	34 50	34 65	34.80	34.95	35.10	35 25	35 40	35.55	35.70	35 85	23
24	36.00	36 15	36.30	36 45	36.60	36.75	36.90	37.05	37.20	37.35	24
25	37.50	37.65	37 80	37.95	38.10	38.25	38.40	38.55	38.70	38.85	25
26	39 00	39 15	39.30	39 45	39 60	39.75	39.90	40.05	40.20	40.35	26
27	40 50	40 65	40 80	40.95	41.10	41.25	41 40	41.55	41.70	41.85	27
28	42 00	42 15	42.30	42.45	42.60	42 75	42.90	43.05	43.20	43.35	28
29	43 50	43 65	43.80	43 95	44.10	44 25	44 40	44.55	44.70	44 85	29
30	45 00	45 15	45.30	45 45	45.60	45.75	45.90	46.05	46 20	46.35	30
31	46.50	46.65	46.80	46 95	47.10	47.25	47.40	47.55	47.70	47.85	31
32	48 00	48.15	48.30	48 45	48.60	48 75	48.90	49.05	49 20	49.35	32
33	49.50	49 65	49.80	49.95	50.10	50.25	50.40	50.55	50.70	50.85	33
34	51 00	51.15	51.30	51.45	51.60	51.75	51.90	52.05	52.20	52.35	34
35	52 50	52.65	52.80	52.95	53.10	53.25	53.40	53.55	53.70	53.85	35
36	54 00	54.15	54.30	54 45	54.60	54.75	54.90	55.05	55.20	55.35	36
37	55 50	55 65	55.80	55.95	56.10	56.25	56.40	56.55	56.70	56.85	37
38	57.00	57.15	57.30	57 45	57.60	57.75	57.90	58.05	58.20	58 35	38
39	58 50	58.65	58 80	58.95	59.10	59 25	59.40	59 55	59.70	59.85	39
40	60 00	60.15	60 30	60 45	60 60	60.75	60 90	61.05	61 20	61.35	40
41	61.50	61 65	61 80	61 95	62 10	62 25	62.40	62 55	62 70	62.85	41
42	63 00	63.15	63 30	63 45	63 60	63 75	63 90	64 05	64 20	64.35	42
43	64.50	64 65	64 80	64.95	65.10	65 25	65 40	65.55	65.70	65.85	43
44	66 00	66 15	66 30	66.45	66.60	66.75	66.90	67.05	67.20	67.35	44
45	67 50	67 65	67 80	67.95	68.10	68.25	68.40	68.55	68.70	68.85	45
46	69 00	69 15	69 30	69.45	69.60	69.75	69.90	70.05	70.20	70.35	46
47	70.50	70 65	70 80	70 95	71.10	71.25	71.40	71.55	71.70	71.85	47
48	72.00	72 15	72.30	72.45	72.60	72.75	72.90	73 05	73.20	73 35	48
49	73 50	73 65	73.80	73.95	74.10	74.25	74.40	74.55	74.70	74.85	49
50	75.00	75.15	75.30	75.45	75.60	75.75	75.90	76.05	76.20	76.35	50

Computed by L. Leland Locke.

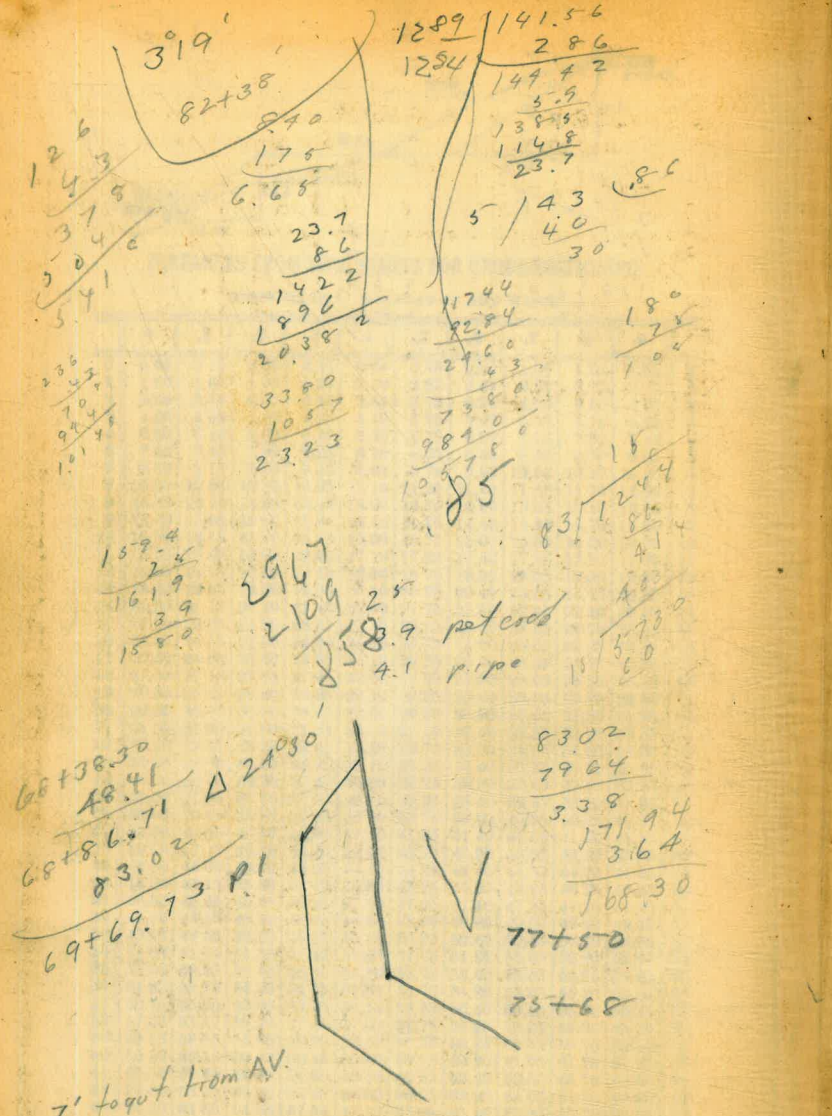
92.84
30.86
61.98
.43
18594
24792
26.55 14

63.70
37.22
2648

2647
1057
3722

63.70
26.65
37.05

1.48
.89
2.37
78
10.17



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.