



# EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and  
SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

Distances from Center of Roadway for Cross-Sectioning  
Roadway 16 feet wide. Side Slopes 1 on 1.  
For Single Track Embankment.

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

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 30.6. For same slopes but other widths of roadbed, correct above figures by one-half difference in width of roadbed; thus in example above, for 20 ft. roadbed distance will be  $30.6 - \frac{1}{2}(20 - 16) + 2$  or 2 ft. added to  $30.6 = 32.6$ . For slopes of 1 on  $1\frac{1}{2}$  see inside of back cover.  
Copyright, 1914, by Eugene Dietzgen Co.

# 1726

## CITY ENGINEER'S OFFICE

This Field Book is manufactured of a High Grade 50% Rag Paper having a WATER RESISTING SURFACE, and is sewed with Bing Special Enamel Waterproof thread.

Made in U. S. A.



Pages

Colina Del Sol Golf Fence check page 5

31-

La Jolla Park + Ravinia St.

40-44 -

X-Sept. Alley - Blk. 282 - Pac. Beach

45-50 -

X-Sept. Alley Federal Blvd subdivisions

55-56

Prop. Storm Drain Blk 15 La Jolla Park

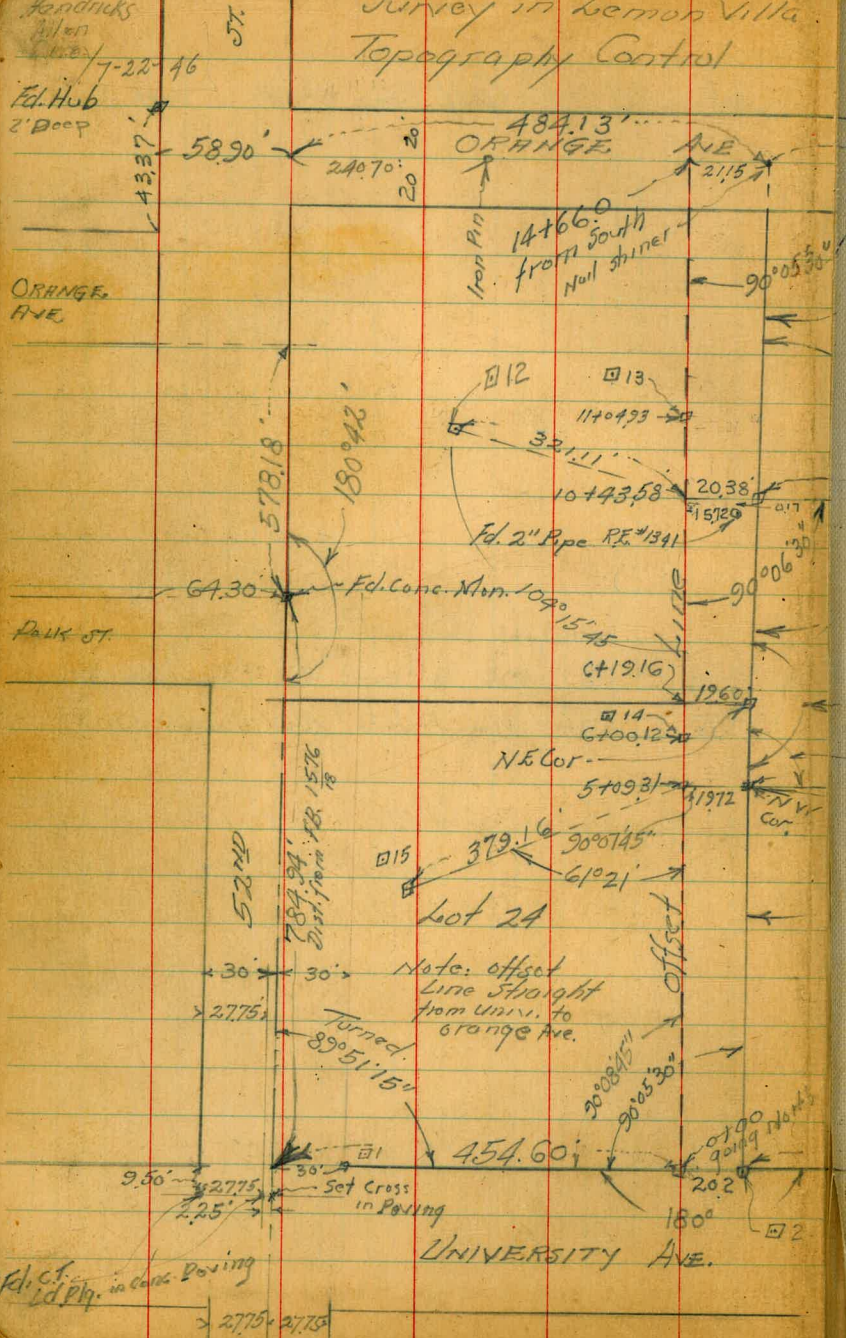
57-60

" " " Draper La Jolla Blvd. Clinic Silver



Hulker  
Handbook  
11/11/19

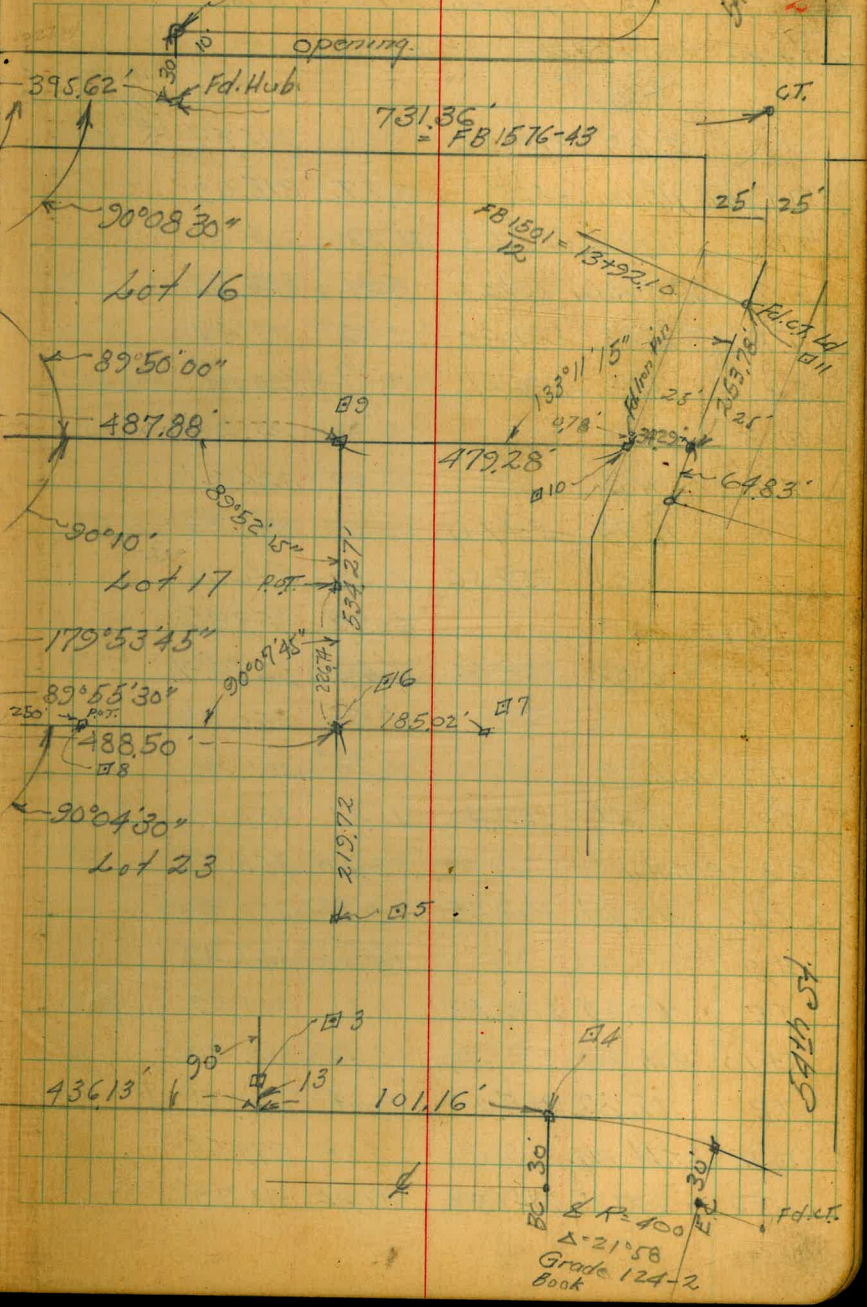
# Survey in Lemon Villa Topography Control



indexed  
c.s.k.

Fd. 1 1/2" Galv. Iron Pipe

5443 2



5443 5



Walker  
Handbook  
Allen  
Cove

Bench Marks  
for Topography Control Points

7-24-46 Sketch Page 2

B.M. N.W. BR  
UNIV. + 52nd  
FB 1576  
27

	2.89	318.46		315.57
□ 1 = Hub NE UNIV. = 52nd	3.37			315.09
T.P.	10.96	317.63	11.79	306.67
□ 2 = Hub SW Corner Lot 23	5.41			312.22
T.P.	11.83	322.30	0.16	317.47
T.P.	7.14	336.27	0.17	329.13
□ 3			2.06	334.21
□ 4 = B.C. Hub			10.00	326.27
T.P.	11.94	347.17	1.04	335.23
T.P.	13.08	359.86	0.39	346.78
□ 5 = Hub			6.50	353.36
T.P.	10.42	368.66	1.62	358.24
□ 6 = Hub			8.58	360.03
□ 7 = Hub			6.90	361.76
T.P.	5.21	362.40	11.47	357.19
□ 8 = P.O. Hub			9.20	353.20
T.P.	12.27	362.55	12.12	350.28
□ 9			15.08	347.47
T.P.	10.69	372.58	0.66	361.89
□ 10 Hub			3.79	368.79
T.P.	12.89	385.23	0.24	372.34
□ 11 C.T. W. Pk.			5.68	379.55
T.P.	0.71	374.50	11.44	373.79

Nail in  
Tel. Pole

T  
374.50

3

chk C.T. Id. Orange & 54th	10.66	363.84		
FB 1576				363.82
52				0.02
	9.96	382.01		372.05
Nail stinger 21.15 of 141.66	1.27			380.74
T.P.	11.44	393.11	0.34	381.67
Iron Pin 240.70 E. E. Line 52nd	2.40			390.71
Corrected	2.29	392.98		390.69 = Pin
T.P.	0.63	380.70	12.91	380.07
chk S.W. BR Orange & 52nd	3.17			377.53
				377.51 - B.M.
				0.02
	3.17	380.68		377.51
T.P.	2.46	370.64	12.50	368.18
□ 12			9.27	361.37
T.P.	0.95	358.84	12.75	357.89
□ 13			4.78	354.06
T.P.	1.22	347.34	12.72	346.12
T.P.	0.27	334.67	12.94	334.40
T.P.	4.14	337.38	1.43	333.24
□ 14			9.04	328.34
T.P.	1.38	325.97	12.79	324.59
T.P.	6.72	320.03	12.66	313.31
□ 15			9.46	310.57
chk B.M. BR Univ. & 52nd	4.48			315.55
				315.57
				0.02



PLEASE DO NOT USE PAGES  
4 TO 10 INC OF THIS BOOK -  
SO THAT NOTES MAY BE  
COMPLETED ON PREVIOUS  
PAGES AT A LATER DATE - G.W.E.

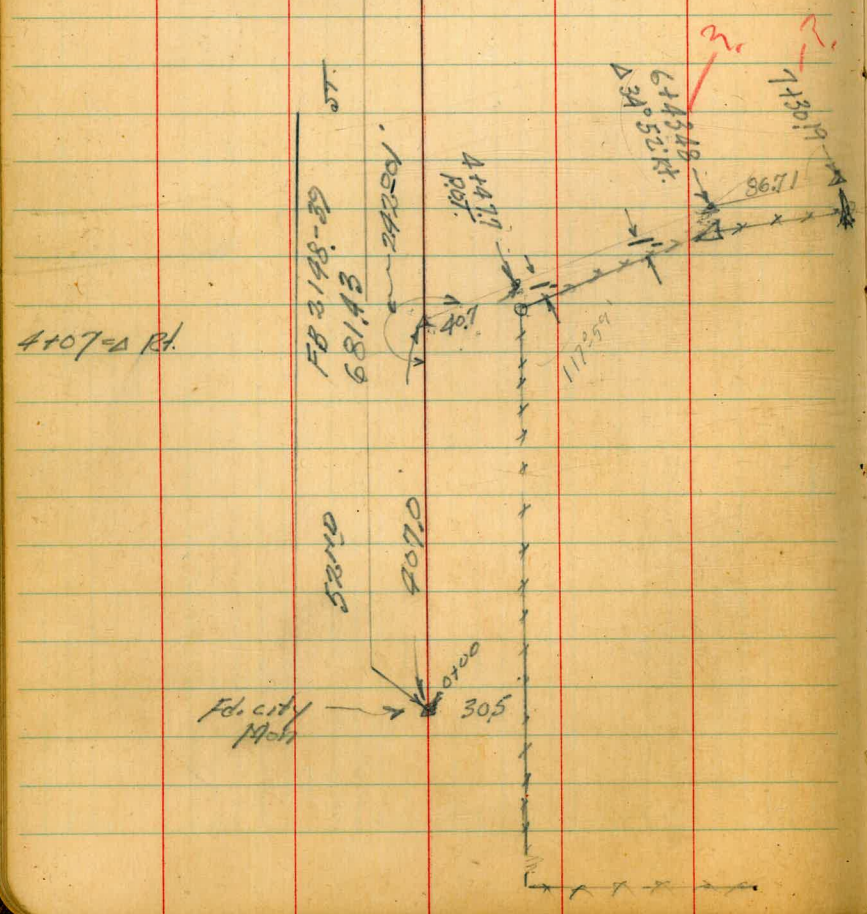
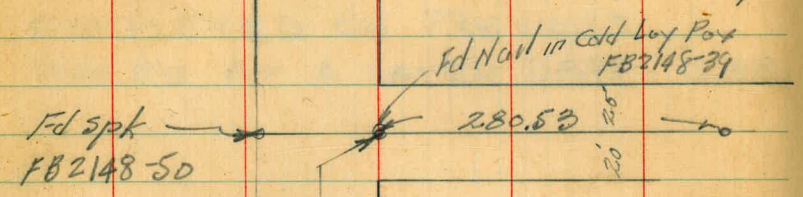


INDEXED  
JAN 16 1956

LOCATION - GOLF COURSE FENCE  
East of 52ND ST. And South of ORANGE AVE  
Location by Stadia From 7+30.19  
Azimuth Clockwise From Back sight

Walker  
Taffel  
Johns  
Elmore  
1-13-56

ORANGE AVE  
OR STA 6+43.48



531.43  
401.00  
277.43

643.48  
447.70  
195.78

270.00  
24.00  
27.00

10  
59



## STADIUM location Fence - Golf Course.

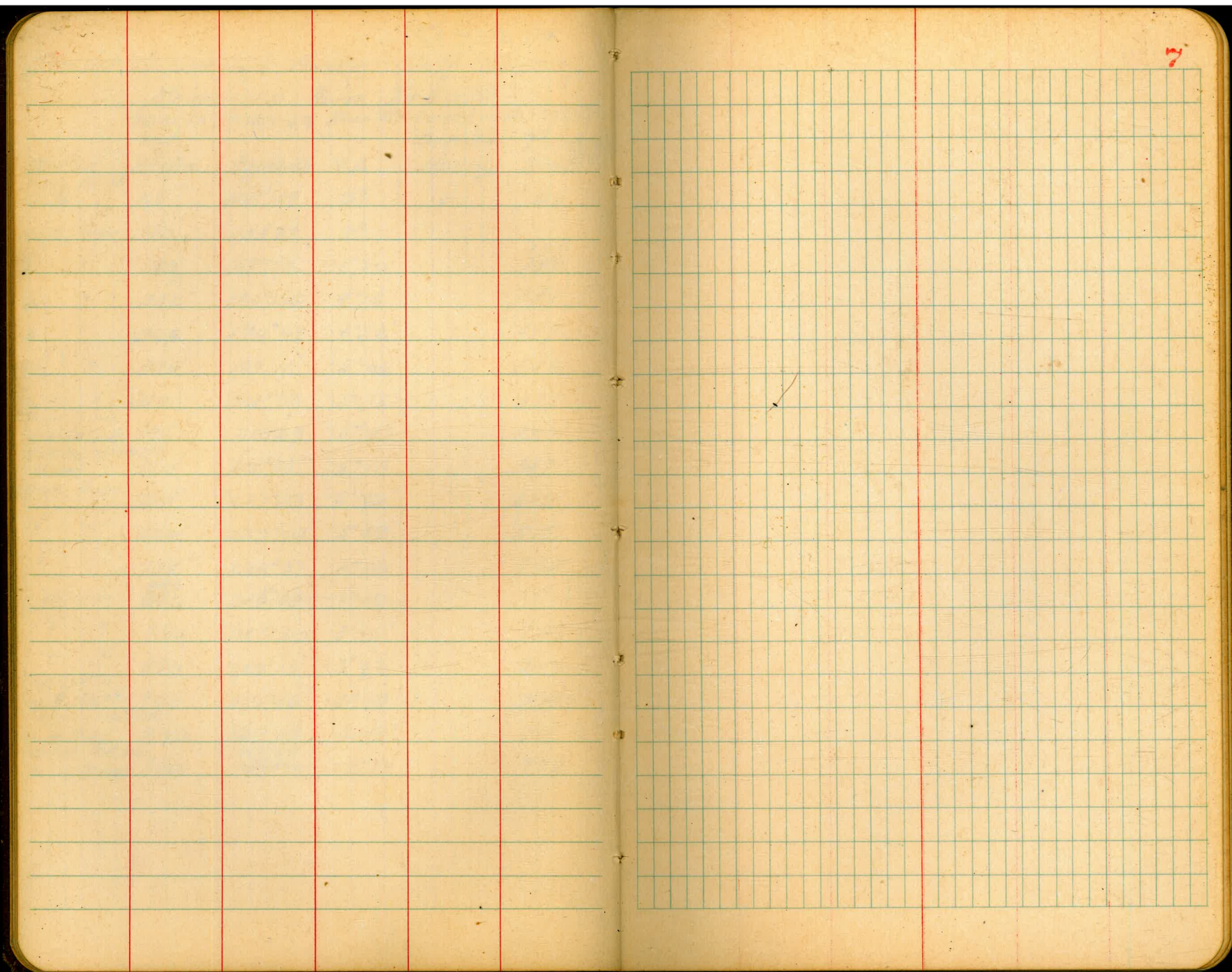
READING FROM 7+30.19

Azimuth Clockwise from Backsight on sta 674338  
Dist.Corrected True Horiz. Dist. <sup>13.</sup>

