1426

POST'S

LEVEL BOOK

No. 380 F

Our Leather Bound Engineers Note Books are carried in the following rulings:

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THE FREDERICK POST CO.

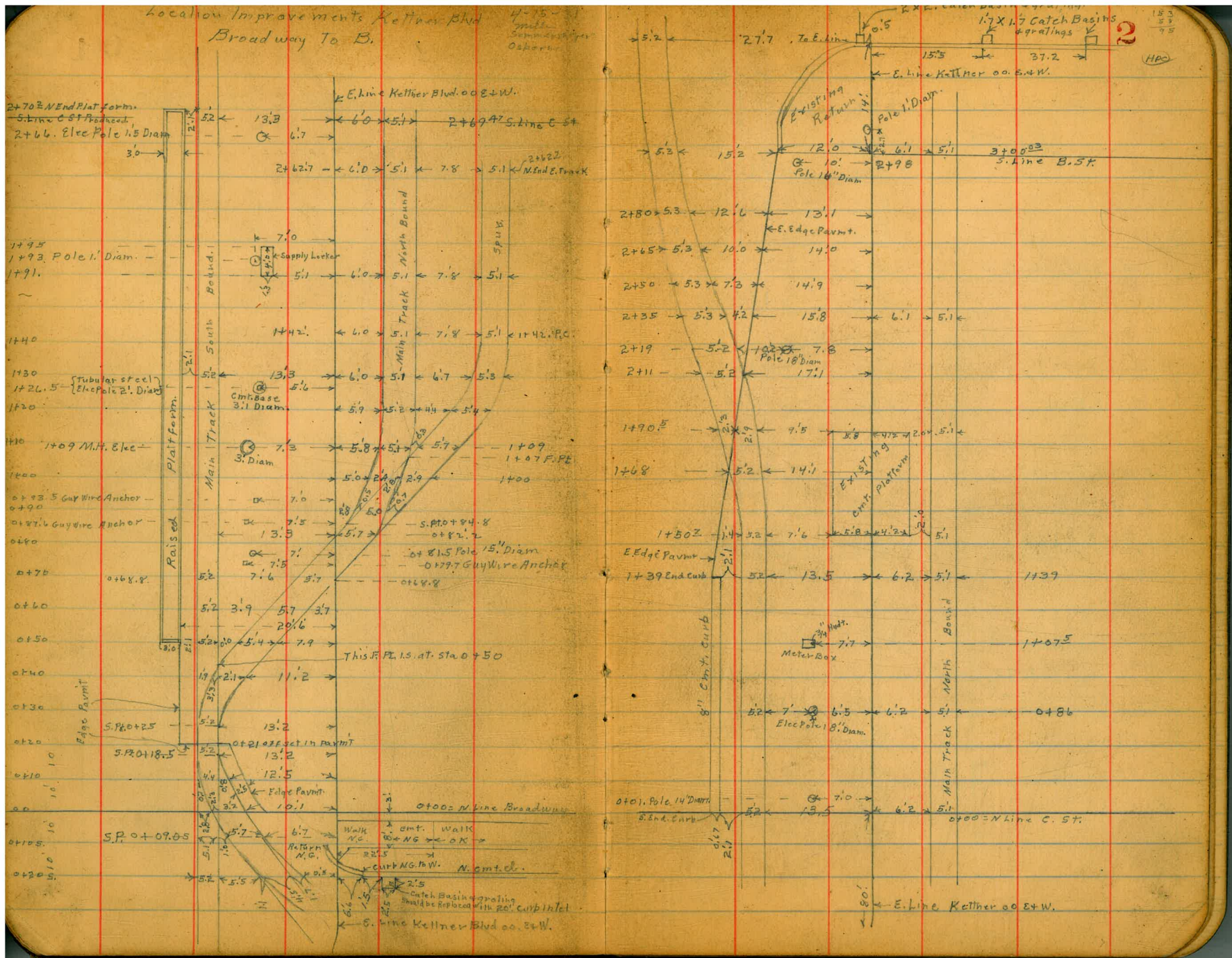
ENGINEERING and DRAFTING SUPPLIES

IRVING PARK STATION

CHICAGO, ILL.

01

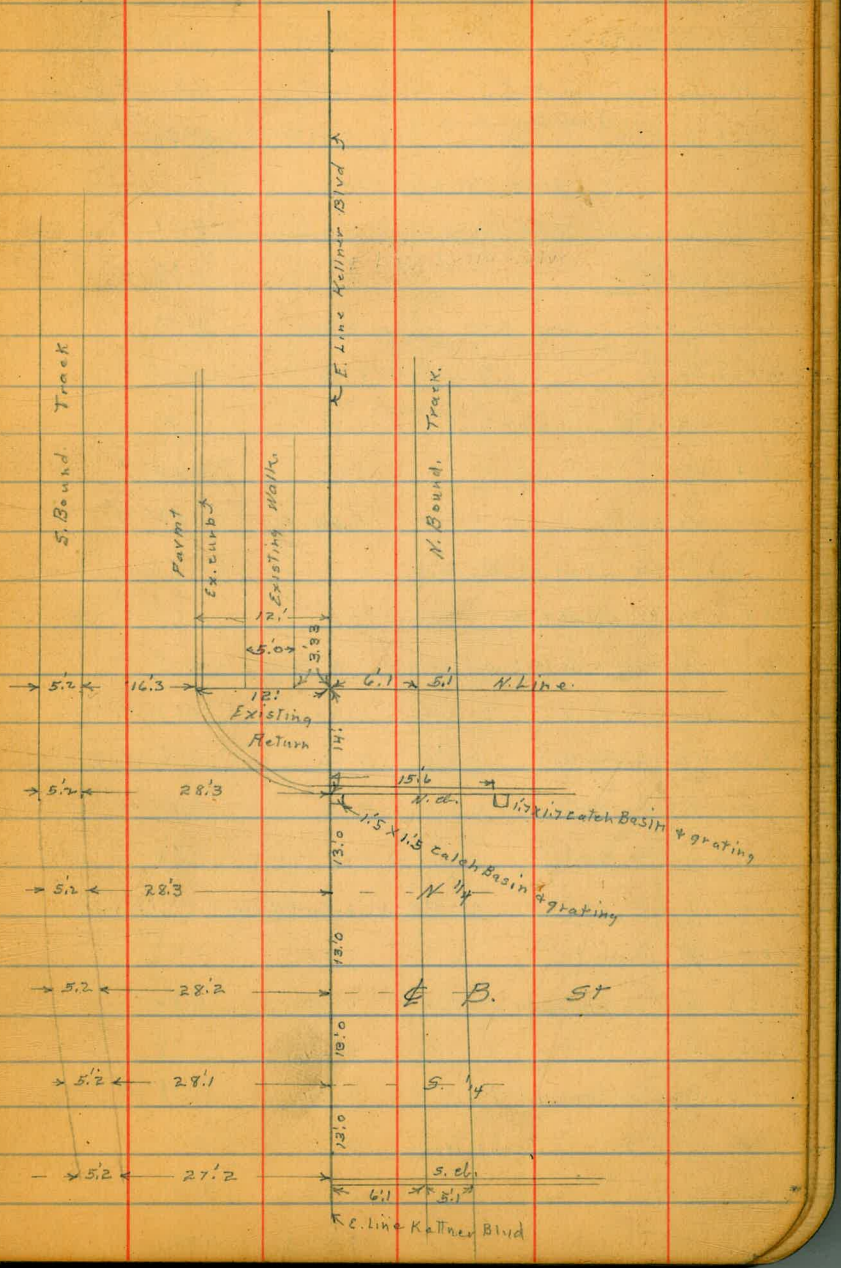
2 Kettner Blvd. Broadway to "B" St.


Location Improvements Kellner Blvd 4-15-
Broadway To B.
E. Line Kellner Blvd. 00 E+W.
2+70.2 N.End Plat form.
S. Line C St Projected
2+66. Elec Pole 1.5 Diam
2+69.47 S. Line C St
2+62.7
2+62.2 N.End E. Track
1+93. Pole 1. Diam.
1+91.
Supply Locker
1+42.
1+42. P.C.
1+30
1+26.5
Tubular steel Elec Pole 2'. Diam
Cmt. Base 3'. Diam.
1+09 M.H. Elec
3'. Diam
1+09
1+07 F. Pt
1+00
0+93.5 Guy Wire Anchor
0+90
0+87.6 Guy Wire Anchor
0+84.8
0+82.2
0+81.5 Pole 15" Diam
0+80
0+79.7 Guy Wire Anchor
0+70
0+68.8
0+60
0+50
This S. Pt. is at. Sta 0+50
0+40
0+30
S. Pt. 0+25
Edge Pavmt
0+20
S. Pt. 0+18.5
0+21.03 Set in Pavmt
0+10
Edge Pavmt
0+00 = N Line Broadway
S.P. 0+09.05
Walk N.G.
Cmt.
Walk
N.G.
O.K.
Return N.G.
Curb N.G. To W.
N. cmt. cl.
Catch Basin & grating Should be Replaced with 20'. curb inlet
E. Line Kellner Blvd 00. E+W.
Plat form.
Raised
South Bound
Main Track
North Bound
Main Track
Spurs
2+78 N.End Plat form.
S. Line C St Projected
2+66. Elec Pole 1.5 Diam
2+62.7
2+62.2 N.End E. Track
1+93. Pole 1. Diam.
1+91.
Supply Locker
1+42.
1+42. P.C.
1+30
1+26.5
Tubular steel Elec Pole 2'. Diam
Cmt. Base 3'. Diam.
1+09 M.H. Elec
3'. Diam
1+09
1+07 F. Pt
1+00
0+93.5 Guy Wire Anchor
0+90
0+87.6 Guy Wire Anchor
0+84.8
0+82.2
0+81.5 Pole 15" Diam
0+80
0+79.7 Guy Wire Anchor
0+70
0+68.8
0+60
0+50
This S. Pt. is at. Sta 0+50
0+40
0+30
S. Pt. 0+25
Edge Pavmt
0+20
S. Pt. 0+18.5
0+21.03 Set in Pavmt
0+10
Edge Pavmt
0+00 = N Line Broadway
S.P. 0+09.05
Walk N.G.
Cmt.
Walk
N.G.
O.K.
Return N.G.
Curb N.G. To W.
N. cmt. cl.
Catch Basin & grating Should be Replaced with 20'. curb inlet
E. Line Kellner Blvd 00. E+W.
Plat form.
Raised
South Bound
Main Track
North Bound
Main Track
Spurs
2
1.7 X 1.7 Catch Basins & gratings
E. Line Kellner 00. E+W.
2+98
3+00.83
S. Line B. St.
Existing Return
Pole 1. Diam.
Pole 16" Diam.
E. Edge Pavmt.
Pole 18" Diam
1+90.5
1+68
Existing Cmt. Platform
1+50.2
E. Edge Pavmt
1+39 End curb
8" Cmt. Curb
3/4" Hydt.
Meter Box
1+07.5
Elec Pole 18" Diam.
0+86
North Bound
Main Track
0+01. Pole 14" Diam
S. End Curb
0+00 = N Line C. St.
E. Line Kellner 00 E+W.

Kellner Blvd X Sce. Bdw. to B St.

BM. B.P.	2.67	19.57		16.90	N.E. cor. I.C. & India
T.P.	3.53	16.82	6.28	13.29	
		25'S. of N. line Bdw.			
		0.0 E of W. = E. line Kellner.			
3.0' E.			5.46	11.36	✓
20' E			5.60	11.22	✓
9.3' E			5.61	11.21	✓
00. E of W = E. line Kellner			5.37	11.45	✓
11' W			5.48	11.34	✓
		20'S. of N. line Bdw. = N. el.			
11' W			5.49	11.33	✓
0.5 W = E. Rail			5.42	11.40	✓
0.0			5.45	11.37	✓
6.6 E. gutter pavmt.			5.84	10.98	✓
6.6 E = W. end good cmt. el.			5.25	11.57	✓
9.3 E of C.B. on grating			5.9~	10.90	✓
9.3 E F.L. 24" culvert.			10.37	6.45	✓
20' E gutter			5.87	10.95	✓
30' E "			5.77	11.05	✓
30' E. cmt. el.			5.12	11.70	✓
		11'S. of N. Line Bdw. = S. Edge cmt. walk			
22.5 E =	good walk to E. N.G. " to W.		4.90	11.92	✓
00 = E. line Kellner			5.18	11.64	✓
3' W. Return N.G.			5.31	11.51	✓
6' W = E. Rail			5.55	11.27	✓
11' W.			5.57	11.25	✓

BM. N.E. B+Kellner 12.83 4.74 0.17 High
These BM.s do not chk. 4.57
BM. S.E. Bdw + Kellner 10.50
3 4.32 6.22 0.10 High

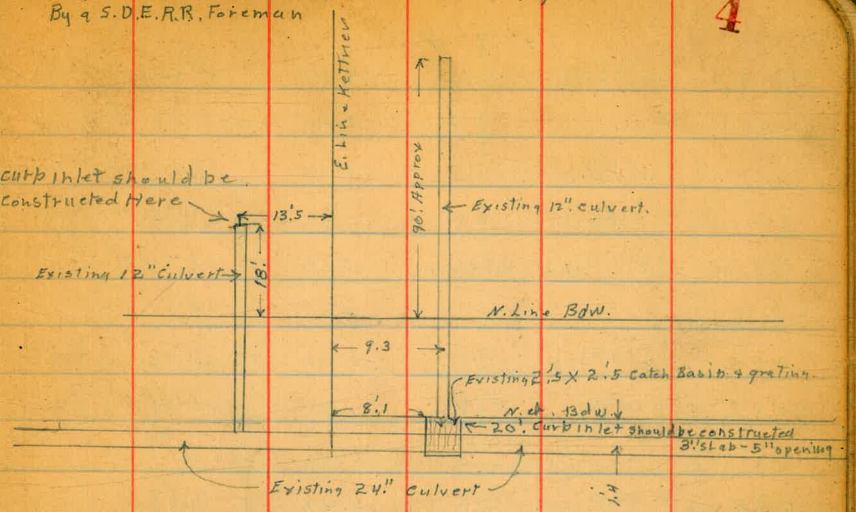


16.82

3'. S. of N. Line Bdw = N. Edge cmt walk

11.4 W.		5.58	11.44 ✓
9.3 W = E. Rail		5.59	11.43 ✓
00. on Return N.C.		5.15	11.67 ✓
22.5 E.	{good walk to E NG " " W.	4.81	11.01 ✓
	0+00 = N. Line Bdw.		
00 = E. Line Kettner Return N.G.		5.23	11.59 ✓
7.6 W = E. Edge pavmt.		5.46	11.36 ✓
10.1 W. = E. Rail		5.62	11.40 ✓
11' W.		5.60	11.42 ✓
13.3 W = E. Rail Main South Bound Track.		5.61	11.41 ✓
18.4 W = W " " " " "		5.60	11.42 ✓
20.6 W. on pavmt.		5.59	11.43 ✓
	0+21 N.		
20.6 W. = E. Edge pavmt. to N.		5.67	11.15 ✓
18.4 W = W. Rail Main S. Bound Track		5.67	11.15 ✓
13.2 W = E " " " " "		5.69	11.13 ✓
10.7 W = E. Edge pavmt. to S.		5.66	11.16 ✓
00 = E. Line Kettner		5.3	11.52 ✓
10' E.		5.0	11.82 ✓
	0+50 N. = S. End Raised Platform.		
23.6 W. pavmt.		5.55	11.47 ✓
23.6 W. Top platform W. edge		4.98	11.84 ✓
20.6 W = " " E "		5.04	11.78 ✓
20.6 W = E. Edge pavmt to S.		5.54	11.28 ✓
18.5 W. = W. Rail S. Bound Track		5.63	11.19 ✓
13.3 W = {E " " " " {W " N " "		5.59	11.43 ✓
7.9 W. = E " " " "		5.62	11.40 ✓

Information on the two 12". Culverts given Mellmer
By a S.D.E.R.R. Foreman



16.82

00 = E. Line	5.5	11.3 ✓
10'. E	5.1	11.7 ✓
0+68.8 N		
10. E	5.3	11.5 ✓
00. = E. Rail N. Bound Track	5.55	11.47 ✓
5.7 W = W " " " "	5.58	11.44 ✓
13.3 W E " S. " "	5.60	11.42 ✓
18.5 W W " " " "	5.64	11.16 ✓
20.6 W dirt.	5.6	11.42 ✓
20.6 W Top platform	4.94	11.88 ✓
0+82.2 N.		
00. E. Line = N. Rail N. Bound Track	5.59	11.43 ✓

1709 N.

20.6 W	platform	4.80	11.0	✓
20.6 W	dirt	5.4	11.4	✓
18.5 W.	= W. Rail	5.45	11.37	✓
13.3 W	= E. Rail	5.48	11.34	✓
7.3 W	= Elec. M.H. on cover	5.30	11.5	✓
00 = E. Line		5.4	11.4	✓
5.8 E. = W. Rail N. Bound. Track		5.39	11.43	✓
10.9 E. = E " " " "		5.37	11.45	✓
11.2 E = W " Spur		5.37	11.45	✓
16.9 E = E " "		5.29	11.53	✓

126.5 N. Elec. Pole cmt. Base.

5.6 W. on Top cmt. Base.		4.82	11.00	✓

142' N.

24' E = E. Rail spur		5.04	11.78	✓
18.9 E W " "		5.09	11.73	✓
11.1 E E, " N. Bound Track		5.10	11.7	✓
6.0 E W " " " "		5.10	11.7	✓
00 = E. Line		5.3	11.5	✓
13.3 W. = E. Rail S. Bound Track		5.40	11.4	✓
18.5 W = W " S " "		5.41	11.4	✓
20.6 W.	dirt	5.4	11.4	✓
20.6 W.	platform	4.73	11.09	✓

200' W.

20.6 W	Platform	4.63	11.9	✓
20.6 W	dirt	5.3	11.5	✓
18.5 W. = W. Rail S. Bound Track		5.30	11.5	✓
13.3 W = E. " " " "		5.29	11.53	✓

00 = E. Line		4.9	11.9	✓
6.0 E. W. Rail N. Bound Track		4.66	11.16	✓
11.1 E = E " " " "		4.66	11.16	✓
18.9 E = W " spur		4.40	11.4	✓
24' E = E " "		4.39	11.43	✓

2762 7 N. = N. End. spur

18.9 E. = W. Rail Spur.		4.17	11.65	✓
24' E = E " "		4.20	11.6	✓

2769 47 N. = S. Line C. St.

11.1 E. = E. Rail N. Bound Track		4.40	11.4	✓ & E. Edge pavmt.
6.0 E = W " " " "		4.41	11.41	✓ " " "
00 = E. Line Kettner		4.63	11.19	✓ " " "
13.3 W. = E. Rail S. Bound. Track		5.14	11.68	✓ " " "
18.5 W = W " " " "		5.15	11.67	✓ " " "
20.6 W.		5.13	11.69	✓ " " "
20.6 W. platform.		4.45	11.37	✓

0.7 N. of S. Line C. = N. End. Raised platform.

20.6 W. pavmt.		5.13	11.69	✓
20.6 W. = N. End platform		4.45	11.37	✓
23.6 W. " "		4.48	11.34	✓
23.6 W. pavmt.		5.13	11.69	✓
T.P.	4.22	17.51	3.53	13.29

17.51

0+00 = N. Line C. St.

21.47 W.	= W. edge 8" curb on pavmt.	5.71	11.80 ✓
20.8 W	= E " 8" " " "	5.79	11.7 ✓
20.8 W	= " 4 " " Top.	5.16	11.35 ✓
18.7 W	= W. Rail S. Bound Track	5.83	11.68 ✓ & N. edge pavmt
13.5 W	= E " " " "	5.83	11.68 ✓ " " " "
00	= E. line Kettner	5.28	11.53 ✓ " " "
6.2 E.	= W. Rail N. Bound Track	4.99	11.52 ✓ " " "
11.3 E	= E " " " "	5.01	11.50 ✓ " " "

0+50. N

11.3 E.	= E. Rail N. Bound Track	5.07	11.44 ✓
6.2 "	= W " " " "	5.02	11.49 ✓
00	= E. line	5.2	11.31 ✓
13.5 W.	= E. Rail S. Bound Track	5.76	11.75 ✓
18.7 W	= W " " " "	5.77	11.74 ✓
20.8 W	dirt	5.9	11.61 ✓
20.8 W.	Top eb.	5.07	11.44 ✓

1+00 N.

20.8 W.	Top eb.	5.00	11.51 ✓
20.8 W	dirt	5.8	11.71 ✓
18.7 W.	= W. Rail S. Bound Track	5.70	11.81 ✓
13.5 W	= E. " " " "	5.70	11.84 ✓
00	= E. Line	5.2	11.31 ✓
6.2 E	= W Rail N. Bound Track	5.10	11.41 ✓
11.3 E	= E " " " "	5.13	11.38 ✓

17.51

1+39 N. = N. End cmt. el.

11.3 E	= E. Rail N. Bound	5.19	11.32 ✓
6.2 E	= W " " "	5.15	11.36 ✓
00	= E. Line	5.1	11.40 ✓
13.5 W	= E. Rail S Bound.	5.67	11.84 ✓
18.7 W.	= W " " "	5.67	11.84 ✓
20.8 W	= E. edge pavmt. to N.	5.50	11.01 ✓
20.8 W.	Top - N. End cmt. el	4.97	11.54 ✓
21.47 W.	W. edge cmt. el on pavmt	5.45	11.06 ✓

1+50 N.

20' W	= E. edge pavmt.	5.58	11.93 ✓
18.6 W	= W. Rail S. Bound.	5.66	11.85 ✓
13.4 W	= E " " "	5.67	11.84 ✓
5.8 W	= W. Edge - S. End. cmt. platform	5.09	11.42 ✓
00	= E. Line - S " " "	5.02	11.49 ✓
4.2 E	= E. Edge - S " " "	4.98	11.53 ✓
6.2 E	= W. Rail N. Bound	5.12	11.39 ✓
11.3 E	= E " " "	5.14	11.37 ✓

1+68 N.

11.3 E	= E. Rail N. Bound	5.19	11.32 ✓
6.2 E	= W " " "	5.18	11.33 ✓
4.2 E	= E. Edge cmt. platform	5.02	11.49 ✓
00	= E. Line on " "	5.05	11.46 ✓
5.8 W	= W. edge " "	5.14	11.37 ✓
14.1 W	= E. Rail S. Bound.	5.64	11.87 ✓
19.3 W	= W " E. " edge pavmt.	5.63	11.88 ✓
T.P.	6.81	18.92	5.40 12.11 ✓

18.92

1+80.5 N.

20.5 W. = W. Rail S. Bound	6.97	11.95	✓
18.2 W. = E. Edge Pavmt.	6.99	11.93	✓
15.3 W = E. Rail S. Bound	6.97	11.95	✓
5.8 W. = W. edge - N. end cmt. platform	6.56	11.36	✓
00 = E. Line on " " " "	6.46	11.46	✓
4.2 E = E. Edge " " " "	6.45	11.47	✓
6.2 E = W. Rail N. Bound	6.65	11.27	✓
11.3 E = E " " "	6.69	11.23	✓

2+11 N

11.3 E = E Rail N. Bound	6.62	11.30	✓
6.2 E = W " " "	6.60	11.32	✓
00 = E. Line	6.6	11.32	✓
11. W = {E. Edge Pavmt. →	6.7	11.22	✓
17.1 W = {E. Rail S. Bound	6.92	11.00	✓
22.2 W = W " " "	6.94	11.98	✓

2+50 N

27.5 W. = W. Rail S. Bound	6.88	11.04	✓
22.2 W = E " " "	6.88	11.04	✓
14.9 W = E. Edge pavmt.	6.93	11.99	✓
19. W	6.7	11.22	✓
00. = E. Line	6.6	11.32	✓
6.1 E. = W. Rail N. Bound	6.50	11.42	✓
11.2 E. E " " "	6.51	11.41	✓

2+80 N.

