1640

IETZ

FIELD BOOK

No 760

TRAVERSE TABLE FOR TRANSIT BOOK.

From 1° to 90° for a distance of 100.

Degrees.	DEGREES.		¼ DEGREE.		½ DEGREE.		¾ DEGREE.		Degrees.
	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	
0			100.00	0.44	100.00	0.87	99.99	1.31	89
1	99.98	1.75	99 98	2 18	99 97	2.62	99 95	3.05	88
2	99.94	3.49	99 92	3.93	99 91	4 36	99.88	4.80	87
3	99.86	5.23	99 84	5 67	99 81	6.10	99.79	6.54	86
4	99 76	6.98	99 73	7.41	99.69	7.85	99.66	8.28	85
5	99 62	8.72	99.58	9.15	99 54	9.58	99.50	10 02	84
6	99.45	10.45	99.41	10 89	99.36	11.32	99.31	11.75	83
7	99 25	12.19	99 20	12.62	99.14	13.05	99.09	13.49	82
8	99.03	13.92	98.97	14.35	98.90	14.78	98.84	15.21	81
9	98.77	15.64	98.70	16.07	98.63	16 50	98 56	16.93	80
10	98 48	17.36	98.40	17.79	98.33	18.22	98.25	18.65	79
11	98 16	19.08	98 08	19 51	97.99	19 94	97.90	20.36	78
12	97.81	20.79	97.72	21.22	97.63	21 64	97.53	22.07	77
13	97.44	22.50	97.34	22.92	97.24	23.34	97.13	23.77	76
14	97.03	24.19	96.92	24 62	96.81	25 04	96 70	25.46	75
15	96.59	25 88	96.48	26.30	96.36	26.72	96.25	27.14	74
16	96.13	27.56	96.00	27 98	95.88	28 40	95 76	28.82	73
17	95.63	29.24	95.50	29.65	95.37	30 07	95.24	30.49	72
18	95.11	30 90	94.97	31.32	94.83	31.73	94.69	32.14	71
19	94.55	32.56	94.41	32.97	94.26	33.38	94.12	33.79	70
20	93.97	34.20	93.82	34.61	93.67	35.02	93.51	35 43	69
21	93.36	35.84	93.20	36.24	93.04	36.65	92.88	37.06	68
22	92.72	37.46	92.55	37.86	92.39	38.27	92.22	38 67	67
23	92.05	39.07	91.88	39 47	91.71	39.87	91.53	40.27	66
24	91.35	40.67	91.18	41.07	91.00	41.47	90.81	41.87	65
25	90.63	42.26	90.45	42.66	90.26	43.05	90.07	43.44	64
26	89.88	43.84	89 69	44.23	89.49	44.62	89.30	45.01	63
27	89.10	45.40	88.90	45.79	88.70	46.17	88.50	46.56	62
28	88.29	46.95	88.09	47.33	87.88	47.72	87 67	48.10	61
29	87.46	48.48	87.25	48 86	87.04	49.24	86.82	49.62	60
30	86.60	50.00	86.38	50.38	86.16	50.75	85.94	51.13	59
31	85.72	51.50	85.49	51.88	85.26	52.25	85.04	52.62	58
32	84.80	52 99	84.57	53.36	84.34	53.73	84.10	54.10	57
33	83.87	54.46	83.63	54.83	83.39	55.19	83.15	55.56	56
34	82.90	55.92	82.66	56.28	82.41	56.64	82.16	57.00	55
35	81.92	57.36	81.66	57.71	81.41	58.07	81.16	58.42	54
36	80.90	58.78	80.64	59.13	80.39	59.48	80.13	59.83	53
37	79.86	60.18	79.60	60 53	79.34	60.88	79.07	61 22	52
38	78.80	61.57	78.53	61.91	78.26	62.25	77.99	62.59	51
39	77.71	62.93	77.44	63.27	77.16	63.61	76.88	63.94	50
40	76.60	64.28	76.32	64.61	76.04	64.94	75.76	65.28	49
41	75.47	65.61	75.18	65.93	74.90	66.26	74.61	66.59	48
42	74.31	66.91	74.02	67.24	73.73	67.56	73.43	67.88	47
43	73.14	68.20	72.84	68.52	72.54	68.84	72.24	69.15	46
44	71.93	69.47	71.63	69.78	71.33	70.09	71.02	70.40	45
45	70.71	70.71							
Degrees.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Degrees.
	DEGREES.		¾ DEGREE.		½ DEGREE.		¼ DEGREE.		

Published by the A. LIETZ Co., San Francisco, Cal.

MADE IN
U. S. A.

1640

CITY ENGINEER

TABLE OF STADIA REDUCTIONS

For a Constant of 100.

ROD VERTICAL.

Min.	0° Hor. Dist.	0° Diff. Elev.	1° Hor. Dist.	1° Diff. Elev.	2° Hor. Dist.	2° Diff. Elev.	3° Hor. Dist.	3° Diff. Elev.	4° Hor. Dist.	4° Diff. Elev.	5° Hor. Dist.	5° Diff. Elev.	6° Hor. Dist.	6° Diff. Elev.	7° Hor. Dist.	7° Diff. Elev.
0'	100.00	.00	99.97	1.74	99.88	3.49	99.73	5.23	99.51	6.96	99.24	8.68	98.91	10.40	98.51	12.10
2	100.00	.06	99.97	1.80	99.87	3.55	99.72	5.28	99.51	7.02	99.23	8.74	98.90	10.45	98.50	12.15
4	100.00	.12	99.97	1.86	99.87	3.60	99.71	5.34	99.50	7.07	99.22	8.80	98.88	10.51	98.48	12.21
6	100.00	.17	99.96	1.92	99.87	3.66	99.71	5.40	99.49	7.13	99.21	8.85	98.87	10.57	98.47	12.28
8	100.00	.23	99.96	1.98	99.86	3.72	99.70	5.46	99.49	7.19	99.20	8.91	98.86	10.62	98.46	12.32
10	100.00	.29	99.96	2.04	99.86	3.78	99.69	5.52	99.47	7.25	99.19	8.97	98.85	10.68	98.44	12.35
12	100.00	.35	99.96	2.09	99.85	3.84	99.69	5.57	99.46	7.30	99.18	9.03	98.83	10.74	98.43	12.43
14	100.00	.41	99.95	2.15	99.84	3.90	99.68	5.63	99.46	7.36	99.17	9.08	98.82	10.79	98.41	12.49
16	100.00	.47	99.95	2.21	99.84	3.95	99.67	5.69	99.45	7.42	99.16	9.14	98.81	10.85	98.40	12.55
18	100.00	.52	99.95	2.27	99.84	4.01	99.67	5.75	99.44	7.48	99.15	9.20	98.80	10.91	98.39	12.60
20	100.00	.58	99.95	2.33	99.83	4.07	99.66	5.80	99.43	7.53	99.14	9.25	98.78	10.96	98.37	12.66
22	100.00	.64	99.94	2.38	99.83	4.13	99.66	5.85	99.42	7.59	99.13	9.31	98.77	11.02	98.36	12.72
24	100.00	.70	99.94	2.44	99.82	4.18	99.65	5.92	99.41	7.65	99.11	9.37	98.76	11.08	98.34	12.77
26	99.99	.76	99.94	2.50	99.81	4.24	99.64	5.98	99.40	7.71	99.10	9.43	98.74	11.13	98.33	12.83
28	99.99	.81	99.93	2.56	99.81	4.30	99.63	6.04	99.39	7.76	99.09	9.48	98.73	11.19	98.31	12.88
30	99.99	.87	99.93	2.62	99.81	4.36	99.63	6.09	99.38	7.82	99.08	9.54	98.72	11.25	98.29	12.94
32	99.99	.93	99.93	2.67	99.80	4.42	99.62	6.15	99.38	7.88	99.07	9.60	98.71	11.30	98.28	13.00
34	99.99	.99	99.93	2.73	99.80	4.48	99.62	6.21	99.37	7.94	99.06	9.65	98.69	11.36	98.27	13.05
36	99.99	1.05	99.92	2.79	99.79	4.53	99.61	6.27	99.36	7.99	99.05	9.71	98.68	11.42	98.25	13.11
38	99.99	1.11	99.92	2.85	99.79	4.59	99.60	6.33	99.35	8.05	99.04	9.77	98.67	11.47	98.24	13.17
40	99.99	1.16	99.92	2.91	99.78	4.65	99.59	6.38	99.34	8.11	99.03	9.83	98.65	11.53	98.22	13.22
42	99.99	1.22	99.91	2.97	99.78	4.71	99.59	6.44	99.33	8.17	99.01	9.88	98.64	11.59	98.20	13.28
44	99.98	1.28	99.91	3.02	99.77	4.76	99.58	6.50	99.32	8.22	99.00	9.94	98.63	11.64	98.19	13.33
46	99.98	1.34	99.90	3.08	99.77	4.82	99.57	6.56	99.31	8.28	98.99	10.00	98.61	11.70	98.17	13.39
48	99.98	1.40	99.90	3.14	99.76	4.88	99.56	6.61	99.30	8.34	98.98	10.05	98.60	11.76	98.16	13.45
50	99.98	1.45	99.90	3.20	99.76	4.94	99.56	6.67	99.29	8.40	98.97	10.11	98.58	11.81	98.14	13.50
52	99.98	1.51	99.89	3.26	99.75	4.99	99.55	6.73	99.28	8.45	98.96	10.17	98.57	11.87	98.13	13.56
54	99.98	1.57	99.89	3.31	99.74	5.05	99.54	6.78	99.27	8.51	98.94	10.23	98.56	11.93	98.11	13.61
56	99.97	1.63	99.89	3.37	99.74	5.11	99.53	6.84	99.26	8.57	98.93	10.28	98.54	11.98	98.10	13.67
58	99.97	1.69	99.88	3.43	99.73	5.17	99.52	6.90	99.25	8.63	98.92	10.34	98.53	12.04	98.08	13.73
60	99.97	1.74	99.88	3.49	99.73	5.23	99.51	6.96	99.24	8.68	98.91	10.40	98.51	12.10	98.06	13.78
c= .75	.75	.01	.75	.02	.75	.03	.75	.05	.75	.06	.75	.07	.75	.08	.74	.10
c=1.15	1.15	.01	1.15	.03	1.15	.05	1.15	.07	1.15	.09	1.14	.11	1.14	.13	1.14	.15
c=1.90	1.90	.02	1.90	.05	1.90	.08	1.90	.12	1.89	.15	1.89	.18	1.89	.21	1.88	.25

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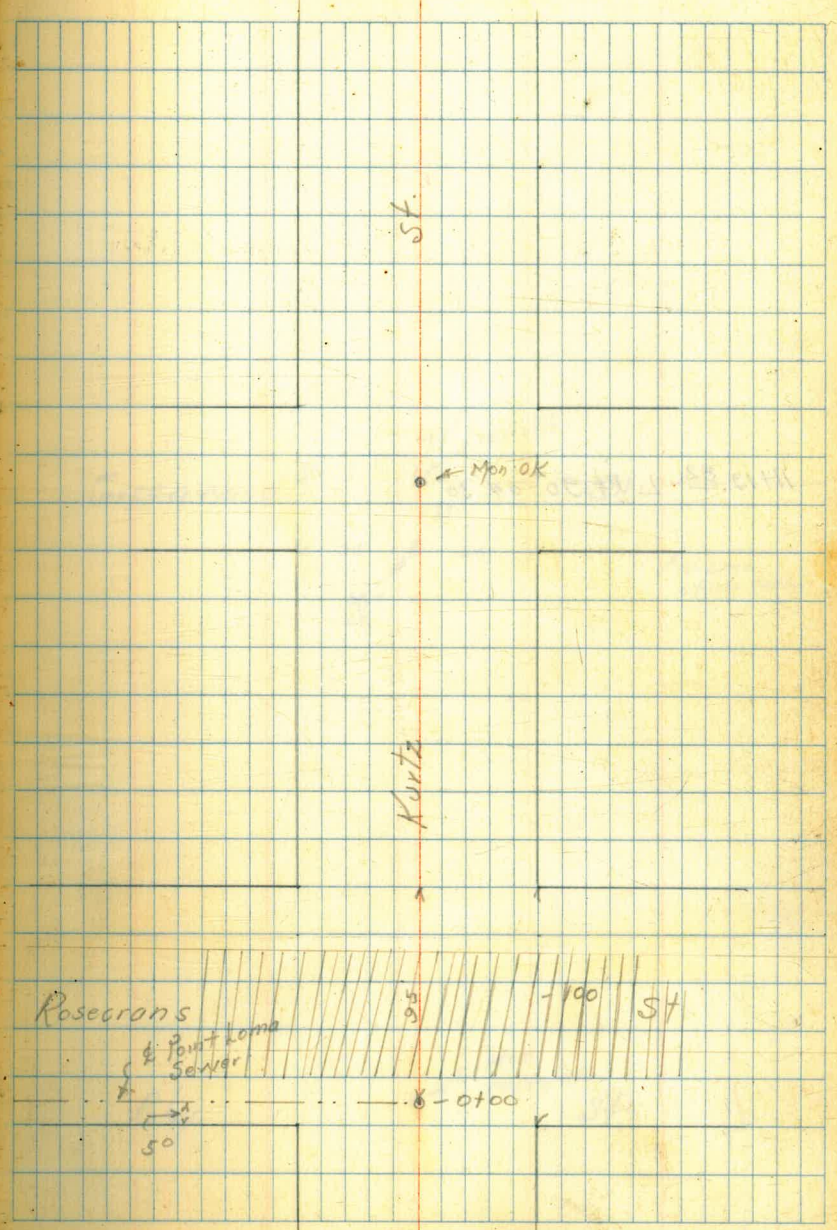
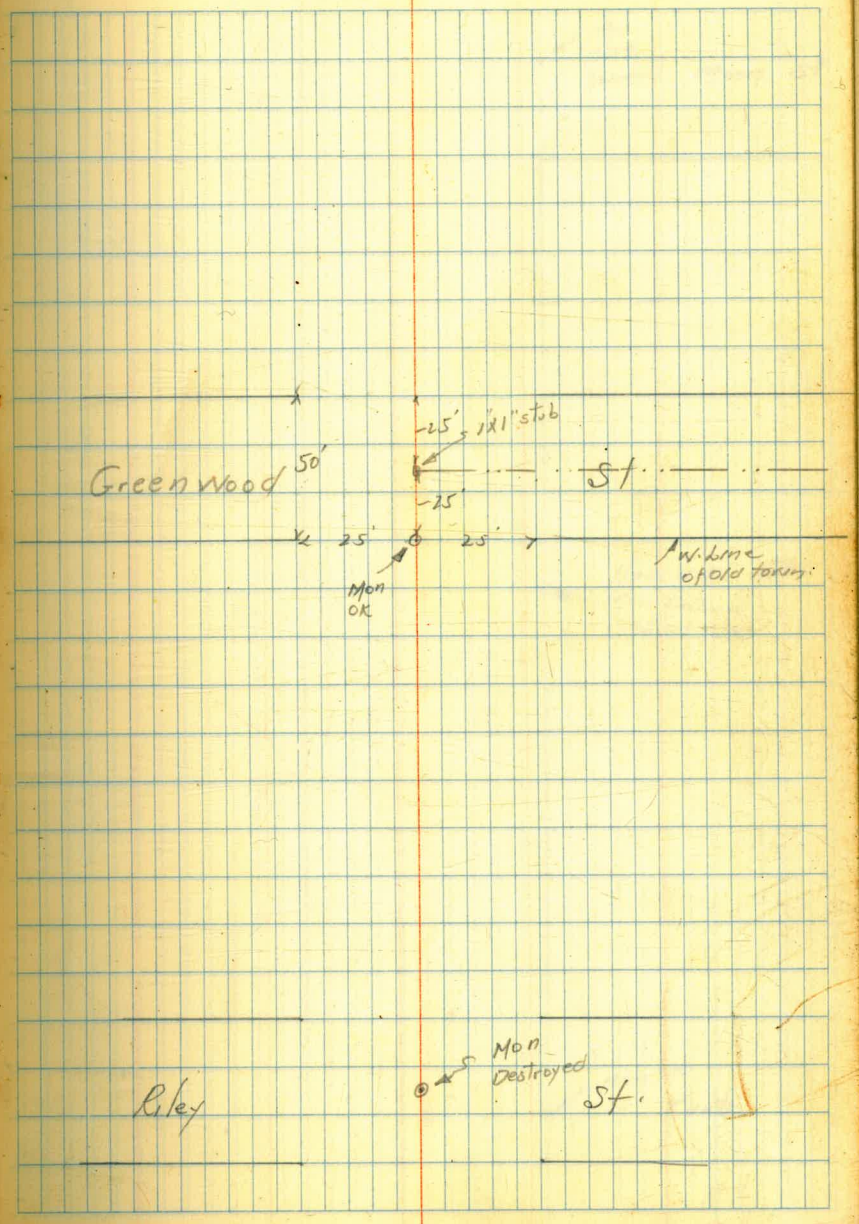
Bliss
Sommermyer
Begg
6/14

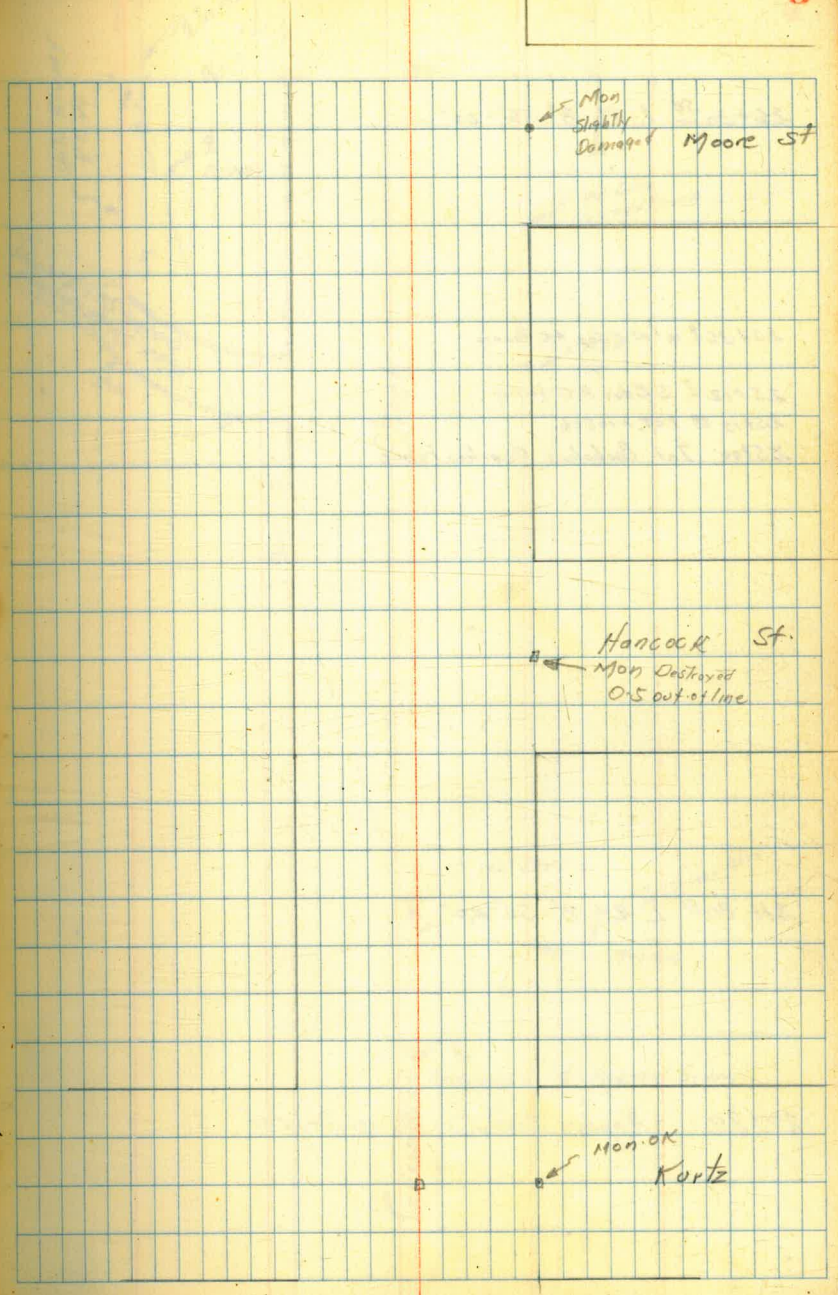
Mission Valley Sewer
Realignment 5' West of the E Line
of Rosecrans = 0+00. = ℄ of Point Loma
Sewer

Alignment Revised. See
References on Drawings.
M.