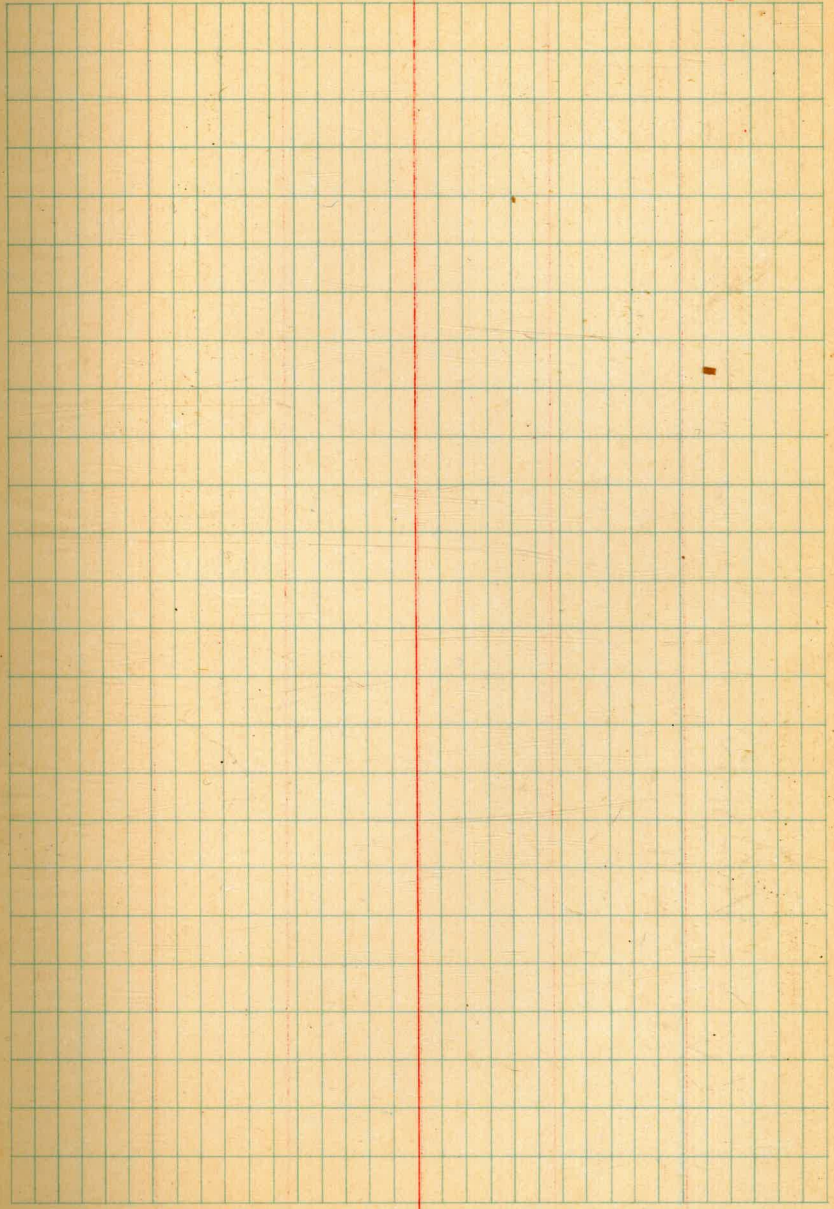
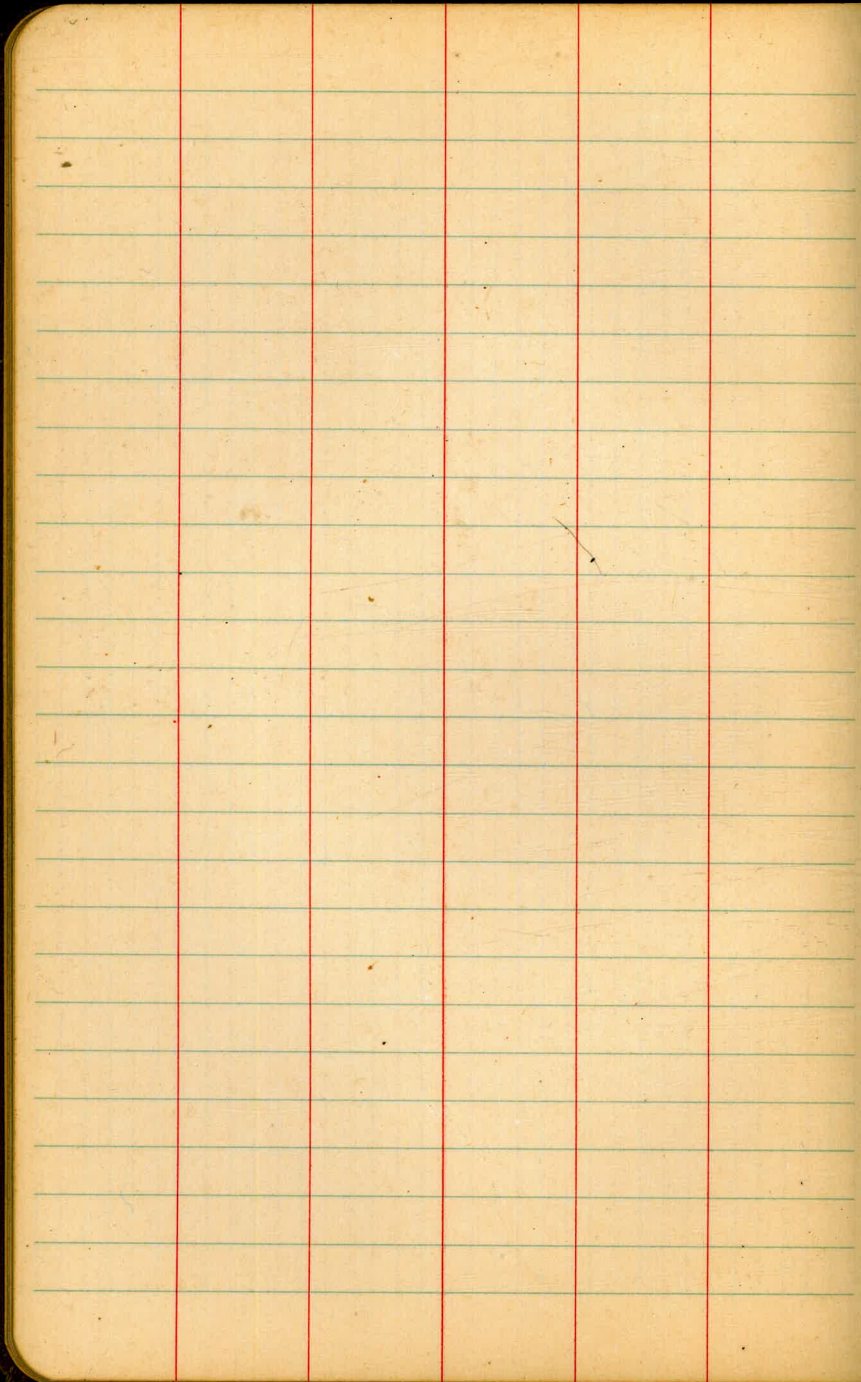
Station	Stadia	Azimuth	$\Delta$	Corrected Horiz. Dist.
Angle Pt. at Gate	25'	208°04'	0°	25'
Angle, Fence	140'	153°37'	0°	150'
" "	180'	167°06'	-1°50'	<del>143</del>
" "	250'	180°04'	-4°16'	249'
" "	360'	190°29'	-4°52'	357'
" "	345'	197°11'	-5°06'	342'
" "	340'	201°22'	-5°15'	337'
Angle, Fence	335'	203°47'	-5°49'	332'
W. side Gate	350'	205°18'	-5°18'	347'
E. side Gate	390'	227°53'	-6°39'	385'
" "	520'	237°04'	-5°43'	515'
" "	735'	236°39'	-2°22'	734'
" "	<del>870</del> 680	243°38'	-2°49'	
" "	990'	247°20'	-3°10'	987'
" "	990'	252°18'	-3°22'	987'
SW Cor "	900'	276°46'	-4°03'	895'
on 52nd				
Red back East side				
" in Fence	890'	243°09'	-2°49'	888'
Red back East side		243°39'		
" in Fence	780'	227°00'	-2°37'	778'

see BK. 2148-67/68

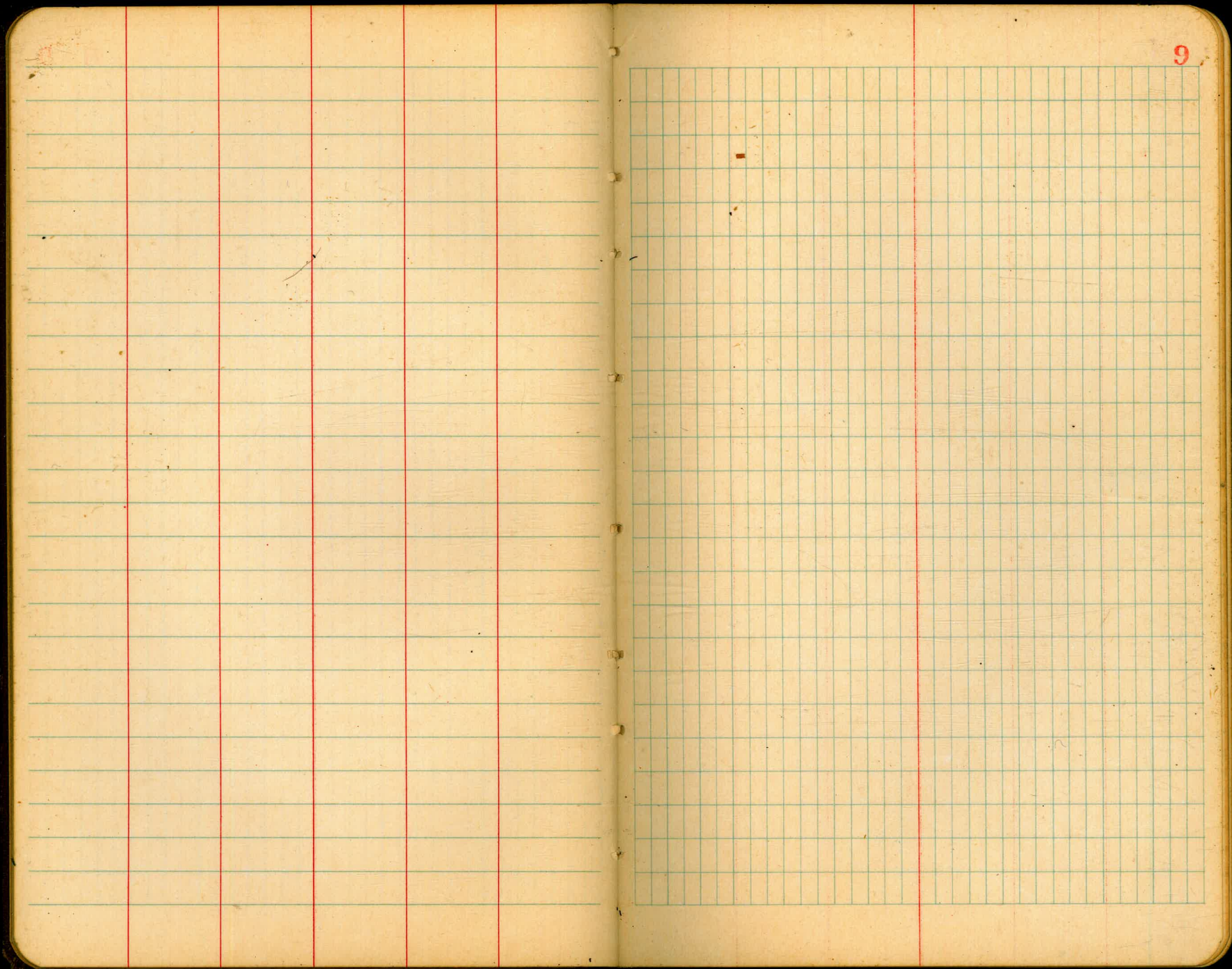












9





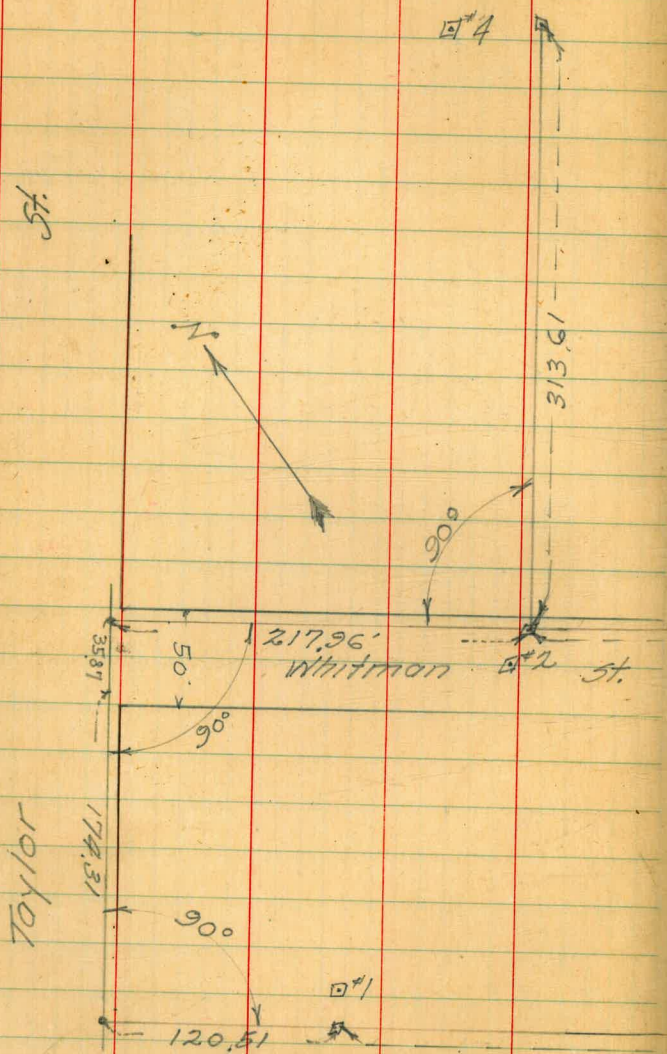


1  
2  
3  
4  
5



Walker  
Hendricks  
Carol  
8-9-46

Control Points - For Topo. Map.  
Presidio Park Playgrounds



Indexed  
c.s.k.

12

+	H.I.	-	Elev	
573	10.95		4.72	SEBP Juan & Taylor
T.P. 583	12.19	4.09	6.36	
		4.49	7.70	Control Pt #1
		4.29	7.90	Control Pt #2
T.P. 421	13.17	3.23	8.96	
		0.59	12.58	Control Pt #4
T.P. 738	19.95	0.60	12.57	Control Pt #3
		8.59	11.36	Control Pt #5
T.P. 498	18.01	6.92	13.03	
		13.30	4.71	SEBP Juan & Taylor

254.40' #3

457.80' #5

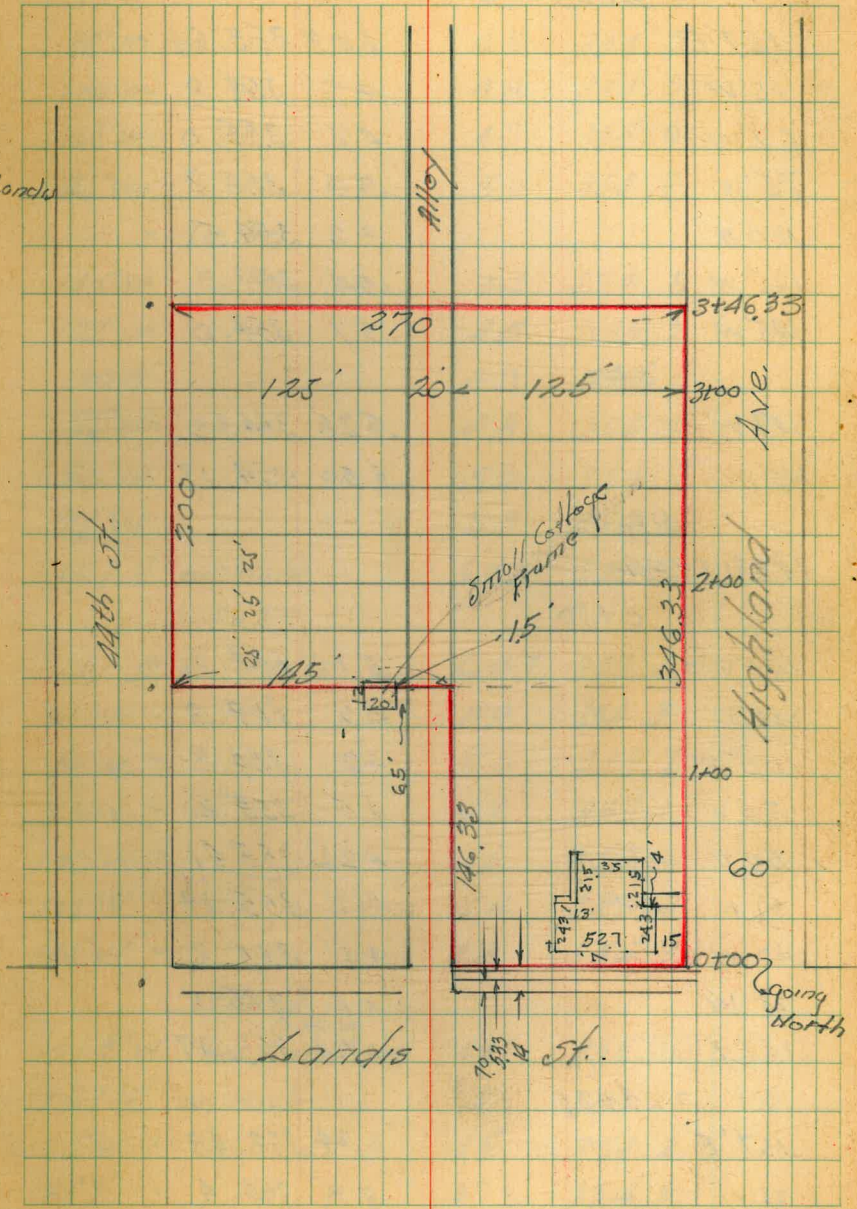
6758-L 78956  
7 # 58 Wallace



Walker Levels - Blk. 8. City Hts. Annex No 1  
 Handricks in lots 11-18 and 25-38  
 Carey Becker See Hard Copy #  
 18-22-46

	3.68	358.39	354.71	B.M. NW BR Wrightman to 44th NW 1 2nd P.O. in Alley N-of
	1.74	358.28	1.85	356.54
N.W. BR	Landis + Highland	4.77	353.51	Landis
	0-1.67			
0 W		4.53	353.75	
25' W		4.62	353.66	
50' W		4.62	353.66	
75' W		4.72	353.56	
100' W		4.88	353.40	
125' W	at Alley	4.86	353.42	
145' W		4.86	353.42	
	0+07			
145' W		4.6	353.7	
125' W		4.4	353.9	
100' W		4.4	353.9	
75' W		4.2	354.1	
67.7	Floor Bld	2.69	355.59	
50' W		4.0	354.3	
25' W		3.9	354.4	
1.87 E		4.48	353.80	
T.P.	3.13	359.67	1.74	356.54
	Cont. P. 1A			

indexed  
C.R.K.