11.2 E. = E. Rail N. Bound.	6.43	11.49	✓
6.1 E = W " " "	6.45	11.47	✓
00 = E. Line	6.5	11.42	✓

18.92

11. W	6.9	11.0	✓ ✓
13.1 W. = E. Edge pavmt.	6.88	11.04	✓
25.7 W = E. Rail S. Bound Track	6.80	11.12	✓
31.0 W = W " " " "	6.81	11.11	✓

3+00 03 N. = S. Line B. St.

32.5 W = W. Rail S. Bound.	6.78	11.14	✓
27.2 W. = E " " "	6.76	11.16	✓
12. W. = {dirt to S + E. / Edge pavmt. to S.	6.78	11.14	✓
12. W = S. End. cmt. & Return	6.35	11.57	✓
00. = E. Line dirt to S.	5.94	11.98	✓
00 = " " S.E. Corcmt. Return	6.4	11.52	✓
6.1 E = W. Rail N. Bound	6.38	11.54	✓
11.2 E E " " "	6.34	11.58	✓

14' N. of S. Line = S. el. line

11.2 E. = {S. edge Pavmt. / E. Rail N. Bound.	6.27	11.65	✓
6.1 E = {W " " / S. edge pavmt.	6.30	11.62	✓
5.5 E. cmt. el.	6.36	11.56	✓
00 = E. Line - E. edge cmt. Return	6.26	11.66	✓ Top el.
" " " pavmt.	6.83	11.09	✓
1.5 W. & catch Basin grating.	6.91	11.01	✓
T.P. 8.20 20.51	6.61	17.31	✓
chk original BM.	3.61	16.90	

12
15.2
27.2
5.3
32.5

80. wide
14' curbs
13' 1/4 s.

Wright St. X Sec
Moore to Hancock

6-11-31
Muller
Walker
Bliss
Drebert

(CEK)

B.M. S. cb. Moore	12.83	40.56		27.73	P.C. E. of Underpass.
T.P.	11.79	52.05	0.30	40.26	
Set B.M. B.P.			2.53	49.48	N.E. Moore + Wright.
	00 = S. Line Moore st.			⊼ = 52.1	
E			2.6	49.5	
+4.5 = E. edge-S. end. cmt walk			2.85	49.20	
+9.5 = W " S " " "			2.87	49.18	
+14. = S. End. cmt. cb			2.90	49.15	
gutter pavmt.			3.57	48.48	
1/4 "			3.51	48.54	
℄ "			3.66	48.39	
1/4 "			4.05	48.00	
gutter "			4.64	47.41	
W. cmt. cb. S. End.			4.18	47.87	
+4.5 E. edge S. end walk			4.16	47.89	
+9.5 W " S. "			4.14	47.91	
W.			4.1	48.0	
		45' S.			
W.			5.0	47.1	
cb			4.6	47.5	
1/4			4.4	47.7	
℄			4.1	48.0	
1/4			4.2	47.9	
cb			3.9	48.2	
S			3.5	48.6	

				52.1	
		24' S.			
3.7 N. of S. Line on Bottom Step			3.33	48.72	
		32' S			
E			4.5	47.6	
+10			4.6	47.5	
cb			5.4	46.7	
1/4			5.7	46.4	
℄			5.5	46.6	
1/4			5.7	46.4	
cb			6.1	46.0	
W			6.0	46.1	
		33' S			
W			6.1	46.0	
cb			6.1	46.0	
1/4			5.8	46.3	
℄			5.6	46.5	
1/4			5.8	46.3	
cb			5.7	46.4	
+10			5.2	46.9	
E			7.0	45.1	
+10			8.2	43.9	
		46' S.			
-10			9.6	42.5	
E			9.6	42.5	
+10			7.5	44.6	
cb			7.3	44.8	

		46'W. (con)		52.1
S. ¼			7.2	44.9
℄			7.0	45.1
¼			7.1	45.0
cb			7.4	44.7
W.			7.4	44.7
		68' S. E N. End 4. garages on E. dirt floors, 1.5 Back		
W			10.7	41.4
W+2'			10.1	42.0
cb			9.9	42.2
¼			9.9	42.2
℄			9.7	42.4
¼			9.8	42.3
cb			9.8	42.3
+4			10.1	42.0
E. same as floor to W.			11.1	41.0
-10			11.4	40.7
		90'S		
E S-1.5 floor			12.9	39.2
E S			12.9	39.2
cb			12.6	39.5
¼			12.7	39.4
℄			12.4	39.7
¼			12.6	39.5
cb.			12.4	39.7
+7			13.0	39.1
W.			15.2	36.9
+5			16.7	35.4

				52.05
T.P.	1.06	40.52	12.59	39.46
		100' S ± S. End of garages on E.		40.5
-5			5.6	34.9
W			5.7	34.8
+7			5.8	34.7
cb			2.4	38.1
¼			2.4	38.1
℄			2.1	38.4
¼			2.4	38.1
cb			2.4	38.1
E S			1.8	38.7
+1.5 floor of garage			1.8	38.7
		107'S		
10' S. of N. Line (E, W)		Olive Tree 12" Diam		
		117.5 S.		
10' S. of N. Line (E, W)		Olive Tree 10" diam		
		125' W		
E			4.3	36.2
cb			4.5	36.0
+6			6.0	34.5
¼			5.8	34.7
℄			5.7	34.8
¼			5.9	34.6
+7			5.4	35.1
cb.			6.2	34.3
+7			7.4	33.1
+9			8.2	32.3
W.			8.1	32.4

129' S. 405

10' S. of N. Line Olive Tree 10" diam

145' S.

W	N	9.7	30.8
	el.	8.7	31.8
	1/4	8.2	32.3
	℄	8.1	32.4
	1/4	8.0	32.5
	el.	7.5	33.0
	+3	6.0	34.5
	E	6.1	34.4

102' S. Picket Fence on E. 2.5 in St.

195' W

	E.	10.2	30.3
	+9	10.1	30.4
	el	13.0.	27.5
	1/4	13.3	27.2
	℄	13.6	26.9
	1/4	13.2	27.3
	+5	12.0	28.5
	el.	11.9	286
	+3'	11.4	29.1
	+7'	12.2	28.3
	W	12.5	28.0

202' S. = N. Line Hancock 40.52

W			13.2	27.3
el			13.2	27.3
1/4			14.1	26.4
℄			14.5	26.0
1/4			14.3	26.2
el			14.3	26.2
E.			14.3	26.2

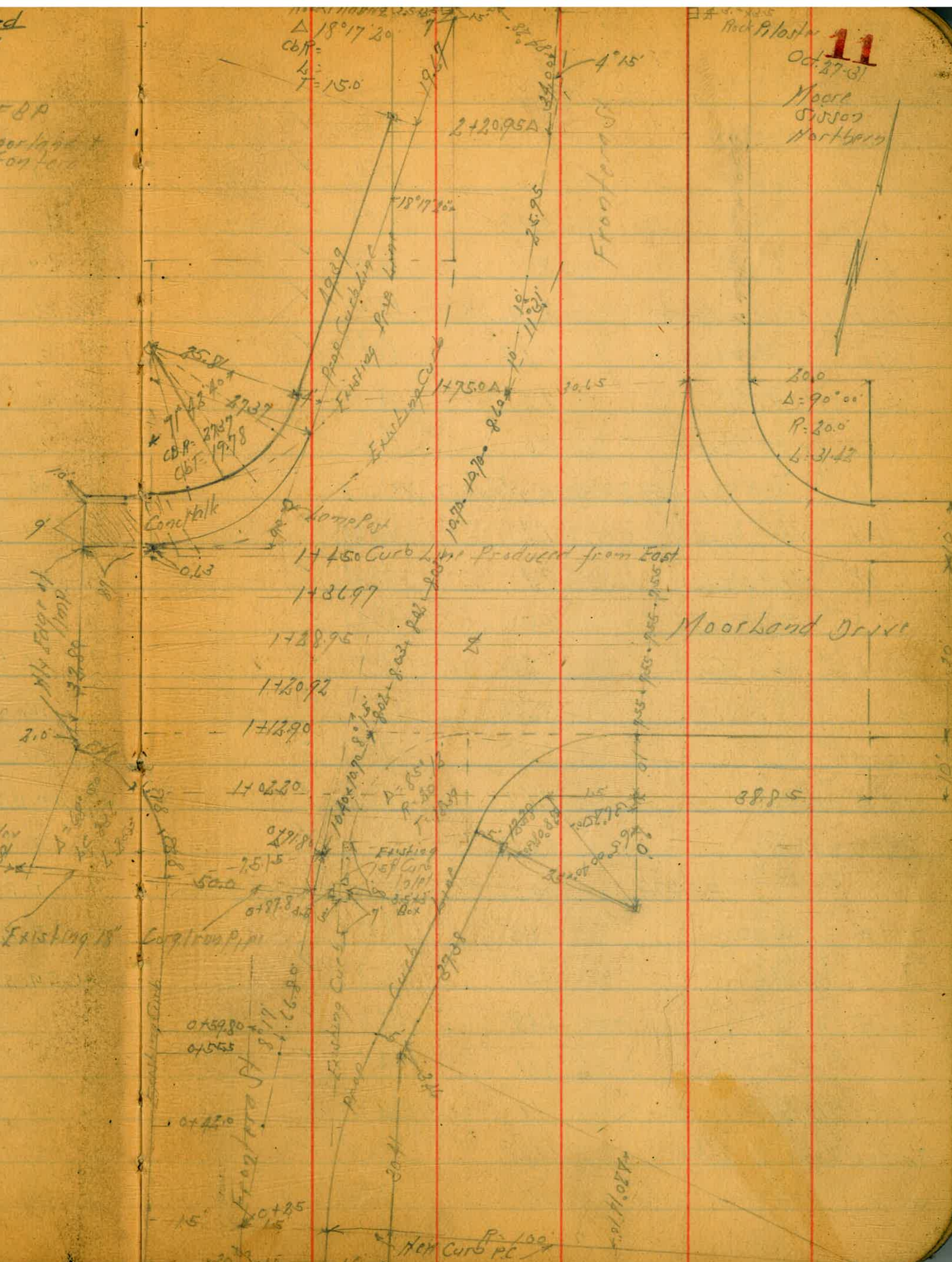
12' S of N. Line = N. el. Line of Hancock.

E			15.3	25.2
el			15.2	25.3
1/4			15.0	25.5
℄			15.2	25.3
1/4			15.2	25.3
el			15.5	25.0
W.			15.2	25.3
T.P.	12.93	52.78	0.67	3985
chk BM. BP.			3.27	49.51 N.E. Moore & Wright
T.P.	13.01	65.67	0.12	52.66
T.P.	12.99	78.17	0.49	65.18
T.P.	6.61	84.64	0.14	78.03
chk BM. BP.			2.59	82.05 N.W. Wright & La Jolla Ave

Proposed Opening
Moorland Drive And Frontera St.
Cross Section

indexed
C.S.K

BM	7.54	25.46 ✓		17.92	SFBP Moorland & Frontera
		0+0 = 25 S of New Cb PC 25'.46			
15 E = Top Cb			7.12	18.34	✓
Gutter on Paving			7.63	17.83	✓
℄ " "			7.51	17.95	✓
15 W Gutter " "			7.23	18.23	✓
15 W : Top Cb			6.60	18.86	✓
		0+25 : New Cb P.C.			
15 W : Top Cb			6.73	18.73	✓
Gutter			7.37	18.09	✓
℄			7.67	17.79	✓
15 E : Gutter			7.78	17.68	✓
15 E : Top Cb			7.31	18.15	✓
25 E : El. Frontera			7.1	18.36	✓
		0+42			
21.5 E =			7.2	18.26	✓
14.8 E = New Cb Line			7.4	18.06	✓ Fl. Elev.
12.5 E : Existing Cb			7.45	18.01	✓
12.5 E Gutter			7.91	17.55	✓
℄			7.86	17.60	✓
10 W			7.80	17.66	✓
17.5 W = Gutter			7.55	17.91	✓
17.5 W = Top Cb			6.89	18.57	✓



Moorland + Frontera

25.46

0+555 = Opp Δ on E.L

19.8 W = Top Cb	7.02	18.64	✓
19.3 W = Gutter	7.66	17.80	✓
10 W	7.97	17.49	✓
℄	8.16	17.30	✓
10.7 E = Existing Gutter	8.17	17.29	✓
10.7 E = " Cb.	7.47	17.99	✓
15.2 = New Cb L	7.2	18.26	✓
20.5 E = New Prop	7.0	18.46	✓
0+598 = Opp New Cb PC on E			
21.6 E = New Prop	6.6	18.86	✓
16.3 E = New Cb L	7.4	18.06	✓
10' E = Existing Cb	7.51	17.95	✓
10 E = " Gutter	8.24	17.22	✓
℄	8.23	17.23	✓
10' W	8.05	17.41	✓
20' W = Gutter	7.69	17.77	✓
20 W = Top Cb	7.05	18.41	✓
0+878 = Opp Cb PC on W = ℄ Prop Catch Basin on W			
24.1 W = Top Cb	7.83	18.13	✓
24.1 W = Gutter	8.09	17.37	✓
10 W	8.48	16.98	✓
℄	8.61	16.85	✓
59 E = Gutter on N End Grating	8.64	16.82	✓
Flow Line of Inlet	8.84	16.62	✓
59 E = Top Existing Cb	7.60	17.86	

2546

25.46

16' E	7.6	17.86 ✓
15' E	7.5	17.96 ✓
20 E	7.3	19.16 ✓
22.6 E = New Cb L on	5.8	19.66 ✓
27.9 E = " E.L.	5.5	19.96 ✓
0+91.80 Δ 8°15 Rt.		
29.6 E = New E.L.	5.4	20.06 ✓
24.3 E = " Cb L	5.7	19.76 ✓
16' E	6.4	19.06 ✓
13 E	7.5	17.96 ✓
5.3 E = Top Existing Cb	7.60	17.86 ✓
= Gutter	8.64	16.82 ✓
℄	8.61	16.85 ✓
10' W	8.45	17.01 ✓
20' W	8.20	17.26 ✓
25 W = Gutter	8.07	17.39 ✓
25 W = Top Cb	7.37	18.09 ✓
1+02.20 = S.L Moorland		
31.7' W = Top Cb	7.23	18.43 ✓
31.7' W Gutter	7.81	17.65 ✓
20 W	7.89	17.57 ✓
10 W	7.99	17.47 ✓
℄	8.03	17.43 ✓
4.2 E = Existing Gutter	7.94	17.52 ✓
4.2 E = " Cb	7.30	18.16 ✓
10' E	7.15	18.31 ✓

Moorland & Frontage

	25.46	25.46		
20 E		6.5	18.96 ✓	
26.2 E = New Cb L.		6.1	19.36 ✓	
33.4 E = " E Prop		5.6	19.86 ✓	
48.5 E = Cb PC.		4.7	20.76 ✓	
1+12.90 = S Cb of Moorland				
44.6 E = New Cb PC Top		4.84	20.62 ✓	
Gutter		5.30	20.16 ✓	
30 E Top Cb		5.79	19.67 ✓	
Gutter		6.25	19.21 ✓	
20 E = PC Existing Cb Top		6.43	19.03 ✓	
Gutter		6.84	18.62 ✓	
10 E		7.28	18.18 ✓	
℄		7.36	18.10 ✓	
10 W		7.41	18.05 ✓	
20 W		7.46	18.00 ✓	
30 W		7.45	18.01 ✓	
41 W		7.83	17.83 ✓	
2.5 Wly End Cb Top		7.29	18.17 ✓	
1+30.95 = S ℄				
46.8 W = Wly of Pav		7.25	18.21 ✓	
40 W		7.13	18.33 ✓	
30 W		7.09	18.37 ✓	
20 W		7.16	18.30 ✓	
10 W		6.98	18.48 ✓	
℄		6.85	18.61 ✓	
10 E		6.57	18.89 ✓	

	25.46	25.46		
20 E		6.11	19.35 ✓	
30 E		5.51	19.95 ✓	
42.8 E		4.79	20.67 ✓	
4+28.95 = ℄ Moorland				
41.0 E		4.38	21.08 ✓	
30 E		4.95	20.51 ✓	
20 E		5.47	19.99 ✓	
10 E		6.00	19.46 ✓	
℄		6.29	19.17 ✓	
10 W		6.62	18.84 ✓	
20 W		6.83	18.63 ✓	
30 W		6.82	18.64 ✓	
40 W		6.82	18.64 ✓	
50 W = Wly of Imp		6.82	18.64 ✓	
1+31.97 = N ℄				
53.1 W = Wly of Imp		6.64	18.82 ✓	
40 W		6.57	18.89 ✓	
30 W		6.53	18.93 ✓	
20 W		6.48	18.98 ✓	
10 W		6.27	19.19 ✓	
℄		5.91	19.55 ✓	
10 E		5.41	20.05 ✓	
20 E		4.92	20.54 ✓	
30 E		4.40	21.06 ✓	
39 E		4.01	21.45 ✓	

Moorland + Frontera

25.46

1+45.00

25.46

27.2 E	3.84	r1.62	✓
30' E	4.07	r1.39	✓
20' E	4.45	r1.01	✓
10' E	5.00	r0.46	✓
℄	5.54	19.92	✓
10' W	5.97	19.49	✓
30' W	6.20	19.26	✓
30' W	6.34	19.12	✓
40' W	6.46	19.00	✓
48.1' W = New Cb PC. Gutter	6.53	18.93	✓
Top Cb	6.05	19.41	✓
56.6 W Mly Imp Gutter	6.59	18.87	✓
Top Cb.	6.17	19.29	✓
= 1+55.70 = N.L Moorland			
60.5' W	6.0	19.46	✓
52 W Prop PC	5.8	19.66	✓
40' W	5.7	19.76	✓
30.3 W = New Cb L	5.65	19.81	✓
22.7 W Existing Cb Top	5.71	19.75	✓
Gutter	6.12	19.34	✓
10' W	5.67	19.79	✓
℄	5.31	r0.25	✓
10' E	4.68	r0.78	✓
20' E	4.27	r1.19	✓
30' E	4.00	r1.46	✓

25.46

25.46

34.8' E	3.89	r1.57	✓
1+66.40			
35.1' E = Existing Cb Top	3.61	r1.85	✓
Gutter	4.13	r1.33	✓
32.5' E	4.13	r1.33	✓
20' E	4.36	r1.10	✓
10' E	4.53	r0.93	✓
℄	5.03	r0.43	✓
10' W	5.51	19.95	✓
16.5' W = Existing Cb Top	5.37	r0.09	✓
Gutter	5.79	19.67	✓
29.8' W = New Cb BC	5.5	19.96	✓
35.8' W = New W Prop	5.4	r0.06	✓
1+75.0 = ℄ LL			
34.4' W = New W Prop BC	5.2	r0.26	✓
30.2' W = New Cb L	5.0	r0.46	✓
14.3' W = Existing Cb Top	5.10	r0.36	✓
Gutter	5.52	19.94	✓
10' W	5.35	r0.11	✓
℄	4.93	r0.53	✓
10' E	4.55	r0.91	✓
20' E	4.47	r0.99	✓
36.6' E Gutter	4.56	r0.90	✓
30.6' E = Existing Cb Top	4.06	r1.40	✓

Moorland + Frontage 25.46

1+85	25.46		
29.0 E = Existing CL Top	4.37	+1.09	✓
Gutter	3.87	+0.59	✓
20 E	3.77	+0.69	✓
10 E	3.73	+0.73	✓
℄	3.97	+0.52	✓
12.5 W = Existing CL Top	4.96	+0.50	✓
Gutter	5.16	+0.06	✓
29.0 W = New CL 6	5.1	+0.36	✓
33.2 W = " W Prop	5.4	+0.06	✓
1+95			
31.2 W = New W Prop	5.1	+0.36	✓
27.0 W = " " CL	5.0	+0.46	✓
20 W	4.95	+0.51	✓
12.4 W = Existing CL	5.03	+0.43	✓
Gutter	5.41	+0.05	✓
℄	5.09	+0.37	✓
10 E	5.00	+0.46	✓
20 E	5.05	+0.41	✓
27.3 E = Gutter	5.17	+0.29	✓
27.3 E = Top CL	4.65	+0.81	✓
2+20.95 = A			
22.8 E = Top CL	5.47	19.99	✓
Gutter	6.09	19.37	✓
10 E	5.89	19.57	✓
℄	5.93	19.53	✓

25.46 25.46

10 W	6.25	19.21	✓
16.8 W = Existing CL	6.03	19.44	✓
Gutter	6.51	18.95	✓
22.9 W = New CL 6	6.0	19.46	✓
27.1 W = New W Prop	5.8	19.66	✓
2+39.95			
28.5 W = W L Frontage	6.6	18.86	✓
19.9 W = New CL	6.7	18.76	✓
18.5 W = Existing CL Top	6.75	18.71	✓
Gutter	7.25	18.21	✓
10 W	6.90	18.56	✓
℄	6.58	18.88	✓
10 E	6.52	18.94	✓
21.1 E = Gutter	6.59	18.87	✓
21.1 E = Top CL	6.08	19.38	✓
2+54.95			
20 E = Top CL	6.58	18.88	✓
Gutter	7.12	18.34	✓
10 E	7.03	18.43	✓
℄	7.10	18.36	✓
10 W	7.42	18.04	✓
20 W = Gutter	7.90	17.56	✓
20 W Top CL	7.38	18.08	✓
30 W	7.2	18.26	✓

Moorland & Frontera 25.46

247295 25.46

30 W	8.0	17.46	✓
20 W - Top Cb	8.10	17.36	✓
Gutter	8.59	16.87	✓
10 W	8.13	17.33	✓
℄	7.78	17.68	✓
10 E	7.60	17.86	✓
20 E - Gutter	7.63	17.83	✓
30 E - Top Cb	7.11	18.35	✓
BM	4.90	20.56	✓ Top Firth Frontera & N.E. Corner Post
Flow Line of Existing Outlet 18" Cast Iron Pipe	15.65	9.81	✓

Atlantic St. Cross Section of 30' Paving Strip N & S of Rosecrans

East Edge Paving 10' E of ℄ Mon. Rosecrans Taylor
Hor " " 20' N of ℄

4-20-34 Moore

B.M.	3.37	9.12		5.15	
	200' N of N.L. Rosecrans				
E Edge Paving			5.61	3.51	
℄ on "			5.50	3.62	
W Edge Paving			5.73	3.39	
	150' N of N.L. Rosecrans				
W			5.45	3.67	
℄			5.27	3.85	
E			5.37	3.75	
	100' N of N.L. Rosecrans				
E			5.13	3.99	
℄			5.01	4.11	
W			5.20	3.92	
	50' N of N.L. Rosecrans				
W			4.97	4.15	
℄			4.76	4.36	
E			4.85	4.27	
	N.L. Rosecrans				
E			4.60	4.52	
℄			4.53	4.59	
W			4.76	4.36	
	25' S of N.L. Rosecrans				
W			4.65	4.47	
℄			4.42	4.70	
E			4.49	4.63	

		9.12		
	50' S of N.L. Rosecrans = ℄			
E			4.36	4.76
℄			4.28	4.84
W			4.47	4.65
	75' S of N.L. Rosecrans			
W			4.36	4.76
℄			4.15	4.97
E			4.24	4.88
	100' S of N.L. = S.L. Rosecrans			
E			4.06	5.06
℄			3.99	5.13
W			4.21	4.91
	50' S of S.L. Rosecrans			
W			3.95	5.17
℄			3.76	5.36
E			3.85	5.27
	100' S of S.L. Rosecrans			
E			3.66	5.46
℄			3.57	5.55
W			3.78	5.34
	150' S of S.L. Rosecrans			
W			3.69	5.43
℄			3.47	5.65
E			3.55	5.57