11-19-82 L. Rt 90°-04'-30"




Mon
Slightly
Damaged
Moore St
Hancock St.
Mon Destroyed
0.5 out of line
Mon. OK
Kurtz

26+30.54 L. Pt 8°-56'-20"

25+36.5 Int N. Edge A.C. Paving

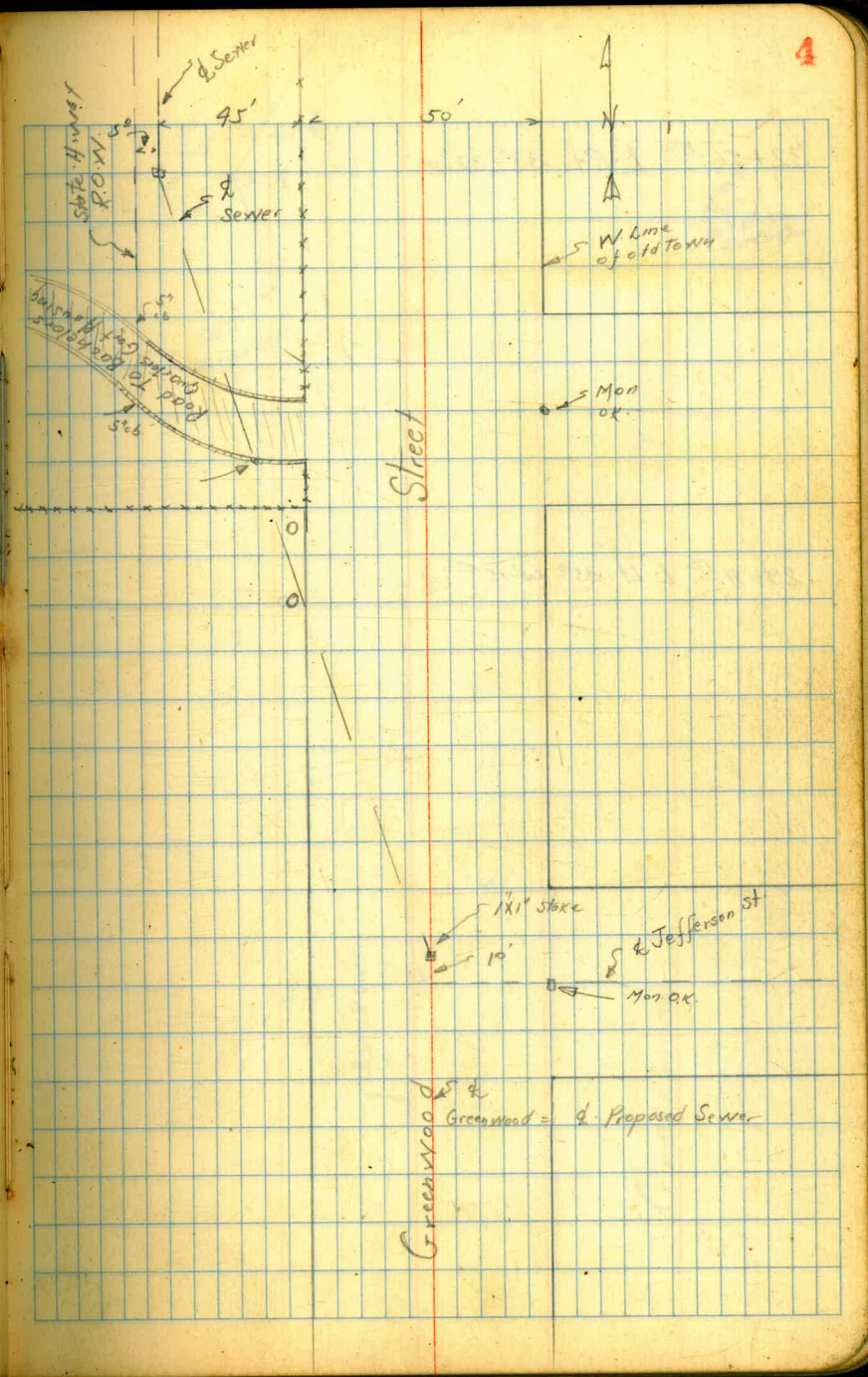
25+12 L. S. Edge A.C. Paving

25+12 2nd P.O.T. x 19.56.

25+00 Int Bachelors Quarters Fence

21+80.01 L. Lt 8°-56'-20"

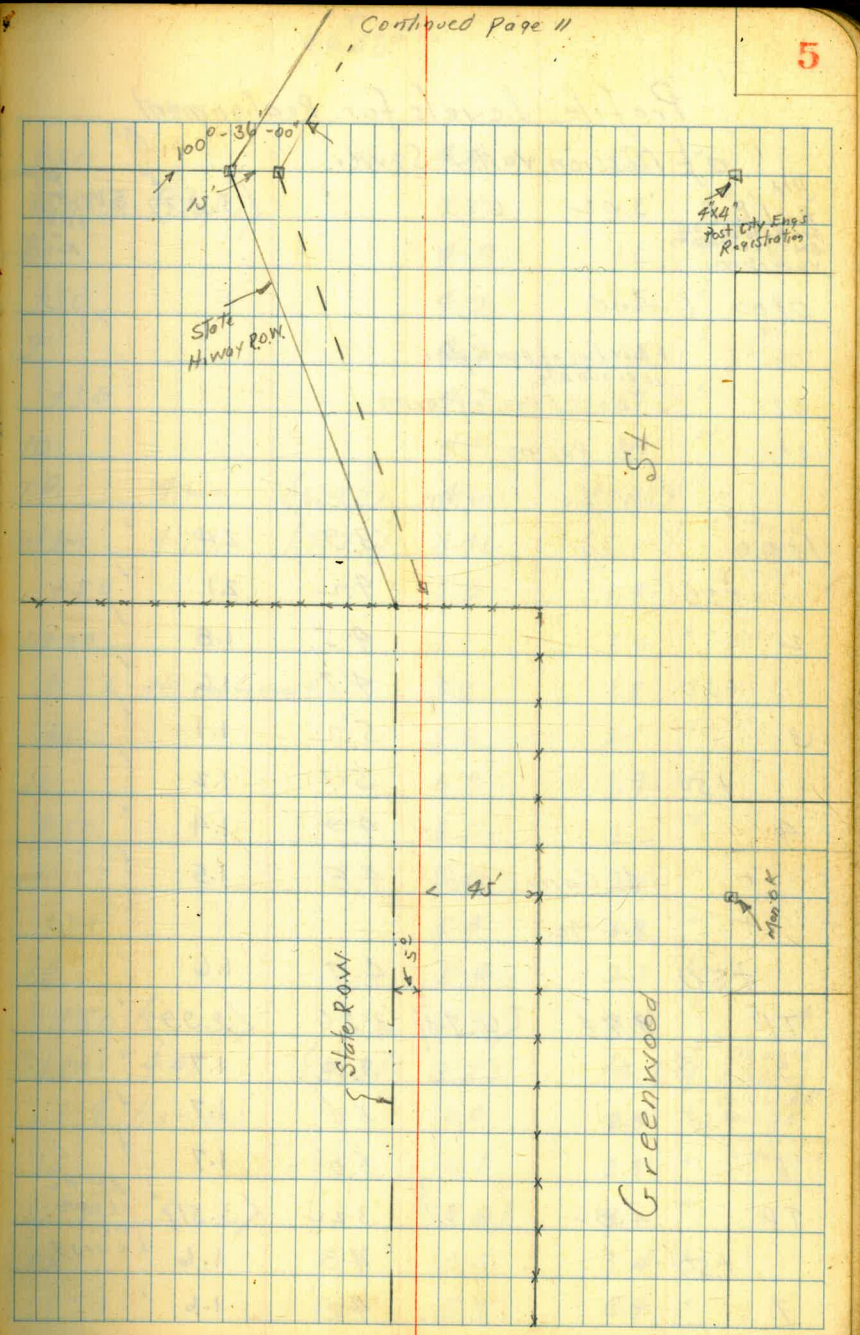
20+80 = Approx End Existing Sewer



32+56.89 L·Rt 33°-32'-00"

29+71.17 L·Lt 35°-25'-15"

Continued Page 11



Profile Levels for Realignment of Mission Valley Sewer

BM # 1 "B" See FB 16 29 - Dail BMs for Mission Valley Sewer		3.02	6.25		⟨3.23⟩	✓	S.W 40 penny spike in Gas & Lt Pole # 3041 Kurtz Rosecrans
0+00	Ground						
" "	Flow Line of pipe in place unavailable						
0+	East Edge of paving						
0+	℄ Paving						
0	W Line of Paving						
1+00				3.9	2.4	✓	
+50				4.2	2.1	✓	
2				4.5	1.8	✓	
+50				4.7	1.6	✓	
3				5.2	1.1	✓	
+50				5.1	1.2	✓	
4				4.9	1.4	✓	
+	℄ Gaines Grd			4.8	1.5	✓	
+	on Mon						
+50				4.7	1.6	✓	
TP		3.74	⟨6.73⟩ ✓	3.26	⟨2.99⟩	✓	
5				5.0	1.7	✓	
+50				5.0	1.7	✓	
6				5.0	1.7	✓	
T.P.		2.86	⟨6.37⟩ ✓	3.22	⟨3.51⟩	✓	BM #2 RR Spike in G & Lt Pole # 3155
+50				4.8	1.6	✓	
7				4.8	1.6	✓	

+50				4.8	1.6	✓	
+70	℄ Riley			4.8	1.6	✓	
8				4.8	1.6	✓	
+50				4.9	1.5	✓	
9				4.9	1.5	✓	
+50				4.7	1.7	✓	
10				4.5	1.9	✓	
T.P.		4.66	⟨6.92⟩ ✓	4.61	⟨1.76⟩	✓	
Set BM		4.73	⟨7.73⟩ ✓	3.42	⟨3.00⟩	✓	Cluster 6 Nails in G & Lt Pole # 3299 20+-Lt 10+92
+50				5.8	1.9	✓	
11+00				5.7	2.0	✓	
+	L Rt on Ground			5.9	1.8	✓	
+50				5.6	2.1	✓	
12				5.8	1.9	✓	
+50				5.5	2.2	✓	
13				5.6	2.1	✓	
+50				5.4	2.3	✓	
14				5.4	2.3	✓	
+50				5.3	2.4	✓	+
Set BM		4.41	⟨8.91⟩ ✓	3.23	⟨4.50⟩	✓	Top and S side of Base of RR Rail. S.E Cor Greenwood + Hancock.
+	℄ Hancock			6.4	2.5	✓	
15				6.1	2.8	✓	
+50				5.8	3.1	✓	
16				5.5	3.4	✓	
+50				5.5	3.4	✓	

		⟨8.91⟩			
+80			5.8	3.1	
17			5.5	3.4	
+50			5.2	3.7	
18			4.8	4.1	
Set BM	4.41	⟨9.18⟩	4.14	⟨4.77⟩	R.R. Spike 20± Lt 17+90 G+Lt Pole #JP 3848
+ ℄ Moore			5.2	4.0	
+50			5.4	3.8	
19			5.1	4.1	
+50			5.1	4.1	
20			5.0	4.2	
+50			5.3	3.9	
21			5.4	3.8	
+50			5.3	3.9	
+ ℄ Jefferson			5.3	3.9	
Set BM	4.08	⟨9.98⟩	3.28	⟨5.90⟩	Cluster 6 Nails in G+Lt & Tel Pole JP 3838 25± Lt 21+50
+80⁰¹ L Lt on stake			6.22	3.76	
" Grd			6.0	4.0	
22			6.2	3.8	
+50			5.9	4.1	
+65			5.9	4.1	
23			4.9	5.1	
+25			4.3	5.7	
+35			4.8	5.2	
+50			4.8	5.2	
" " G+Lt Pole 5 Rt in clear					

		⟨9.98⟩			
24			4.5	5.5	
+23 24" EU 0.1 Lt in clear					
+50			4.5	5.5	
+70 14" Eucalyptus 6' Rt in clear					
25			4.3	5.7	
TP	4.78	⟨9.88⟩	4.88	⟨5.10⟩	
+12³ S Edge cb			4.91	4.97	
" " " AC Paving			5.20	4.68	
+24⁵ ℄			4.90	4.98	
36⁰ N Side " "			5.31	4.57	
" " Top cb			4.90	4.98	
Set BM	2.16	⟨7.19⟩	4.85	⟨5.03⟩	Chiseled Hn spot in S CB 36± Lt 25+19
+50			2.5	4.7	
26			3.1	4.1	
+12			3.4	3.8	
+30⁵⁴ L Rt on stake Grd Same			4.31	2.88	
+50			4.7	2.5	
27			5.1	2.1	
+50			4.8	2.4	
28			5.1	2.1	
+50			5.0	2.2	
TP	6.02	⟨8.77⟩	4.44	⟨2.75⟩	
29			6.6	2.2	
+50			6.4	2.4	
+71¹⁷ L Lt on stake Grd same			5.83	⟨2.94⟩	

		⟨8.77⟩ ✓			
+76			4.6	4.2 ✓	
30			4.5	4.3 ✓	
+50			4.4	4.4 ✓	
31			4.3	4.5 ✓	
+50			4.1	4.7 ✓	
32			4.2	4.6 ✓	
T.P.	4.51	⟨9.57⟩ ✓	3.71	5.06 ✓	
+50			4.8	4.8 ✓	
+56 86 LRt on Stake Ground Same			4.95	4.62 ✓	
33			4.5	5.1 ✓	
+50			4.6	5.0 ✓	
34			4.7	4.9 ✓	
+50			4.7	4.9 ✓	
35			5.1	4.5 ✓	
+53 50 L Lt on Stake Grd Same			5.21	4.36 ✓	
36			6.0	3.6 ✓	
+42 50 L Rt			6.42	3.15 ✓	
+60 Base S Hiway fill Pacific Blvd ✓			6.4	3.2 ✓	
T.P.	12.60	⟨15.75⟩ ✓	6.42	⟨3.15⟩ ✓	
Set BM	8.09	⟨18.86⟩ ✓	4.98	⟨10.77⟩ ✓	R.P. Hub for L 250'± Lt 36+42.50 See sketch
T.P.	9.93	⟨23.04⟩ ✓	5.75	⟨13.11⟩ ✓	
+84 6 Top of shoulder			4.8	18.2 ✓	
36+86 6 N Edge A.C. Paving			4.83	18.21 ✓	
37+45 6 E " "			5.46	17.58 ✓	
+53 8 Gutter			6.06	16.98 ✓	

		⟨23.04⟩ ✓		
+53 8 Top cb			5.37	17.67 ✓
+58 Top Hiway fill			6.7	16.3 ✓
TP	1.29	⟨18.96⟩ ✓	5.37	⟨17.67⟩ ✓
+80 Toe Pac Ave fill			13.4	5.6 ✓
38			13.8	5.2 ✓
+50			14.2	4.8 ✓
+90			13.8	5.2 ✓
39			15.4	3.6 ✓
+08			16.9	2.1 ✓
+26			16.4	2.6 ✓
+55			16.0	3.0 ✓
+75 8 int Cons Drain Ground			8.9	10.1 ✓
" " Top Cons. Drain			10.67	8.29 ✓
Set BM.	3.78	⟨16.47⟩ ✓	4.27	⟨12.69⟩ ✓
+84			11.2	5.3 ✓
+98			11.0	5.5 ✓
40+02			7.5	9.0 ✓
+30			7.9	8.6 ✓
+40			7.7	8.8 ✓
+46			5.0	11.5 ✓
+52			4.5	12.0 ✓
+55			3.2	13.3 ✓
+57 Gauge W Rail			2.61	13.86 ✓
+62 30 " E "			2.61	13.86 ✓
+64			3.3	13.2 ✓

		⟨16.47⟩			
+73			5.6	10.9	✓
+90 Toe RR fill			13.1	3.4	✓
+97			14.2	2.3	✓
" " G+Lt Pole 8.5 Rt in clear					
41+12			12.6	3.9	✓
" " Guy D.Man. 3' Lt in clear					
+18			11.0	5.5	✓
+25			11.0	5.5	✓
+50			10.8	5.7	✓
42			10.9	5.6	✓
+50			10.7	5.8	✓
43			10.9	5.6	✓
T.P.	4.06	⟨9.99⟩ ✓	10.54	⟨5.93⟩	✓
+36			4.2	5.8	✓
+44 Guy D.Man 15' Rt					
+50			4.7	5.3	✓
+ " G+Lt Pole #P1180 7.2 Lt in clear					
+71.51 ℄ Lt on Hub Grand Same			4.65	5.34	✓
44+00			4.4	5.6	✓
+50			5.0	5.0	✓
45			5.0	5.0	✓
+50			4.7	5.3	✓
46			4.3	5.7	✓
check BM ℄ S.W. Piley+Whitman	4.55	⟨10.48⟩ ✓	4.06	⟨5.93⟩	✓
+29.83 ℄ Whitman			5.1	5.4	✓

		⟨10.48⟩			
+50			4.7	5.8	✓
47			4.5	6.0	✓
+50			4.6	5.9	✓
48			4.3	6.2	✓
T.P.	4.82	⟨11.22⟩ ✓	4.08 (over 6.40)	⟨6.40⟩	✓
+50			5.0	6.2	✓
+70 G+Lt Pole 7.2 Rt in clear					
+80 Guy D.Man 2' Lt					
49			5.0	6.2	✓
+05 ℄ Gaines			5.0	6.2	✓
+50			4.5	6.7	✓
+70			4.6	6.6	✓
50			4.6	6.6	✓
Set BM	5.26	⟨9.97⟩ ✓	6.51	⟨4.71⟩	✓ S.E. Prop. Mon. Chesnut + Gaines
+26.36 ℄ Rt (℄ Rt. is at sta 51+26.36)			3.99	5.98	✓
+35			3.0	7.0	✓
+50			3.0	7.0	✓
+70			3.5	6.5	✓
51			3.3	6.7	✓
+50			2.7	7.3	✓
+75			2.4	7.6	✓
52			2.5	7.5	✓
TP	5.77	⟨12.50⟩ ✓	3.24	⟨6.73⟩	✓
+50			5.2	7.3	✓
53			5.3	7.2	✓

			<12.50>			
+50				5.2	7.3	✓
TP		12.37	<22.89>	1.98	10.52	✓
54				15.0	7.9	✓
+50				14.9	8.0	✓
55+00				14.8	8.1	✓
55+50				14.9	8.0	✓
+82	Toe Govt Dyke Embankment			14.9	8.0	✓
+99.57	L.Rf. on stake			11.98	10.91	✓
" "	8' Rt Toe Dyke			15.2	7.7	✓
" "	6 Lt			9.0	13.9	✓
56				11.3	11.6	✓
+33				8.3	14.6	✓
" "	7' Lt Top Dyke			4.9	18.0	✓
14' Rt	Toe govt Dyke			15.5	7.4	✓
+70				5.3	17.6	✓
" "	3' Lt Top Dyke			4.5	18.4	✓
" "	5 Rt			7.6	15.3	✓
+90.17	L. Lt on stake Top Dyke			4.32	18.57	✓
TP		5.07	<23.65>	4.31	<18.58>	✓
+90.17	2' Rt			5.3	18.3	✓
57				5.0	18.6	✓
+50				4.8	18.8	✓
+65	Top Gas Co MH			4.78	18.87	✓
Check BM	+8 18.5 Lt ℄ S End old Town Bridge			3.63	20.02 / 20.00 BM	✓
+70.44	W Side Paving			4.69	18.96	✓

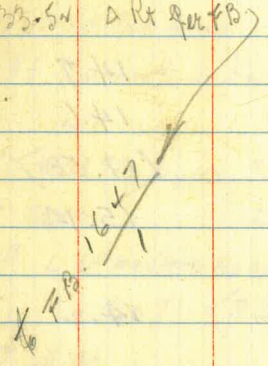
	<23.65>			
+94.75	A.C. East Edge of Taylor St paving	4.53	19.12	✓
58	cold Roll N. Edge of Mission Valley Paving	4.56	19.09	✓
+10		4.4	19.2	✓
+19		3.9	19.7	✓
+38	Guy D. Man 4' Lt			
+40		5.2	18.4	✓
" "	5' Lt	6.5	17.1	✓
+50		5.4	18.2	✓
+58.4	Tel Pole # 89209 H 0.6 Lt in clear	6.0	17.6	✓
+61		6.0	17.6	✓
" "	5' Lt	8.0	15.6	✓
+76		7.7	15.9	✓
" "	6' Lt D Man Guy			
+79	9' Rt G Lt Pole in clear			
+90		8.9	14.7	✓
59		9.0	14.6	✓
TP	+22 <18.80>	6.07	<17.58>	✓
+22.14	L. Lt (See pg. 23 & 24. alignment Change)	3.66	15.14	✓
" "	7' Lt 4" Eucalyptus			
" "	10 Lt Top Bank	4.6	14.2	✓
+28	12" Pepper 8' Lt			
+38		4.1	14.7	✓
+54		5.3	13.5	✓
" "	5' Lt Top Bank	5.6	13.2	
" "	4 Rt 6" Palm			
+71		6.2	12.6	✓