35967

0+25

167'E	6.03	353.64	-
15'W	4.9	354.8	-
67'W	4.7	355.0	-
75'W	5.0	354.7	-
100'W	5.2	354.5	-
125'W	5.4	354.3	-
145'W	5.7	354.0	-

0+36

147'W	5.28	354.39	-
145'W	5.50	354.17	-

0+51

1438'W = Pole

0+50

148'W	5.1	354.6	-
128'W	4.9	354.8	-
100'W	4.9	354.8	-
75'W	4.5	355.2	-
54'W on Walk	4.26	355.41	-
37'N " "	4.53	<del>355.14</del> 355.17	-
50'W	4.5	355.2	-
25'W	4.6	355.1	-
167'E	6.20	353.47	-

0+75

167'E	6.24	353.43	-
25'W	5.3	354.4	-

0+75

35967

14

50'W	4.9	354.8	-
75'W	4.8	354.9	-
100'W	4.8	354.9	-
125'W	4.7	355.0	-
145'W	5.0	354.7	-

1+00

145'W	5.2	354.5	-
125'W	4.5	355.2	-
100'W	4.7	355.0	-
75'W	4.8	354.9	-
50'W	5.0	354.7	-
25'W	5.3	354.4	-
167'E on Walk	6.41	353.26	-

1+25

167'E on Walk	6.47	353.20	-
25'W	5.4	354.3	-
50'W	5.0	354.7	-
75'W	4.6	355.1	-
100'W	4.6	355.1	-
125'W	4.4	355.3	-
145'W	4.8	354.9	-

1+46.33

151.8'W Floor Wash Room	4.41	355.26	-
167'E on Walk	6.57	353.10	-
25'W	5.5	354.2	-
50'W	4.9	354.8	-



14633 35967

75'W	4.6	355.1	-
100'W	4.5	355.2	-
125'W	4.4	355.3	-
150'W	4.8	354.9	-
175'W	4.9	354.8	-
200'W	5.1	354.6	-
225'W	5.0	354.7	-
250'W	5.3	354.4	-
271.67'W sidewalk	6.38	353.29	-
	1+75		
271.67'W sidewalk	6.42	353.25	-
265'W	5.2	354.5	-
250'W	4.9	354.8	-
225'W	4.7	355.0	-
200'W	4.6	355.1	-
175'W	4.6	355.1	-
150'W	4.5	355.2	-
125'W	4.4	355.3	-
100'W	4.4	355.3	-
75'W	4.7	355.0	-
50'W	5.0	354.7	-
25'W	5.6	354.1	-
167' E on Walk	6.70	352.97	-
	2+00		
167' E on Walk	6.79	352.88	-

2400 35967

25'W	5.6	354.1	15
50'W	5.1	354.6	
75'W	4.8	354.9	
100'W	4.4	355.3	
125'W	4.3	355.4	
150'W	4.6	355.1	
1448'W = Elec. Pole			
175'W	4.6	355.1	
200'W	4.5	355.2	
225'W	4.6	355.1	
250'W	4.8	355.9	
265'W	5.1	354.6	
271.67'W. Walk	6.31	353.36	
	2+25'		
271.67'W = Walk	6.30	353.37	
265'W	5.1	354.6	
250'W	4.7	355.0	
225'W	4.6	355.1	
200'W	4.6	355.1	
175'W	4.5	355.2	
150'W	4.3	355.4	
125'W	4.3	355.4	
100'W	4.5	355.2	
75'W	4.7	355.0	
50'W	5.3	354.4	
25'W	5.6	354.1	
167' E	6.93	352.74	



2+50

167'E	6.94	352.73 ✓
25'W	5.8	353.9 ✓
50"	5.3	354.4 ✓
75"	4.9	354.8 ✓
100'	4.7	355.0 ✓
125'W	4.4	355.3 ✓
150"	4.2	355.5 ✓
175"	4.3	355.4 ✓
200'W	4.6	355.1 ✓
225'W	4.6	355.1 ✓
250'W	4.6	355.1 ✓
265'W	5.0	354.7 ✓
271.67'W = Walk	6.30	353.37 ✓

2+75

271.67'W = Walk	6.19	353.48 ✓
265'W	5.0	354.7 ✓
250'W	4.5	355.2 ✓
225'W	4.3	355.4 ✓
200'W	4.3	355.4 ✓
175'W	4.1	355.6 ✓
150"	4.0	355.7 ✓
125"	4.3	355.4 ✓
100'W	4.7	355.0 ✓
75'W	4.9	354.8 ✓
50'W	5.1	354.5 ✓
25'W	5.8	353.9 ✓
167'E = Walk	7.09	352.64 ✓

3+00

167'E on Walk	7.17	352.50
25'W	6.0	353.7
50"	5.2	354.5
75"	4.9	354.8
100"	4.5	355.2
125"	4.1	355.6
149.2'W 3'S = Elec. Pole		
150"	4.0	355.7
175"	3.9	355.8
200"	4.1	355.6
225"	4.1	355.6
250'W	4.3	355.4
265'W	4.5	355.2
271.67'W = Walk	6.22	353.45

3+25

271.67'W = Walk	6.17	353.50
265'W	4.3	355.4
250'W	4.1	355.6
225'W	3.9	355.8
200'W	3.8	355.9
175'W	3.9	355.8
150'W	4.0	355.7
125'W	4.3	355.4
100'W	4.5	355.2
75'W	5.0	354.7



35967

3+25

50' W 54 354.3 -

25' W 61 353.6 -

167' E = Walk 736 352.31 -

3+46 33 = North

167' E = Walk 742 352.25 -

25' W 63 353.4 -

55' W 58 353.9 -

75' W 52 354.5 -

100' W 48 354.9 -

125' W 45 355.2 -

150' W 41 355.6 -

175' W 42 355.5 -

200' W 41 355.6 -

225' W 39 355.8 -

250' W 44 355.3 -

265' W 45 355.2 -

27167' W 616 353.51 -

T.P. 4.97 358.43 621 353.46 -

chk starting BM 373 354.70

354.71 = BM

0.01 Error

Curb &amp; Gutter on Highland NW B.P.

4.51 358.02

353.51

Lunch

Highland

Elev.

0+00

Cb. 4.51 353.51 ✓

Gut. Parity 5.05 352.97 ✓

0+125

Cb. 4.63 353.39 ✓

Gut. 5.24 352.78 ✓

0+150

Cb. 4.73 353.29 ✓

Gut 5.35 352.67 ✓

0+175

Cb. 4.90 353.12 ✓

Gut 5.47 352.55 ✓

1+00

Cb. 4.98 353.04 ✓

Gut 5.55 352.47 ✓

1+125

Cb. 5.06 352.96 ✓

Gut 5.63 352.39 ✓

1+150

Cb. 5.27 352.75 ✓

Gut 5.79 352.23 ✓

1+175

Cb. 5.34 352.68 ✓

Gut 5.90 352.12 ✓



2+00	35852	Highland	
cb	5.41	352.61'	
Gut	6.04	351.98'	
2+25			
cb	5.53	352.49'	
Gut	6.23	351.79'	
2+50			
cb	5.63	352.39'	
Gut	6.33	351.69'	
2+75			
cb	5.71	352.31'	
Gut	6.37	351.65'	
3+00			
cb	5.83	352.19'	
Gut	6.42	351.60'	
3+25			
cb	6.00	352.02'	
Gut	6.55	351.47'	
3+46.33			
cb	6.09	351.93'	
Gut	6.65	351.37'	
Lands cb 07			West of Highland
0+00			
cb	4.63	353.39'	
Gut	4.93	353.09'	

25'W	35802		
cb	4.61	353.41'	
Gut	5.0	353.00'	
50'W			
cb	4.67	353.35'	
Gut	5.1	352.9'	
75'W			
cb	4.68	353.34'	
Gut	5.1	352.9'	
100'W			
cb	4.89	353.13'	
Gut	5.2	352.8'	
125'W			
cb	4.83	353.19'	
Gut	5.2	352.8'	
145'W			
cb	4.83	353.19'	
Gut	5.2	352.8'	
270'W			
TR 4.56	357.32	5.26	352.76'
cb		4.52	352.80'
Gut Pavi		5.07	352.25'
Cont	P-19		



35732

cb + Gwt. on 44th on East  
from N.L. Landis = 0700

0+00	on cb.	4.43	352.89
"	Gwt.	4.99	352.33
1+46.33	cb.	4.23	353.09
"	Gwt.	4.82	352.50
1+75	cb.	4.23	353.09
"	Gwt.	4.73	352.59
2+00	cb.	4.00	353.32
"	Gwt.	4.55	352.77
2+25	cb.	4.10	353.22
	Gwt.	4.56	352.76
2+50	cb.	4.01	353.31
	Gwt.	4.41	352.91
2+75	cb.	4.01	353.31
"	Gwt.	4.37	352.95
3+00	cb.	3.93	353.39
"	Gwt.	4.37	352.95
3+25	cb.	3.99	353.33
"	Gwt.	4.29	353.03
3+46.33	cb.	3.88	353.44
	Gwt.	4.29	353.03
chk	2+50 edge walk	3.90	353.42
	271.67 W		
chk	2+00	3.97	353.35
			353.36
			0.01



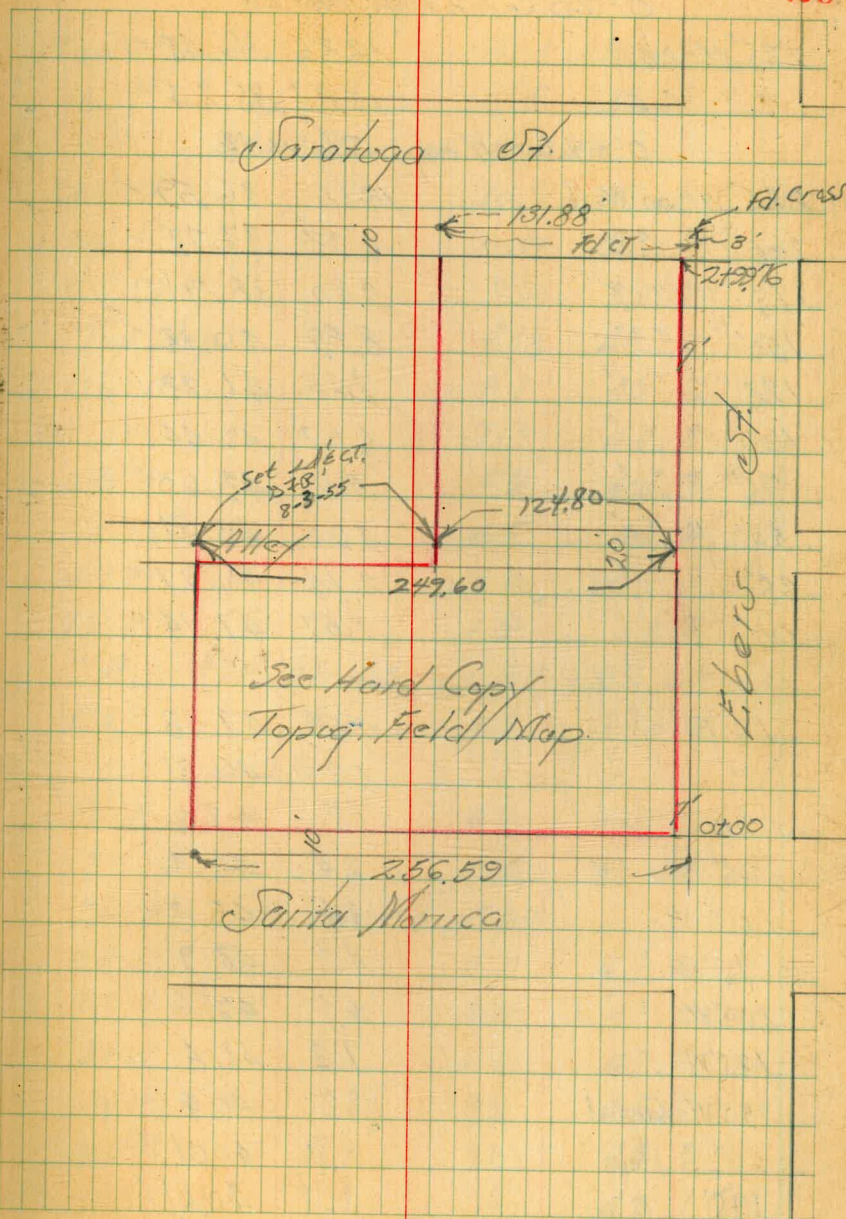
Walker  
Hendricks  
Carey  
Secher

Topog. Recreational Grounds  
on City owned Lots Blk 31  
Ocean Beach

8-23-46	6.40	36.46		30.06	B.M. SW cor. Voltaire Ebers
T.P.	6.92	38.13	5.25	31.21	SW 2' tick Mouly Ebers
T.P.	6.65	41.31	3.47	34.66	Brighton Ebers
chk SW cor. Cape May	4.93	36.38			Ebers
	4.93	41.35	Corrected	36.42	B.M.
T.P.	2.54	49.46	1.43	39.92	NE Tick Santa Monica Ebers St
T.P.	1.57	48.71	2.32	47.14	
0-20 = North cb Little Santa Monica					
cb		1.70		47.01	
cut		2.44		46.27	
25' W on cb		2.90		45.81	
" " cut		3.58		45.13	
50' W cb.		3.99		44.72	
" " cut		4.77		43.94	
75' W cb.		5.20		43.51	
100' W "		6.35		42.36	
125' W cb.		7.55		41.16	
" cut		8.20		40.51	
150' W cb.		8.71		40.00	
" cut		9.42		39.29	
175' W cb		9.89		38.82	
" cut		10.57		38.14	
200' W cb		11.09		37.62	
" cut		11.75		36.98	

indexed  
e.s.k.

20





48.71

0-20 Cont. from P-20

225' W	cb.	12.26	36.45
" "	cut	12.87	35.84
0-7.6 = N edge Side Walk.			
225' W	on Walk	12.12	36.59
200	" "	10.93	37.78
175	" "	9.80	38.91
150	" "	8.59	40.12
125	" "	7.48	41.23
100	" "	6.27	42.44
75	" "	5.11	43.60
50	" "	3.90	44.81
25	" "	2.74	45.97
00	" "	1.57	47.14

0+00

12' E	cb.	1.53	47.18
"	cut	1.90	46.81
00		1.5	47.2
25' W		2.4	46.3
50' W		3.4	45.3
75' W		4.8	43.9
100' W		6.1	42.6
125' W		7.3	41.4
150' W	Ground	8.3	40.4
"	Steps	8.70	40.01
175'	"	8.70	40.01
"	Ground	9.6	39.1

0+00 Cont.

48.71

21

200' W		10.1	38.6	
225' W		11.8	36.9	
0+10.9 = Line East. 86				
225' W		10.9	37.8	
200' W		10.0	38.7	
175' W		9.2	39.5	
Top stop.		7.88	43.83	
150' W		8.1	40.6	
125' W		7.2	41.5	
100' W		5.8	42.9	
75' W		4.5	44.2	
50' W		3.2	45.5	
25' W		1.9	46.8	
TR	514	52.28	1.57	47.14
00			5.1	47.2

0+25

12' E	cb.	5.36	46.92
"	cut	5.81	46.47
3.6' E	on West edge Walk	5.30	46.98
00		5.1	47.2
25' W		5.3	47.0
50' W		6.6	45.7
75' W		7.8	44.5
100' W		9.0	43.3
111.3' W		9.6	42.7



52.28

0+50

12' E cb.	5.64	46.64	-
" Ect.	6.07	46.21	-
3.6' E Walk	5.58	46.73	-
00	5.9	46.4	-
5' W	5.0	47.3	-
25' W	5.3	47.0	-
50' W	6.2	46.1	-
75' W	7.4	44.9	-
100' W	8.6	43.7	-
111.3' W	9.1	43.2	-

0+75

cb	5.90	46.38	-
Ect.	6.33	45.95	-
Walk	5.81	46.47	-
00	5.9	46.4	-
6' W	4.7	47.6	-
25' W	5.0	47.3	-
50' W	6.0	46.3	-
75' W	7.2	45.1	-
100' W	8.4	43.9	-
125' W	9.7	42.6	-
136.8' W	10.1	42.2	-

1+00

cb.	6.15	46.13	-
Ect	6.62	45.66	-
Walk	6.06	46.22	-

52.28

1+00

22

00	6.0	46.3	-
5' W	4.9	47.4	-
25' W	4.5	47.8	-
50' W	5.7	46.6	-
75' W	6.6	45.7	-
100' W	8.3	44.0	-
125' W	9.7	42.6	-
136.8' W	10.0	42.3	-

1+25

cb.	6.38	45.90	-		
Ect	6.88	45.40	-		
Walk	6.30	45.98	-		
00	6.2	46.1	-		
10' W	4.1	48.2	-		
25' W	4.4	47.9	-		
50' W	5.5	46.8	-		
75' W	6.7	45.6	-		
100' W	7.8	44.5	-		
125' W	9.6	42.7	-		
136.8' W	10.1	42.2	-		
T.P.	3.38	50.46	5.20	47.08	-

1+40

cb	4.69	45.77	-
Ect	5.13	45.33	-
000	4.62	45.84	-



	1440	5046	
5' W	32	47.3	-
3' N Above street	45	46.0	-
25' W	30	47.5	-
4' N	40	46.5	-
50' W	36	46.9	-
4' N	44	46.1	-
75' W	49	45.6	-
4' N	56	44.9	✓
100'	60	44.5	-
15' N = Pole			
4' N	70	43.5	-
125' W	76	42.9	-
4' N	80	42.5	✓
150' W	90	41.5	-
3' N	93	41.2	-
13' S	78	42.7	-
175' W	100	40.5	✓
13' South	100	40.5	-
3' N	103	40.2	-
200' W	100	40.5	✓
199' W = Pole 15' in Alley			
3' N	111	39.4	-
225' W	114	39.1	-
4' N	120	38.5	✓
250' W	125	38.0	-
3' N	129	37.6	✓

	1460	5046	
cb	4.95	45.51	-
Cent	5.47	44.99	-
00 cb	4.84	45.62	-
25' W	4.4	46.1	-
50' W	4.3	46.2	-
75' W	5.7	44.8	-
100' W	7.0	43.5	-
125' W	8.1	42.4	-
142' W Conc. Apron	8.72	41.74	-
153.5' W " " West	8.91	41.55	-
175' W	9.91	40.6	-
200' W	10.8	39.7	-
225' W	11.9	38.6	-
250' W	13.0	37.5	-
	1475		
125' W	8.0	42.5	-
100' W	7.2	43.3	-
75' W	5.8	44.7	-
50' "	5.1	45.4	-
25' W	4.9	45.6	-
00	4.8	45.7	-
Walk	4.98	45.48	-
cb	5.12	45.34	-
Cent	5.58	44.85	✓



5046

2+00

cb.	5.33	45.13	-
cut	5.90	44.56	-
Walk	5.23	45.23	-
00	5.1	45.4	✓
25'W	5.6	44.9	✓
50'W	5.9	44.6	✓
75'W	6.4	44.1	✓
100'W	7.4	43.1	✓
125'W	8.3	42.2	✓

2+25

125 W	8.3	42.2	✓
100 W	7.5	43.0	✓
75 W	6.9	43.6	✓
50 "	6.0	44.5	✓
25 W	5.7	44.8	✓
00	5.5	45.0	✓
Walk	5.52	44.94	✓
cb.	5.58	44.88	✓
cut.	6.16	44.30	✓

2+50

cb.	5.85	44.61	✓
cut.	6.42	44.02	✓
Walk	5.81	44.65	✓
00	5.5	45.0	✓
25'W	5.9	44.6	✓
50'W	6.7	43.8	✓

5046

24

75'W	7.5	43.0	-
100'W	8.2	42.3	-
125'W	8.2	42.3	-

2+75

125'W	8.5	42.0	✓
100'W	8.3	42.2	✓
75'W	7.9	42.6	✓
50'W	7.0	43.5	✓
25'W	6.5	44.0	✓
00	5.9	44.6	✓
Walk	6.04	44.42	✓
cb.	6.12	44.34	✓
cut.	6.65	43.81	✓

2+99.76 = 5L Saratoga

cb.	6.42	44.04	✓
cut	6.91	43.55	✓
Walk	6.31	44.15	✓
00	6.3	44.2	✓
25'W	6.7	43.8	✓
50 W	7.6	42.9	✓
75'W	8.2	42.3	✓
100'W	9.0	41.5	✓
125'W	9.2	41.3	✓