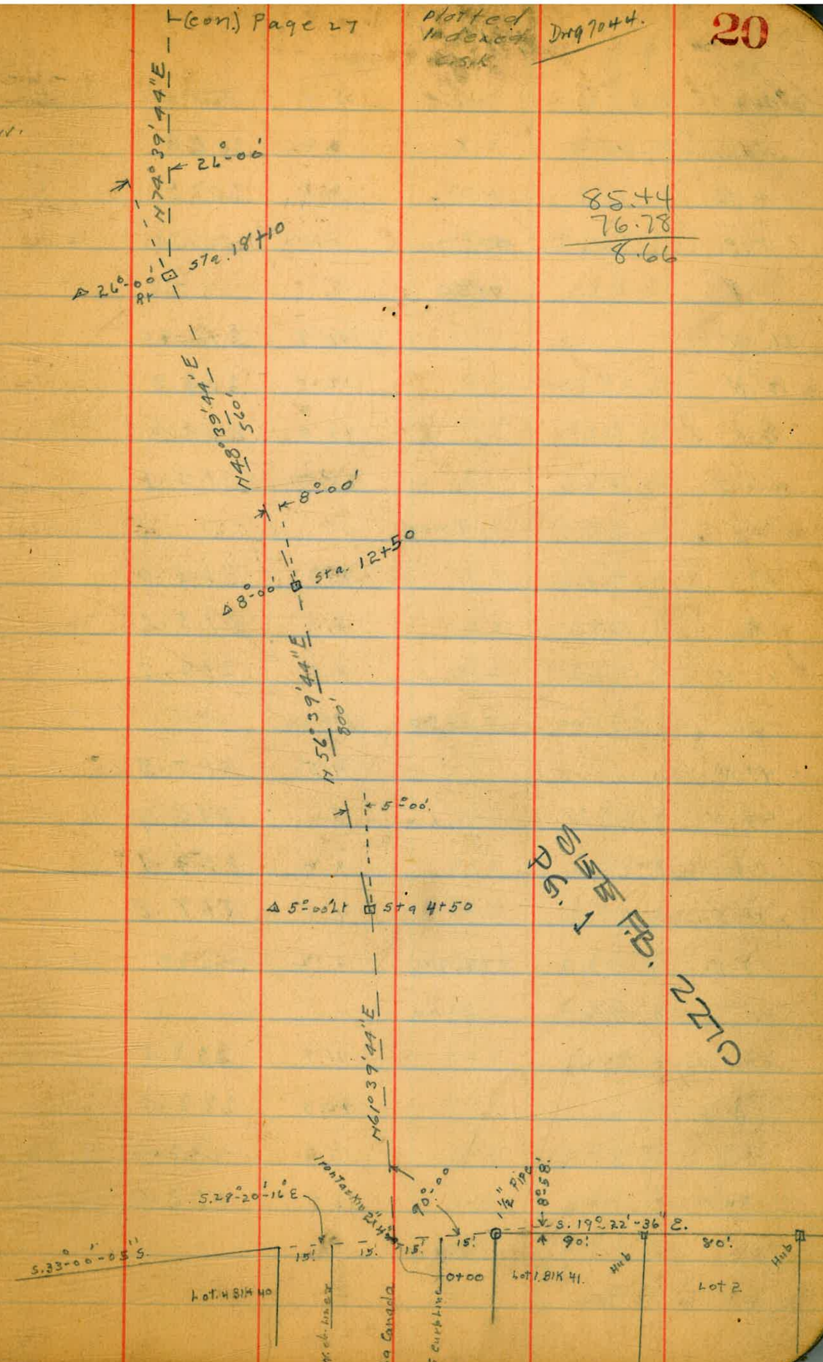
Roseerans St. Cross Section
At Taylor + San Diego Ave

BM	4.99	10.14		5.15	Mon Roseerans + Taylor
		1+12.13 = Fly Santa Fe Rail W			
N 1/4 on Paving			4.75	5.39	
S 1/4 " "			4.89	5.25	
		1+26.25 = Sec "A"			56.5
S 1/4 on Paving			4.90	5.24	
N 1/4 " "			4.96	5.18	
		Sec "B"			85.6
S 1/4 on Paving			5.17	4.97	
N 1/4 " "			5.00	5.14	
		47' N of Sec B" on Cb Line = Cb E.C.			
Gutter on Paving			5.37	4.77	
Top Curb			4.76	5.38	

La Cañada. Canyon
Survey & X Sec. From E Line La Jolla Hermosa Unit #2 East.

12-?-31 Miller Walker Bliss

	+	H.I.	–	Elev.	
BM. B.P.	12.52	97.96		85.44	BM NTP N.E. La Jolla Blvd & La Canada 76.78 =
T.P.	13.12	110.67	0.41	97.55	
T.P.	12.10	122.32	0.45	110.22	
BM. Top Hydt			8.26	114.06	N.W. Beaumont & La Canada
T.P.	12.97	134.62	0.67	121.65	
T.P.	13.27	147.63	0.26	134.36	
B.M. Nly Tack			8.60	139.03	S.E. Waverly & La Canada.
T.P.	13.04	160.54	0.13	147.50	
T.P.	13.15	173.15	0.54	160.00	
B.M. Nly. Tack			8.30	164.85	S.E. Bellvue & La Canada
T.P.	12.85	185.60	0.40	172.75	
T.P.	12.20	197.49	0.31	185.29	
B.M. Top Hydt			7.40	190.09	N.W. Folsom dr & La Canada
T.P.	12.70	210.04	0.15	197.34	
BM. 1½" Pipe S. Line La Canada & E Line La Jolla Hermosa #2			2.20	207.84	OK
0+00 = { E. End. cmt walk, Curb, & pavmt / E. Line La Jolla Hermosa Unit #2.		HI 210.04			
S.			2.2	208.84	
+4			2.7	207.34	
+10			5.0	205.04	
S. cmt Curb			5.10	204.94	
gutter on pavmt.			5.95	204.09	
¼ " "			5.67	204.37	
℄ " "			5.48	204.56	
¼ " "			5.66	204.38	
gutter " "			5.91	204.13	
N. cmt. cb.			5.05	204.99	



		210.04		
N. ⊄ +5			5.0	205.0
N. Line			3.2	206.8
+13			2.2	207.8
T.P.	13.15	222.30	0.89	209.15
		0+50		
31' N			11.9	210.40
13' N			12.5	209.8
⊄			13.0	209.3
25' S			12.2	210.1
		1+00		
18' S			8.3	214.0
⊄			8.7	213.6
38' N			8.8	213.5
		1+50		
47' N			4.5	217.8
37' N			5.4	216.9
⊄			4.2	218.1
11' S			4.5	217.8
T.P.	13.11	235.29	0.12	222.18
		2+00		
21' S			11.7	223.6
5' S			12.3	223.0
⊄			13.3	222.0
44' N			12.7	222.6

		2+50		
25' N			8.5	226.8
3' N			8.9	226.4
⊄			10.0	225.3
6' S			8.2	227.1
40' S			7.1	228.2
		2+85		
49' S			4.2	231.1
34' S			4.4	230.9
30' S			5.7	229.6
10' S			4.5	230.8
⊄			6.2	229.1
3' N			5.2	230.1
11' N			5.0	230.3
T.P.	13.13	247.96	0.46	234.83
		3+50		
22' N			10.6	237.4
10' N			10.8	237.2
4' N			13.9	234.1
2' N			11.1	236.9
⊄			11.1	236.9
39' S			10.0	238.0
		4+00		
32' S			5.1	242.9
18' S			5.3	242.7
13' S			6.5	241.5
4' S			6.3	241.7

	-47 ℄	4+00 (con)								
2'S			9.1	238.9	30'S			1.9	257.7
℄			6.8	241.2	T.P.	13.21	272.47	0.34	259.26
29'N			5.0	243.0			6+00		
	4+50.	△ 5°-00' Lt.		on split	31'S.			10.6	261.9
33'N			0.0	248.0	5'S			12.6	259.9
℄ on Hub			1.27	246.69	3'S.			14.6	257.9
4'S.			2.2	245.8	℄			11.9	260.6
6'S.			4.4	243.6	10'N			13.0	259.5
8'S.			1.9	246.1	15'N			11.9	260.6
13'S			0.3	247.7	33'N			12.0	260.5
28'S			+0.7	248.7			6+50		
T.P.	12.93	259.62	1.27	246.69	31'N.			8.5	264.0
		5+00			℄			8.5	264.0
29'S.			6.4	253.2	30'S			6.8	265.7
7'S			7.2	252.4			7+00		
6'S			10.4	249.2	26'S.			3.1	269.4
℄			10.4	249.2	3'S			4.3	268.2
3'N			8.0	251.6	℄			5.0	267.5
32'N			6.3	253.3	32'N.			3.2	269.3
		5+50			T.P.	13.20	284.95	0.72	271.75
31'N			2.6	257.0			7+50		
15'N			2.8	256.8	36'N.			12.0	273.0
℄			4.0	255.6	20'N			12.8	272.2
2'S			4.4	255.2	16'N			13.9	271.1
4'S			6.7	252.9	4'N			15.2	269.8
5'S			4.0	255.6	℄			12.8	272.2
					25'S			12.1	272.9

		8+00		
20.5		8.2	276.8	
℄		9.2	275.8	
12'N.		9.4	275.6	
15'N.		11.2	273.8	
18'N.		9.5	275.5	
38'N		7.0	278.0	
		8+50		
40'N.		3.7	281.3	
31'N		4.8	280.2	
29'N		3.4	281.6	
℄		3.8	281.2	
18'S		3.3	281.7	
T.P.	12.81	293.26	0.00	284.95
		9+00		
20'S		10.0	287.8	
℄		10.1	287.7	
38'N		10.8	287.0	
42'N		13.9	283.9	
44'N.		11.0	286.8	
		9+50		
41'N.		4.4	293.4	
40'N		9.4	288.4	
37'N		9.4	288.4	
34'N		4.8	293.0	
23.N.		4.1	293.7	
℄		4.1	293.7	

22'S.			3.4	294.4
T.P.	12.80	310.21	0.35	297.41
		10+00		
29'S.			9.7	300.5
℄			10.6	299.6
22'N			10.2	300.0
28'N			13.5	296.7
32'N			13.5	296.7
37'N			3.5	306.7
		10+25		
24'N			9.5	300.7
18'N			11.2	299.0
12'N			7.8	302.4
℄			7.5	302.7
33'S			7.6	302.6
		10+50		
37'S.			4.2	306.0
℄			4.5	305.7
17'N			5.5	304.7
20'N			7.6	302.6
24'N			7.3	302.9
26'N			3.3	306.9
		10+75		
17'N			1.2	309.0
13'N			2.4	307.8
9'N			5.3	304.9

			18+75	
5' N			1.8	308.4
℄			1.6	308.6
40' S			1.2	309.0
T.P.	13.14	322.48	0.90	309.31
		11+00		
41' S			10.2	312.3
15' S			10.4	311.9
12' S			13.1	309.4
10' S			10.2	312.3
℄			10.9	311.6
1' N			10.9	311.6
2' N			13.0	309.5
12' N			11.7	310.8
16' N			10.5	312.0
		11+50		
20' N			4.3	318.2
17' N			8.6	313.9
13' N			8.3	314.2
8' N			5.0	317.5
℄			4.4	318.1
1' S			7.4	315.1
6' S			6.6	315.9
7' S			4.4	318.1
26' S			4.9	317.6
40' S			3.2	319.3

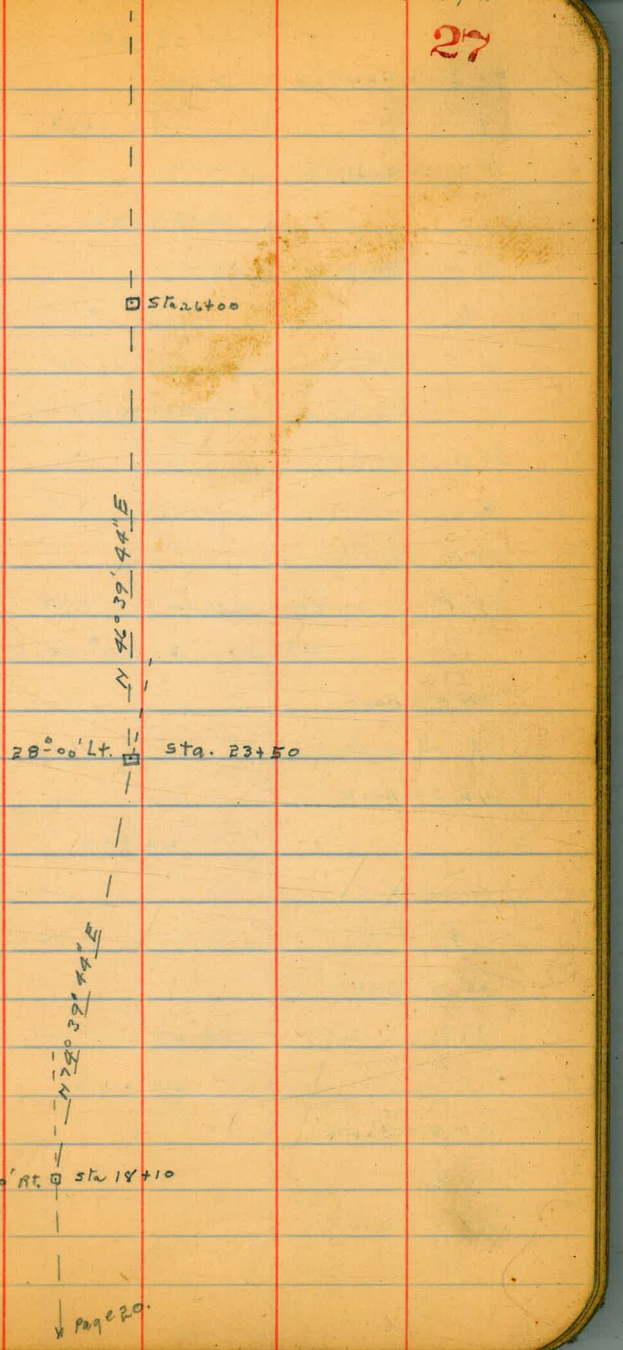
			11+66	
40' S.			1.4	321.1
31' S.			2.5	320.0
8' S			2.1	320.4
7' S			5.7	316.8
3' S			5.7	316.8
℄			2.7	319.8
10' N			2.4	320.1
12' N			7.5	315.0
15' N			7.6	314.9
16' N			3.1	319.4
19' N			2.5	320.0
		11+70		
18' N.			2.4	320.1
16' N			4.6	317.9
℄			5.1	317.4
5' S.			5.1	317.4
8' S			1.7	320.8
32' S			2.1	320.4
40' S			0.9	321.6
T.P.	12.79	335.03 ✓	0.21	322.24 ✓
		11+84		
38' S.			11.7	323.3
6' S.			11.7	323.3
5' S.			15.8	319.2
℄			15.9	319.1
20' N			15.0	320.0
22' N			12.8	322.2

	33543								
	114 91.					13+00			
22' N.			12.7	322.3	34' S			8.3	339.1
20' N			14.7	320.3	17' S			8.5	338.9
13. N			14.7	320.3	15' S			12.1	335.3
10' N			11.6	323.4	12' S.			9.0	338.4
℄			11.7	323.3	℄			8.5	338.9
3' S.			15.2	319.8	26' N.			8.1	339.3
5' S			15.2	319.8		13+50			
6' S			11.4	323.6	26' N.			1.5	345.9
39' S.			10.7	324.3	℄			1.3	346.1
	12+25				4' S.			1.1	346.3
37' S			6.3	328.7	8' S			5.5	341.9
28' S			7.4	327.6	15' S			4.4	343.0
15' S			8.0	327.0	17' S.			1.6	345.8
13' S			12.0	323.0	32' S			2.1	345.3
10' S			8.4	326.6	35' S			3.5	343.9
℄			7.3	327.7	T.P.	13.22	360.28 ✓	0.37	347.06 ✓
21' N			6.9	328.1		14+00			
	12+50 △ 8°00' Lt.			on split.	26' S,			5.7	354.6
23' N			2.8 ✓	332.2	℄			7.0	353.3
17' N			4.4	330.6	4' N.			12.0	348.3
℄ on Hub.			4.23	330.80	7' N.			12.0	348.3
12' S,			5.0	330.0	8' N			7.5	352.8
15' S.			10.0	325.0	31' N.			7.0	353.3
18' S.			5.0	330.0					
33' S.			3.5	331.5					
T.P.	12.95	342.43 ✓	0.55	334.48 ✓					

		14+50		
36'N			0.8	359.5
8'N.			1.0	359.3
4'N			6.6	353.7
℄			4.6	354.3
5'S			0.7	359.6
T.P.	13.14	373.03 ✓	0.39	359.89 ✓
23'S.			12.4	360.4
		15+00		
20'S = Bank				
℄			7.5	365.5
43'N = Bank				
T.P.	13.31	386.01 ✓	0.33	372.20 ✓
		15+50		
31'N = Bank				
℄			12.6	373.4
45'S. = Bank				
		16+00		
36'S = Bank				
℄			5.5	380.5
41'N. = Bank				
		16+15		
41'N = Bank				
℄			3.3	382.7
26'S = Bank				
T.P.	13.03	398.81 ✓	0.23	385.78 ✓

		16+50		
29'S. = Bank				
℄			11.1	387.7
43'N = Bank				
		17+00		
39'N. = Bank				
℄			3.7	395.1
34'S. = Bank				
T.P.	13.23	411.23 ✓	0.81	388.00
		17+50		
36'S. = Bank				
℄			7.7	403.5
35'N = Bank				
T.P.	13.02	423.77 ✓	0.48	410.75 ✓
		18+10	Δ 26°-00' Rt	
12'N = Bank				
℄ on Hyb			10.86	412.91
48'S = Bank				
		18+60		
43'S = Bank				
℄			5.2	418.6
18'N = Bank				
T.P.	13.16	436.65 ✓	0.28	423.49 ✓
		19+00		
21'N = Bank				
℄			12.5	424.2
50'S = Bank				

		19+50		
42' S = Bank				
℄			5.4	431.3
20' N = Bank				
T.P.	13.23	448.56 ✓	0.32	436.38 ✓
		20+00		
18' N = Bank				
℄			11.2	438.4
42' S = Bank				
		20+50		
45' S = Bank				
℄			7.0	442.6
17' N Bank				
		21+00		
17' N = Bank				
℄			2.6	447.0
45' S = Bank				
T.P.	13.07	462.23	0.40	449.16
		21+50		
47' S = Bank				
℄			10.3	451.9
15' N = Bank				
		22+00		
15' N = Bank				
℄			3.7	458.5
45' S = Bank				
T.P.	12.99	474.71	0.51	461.72 ✓



		22+30		
42'S. = Bank				
℄			11.7	463.0
11'N Bank				
		22+50		
16'N = Bank				
℄			9.8	464.9
61'S = Bank				
		23+00		
54'S = Bank				
℄			4.8	469.9
28'N = Bank				
T.P.	12.80	485.91 ✓	1.60	473.11 ✓
		23+50 Δ 28°-00' Lt.		
36'N = Bank				
℄ on Hub			11.18	474.73
44'S = Bank				
		24+00		
61'S = Bank				
℄			7.2	478.7
35'N = Bank				
T.P.	12.73	498.43	0.21	485.70 ✓
		24+50		
27'N = Bank				
℄			15.0	483.4
77'S. = Bank				

	25+00		
℄		11.3	487.13
	25+50		
℄		8.0	490.4
	26+00 Hub		
on Hub		4.76	493.6 ✓

For Topog. in Amphitheatre. at End of La Canada Canyon Rd. See Page 29.

Stadia Topog From Hub
Sta 26+00 Asmuth Reconed
From Back Tangent to sta 23+50
Elev Hub sta 26+00 = 493.67
Azmuth Measured Clockwise

		Azmuth	Stadia	Vert Δ	Horiz Dist	Vert Dist	Elev.
#1		18°-02'	122.	+ 2°-30'			
#2	Bottom Bank	18°-02'	128'	- 2°-15'			
#3	" "	46°-25'	120'.	+ 0°-10'			
#4		46°-25'	108'.	- 0°-43'			
#5		77°-44'	108'	+ 1°-15'			
#6	Bottom Bank	77°-44'	124'	+ 2°-18'			
#7	" "	91°-50	120'	+ 2°-25'			
#8		91°-50	110.	+ 1°-50'			
#9		111°-30'	112.	+ 2°-45'			
#10	Bottom Bank	113°-48'	152'.	+ 3°-54'			
#11	" "	119°-30'	96'.	+ 3°-20'			
#12		119°-30'	86'	+ 3°-05'			
#13		133°-45'	90'.	+ 3°-26'			
#14	Bottom Bank	133°-45'	100'.	+ 4°-00'			
#15	" "	140°-31'	130'.	+ 4°-26'			
#16		144°-53'	126'.	+ 3°-40'			
#17		152°-25'	162'.	+ 3°-56'			
#18	Bottom Bank	149°-37'	168'.	+ 4°-24'			
#19	" "	157°-49'	192'.	+ 4°-19'			
#20		157°-49'	182'.	+ 4°-00'			
#21		168°-30'	164'.	+ 4°-00'			
22	Bottom Bank	169°-30'	186'.	+ 4°-23'			
23	" "	183°-04'	170'.	+ 4°-25'			
24		183°-04'	160'.	+ 4°-05'			

At Hub sta 26+00 Elev=

		Az	Stadia	Vert. Δ
#25		195°-35'	154'	+3°-55'
#26	Bottom Bank	196°-40'	190'	+4°-27'
#27	"	218°-13'	144'	+3°-37'
#28		218°-13'	138'	+3°-21'
#29		224°-21'	172'	+3°-23'
#30	Bottom Bank	221°-24'	174'	+3°-53'
#31		224°-27'	194'	+3°-26'
#32	Bottom Bank	221°-04'	196'	+3°-47
#33	" "	224°-21	214'	+3°-54'
#34		224°-21'	194'	+3°-25'
#35		227°-16'	192'	+3°-17'
#36	Bottom Bank	227°-16'	196'	+3°-29'
#37		227°-16'	120'	+3°-03'
#38		249°-13'	70'	+1°-34'
#39		249°-13'	174'	+2°-27'
#40	Bottom Bank	249°-13'	182'	+2°-42'
#41	" "	251°-31'	202'	+2°-57'
#42		253°-56'	194'	+2°-35'
#43	Bottom Bank	258°-39'	200'	+2°-45'
#44		258°-39'	178'	+2°-19'
#45		258°-39'	80'	+1°-02'
#46		274°-12'	80'	+0°-10'
#47		274°-12'	120'	+0°-41'
#48	Bottom Bank	274°-12'	126'	+1°-20'
#49	" "	292°-35'	126'	0°-00'

At Sta 2.6+00 HubElev. =

		Azmuth	Stadia	Vert
#50		292°-35'	118'	- 0°-24'
#51		292°-35'	64'	- 1°-09'
#52	Bottom Bank	307°-45'	146'	- 0°-46'
#53		307°-45'	139'	- 1°-11'
#54		307°-45'	80'	- 1°-52'
#55	Bottom Bank	333°-41'	172'	- 2°-09'
#56		333°-41'	166'	- 2°-30'
#57		333°-41'	106'	- 3°-18'

Vert. Δ chk. Levels from sta. 26+00 to sta. 0+00

26+00 to	23+50	= 250'	Vert Δ = - 4°-22'	Vert Dist	19.09
23+50 to	18+10	= 540'	Vert Δ = - 6°-32'		61.84
18+10 to	12+50	= 560'	Vert Δ = - 8°-23'-30"		82.60
12+50 to	4+50	= 800'	Vert Δ = - 6°-02'-30"		84.67
4+50 to	0+00	= 450'	Vert Δ = - 5°-23'-30"		42.47
					= 204.56