Continued Page 15

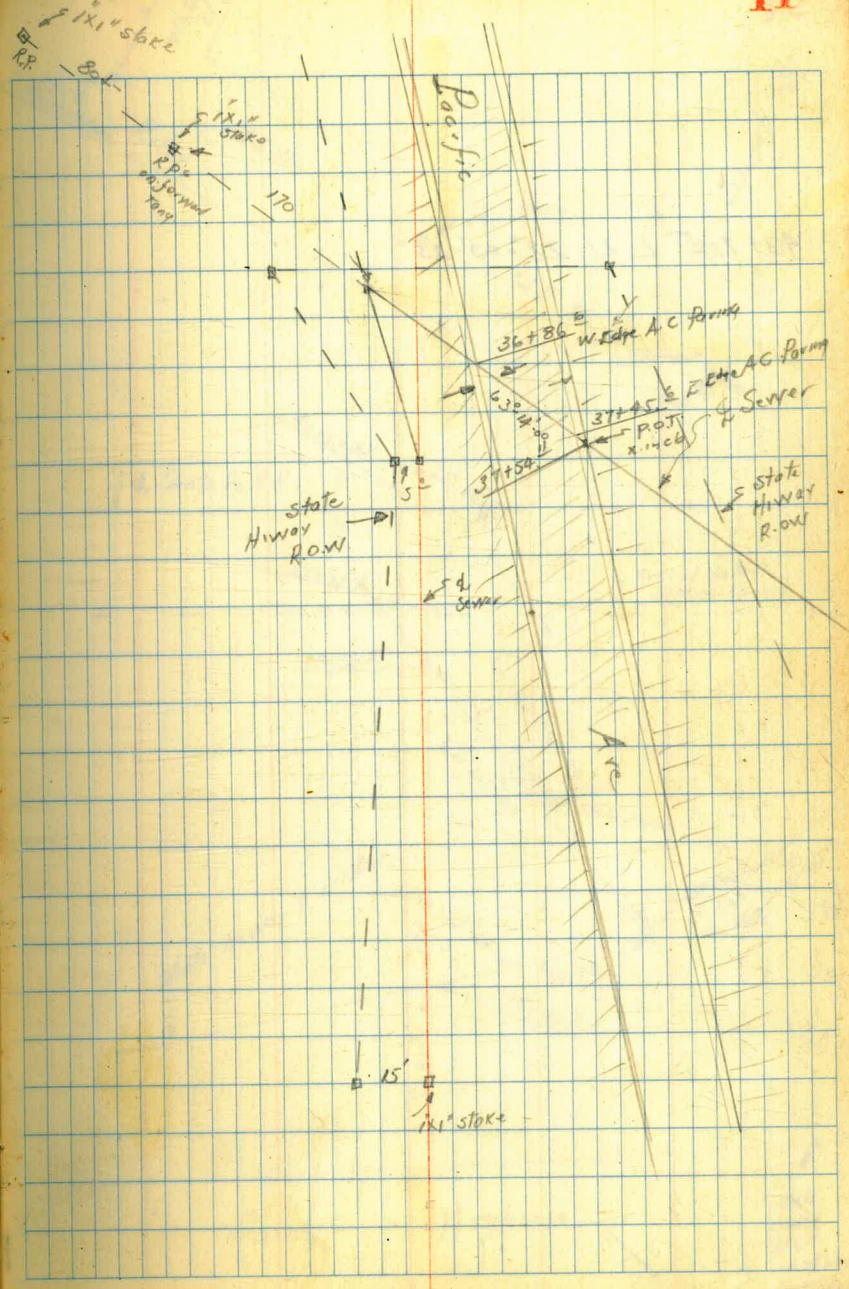
36+42.50 ∠ Rt 100°-56'-30"

35+53.59 ∠ Lt 36°-00'-00"

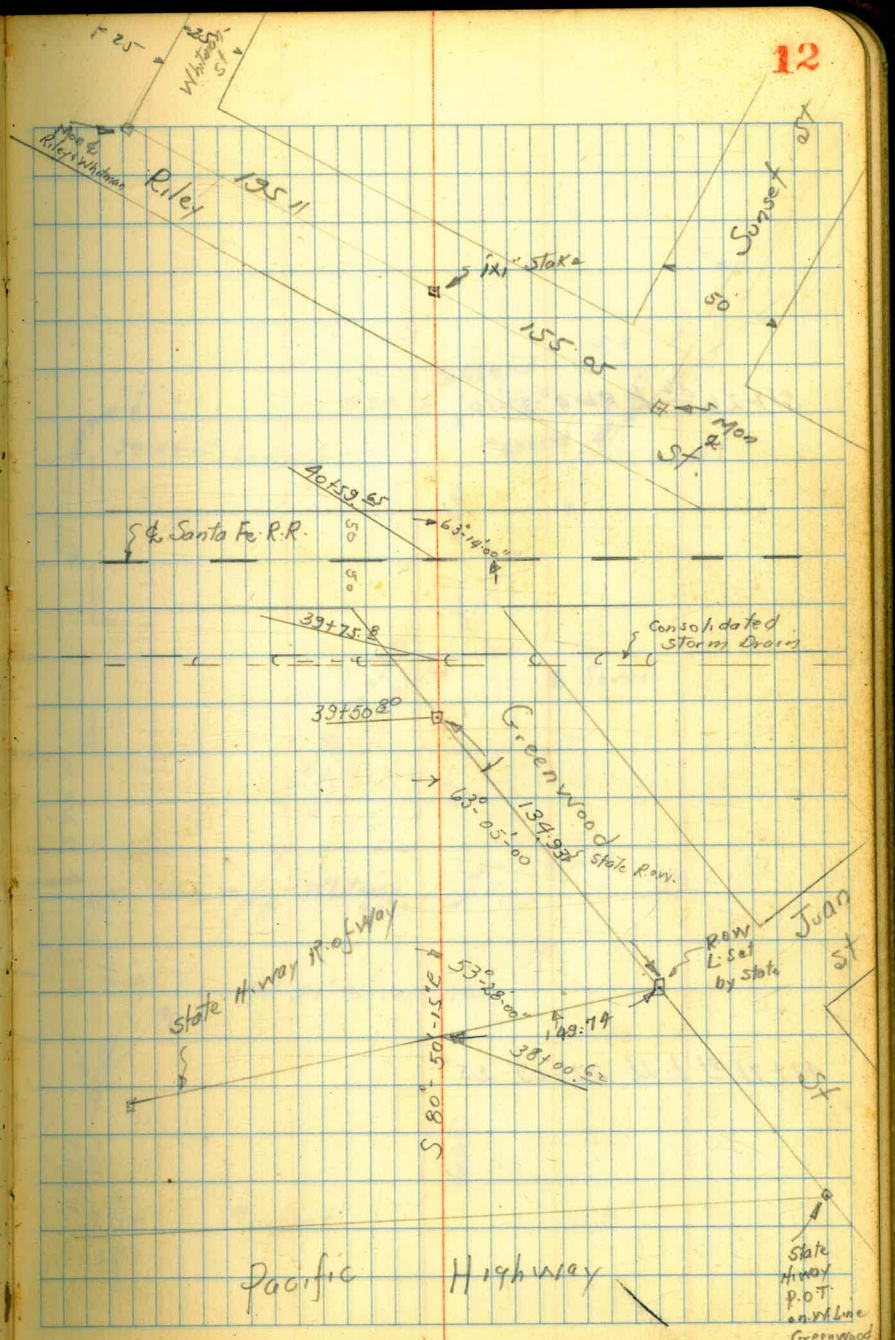
37+33.54 ∆ Rt



32+56.86 ∠ Rt 33°-32'-00

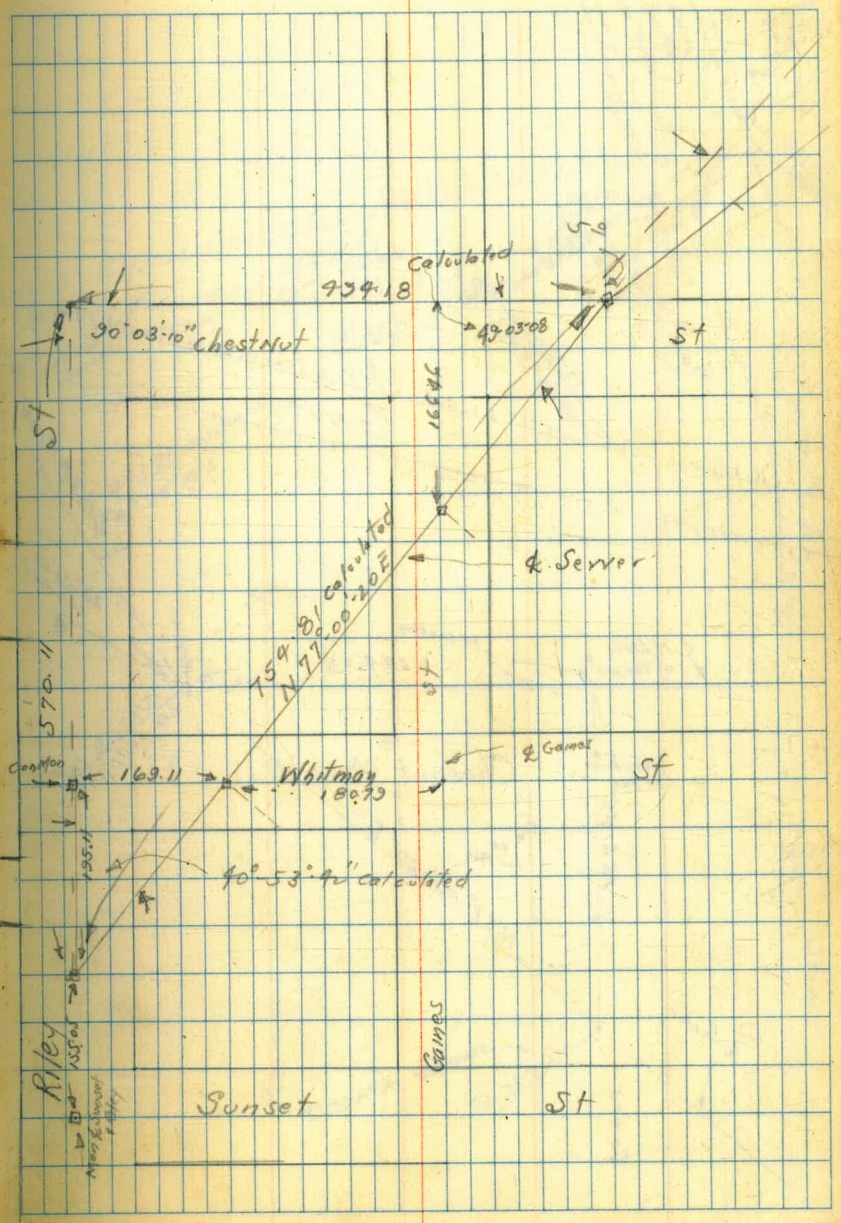


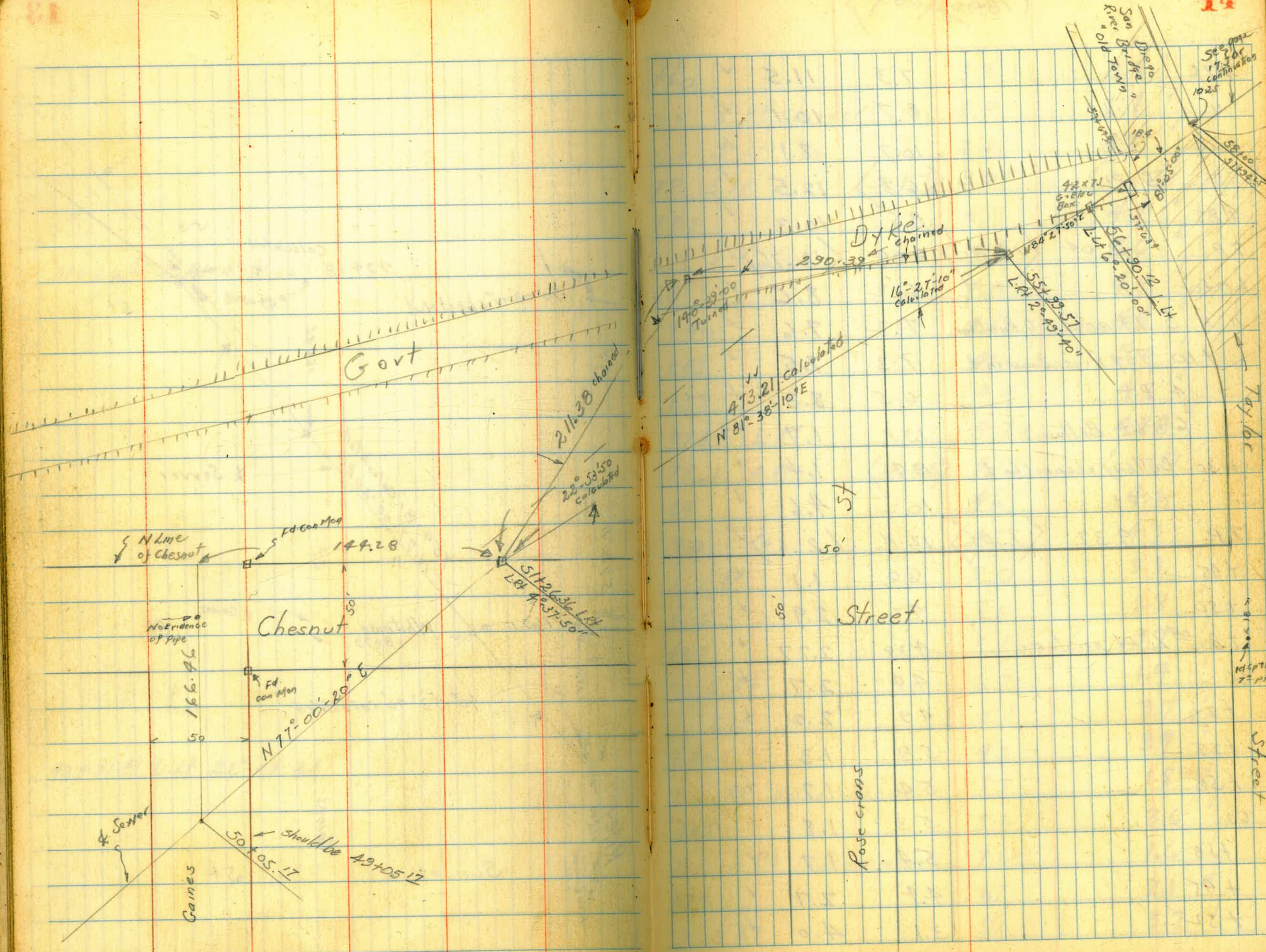
93+71.51 ∠ Lt 22°-09'-25"



51+26 36 L Rt 4°-37'-50"

43+71.51 L Lt 22°-09'-25"




Govt
Dyke
chained
290.39
146°-39'-00"
Turned
16°-27'-10"
Calculated
55+99.57
Lt 2°-49'-40"
N84°-27'-30"E
56+90.12 Lt
Lt 6°-20'-00"
San Diego
River Bridge
"Old Town"
See page 17 for continuation
102.5
184
58+00
81°-05'-00"
473.21 calculated
N 81°-38'-10"E
211.38 chained
22°-53'-50"
calculated
N Line
of Chesnut
Fd Con Mon
144.28
51+26.36 Lt
Lt 4°-37'-50"
50'
Chesnut
No Evidence
of Pipe
Fd
Con Mon
166.46
50
N 77°-00'-20" E
℄ Sewer
50+05.17
Should be 49+05.17
Gaines
57
50'
50'
Street
Taylor
Street
Rosecrans

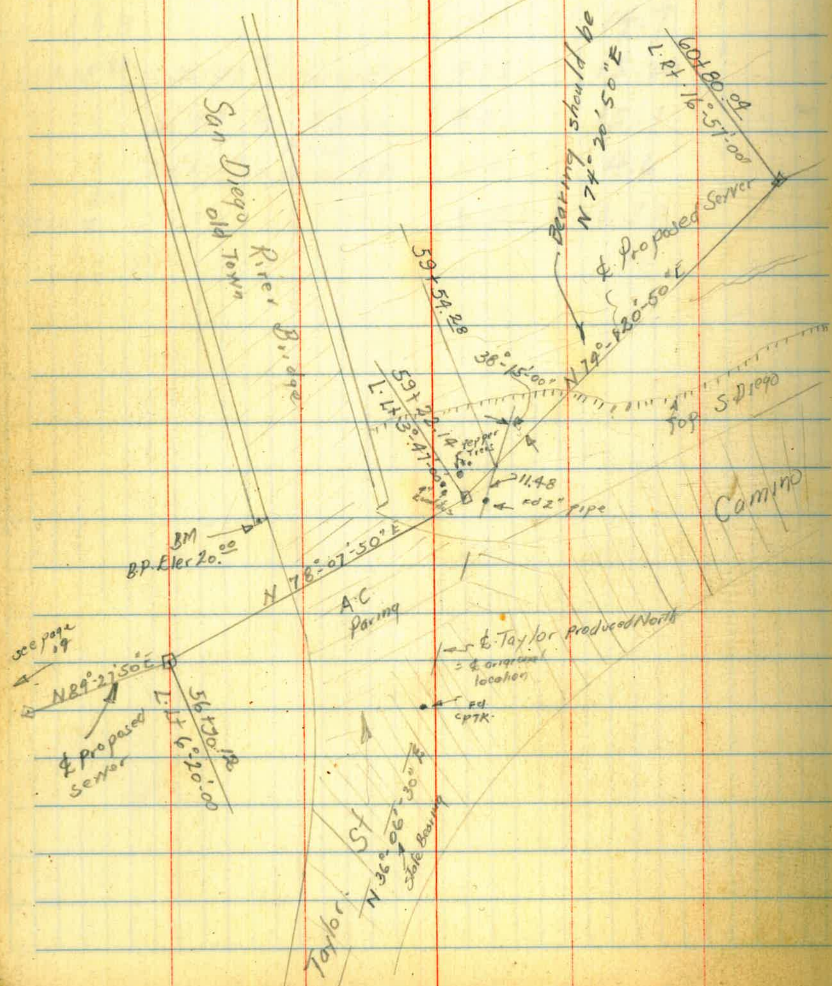
	(18.80)		
+76		7.3	11.5 ✓
" 3' Lt		8.7	10.1 ✓
" 7 Lt		10.7	8.1 ✓
" 5' Rt		6.3	12.5 ✓
+85		8.5	10.3 ✓
T.P 2.04	(14.80) ✓	6.04	(12.76) ✓
60+00		6.2	8.6 ✓
" " 5 Lt edge S.O. River Bank		7.2	7.6 ✓
+10 Top R. ver Bank on Lt.		7.3	7.5 ✓
" 4' Rt		6.5	8.3 ✓
" 6 Lt Bottom		13.1	1.7 ✓
+30 Bottom channel on Lt		13.4	1.4 ✓
" " 5' Rt		10.2	4.6 ✓
T.P. 4.37	(7.06) ✓	12.11	(2.69) ✓
+45		60	1.1 ✓
+50		9.2	2.9 ✓
+80 ±2 L. Rf onstake		4.24	2.77 ✓
61		4.4	2.7 ✓
+20		4.9	2.2 ✓
+25		5.8	1.3 ✓
+50		5.4	1.7 ✓
62		5.3	1.8 ✓
+18		5.4	1.7 ✓
+45		4.4	2.7 ✓
+52		3.1	4.0 ✓