5 edge Walk Saratoga

125'W	10.09	40.37	-
100 W	9.34	41.12	✓



5046

75'W	8.57	41.89	-
50'W	7.82	42.64	-
25'W	7.08	43.38	-
00	6.34	44.12	-
5 cb. Surologa of			
8'W cb	6.70	43.76	-
Gut	7.37	43.09	-
25'W cb.	7.26	43.20	-
"    Gut	7.88	42.58	-
50'W cb.	8.01	42.45	-
Gut	8.65	41.81	-
75'W cb.	8.76	41.70	-
Gut	9.40	41.06	-
100'W cb.	9.54	40.92	-
Gut	10.18	40.28	-
125'W cb.	10.33	40.13	-
Gut	10.96	39.50	-
West 175.5 4' South Sch. Surologa = 10' Arc			
" 075.5 " " " " 10' "			
" 078 " " " " 6' "			
T.P. 190 43.62	8.74	41.72	-
1727			
200'W	8.0	40.6	-
228W	5.0	38.6	-
250'W	6.0	37.6	-

4362

25

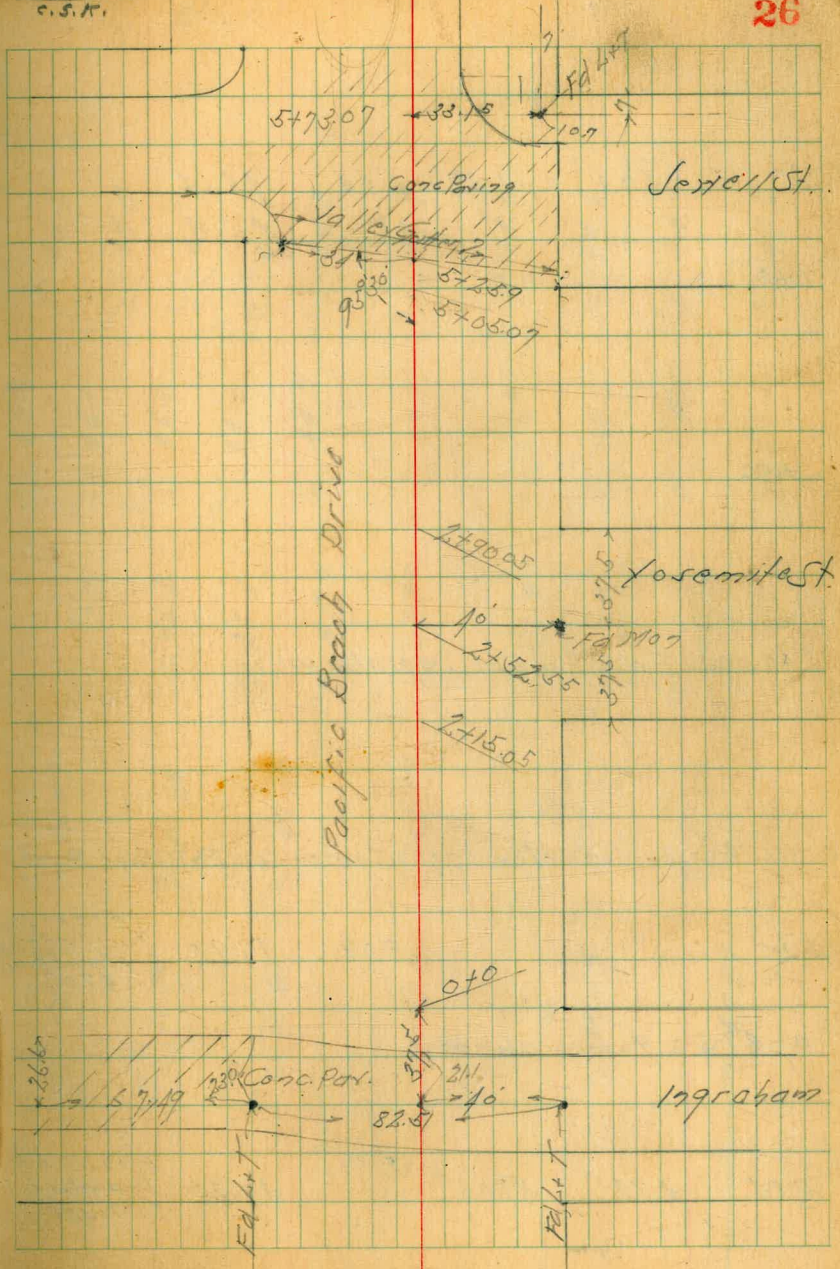
1700			
250'W	6.0	37.6	-
225'W	4.7	38.9	-
200'W	4.0	39.6	-
0775			
212'W	4.7	38.9	-
250'W	6.0	37.6	-
0750			
250'W	6.3	37.3	-
225'W	6.0	37.6	-
0711			
250'W	6.4	37.2	-
225'W	5.8	37.8	-
0700			
250'W	7.6	36.0	-
0-			
Walk 200'W	8.12	35.50	-
0-20			
250'W cb.	8.29	35.33	-
Gut	8.97	34.65	-
T.P. 6.26 47.98	1.90	41.72	-
chk B.M. Cape May at Ebers 1159	36.39		
	36.42	= B.P.	
	0.03		



Cross Section Pacific Beach Drive  
Ingraham to Jewell

Indexed  
C.S.K.

Sept. 27-46  
# 5550  
McCoy  
Hodder  
Allen





TP 3.73 48.87 6.44 44.64

140

150

0+0 = East Line of Ingraham

0-16.4 = Ely Conc Pav 27.5 Taken on East Edge Paving

BM

3.09 47.99

5270 ft H. 10 Pacific 8 rods  
East of Ingraham  
48.02

0-37.5 =  $\frac{1}{2}$  Ingraham

BM

3.72

31.68

47.36

Mon 389 Line  
Ingraham  
301101

53 70	54 70	54 37	72 31	68 70	57 70	70 70	55 70	64 70	65 70
45.8	45.7	45.7	43.9	44.3	44.4	44.1	45.6	44.7	44.6
57 70	50 70	50 37	62 31	62 70	52 70	57 70	51 70	50 70	51 70
45.9	46.1	46.1	44.3	44.9	44.9	44.4	45.9	45.1	45.3
50 70	48 70	55 30	55 30	55 70	54 70	54 70	51 70	51 70	51 70
46.1	46.3	45.5	45.8	45.7	45.7	46.1	46.2		
46.49	46.24	46.03	45.77	45.63	45.50				
459 130	474 80	480 70	498	498	509 70	509 70	519 80		
46.19	46.34	46.28	46.10	46.10	45.99	45.99	45.89		
				37.08					



Pacific Beach Drive

3+10

+90.05 = 1/2 L. Yosemite to Souths

BM

6.05

1/2 Pacific  
to Yosemite

+52.55 = 1/2 Yosemite to Souths

+15.05 = 1/2 L. Yosemite to Souths

2+10

1+50

48.87

Lt.

Z

Rt.

28

44.1	44.6	44.6	44.8	45.0	44.1	44.6	44.6	44.8	45.0
44.3	44.6	44.7	44.9	44.9	44.9	44.9	44.9	44.9	44.9
43.2	43.4	43.2	43.2	43.3	43.4	43.5	43.2	43.3	43.6
43.4	43.4	43.4	43.5	43.6	43.6	43.6	43.6	43.6	43.6
43.3	43.3	43.4	43.5	43.6	43.6	43.6	43.6	43.6	43.6
43.3	43.1	43.2	43.4	43.5	43.5	43.5	43.5	43.5	43.5
43.9	43.8	44.1	44.1	44.3	44.3	44.3	44.3	44.3	44.3
43.5	43.5	43.5	43.7	43.6	43.6	43.6	43.6	43.6	43.6
43.4	43.7	43.4	43.4	43.6	43.6	43.6	43.6	43.6	43.6
44.1	43.7	43.4	43.4	43.6	43.6	43.6	43.6	43.6	43.6

48.87







Pacific Beach Drive

Lt. Lt. Rt.

BM 1.85 4798

stop of this Pacific Beach Dr. a program 4799

TP 5.19 49.83 3.73 44.64

+83.3 = Cb BC on Rt.

+62.4 = F Cb Line Sewell to South

+49.3 = W Cb Line of Sewell to North

+5+33 = N+S Valley Gutter Taken on Diag

48.37

45.53 284 21/10 Cb	44.96 341 30.25 6-11-25 Gutter	45.05 332 30	45.07 333 30	45.08 329	45.07 322 30	44.92 315 30 7-5-10 Paving	44.92 338 30 7-10-25 Gutter	45.67 334 30 7-10-25 Cb	44.99 338 30 7-10-25 Gutter	45.62 315 30
46.27 318 30 44-Cb	44.59 319 30 44-Gutter	44.47 310 30	44.29 308	44.15 312 30	44.07 313 30 7-3-5-10 Paving	45.25 317 30 7-5-10 Gutter	45.14 323 30 7-10-25 Cb	45.64 313 30 7-10-25 Cb	45.84 253	46.24 313 30 7-10-25 Cb



Proposed Storm Drain Block 15  
La Jolla Park

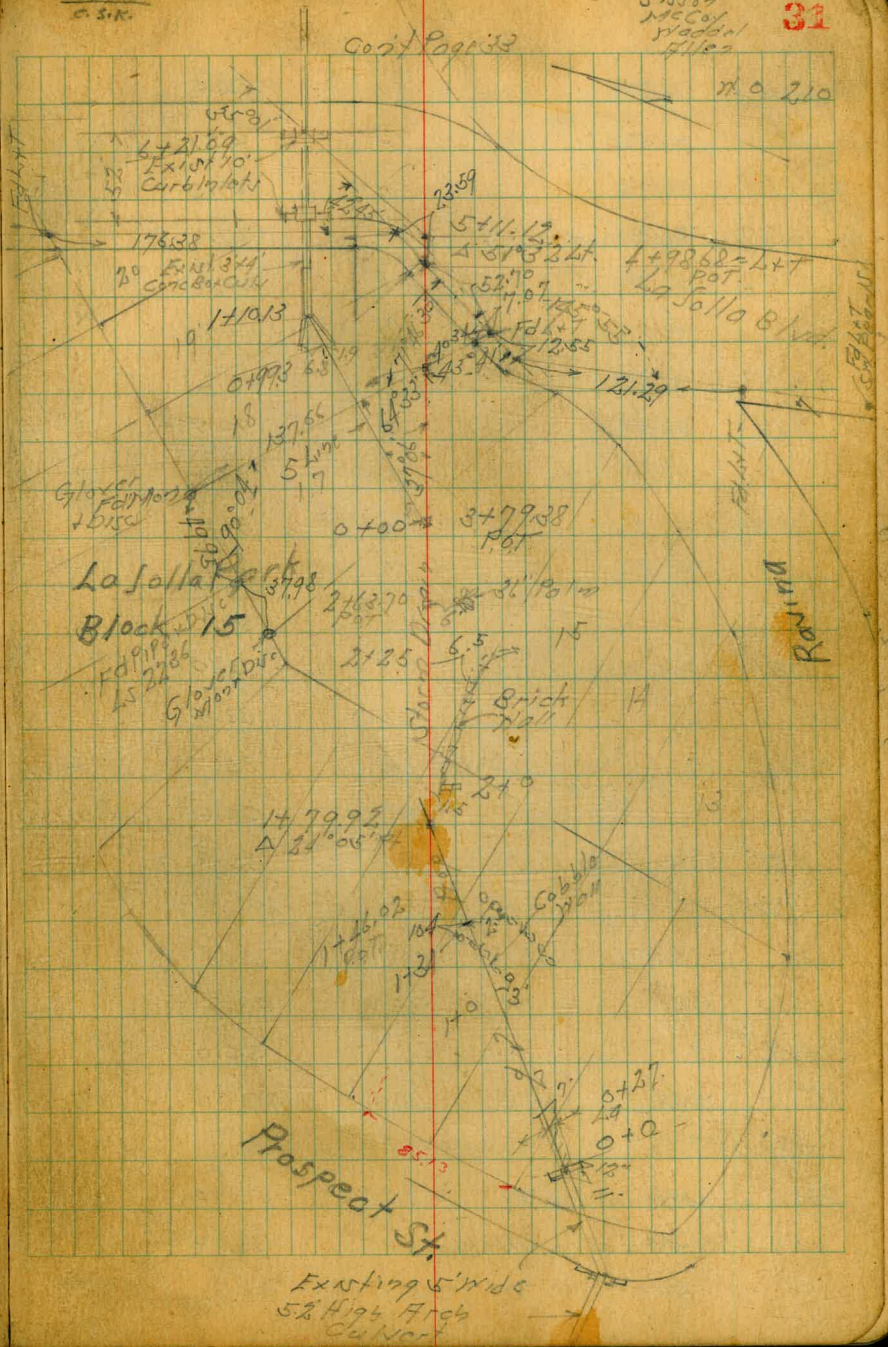
BM	0.29	38.72	38.45	S.F.R.P. Ravine 01/14/02
TP	7.11	32.93	25.82	
0+0	1/4 Arch Culvert	7.11	25.82	Top H/W
"	Bottom Culvert	13.16	19.77	12189
+27	02 Conc	11.55	21.38	Prospect L.T.P.
+35	1/4 Conc. sly Low	11.52	21.91	
+50	07 Lawn	10.9	22.0	
+70		9.3	23.6	
+100		8.1	24.8	
+13	Top Cobble Wall	7.5	25.4	
"	Ground	8.0	29.0	
+35.5	"	8.6	29.3	
"	2 1/2 Foot Bridge	4.95	27.98	on Deck
+46.02	POT	6.97	25.96	on Hill
"	6' lift of 1/2 Bottom Wash	9.8	23.1	
+70		7.1	25.5	
+79.92	$\Delta 24^{\circ} 05' R$ - Bot. Wash	9.13	23.80	on Hill
TP	10.83	34.63	23.80	
+99	Ground	9.4	25.2	
"	2 1/2 Foot Bridge	6.92	27.71	on Deck
2+0	15 ft 1/2 Base Brick	9.5	25.1	
"	15 " " Top H/W	7.35	27.28	
+25	Bottom Wash	8.3	26.3	
+41	3 ft 1/2 " 12" Palm			
+44		6.6	28.0	

Indexed  
a.s.k.

Cont Page 33

Oct 23-46  
S. J. ...  
M. ...  
J. ...  
G. ...

31





27.54		2.0	32.6	
	15' Rt of Bottom	7.5	27.1	
+64		5.1	29.5	
+77	= Bottom Wash	7.0	27.6	
+88		5.1	29.5	
TP	12.14	45.61	1.16	32.47
37.03		7.4	38.2	
+19		5.2	40.9	
"	16' Lt of 1/2	13.1	33.5	
"	42" " " = Bottom Wash	13.8	31.8	
+29		4.7	40.9	
+33		11.6	39.0	
+41	= Bottom Wash	13.2	32.9	
+61		11.9	33.7	
+69	5' Rt of 1/2	9.9	35.7	
"	13' Rt of 1/2	12.0	33.6	Bottom Wash
+95	Bottom Wash	9.7	35.9	
+20		2.7	42.9	
TP	12.76	58.24	0.13	45.48
+40		9.3	48.9	
+69		5.2	55.0	
TP	6.12	63.32	1.04	57.20
+84		4.8	58.5	
57.0	on Conc Walk	4.85	58.47	
+08.3	W Cb of Lafayette Blvd	5.08	58.29	Top Cb
"	Gutter on Pav. 7.9	5.40	57.92	

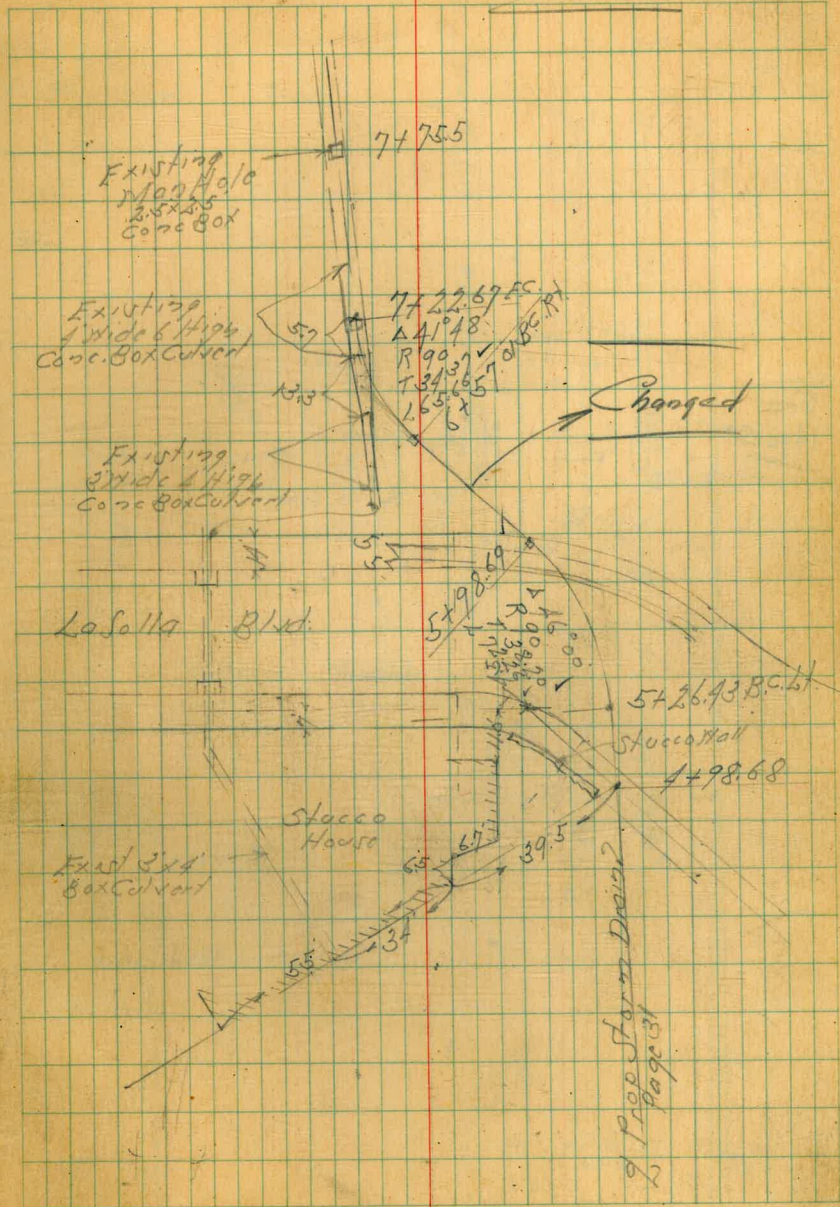
Notes Reduced 10-25-26

5711.12	5713.21	5.21	58.11	on Pav
+71.5	on Pav	4.31	59.01	
64.0	"	1.13	58.89	
+21.09	= F.C. of Lafayette Blvd	4.27	59.05	Top Cb
"	on Grate	5.22	58.10	
"	Bottom Box	8.47	59.85	Top 12" Chimney
"	Bottom Culvert	24.35	38.97	
17' Lt of West Side		5.87	57.95	Top Cb
"	on Grate	6.81	56.51	
"	Bottom Box	10.00	58.31	Top 12" Chimney
"	Bottom Culvert	25.83	37.49	
B.M.		0.07	63.25	5-1/2" Top 8" H. Ravingy 20' to the Box 83.22
	5 Line Prop. Storm Drain			
B.M.	0.58	63.83	63.25	above
TP	0.89	52.09	12.63	51.20'
TP	6.30	47.10	11.29	40.80'
0+0.5	= 2499.38	11.11	35.99	on Stub
+50	= 54 10' Wash	10.8	36.3	
TP	3.33	40.85	9.58	37.52'
+77		3.1	37.8	
+99.3		4.9	36.0	
"	19' Rt of 1/2 = 1/4 Conc	2.63	37.22	
"	18' Lt " " = 1/4 Conc	3.73	37.13	
17+0.13	= Outlet 3' x 4' High Conc Box Culvert 8" Walls 8" Top	5.55	35.30	