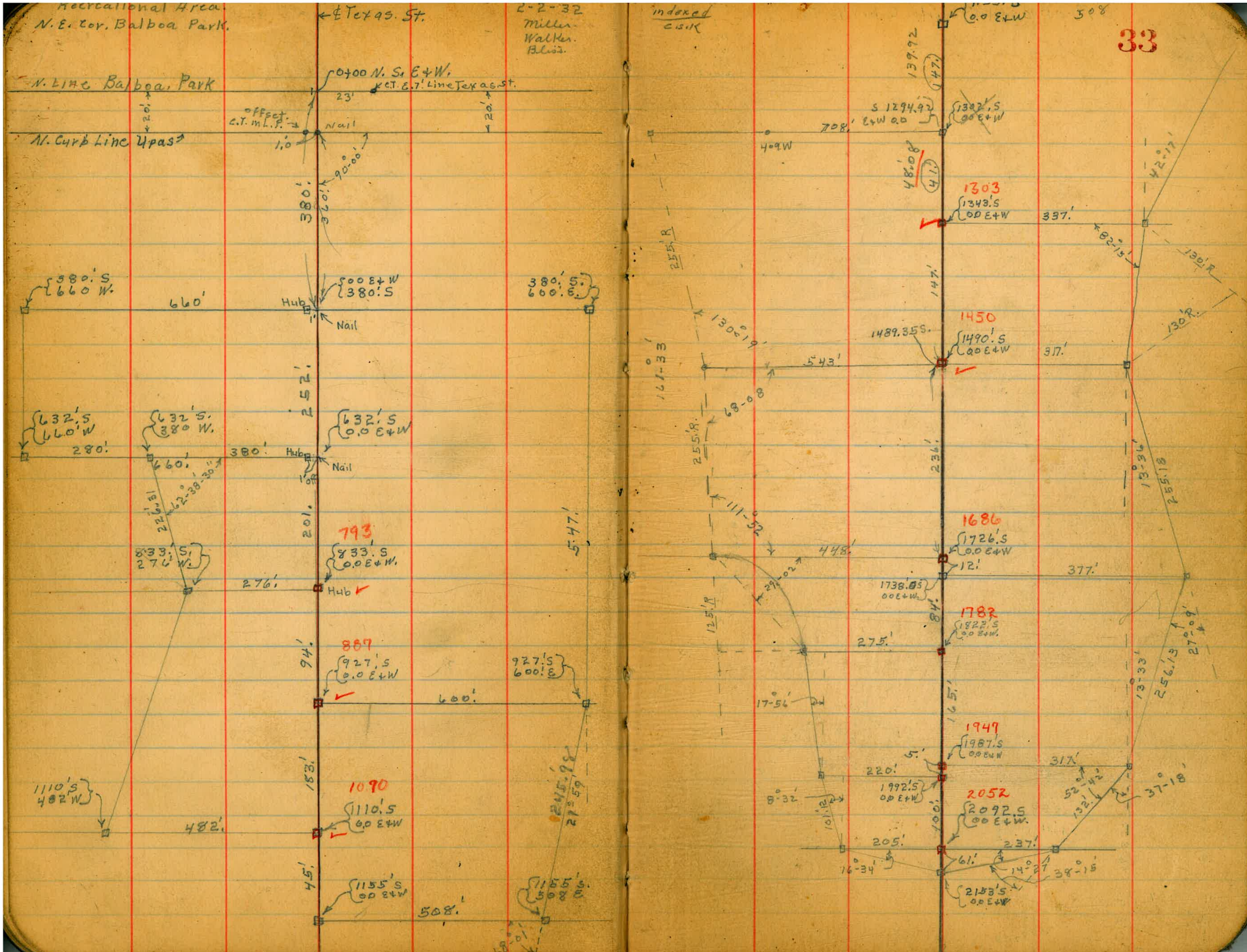
Tan 4°-22' = .07636
250.
381800
15272
19.09000

Tan 6°-32' = .11452
540.
458080
57240
61.84080

Tan 8°-23'-30" = .14752
560.
884120
73760
82.60120

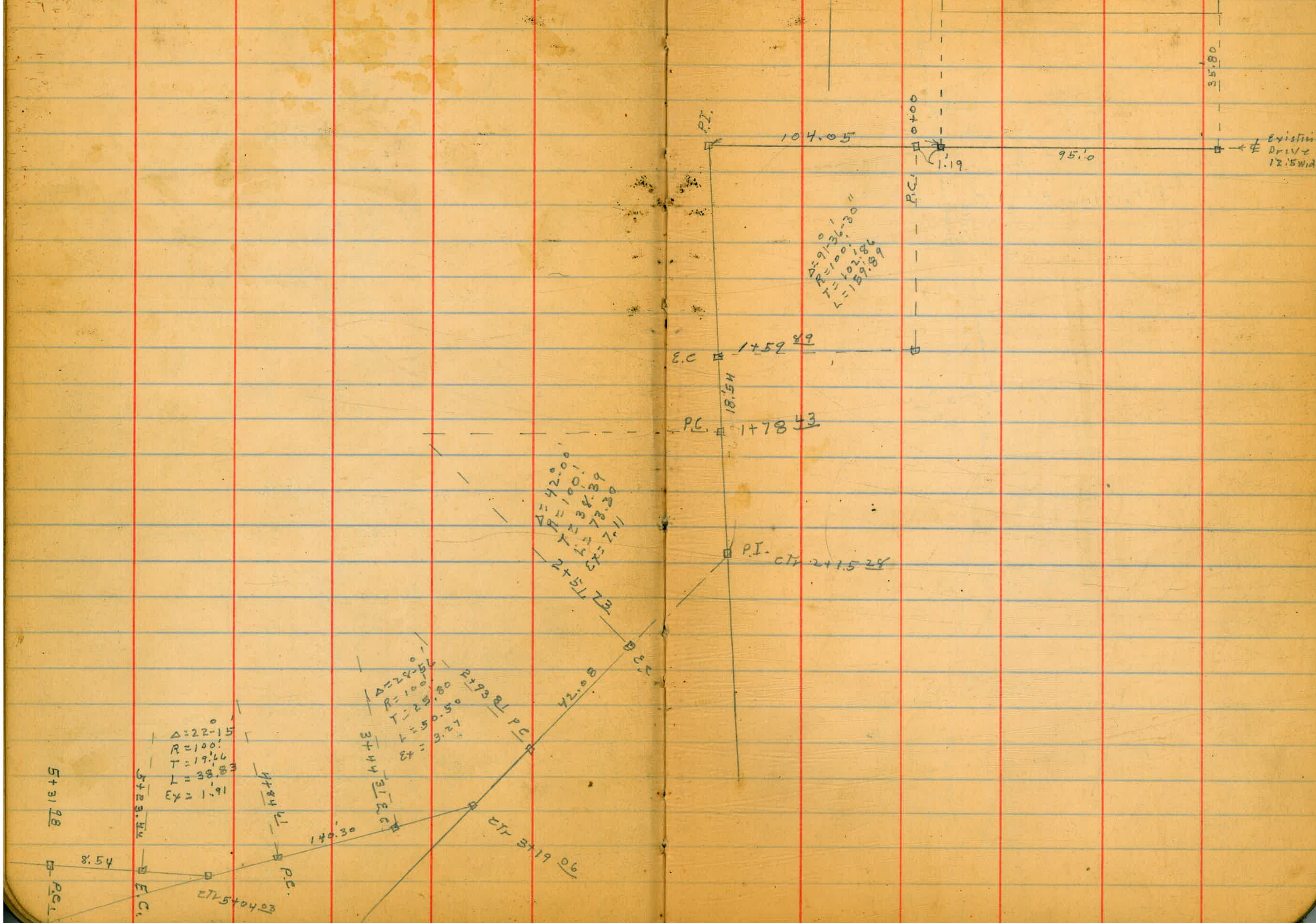
Tan 6°-02'-30" .10584
800
846720

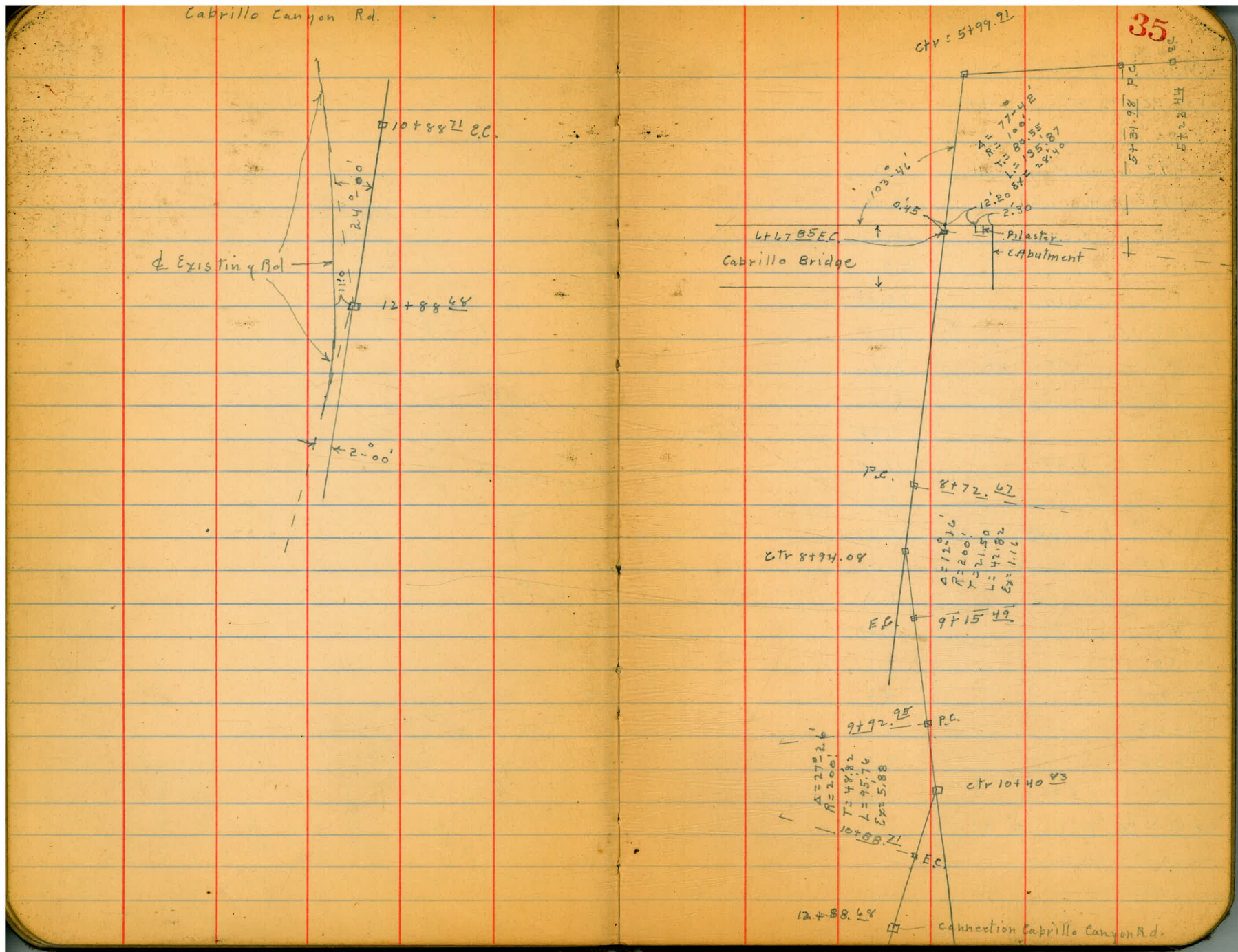
Tan 5°-23'-30" .09438
450.
471900
37752
42.47100


Recreational Area
N. E. Cor. Balboa Park.
℄ Texas St.
2-2-32
Miller
Walker
Bliss
indexed
N. Line Balboa Park
0+00 N. S. E+W.
C.T. E.T. Line Texas St.
23'
20'
offset C.T. M.L.P.
Nail
1.0
N. Curb Line Upas St.
90°00'
380'
{380' S 660 W.
660'
Hub
{0.0 E+W 380' S
Nail
{380' S. 600' E.
252'
{632' S 660' W
{632' S. 380 W.
{632' S 0.0 E+W
280'
380'
Hub
Nail
1' off
60'
226.81
62°-38'-30"
201'
793
{833' S. 276' W.
{833' S 0.0 E+W.
276'
Hub
547'
887
94'
{927' S 0.0 E+W
{927' S 600' E
600'
183'
1090
{1110' S 482' W
{1110' S 0.0 E+W
482'
245.98
27°-59'
45'
{1155' S 0.0 E+W
{1155' S. 508' E.
508'
68-01'
508
139.92
147'
S 1294.92 E+W 0.0
{1302' S 0.0 E+W
708'
409 W
48.08
41'
1303
{1343' S 0.0 E+W
337'
82°-15'
42°-17'
130' R.
255' R
147'
1450
1489.35 S.
{1490' S 0.0 E+W
130°-19'
543'
317'
161°-33'
68°-08'
255' R.
236'
13°-34'
255.18
111°-52'
1686
{1726' S 0.0 E+W
448'
12'
377'
1738.85 0.0 E+W
29°-02'
84'
1782
{1822' S 0.0 E+W.
125' R
275'
27°-09'
256.13
13°-33'
17°-56'
165'
1947
{1987' S 0.0 E+W
5'
220'
317'
1992' S 0.0 E+W
2052
{2092' S 0.0 E+W.
52°-42'
37°-18'
8°-32'
101.18
100'
132'
205'
237'
61'
16°-34'
14°-27'
38°-15'
{2153' S 0.0 E+W

Indexed
C.S.K.

Proposed Road. Cabrillo Canyon — 20' Roadway
2-10-32
Miller
Walker
Bliss
Northern




Cabrillo Canyon Rd.
10+88.71 E.C.
℄ Existing Rd
12+88.48
2-00'
24-00'
1:1.0
Ctr = 5+99.91
5+31.98 P.C.
Δ = 77°-42'
R = 100.00'
T = 80.55
L = 135.87
E = 28.40
103°-46'
0.45'
12.20'
2.30
4+67.85 E.C.
Pilaster
℄ Abutment
Cabrillo Bridge
P.C. 8+72.67
Ctr 8+94.08
Δ = 12°-26'
R = 200.00'
T = 21.50
L = 42.82
E = 1.16
E.C. 9+15.49
9+92.95 P.C.
Δ = 27°-26'
R = 200.00'
T = 48.82
L = 95.74
E = 5.88
ctr 10+40.83
10+88.71 E.C.
12+88.48
connection Cabrillo Canyon Rd.

Levels Cabrillo Canyon.

S.W. Cor. Bottom B.M. Slop.	3.45		Zoological Hospital	5+31 98 P.C.	Δ 77-42' Lt.	7.58		on Hub
0+00 P.C.	Δ 91°-36'-30" Lt.	4.77		T.P.		13.03		Nail in Tree.
0+50		6.9						
0+93, Top wall. W. edge walk.		11.3						
0+93 5 Bottom wall		13.3						
T.P.	0.07	12.82						
1+20		5.5						
T P	0.14	13.08						
1+59 89 E.C.		1.08	on Hub					
1+78 43 P.C.	42°-00' Rt.	3.4						
2+15 28 ctr. Curve		6.0						
2+51 73 E.C.		7.56	on Hub					
T.P.	3.49	13.10.						
2+72		0.6						
2+93.81	P.C. Δ 28°-52' Rt.	3.50	on Hub					
3+19.04	ctr Curve	6.12						
3+44 31	E.C	9.2						
T.P.	0.74	10.89						
3+68		4.1						
3+90		4.6						
4+25		5.1						
4+50		7.7						
T.P.	3.01	11.28						
4+84 41 P.C.	Δ=22°-15' Rt.	2.63	on Hub					
5+04 03	ctr Curve	5.2						
5+23 44	E.C.	6.83	on Hub					

Survey for Establishment of South Boundary of Zoo

2-11-32 Mills Walker Bliss

Indexed CSK

Plotted on hard copy C.S.K. 2-24-32

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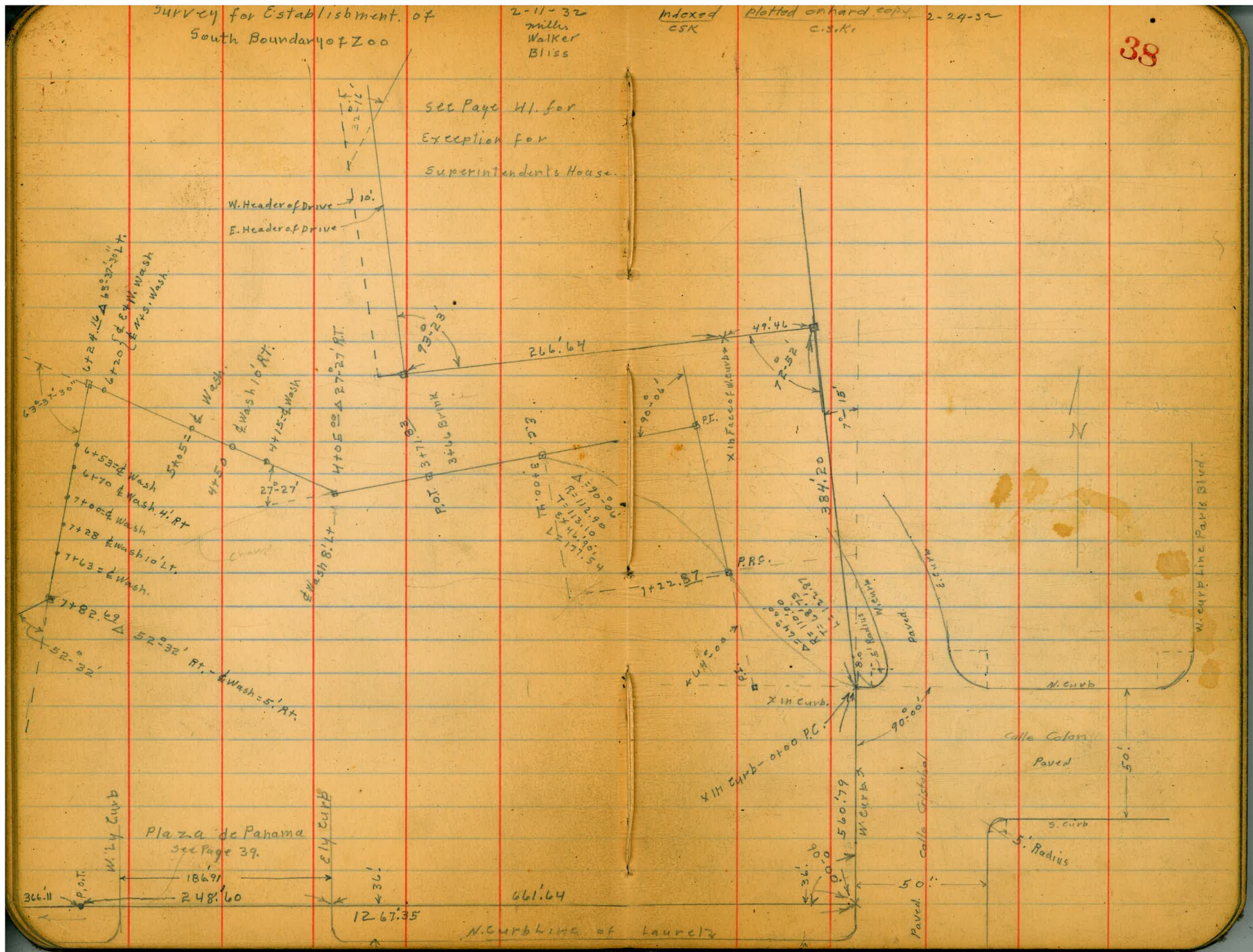
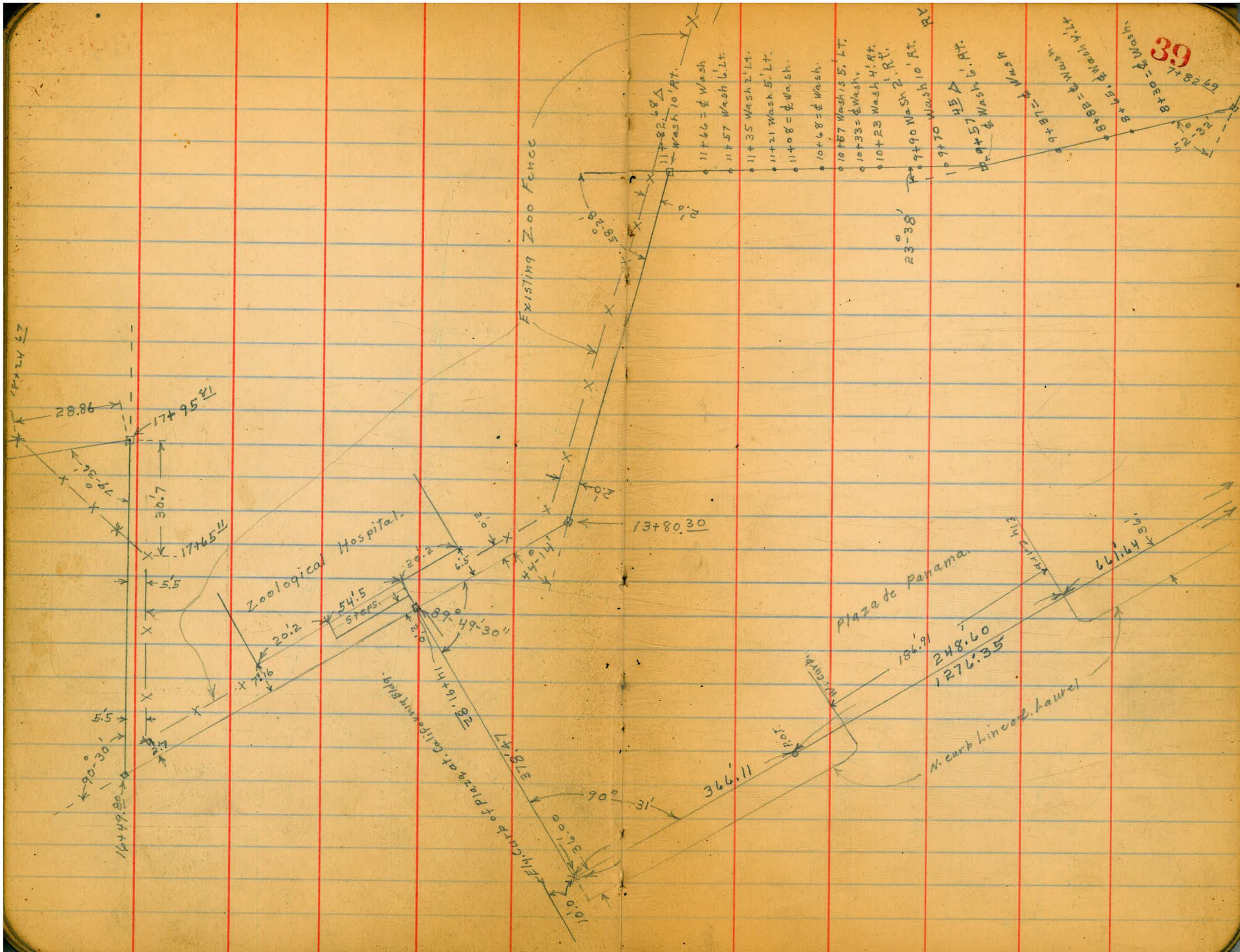
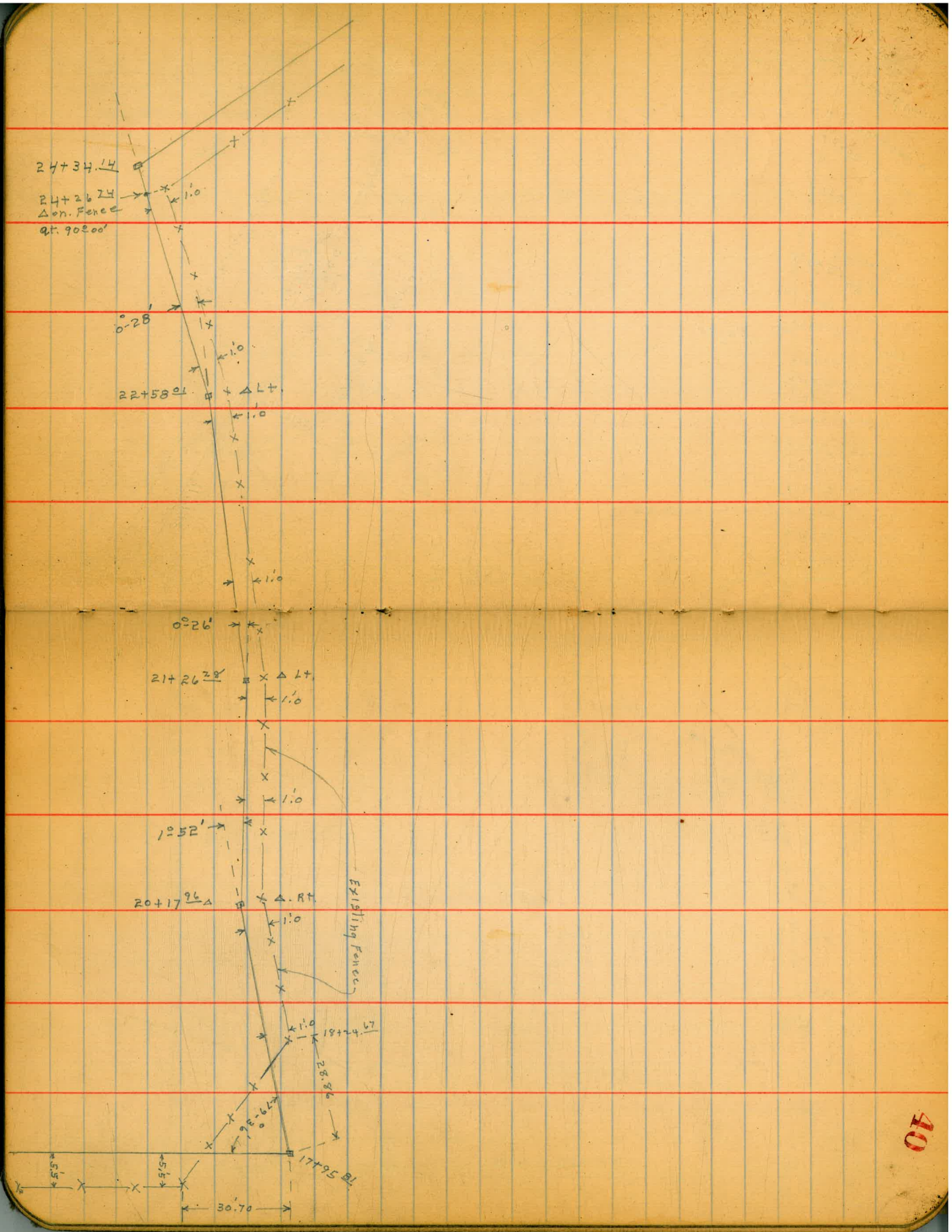
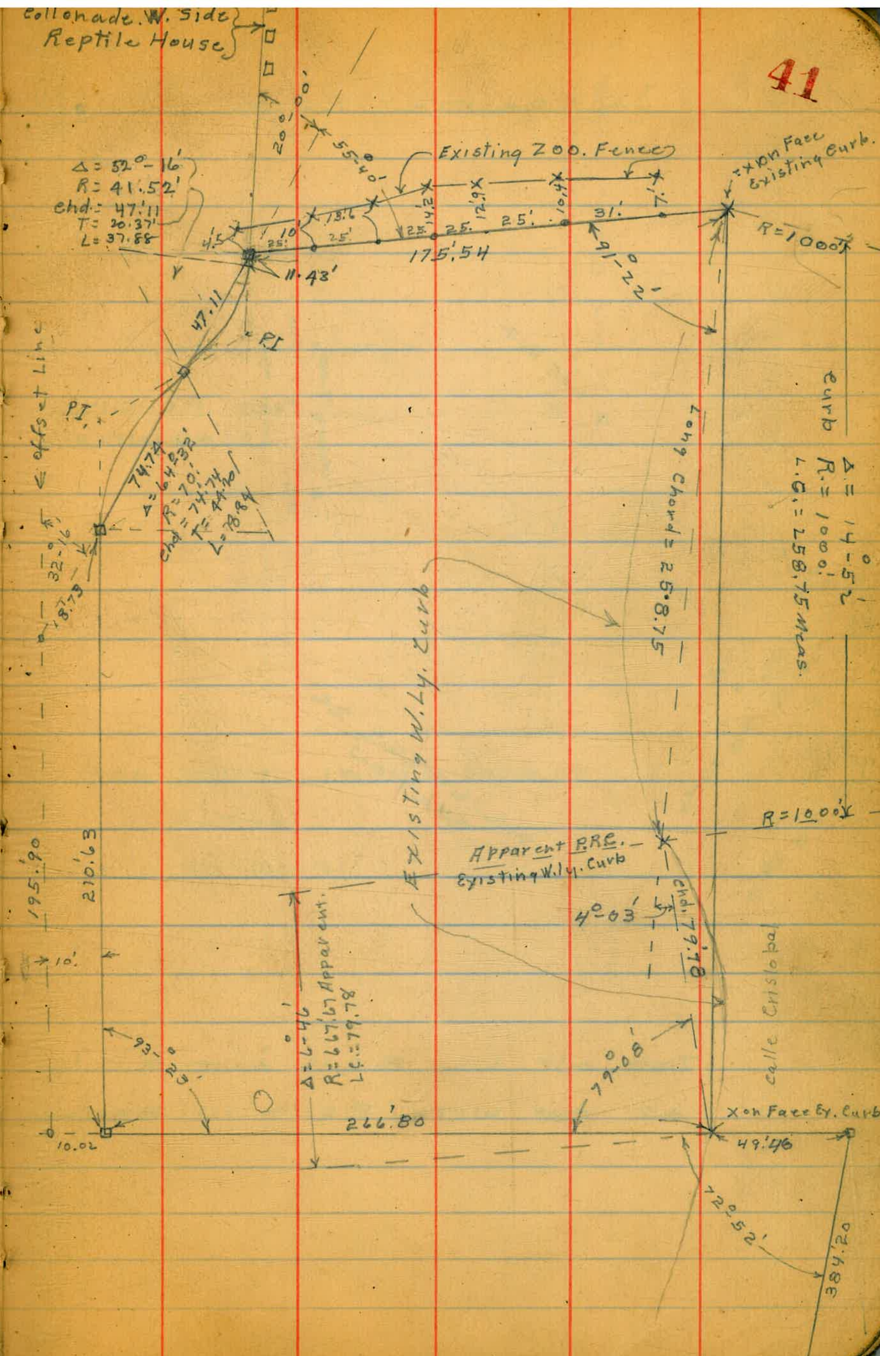