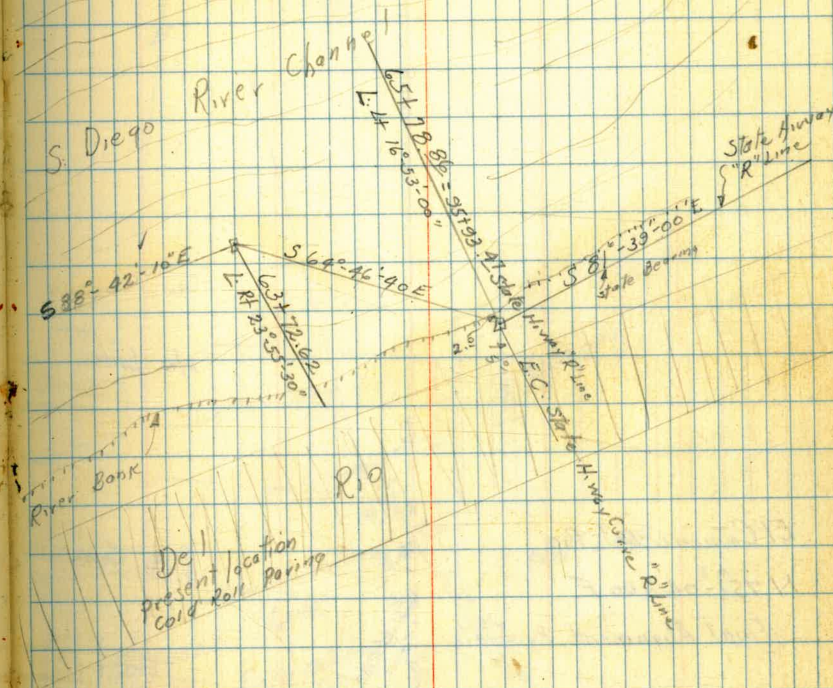
	(7.06)		
+60		3.3	3.8 ✓
" " 5' Rf Channel		5.4	1.7 ✓
" " 3 Lt		2.2	4.9 ✓
TP 5.18	(9.17) ✓	3.07	(3.99) ✓
+85		5.1	4.1 ✓
" " 5' Rf		5.6	3.6 ✓
63		4.8	4.4 ✓
+40		4.7	4.5 ✓
+45		4.2	5.0 ✓
+55		4.4	4.8 ✓
+72 ±2 L. Rf.		4.79	4.38 ✓
TP on L. 4.97	(8.85) ✓	4.79	(4.38) ✓
64		4.6	4.2 ✓
+13		4.5	4.3 ✓
" 2' Rf		5.0	3.8 ✓
" 5 "		6.0	2.8 ✓
+25		5.1	3.7 ✓
" 5' Rf		6.9	1.9 ✓
" 5 Lt		5.1	3.7 ✓
+40		4.9	3.9 ✓
" " Rf Bottom channel		7.0	1.8 ✓
+65		5.2	3.6 ✓
" " 3' Rf Bottom channel		7.2	1.6 ✓
+78		6.7	2.1 ✓
" 5' Lt		5.1	3.7 ✓

65+78 8? '' 68

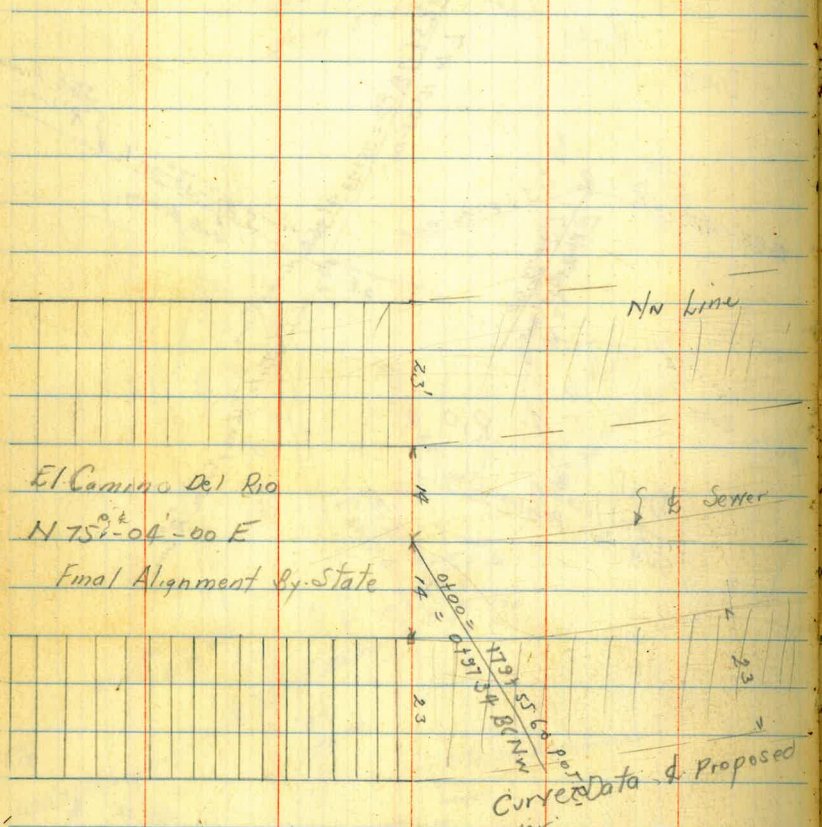
		⟨8.85⟩ ✓			
+95	Bottom channel	Toe Present Hiway fill	7.2	1.6	✓
65			7.2	1.6	✓
+08			5.3	3.5	✓
" "	5' Lt Toe slope		7.1	1.7	✓
T.P.	12.98	⟨19.95⟩ ✓	1.88	⟨6.97⟩	✓
+68			53	14.7	✓
$65+78^{86}$	$= 95+93^{47}$ S. Hiway E.C.		4.75	15.20	✓
" "	2' Lt Top R. Bank		4.9	15.1	✓
" "	20' Lt Toe Present Hiway fill		15.4	4.6	✓
Check BM #			6.23	13.72	✓

See pg. 23 for Alignment Change
from 59+22.14 to Equa. 65+78.86 = State Hiwy E.C.

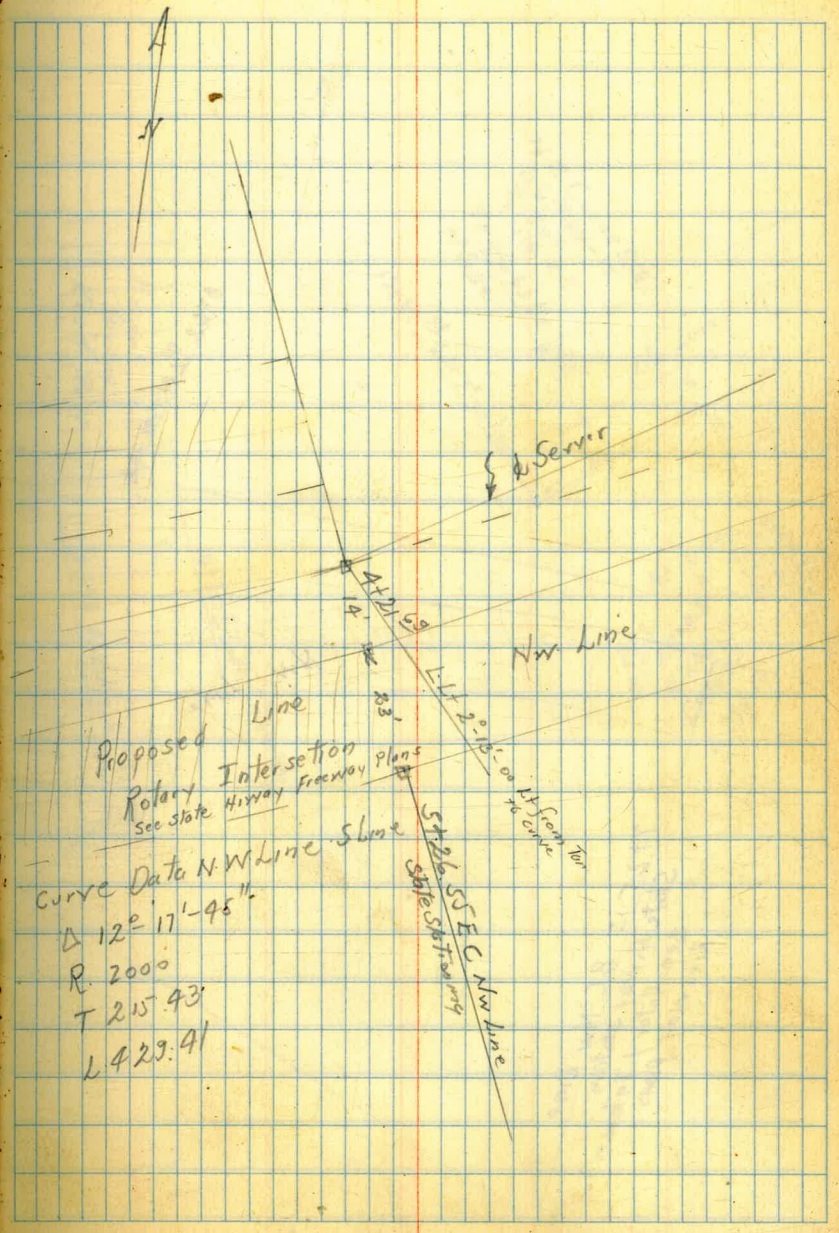


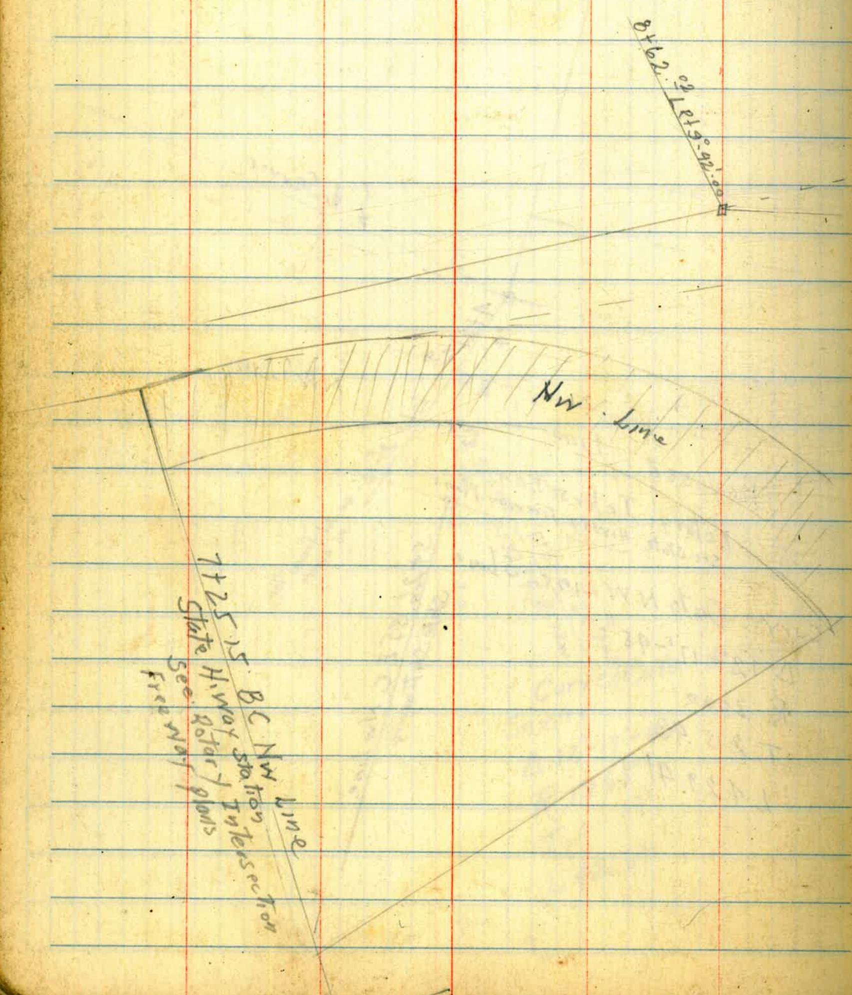


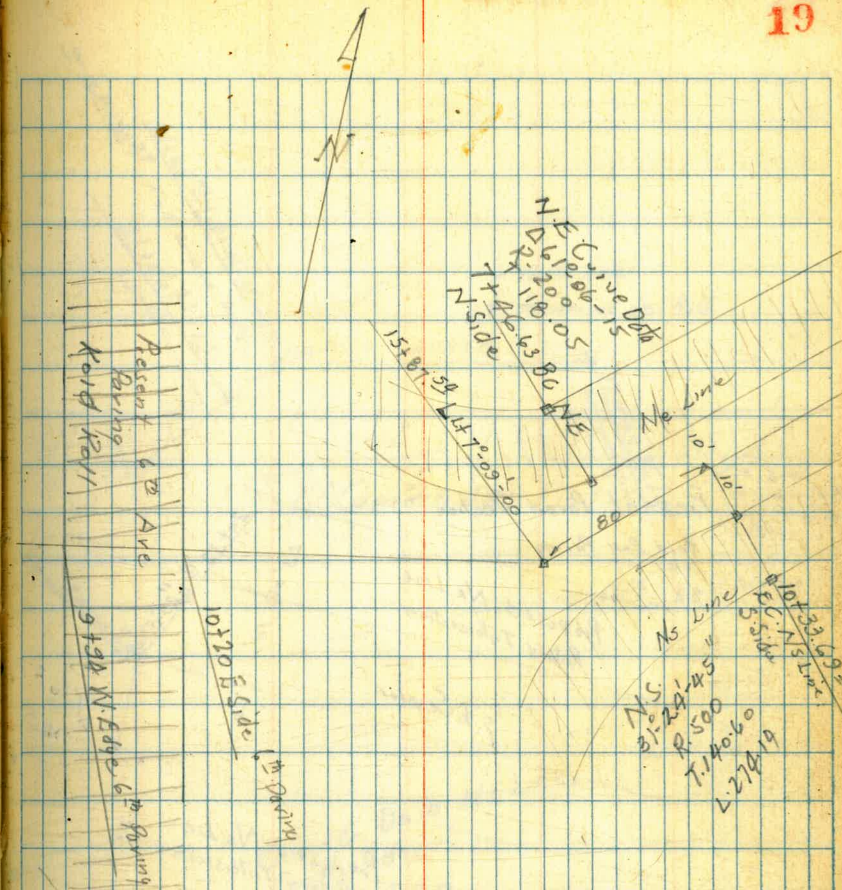
Alignment Notes of Mission Valley Sewer
Through Rotary Intersection 6th Ave + Camino Del Rio

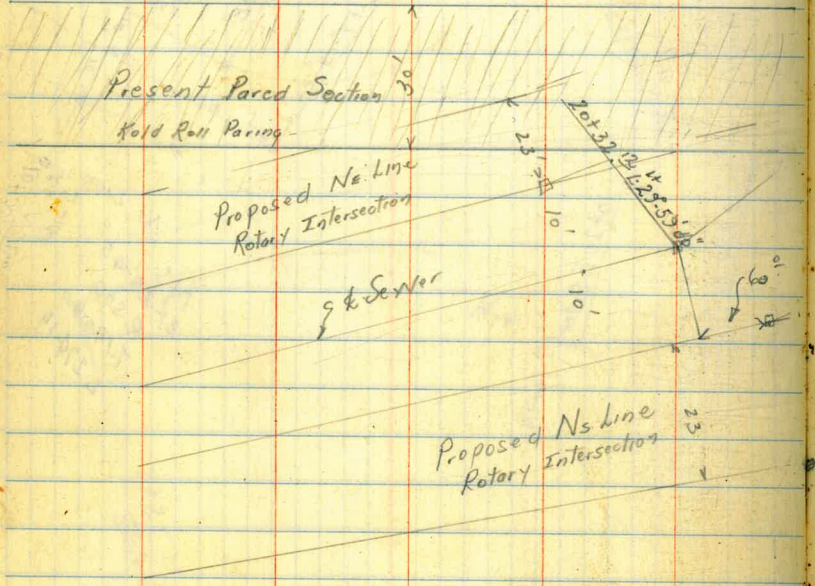


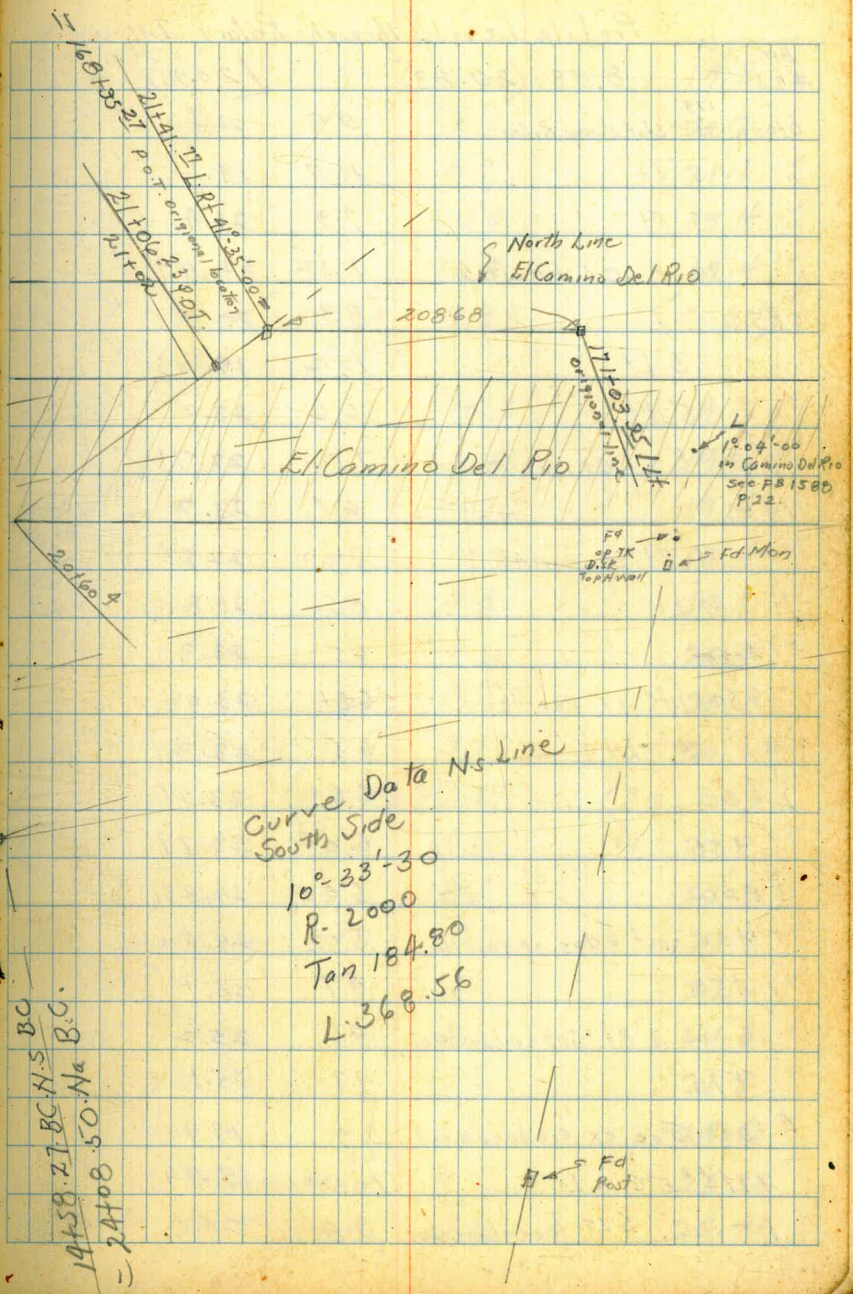
Curve Data of Proposed Sewer
Δ 12°-17'-45
R 1965'
T 211.67'
L 421.69




8+62.20 Lt 9°-42'-00"
Nw Line
7+25.15 BC Nw Line
State Hiway station
See Rotary Intersection
Freeway plans


N
Present 6' Arc
Paving
Ko19 Ro11
9+94 W. Edge 6' Paving
10+20 E Side 6' Paving
N.E. Curve Data
Δ 61°06'-15
R 200
T 118.05
7+46.63 BC
N Side
15+87.59 Lt 7°-09'-00
NE
Ne Line
10'
10'
80
10+33.69 EC N S Line
S Side
Ns Line
N.S.
31°-24'-45"
R 500
T 140.60
L 274.19