Notes on page

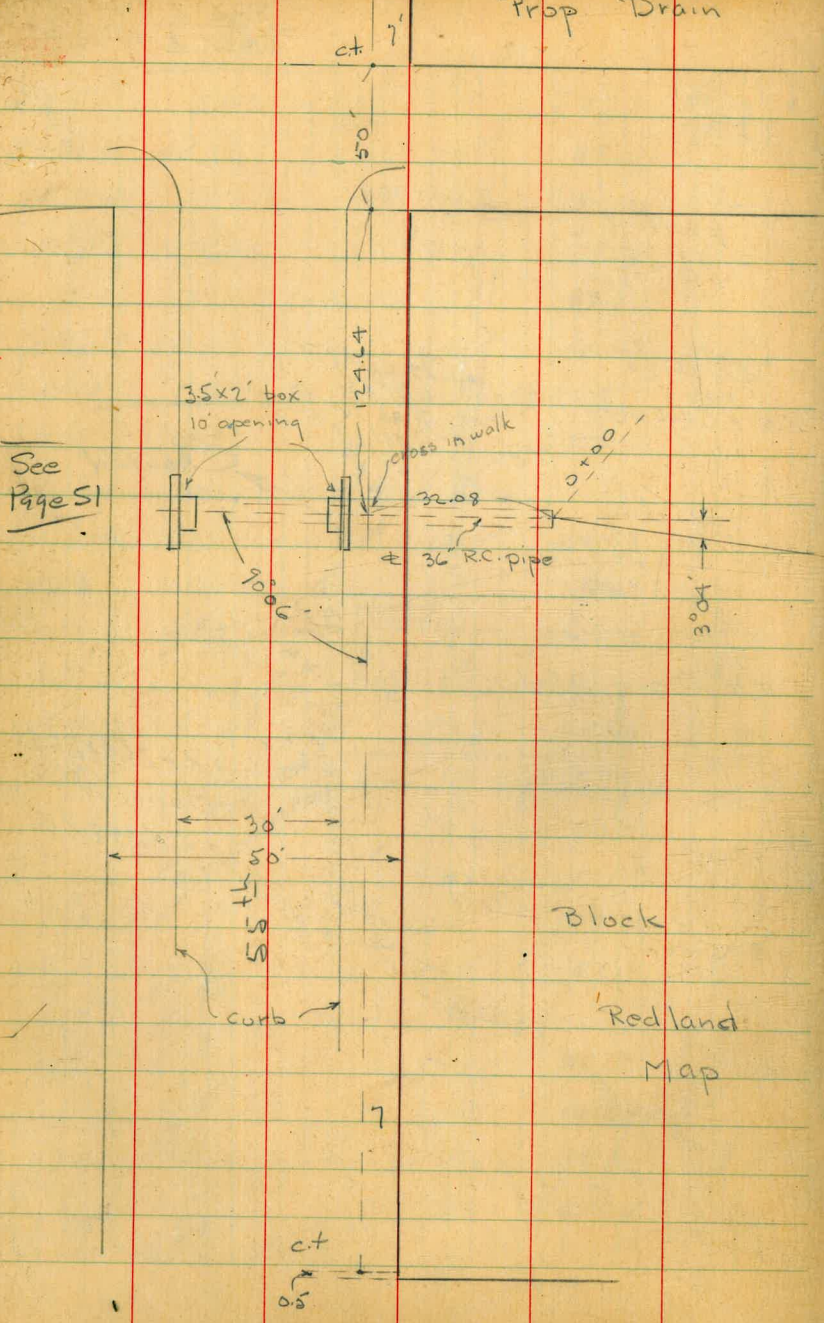


B.M.	3.47	66.72	63.25	SW Top of W.A. Ravina + LaSalle Blvd Page 32
5+26.43 B.C.L.		7.46	59.26	
+50.52		6.86	59.86	
+74.3 = Gutter		7.14	59.58	
" = East LaSalle Blvd	6.82		59.90	
+98.69 - F.C.		6.07	60.65	on Stub
6+0.4	6.4 Lt of 1/2 = 5' x Stucco Wall 8'			
+0.9	3.2 " " = Fly 3" Cypress Tree			
+12	= Woven Wire Exposed			
+16	2.2 Lt of 1/2 = Fly 12" Cypress Tree			
+25		5.8	60.9	
+31	1.5 Rt of 1/2 = 1 1/4 12" Cypress Tree			
+47	4.4 Lt of 1/2 = 5 Fly 7' 8" H Lily Pond			
+57.01 = B.C.R.		6.06	60.66	on Stub
+58	2.4 Lt of 1/2 = Fly 10" Cypress Tree			
+71		6.0	60.7	
T.P.	3.44	64.11	60.5	60.67
+93		16.5		53.6
7+0	= H Fly 11' Diam. Lily Pond	12.0		52.1
+17	8' = 8' H Plumeria Palm			
+22.67 - F.C.		12.54	51.57	TOP OF 12' x 12' CONC CHIMNEY
"		22.42	41.09	FLOOR LINE 4' x 6' CONC
7+75.5 = Man Hole 25' x 25'	10.85		53.26	on Riv
"		20.77	43.34	





Prop Drain



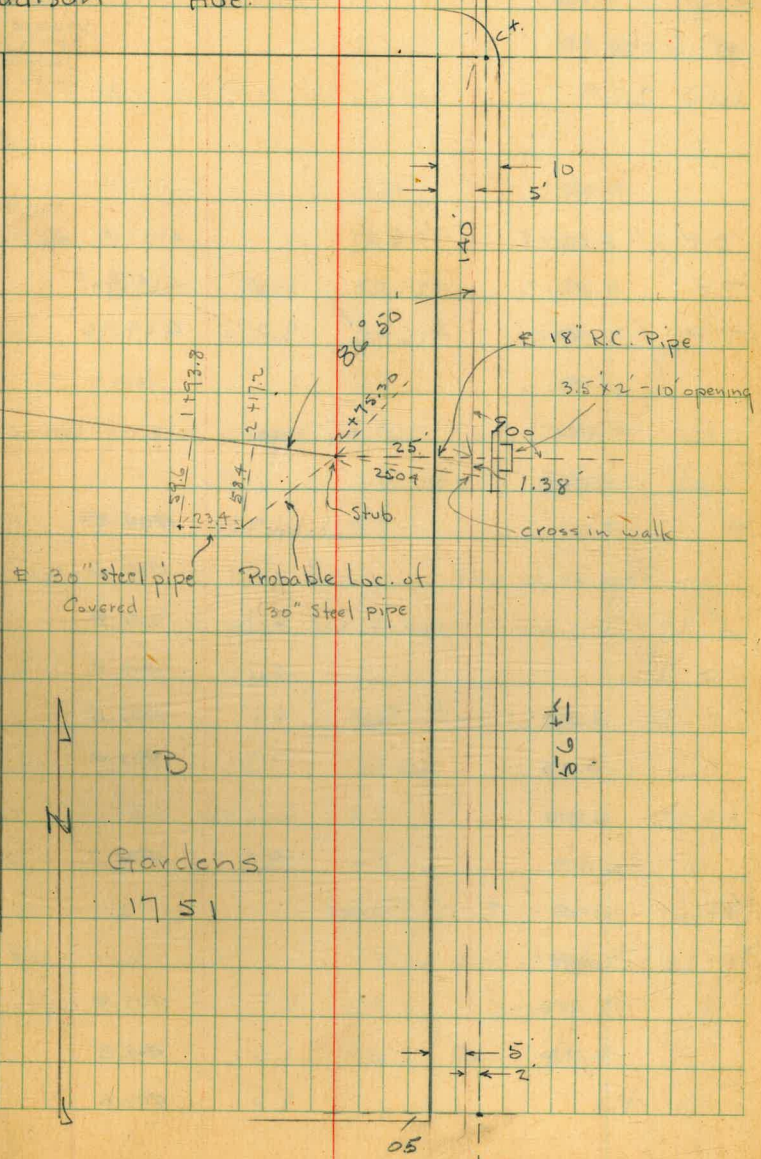
Block

Redland  
Map

Indexed  
C.S.K.

Madison Ave.

20'  
Alley



N

B

Gardens  
1751

56 ft



Survey for Prop Drain Thru Block B.  
 In Redland Gardens - 55<sup>th</sup> to 56<sup>th</sup> - S. of Madison

# 660

W.O. 229

12-3-46

Osborne  
 Hardin  
 Worrall  
 Smith

B.M.	2.88	425.07		422.19	NW. B.P. 55 <sup>th</sup> + El Cajon
T.P.	4.13	424.03	5.17	419.90	
T.P.	0.86	415.12	9.77	414.26	

0+00 =  $\pm$  of End of 36" R.C. pipe + face of loose rock wall ground inlet.

$\pm$ = F.L. pipe		10.23		409.89	
Top rock wall		5.9		409.2	level to W. 10'
4' Lt. = Top wall		5.7		409.2	
10' Lt		5.7		409.2	
8' Rt. = Angle of wall - Top		6.1		409.0	
ground		7.7		407.2	

0+03

$\pm$

8.4 406.7

0x+16 - 1' Lt =  $\pm$  12' Pepper

0x+20 = Bot of Rock wall

$\pm$ ground		7.7		407.2	
Top wall		5.6		409.5	
10' Lt.		5.5		409.6	

0

415.12 ✓

x+20 (cont.)

35

9' Rt.		8.2		406.9	
19' Rt. = base - end Rock + bank.	wall for chicken pen	7.7		407.2	ground
		5.76		409.26	Top wall
0+28 - 54' Lt. = 4" x 4" Post for Arbor.					
0+33					
$\pm$		5.4		409.7	
10' Lt		4.8		410.3	
12' Rt. = Rock wall - Top		5.7		409.2	
14' Rt. " " bot.		7.4		407.7	
17' Rt. = $\pm$ creek		7.9		407.2	
20' = wall base		7.4		407.7	
" " Top		5.5		409.6	
30' Rt		4.7		410.2	
0+35 - 10.6 Rt. = $\pm$ 3" fig tree					
0+40 - 6' Lt = 4" x 4" post for Arbor.					
0+45					
$\pm$		4.5		410.6	
15' Lt		3.7		411.4	
11' Rt. = Top - end rock wall		5.5		409.6	
12' Rt. = base " " "		6.9		408.2	
17' = $\pm$ Creek		7.5		407.6	
21 = base - end wall		7.0		408.1	
22 = Top " " "		5.4		409.7	
30		4.2		410.9	



415.12 ✓

0+49 -	Cross wire fence			
0+50				
⊕		1.7	413.9	
15 Lt.		0.1	415.0	
8' Rt.	Wire fence	3.6	411.5	
19' Rt.	⊕ creek	7.2	407.9	
30 Rt.		3.6	411.5	
T.P.	11.95	426.21	0.86	414.76
0+70				
⊕		10.2	416.0	
15 Lt.		8.0	418.2	
10' Rt.		12.1	419.1	
22 Rt.	fence	14.9	411.3	
30' Rt.	⊕ creek	17.3	408.9	
40 Rt.		11.5	414.7	
0+74 -	45 Lt = ⊕ 4" pepper			
1+00				
⊕		6.7	419.5	
15 Lt.		3.6	422.6	
20' Rt.	fence	12.0	419.2	
30' Rt.	⊕ Creek	14.6	411.6	Brush
40' Rt.		9.4	416.8	
1+13 -	45 Rt - 12" Pepper			

426.21

36

1+21 -	45 Rt = ⊕ 18" Pepper			
1+24 =	Cross wire fence			
⊕		4.3	421.9	
15 Lt.		1.3	422.9	
15' Rt.	fence Cor.	9.6	416.6	
28' Rt.	⊕ Creek - Heavy brush	12.9	413.3	
40' Rt.		9.3	416.9	
1+47 =	Cross wire fence			
1+50				
⊕		2.6	423.6	
15 Lt.		+11.0	427.2	
16 Rt.	Wire fence	7.3	418.9	
25 Rt.	⊕ Creek	10.5	415.7	
40 Rt.		4.6	421.6	
T.P.	13.26	436.11	3.36	422.85
1+54 -	4.4 Lt = 3" Apricot Tree			
1+59 =	Mend rock + Conc. wall - ⊕ 8.7 Rt = 2" Apple tree			
⊕	base wall	11.6	429.5	
Top	"	9.56	426.55	
1+63 -	4.3 Lt = ⊕ shrub			
1+64 -	1.3 Rt = ⊕ 2" fig.			
1+70 -	5.7 Lt = ⊕ 2" fig.			
1+71 -	9.4 Rt = ⊕ 1" Tropical fruit tree			



436.11

1+75			
⊕		7.2	428.9
11' Lt. = beg. wall	Rock + Conc	4.8	431.3
11' Lt.		4.22	431.89
10' Rt. = Top wall		8.97	427.12
	base "	9.6	426.5
15.5' = wire fence		10.7	425.9
27' Rt.		14.8	421.3
41' = Rt. = ⊕ Creek		20.1	416.0
60' Rt.		13.5	422.6
1+83 - 10.2 Rt. = ⊕ 4" Peach			
1+85 = Rock wall from N.		5.9	430.2
" " Top		4.67	431.09
1+87 - 3.5 Lt. = ⊕ 2" Orange			
1+91 = Rock wall - Top		4.30	431.81
" " ground		5.3	430.8
1+96 = 29 Lt. = Rock wall - ground		4.6	431.5
" " " Top		3.34	432.77
1+98 - 9.3 Rt. = 4" Peach			
1+93.8 = 59.6 Rt. = outlet 30" Steel pipe			
FL. pipe		18.66	417.45
2+00			
⊕		4.4	431.7
4.1 Lt. = Wall - ground		4.3	431.8
	Top	3.06	433.05

2+00 Cont.

436.11

37

15' Lt.		1.6	434.5
15' Rt. = wire fence		6.8	429.3
40' Rt.		10.9	425.2
62' Rt. = low point		15.5	420.6
70' Rt.		12.0	422.1
2+03 - 2.5 Lt. = Rock wall	⊕ 2" Lemon	6.5	
2+09 - 6.3 Lt. = Rock wall		2.37	433.72
" " "		3.3	432.8
2+15 - 6.5 Rt. = ⊕ 4" Plum			
2+17.2 - 58.4 Rt. = ⊕ 30" pipe at Angle pt. (covered.)			
2+21 - 10.5 Rt. = ⊕ 1" Lemon			
2+29 - 3.2 Rt. = 4" Avocado			
2+31 - 11.9 Rt. = angle in wire fence			
2+35			
⊕		5.0	431.1
7.2 Lt. = Rock wall - base		4.1	432.0
	Top	3.02	433.09
11.4 = Rock wall along house		3.1	433.0
5' Rt.		6.5	429.6
30' Rt. = Low point		11.0	425.1
50' Rt.		10.6	425.5
✓ 1+37 = cross wire fence			
✓ 1+41 - 7.5 Lt. = Corn House			
Sill of door to basement		3.04	433.07



436.11 ✓

2+50				
Φ		7.8	428.3	
8.4 Lt. = Side of House - ground		6.5	429.6	
15' Rt. = Low point		9.7	426.8	
38' Rt. = along House		9.1	427.0	

T.P. 11.89 445.59 ✓ 2.41 433.70

2+69 - 9.2 Lt. = Cor. House + beg Conc. wall				
2+75.30 = should be end of 18" R.C. pipe - Covered				
Φ on stub.		7.98	437.61	
9.3 Lt. = base Conc. wall		8.3	437.3	
Top " "		4.82	440.77	
10' Rt.		9.6	437.0	
2+81 = Top of fill - Φ		5.2	440.8	

F.L. of inlet of 18" pipe 8.57 437.02  
 1.6 Back of curb face - at Φ of inlet - see sketch.

T.P.	1.65	445.37 ✓	1.87	443.72	
	0.77	436.52 ✓	9.62	435.75	
	1.98	427.23 ✓	11.27	425.25	
check starting B.M.		4.98	422.25 ✓	422.19	

Notes Reduced 12-18-96



Proposed Culvert 8th Ave. South of  
Robinson Ave.

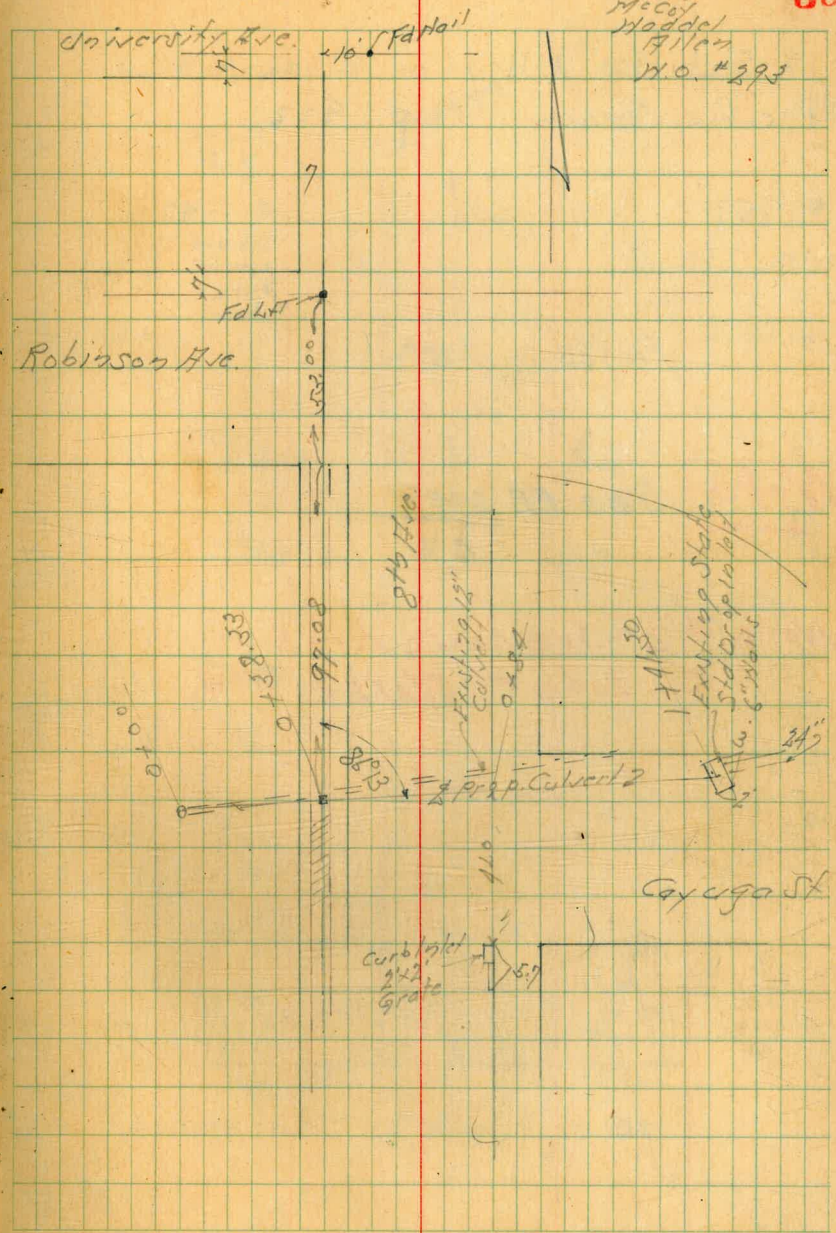
				35	
B.M.	3.58	287.94		284.36	N.W. CP University 8th Ave.
TP	0.15	278.89	9.20	278.74	
B.M. state			8.29	270.60	N.W. CP W.C. 815 40 Sof. 5th Robinson 270.72
TP	1.00	271.60	8.29	270.60	
TP	1.76	261.83	11.53	260.07	
0+0 = 12" let 12" Conc. Pipe		15.76		246.07	Flow Line Conc. Pipe
+16		5.4		256.9	
TP	9.15	269.22	1.76	260.07	
+31		2.5		266.7	
+38.5 = Fly Conc. Walk		2.10		267.12	
+44.5 = 14" ch of 8th St.		2.42		266.80	
" Gutter on Paving		2.99		266.23	
+66 on Paving		2.95		266.27	
+84 = Fly Paving		3.85		265.37	
" 4' South of 1/2" curb in ch		5.11		264.11	on Grating
"		7.58		261.69	Flow Line
+87		3.3		265.9	
1+0		3.8		265.9	
+13		12.4		256.8	
" 2' Lt of 1/2"		18.4		250.8	
+22		20.3		248.9	= Bottom Hole
+30		16.2		253.0	
+41.30 = 2' x 2' Drop Inlet		15.94		253.28	Top Conc Drop Inlet
" " " " "		22.50		245.72	Flow Line

Notes Reduced  
3.28.47

Indexed  
0.5.16.