Existing Zoo Fence
Zoological Hospital
Plaza de Panama
N. curb line of Laurel
E'ly Curb of plaza at California Bldg.
Steps
13+80.30
17+95.81
17+65.11
16+49.80
28.86
30.7
5.5
20.2
54.5
89° 49' 30"
14+91.82
378.47 Lt.
90° 31'
366.11
P.O.T.
186.91
248.60
1276.35
661.64
23° 38'
11+66 = ℄ Wash
11+57 Wash 6' Lt.
11+35 Wash 2' Lt.
11+21 Wash 5' Lt.
11+08 = ℄ Wash.
10+68 = ℄ Wash.
10+67 Wash is 5' Lt.
10+33 = ℄ Wash
10+23 Wash 4' Rt.
9+90 Wash 2' Rt.
9+70 Wash 10' Rt.
8+30 = ℄ Wash
7+82.69

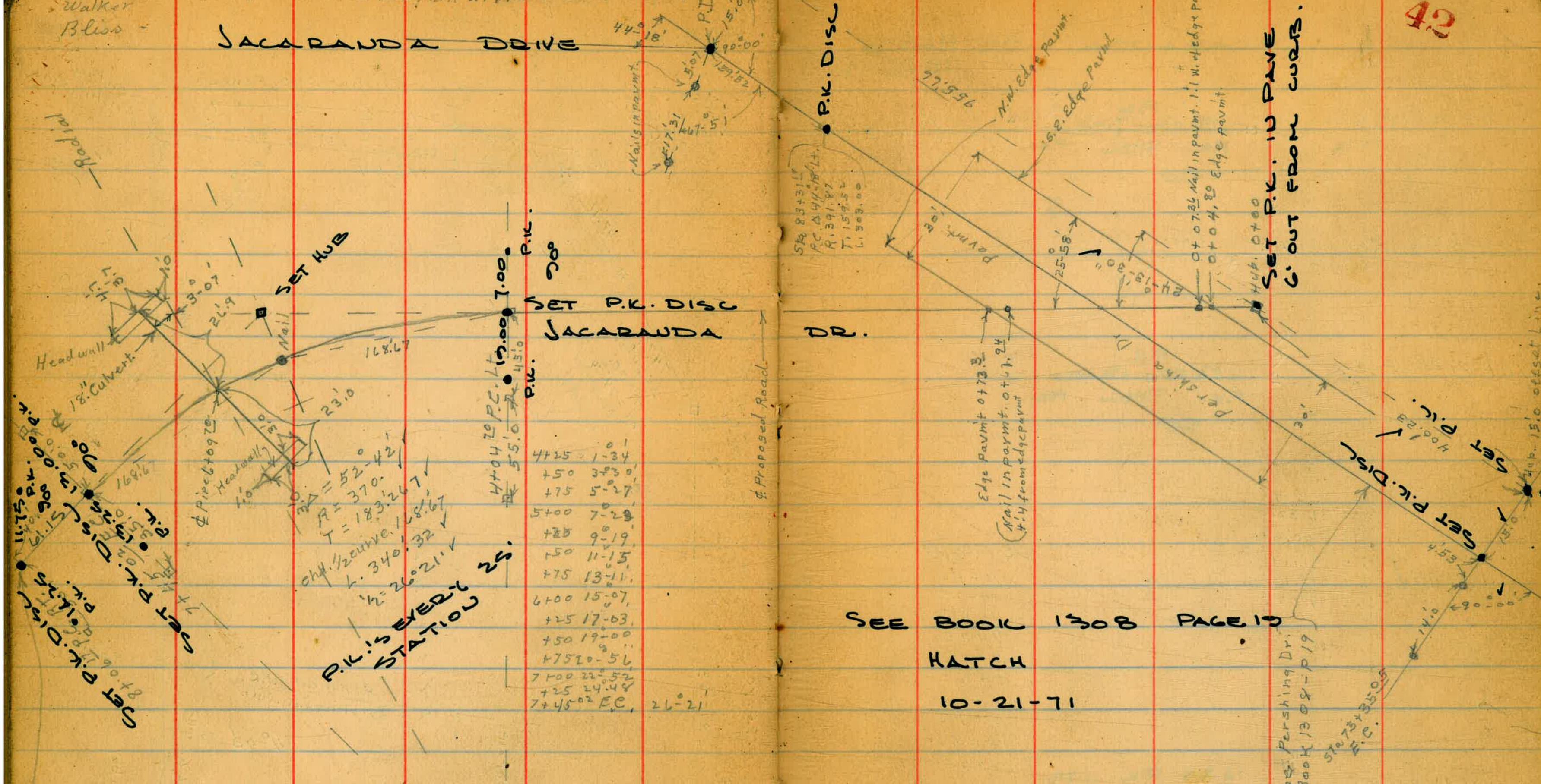

24+34.14
24+26.24
Δ on. Fence
at. 90°00'
0°-28'
1.0
22+58.01
Δ Lt.
0°-26'
21+26.28
Δ Lt.
1°-52'
20+17.96
Δ. Rt.
Existing Fence
18+24.67
28.86
179°-36'
17+95.81
5.5'
5.5'
30.70

178
156.
20


Collonade W. Side
Reptile House
Existing Zoo. Fence
x on Face Existing Curb.
Δ = 52° - 16'
R = 41.52'
chd = 47.11
T = 20.37'
L = 37.88
175.54
11.43'
47.11
PI
PI
R = 1000'
91° - 22'
Curb
Δ = 14° - 52'
R. = 1000.'
L.C. = 258.75 Meas.
Long Chord = 258.75
74.74
Δ = 64° 32'
R = 70.'
Chd = 74.74
T = 44.20
L = 78.84
32° - 16'
18.73
Offset Line
Existing W.Ly. Curb
R = 1000'
Apparent BRC.
Existing W.Ly. Curb
4° - 03'
Chd. 79.18
195.90
210.63
10'
Δ = 6° - 46'
R = 667.67 Apparent
L = 79.78
93° - 20'
79° - 08'
266.80
Calle Cristobal
X on Face Ex. Curb
10.02
49.46
72° 52'
384.20

9-22-33
Survey Road. Connecting Pershing Dr. & N. Line Balboa Park at Arizona

Miller
Walker
Bliss


JACARANDA DRIVE
P.K.
P.I. Hub
15.0'
90°-00
159.52
Nails in pavmt.
Radial
SET HUB
Nail
Headwall
18" Culvert
168.67
23.0
SET P.K. DISC
JACARANDA DR.
7.00
15.00
P.K.
P.C.
55.0
Pipe
Headwall
Δ = 52°-42'
R = 370'
T = 183.24'
Chd. ½ curve 168.67
L. 340.32'
Δ/2 = 26°-21'
P.K.'S EVERY 25' STATION
SET P.K. DISC
Con. Page 43
Proposed Road
P.K. DISC
Sta 83+31.18
Edge Pavmt
Nail in pavmt.
N.W. Edge Pavmt
S.E. Edge Pavmt
30'
Pershing Dr.
SET P.K. IN PAVE 6' OUT FROM CURB.
SET P.K. DISC
SET P.K.
Baseline Pershing Dr. Book 1308 - P 19
offset Line

4+25	1-34
+50	3-30
+75	5-27
5+00	7-23
+25	9-19
+50	11-15
+75	13-11
6+00	15-07
+25	17-03
+50	19-00
+75	20-56
7+00	22-52
+25	24-48
7+45.02 E.C.	26-21

SEE BOOK 1308 PAGE 19
HATCH
10-21-71

TIED OUT ALL B.C.'S AND E.C.'S AT 90° WITH P.K.'S IN BERM.

JACARANDA DR. HATCH
10-21-71

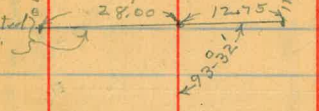
13+74 50 P.C.

13+37 25

293.15

P.K. 18.00 7.50 P.K.
P.K. DISC P.K.
90°

12+08 10 ℄ 12" Corrugated Culvert.



10+81 35 E.C.1

P.K. 13.00 13.00
P.K. DISC P.K.
90°

Δ = 31°-32' ✓
R = 500.0 ✓
T = 141.17 ✓
L = 275.18 ✓
Ex = 19.35
½Δ = 15° 46'00" ✓

P.I. H 46 ✓

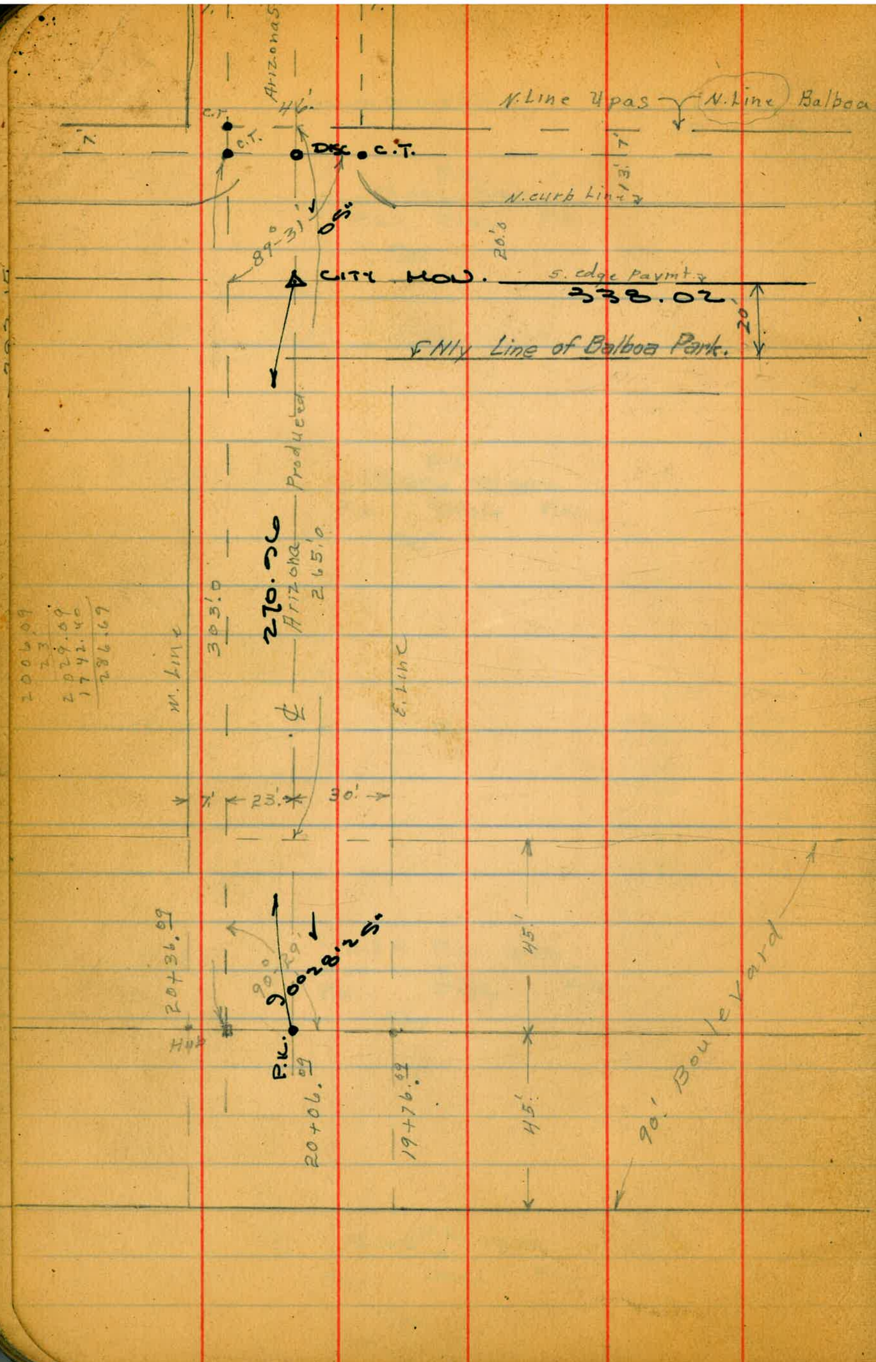
E.C. 10+81 35	15°-46'
10+50	13°-58'
10+25	12°-32'
10+00	11°-06'
9+75	9-40
9+50	8°-14'
9+25	6°-49'
9+00	5°-23'
8+75	3°-57'
8+50	2°-31'
8+25	1°-48'

8+06 11 P.C. Rt.

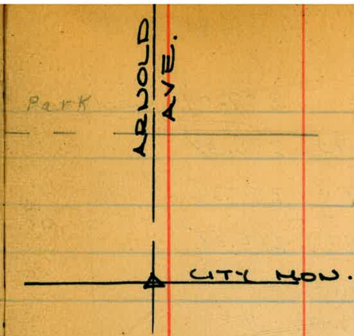
12.25 P.K. 11.75
30.10 40.
P.K. DISC P.K.
90°

7+45 02 E C

13.25 P.K. 13.00
35.0 0.0
P.K. DISC P.K.
90°



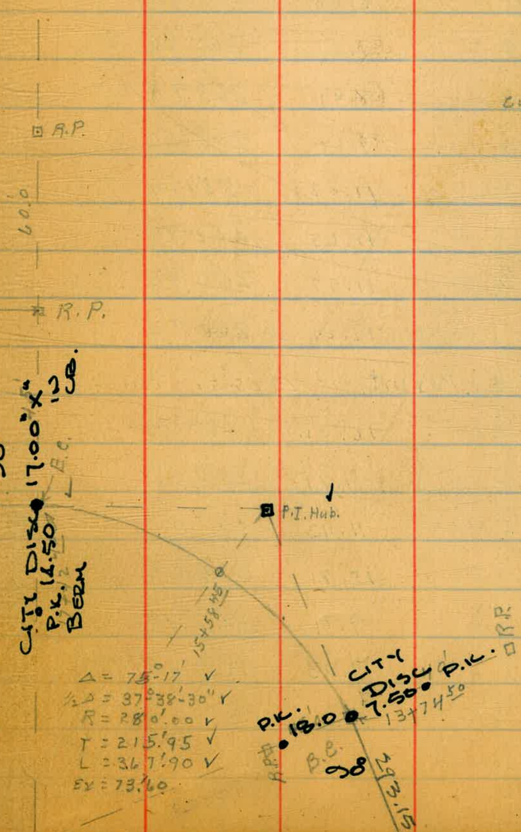
75-17
104-43½
209-26



Page 80 for Gutter Grades

HATCH
OCT. 71

Def ∠s.	
14+00	2°-36'.5
14+50	7°-43'.5
15+00	12°-50'.5
15+25	15°-24'.
15+50	17°-57'.5
15+75	20°-31'
15+87.5	21°-47'.5
16+00	23°-04'
+12.5	24°-21'
+18.5	24°-58'
culvert. +22.75	25°-24'
+25	25°-38'
+37.5	26°-54'.5
+50	28°-11'
+62.5	29°-28'
+70	30°-04'.5
17+00	33°-18'
17+42.40 E.C.	37°-38'-30"



X See Road Connecting Pershing Dr. & Arizona St.