Curve Data Ns Line
South Side
10° 33' 30
R. 2000
Tan 184.80
L. 368.56

14458.27 BC H.S
24408.50 Na B.C.

Profile Levels through Rotary Intersection

BM #23 1629/X	8.88	⟨29.83⟩		⟨20.95⟩
0+00 = 179+60 55 Stat. Hiway R. Line			9.4	20.4
" 5' Lt			10.7	19.1
" 5 Rt			7.9	21.9
" 10 Rt ex. Paving			7.34	22.49
0+50			8.9	20.9
" 5 Lt			10.2	19.6
" 5' Rt			6.6	23.2
" 8 Rt ex Paving			7.12	22.71
1+00			6.1	23.7
" 4' Rt ex paving			7.00	22.83
" 5 Lt			8.5	21.3
+30			6.5	23.3
+50 Int ex. paving			6.81	23.02
" 4' Lt			6.5	23.3
2+00			6.62	23.21
+50			6.04	23.79
3+00			5.45	24.38
+32 east edge ex paving			5.03	24.80
+50			4.7	25.1
" " 3' Rt Top embankment			4.6	25.2
+70			4.7	25.1
4+00 Toe ex embankment			9.9	19.9
+21.59 E.C. ℄ L			10.34	19.49
" " 5 Lt Toe embankment			9.8	20.0

Reduced by M.R.Y. 8/11/42

⊼ = ⟨29.83⟩

+45			10.0	19.8
+60			9.1	20.7
+82			8.7	21.1
+87			10.4	19.4
5			10.4	19.4
T.P.	8.64	⟨29.59⟩ # 79969	8.88	⟨20.95⟩
+15 G+Lt Pole 10.6 Lt				
+50			10.5	19.1
6			10.4	19.2
+50			10.2	19.4
7			10.2	19.4
+50			9.8	19.8
8			9.6	20.0
+50			9.5	20.1
+62.02 ℄ Rt			9.37	20.22
TP	9.21	⟨29.43⟩	9.37	⟨20.22⟩
9			8.6	20.8
+50			8.1	21.3
+55			8.1	21.3
+65			6.2	23.2
+70			8.1	21.3
+82 Toe 6th st fill			7.6	21.8
+88			3.8	25.6
+94 W. Edge Kold Roll paving 6th St			4.05	25.38
10+07± ℄ 6th st paving			4.02 (4?)	25.41

↑ 29.43 ✓

10+20	E Side Prescott 6th St paving		9.10	25.33 ✓
+29			4.0	25.4 ✓
+27			5.2	24.2 ✓
+35			5.2	24.2 ✓
+38	Toe 6th St fill		7.5	21.9 ✓
+50			7.9	21.5 ✓
11+00			8.1	21.3 ✓
+50			8.0	21.4 ✓
12			8.0	21.4 ✓
+50			7.7	21.7 ✓
13			7.7	21.7 ✓
T.P.	4.32	⟨26.79⟩ ✓	6.96	⟨22.47⟩ ✓
+45			4.4	22.4 ✓
+66			4.9	21.9 ✓
14			4.9	21.9 ✓
+50			5.0	21.8 ✓
15			4.8	22.0 ✓
+50			5.0	21.8 ✓
+87 54	L. Lt		4.98	21.81 ✓
16			4.8	22.0 ✓
+20			4.4	22.4 ✓
+50			4.6	22.2 ✓
17			4.6	22.2 ✓
+50			4.7	22.1 ✓
18			4.2	22.6 ✓

↑ 26.79 ✓

21+06 23

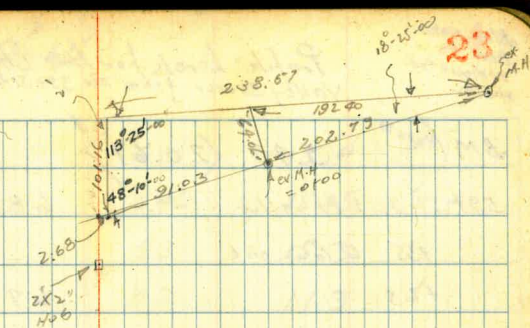
T.P.	8.13	⟨31.5⟩ ✓	3.41	⟨23.38⟩ ✓
+50			8.7	22.8 ✓
19			8.8	22.7 ✓
+50	cross fence		8.5	23.0 ✓
+65			8.3	23.2 ✓
+85			9.2	22.3 ✓
20			8.8	22.7 ✓
+19			8.5	23.0 ✓
+32 12	L Lt		7.52	23.99 ✓
+42			6.4	25.1 ✓
+47	Top Camino Del Rio Embankment		5.5	26.0 ✓
+60 9	S. Edge Camino Del Rio Old Rd paving		5.18	26.33 ✓
+80 8	℄		4.78	26.73 ✓
21+02	N Edge ex. paving		4.65	26.85 ✓
+06 23	p.o.T N Side	Top. El Camino Embankment	4.18	27.33 ✓
+24	Toe slope		9.0	22.5 ✓
+38			9.4	22.1 ✓
+41 17	=		10.31	21.20 ✓
check BM # 26			5.53	⟨25.98⟩ ✓ 25.96 02

equ 65+56.99 = 95+93.97 S Hiway

63+49.99 L. Rt 4°-19'-00"

59+51.92 L. 15°-54-30 Rt

59+22.14 old L. N.W. P. of T.



Bliss Notes
Begg & W Moore Rod
8/13/19

Profile Levels for Lane Change Mission Valley Sewer from Sta 59+51.22 to 65+56.34 = 35+93.87 State Highway Sta.

L. Hub 59+22.14

BM (Page 10)	5.47	⟨20.61⟩	⟨15.14⟩ ✓
59+51.92 L Rt of Hub	6.85	13.76	✓
+55 6" Palm. on L.			
+65	6.7	13.9	✓
" " 5' Lt	7.8	12.8	✓
" " 4' Rt Top Bank	5.1	15.5	✓
+85	5.2	15.4	✓
" " 3' Rt Top Bank	3.7	16.9	✓
" " 5' Lt	7.2	13.4	✓
+95	3.3	17.3	✓
60+00	3.5	17.1	✓
" " 3' Lt. edge Bank	3.8	16.8	✓
+50	4.0	16.6	✓
" 5' Lt. edge R. Bank ± 179.0 to	4.5	16.1	✓
+68 Tel Pole 9.2 Rt mclear			
" " " " Guy 3' Lt.			
61+00	4.7	15.9	✓
" " 6' Lt. edge River Bank	4.7	15.9	✓
" " 9' Rt edge ex. paving	5.25	15.36	✓
+50	5.3	15.3	✓
" 5.5 Lt. R. Bank	5.4	15.2	✓
" 5' Rt. ex paving	5.5	15.1	✓
62+00	5.3	15.3	✓
" " 5' Lt. edge R Bank	5.4	15.2	✓
" " 5' Rt. " ex. Paving	5.43	15.18	✓

⟨20.6⟩ ✓

62+50	5.2	15.4 ✓
" " 6.5 Rt ex. paving	5.46	15.15 ✓
+60	5.3	15.3 ✓
" 7' Lt	9.3	11.3 ✓
+69 Tel Pole 4.4 Lt in clear		
+77 Guy Pole on L. 8" Dia Pole		
+80	5.2	15.4 ✓
63	6.8	13.8 ✓
" 2.5 Rt Top River Bank	5.6	15.0 ✓
" 9.5 " edge ex Paving	5.3	15.3 ✓
" 7' Lt	11.7	8.9 ✓
" 14' Lt	16.6	4.6 ✓
63+30	7.2	13.4 ✓
" " 5' Rt Top Bank	5.1	15.5 ✓
" " 10 " edge ex Paving	5.4	15.2 ✓
+99.94 L. Rt	8.39	12.22 ✓
5' Rt Top Bank	5.5	15.1 ✓
11.5 " edge ex Paving	5.5	15.1 ✓
+99.94 4' Lt	11.3	9.3 ✓
" " 7 "	12.3	8.3 ✓
" " 5' Lt. Toe slope	18.0	2.6 ✓
TP 766	⟨19.88⟩	8.39 ⟨12.22⟩ ✓
+75	6.9	13.0 ✓
64+00	6.2	13.7 ✓
" " 1' Rt. Top Bank	5.2	14.7 ✓
" " 9 "	5.1	14.8 ✓

⟨13.88⟩ ✓

64+00 9' Lt	12.2	07.7	✓
+17 Top Bank on ℄	5.1	14.8	✓
+50	5.0	14.9	✓
" " 1' Lt edge of R Bank	5.0	14.9	✓
" " 9' "	11.2	8.7	✓
" " 8.3 Rt edge ex Paving	5.1	14.8	✓
+78 Tel Pole on ℄			
+96 G x Lt Guy Pole 2' Lt in clear			
65+00	4.8	15.1	✓
" " 3' Lt edge of River Bank	5.0	14.9	✓
" " 7' Rt " ex paving	5.0	14.9	✓
+30	4.7	15.2	✓
" " 3' Lt edge R. Bank	4.7	15.2	✓
" " 5.5 Rt edge ex Paving	4.9	15.0	✓
65+56 .94 = 95+93.47 State Hiway	4.71	15.17	✓
" " 5' Rt edge ex paving	4.7	15.2	✓
" " 2' Lt " R. Bank	4.7	15.2	✓

Profile for Production of old Town

Sewer into New Mission Valley Sewer across present Camino Del Rio alignment

BM #9 1636/16 1629/14	6.64	⟨20.37⟩ ✓	⟨13.73⟩	✓
Flow Line ex MH .00		6.96	13.41	✓
Rim		0.46	19.91	✓
0+00 Ground		3.9	16.5	✓
0+13 Top New 12' Gas Main		7.29 (2?)	13.08	✓

⟨20.37⟩

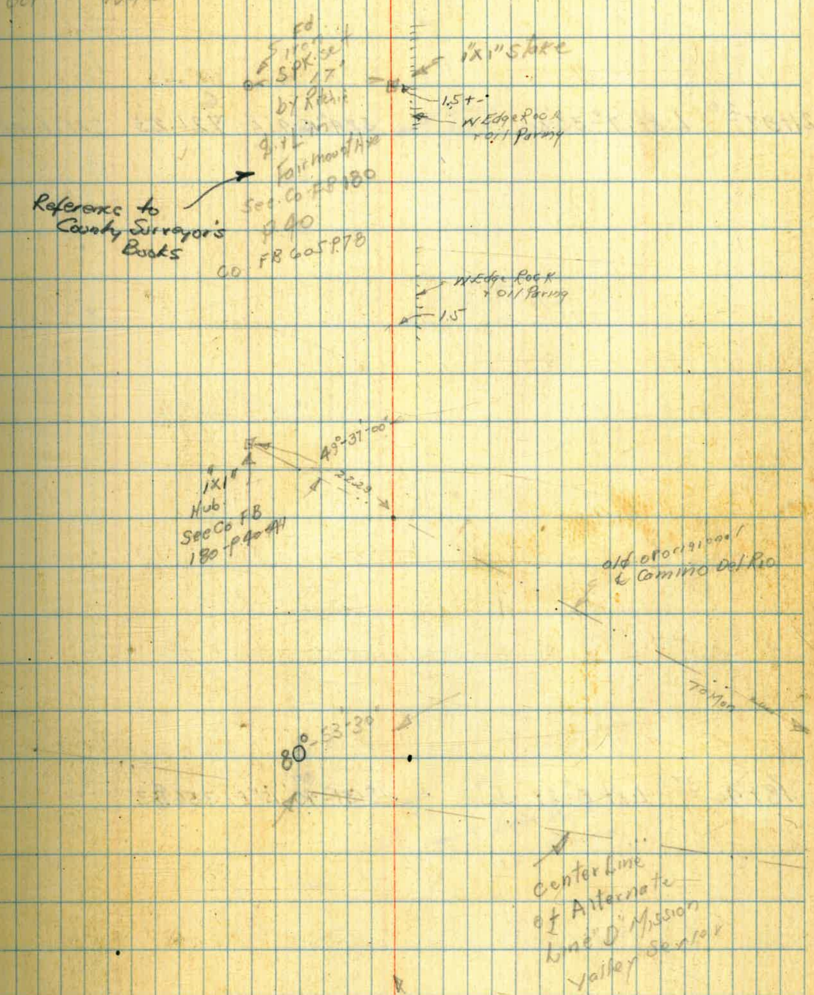
0+38	4.5	15.9	✓
0+40 S Side Cobble Gutter	5.45	14.92	✓
0+43.3 N " " " = Edge ex Paving	5.32	15.05	✓
0+65.7 ℄ ex Paving	5.16	15.21	✓
0+87 N Side ex Paving	5.14	15.23	✓
0+93.11 Connect Mission Valley Sewer = 96+36.48 ℄ Hiway "A" Line Sta	5.24	15.13	✓
Check Stub E.C. State Hiway 95+93.47	5.19	15.18 ✓ 15.17	.01 diff

Alignment Fairmount Ave

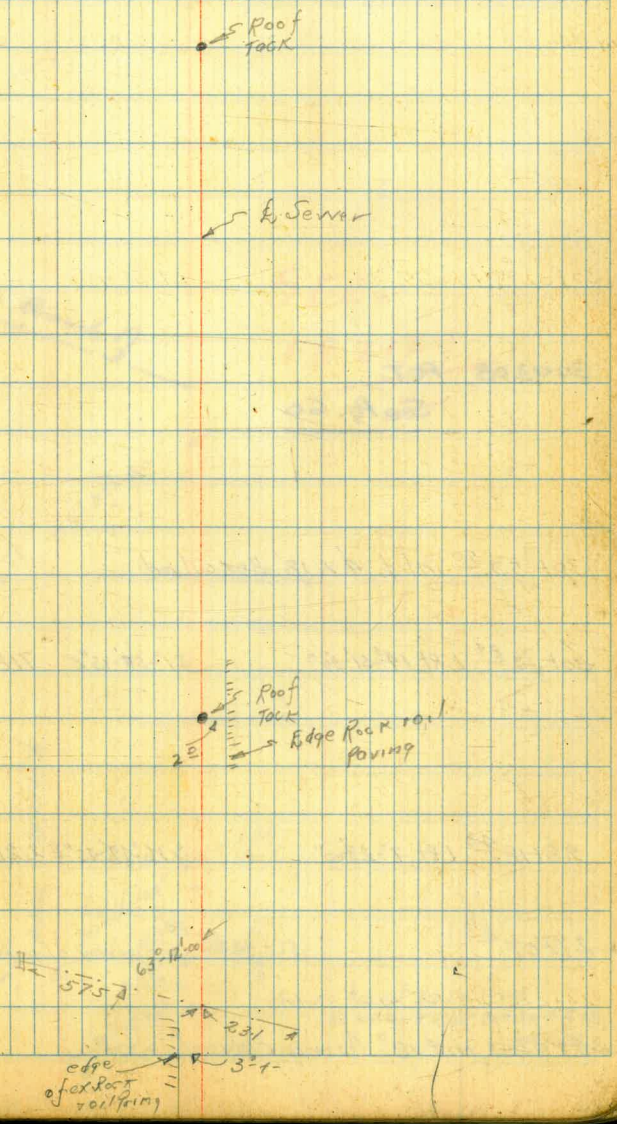
Section Mission Valley Sewer

		Bearing	Dist	Mag Bearing
8+12	L Rt 0°-21'-30	S 40°-~~21'~~-45 E 17'	1028.37	
5+00				
2+02.28	int old ℄ Camino Del Rio ? 3			
		S 40-39'-15 E	812'	
0+00	= 370+10.57 on Alternate Line "D"	See F.B. 1631		Pages 96-98

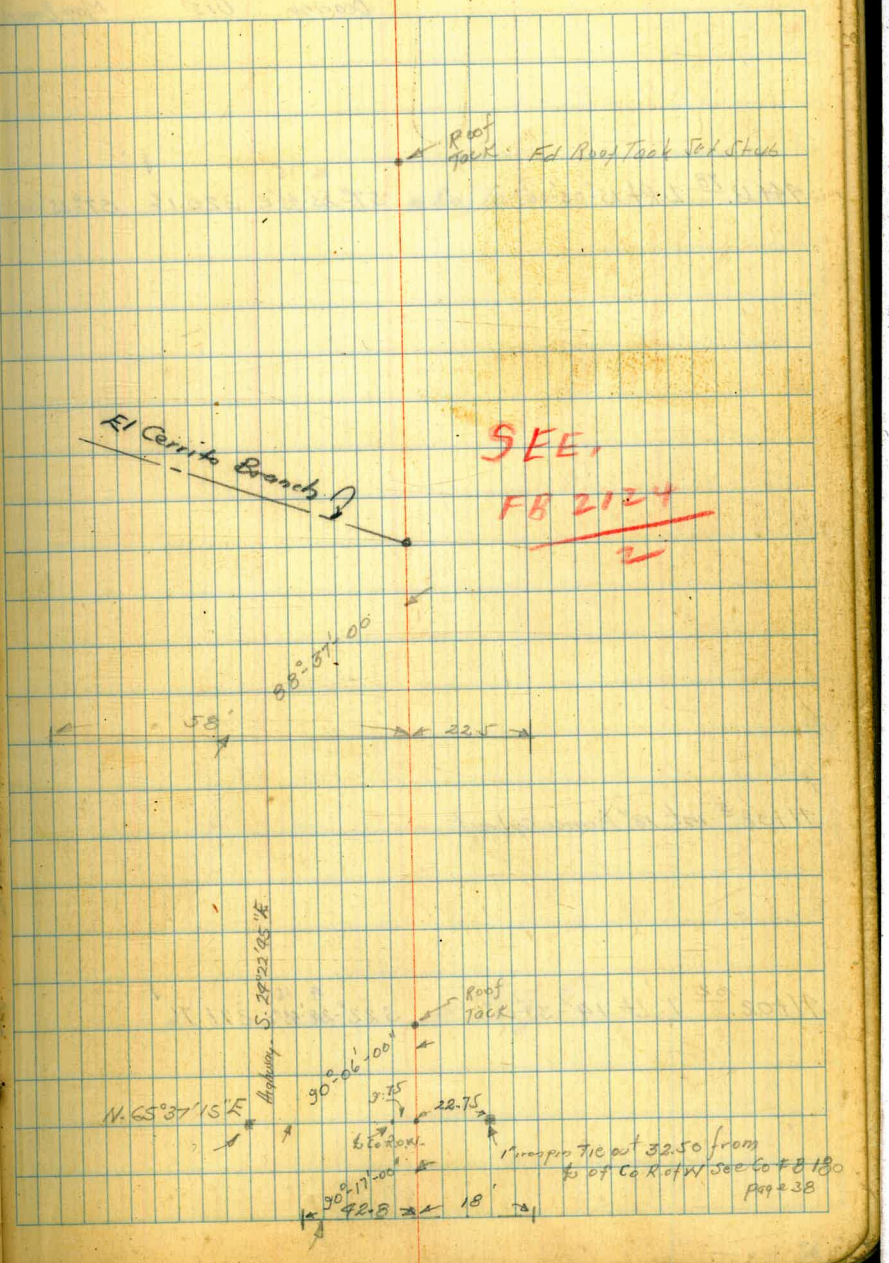
Bliss Notes
Sisson ⊼
Begg chain
Hazard
Sommermyer
Oct 1942



	Bearing	Dist	Mag Bearing
21+97 $\frac{20}{=}$	L Rt. 7°-33'-30"	S 24°-16'-45"E	6 N 21°-23'	S 21°-10'-00"E
18+40 $\frac{37}{=}$	L Rt 8°-27'-30"	S 31°-50'-15"E	35683	
15+36 int 30" Armco culvert				
15+00				



	Bearing	Dist	Mag Bearing
37+58.53 L. Lt 5°-43'-00"	S 7° 40' 5" E	343.49 ✓	
34+93.08 POT. See Pg. 60			
30+59.50 int ℄ 4'x18' Box culvert			
30+39.84 L Rt 19°-51'-00"	S 1°-57'-15" E	718.69 ✓	S 1°-40'-00" E
28+18.43 L Rt 7°-28'-00"	S 16°-48'-45" E	221.41 ✓	S 16°-55'-00"
27+07.23	56+36.39 EC Co. Highway alignment See Co. FB 180 P 38		
24+02.9 int 18" Armco culvert			



	Bearing	Dist	Mag Bearing
44+13.78 L.Pt 15°-03'-00"	S7°-25'-45"E	320.16	S7°-35'-00 E
41+98.5 Int 18" Armco Culvert			
41+02.02 L.Lt 14°-33'-00"	S22°-28'-45"E	311.76	

⊙ Roof Rock

2"x2" R.W.