March 27-47

39



Sisson  
McCoy  
Haddel  
Allen  
W.O. #293

Existing State  
Std Drop Inlet  
w. 6" Balls

Curb Inlet  
12x22  
Grate



X-Section 20' Alley in Block 282  
Pacific Beach - Map 922

# 959  
W.O. 230

4-1-47  
Osborne  
Hardin  
Smith  
Worrell

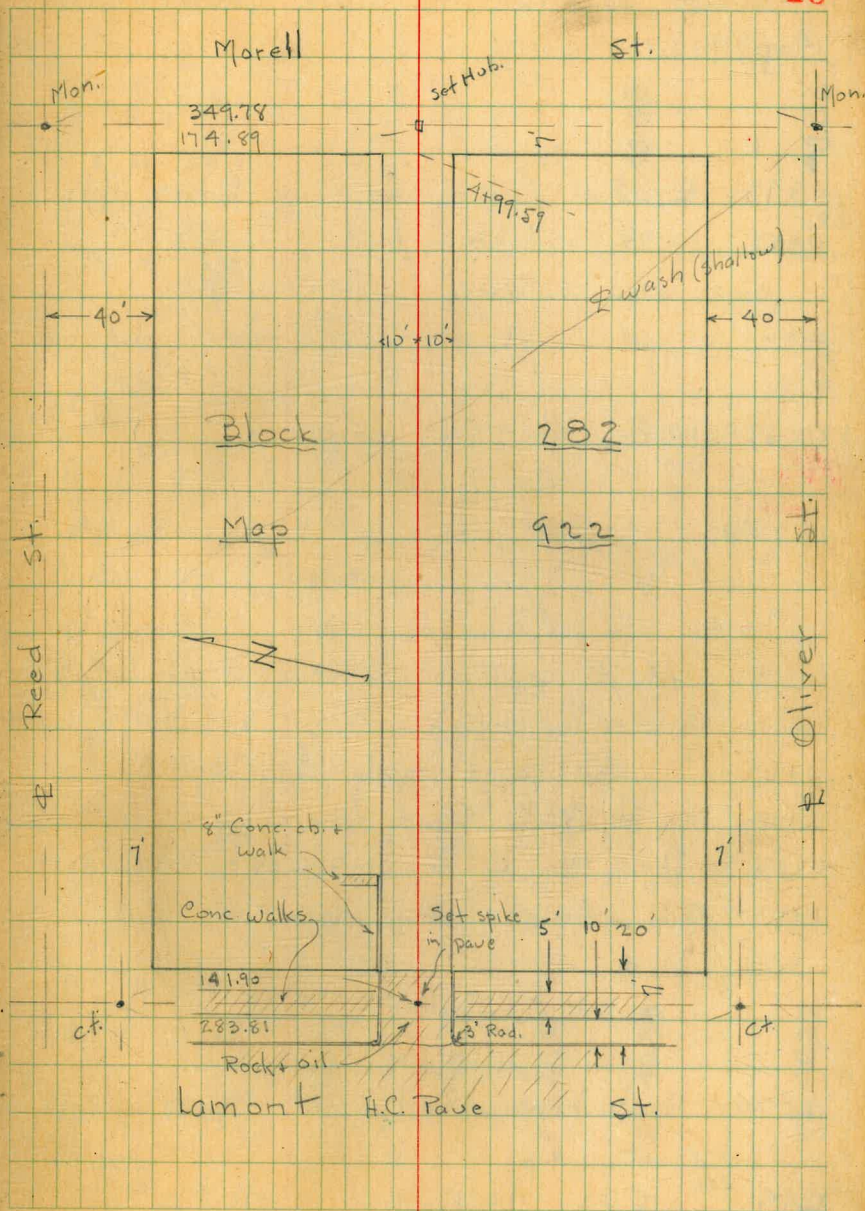
Plotted: J.M.

Note See FB 2218  
62

Note # 2 - See Loose Leaf  
For Latest. 7/1/57 SCA.

Indexed  
C.S.M.

40

















check B.M. S.W. 7' Mon. <sup>Morell</sup> 12.00 23.55 23.53  
 Pac. Beach Dr.

5+19.59 = Prop. cb: Line

5+00 - 9.2 Lt. = end board fence

4+99.59 = W.L. Morell (ungraded)

Lt.

Rt.

Rt.

42

9.6	26.0				
50		11.2	24.4		
		11.6	24.0		
		12	23.6		
		10			
		14.8			20.8
		50			for Profile
	24.8				
	24.5				
	24.0				
	23.8				
	23.4				
10.8					
50					
11.6					
11.8					
12					
60					

35.55

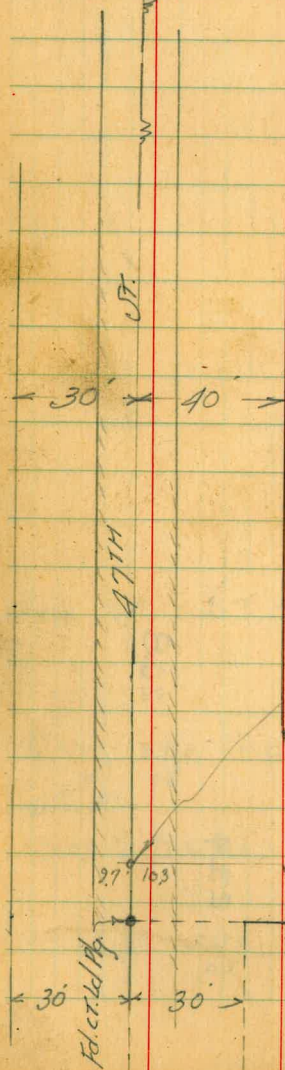


Melter  
Baker  
Subsidiary  
4-25-47

CROSS SECTION 30' Alley  
FEDERAL BOULEVARD SUBDIVISION

Fd. Ct. 1st Pk.  
Elev = 228.05  
FB 1682  
5

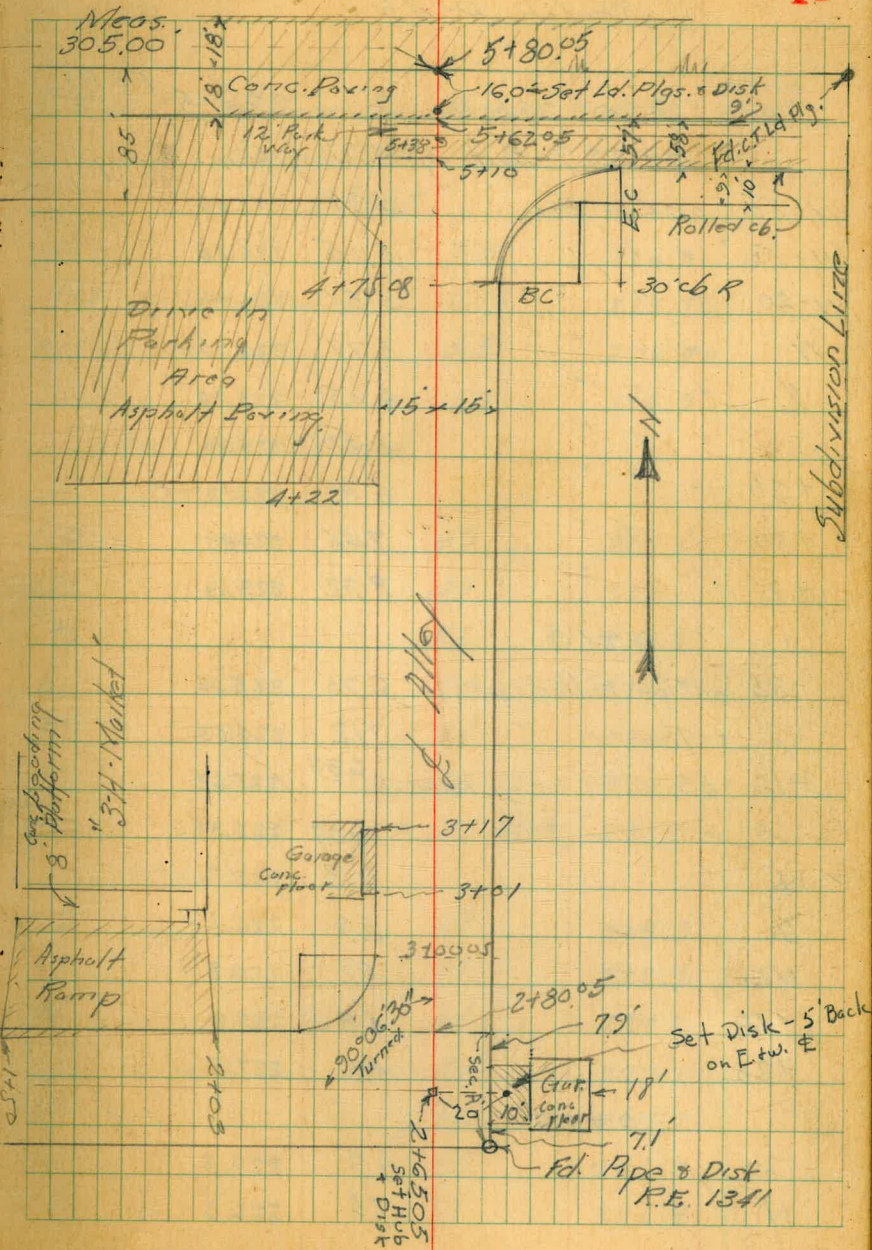
(Levels & Sections  
on P. 46 to P. 50)



Set Ld. & Disk

Alley

INDEXED  
C.S.M.



Subdivision Line



2+65.05  
Set Hub  
& Disk

Set Disk - 5' Back  
on E. w. E

Fd. Pipe & Disk  
R.E. 1341



Cross Section 30 Alley  
Sketch P-45

3.90 231.95 228.05 <sup>FB 1682</sup><sub>5</sub>

0-22.7 = East edge existing Conc. Paving.

N-85'	on Conc Pav.	4.91	227.04
N-50'	" " "	5.15	226.80
N-20'	" " "	5.51	226.44
N	" " "	5.77	226.18
L	" " "	6.05	225.90
J	" " "	6.37	225.58
+20	" " "	6.83	225.12
+50	" " "	7.46	224.49
+85	" " "	8.32	223.63

0-10

-35	on Top Rolled cb.	6.70	225.05
"	" Toe " "	7.12	224.83
-10	= BC 10' Ret on Top Rolled cb	6.33	225.62
"	" " Toe " "	6.57	225.38

SL		6.3	225.7
L		5.9	226.1
NL		5.2	226.8
+10		4.8	227.2
+20		4.8	227.2

0+00

-20		4.7	227.3
N		5.4	226.6

B.M. 1d Pkg in Conc Pav. Federal & 47th = <sup>Sketch</sup><sub>P-45</sub>  
0+00 Cont

231.95

L		5.8	226.2
+14'	on Top Rolled cb	6.19	225.76
+15=SL	" Top " "	5.89	226.06
SL+10'		5.7	226.3

0+02 = Pak 13' N of L

0+30

-10		4.9	227.1
SL		4.9	227.1
+5		5.2	226.8
L		5.3	226.7
+9		5.4	226.6
N		4.8	227.2
+10		4.1	227.9

0+40

-10		3.7	229.3
-3		3.1	228.9
N		4.1	227.9
+3		4.9	227.1
+5		4.8	227.2
+6		5.3	226.7
L		5.1	226.9



231.95

X-Section  
30' Alley

0+40 Cont.

L+10	5.1	226.9
S.L.	4.9	227.1
+10	4.8	227.2

0+70

-10	4.9	227.1
S.L.	5.0	227.0
L	4.9	227.1
+8	5.1	226.9
+10	4.5	227.5
N	3.3	228.7
+2	2.8	229.2
+10'	2.9	229.1

1+00

-10	2.7	229.3
-5	3.0	229.0
N	3.4	228.6
+7	4.5	227.5
L	4.6	227.4
S.L.	4.6	227.4
+10	4.9	227.1

1+10 = Beg. Conc. Wall on S.L. line. 1+65 = <sup>East of</sup> end Wall

S.L. on Ground of Conc. Block	4.5	227.5	on ground
S.L. " Top Conc. Block wall	10.4	232.4	

231.95

1+32 = Beg. Conc Drive on South

S.L. on Conc Drive	4.61	227.34	47
L	4.6	227.4	
N	4.8	227.7	
+5	4.0	228.0	
+10	2.1	229.9	
+15	1.8	230.2	

1+42 = East edge Above Conc. Drive

S.L. on Drive	4.41	227.54	
---------------	------	--------	--

1+50 = Beg. Asphalt Ramp on North

-25' on Asphalt	1.44	230.51	
-15 " "	1.81	230.14	
-10 " "	3.64	228.31	
NL " "	4.31	227.64	
+2 " " = South edge	4.57	227.38	
L	4.5	227.5	

S.L. on Ground of Wall	4.5	227.5	
------------------------	-----	-------	--

1+45 14' RT of L = Pole Anchor

1+65 = Tel Pole 14' RT of L

S.L. on ground of Wall	4.1	227.9	
" " Top of "	10.4	232.4	
L	4.4	227.6	
+14 on Top Asphalt Ramp	4.40	227.55	
NL. on " "	4.30	227.65	
+16 " " "	3.17	228.78	
+28 " " "	2.69	229.26	
+29 on Conc Ramp.	1.00	230.95	



		231.95			on E Hub
TR	5.11	232.68	4.38	227.57	2165.05
	1+95				
28' lt of NL	on Conc. Locality	Platform 1.35		231.33	
-29	on Asphalt Ramp	3.64		229.04	
NL	" "	4.93		227.75	
g	" "	5.1		227.6	
SL	" "	5.4		227.3	
+10	" "	5.7		227.0	
	2+03				
N-23	on Ramp	3.82		228.86	
NL	" "	4.84		227.84	
	2+30.05 = BC.	20' Rod			
N-10		2.9		229.8	
-2		3.6		229.1	
N		4.6		228.1	
+4		5.2		227.5	
g		4.9		227.8	
SL		5.2		227.5	
+10		5.7		227.0	
	2+50.05 = 144	Alley on N			
-10		5.3		227.4	
SL		5.0		227.7	
g		4.9		227.8	
N		4.8		227.9	
+5		3.6		229.1	

	232.68				X-Sections 30' Alley Federal Blvd Sub. 48
	2+65.05				
NL	4.7		228.0		
g on Hub	5.11		227.57		
SL	5.0		227.7		
+10	5.2		227.5		
	Sec A = E Line	N + South Alley			
SL-10	5.1		227.6		
SL Ground	4.7		228.0		
SL on 2" Pipe	5.63		227.65		
SL +7.1 = South edge Conc Drive	4.86		227.82		
10' East Abance on Garage Floor	4.77		227.91		
g on Conc Drive	4.93		227.85		
10' E, on Garage Floor	4.71		227.97		
g 17 on Hedge Drive	4.77		227.91		
10' E, on Floor	4.70		227.98		
NL	4.6		228.1		
	2+75 = Pole 135' RT of g				
	2+80.05 = NL East & West Alley				
E-10	4.7		228.0		
E	4.7		228.0		
g	4.8		227.9		
W	4.9		227.8		
	3+00.05 = 1' North of South edge Garage on West				
-4.5' at garage	3.9		229.4		
NL	3.6		229.1		
+7	4.6		228.1		



232.68

L	4.8	227.9	
E	4.7	228.0	
+10	4.5	228.2	
3+01 = Beg. Conc Apron on W			
L + 14.6 on Toe Conc Apron	3.42	229.26	
W + 4.5 on Conc "	3.04	229.64	
3+17 = N edge Conc. Apron on West			
W - 4.5 = Top Conc Apron	2.97	229.71	Conc Floor Same Elev
W + 0.4 = Toe "	3.43	229.25	
3+50			
-10	2.4	230.3	
-3	2.7	230.0	
W	3.4	229.3	
+3	4.2	228.5	
L	4.5	228.2	
+11	4.5	228.2	
E	4.0	228.7	
+10	3.2	228.8	
3+75			
-10	3.5	229.2	
E	3.5	229.2	
+5	4.1	228.6	
L	4.1	228.6	
+7	4.2	228.5	
W	2.9	229.8	
+3	2.5	230.2	
+10	2.2	230.5	

232.68 X-Section 30' Alley

T.P. 578	236.03	2.43	230.25	49
4+00				
-15		5.2	230.8	
-3		5.4	230.6	
W		5.7	230.3	
+7		6.8	229.2	
L		6.9	229.1	
+9		7.1	228.9	
E		6.7	229.3	
+10		6.7	229.3	
4+22				
-10		6.4	229.6	
E		6.4	229.6	
+7		6.6	229.4	
L		6.6	229.4	
+9		6.3	229.7	
W		5.4	230.6	
		5.14	230.89	
70.7 on East edge Asphalt Pav.				
+15 " South " " Pav 501			231.02	
4+40 = Tel Pole on E. Line = on Line				
4+41 = Beg. Conc. Block Wall on E. 15' Back				
E - 1.5 on Ground at Wall	6.1		229.9	
" " Top Wall	+0.4		236.4	
4+64 = Pole Anchor on East. on Line				
4+75.08				
-15 on Asphalt Pav.	5.78		230.75	
West Line - 1.5	5.29		230.78	
on Asphalt Pav.				