B.M. B.P.	0.47	309.51 ✓		309.04 ✓	S.E. 28th & Redwood.
T.P.	0.30	296.88 ✓	12.93	296.58 ✓	
T.P	0.01	284.35 ✓	12.54	284.34 ✓	
T.P.	0.05	272.43 ✓	11.97	272.38 ✓	
	0+04 80 = S.E. edge Pavmt.				
	See on S.E. Edge of Pavmt.				
211.6 Rt of ℄			1.79	270.64	
181.6 " "			3.81	268.62	
151.6 " "			5.54	266.89	
121.6 " "			6.88	265.55	
91.6 " "		Reduced Sept. 23rd '33 by M.M.M.	7.77	264.66	
61.6 " "			8.49	263.94	
℄			9.87	262.56	
50' Lt.			11.03	261.40	
100' "			11.65	260.78	
150' "			11.97	260.46	
200' "			12.27	260.16	
	0+39. ℄ Ex. Pavmt				
230.8 Lt			12.02	260.41	
180.8 "			11.79	260.64	
130.8 "			11.43	261.00	
80.8 "			10.81	261.62	
30.8 "			9.71	262.72	
℄			9.03	263.40	
30.8 Rt			8.31	264.12	
60.8 "			7.53	264.90 ✓	

272.43

90.8 Rt.	6.73	265.70	
120.8 "	5.50	266.93	
150.8 "	3.65	268.78	
180.8 "	1.79	270.64	
0+73 3 = N.W. edge pavmt.			
150.0 Rt	1.89	270.54	
120' "	3.73	268.70	
90' "	5.50	266.93	
60' "	6.78	265.65	
30' "	7.63	264.80	
℄	8.31	264.12	
61.8 Lt.	9.70	262.73	
111.8 "	10.88	261.55	
161.8 "	11.56	260.87	
211.8 "	11.79	260.64	
261.8 "	12.07	260.36 ✓	
0+90 ℄ Parallel to Pavmt			
277.7 Lt	11.8 ✓	260.6	
227.7 "	11.8	260.6 ✓	
177.7 "	11.4	261.0	
127.7 "	10.7	261.7	
77.7 "	9.7	262.7 ✓	
36' "	8.6	263.8 ✓	
℄	8.1	264.3	
14.1 Rt.	7.8	264.6	
44.1 "	6.6	265.8 ✓	

		272.48					269.92	Pershing to Arizona	
74.1 Rt.			5.5	266.9		℄		5.3	264.6	
104.1 "			3.8	268.6		26.1 Rt.		4.7	265.2	✓
134.1 "			2.2	270.2		56.1 "		4.4	265.5	
	1+00 ℄ Parallel to Pavmt.					86.1 "		2.5	267.4	
125.1 Rt.			2.1	270.3			1+10 at 90°-00' from ℄ Road.			
95.1 "			3.8	268.6		℄		5.3	264.6	
65.1 "			6.7	265.7		15' Lt		5.8	264.1	
35.1 "			7.1	265.3		20' "		6.2	263.7	
5.1 "			7.8	264.6		25' "		8.3	261.6	
℄			8.0	264.4		40' "		9.2	260.7	
45' Lt.			8.6	263.8			1+50 at 90°-00			
86.5 "			11.6	260.8		35' Lt		7.3	262.6	
136.5 "			12.9	259.5		20' "		6.3	263.6	✓
186.5 "			14.8	257.6		15' "		6.1	263.8	
236.5 "			12.3	260.1		℄		5.2	264.7	
286.5 "			12.1	260.3		15' Rt		4.7	265.2	
T.P.	4.03	269.92 ✓	4.54	265.89 ✓		20' "		4.5	265.4	
	1+10 ℄ Paralell to Pavmt.						2+00			
295.5 Lt			9.5	260.4		30' Rt		2.9	267.0	
245.5 "			10.0	259.9		20' Rt		3.5	266.4	
195.5 "			12.0	257.9		15 "		4.9	265.0	
145.5 "			11.2	258.7		℄		4.9	265.0	
95.5 "			10.0	259.9	✓	15' Lt		5.5	264.4	
65 "			9.5	260.4		20' "		5.9	264.0	
54 "			7.7	262.2		30' "		6.5	263.4	
40' "			5.7	264.2						
				✓					✓	

			269.92						269.92		
			2+50								
30' Lt				6.1	263.8						
20' Lt				5.3	264.6	15' Rt.				2.3	267.6
15' "	edge rd.			4.7	265.2	8' "	ditch			6.1	263.8
℄				4.6	265.3	4' "	edge rd.			4.7	265.2
13' Rt	edge rd.			4.8	265.1	℄ ground				4.6	265.3 ✓
15' "				4.3	265.6	℄ on Hub.				4.71	265.21 ✓
20' "				3.0	266.9	15' Lt.				4.6	265.3 ✓
30' "				2.0	267.9	17' "	edge rd			4.6	265.3 ✓
		3+00.				20' "				4.5	265.4 ✓
30' Rt				2.2	267.7	30'			✓	5.4	264.5 ✓ ℄ Hub. B.C.
20' Rt				2.4	267.5	T.P.	4.04	269.25		4.71	265.21 4+04.20
15' "				2.6	267.3			4+25			✓
14' "	ditch			5.5	264.4	30' Lt	Line Trees.			5.1	264.2
11' "	edge rd.			4.4	265.5	20' "	edge rd.			4.1	265.2
℄				4.5	265.4	15' "				4.3	265.0
13' Lt	edge rd			4.4	265.5	℄				4.2	265.1
15' "				4.5	265.4	+5 Rt				4.1	265.2
20' "				5.3	264.6	7' "	ditch			5.6	263.7
30' "				6.2	263.7	10' "				3.4	265.9
		3+50				15' "				0.1	269.2
30' Lt				6.1	263.8	20' "				+0.3	269.5 ✓
20' Lt				5.0	264.9	30' "					
15' "	edge rd			4.6	265.3			0+45			
℄				4.4	265.5	24' (Rt.) (Lt.)	Line Trees.			0.1	269.2 ✓
10' Rt	edge rd			4.7	265.2	20' "				0.6	268.7 ✓
12' "	ditch			6.0	263.9	17' "				1.0	268.3 ✓
15' "				3.3	266.6	15' "				1.8	267.5 ✓
20' "				2.2	267.7	7' "	ditch			3.8	263.5 ✓
30' "				2.0	267.9	4' "	edge rd.			4.5	264.8 ✓
		4+04.20 P.C.	K 52°-42' Lt. ℄		R. 370.00	℄				4.6	264.7 ✓
30' Rt				0.6	269.3						✓
20' Rt				1.5	268.4						
17' "				1.6	268.3						
				✓							

		269.25			
		4+50 con.			
15' Lt.			5.0	264.3	
19' "	edge rd.		4.9	264.4	
20' "			4.4	264.9	
30' "			5.8	263.5	
		4+75			
27' Lt.	Tree Line	N. end.	6.2	263.1	
20' "			5.4	263.9	
19 "			6.0	263.3	
15 "			6.0	263.3	
℄			5.3	264.0	
4' Rt.	edge rd		5.3	264.0	
6' "	ditch		6.2	263.1	
15' "			2.6	266.7	
20' "			1.9	267.4	
25' "	Tree line		1.7	267.6	
		5+00			
27' (Lt) Rt	Tree Line	N. end.	3.9	265.4	
20' "			4.6	264.7	
15' "			5.0	264.3	
7' "	ditch		6.6	262.7	✓
5 "	edge rd		5.9	263.4	✓
℄			6.2	263.1	✓
15' Lt.			6.9	262.4	✓
19' "	edge rd		7.0	262.3	
20' "			6.9	262.4	
30' "			7.5	261.8	
				✓	

		269.25			
		5+25			
30' Lt.			9.6	259.7	
20' "			8.0	261.3	
17' "	edge rd.		7.9	261.4	
15 "			7.9	261.4	
℄			7.2	262.1	
10' Rt.	edge rd.		6.6	262.7	
12. "	ditch		7.6	261.7	
15. "			4.9	262.4	
20. "			6.6	262.7	
30. "			5.9	263.4	
		5+50			
30' Rt			8.0	261.3	✓
20' "			9.1	260.2	✓
15' "			8.8	260.5	
12' "	edge rd		7.4	261.9	✓
℄			8.1	261.2	✓
15' Lt	edge rd.		8.7	260.6	
20' "			10.4	258.9	
30' "			12.9	256.4	✓
		5+75			
40' Lt			19.0	250.3	✓
30' Lt.			16.0	253.3	✓
25' "			15.8	253.5	✓
20' "			11.6	257.7	✓
16' "			9.6	259.7	✓
15' "			9.6	259.7	✓
13' "	edge rd		9.3	260.0	✓
℄			9.0	260.3	✓
				✓	

269.25

5+75 (con)

14' Rt.	edge rd.	8.0	261.3	
15' "		8.5	260.8	
18' "		10.1	259.2	
20' "		10.1	259.2	
30' "		9.4	259.9	
	6+00			
40' Rt.		12.0	257.3 ✓	
20' "		11.7	257.6	
16' "	edge rd	8.5	260.8	
15' "		8.5	260.8	
℄		9.6	259.7 ✓	
11' Lt	edge rd.	9.9	259.4 ✓	
15' "		11.5	257.8	
20' "		14.0	255.3	
25' "		18.7	250.6	
34' "		21.8	247.5 ✓	
45' "		19.9	249.4 ✓	
T.P.	6.50	265.71 ✓	10.04	259.21 ✓
	6+09.20 ℄ = ℄ 18" cmt. Pipe Culvert ∠3°-09' to Lt. of Radial Line			
8' N. of wash. 40' Lt.			16.2	249.5 ✓
36' "			16.0	249.7 ✓
33' "	In wash.		17.7	248.0 ✓
23' Lt. F.L. Outlet Pipe			15.17	250.54 ✓
23' " Top Headwall.			12.42	253.29 ✓
20' "			11.0	254.7 ✓
15' "			7.0	258.7
				✓

265.71

10' Lt		6.0	259.7	
9' "	edge Rd.	6.5	259.2	
℄		6.2	259.5	
15' Rt.		5.0	260.7	
17' "	edge rd.	5.0	260.7	
20' "		6.2	259.5 ✓	
26.9 "	Top Wing Wall	8.36	257.35 ✓	
26.9 "	F.L. Inlet 18" Pipe	11.03	254.68 ✓	
34' "		10.3	255.4	
35' "		9.1	256.6 ✓	
40' "		8.3	257.4 ✓	
	6+25			
40' Rt		8.0	257.7	
24' "		7.8	257.9	
20' "		5.5	260.2	
19' "	edge Rd.	5.0	260.7	
15'		5.1	260.6	
℄		6.4	259.3	
9' Lt	edge rd.	6.6	259.1	
10' "		5.8	259.9 ✓	
15' "		8.7	257.0	
20' "		11.0	254.7	
30' "		16.0	249.7	
40' "		16.5	249.2 ✓	

		265.71			
		4+50			
30' Lt			6.2	259.5	
20' "			6.2	259.5	
15' "			6.0	259.7	
8' "			5.4	260.3	
7' "	edge rd.		6.2	259.5	
℄			6.1	259.6	
15 Rt.			4.7	261.0	
20' "	edge rd.		5.0	260.7	✓
30' "			6.4	259.3	
		6+75			
30' Rt			2.7	263.0	✓
20' "			5.4	260.3	
18' "	edge rd.		4.0	261.7	
15' "			4.1	261.6	
℄			5.4	260.3	
8' Lt	edge rd.		5.8	259.9	✓
12' "			4.4	261.3	
15' "			4.5	261.2	
20' "			4.6	261.1	
30' "			5.0	260.7	
		7+00			
30' Lt.			4.2	261.5	✓
20' "			3.5	262.2	✓
15' "			3.1	262.6	
10' "	edge rd.		5.3	260.4	
℄			4.8	260.9	
				✓	

		265.71			
15' Rt.	edge Rd.		8.6	262.1	
18' "			4.6	261.1	
20' "			3.3	262.4	
30' "	Treeline		1.8	263.9	
		7+25			
30' Rt.	Treeline		0.5	265.2	
20' "			3.8	261.9	
15' "			3.5	262.2	
13' "	edge rd.		3.8	261.9	
℄			4.4	261.3	✓
12' Lt	edge rd.		4.9	260.8	✓
15' "			3.4	262.3	✓
18' "			2.4	263.3	✓
20' "			2.5	263.2	
30' "			3.6	262.1	
	7+45.22 E.C.				
30' Lt.			2.6	263.1	✓
20' "			2.1	263.6	✓
15' "			3.5	262.2	
13' "	edge rd.		4.5	261.2	
℄			4.1	261.6	✓
13' Rt	edge rd.		3.9	261.8	✓
15' "			3.6	262.1	✓
20' "			2.9	262.8	✓
27' "			+0.2	265.9	✓
30' "			+0.4	266.1	✓
T.P. ℄ Hub	7.71	269.14 ✓	4.28	261.43	✓ Sta 7+45.22 E.C.

		269.14			
		7+75			
29' Rt.	N.End Trees		2.5	266.6	
26' "			2.5	266.6	
20' "			5.2	263.9	
15' "	edge rd.		7.4	261.7	
℄			7.4	261.7	
15' Lt.	edge rd		7.4	261.7	
20' "			5.3	263.8	
30' "			5.7	263.4 ✓	
	8+06.17	B.C. Rt. ∠ 31°-32'		R=500.00 ✓	
30.10 Lt.			6.34	262.80	Tie out Hub
20' Lt.			5.8	263.3	
14 "	edge rd.		7.5	261.6	
15 "			7.5	261.6	
℄			7.5	261.6	
15' Rt.	edge rd.		7.2	261.9	
20' "			5.3	263.8	
23' "			3.4	265.7	
30' "			2.9	266.2	
		8+50			
30' Rt			4.3	264.8 ✓	
20' "			5.2	263.9 ✓✓	
15' "			7.6	261.5	
13' "	edge rd		8.2	260.9	
℄			8.1	261.0	
15' Lt.			8.3	260.8	
18' "	edge rd.		8.5	260.6	
				✓	

		269.14			
20' Lt.			7.4	261.7	
30' "			7.1	262.0	
		9+00			
30' Lt.			9.7	259.4	
20' "			9.1	260.0	
15' "	edge rd.		9.3	259.8	
℄			9.4	259.7	
11' Rt	edge rd		9.7	259.4	
15' "			8.8	260.3	
20' "			7.6	261.5 ✓	
30' "			7.1	262.0	
		9+50			
30' Rt.			9.6	259.5	
20' "	Tree line		10.0	259.1	
15' "			11.0	258.1	
13' "	edge rd.		11.1	258.0	
℄			10.8	258.3 ✓	
15' Lt.	edge rd.		10.8	258.3 ✓	
20' "			11.7	257.4	
30' "			12.4	256.7	
		10+00			
30' Lt.			15.1	254.0	
20' "			14.4	254.5	
18 "			14.5	254.6 ✓	
15' "	edge rd		12.8	256.3	
℄			12.4	256.7 ✓	✓
T.P.	1.81	259.50 ✓	11.45	257.69 ✓	P.I. Hub

10+00 (con).

15 Rt.	edge rd	3.3	256.2	
18 "		3.4	256.1	
20 "		2.5	257.0	
24 "	Tree Line	2.7	256.8	
30		2.6	256.9	✓

10+50

30' Rt		2.9	256.6	
24' "	Tree Line	3.0	256.5	
20 "		3.1	256.4	
18'		4.6	254.9	
16'	edge rd	4.3	255.2	
15'		4.2	255.3	
℄		4.0	255.5	✓
13' Lt.	edge rd.	4.5	255.0	✓
15' "		5.1	254.4	
20' "		6.3	253.2	
36' "		7.5	252.0	

10+81.35 E.C.

30' Lt		7.7	251.8	
20' "		6.6	252.9	
15' "		6.4	253.1	
14' "	edge rd	5.3	254.2	
℄		4.6	254.9	
14' Rt	edge rd.	4.9	254.6	✓
15' "		5.2	254.3	
20' "		3.7	255.8	
24' "	Tree Line	3.7	255.8	✓

11+00.

24' Rt.	Tree Line	3.9	255.6	✓
20' "		3.7	255.8	✓
15' "		5.2	254.3	✓
14' "	edge rd.	5.2	254.3	✓
℄		5.0	254.5	✓
15' Lt.	edge rd.	5.7	253.8	✓
20' "		7.1	252.4	✓
30' "		7.7	251.8	✓

11+50.

30' Lt		8.5	251.0	✓
20 "		7.8	251.7	✓
17 "	edge rd.	6.4	252.9	✓
15' "		6.5	253.0	✓
℄		5.7	253.8	
12' Rt.		6.1	253.4	
15' "		5.1	254.4	
20' "		4.4	255.1	
22 "	Tree Line	4.4	255.1	

12+00

23' Rt.	Tree Line	4.1	255.4	
20' "		4.1	255.4	
15' "		6.4	253.1	✓
14' "		7.7	251.8	✓
11' "	edge rd	6.4	253.1	✓
℄		6.0	253.5	✓
15' Lt.		6.2	253.3	✓

		259.50			
17' Lt	edge rd.		4.3	253.2	
20' "			7.4	252.1	
30' "			8.2	251.3	
	12+08.10 ℄	12" Corrugated Pipe Culvert L. 93°32' N. to W.			
40' Lt.			8.6	250.9	
28' Lt. outlet	Flow Line		9.9	249.6	
27' Lt			7.7	251.8	✓
20' "			7.2	252.3	✓
17' "	edge rd.		6.1	253.4	✓
15' "			6.1	253.4	✓
℄			6.0	253.5	✓
11' Rt.	edge rd.		6.3	253.2	✓
12'.75 "	Inlet. Flow Line		8.6	250.9	
15' "			7.1	252.4	
20' "			4.1	255.4	
23' "	Tree Line		4.1	255.4	✓
T.P.	4.76	258.81 ✓	5.45	254.05 ✓	
		12+50			
23 Rt.	Tree Line		4.0	254.8	
20' "			4.0	254.8	✓
15' "			6.2	252.6	
13' "	edge rd.		5.5	253.3	
℄			5.1	253.7	
15' Lt	edge rd.		5.6	253.2	✓
20' "	Tree		6.0	252.8	✓
30' "			6.3	252.5	✓
					✓

		258.81			
		13+00.			
30' Lt.			4.8	254.0	✓
20' "			4.4	254.4	✓
15' "	edge rd.		5.0	253.8	
℄			4.8	254.0	✓
13' Rt.	edge rd		5.1	253.7	✓
15' "			5.6	253.2	✓
20 "			2.9	255.9	✓
23' "	Tree Line		2.9	255.9	✓
		13+37.25			
30' Rt			2.5	256.3	✓
20' "			2.8	256.0	
15' "			4.9	253.9	
11' "	edge rd.		4.9	253.9	
℄			4.7	254.1	✓
15' Lt.			5.0	253.8	✓
17' "	edge rd		5.0	253.8	✓
20' "			4.5	254.3	
30' "			4.6	254.2	✓
	13+74.59 P.C. Lt.		L. 75°-17'	R. = 280	
30' Lt			5.9	252.9	✓
20' "	edge rd.		5.1	253.7	✓
15' "			4.8	254.0	✓
℄			4.6	254.2	✓
11' Rt	edge rd.		4.9	253.9	✓
15' "			3.3	255.5	✓
20'			3.2	255.6	✓
26' "	Tree line		2.4	256.2	✓

		258.81			
T.P. 45' Lt RP	6.28	258.49 ✓	6.60	252.21 ✓	pc. Sta 13+74.50
		14+00			
22' Rt.	Tree Line		2.6	255.9	
20' "			2.6	255.9	
15' "			3.0	255.5	
9' "			5.0	253.5	
6' "	edge rd.		4.3	254.2	
℄			4.2	254.3	
15' Lt.			4.4	254.1	
20' "	edge rd		4.7	253.8	
24' "	Tree line		5.0	253.5	
30' "			5.2	253.3	
		14+50			
30' Lt			5.6	252.9	
24' "	Tree Line		5.3	253.2	
20' "	edge rd.		4.6	253.9	
15' "			4.4	254.1	
℄			4.3	254.2	
8' Rt	edge rd		4.4	254.1	
11' "			5.0	253.5	
15' "			2.7	255.8	
20' "			2.5	256.0	
24' "	Tree line	N. End.	2.3	256.2	
54' "	℄ Rd. E. Branch.		1.7	256.8	
		14+75			
44' Rt.	℄ Rd. E. Branch		2.8	255.7	
33' "	edge " "	"	3.2	255.3	
				V	

		258.49			
27' Rt			1.6	256.9	
20' "			2.1	256.4	
15' "			4.4	254.1	
12' "	edge rd.		4.4	254.1	
℄			4.2	254.3	
15' Lt			4.6	253.9	
20' "	edge rd.		4.9	253.6	
30' "			5.4	253.1	
		14+93			
30' Lt			5.8	252.7	
20' "			4.8	253.7 ✓	
15' "	edge rd.		4.8	253.7	
℄			4.4	254.1 ✓	
15' Rt	edge rd		4.5	254.0 ✓	
17' "			4.5	254.0 ✓	
20' "			2.7	255.8 ✓	
25' "	W. edge E. Branch Rd.		4.0	254.5 ✓	
38' "	℄ " " "		3.6	254.9	
49' "	E. " " "		3.4	255.1	
	15+00 In. Intersection with E. Branch Rd.				
47 Rt.	= N.E. edge rd.		3.8	254.7	
35' "	℄ E. Branch.		3.8	254.7	
20' "			4.4	254.1	
15' "			4.5	254.0 ✓	
℄			4.5	254.0 ✓	
15 Lt	edge rd.		4.7	253.8	
				V	

		258.49			
		15+00			
20' Lt			4.7	253.8	
30' "			6.3	252.2	
		15+25			
30' Lt			7.0	251.5	
23' "			5.1	253.4	
20' "			5.1	253.4	
15' "			5.1	253.4	
10' "	edge rd.		5.1	253.4	
℄			5.1	253.4	
15' Rt			4.6	253.9	✓
20' "			4.7	253.8	✓
41' "	N.E. edge	Road.	4.7	253.8	✓
		15+50			
34' Rt.	N.E. edge	rd	5.3	253.2	✓
20' "			5.2	253.3	✓
15' "			5.2	253.3	✓
℄			5.9	252.6	✓
7' Lt	edge rd.		5.9	252.6	✓
15' "			5.7	252.8	✓
20' "			6.0	252.5	✓
30' "			8.2	250.3	✓
		15+75			
40' Lt			10.9	247.6	✓
20' "			6.3	252.2	✓
15' "			6.2	252.3	✓
℄ "	edge rd.		6.3	252.2	✓
				✓	

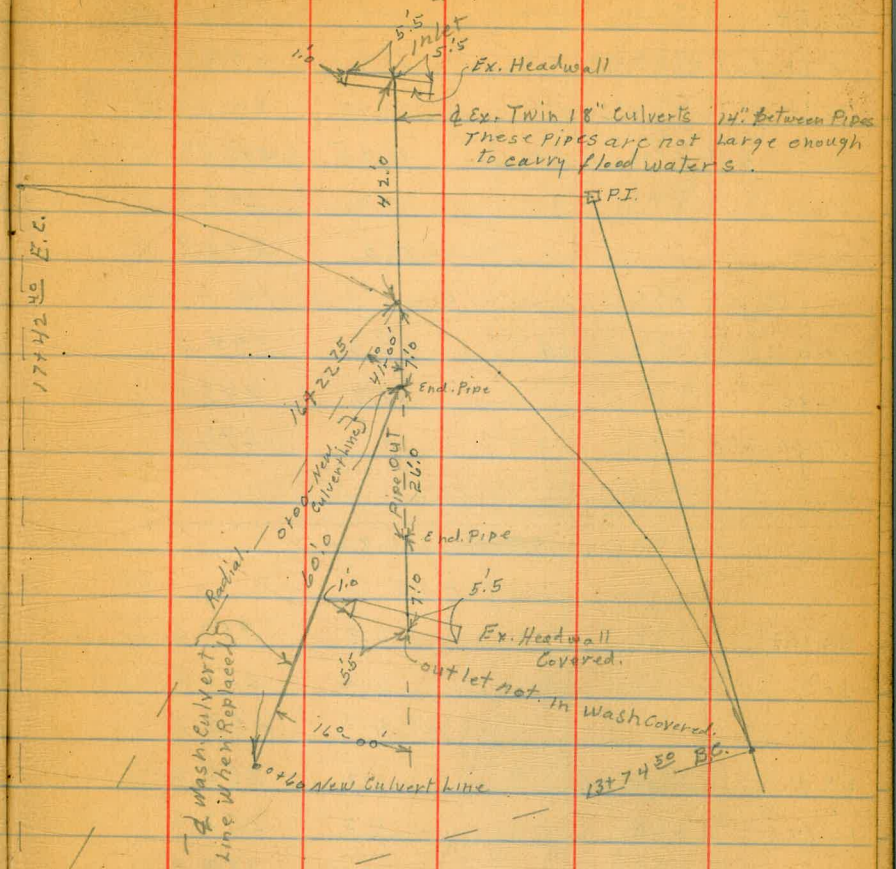
Pershing To Arizona

		~~258.47~~ 258.49			
15' Rt.			5.7	252.8	
20' "			5.6	252.9	
29' "	N. edge rd.		5.6	252.9	
		15+87.5			
30' Rt.			6.0	252.5	
25' "	N. edge rd.		5.9	252.6	
20' "			5.7	252.8	
15' "			5.8	252.7	✓
℄	s. edge Rd.		6.4	252.1	✓
15' Lt			6.0	252.5	✓
T.P.	4.21	256.81 ✓ ~~256.79~~	5.89	~~252.58~~	✓ 252.60
20' Lt.			4.4	252.4	
32' "			5.5	251.3	
45' "			12.0	244.8	
58' "			13.5	243.3	
		16+00			
50' Lt			14.1	242.7	
20' "			12.7	244.1	
15' "			11.4	245.4	
10' "			10.0	246.8	
9' "			4.7	252.1	
℄	s. edge Rd.		4.5	252.3	
15' Rt.			4.2	252.6	
20' "	N. edge Rd.		4.1	252.7	
32' "	Tree Line		5.4	251.4	
				✓	

		256.79		
		16+12.5		
35' Rt			5.4	251.4
25' "	edgerd.		4.3	252.5
20' "			4.3	252.5
15' "			4.3	252.5
℄	edgerd.		4.8	252.0
3' Lt			5.0	251.8
4' "			12.3	244.5
15' "			12.9	243.9
20' "			11.8	245.0
40' "			11.8	245.0
		16+18.5		
40' Lt.			9.5	247.3
24' "			8.4	248.4
20' "			10.2	246.6
15' "			12.3	244.5
5' "			12.3	244.5
4' "			5.0	251.8
℄	edgerd.		4.7	252.1
15' Rt			4.3	252.5
20' "			4.2	252.6
25' "	edgerd.		4.2	252.6
35' "			5.8	251.0
		256.92		252.60
T.P.	4.32	256.90	4.21	252.58
				✓

Existing Culvert Profile

Sta 16+22.75 ℄



50' Rt	on line of Culvert	9.4	247.5 ✓
42' "	Inlet F.L.	10.95	245.97 ✓
42' "	Top Head wall	8.25	248.67 ✓
30'		4.4	252.5 ✓
℄		4.8	252.1

~~256.90~~ 256.92

Profile Existing Culvert (cow)

6' Lt.	4.9	252.0	✓
7' Lt. End Pipe F.L.	12.2	244.7	✓
33' Lt " " F.L.	13.45	243.47	✓
40' " End Pipe outlet Covered Rod. on Top Headwall	16.95	245.97	✓
50' "	7.2	249.7	✓ ✓
60' "	10.0	246.9	✓

Profile ℄ Wash from End Pipe 7' to Lt. of ℄ — South.