		Bearing	Dist	Mag Bearing
		21 95		
51+93.58	L Rt 5°-13'-00"	S 23°-12'-15W	358.14	S 23°-20'-00 W
		18 08 95		
49+25.87	L Rt 12°-06'-00	S 17°-59'-15W	267.71	
		S 5° 02' 45" W		
47+33.94	L Rt 13°-19'-00"	~~S 5°-53'-15W~~	191.93	

2"X2" R.W

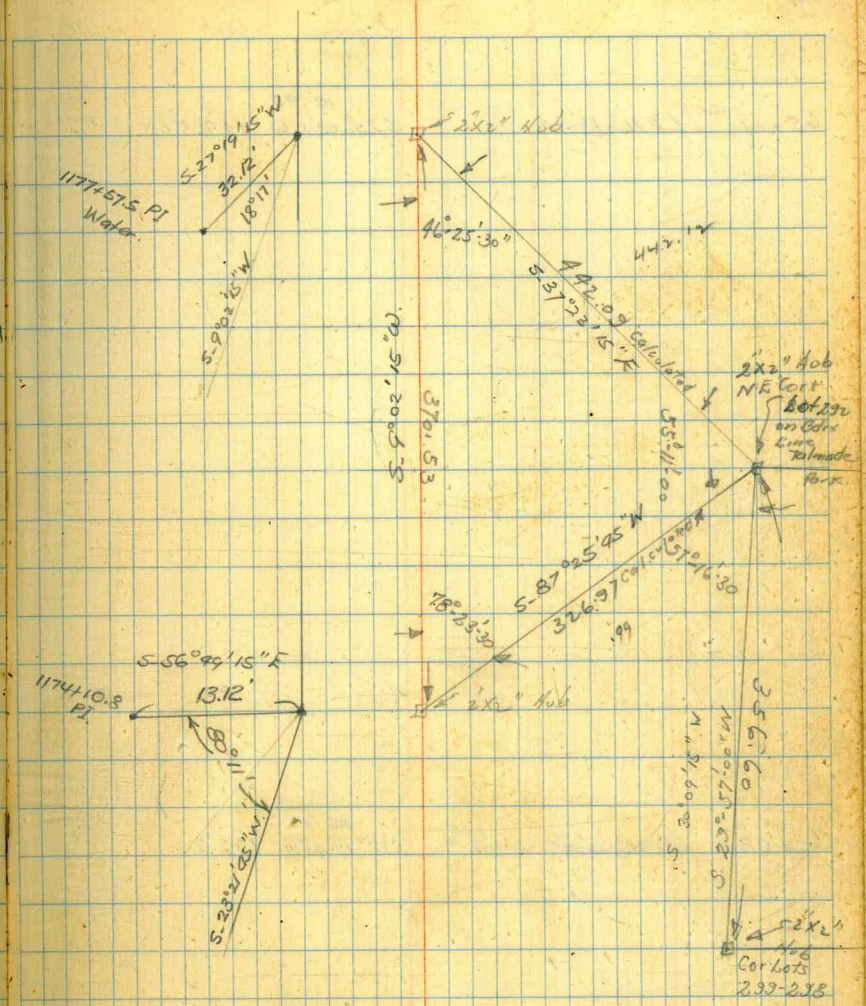
2"X2" R.W. Hub

2"X2" R.W. Hub

Note: See 6093-L for City Boundary

32

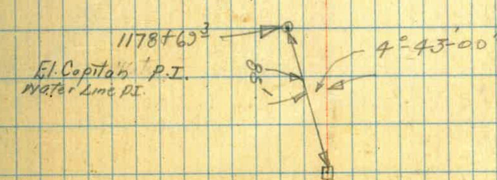
	Bearing	Dist	Mag Bearing
594+22.25 L Δ 15°-12'-00"	S 6°-19'-15 E (9-45)	386.72	
	See 7040 / 59		
557+51.72 Lt Δ 14°-19'-30"	S 8°-52'-45 W (9-15)	370.53	



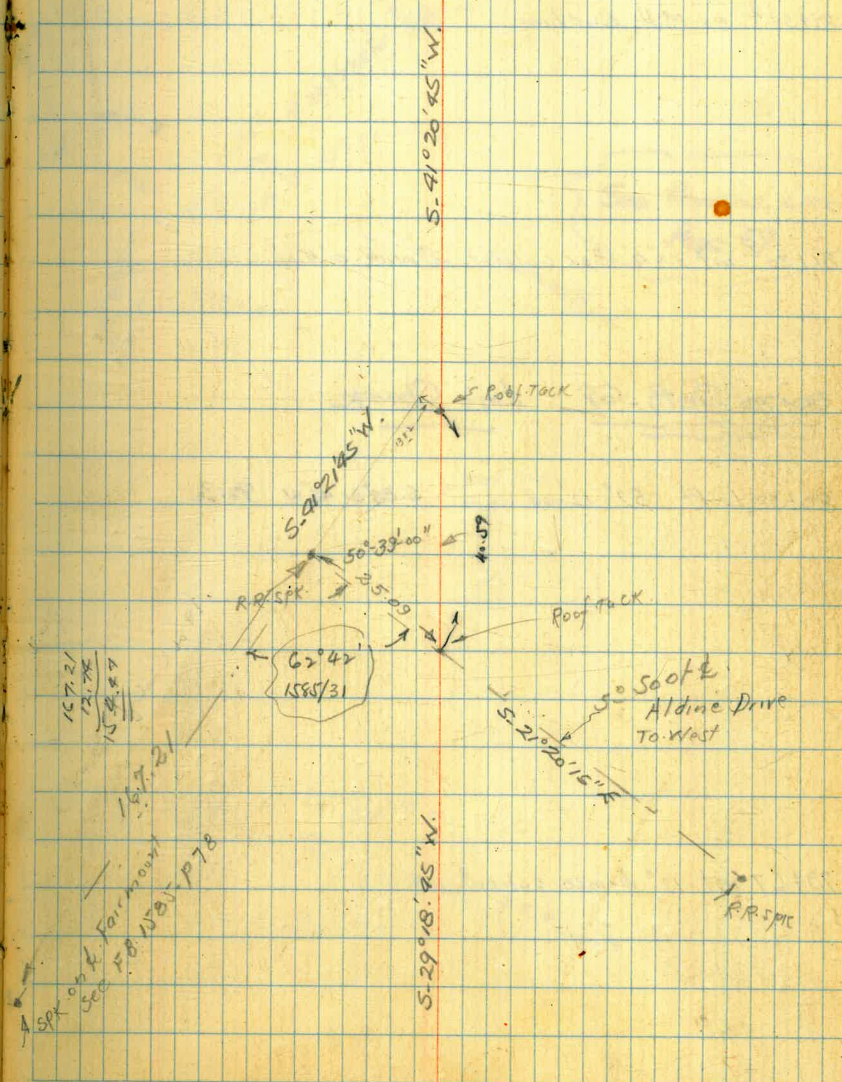
		Bearing	Dist	Mag Bearing
65+01 20	LR 16°-53'-30"	(18 45) S 29°-09'-15 W	144.50	
63+08.97	Lt 18°-35'-00"	(25 1E) S 12°-15'-45 W	192.23	
59+22 25	L.Lt 15°-12'-00"			

Roof Tack in paving

Roofing Tack in paving



		Bearing	Dist	Map Bearing
75+68.¹¹	LΔ+5°-01'-00"	19 45 S36°-10'-15"W	490.59	
66+95 ⁷⁰	LΔ 12°-02'-00	20 45 S-41°-11'-15"W	922.71	S 41°-25'-00"W
66+05 ¹¹	mts ℄ Aldine Drive West of Fairmount			



Plans - 6090 - Sewers.
Drg. 2351 B. Sewers R. of W.

N. 78°27' 15" W

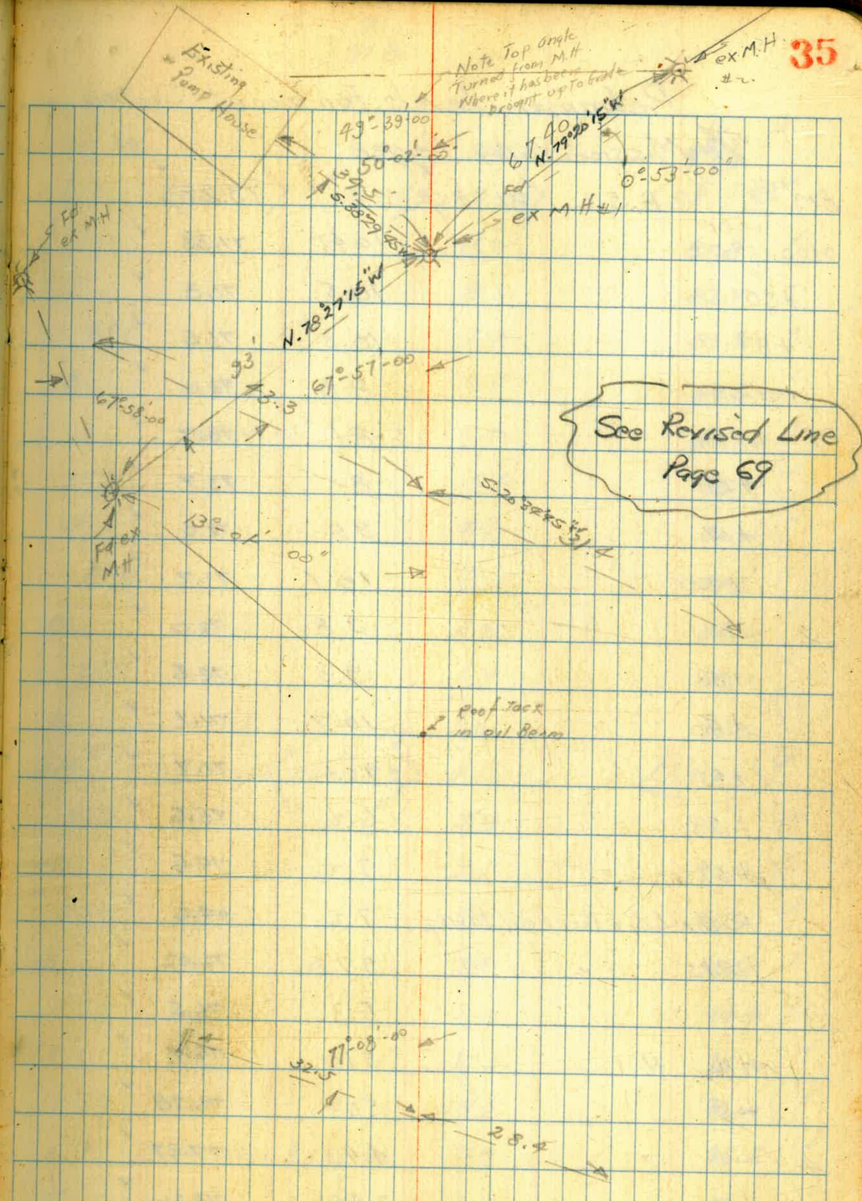
81+51.3 ex M.H. End Line

81+30± int 3'x4' Box culvert 3' wide - 4' High

80+70 See Pg. 69 Line Change

80+59 L Rt 52°-12'-00" S-88°31'45"W 92.30

79+67 int 12" Armco culvert



See Revised Line Page 69

Preliminary Levels. Fairmount Section

Missroon Valley Sewer

BM. #57 on RW	8.52	[81.80]	[73.28]	✓
0+00 2"x2"		10.47	71.33	✓
+50		10.5	71.3	✓
+87		10.3	71.5	✓
+90		8.8	73.0	✓
1		8.1	73.7	✓
+13		8.1	73.7	✓
+17		9.8	72.0	✓
+50		10.1	71.7	✓
2		9.8	72.0	✓
+37		9.3	72.5	✓
+40		10.7	71.1	✓
+45		10.1	71.7	✓
+53		6.2	75.6	✓
+57		7.2	74.6	✓
+59 N Edge Rock Hill Paving		7.2	74.6	✓
+81.5 " " " "		5.78	76.02	✓
3		5.3	76.5	✓
+16 N		5.10	76.7	✓
+50		5.02	76.78	✓
4		4.93	77.37	✓
+50		3.48	78.32	✓
5		2.5	79.3	✓
+50		1.5	80.3	✓
6		0.7	81.1	✓
TP. 10.07		[91.04]	[80.97]	✓
+50		9.2	81.8	✓
7		8.3	82.7	✓
+50		7.4	83.6	✓
8		6.5	84.5	✓
+ on Stake		6.4±	84.6±	✓
+50		5.8	85.2	✓
9		4.8	86.2	✓
+50		3.7	87.3	✓
10		2.8	88.2	✓
+50		1.9	89.1	✓
11		1.0	90.0	✓
BM. ±1 N.40		[100.98]	[89.88]	✓
+50		9.9	91.1	✓
12		9.1	91.9	✓
+50		8.1	92.9	✓
13		7.4	93.6	✓
+50		6.6	94.4	✓
14		5.8	95.2	✓
+50		4.8	96.2	✓
" " 13 Rt edge Bank		5.5	95.5	✓
15		3.8	97.2	✓
" " 11 Rt " "		4.2	96.8	✓
+30 Mt 30" Armco culvert		2.8	98.2	✓
1" 23.1 Rt outlet End of low →		8.07	92.91	✓

		⟨100.98⟩			
15+36 inlet end 30" culvert 57.5 Lt		Flow	5.69	95.29	✓
+50			2.5	98.5	✓
16			1.5	99.5	✓
+50			0.3	100.7	✓
T.P.	10.21	⟨110.89⟩ ✓	0.30	⟨100.68⟩	✓
17			9.1	101.8	✓
+50			8.1	102.8	✓
18			7.5	103.4	✓
+40.37 L. Rt			6.9	104.0	✓
" " 2' Rt edge Rock, oil Paving			7.1	103.8	✓
19			5.8	105.1	✓
" 2' Lt edge Rock + Oil Paving			5.6	105.3	✓
+50			5.1	105.8	✓
" " 5' Lt edge Rock + oil paving			4.8	106.1	✓
" " 10 Rt " Bank			5.4	105.5	✓
BM #2 15± Rt 19+80		30' Penny Spk C+Lt Pole	3.41	107.48	✓
20+00			4.4	106.5	✓
" " 7' Lt edge Paving			4.05	106.84	✓
" " 8 Rt " Bank			4.6	106.3	✓
" " 12 " Bottom "			6.5	104.4	✓
+50			3.8	107.1	✓
" " 7' Lt Paving			3.5	107.4	✓
" " 8' Rt edge Bank			4.0	106.9	✓
21			3.1	107.8	✓
" 5.5 Lt edge Paving			2.8	108.1	✓
" 10' Rt edge Bank			3.5	107.4	✓

110.89 ✓

21+50	1.8	109.1	✓
" " 3.5 Lt edge Paving	1.6	109.3	✓
21+97 20° L Rt 0.2 in paving	0.4	110.5	✓
T.P. 10.74 ⟨121.45⟩ ✓	0.18	⟨110.71⟩	✓
22+50	9.8	111.7	✓
" " 2' Lt edge Paving	9.7	111.8	✓
23	8.9	112.6	✓
" 2' Lt edge Paving	8.8	112.7	✓
+50	8.1	113.4	✓
" " 2' Lt " "	8.0	113.5	✓
24	7.1	114.4	✓
" 1' Lt edge Paving	7.0	114.5	✓
+03.9 int 18" Armco	7.0	114.5	✓
+03.9	10.30	111.15	✓
	11.44	110.01	✓
+50	5.9	115.6	✓
" 1' Lt Paving	5.9	115.6	✓
25	4.8	116.7	✓
" 1' Lt Paving	4.8	116.7	✓
+50 in edge Paving	3.7	117.8	✓
" 12' Rt edge Bank	3.9	117.6	✓
26 in edge of Paving	2.7	118.8	✓
" 13' Rt edge of Bank	3.0	118.5	✓
" 18 " Bottom " "	8.4	113.1	✓
+50 in edge of Paving	1.9	119.6	✓

	⟨121.45⟩		
27+00		0.9	120.6
" " 0.5 Rt edge of Paving		1.0	120.5
T.P	12.91 ⟨133.94⟩	0.92	⟨121.03⟩
+50		12.4	121.5
" " 2' Rt edge paving		12.5	121.4
28	"	11.1	122.8
" 3.5 Rt edge Paving		11.35	122.59
18.93 L. Rt		10.4	123.5
" " 4' Rt		10.8	123.1
+50		9.7	124.2
" " 1' Rt edge Paving		9.9	124.0
+72 int edge Paving		9.1	124.8
29		8.3	125.6
" " 3.5 Lt edge Paving		8.1	125.8
+50		6.9	127.0
" 4' Lt edge of Paving		6.8	127.1
30		5.5	128.4
" 1 Lt edge Paving		5.9	128.5
+15 int edge of "		5.1	128.8
30+39 L. Rt		4.4	129.5
" " 3' Rt		4.6	129.3
+59.5 int ℄ 4X8 culvert		4.3	129.6
" " 22.5 Rt Flow Line		10.55	123.39
" " 58 Lt " "		8.76	125.18
BM #4 Hi chisel spot in culvert wing wall 25' Rt. 30+85	11.15 ⟨140.14⟩	4.95	⟨128.99⟩

	⟨140.14⟩		
31+00		10.0	130.1
" " 4.5 Lt edge Paving		9.8	130.3
+50		8.5	131.6
" " 7.5 Lt edge Paving		8.9	131.2
32		7.7	132.4
" 9' Lt Edge of paving		8.0	132.1
+50		6.6	133.5
" " Lt edge of paving		6.6	133.5
33		5.7	134.4
" 7.5 Lt paving		5.3	134.8
+50		4.2	135.9
34		2.7	137.4 Concrete
" 5.5 Lt paving		2.5	137.6 ✓ 20 wtr
+50		1.4	138.7
T.P 12.17	⟨152.10⟩	0.21	⟨139.93⟩
35		11.6	140.5
" 6' Lt Edge Paving		11.7	140.4
+50		10.2	141.9
36		8.7	143.4
" 4' Lt Paving		8.7	143.4
+58		7.7	144.4
37		6.5	145.6
" 4' Lt Paving		6.4	145.7
" 12' " Edge Bank		6.5	145.6
" 12' " Bottom		13.7	138.4

		⟨152.70⟩			
37+58^53 Lt			5.4	146.7	✓
38			4.3	147.8	✓
" 3.5 Lt Paving			4.2	147.9	✓
+50			2.9	149.2	✓
39			1.0	151.1	✓
" 1.5 Lt Paving			0.9	151.2	✓
" 15' Rt Bank			1.5	150.6	✓
" 25 " Bottom Bank			10.2	141.9	✓
T.P.	12.95	⟨164.81⟩	0.24	⟨151.86⟩	✓
+50			11.8	153.0	✓
" 3.5 Lt Paving			11.7	153.1	✓
40			10.1	154.7	✓
" 7.5 Lt Paving			10.0	154.8	✓
+50			8.1	156.7	✓
41			6.2	158.6	✓
+02^02 Lt on 2"x2" Hub			6.18	158.63	✓
" " 26' Lt Paving			6.8	158.0	✓
+50			4.9	159.9	✓
+98^5 1st 18" Armco culvert			3.7	161.1	✓
" Lt flow			6.45	158.36	✓
" Rt "			8.96	155.85	✓
42			3.7	161.1	✓
" 13 Lt Paving			4.0	160.8	✓
" 16 Rt edge Bank			3.9	160.9	✓
Set BM #5 Hi spot culvert headwall			4.27	160.54	✓

		⟨164.81⟩			
+50			2.6	162.2	✓
" 12' Rt edge Bank			3.2	161.6	✓
" 18 " Bottom "			8.2	156.6	✓
43			1.5	163.3	✓
" 9' Lt Paving			1.2	163.6	✓
" 11' Rt edge Bank			1.5	163.3	✓
" 18 " Bottom "			7.3	157.5	✓
+50			0.0	164.8	✓
T.P.	12.70	⟨177.29⟩	0.22	⟨164.59⟩	✓
44			10.9	166.9	✓
" 2' Lt Paving			10.2	167.1	✓
" 18 R edge Bank			11.8	165.5	✓
+13^28 L Rt side edge of Paving			9.8	167.5	✓
+50			8.7	168.6	✓
" " 5' Lt Paving			8.4	168.9	✓
" " 17' Rt edge Bank			9.2	168.1	✓
45			6.7	170.6	✓
" 8' Lt edge Paving			6.2	171.1	✓
" 17' Rt edge of Bank			6.7	170.6	✓
+50			4.9	172.4	✓
" 11' Lt Paving			4.3	173.0	✓
46			3.0	174.3	✓
" 11.5 Lt Paving			2.4	174.9	✓
+50			1.4	175.9	✓
" 8' Lt Paving			0.8	176.5	✓