23603

4+75.08 Cont. from P. 49

W	5.4	230.6
TS	5.7	230.3
L	5.8	230.2
8	6.0	230.0
E	5.5	230.5
+1.3 at Conc. Block wall	5.4	230.6
" Top " "	10.8	236.8

4+78 = 3" Pipe Sign Support on 1/4 oz. Bolt

4+89 = " " " " " "

4+95.25 = 5/8 Federal Blvd

-20	5.6	230.4
E	5.5	230.5
L	5.4	230.6
W	5.3	230.7
+1.5 on East edge Pav.	5.28	230.75
+1.5 " on Pav.	5.41	230.62

4+94.85

SE Curb Return Length 47.1 4 equal Parts

B.C. on cb	5.45	230.58
" " Toe cb.	5.77	230.26
① on cb	5.50	230.53
① " Toe	5.78	230.28
② " cb	5.50	230.53
② " Toe	5.81	230.22
③ on cb	5.58	230.45
③ " Toe	5.83	230.20

23603 X-Section 30' Alley

on cb

50

① = E.C. cb Ref on Federal	5.54	230.49
② on Toe cb. on Asphalt	5.81	230.22
5+10 = Beginning Asphalt Paving		
-30' on Pav.	5.76	230.27
-10 " "	5.48	230.55
E " "	5.27	230.76
L " "	5.37	230.66
W " "	5.43	230.50
+1.5 " "	5.43	230.50

5+38 = N edge Asphalt

-15 on Pav.	5.65	230.38
W " "	5.50	230.43
L " "	5.17	230.86
E " "	5.13	230.90
+30 " "	5.39	230.64

5+62.05 = Edge Exist. Conc. Pav. Federal Blvd

-30' on Conc. Pav.	4.85	231.18
E " " "	4.98	231.05
L " " "	5.07	230.96
2' North on Disk	5.03	231.00
W on Conc. Pav.	5.18	230.85
+30 " " "	5.43	230.60

chk starting BM 800 228.03  
 228.05  
 0.02



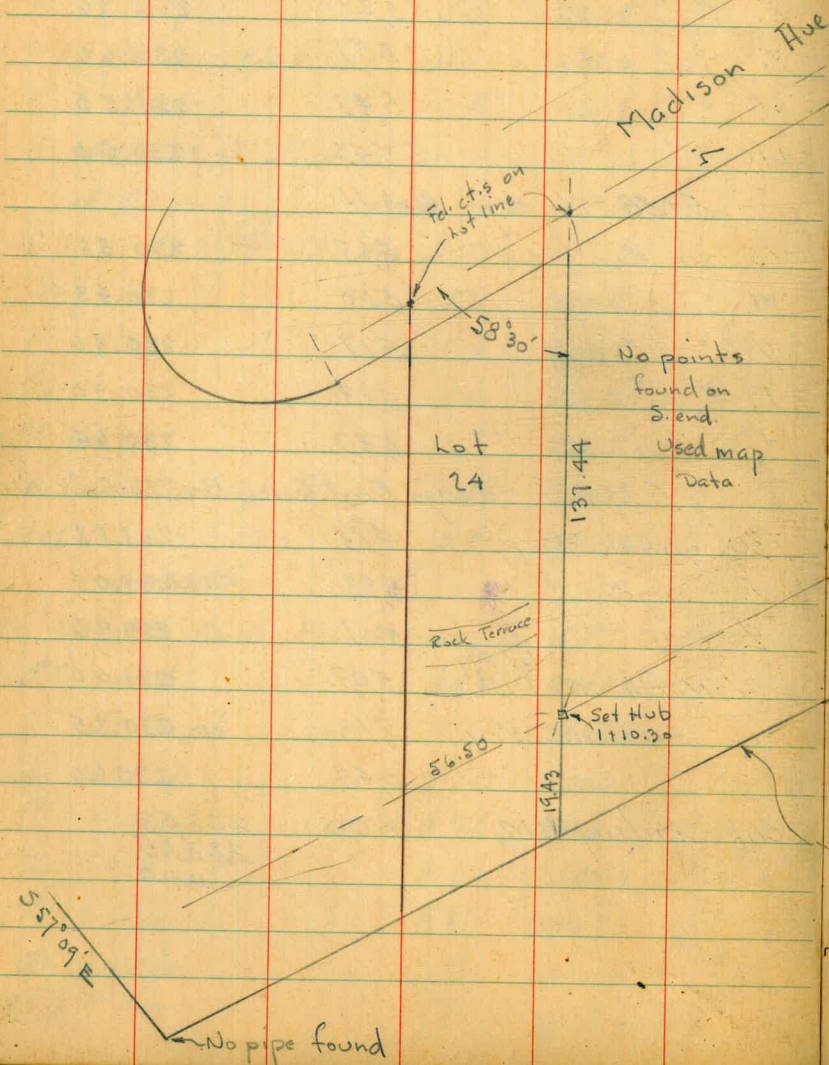
Survey for Prop. Drain along Sly. Line  
of Cajon Terrace - from Ext. Culverts  
across 55<sup>th</sup>

5-12-47

# 1070

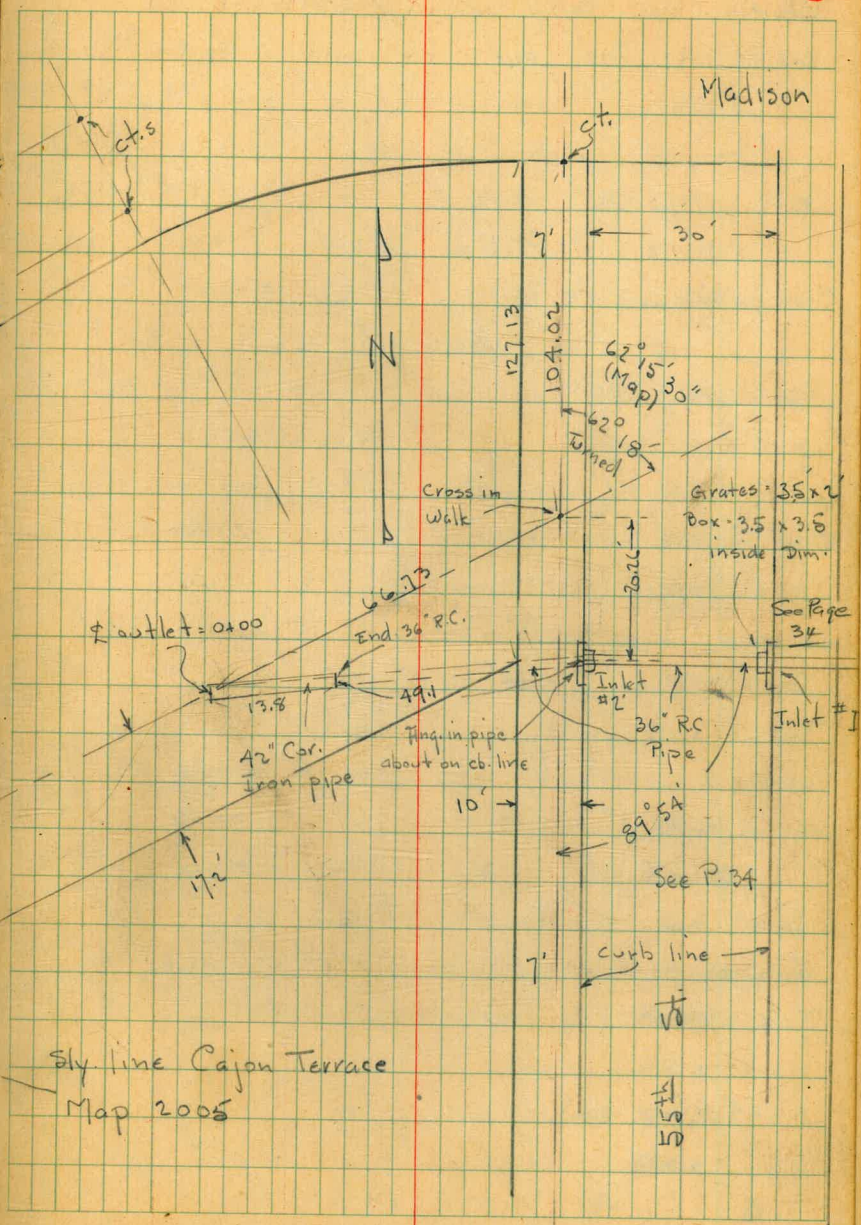
W.O. 90024

Osborne  
Hardin  
Smith  
Worrell



Indexed  
C.S.H.

51





Levels for Prop Drain - Sketch P. 51

See P. 34 for Levels to East.

BM.	1.44	423.63	422.19	N.W. El Capon +55 <sup>th</sup>
	2.51	423.51	2.63	421.00
Cross on W. 7' Line + $\Phi$ Prod.		5.37	418.14	
		423.51		

Rods on Inlet on E. side - Inlet #1

Top cb. on $\Phi$ Inlet	4.89	418.62
gut " " on $\Phi$ Inlet	5.89	417.62
Edge of grate 2' out from cb	5.81	417.70
F.L. of Box - Break seems to	21.95	401.56

be on W. side of Box 2' out from the cb.

Inlet #2 on W. side 55<sup>th</sup>

Top cb. on $\Phi$ Inlet	5.46	418.05
gut " " "	6.45	417.06
edge of grate - 2' out on $\Phi$	6.36	417.15
F.L. box + Culvert at E	24.31	399.20

side of box - seems to be the break

Ground profile down to outlet of pipe

Top of cb. +  $\Phi$  inlet is 0-62.9

0-45 = Top bank 6.6 416.9

T.P. 0.38 410.73 13.16 410.35

410.73

52

0-30	5.1	405.6
0-13.8 = End 36" Conc. + Beg 42" Cor. iron (buried)		
$\Phi$ -	11.4	399.3
10' Rt.	7.6	403.1
10' Lt.	11.7	399.0
0-04 = Top of bank above outlet		
$\Phi$	12.7	398.0
10' Rt.	10.4	400.3
20' Rt.	7.2	403.5
10' Lt.	12.7	398.0
20' Lt.	8.5	402.2
T.P. 0.46	399.56	11.63
		399.10

(0-13.8 = end 36" Conc. (see above for ground shots)

Flow line 36" Conc. (end)	7.44	392.12
" " 42" Cor. Iron	7.53	392.03

Beg. Reg. sections at 0+00  $\Phi$  Prop drain = base line

0+00 - $\Phi$ = F.L. end 42" pipe	8.14	391.92
10' Lt.	1.6	398.0
20' Lt.	+2.0	401.6
15' Rt.	1.5	398.1



399.56 ✓

0+25		
±	6.9	392.7
10' Lt.	2.9	396.7
10' Rt. ± Wash	9.5	390.1
20' Rt.	3.2	396.9
0+45		
±	8.6	391.0
15' Lt.	2.4	397.2
5' Rt. ± Wash	12.1	387.5
10' Rt.	8.3	391.3
20' Rt.	3.2	396.9
0+60 = ± Wash		
±	12.7	386.9
15' Lt.	3.7	395.9
5' Rt.	9.1	390.5
15' Rt.	5.4	394.2
0+75		
±	8.9	390.7
6' Lt. ± Wash	13.4	386.2
15' Lt.	5.8	393.8
10' Rt.	4.6	395.0
20	1.6	398.0
1+00		
±	8.3	391.3
10 Lt. ± Wash	14.3	385.3
20 Lt.	9.4	390.2

399.56 ✓

53

10' Rt.	2.8	396.8
20' Rt. #24	+0.5	400.1
1+10.30 = Hub = E.L. Lot	8.56	391.0
1+20		
±	8.8	390.8
10' Lt.	12.6	387.0
20' Lt. ± Wash	16.3	383.3
30' Lt.	10.3	389.3
5' Rt.	4.8	394.8
12' Rt. = base Terrace Cobble surface	4.4	395.2
1+45		
±	6.9	392.7
15' Rt.	2.1	397.5
10' Lt.	14.1	385.5
21' Lt. ± Wash	17.6	382.0
30' Lt.	12.9	386.7
1+65		
± = Top Rock + Conc. Terrace	8.79	390.77
7' Lt. = Base Ter.	4.2	385.4
20' Lt. ± Wash	18.3	381.3
30' Lt.	15.0	384.6
10' Rt. = Base Rock + Conc. Ter.	7.2	392.4
12' Rt. = Top Rock Ter.	2.9	396.7
19' Rt. = Base Rock Ter.	2.8	396.8

on Hub



399.56 ✓

399.56

0+81 = edge Rock + Conc Ter.			
± = Top	9.03	390.53	<del>390.53</del>
2' Lt. = Base	12.7	386.9	
10' Lt.	17.5	382.1	
26' Lt. = ± Wash	19.1	380.5	
35' Lt.	12.5	387.1	
12' Rt. = base Rock Ter.	8.0	391.6	
18' Rt. = Top " "	2.8	396.8	
1+90 = ± 10" Pepper			
1+96			
±	13.4	386.2	
2.5 Lt. = Top <sup>Ter. Beg.</sup> Rock + Conc.	14.2	385.9	
4' Lt. = Base	18.3	381.3	
23' Lt. = ± Wash	19.5	380.1	
30' Lt.	15.1	388.5	
40' Lt.	10.0	389.6	
5' Rt. = Base <sup>Ter.</sup> Rock + Conc.	11.7	387.9	
6.5' Rt. = Top	8.00	391.6	
18' Rt. = Base Rock Ter.	7.8	391.8	
2+15			
±	18.5	381.1	
20' Lt. = ± Wash	20.3	379.3	
30' Lt.	13.4	386.2	
2' Rt. = Base - end Rock	17.8	381.8	
4' Rt. = Top - end	14.4	385.2	

Notes Reduced. 5.13.87

54

12' Rt. = Base - end Rock Ter.	11.2	388.8	
13' Rt. = Top " " Ter.	8.5	391.1	
25' Rt. = Base Rock Ter.	6.5	393.1	
2+36 = 7' Lt. = ± 4" Avacado			
2+48 = 8.2 Lt. = ± 6" Avacado			
2+50 = end.			
±	18.0	381.6	
15' Lt. = ± Wash	22.0	377.6	
30' Lt.	15.1	383.5	
5' Rt.	15.3	389.3	
20' Rt.	8.3	391.3	
T.P.	11.63	410.73 ✓	0.46
	12.83	413.34 ✓	0.22
	3.81	424.63 ✓	2.52
Check Starting B.M.	2.43	422.20 - 422.19 ✓	



Proposed Storm Drain  
2" Line

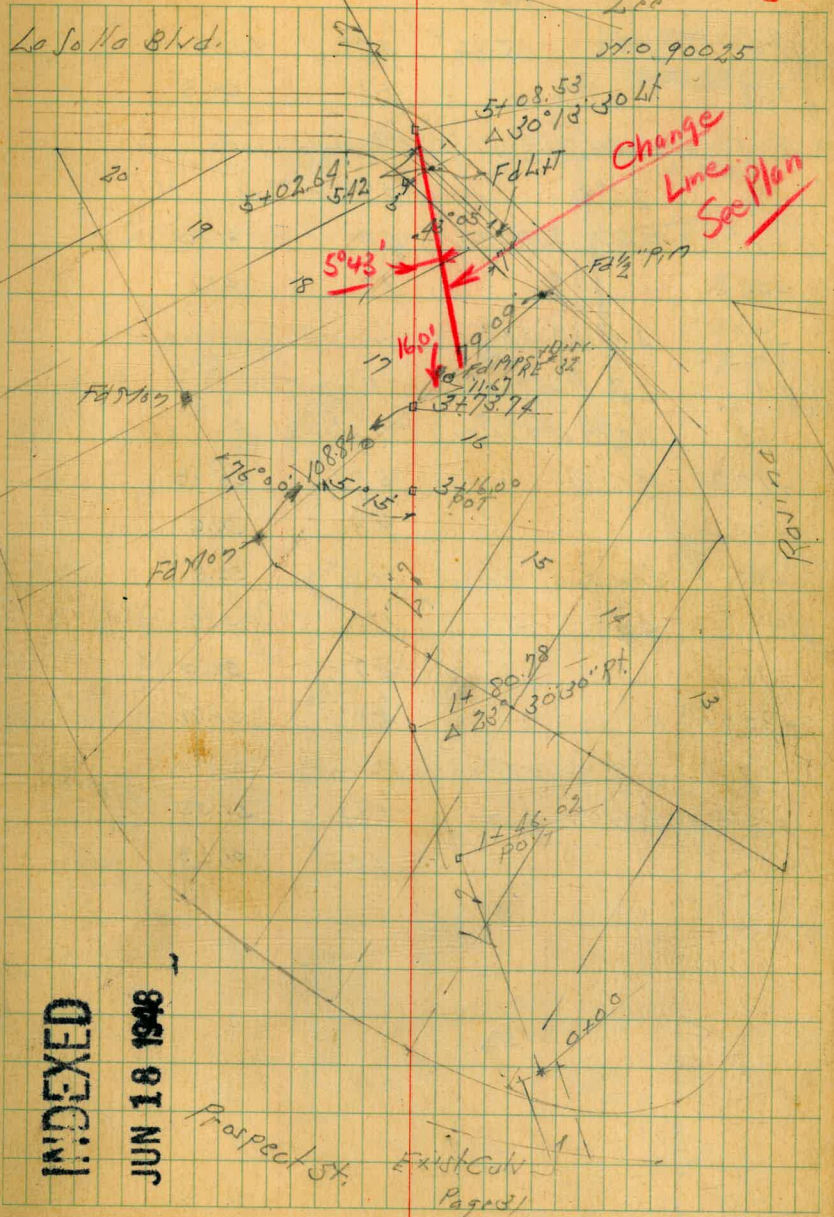
Block 15 La Jolla Park

RM	0.10	63.35	63.25	574 Top of Hyd Rowing + La Jolla Blvd 63.25 79.32
TP	1.55	51.80	13.10	50.25
3+73.74 = Sky Lot 17		15.8	36.0	
4+0 = Top of New Fill		14.7	37.1	
TP	12.85	63.10	1.55	50.25
+35 = Top New Fill		5.0	58.1	
+60		4.3	58.8	
+98.8 = Edge Conc. Walk		4.58	58.52	
5+05.6		4.82	58.28	
+08.35 A 30° 13' 30" Lt		4.83	58.27	on Stab
+14.25 = Cb		4.96	58.19	
" = Gutter		5.30	57.80	
+24.92		4.84	58.26	
TP	7.86	65.37	5.59	57.51
+24.92	77.8	4 1/2' Cb	7.94	57.93 Top Curb
"	"	"	8.93	56.99 Grate
"	"	"	12.57	52.80 Bottom Box
+49.6		6.16	59.21	
+88.3 = Cb		5.95	59.92	
" = Gutter		6.30	59.07	
" 41.4' Wl		6.37	59.00	Top Curb
"		7.36	58.01	Grate
"		10.61	54.76	Bottom Box
6+00.2 = Edge Walk		5.81	59.53	

For P 4170  
Sec Page 31

June 16-48  
S. S. Smith  
Becher  
L. C.