0+00 = End Pipe 7' to Lt. of ℄	12.3	244.6	
0+30	13.5	243.4	
0+60	14.1	242.8	

~~256.90~~ 256.92

16+25

35' Rt.	6.3	250.6	
30' "	6.2	250.7	
25' "	4.7	252.2	
20' " edge rd	4.3	252.6	
15' "	4.3	252.6	
℄ edge rd.	4.8	252.1	✓
15' Lt	4.9	252.0	✓
20' "	5.2	251.7	
35' "	7.4	249.3	

16+37.5

40' Lt	6.8	250.1	✓
20' "	4.8	252.1	✓
15' "	4.7	252.2	
		✓	

~~256.90~~ 256.92

3' Lt edge rd	4.9	252.0	
℄	4.7	252.2	
15' Rt	4.2	252.7	✓
20' " edge rd.	4.1	252.8	
35' "	7.8	249.1	✓

16+50

40' Rt	8.2	248.3	✓
35' "	10.3	246.6	✓
30' "	6.8	250.1	
20' " edge Rd	4.0	252.9	
15' "	4.1	252.8	✓
℄	4.4	252.5	
15' Lt. edge rd.	4.5	252.4	
20' "	4.5	252.4	
45' Lt.	5.5	251.4	

16+62.5

45' Lt	4.5	252.4	✓
20' "	4.2	252.7	
15' " edge rd.	4.2	252.7	
℄	4.2	252.7	
15' Rt	3.8	253.1	
20' "	3.7	253.2	
32' "	9.8	247.1	✓
45' "	10.0	246.9	
		✓	

		~~256.90~~			
		16+70.			
45'. Rt.			4.7	252.2	
20'. "	edge rd.		3.7	253.2	
15'. "			3.7	253.2	
℄			4.1	252.8	
15'. Lt	edge rd.		4.1	252.8	
20' "			4.3	252.6	
45' "			4.1	252.8	
		17+00			
45'. Lt			2.8	254.1	
20'. "			2.3	254.6	
19' "			3.7	253.2	
15' "	edge rd.		3.7	253.2	
℄			3.2	253.7	
15'. Rt.			3.1	253.8	
20'. "	edge rd.		3.1	253.8	
45'. "			3.4	253.5	✓
T.P. ℄ Hub	11.33	266.95 ~~266.93~~	1.30	255.62 ~~255.60~~	17+42^40 E.C
		17+42^40 E.C.			
45'. Rt			10.9	256.0	
30' "			10.4	256.5	
29'. "	edge rd		11.7	255.2	
20' "			11.3	255.6	
15' "			11.3	255.6	
℄			11.2	255.7	
15'. Lt			11.4	255.5	
12'. "	edge rd.		12.2	254.7	✓
				✓	

		266.95 ~~266.93~~			
13'. Lt			10.8	256.1	
15' "			10.8	256.1	
20'. "			11.0	255.9	
30' "			11.4	255.5	
45'. "			10.0	256.9	✓
		18+00			
45'. Lt			8.0	258.9	✓
20 "			8.4	258.5	
15 "			9.4	257.5	
℄ "			8.6	258.3	
1'. Rt	edge rd.		9.0	257.9	
10'. "			8.0	258.9	
15 "			8.0	258.9	
20'. "			~~8.0~~	258.9	
35'. "			8.6	258.3	
38' "			7.7	259.2	
45'. "			7.8	259.1	
		18+50			
45'. Rt			5.3	261.6	
20'. "			6.1	260.8	
15' "			6.1	260.8	
℄	edge rd.		6.6	260.3	
15' Lt			6.4	260.5	
20'. "			6.4	260.5	
45' "			5.3	261.6	
				✓	

		266.93 ~~266.93~~			
		19+00			
45' Lt			2.2	264.7	✓
20' "			3.1	263.8	✓
15' "			3.7	263.2	✓
5' "			4.3	262.6	✓
4' "	edge rd		5.1	261.8	✓
℄			4.6	262.3	✓
15' Rt			4.0	262.9	✓
20' "			3.8	263.1	✓
45' "	edge rd		3.8	263.1	✓
		19+50			
45' Rt	edge rd.		1.9	265.0	✓
20' "			1.5	265.4	✓
15' "			1.5	265.4	✓
℄			2.4	264.5	✓
10' Lt.	edge rd		3.2	263.7	✓
15' "			2.5	264.4	✓
20' "			2.5	264.4	✓
45' "			1.4	265.5	✓
	19+76.09 = E. Line Arizona St. Produced.				
45' Lt			0.6	266.3	✓
20' "			1.3	265.6	✓
15' "			1.3	265.6	✓
10' "	edge rd.		2.0	264.9	✓
℄			1.1	265.8	✓
15' Rt			0.7	266.2	✓
20' "			0.7	266.2	✓
45' "	edge rd.		0.8	266.1	✓

Pershing to Arizona

		266.95 ~~266.93~~			
T.P.	8.44	274.33 ~~274.31~~	1.06	265.89 ~~265.87~~	
	20+06.09 ℄ Arizona Produced.				
45' Rt	edge rd		6.5	267.8	
20' "			6.8	267.5	
15' "			6.8	267.5	
℄			7.1	267.2	
12' Lt	edge rd.		7.8	266.5	
15' "			7.4	266.9	
20' "			7.4	266.9	
45' "			6.6	267.7	
	20+36.59 = W. Line Arizona Produced				
45' Lt			5.8	268.5	
20' "			6.0	268.3	✓
15' "	edge Rd.		6.2	268.1	✓
℄			5.7	268.6	✓
15' Rt			5.6	268.7	✓
20' "			5.5	268.8	✓
45' "	edge Rd		5.1	269.2	✓
	20+86.09				
45' Rt	edge rd		3.3	271.0	
20' "			3.8	270.5	
15' "			3.8	270.5	
℄			3.8	270.5	
15' Lt			3.7	270.6	
20' "			3.7	270.6	✓
45' "	edge rd.		4.0	270.3	
				✓	

~~274.31~~
21+36.09

45' Lt	edge Rd.		1.6	272.7	
20' "			1.2	273.1	
15' "			1.2	273.1	
℄			1.3	273.0	
15' Rt			1.4	272.9	
20' "			1.4	272.9	
45' "	edge Rd.		1.5	272.8	
				✓	

60' wide X Sec. Production of Pershing to Arizona
10' cbs Arizona St. from N. Line
10' 4's. 90' Blvd. to N. Line Balboa Park

~~274.31~~
274.33

0+00 = N. Line 90' Blvd.

W.			5.1	269.2	
cb			5.6	268.7	✓
1/4			6.0	268.3	✓
℄			6.5	267.8	✓
1/4			7.2	267.1	✓
cb			7.8	266.5	✓
E			8.3	266.0	✓
		0+02 North			
E.			7.1	267.2	✓
cb			7.2	267.1	✓
1/4			7.0	267.3	✓
℄			6.5	267.8	✓
1/4			5.9	268.4	✓
cb			5.5	268.8	✓
+4.			4.5	269.8	✓
W			4.3	270.0	✓
		0+35 North.			
✓ W.			3.0	271.3	✓
+7			3.4	270.9	✓
cb			3.9	270.4	✓
1/4			4.5	269.8	✓
℄			4.9	269.4	✓
1/4			5.2	269.1	✓
cb			5.5	268.8	✓
				✓	

		~~274.33~~ 274.31						~~274.33~~ 274.31		Pershing	Jefferson
		0+35 North									
+2			5.2	269.1 ✓		1.4			3.0	271.3 ✓	
E			5.2	269.1 ✓		cl			3.1	271.2 ✓	
		0+70 North				+3			2.0	272.3 ✓	
E			4.6	269.7		W.			1.9	272.5 ✓	
+5			4.1	270.2				1+50			
cl			4.7	269.6		W.			1.8	272.5 ✓	
1.4			4.2	270.1		+7			2.1	272.2 ✓	
℄			3.9	270.4		cl			2.9	271.4 ✓	
1.4			3.6	270.7		1.4			3.0	271.3 ✓	
cl			3.5	270.8		℄			2.9	271.4 ✓	
+5			2.6	271.7		1.4			3.2	271.1 ✓	
W			2.4	271.9		cl			4.0	270.3 ✓	
		1+00				+5			3.3	271.0 ✓	
W			2.4	271.9		E.			3.4	270.9 ✓	
+7			2.7	271.6				1+75			
cl			3.0	271.3		E.			3.1	271.2 ✓	
1.4			3.2	271.1 ✓		cl			3.2	271.1	
℄			3.3	271.0		+5			3.7	270.6	
1.4			3.8	270.5 ✓		1.4			3.6	270.7	
cl			4.2	270.1 ✓		℄			3.1	271.2	
E.			4.2	270.1 ✓		1.4			3.0	271.3	
		1+40				cl			2.9	271.4 ✓	
E			4.4	269.9 ✓		+2			2.1	272.2 ✓	
cl			3.6	270.7 ✓		W.			2.1	272.2 ✓	
1.4			3.2	271.1 ✓							
℄			3.0	271.3						✓	
				✓							

	274.33 ~~274.31~~				
	1+84				
W		2.2	272.1 ✓		
↑5		3.1	271.2 ✓		
cl		3.3	271.0 ✓		
1/4		3.2	271.1 ✓		
℄		3.3	271.0 ✓		
1/4		3.7	270.6 ✓		
cl		3.3	271.0 ✓		
E		3.2	271.1 ✓		
	1+90				
E.		3.2	271.1 ✓		
cl		3.5	270.8 ✓		
1/4		3.6	270.5 ✓		
℄		3.4	270.9 ✓		
1/4		3.3	271.0 ✓		
cl		3.4	270.9 ✓		
W.		3.1	271.2 ✓		
	2+05				
W		3.6	270.7 ✓		
cl		3.7	270.6 ✓		
1/4		3.7	270.6 ✓		
℄		3.8	270.5 ✓		
1/4		4.0	270.3 ✓		
cl		4.0	270.3 ✓		
E		4.0	270.3 ✓		
			✓		

Use this H.I. for Pavmt. (274.31) ~~274.33~~ H.I. from Pershing — Pershing To Arizona

2+25 = S. Edge Pavmt.

E	pavmt	5.31	268.95	✓
cl	"	5.10	269.16	✓
1/4	"	4.90	269.36	✓
℄	"	4.80	269.46	✓
1/4	"	4.60	269.66	✓
cl	"	4.45	269.81	✓
W.	"	4.30	269.96	✓

2+45 = N. cl. Line Upas.

W.	gutter pavmt	4.84	269.42	✓
W.	cmt. cl.	4.26	270.00	✓
cl.	pavmt	5.11	269.15	✓
1/4	"	5.22	269.04	✓
℄	"	5.37	268.89	✓
1/4	"	5.64	268.62	✓
cl.	"	5.98	268.28	✓
E.	gutter pavmt	6.21	268.05	✓
E.	cmt. cl.	5.52	268.74	✓

2+65 = N. Line Upas = N. Line Balboa Park

E. cmt. cl.		5.36	268.90	✓
gutter	pavmt	5.78	268.48	✓
1/4	"	5.20	269.06	✓
℄	"	4.77	269.49	✓
1/4	"	4.70	269.56	✓
gutter	"	4.93	269.33	✓
W. cmt. cl.		4.35	269.91	✓
BM. BP. N.W. Arizona + Upas.		4.31	270.02 ~~270.00~~ = 269.95	

Reduced by W.M.M. Sept 23-'33

X Section on University from Centre

	+	HI	-	Elev	
	3.21	320.03		316.82	NW corner University
Rt.		0+00	8' West of Park B.V.D.		
25			5.54	314.44	
18			5.41	314.62	
℄			5.44	314.59	
18			6.03	313.98	
25			6.34	313.39	
Rt.		0+25			
25			6.12	313.91	
18			5.93	314.10	
℄			5.92		
18			6.38	313.45	
25			7.11	312.92	
Rt.		0+50			
25			6.59	313.44	
18			6.42	313.61	
℄			6.50	313.53	
18			7.21	312.82	
25			7.63	312.35	
Rt		0+75			
25			7.08	312.95	
18			6.87	313.21	
℄			7.04	312.99	
18			7.75	312.28	
25			8.24	311.69	

Rt		1+00		
25			7.61	312.42
18			7.42	312.61
℄			7.46	312.43
18			8.18	311.85
25			8.81	311.21
Rt.		1+25		
25			8.24	311.79
18			8.02	312.01
℄			8.22	311.81
18			8.42	311.11
25			9.44	310.59
Rt		1+50		
25			8.76	311.27
18			8.56	311.47
℄			8.84	311.19
18			9.52 ?	310.51
25			10.15	309.88
		1+75		
25			9.25	310.75
18			8.82	311.21
℄			9.51	310.52
18			10.04	309.99
25			10.61	309.42

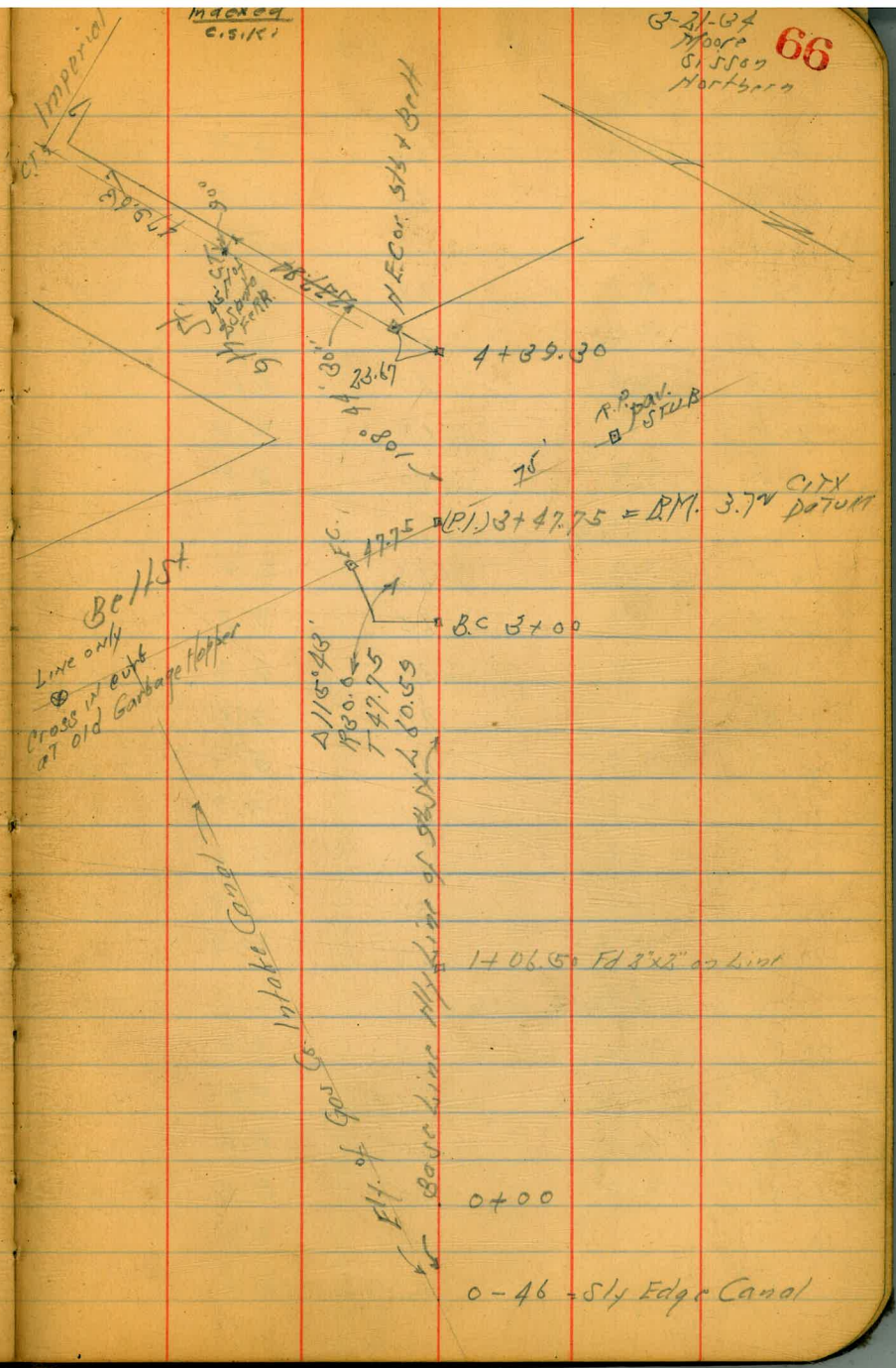
		32003		
RT		2+00		
25			9 74	310.29
18			9 48	310.55
℄			10 05	309.88
18			10 41	309.62
25			10 98	309.08
TP			919	310 84
	1 89	312 73		
RT		2+25		
25			3 11	309.62
18			2 78	309.95
℄			3 20	309.53
18			3 59	309.14
25			4 18	308.55
RT		2+50		
25			3 53	309.20
18			3 41	309.32
℄			3 82	308.91
18			4 09	308.64
25			467	308.04
RT		2+75		
25			4 10	308.63
18	~		3 87	308.86
℄			4 09	308.64
18			4 15	308 25
25			5 04	307.69

RT	3+00		
25		4 54	307.19
18		4 32	308 41
℄		4 44	308.29
18		4 84	307.91
25		5 24	307.39
RT	3+25		
25		5 21	307.52
18		487	307.86
℄		497	307.76
18		540	307.33
25		581	306.92
RT	3+33	Manhole	
25		51	307.63
18		48	307.93
℄		47	top of manhole
18		53	
25		57	306.7
RT	3+50		
25		562	307.11
18		581	307.42
℄		541	307.32
18		572	307.01
25		620	306 53

			312.73		
RT.		3+75			
25			608	306.65	
18			579	306.94	
2			560	307.13	
18			609	306.73	
25			648	306.25	
RT		4+00			
25			661	306.12	
18			630	306.43	
2			608	306.65	
18			644	306.39	
23.3			673	306.00	
T.P.		312.73	889	WINCOR of Centre 303.88 BM.	

Levels for Garbage Hopper At 5th & Bell St.

BM	2.46	16.57		14.11	N.H.B.P. ℄ + 10.15 St.
TP	4.90	9.80	11.67	4.90	
	0 – 46 = S ly Edge Canal				
℄ = S ly Edge Canal			6.1	3.7	
20' S			6.5	3.3	
40' S			5.9	3.9	
60' S			6.1	3.7	
80' S			7.5	2.3	
	0 + 0				
80' S			6.6	3.2	
60' S			5.2	4.6	
40' S			4.6	5.2	
20' S			5.5	4.3	
℄			6.3	3.5	
35' N = E ly Canal			7.1	2.7	
	0 + 26				
40' N = E ly Canal			7.5	2.3	
20 N			6.6	3.2	
℄			3.1	6.7	
20' S			2.7	7.1	
40' S			2.9	6.9	
60' S			3.9	5.9	
80' S			4.8	5.0	



		9.80		
	0+61			
80'S		4.4	5.4	
60'S		4.5	5.3	
40'S		4.1	5.7	
20'S		3.9	5.9	
℄		3.9	5.9	
20'N		4.2	5.6	
40'N		6.9	2.9	
63'N = Fly Canal		7.0	2.8	
	0+96			
79'N = Fly Canal		6.9	2.9	
55'N		6.5	3.3	
42'N		3.6	6.2	
27'N		2.7	7.1	
℄		4.7	5.1	
20'S		5.1	4.7	
40'S		5.6	4.2	
60'S		5.0	4.8	
80'S		5.0	4.8	
	1+38			
80'S		5.8	4.0	
60'S		5.2	4.6	
40'S		5.0	4.8	
20'S		4.0	5.8	
℄		4.5	5.3	
10'N		5.2	3.6	

	9.80		
70'N		6.0	3.8
104'N = Fly Canal		7.1	2.7
	1+80		
122'N = Fly Canal		7.4	2.4
90'N		5.6	4.2
78'N		3.0	6.8
65'N		2.8	7.0
40'N		4.4	5.4
℄		4.9	4.9
20'S		4.8	5.0
40'S		5.1	4.7
60'S		4.8	5.1
80'S		5.1	4.7
	2+05		
80'S		4.8	5.0
60'S		4.4	5.4
40'S		4.8	5.0
20'S		4.6	5.2
℄		4.0	5.8
40'N		4.9	4.9
65'N		4.9	4.9
87'N		4.0	5.8
100'N		5.2	4.6
138'N = Fly Canal		6.2	3.6

9.80

	2+80			
162N = Ex Cond		6.4	3.4	
100N		4.4	5.4	
50N		4.0	5.8	
℄		4.5	5.3	
20S		4.7	5.1	
40S		5.0	4.8	
60S		5.5	4.3	
80S		4.8	5.0	
	2+55			
80S		5.4	4.4	
60S		5.3	4.5	
40S		6.0	3.8	
20S		5.3	4.5	
℄		5.1	4.7	
20N		5.2	4.6	
40N		5.7	4.1	
70N		5.9	3.9	
100N		5.4	4.4	
140N - Rim of Sump		5.7	4.1	
	2+80			
140N - Rim of Sump		7.5	2.3	
100N		5.8	4.0	
50N		6.5	3.3	
℄		6.4	3.4	
20S		6.9	3.5	

9.80

40S		6.1	3.7	
60S		6.6	3.2	
80S		6.2	3.6	
	3+0 - B.C.			
80S		6.9	2.9	
60S		7.0	2.8	
40S		6.5	3.3	
20S		7.0	2.8	
℄ on Hub		6.96	2.84	
30N		6.4	3.5	
	3+47.75 (P.I.) Take on S'ly Line Bolt			
℄ of 4"x4" Hub (P.I.)		6.08	3.72	Set B.M.
47.75N = E.C.		6.0	3.8	
80N		5.6	4.2	
150N		7.0	2.8	
TP	4.97	8.34	6.43	3.37
TP	7.61	9.65	6.80	2.04
TP	7.59	16.00	1.24	8.41
B.M.			1.02	14.98

N.H.B.P. K+8 1/4 St. 14.99

Garbage Hopper Sewer

B.M. 2x4 P.I. Hub	6.1	9.8		3.7	3+47.75 page 68
				Cut Stub	Grade F.L.
0+0=MH			4.75	5.09	2.00
+50			4.53	5.31	1.00
1			5.65	4.19	0.00
+55	-3.47		6.0	3.80	-1.10
2			8.80	1.0	-2.0
+50			9.45	0.39	-3.0
3=outlet			13.68	-3.8	-4.00
			Grade		
#1			5.50	4.34 / 6.32 F 1.98	
#2			5.50	4.34 / 6.25 F 1.91	
#3			5.50	4.34 / 4.68 F 0.34	
#4			3.00	6.84 / 4.60 C 2.24	
#5			3.00	6.84 / 3.22 C 3.62	
#6			5.50	4.34 / 4.17 C 0.17	
#7			5.50	4.34 / 5.01 F 0.67	
#8			5.50	4.34 / 6.68 F 2.34	

Indexed
E.S.K.