	177.29			
TP	12.02	188.80	0.51	176.78
47			10.8	178.0
" 45 Lt Paving			10.6	178.2
" 19' Rt			11.4	177.4
+33 94 L Rt of 2x2 Hub		on Edge of Paving	9.72	179.08
+74 29 Int 3'x7' Box Culvert			8.5	180.3
" " 4' Lt Paving			8.1	180.7
" " 26.5 Rt Flow			20.12	168.68
" " 57.1 Lt "		Track Culvert		
" " flow 26.5 from W End			19.70	169.10
Set BM #6 Square cut in culvert Wing				
48			7.7	181.1
" 3' Lt Edge of paving			7.3	181.5
" 16' Rt " " Bank			8.7	180.1
" 25" Bottom "			18.1	170.7
+50			5.6	183.2
" 4' Lt edge of Paving			5.3	183.5
" 12' Rt " " Bank			6.0	182.8
" 25 " Bottom "			18.0	170.8
49			3.5	185.3
" 3' Lt edge of Paving			3.4	185.4
" 12 Rt " " Bank			3.6	185.2
" 24 " Bottom "			17.9	170.9
49+25 87 L Rt on 1x2" Rvt		Edge of Paving	2.37	186.93
" " 14' Rt Depot Bank			2.5	186.3

	188.80			
+50			1.7	187.1
" 2.0 Lt Paving			1.5	187.3
50			0.3	188.5
" 6' Lt edge Paving			0.0	188.8
" 11 Rt " Bank			0.5	188.3
" 20 " Bottom "			11.1	177.7
TP	12.11	200.80	0.11	188.69
+50			10.8	190.9
" " 6' Lt Paving			10.1	190.7
" " 11' Rt edge Bank			10.8	190.0
" " 19 " Bottom "			20.6	180.2
51			8.2	192.6
" 6' Lt edge Paving			7.9	192.9
" 12 Rt " Bank			8.5	192.3
+50			6.5	194.3
" " 4' Lt			6.2	194.6
" " 13' Rt			7.2	193.6
" " 30 " Bottom Bank			18.1	182.7
+93 58 L Rt on 2"x2" Hub			5.24	195.56
" " 1.7			5.1	195.7
" " 15' Rt Edge Bank			5.5	195.3
52			5.1	195.7
" 2' Lt Paving			4.9	195.9
+50			3.6	197.2
" 5' Lt			3.2	197.6
" 11 Rt			3.2	197.6

⟨200.80⟩ ✓

52+50	26' Rt Bottom Bank	17.5	183.3	✓
53		2.0	198.8	✓
"	7 Lt Paving	1.9	198.9	✓
"	9' Rt Edge Bank	2.2	198.6	✓
" "	27 " Bottom "	13.2	187.6	✓
+32⁵	Int 18" Armco Culvert	1.0	199.8	✓
" "	41.3 Lt flow Line	3.38	197.42	✗
" "	31.2 Rt " "	9.53	191.27	✗
+50		0.4	200.4	✗
"	" 7.5 Lt	0.4	200.4	✓
"	7.5 Rt edge of Bank	+0.2	201.0	✓
"	" 20' Rt Bottom "	11.9	188.9	✓
T.P	12.67 ⟨213.10⟩	0.37	⟨200.43⟩	✓
Set BM #7	41 ± Lt □ in Top Culvert Headwall 52+32⁵	12.85	200.25	✓
54		11.0	202.1	✓
"	10' Lt Paving	11.0	202.1	✓
"	7' Rt Edge of Bank	10.7	202.4	✓
"	30 " Bottom "	20.0	193.1	✓
+50		9.3	203.8	✓
"	" 12.5 Lt Paving	9.3	203.8	✓
"	" 12' Rt Edge Bank	9.4	203.7	✓
55		7.8	205.3	✓
"	14' Lt edge of Paving	8.1	205.0	✓
+51⁷²	L Lt on 2"x2" Hub	6.39	206.71	✓
"	14' Rt ¢ El Capitan Pipeline			
	19' Lt Paving	7.0	206.1	✓

⟨213.10⟩

56	5.6		207.5	✓
" 14' Lt Edge of Paving	5.9		207.2	✓
+50	4.7		208.4	✓
" " 10' Lt Paving	4.6		208.5	✓
" 11' Rt Edge Bank	4.4		208.7	✓
57	3.2		209.9	✓
" 7' Lt Paving	3.0		210.1	✓
" 13' Rt Edge of Bank	3.2		209.9	✓
+50	1.2		211.9	✓
" 7' Lt Edge of Paving	1.4		211.7	✓
" 16' Rt Edge of Bank	1.3		211.8	✓
T.P. 12.00 ⟨224.91⟩	0.19		⟨212.91⟩	✗
58	11.6		213.3	✓
" " 9.5 Lt Paving	11.8	213.1	BM 91	✓
" " 15' Rt Edge of Bank	10.6	214.3		✓
+50	10.0		214.9	✓
" " 15' Lt Paving	10.2		214.7	✓
+92	8.7		216.2	✓
" " 11.5 Lt ¢ El Capitan Pipeline				
59	8.5		216.4	✓
" " 21.5 Edge of	9.1		215.8	✓
" " 13' Rt Edge of Bank	7.5		217.4	✓
59+19 Int 18" Armco culvert	8.0		216.9	✓
62.8 Lt Flow Line	8.53		216.38	✓
22.7 Rt flow Line	17.70		207.21	✓
Set BM #8 □ in Culvert Headwall 63' ± Rt 59+19	9.12		215.79	✓

⟨224.91⟩

59+22 25 Lt on 2"x2" Hub			7.86	217.05	✓
" " 25' Lt Paving			8.7	216.2	✓
" 10' Rt Edge of Bank			7.7	217.2	✓
+50			7.5	217.4	✓
60			6.5	218.4	✓
" 21' Lt paving			7.0	217.9	✓
" 19' Rt Edge of Bank			5.5	219.4	✓
+50			5.4	219.5	✓
61			4.2	220.7	✓
" 17' Lt Paving			4.5	220.4	✓
" 18' Rt Edge of Bank			3.7	221.2	✓
+50			3.4	221.5	✓
" " 15' Rt Edge of Bank			3.2	221.7	✓
" " 14 Lt " " Paving			3.2	221.7	✓
62			2.4	222.5	✓
" 13' Lt Paving			1.9	223.0	✓
" 8' Rt Edge of Bank			2.3	222.6	✓
" 20 " Bottom			15.3	209.6	✓
+50			0.8	224.1	✓
" 8' Lt Edge of Paving			0.3	224.6	✓
" 18 Rt " " Bank			0.2	224.7	✓
TP	12.79	⟨237.60⟩ +	0.10	⟨224.81⟩	×
63			11.9	225.7	✓
" 3' Lt edge of Paving			11.7	225.9	✓
" 19 Rt " " Bank			12.3	225.3	✓

⟨237.60⟩

63+08 27' Lt (Get Paving Here)			11.60	226.0	✓
+50			10.5	227.1	✓
64			10.2	227.4	✓
" 8' Paving			9.0	228.6	✓
" 7.3 Rt edge of Bank			9.1	228.5	? ✓
+50			8.3	229.3	✓
" " 6' Lt Paving			7.7	229.9	✓
" 11' Rt Bank			8.9	228.7	✓
+75			7.5	230.1	✓
" " 10' Rt edge of Bank			7.6	230.0	✓
+92 12' Lt Paving			6.7	230.9	✓
65+01, 2° L Rt			6.4	231.2	✓
" " 4.5 Rt edge of Paving			6.8	230.8	✓
" " 14 " " " Wing wall			7.6	230.0	✓
" " " Bottom of Ditch			20.0	217.6	✓
Int 42" Armco culvert			6.1	231.5	✓
" " Rt flow line			19.65	217.95	✓
" " Lt " "			14.09	223.51	✓
+50			4.7	232.9	✓
66			3.4	234.2	✓
+95 7° L Rt in edge ex. paving			2.51	235.09	✓
Check BM	11.39	⟨247.39⟩ +	1.60	⟨236.00⟩	✓ 40'± Rt 66+65 S.P. in culvert headwall
+65			12.0	235.4	✓
" 1.5 Lt Paving			12.0	235.4	✓
67			11.1	236.3	✓
" 3' Lt. ex paving			10.9	236.5	✓

	⟨247.39⟩			
67+00	18' Rt edge Bank	12.0	235.9	✓
+50		8.8	238.6	✓
" "	4' Lt ex Paving	8.8	238.6	✓
68		6.7	240.7	✓
"	4' Lt ex. Paving	6.7	240.7	✓
"	14' Rt Edge Bank	7.0	240.4	✓
+50		4.5	242.9	✓
+57 28	Int 18" Armco	4.2	243.2	✓
" "	17.5 Rt Flow	9.55	237.88	✓
" "	38.5 Lt "	7.68	239.71	✓
69		2.5	244.9	✓
"	3.5 Lt ex. paving	2.5	244.9	✓
"	16' Rt edge Bank	2.1	245.3	✓
+50		0.7	246.7	✓
TP	12.37 ⟨259.54⟩ ✓	0.22	⟨247.17⟩ ✓	
70		10.5	249.0	✓
"	4' Lt ex Paving	10.3	249.2	✓
"	17' Rt edge Bank	10.1	249.9	✓
+50		8.2	251.3	✓
71		6.0	253.5	✓
"	4' Lt ex. paving	5.7	253.6	✓
"	18' Rt edge of Bank	6.2	253.3	✓
+50		3.6	255.9	✓
72+00		1.4	258.1	✓
"	3.5 Lt ex. Paving	1.2	258.3	✓
"	16' Rt edge Fill Bank	2.0	257.5	✓

	⟨259.54⟩			
TP	12.79 ⟨272.13 38⟩ ✓	0.20	⟨259.34⟩	✓
72+50		12.0	260.1	✓
73		10.0	262.1	✓
"	3' Lt	9.9	262.2	✓
"	14' Rt edge Fill Bank	10.1	262.0	✓
"	21 " Toe fill Bank	13.7	252.8	✓
+50		7.6	269.5	✓
74		5.1	267.0	✓
"	2.5 Lt ex Paving	5.0	267.1	✓
"	16' Rt	5.3	266.8	✓
+50		3.1	269.0	✓
75		0.9	271.2	✓
"	3' Lt ex Paving	0.7	271.4	✓
"	15 Rt edge fill Bank	1.9	270.2 ✓	⟨271.99⟩
TP	13.07 ⟨285.06⟩ ✓	0.14	~~272.79~~	
75+0		7.2	277.9	✓
+57.9	Int 18' Armco	10.8	279.3	✓
" "	23.3 Rt Flow Line	17.80	267.26	✓
33' Lt	flow Line	14.10	270.96	✓
Set BM		11.19	273.87	✓
+68.41	L Lt	10.2	279.9	✓
" "	3 Lt ex. Paving	10.1	275.0	✓
" "	12. Rt edge fill Bank	9.7	275.9	✓
76		8.5	276.6	✓
"	2.5 Lt ex Paving	8.5	276.6	✓
"	13' Rt edge fill Bank	8.3	276.8	✓

Chiseled square Top Culvert Headwall 384-41 75+58

		$\langle$285.06$\rangle$			
76+50			6.2	278.9	✓
77			3.8	281.3	✓
" 0.5 Lt ex paving			3.8	281.3	✓
" 15' Rt edge fill Bank			4.3	280.8	✓
" 35 " Toe " "			17.1	268.0	✓
+50			1.6	283.5	✓
TP	12.70	$\langle$297.58$\rangle$	0.18	~~285.08~~	[284.88]
78			11.7	285.9	✓
" 1.5 Lt ex Paving			11.7	285.9	✓
" 15 Rt edge fill Bank			11.2	286.4	✓
+50			9.3	288.3	✓
79			6.5	291.1	✓
" 2.5 Lt			6.3	291.3	✓
" 15 Rt edge fill Bank			7.2	290.4	✓
" 36 Rt Toe fill			20.9	276.7	✓
+50			3.8	293.8	✓
+67 1st 12" Armco culvert			2.9	294.7	✓
" " 32.5 Lt flow			4.31	293.27	✓
" " 28.4 Rt "			14.25	283.33	✓
Set BM			2.45	295.~~30~~ 13	☐ in Top culvert Headwall 3.3+- 79+66
80			1.1	296.5	✓
" 2.5 Lt edge ex paving			1.0	296.6	✓
" 13' Rt " Fill Bank			1.0	296.6	✓
" 37 " Toe " "			16.8	280.8	✓
TP	8.32	$\langle$305.63$\rangle$	0.27	$\langle$297.~~34~~ 31$\rangle$	

See Pg 35 +58

	$\langle$305.63$\rangle$			
+50		6.3	299.3	✓
+67 L Lt		5.92	299.71	✓
" " 3' Lt ex Paving		5.8	299.8	✓
81		6.0	299.6	✓
" 6' Rt edge fill Bank		5.7	299.9	✓
+28		7.5	298.1	✓
" " 8' Rt edge fill Bank		8.1	297.5	✓
+30 1st 3x4' Box culvert (4 High 3' Wide)		7.6	298.0	✓
" " 31.4 Rt Top Slab / flow Line		23.1 / 27.7	282.5 / 277.9	✓
" " 43.3 Lt Top slab / " "		18.2 / 22.8	287.4 / 282.8	✓
+51.3 ex M H End Line Grd (M H #1 See Notes Below)		6.8	298.8	✓
" " Rim		11.95	293.68	✓
" " flow Line		15.75	~~290.08~~ 289.88	✓
			290.40 Record	
			See FB 1248 P 72	

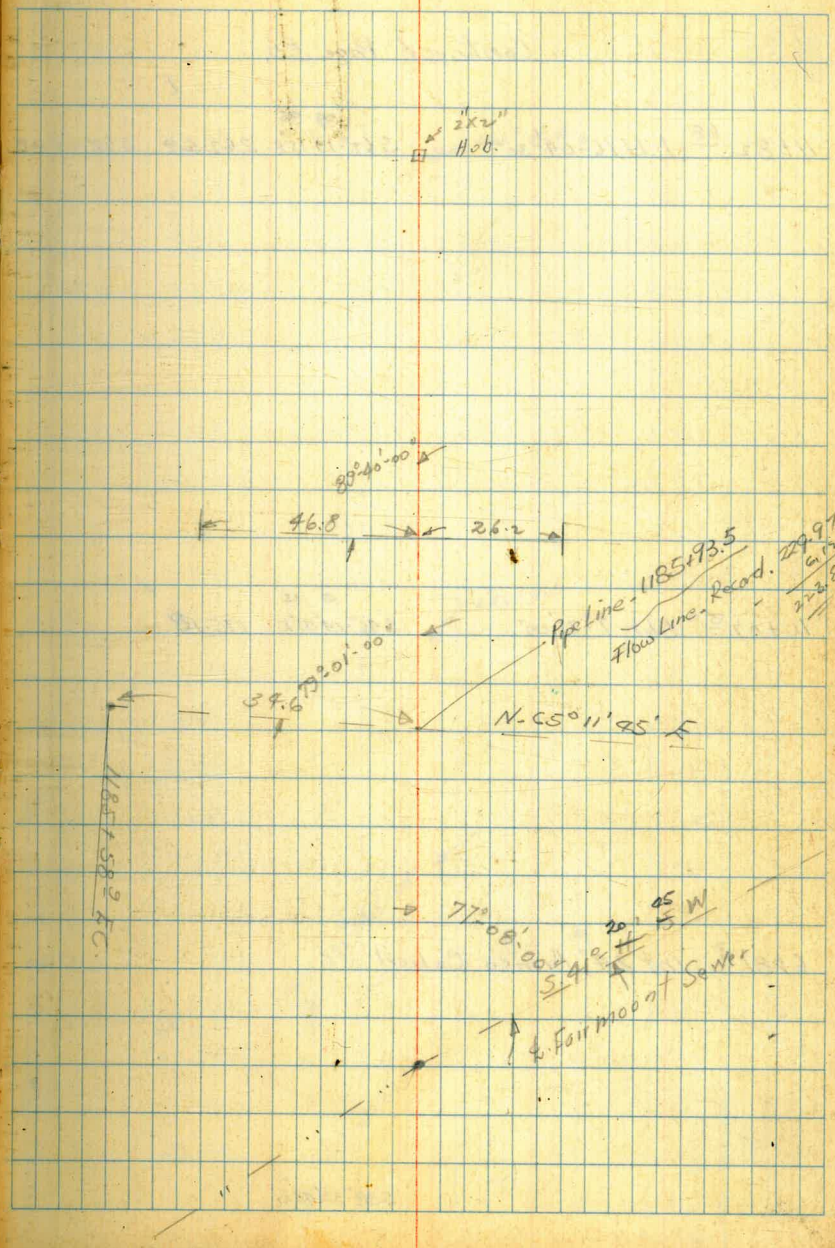
See Revision on Pg. 71. Sta. 80+70 to 82+22.8

Dec 9, 194-				
BM ~~465~~ 430	[304.01]		299.71	80+67 on L; see above
Rim ex M H #2	This M H Located after first notes were taken	6.20	297.81	✓
Flow Line		14.00	290.01	✓
Rim M H #1	Raised since first Notes were taken	5.05	298.96	✓

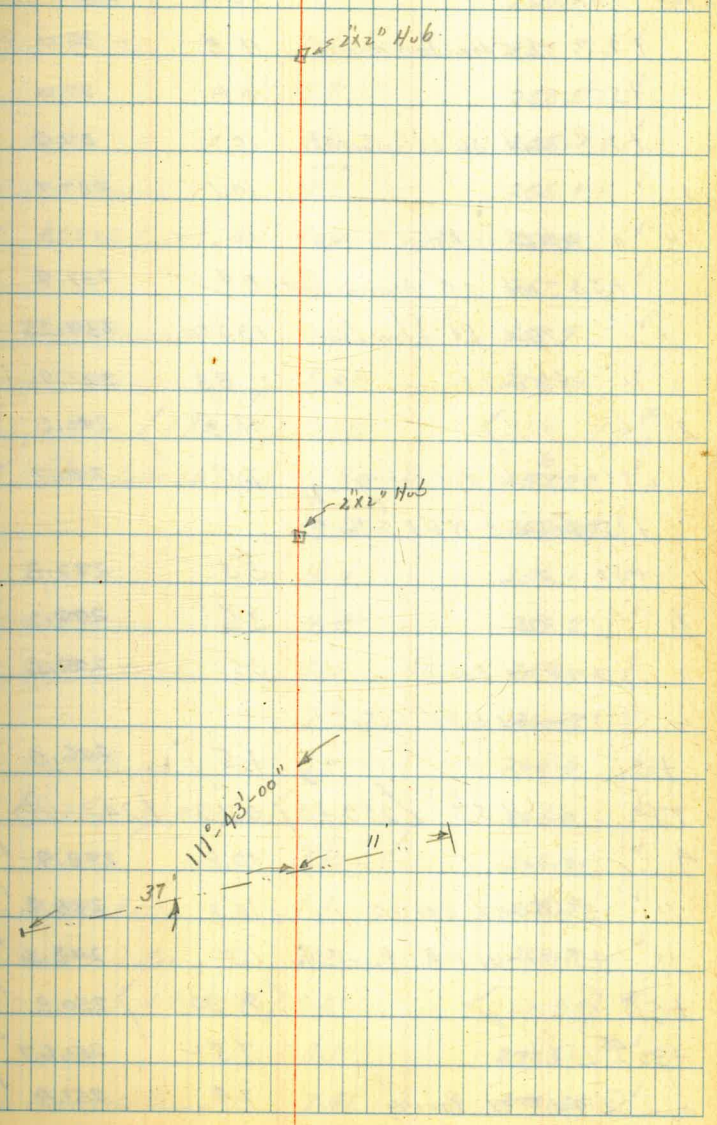
11/16/42

Alignment Aldine Drive

Sewer	Bearing	Dist	Mag B.
4+90.95 L. Lt 2°-43'-00"	S 38°-33'-45" E	517.05	
1+55 int 18" Armco Culvert			
~~0+36~~ 6 Intersect 36" El Capitan Pipe Line = 1185+93.5 0+22.61	El Capitan Stationing See Mr Pyles Office for True Grade Elev of this Pipe		
{See Water Dept's. Books. 186. A.} & Also - 193 Alignment of 36" Water Main. Plan. File No 809. Sheets 39 & 40			
	S. 35°-47'-15" E		
66+45 T° Fairmount Line = 0+00 Aldine Drive	S 35°-56'-45" E	490.95	S 35°-40'-00" E



	Bearing	Dist	Mag. Bearing
Continued Page 50.			
11+82.68 Lt 16°-04'-30"	S62°-19'-15"E	262.69	S62°-09'-05"E
10+07.50 Lt 7°-35'-00"	S46°-14'-45"E	175.18	
6+81.3 Int 24" Armco Culvert			
	S38°-39'-45"E		