55



INDEXED

JUN 18 1948

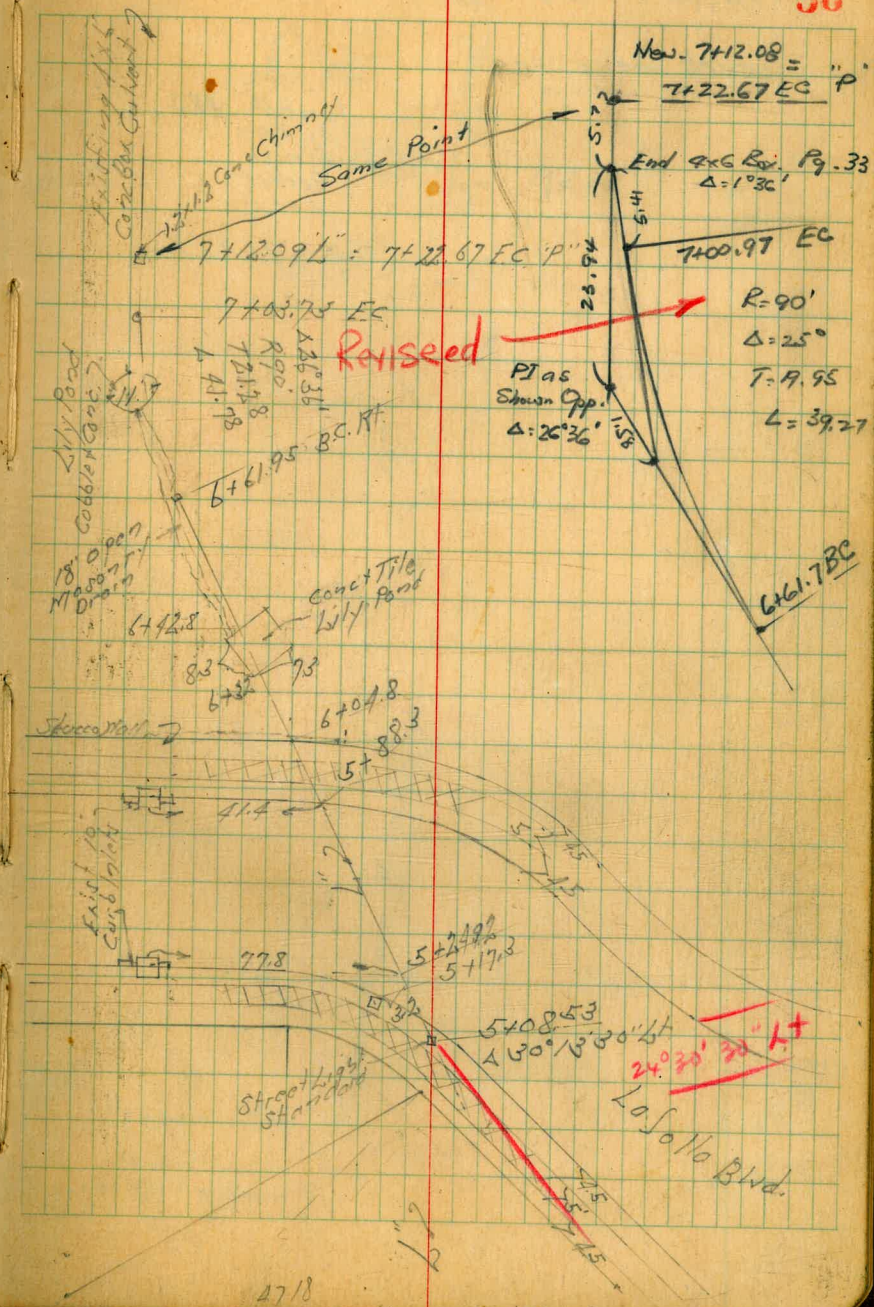
EXIST'G DW  
Page 31



TP	4.77	65.86	428	61.09
6+06			5.6	60.3
+115	0.5 L of 2-5 Ely 14" Cypress Tree			
+24	2.5 R of 1-11 Ely 9" Pipe Tree			
6+32	Edge Conc Tile Pond		4.76	61.10
+428	" " " "		4.8	61.1
+46	2 W of 2-5 Ely cluster of Bamboo			
+48	2.7 R of 2-11 Ely 10" Pipe Tree			
+53	1.5 L of 2-11 Ely cluster of Bamboo			
6+1.95	- B.C. Pt		5.76	60.10
+75			9.3	56.6
+83	Edge Lily Pond		13.1	52.8
TP	4.08	57.68	1226	53.60
+95			5.7	52.0
7+02.73	- EC		5.77	51.91
+07	2-11 Ely 18" Cocoa Palm Tree			
+12.09	- 1.8 x 1.8 Conc Chimney		6.13	51.55
"			16.05	41.63

Top of 18"  
1.8 x 1.8 Conc  
Chimney

Bottom of  
Conc









Cross Section Proposed Storm Drain  
 Draper Ave to Fads Ave Bet. Klina St x Sikora St  
 Sketch Page 57

Lt-H: 2 Pt-S 58

+19					
1 + 0					
TP	12.29	80.74	8.77	68.45	
+70					
+45					
+20					
0 + 0	= Ely Exist 4'x6' Conc. Storm Drain				
TP	1.57	77.22	12.55	75.65	Sta. BP Klina + Draper
BM	2.16	88.20	86.04		

76.1 46 12	68.7 130 5	67.4 133	66.6 14.1 7.8 Bottom X 2.0	71.7 9.0 15	
71.4 9.3 11	67.0 137 5	66.6 14.1	66.6 14.1 2	71.6 9.1 10	
		80.74 ✓			
72.6 4.6 10	70.1 7.1 3	65.1 13.1	65.4 11.8 3	69.5 7.7 11	69.9 7.3 30
72.4 4.8 10	72.0 5.2 5	66.9 10.3	63.4 13.8 3.8 Bottom X 2.5	66.0 11.2 10	70.8 6.4 19
75.8 1.4 11	67.1 10.1 5	63.6 13.6	63.4 13.8 3	73.1 4.1 11	
75.9 1.3 12	63.4 14.0 5	62.57 14.65 = Flank Line	69.31 7.91 70.0 = Top Plane Box	62.9 7.4 4	73.1 4.1 10
		77.22 ✓			



Lt. 2 Rt.

+50

+21

TP 2.62 80.95 2.41 78.33

2+0

+80

+50

1+28.92 Δ 3 sight

80.74

79.2 1.88 10	78.8 2.2 8-9 Petal Fence	71.2 8.3 10	70.6 10.3 1	71.2 9.7 7-11 H/DY Wall	78.2 2.7 11-Top DY Wall
78.4 2.5 10	78.4 2.6 7-9 Petal Fence	71.4 9.6 80951	69.0 12.0 4	73.2 8.8 8-11 H/DY Wall	78.6 2.4 11-Top DY Wall
77.9 2.8 10	71.3 3.4 6-Fence	70.7 10.0	69.4 11.3 1-11 Bottom Wash	69.6 11.1	76.3 4.4 10
78.7 2.0 10	77.2 3.5 5-Fence Lim	73.9 6.8	68.4 11.9 5-11 Bottom Wash	70.4 10.3 17	76.0 4.7 18
78.1 2.6 10	71.1 3.6 3-High board Fence	70.4 5.3	69.1 11.6 18	69.4 12.3 18-5-11 Bot Wash	73.7 7.0 20
	78.0 2.7 8	71.39 9.35 07/16/6	68.9 13.8 6	67.1 13.6 12	72.3 8.4 18

80.74 1

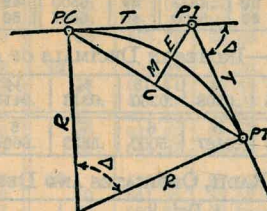






# DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES

Copyright, 1914, by Eugene Dietzgen Co., New York City



232 68  
4 83  
227 85  
225

### CURVE FORMULAS

- Radius— $R = \frac{50}{\sin \frac{D}{2}}$  (1) Degree of Curve— $D$  and  $\sin \frac{D}{2} = \frac{50}{R}$  (2)  
 Tangent— $T = R \tan \frac{\Delta}{2}$  (3) Length of Curve— $L = 100 \frac{\Delta}{D}$  (4)  
 Middle ordinate— $M = R(1 - \cos \frac{\Delta}{2})$  (5)  $= R \text{vers} \frac{\Delta}{2}$  (6)  
 External— $E = T \tan \frac{\Delta}{4} = R \div \cos \frac{\Delta}{2} - R$  (8)  $= R \text{exsec} \frac{\Delta}{2}$  (9)  
 Long Chord— $C = 2 R \sin \frac{\Delta}{2}$  (10)  $\Delta$ —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  $1^\circ$  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—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 115.37. For from Table IV for  $1^\circ$  curve  $E = 960.6$  for  $8^\circ 20' = 960.6 \div 8\frac{1}{3} = 115.27$  and from Table V correction—.10 or  $E = 115.37$  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  $D = 5^\circ 30'$ .



TABLE IV.—TANGENTS AND EXTERNALS TO A 1° CURVE.

Table with columns: Central Angle, Tangent, External. Rows 31-40. Includes handwritten notes at top: 27.11, 48.11, 32.11.

TABLE IV.—TANGENTS AND EXTERNALS TO A 1° CURVE.

Table with columns: Central Angle, Tangent, External. Rows 61-70.



TABLE IV.—TANGENTS AND EXTERNALS TO A 1° CURVE.

Central Angle	Tangent	External	Central Angle	Tangent	External	Central Angle	Tangent	External
91°	5830.5	2444.9	101°	6950.6	3278.1	111°	8326.7	4386.1
10'	5847.5	2457.1	10'	6971.3	3294.1	10'	8362.7	4407.6
20	5864.6	2469.3	20	6992.0	3310.1	20	8388.9	4429.2
30	5881.7	2481.5	30	7012.7	3326.1	30	8415.1	4450.9
40	5898.8	2493.8	40	7033.6	3342.3	40	8441.5	4472.7
50	5916.0	2506.1	50	7054.5	3358.5	50	8468.0	4494.6
92	5933.2	2518.5	102	7075.5	3374.9	112	8494.6	4516.6
10	5950.5	2531.0	10	7096.6	3391.2	10	8521.3	4538.8
20	5967.9	2543.5	20	7117.8	3407.7	20	8548.1	4561.1
30	5985.3	2556.0	30	7139.0	3424.3	30	8575.0	4583.4
40	6002.7	2568.6	40	7160.3	3440.9	40	8602.1	4606.0
50	6020.2	2581.3	50	7181.7	3457.6	50	8629.3	4628.6
93	6037.8	2594.0	103	7203.2	3474.4	113	8656.6	4651.3
10	6055.4	2606.8	10	7224.7	3491.3	10	8684.0	4674.2
20	6073.1	2619.7	20	7246.3	3508.2	20	8711.5	4697.2
30	6090.8	2632.6	30	7268.0	3525.2	30	8739.2	4720.3
40	6108.6	2645.5	40	7289.8	3542.4	40	8767.0	4743.6
50	6126.4	2658.5	50	7311.7	3559.6	50	8794.9	4766.9
94	6144.3	2671.6	104	7333.6	3576.8	114	8822.9	4790.4
10	6162.6	2684.7	10	7355.6	3594.2	10	8851.0	4814.1
20	6180.2	2697.9	20	7377.8	3611.7	20	8879.3	4837.8
30	6198.3	2711.2	30	7399.9	3629.2	30	8907.7	4861.7
40	6216.4	2724.5	40	7422.2	3646.8	40	8936.3	4885.7
50	6234.6	2737.9	50	7444.6	3664.5	50	8965.0	4909.9
95	6252.8	2751.3	105	7467.0	3682.3	115	8993.8	4934.1
10	6271.1	2764.8	10	7489.6	3700.2	10	9022.7	4958.6
20	6289.4	2778.3	20	7512.2	3718.2	20	9051.7	4983.1
30	6307.9	2792.0	30	7534.9	3736.2	30	9080.9	5007.9
40	6326.3	2805.6	40	7557.7	3754.4	40	9110.3	5032.6
50	6344.8	2819.4	50	7580.5	3772.6	50	9139.8	5057.6
96	6363.4	2833.2	106	7603.5	3791.0	116	9169.4	5082.7
10	6382.1	2847.0	10	7626.6	3809.4	10	9199.1	5107.9
20	6400.8	2861.0	20	7649.7	3827.9	20	9229.0	5133.3
30	6419.5	2875.0	30	7672.9	3846.5	30	9259.0	5158.8
40	6438.4	2889.0	40	7696.3	3865.2	40	9289.2	5184.5
50	6457.3	2903.1	50	7719.7	3884.0	50	9319.5	5210.3
97	6476.2	2917.3	107	7743.2	3902.9	117	9349.9	5236.2
10	6495.2	2931.6	10	7766.8	3921.9	10	9380.5	5262.3
20	6514.3	2945.9	20	7790.5	3940.9	20	9411.3	5288.6
30	6533.4	2960.3	30	7814.3	3960.1	30	9442.2	5315.0
40	6552.6	2974.7	40	7838.1	3979.4	40	9473.2	5341.5
50	6571.9	2989.2	50	7862.1	3998.7	50	9504.4	5368.2
98	6591.2	3003.8	108	7886.2	4018.2	118	9535.7	5395.1
10	6610.6	3018.4	10	7910.4	4037.8	10	9567.2	5422.1
20	6630.1	3033.1	20	7934.6	4057.4	20	9598.9	5449.2
30	6649.6	3047.9	30	7959.0	4077.2	30	9630.7	5476.5
40	6669.2	3062.8	40	7983.5	4097.1	40	9662.6	5504.0
50	6688.8	3077.7	50	8008.0	4117.0	50	9694.7	5531.7
99	6708.6	3092.7	109	8032.7	4137.1	119	9727.0	5559.4
10	6728.4	3107.7	10	8057.4	4157.3	10	9759.4	5587.4
20	6748.2	3122.9	20	8082.3	4177.5	20	9792.0	5615.5
30	6768.1	3138.1	30	8107.3	4197.9	30	9824.8	5643.8
40	6788.1	3153.3	40	8132.3	4218.4	40	9857.7	5672.3
50	6808.2	3168.7	50	8157.5	4239.0	50	9890.8	5700.9
100	6828.3	3184.1	110	8182.8	4259.7	120	9924.0	5729.7
10	6848.5	3199.6	10	8208.2	4280.5	10	9957.5	5758.6
20	6868.8	3215.1	20	8233.7	4301.4	20	9991.0	5787.7
30	6889.2	3230.8	30	8259.3	4322.4	30	10025.0	5817.0
40	6909.6	3246.5	40	8285.0	4343.6	40	10059.0	5846.5
50	6930.1	3262.3	50	8310.8	4364.8	50	10093.0	5876.1

90°06

TABLE V.—CORRECTIONS FOR TANGENTS AND EXTERNALS.

These corrections are to be added to the approximate values, found by dividing the tangent, or external, for a 1° curve (Table IV) by the degree of curve, in order to obtain the true tangents, or externals. Intermediate values may be obtained by interpolation.

**FOR TANGENTS ADD**

Central Angle	DEGREE OF CURVE													
	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°
10°	.03	.06	.09	.13	.16	.19	.22	.25	.28	.31	.34	.38	.42	.46
15°	.04	.10	.14	.19	.24	.29	.34	.39	.45	.51	.53	.58	.63	.68
20°	.06	.13	.19	.26	.32	.39	.45	.51	.58	.65	.72	.79	.84	.90
25°	.08	.16	.24	.33	.40	.49	.58	.67	.75	.83	.90	.99	1.06	1.14
30°	.10	.19	.29	.39	.49	.59	.69	.79	.89	.99	1.09	1.20	1.29	1.39
35°	.11	.22	.34	.47	.58	.69	.79	.81	.92	1.04	1.29	1.42	1.54	1.66
40°	.13	.26	.40	.53	.67	.80	.93	1.06	1.20	1.34	1.49	1.64	1.79	1.94
45°	.15	.30	.44	.60	.76	.91	1.06	1.21	1.37	1.52	1.70	1.87	2.04	2.21
50°	.17	.34	.51	.68	.85	1.02	1.19	1.36	1.54	1.72	1.91	2.10	2.29	2.48
55°	.19	.38	.57	.76	.95	1.14	1.32	1.52	1.72	1.92	2.14	2.35	2.56	2.77
60°	.21	.42	.63	.84	1.05	1.27	1.49	1.71	1.94	2.17	2.38	2.60	2.83	3.07
65°	.23	.46	.69	.93	1.16	1.40	1.64	1.88	2.13	2.38	2.63	2.88	3.13	3.39
70°	.25	.51	.76	1.02	1.28	1.54	1.80	2.06	2.33	2.60	2.88	3.16	3.44	3.72
75°	.27	.56	.83	1.12	1.40	1.69	1.98	2.27	2.57	2.87	3.16	3.47	3.78	4.09
80°	.30	.61	.91	1.22	1.53	1.84	2.15	2.46	2.78	3.10	3.44	3.78	4.12	4.46
85°	.33	.66	1.00	1.33	1.68	2.02	2.36	2.70	3.05	3.40	3.77	4.14	4.55	4.89
90°	.36	.72	1.09	1.45	1.83	2.20	2.57	2.94	3.32	3.70	4.10	4.50	4.91	5.32
95°	.39	.79	1.19	1.55	2.00	2.40	2.80	3.20	3.61	4.02	4.40	4.85	5.38	5.83
100°	.43	.86	1.30	1.74	2.18	2.62	3.06	3.50	3.95	4.40	4.88	5.37	5.85	6.34
110°	.51	1.03	1.56	2.08	2.61	3.14	3.67	4.21	4.76	5.31	5.86	6.43	7.01	7.60
120°	.62	1.25	1.93	2.52	3.16	3.81	4.45	5.11	5.77	6.44	7.12	7.80	8.50	9.22

**FOR EXTERNALS ADD**

Central Angle	DEGREE OF CURVE													
	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°
10°	.001	.003	.004	.006	.007	.008	.009	.011	.012	.014	.015	.017	.018	.020
15°	.003	.007	.010	.014	.018	.023	.027	.029	.032	.035	.039	.043	.047	.051
20°	.006	.011	.017	.022	.028	.034	.038	.045	.051	.057	.063	.070	.076	.083
25°	.009	.018	.027	.036	.046	.056	.065	.074	.083	.093	.106	.120	.127	.135
30°	.013	.025	.038	.051	.065	.078	.090	.103	.116	.129	.149	.170	.179	.188
35°	.018	.035	.054	.072	.088	.109	.131	.153	.175	.197	.213	.230	.247	.264
40°	.023	.040	.070	.093	.117	.141	.172	.203	.234	.265	.277	.290	.315	.341
45°	.030	.060	.093	.119	.153	.184	.216	.254	.289	.325	.351	.378	.411	.445
50°	.037	.075	.116	.151	.189	.227	.266	.305	.345	.384	.425	.467	.508	.550
55°	.046	.093	.142	.188	.236	.283	.332	.381	.420	.479	.530	.582	.641	.700
60°	.056	.112	.168	.225	.283	.340	.398	.457	.516	.575	.636	.697	.774	.851
65°	.067	.135	.204	.273	.343	.412	.483	.554	.625	.697	.771	.845	.922	1.01
70°	.080	.159	.240	.321	.403	.485	.568	.652	.735	.819	.906	.994	1.08	1.17
75°	.095	.183	.266	.353	.440	.528	.618	.707	.797	.887	.977	1.07	1.18	1.29
80°	.110	.220	.332	.445	.558	.671	.787	.903	1.02	1.13	1.25	1.38	1.50	1.62
85°	.128	.259	.391	.524	.657	.790	.926	1.06	1.20	1.34	1.47	1.62	1.76	1.91
90°	.149	.299	.450	.603	.756	.910	1.07	1.22	1.38	1.54	1.70	1.87	2.03	2.20
95°	.174	.350	.522	.706	.885	1.06	1.25	1.43	1.62	1.80	1.99	2.18	2.38	2.58
100°	.200	.401	.604	.809	1.01	1.22	1.43	1.64	1.85	2.06	2.28	2.50	2.73	2.96
110°	.268	.536	.806	1.08	1.35	1.63	1.91	2.20	2.48	2.76	3.05	3.35	3.66	3.96
120°	.360	.721	1.08	1.45	1.82	2.19	2.57	2.95	3.33	3.72	4.11	4.50	4.91	5.33







913.13  
2.20  
910.93    488  
474.80    174  
436.13    962

971  
537  
1508

55

225.03  
30  
195.03  
280.05  
475.08