		9.84				
	#9			5.00	4.84 / 6.65	F 1.81
+3.09						
+4.31	#10			5.00	4.84 / 4.80	C 0.04
+4.19						
+4.90						
+3.02						
+3.39						
+0.16						
B.M.	4.86	8.58			3.72	3+47.75 Page 68 / 5-8.34

Sewer as Constructed

0+0 = MH					
+08	F.L. Existing Pipe		1.64	6.94	
+50			0.13		8.45 / 3.68 C 4.77
1+0		.036	-1.67	10.25 / 3.36	C 6.89
+55 = Brk		0	-3.47		13.05 / 5.80 C 7.25
2+0			-3.94	12.52 / 7.58	C 4.94
+50		.01055	-4.47		13.05 / 8.15 C 4.90
3+0 = Outlet			-5.00	13.58 / 11.85	C 1.73

Garbage Hopper
9th And Bell St

4-4-34

BM	5.92	9.64		3.72	Hub 3+47.75 Pg. 68	S.W. Cor Drive	Sub. Grade 3.35	6.29 / 5.29 C 1.00
				Sub. Grade		N.W. Cor Drive	3.15	6.19 / 4.15 C 2.04
#1	Bent Fly of Hopper			5.50	4.14 / 4.24 F 0.90			
#2	out			out		Sewer M.H.	2.00	7.64 / 4.44 C 3.20
#3					4.14 / 4.54 F 0.40			
#4				4.14 / 4.55 F 0.61				
#5					4.14 / 4.43 F 0.29			
#6				4.14 / 4.33 F 0.19				
#7					4.14 / 4.68 F 0.54			
#8				4.14 / 4.93 F 0.79				
#9					4.14 / 4.89 F 0.75			
#10				4.14 / 4.89 F 0.75				
#11					4.14 / 4.28 F 0.14			
#12				4.14 / 4.32 F 0.18				
#13				5.50	4.14 / 3.98 C 0.16			

Water Grade 9th St And Belt.

4-10-34
Moore
Sisson
Northern

71

U.S. C+G. Datum

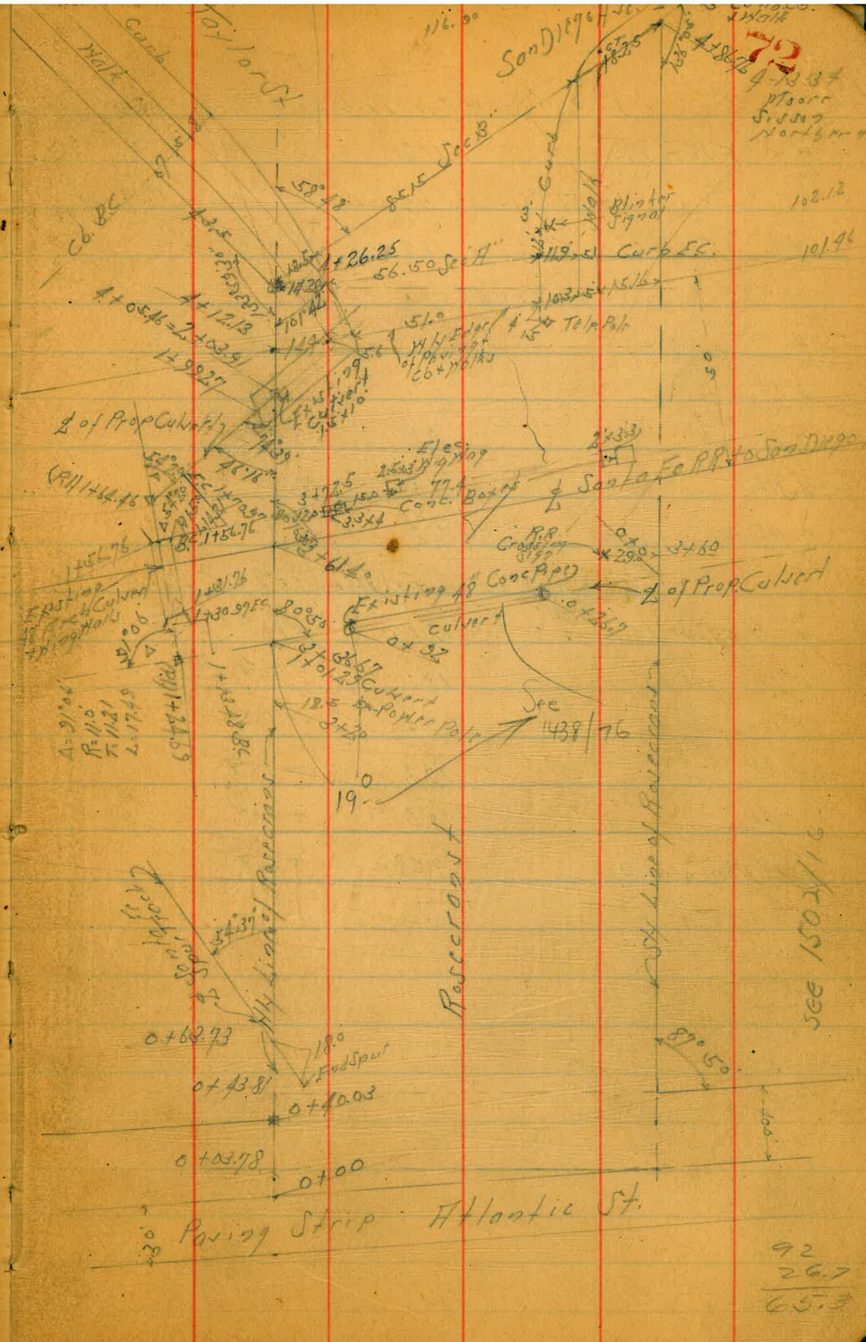
BM	3.77	16.50		12.73	Hub 3+47.75 Pogrd 3.72 / 9.01 / 12.73
0+0 = End Existing Pipe 9th St & Santa Fe Tracks 10' N of ℄ Santa Fe				Bot Ditch 7.00	9.5 / 9.5 Bot Ditch
+50				6.88	9.6 / 5.5 / c 4.1
1+0				6.76	9.7 / 6.6 / c 3.1
+50				6.64	9.9 / 6.3 / c 3.6
2+0				6.52	10.0 / 7.5 / c 2.5
+50 = 8" Cross 10' S ℄ Belt				6.40	10.1 / 7.5 / c 2.6
+89 = Gate 8"				6.40	10.1 / 4.2 / c 5.9
3+20 = Δ 24°58' Rt.				6.40	10.1 / 4.1 / c 6.0
+39.3 = 8" Hyd. Tee		St. Grade 9.9 / 6.6 / 3.9 / c 2.7	10.1 / 3.9 / +6.2	6.40	10.1 / 5.0 / c 5.1
3+89.3				6.40	10.1 / 3.9 / c 6.2
4+39.3 = End.				6.40	10.1 / 2.9 / +7.2

Cross Section Rosecrans St
Atlantic St to Taylor & San Diego Ave.

Indexed
E.S.K.

Cross Section Proposed Culvert

BM	5.06	10.21		5.15	Mon N.L. Rosecrans N Mly L Taylor
		0+20			
℄			12.6	−2.4	
2' Rt			9.7	+0.5	
2' Lt			9.7	+0.5	
		0+0			
℄			12.1	−1.9	
2' Lt			10.4	−0.2	
2' Rt			9.7	+0.5	
		0+26.7 = Sly End Existing 48" Pipe			
℄ Flow Line			12.55	−2.34	
2' Lt			10.2	0.0	
2' Rt			10.2	0.0	
		0+92 = Nly End Existing 48" Pipe			
℄ Flow Line			11.60	−1.4	
2' Lt			10.0	+0.2	
2' Rt			9.6	+0.6	
		1+01.29 = N.L. Rosecrans			
℄			11.8	−1.6	
2' Lt			10.0	+0.2	
2' Rt			10.8	−0.6	
		1+13.48 = BC			
℄			12.1	−1.9	
2' Lt			10.7	−0.5	
2' Rt			11.0	−0.8	



10.21

1+31.76 = N End Existing 48" Arch Culvert

℄	Flow Line	11.81	-1.60

1+56.76 = E End Existing 48" Arch Culvert

℄	Flow Line	11.75	-1.54 ✓

1+70.97 = EC

℄		12.0	-1.8
4' Lt		11.7	-1.5
7' Lt		8.2	+2.0
4' Rt		11.8	-1.6
8' Rt		7.2	+3.0

1+99.27 = End Existing 15'x10' Culvert

℄	Flow Line	12.07	-1.86 ✓
5' Lt		12.1	-1.9
6' Lt		9.4	+0.8
5' Rt		12.1	-1.9
6' Rt		9.4	+0.8
℄	Top Conc. Bot	9.48	+0.73

164.46
15C.76
7.70

1 84
-1.54
.3

1 99.27
1 70 97
28.30
7.70
36.00
8.58
27.N

Cross Section Rosecrans St
Atlantic St. to Taylor San Diego Ave

100' Wide

BM	2.25	7.40	5.15	Mon Rosecrans & Taylor
		0+0 Taken on Fly of Paving = Fly Edge Paving Atlantic		
NL	on Paving	2.89	4.51	
℄	" "	2.63	4.77	
SL	" "	2.32	5.08	
50' N of NL	" "	3.13	4.27	
100' N	" "	3.40	4.00	
150' N	" "	3.68	3.72	
200' N	" "	3.89	3.51	
		0+03.78 = Fly Paving on S		
200' N of NL		4.1	3.3	
150' N	" "	3.8	3.6	
100' N	" "	3.5	3.9	
50' N	" "	3.3	4.1	
NL		3.0	4.4	
℄		2.7	4.7	
SL	on Paving	2.32	5.08	
	0+20			
SL		2.8	4.6	
℄		2.9	4.5	
NL		3.6	3.8	
50' N of NL		4.2	3.2	
100' N	" "	4.4	3.0	
150' N	" "	5.1	2.3	
200' N	" "	5.3	2.1	

7.40

0+40.03 Taken on Fly Line of Atlantic

200' N of NL	5.7	1.7
150' N " "	5.1	2.3
100' N " "	5.1	2.3
50' N " "	5.1	2.3
NL	5.3	2.1
℄	3.2	4.2
SL	2.8	4.8
	0+43.81 = Fly L Atlantic on S	
SL	2.8	4.8
+25	3.3	4.1
+50	3.3	4.1
+75	4.4	3.0
+100 = NL	5.7	1.7
25 N of NL	4.2	2.5
50 " "	4.8	2.6
75 " "	5.8	1.6
100 " "	5.8	1.6
150 " "	5.2	2.2
200 " "	5.5	1.9
	1+0	
200' N of NL	5.5	1.9
150' N " "	5.6	1.8
100' N " "	5.8	1.6
75' N " "	6.3	1.1
50' N " "	5.4	2.0

7+10

25' N	4.6	2.8	
N.L.	4.9	2.5	
+25	5.2	2.2	
+50	4.9	2.5	
+75	5.0	2.4	
+90	3.1	4.3	
+100 - SL	3.0	4.4	
1+50			
S.L.	5.1	2.8	
+25	5.2	2.2	
+50	5.1	2.3	
+90	5.6	1.8	
+75	4.1	3.0	
+100 - NL	4.9	2.5	
25' N of NL	5.3	2.1	
50 N " "	6.4	1.0	
75' N " "	5.8	1.6	
100 N " "	5.0	2.4	
150 N " "	5.1	2.8	
200 N " "	6.8	0.6	
2+0			
200 N of N.L.	4.5	2.9	
150 N " "	5.1	2.3	
100 N " "	5.9	1.5	
75 N " "	5.8	1.6	
50 N " "	5.8	1.6	

7+10

25 N of NL	5.2	2.2	
N.L.	5.5	1.9	
+25	5.2	2.2	
+30	5.8	1.6	
+50	5.1	2.0	
+75	5.7	1.7	
+100 - SL	5.6	1.8	
2+50			
S.L.	5.2	2.2	
+25	5.3	2.1	
+50	5.2	2.2	
+90	5.6	1.8	
+75	4.7	2.7	
+100 - NL	5.6	1.8	
25' N of NL	5.7	1.7	
50 " " " "	6.2	1.2	
75 " " " "	6.3	1.1	
100 " " " "	6.6	0.8	
125 " " " "	4.9	2.5	
150 " " " "	2.7	5.2	
175 " " " "	3.6	3.8	
200 " " " "	7.2	0.2	
TP	5.39	2.94	2.85 4.55
3+10			
200 N of NL	11.3	-1.4	
175 N " "	11.2	-1.3	

150' N of N.L.	10.0	-0.1
125' N " "	7.1	+2.8
100' N " "	4.9	5.0
75' N " "	8.6	1.3
50' N " "	8.5	1.4
25' N " "	7.7	2.2
N.L.	7.9	2.0
+25	7.5	2.4
+50	6.6	3.3
+75	7.5	2.4
+100 = S.L.	8.2	1.7
2+30		
S.L.	8.6	1.3
+25	8.8	1.1
+36	5.2	4.7
+50	5.3	4.6
+63	5.4	4.5
+80	8.7	1.2
+100 = N.L.	7.6	2.3
25' N of N.L.	9.4	0.5
50' N " "	6.0	3.9
75' N " "	4.8	5.1
100' N " "	8.1	1.8
3+37		
100' N of N.L.	5.2	4.7
75' N " "	4.1	5.8

50' N of N.L.	5.2	4.7
32' N " "	6.4	+3.5
25' N " "	11.2	-1.3
N.L.	11.5	-1.6
+20	10.9	-1.0
+28	4.7	+5.2
+65	5.0	4.9
+75	8.5	1.4
+100 = S.L.	9.0	0.9
3+15		
S.L.	7.7	2.2
+29	8.1	1.8
+38	4.5	5.4
+50	4.5	5.4
+74	4.5	5.4
+82	8.2	1.7
+100 = N.L.	6.7	3.2
25' N of N.L.	5.1	4.8
50' N " "	4.3	5.6
75' N " "	3.7	6.2
100' N " "	4.1	5.8
3+52		
100' N of N.L.	5.2	4.7
75' N " "	4.2	5.7
50' N " "	4.2	5.7
25' N " "	4.3	5.6

9.94

N.L.	4.8	5.1
+25	4.7	5.2
+50	4.2	5.7
+65	4.1	5.8
+73	8.8	1.1
+84	7.8	+2.1
+85	12.2	-2.3
+100 = S.L.	11.7	-1.8
3+61.4		
S.L.	8.0	+1.9
+30	5.9	4.0
+40	3.8	6.1
+50	3.9	6.0
+75	3.8	6.1
+100 = N.L.	4.2	5.7
25' N of N.L.	4.2	5.7
50 N " "	5.0	4.9
75' N " "	5.5	4.4
100 N " "	7.8	2.1
3+61.4 Taken on Line Santa Fe RR		
100 N of N.L. Top Rail	3.66	6.28
50 N " " " "	3.68	6.26
N.L.	3.72	6.22
+50 " "	3.81	6.13
+100 = S.L.	3.77	6.17

9.94

3+75		
S.L.	4.3	5.6
+25	4.3	5.6
+50	3.9	6.0
+75	4.1	5.8
+100 = N.L.	5.5	4.4
24' N of N.L.	7.9	+2.0
26' N " "	11.4	-1.5
31' N " "	11.3	-1.4
34' N " "	6.8	+3.1
50 N " "	6.6	3.3
75' N " "	8.8	1.1
100' N " "	9.9	0.0
3+85		
100' N of N.L.	10.2	-0.3
75' N " "	9.8	+0.1
50 N " "	7.8	2.1
31' N " "	7.4	+2.5
25' N " "	11.5	-1.6
16' N " "	11.5	-1.6
10' N " "	7.7	+2.2
N.L.	9.5	0.4
+20	4.3	5.7
+50	4.1	5.8
+75	4.0	5.9
+100 = S.L.	4.3	5.6

		9.94		
	4+0			
S.L.			9.2	0.7
+13			3.6	6.3
+50			4.2	5.7
+85			3.8	6.1
+95			8.9	1.0
+100 =	N.L.		8.9	1.0
2' N	of N.L.		9.2	+0.7
3' N	" " "		11.7	-1.8
12' N	" " "		11.3	-1.4
15' N	" " "		6.9	+3.0
25' N	" " "		8.1	1.8
50' N	" " "		9.5	0.4
75' N	" " "		9.4	0.5
100' N	" " "		9.0	0.9
	4+12.13			
100' N	of N.L.		8.9	1.0
75' N	" "		9.3	0.6
50' N	" " "		8.8	1.1
25' N	" " "		8.4	1.5
N.L.			8.2	1.7
+9			4.2	5.7
+25			4.7	5.2
+50			4.4	5.5
+75			4.2	5.7
+88			3.3	6.6
+100	S.L.		9.1	0.8

		9.94		
4+12.13	Taken on Ely R of W Santa Fe			
S.L.			5.7	4.2
+15.16 =	Sly Cons. Walk		4.14	5.80
+30.46 =	Top Cb		4.67	5.27
	Gutter on Pav		5.23	4.71
+55.96	" "		4.43	5.51
+81.46	Gutter		4.94	5.00
	Top Cb		4.35	5.59
+93			4.2	5.7
+101.46 =	N.L.		8.2	1.7
	4+26.25			
N.L.			4.8	5.1
	Sec "A"			
N.L.			4.8	5.1
+14.28 =	Top Cb		4.38	5.56
	Gutter on Paving		5.00	4.94
+42.53	" "		4.66	5.28
+70.78	Gutter " "		4.95	4.99
	Top Cb		4.25	5.69
+87.78 =	Sly Edge Walk		4.12	5.82
+102.12 =	S.L.		4.9	5.0
	Sec "B"			
S.L.	on Edge Walk		4.28	5.66
+18.25 =	Top Cb		4.32	5.62
	Gutter on Pav		4.97	4.97
+60.82			4.83	5.11

9.94

7+03.40 = Gutter on Pav		5.00	4.94	
Top Cb		4.43	5.51	
7+16.90 = H.L		4.80	5.14	
B M		4.80	5.19	Mon Rosecrans & Taylor 5.15

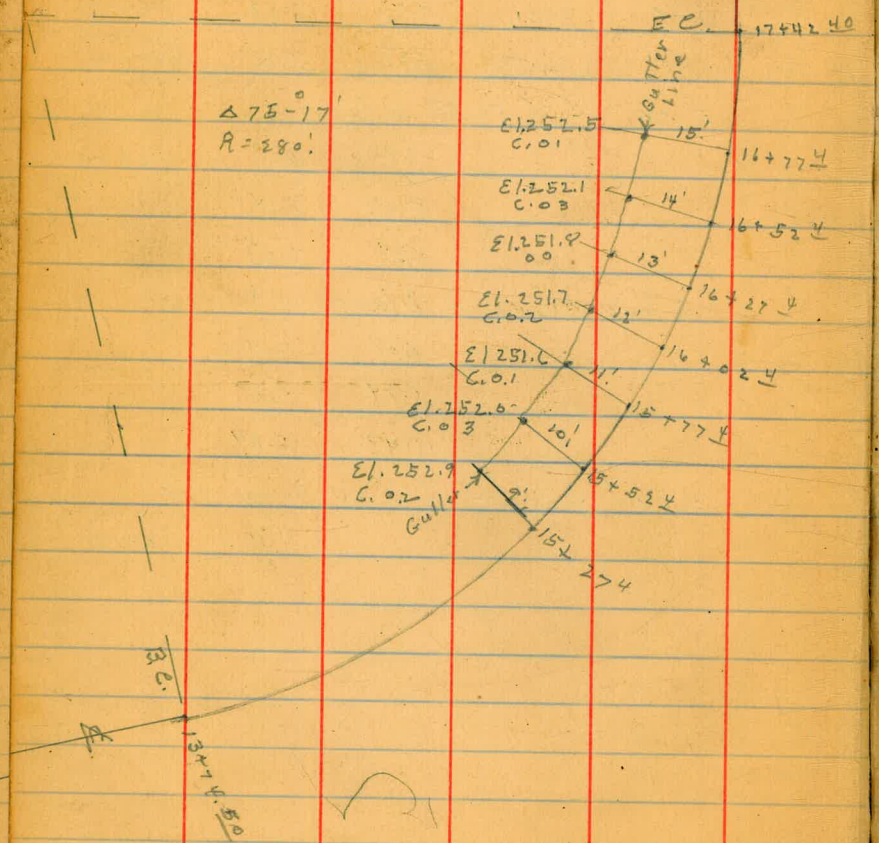
See page 17 this Book for further x sections

Check levels

	3.55	16.25		12.70	SW cor. S Abut Y.D. River Bridge S.Fe.
T.P.	2.55	10.39	8.41	7.84	
T.P	4.15	10.50	4.04	6.35	
Surf Top Hyd.			1.44	9.06	Taylor & Whitman 8.66
T.P.	3.49	8.53	5.47	5.03	1104-73
NW Mon.	5.44	10.57	3.37	5.15	Taylor & Rosecrans 5.15
	E rail of S. Fe. R.R. on Rosecrans				
S			4.40	6.17	Top rail
E			4.43	6.14	" "
N			4.34	6.23	" "
	E edge paving on Atlantic & Rosecrans				
N			6.07	4.50	
C			5.79	4.78	
S			5.48	5.09	
	E rail S.Fe. & San Diego RR				
				4.32	on rail

Page 41 for Alignment.

BM. 256.77
0.23
257.00



IMPROVED TABLES AND INFORMATION

DIRECTIONS FOR USE OF TABLES

TABLE No. 1.

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

TABLE No. 9.

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

Degree of curve with a given I may be found by dividing tangent, (or external), opposite I by given tangent, (or external).

The distance from a point on the tangent to the curve is very nearly the square of the tangent length divided by twice the radius.

$\angle A = \angle MOP$

$R =$

$\sin A = \frac{a}{c} = \frac{a}{1}$

$\cos A = \frac{b}{c} = \frac{b}{1}$

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

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

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

$\csc A = \frac{OT}{3}$ $\quad OT$

Curvature of Earth's su

Curvature in feet = 0.6

Difference between arc

Probable error of a sing $\qquad \sqrt{n-1}$

Error in chaining of 0.01 feet in 100 feet:
Due to—

1. Length of tape error of 0.01 feet
2. Alignment. One end 1.4 feet out of line
3. Sag of tape at centre of 0.61 feet.
4. Temperature difference of 15°
5. Difference of pull of 15 lbs.

STADIA REDUCTION FORMULÆ.

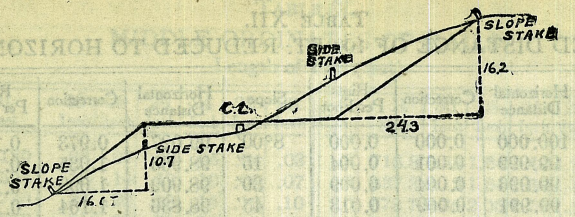
Horizontal Distance $= R - R \sin^2 a + C \cos a$

Vertical Distance $= R \tfrac{1}{2} \sin 2a + C \sin a$

$R = \text{Reading} \times \frac{\text{distance from Object glass to cross hairs}}{\text{distance between cross hairs}}$

C = distance from Object glass to cross hairs + distance from Object glass to center of instrument.

a = angle of elevation for mid Reading



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.

N.W.B.P.	Arizona	269.95
S.E	Texas & Myrtle	282.38
N.W.	Alabama	259.503

20 · Walk
20 " Parking
40
20
10
155
265
45
310
45
355

N. to E. 90-29
89-31

Univ

N cor hd RR spike in Pole 315 83
316 83
303 8.83

179 60
115 43
64 17

2)127-15
63-37-30

7.9
5.4
5.2
20.5
18.5

12.5
0.8
4.4
0.7
18.4

11.1

216.54
5.75
270.79
271.29
4.65
266.64
275.32
5.55
267.87

24 40
960

13.5
5.2
18.7
2.1
20.8
0.67
21.47
57-45
65.55
23.00

89-49-30
179-39

1649.80
30.69
115.32
1795.81

R-

12.08
10.58
1.50

24.7
54.4
20.3

ENGINEERING DEPARTMENT,
CITY OF SAN DIEGO,
CALIFORNIA.