Profile Levels Aldine Drive Sewer

BM Ridge AT	11.75	(247.75)	(236.00) ✓
66+45 Z° = 0+00	12.6	235.2 ✓	
+23 E. Edge Four mount	11.8	36.0 ✓	
+50	10.8	37.0 ✓	
+52.6 int 36" EI Capitan Water Line	10.2	37.6 ✓	
1	10.1	237.7 ✓	
" " 10' Lt ex Aldine Paving	10.	≈37.8 ✓	
+55 int 18" Armco culvert	8.4	239.9 ✓	
" " 26.2 Rt flow Line	13.50	238.25 ✓	
" " 46.8 Lt. " "	15.83	237.92 ✓	
2	7.3	240.5 ✓	
" 2.5 Lt ex Mold Roll Paving	7.1	240.7 ✓	
+15 Begin 3' W.P.A. Rock Gutter Rock 45 Lt			
+50	5.5	242.3 ✓	
3	3.6	244.2 ✓	
" 2.4 Lt ex Paving	3.5	244.3 ✓	
" 4.3 Rt ex W.P.A. Gutter			
+50	1.5	246.3 ✓	
T.P. 11.57 (259.19)	0.13	(247.62) ✓	
4	10.8	248.4 ✓	
" 2' Lt ex Paving	10.8	248.4 ✓	
" 4.5 " W.P.A. Rock Gutter	11.0	248.2 ✓	
+50	8.9	250.3 ✓	
+90 45 L. Lt	7.52	251.67 ✓	
" " 2.4 Lt ex. Paving	7.4	251.8 ✓	
" " 3.5 Rt W.P.A. Gutter	7.8	251.9 ✓	

(259.19) ✓

5	7.1	252.1 ✓	
" 2.4 Lt ex Paving	7.1	252.1 ✓	
" 3.5 Rt ex Gutter	7.1	252.1 ✓	
+50	5.7	253.5 ✓	
6	4.1	255.1 ✓	
" 1.3 Lt ex Paving	4.1	255.1 ✓	
" 4.6 Rt W.P.A Rock Gutter	4.3	254.9 ✓	
+50	2.1	257.1 ✓	
+81.3 int 24" Armco culvert	0.8	258.9 ✓	
" 37' Lt Flow Line	5.00	259.19 ✓	
TP. 10.93 (270.04)	0.98	(259.11) ✓	
" 11' Rt flow Line 24" culvert	13.80	256.24 ✓	
Set BM.	10.75	259.29 ✓	
7	10.9	259.1 ✓	
" 1' Rt edge ex Paving	10.8	259.2 ✓	
" 4.5 Lt W.P.A. Gutter	11.0	259.0 ✓	
+50	9.3	260.7 ✓	
8 on Edge Paving	6.7	263.3 ✓	
" 4.5 Rt edge W.P.A Gutter	7.0	263.0 ✓	
+50	3.8	266.2 ✓	
9 on Edge ex Mold Roll	1.1	268.9 ✓	
" 4.3 Rt W.P.A. Gutter ✓	1.3	268.7 ✓	
T.P. 13.12 (282.96)	0.20	(269.84) ✓	
+50	11.1	271.9 ✓	
10+07.50 L. Lt on Edge Paving	7.41	275.55 ✓	
" 4.5 Rt W.P.A Gutter	7.4	275.6 ✓	

	282.96		
+50	9.1	278.9	✓
" 11 3.5 Rt ex Paving	9.2	278.8	✓
" " 7.5 " ex Gutter	4.4	278.6	✓
11+00	0.6	282.9	✓
" 5 Lt Rt edge Paving	0.7	282.3	✓
" 8.3 Gutter W.P.A.	0.7	282.3	✓
TP 12 75 (295.45)	0.26	(282.70)	✓
+50	9.1	286.9	✓
" 3' Rt ex Paving	9.2	286.3	✓
+76. int edge Paving	7.1	288.9	✓
+82.68 L Lt on 2x2" Hub	6.86	288.59	✓
" 1' Lt edge ex Paving	6.7	288.8	✓
" 2' Rt " W.P.A Gutter	7.0	288.5	✓
12+00 int edge Paving	5.3	290.2	✓
" " 4.5 Rt W.P.A Rock Gutter	5.6	289.9	✓
+50	1.6	293.9	✓
" 3' Rt ex Paving	1.6	293.9	✓
TP 12.85 (307.86)	0.44	(295.01)	✓
13	11.1	296.8	✓
" 1' Rt edge Ex Paving	11.1	296.8	✓
" 4.5 Rt edge W.P.A Culvert	11.3	296.6	✓
+50	9.0	298.9	✓
" 3' Lt edge ex. Par	8.8	299.1	✓
14 approx ctr W.P.A Gutter	5.7	302.2	✓
" 3.5 Lt ex Paving	5.4	302.5	✓

	307.86		
14+45.37 Lt	1.89	305.97	✓
1' Rt ex Paving	2.0	305.9	✓
3.5 Rt approx ctr W.P.A Gutter	2.5	305.4	✓
TP 12 91 (320.59)	0.18	(307.68)	✓
15 L Edge W.P.A Gutter	10.2	310.9	✓
5.5 Lt edge of ex Paving	10.1	310.5	✓
+39 edge E Edge W.P.A Gutter	7.2	313.9	✓
+50	6.2	314.9	✓
" 2' Rt E Edge Rock Gutter	6.2	314.9	✓
16 edge ex Paving	1.1	319.5	✓
" 4.5 Rt Rock Gutter	1.4	319.2	✓
TP 12.87 (333.25)	0.21	(320.38)	✓
+47.78 L Lt	8.73	324.52	✓
" " 2' Lt ex Paving	8.6	324.7	✓
3.6 Rt edge Rock Gutter	8.8	324.5	✓
+52 int edge ex Paving	8.1	325.2	✓
17+00	4.0	329.3	✓
" " 7' Rt edge Paving	4.0	329.3	✓
+35	2.9	330.9	✓
+50	3.2	330.1	✓
18	4.9	328.9	✓
" " 9.4 Lt Gutter	5.45	327.80	✓
" " " " Top Cb	4.43	328.82	✓
+20 int	4.9	328.9	✓
" " 17.3 Lt Flow	17.52	315.73	✓

(333.25) ↑ ✓

18+20	21.7 RT flow		15.79	317.86 ✓
18+35 47	Pins ex M.H End Line		5.94	327.31 ✓
" "	Flow Line		10.44	322.81 ✓
TP-	10:37	(341.05)	2.57	(330.68) ✓
				+ 5.58 P
Check BM			3.13	337.92 Monroe + 47.73
				337.94 Record
				0.02 error

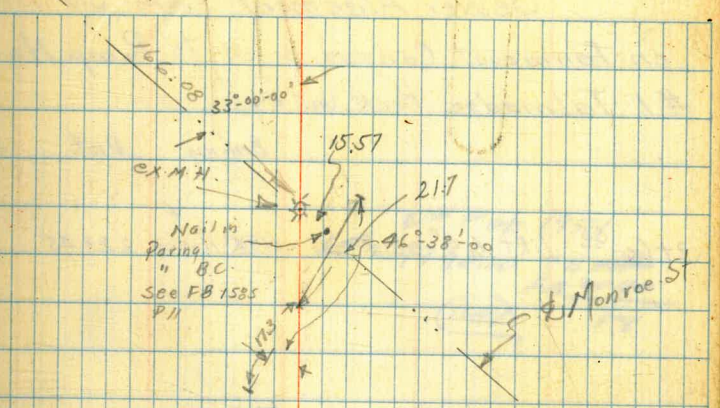
Aldine Drive Sewer Alignment

		Bearing	Dist	Map Bearing
	End Line At Ex. Stmy M.H.	21 05		
18+35.47	Lt to ℄ Monroe 33°-00'-00	N 89°-32'-15"E		
18+20 int	36" Culvert			
16+47.78	Lt 16°-24'-30	18 15 S 57°-27'-45"E	187.13	✓
14+45.37	Rt 21°-16'-00"	20 53 05 S 91°-03'-15"E	202.91	✓
		09 05" S 62°-19'-15E		

Continued from Page 46

Dist is to intersected Crossing on Rim of M.H.

47th + Monroe = ℄ 47th, Monroe



2"x2" R.W.H.b

2"x2" R.W.H.b

11/25/42

Sewer Alignment From Sta 55+51 72 on Fairmount Canyon = 00 to Pump House #1 Talmadge Park Unit #2

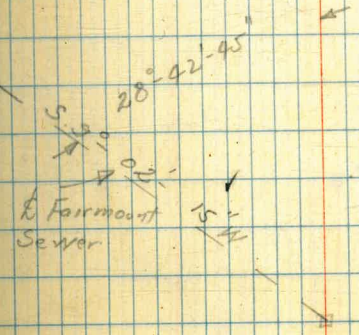
		Bearing	Dist	Map Bearing
3+60.55	L Rt	64°-03-30	N78°-11-30W	223.95

See F.B 2040 / 58

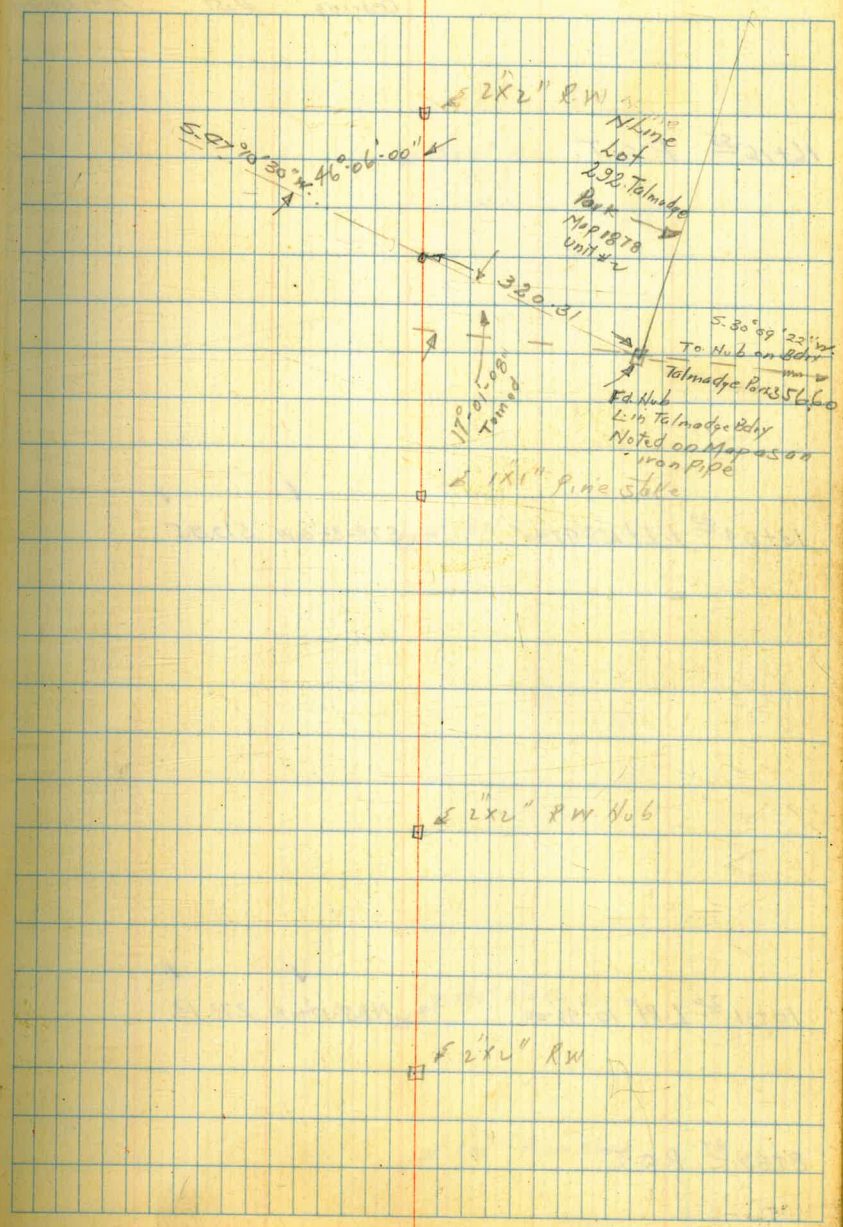
55+57.72 = 00 — S37°-45'-00W — 360.55

2nd Feb 1951

← = 1+80.20 F.B ~~2040~~ F.B 2040 / 58



	Bearing	Dist	Mag. Bearing
7+73 56 L. Lt 9°-35'-30"	S 83°-41'-00 W	257.64	
7+06 28 1X1" Stk int. E. Bdry line of Talmadge Park. Map 1878 Unit #2			
5+84 L. Lt 8°-32'-00	N 86°-43'-30 W	189.56	
4+25 53 P.O.T.			
3+60 55 L. Rt 64°-03'-30"	N 78°-11'-30 W	223.95	



	Bearing	Dist	Mag Bearing
16+16.55 P.O.T.			
13+04.33 L.Lt 15°-47'-30"	S78-33'-30W	519.95	
10+31.20 L.Rt. 10°-40'-00	N85°-33'-00W	273.13	
8+89.87 P.O.T.			

2"x2" R.W. Mk.

5/8"x1" Pinestake

5/8"x1" Stake Pine

5/8"x1" Pine Stake

19+29" int W. Line Talmadge Unit #2. L Rt 74°-30'-00 N-0°27'30"W

19+26.65 End line Connect existing Sewer

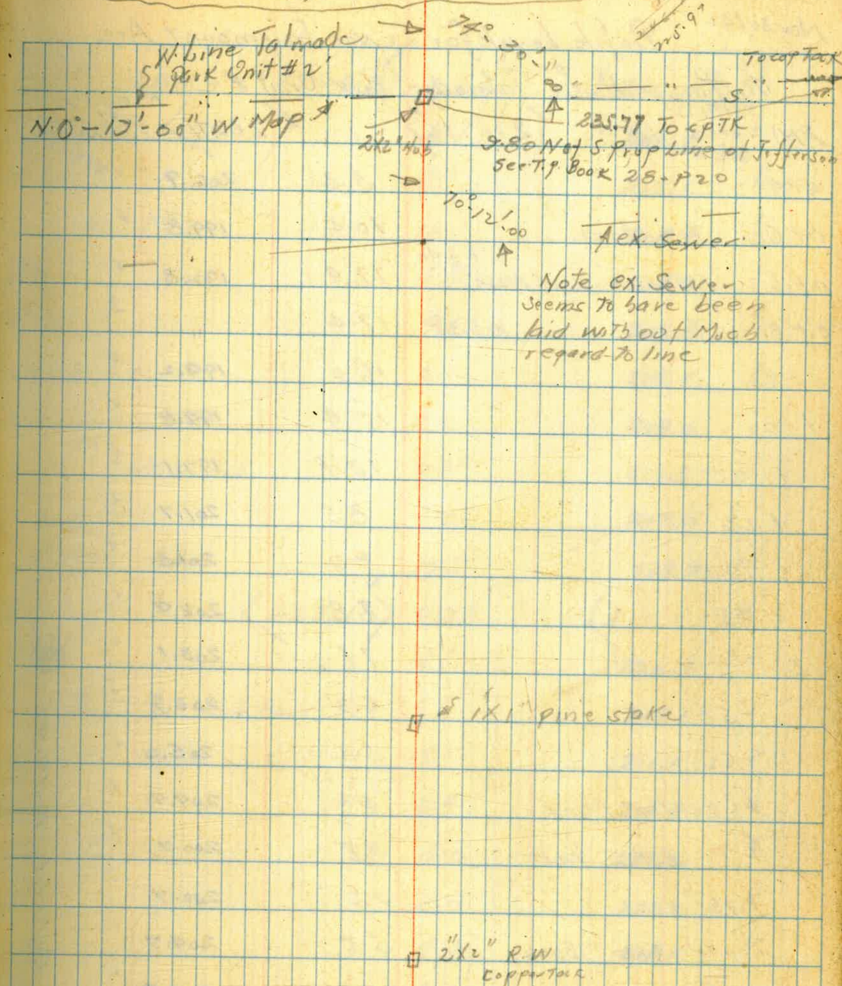
1924.11
1824.28
104.83

18+95.06 P.O.T.

18+24.28 L Rt 26°-29'-00 N 74°-57'-30"W 102.37

See - Sewer Plan #355 for Talmadge Park Sewer Lines.

3 7
225.97
9.8
225.97



Nov 30/42

Profile Levels for Sewer Fairmount Area

To Pump House #1 Talmadge Park Unit #2

BM. = 0+00 Datum	3.95	(210.16)	(206.71)	On R.W. Hub at L on Fairmount Sewer
0+95		3.3	206.9	
0+60 Top Bank		10.4	199.8	
0+62 Bottom Fairmount Wash E Side		17.4	192.8	
0+81 " " W Side		17.4	"	
0+83		16.0	194.2	
1+00		15.9	194.8	
+03		13.1	197.1	
+20		8.5	201.7	
+40		8.9	201.3	
+45		7.8	202.4	
2		7.1	203.1	
+58		6.3	203.9	
+62		5.2	205.0	
+68 Top Bank		5.8	204.4	
" " Bottom Wash		9.5	200.7	
+76 "		9.5	200.7	
" " Top Bank		5.5	204.7	
+83		4.8	205.4	
+87		5.7	204.5	
TP	5.71	(209.67)	6.20 (203.96)	
3		5.0	204.7	
+33		4.8	204.9	
+40		2.7	207.0	

Notes. Reduced 12-14-42

(209.67)

4				
+60 55	12.81	(220.22)	2.26	(207.41)
+63			11.1	209.1
+82			8.1	212.1
1 " 10' Rt			12.1	208.1
+87			5.8	214.4
4+00			4.4	215.8
" 6' Rt			6.1	214.1
" 10 "			11.2	209.0
+25.5 R.O.T. on Hub			0.71	219.51
" 6' Rt			3.2	217.0
" 10' "			10.5	209.7
TP	3.67	(223.18)	0.71	(219.51)
+40			3.1	220.1
" 8 Rt Top Cut Bank			6.1	217.1
" " 14 " Bottom " "			12.1	211.1
+50			3.4	219.8
" 7' Rt			6.0	217.2
+60			2.0	221.2
+65			9.4	218.8
+80			3.4	219.8
" " 9' Rt			10.1	213.1
" " 12' Rt Bottom Wash			16.0	207.2
5+00			4.7	218.5
" 8' Rt			8.6	214.6
" 13' "			10.1	213.1
" 15 " Bottom Wash			13.4	209.8

		(223.18)		
5+10	℄	4.4	218.8	✓
+35	℄	1.2	222.0	✓
T.P.	6.90 (229.83)	0.25	(222.93)	✓
+35 10' Rt		10.6	219.2	✓
" 5' Lt		5.6	224.2	✓
+60	℄	4.2	225.6	✓
" " 5' Lt		2.6	227.2	✓
" " 5' Rt		5.8	224.0	✓
+89 Lon Stub	℄	1.27	228.56	✓
" 5' Rt		5.3	224.5	✓
" 5' Lt		10.6	230.9	✓
T.P. on L.	8.72 (237.18)	1.27	(228.56)	✓
6+00	℄	6.0	231.2	✓
" " 5' Lt		4.0	233.2	✓
" " 5' Rt		7.6	229.6	✓
+25	℄	4.3	232.9	✓
" 5' Rt		6.8	230.2	✓
" 5' Lt		1.7	235.5	✓
+50	℄	3.0	234.2	✓
" 5' Rt		5.0	232.2	✓
" 5' Lt		1.1	236.1	✓
+70	Ditch Note: cross section started by Brais from VanDyke	2.6	234.6	✓
7		1.0	236.2	✓
" 5' Rt		2.0	235.2	✓
" 5' Lt		0.1	237.1	✓

		(237.18)		
T.P. 7.50	(244.47)	0.21	(236.97)	✓
7+50 ℄		8.0	236.5	✓
" 5' Rt		9.4	235.1	✓
" 5' Lt		6.4	238.1	✓
+65 ℄		7.2	237.3	✓
+73.56 L.O.H.O.6 ℄		6.26	238.21	✓
" 5' Rt		8.0	236.5	✓
" 5' Lt		4.6	239.9	✓
+85		4.5	240.0	✓
8		1.7	242.8	✓
" 5' Lt		6.2	239.3	✓
" 5' Rt		3.7	240.8	✓
T.P. 7.87	(251.95)	0.39	(244.08)	✓
+35 ℄		5.6	246.4	✓
" 5' Lt		3.2	248.8	✓
" 5' Rt		7.1	244.9	✓
+50 ℄		4.8	247.2	✓
" 5' Lt		3.3	248.7	✓
" 5' Rt		6.6	245.4	✓
+75 ℄		4.2	247.8	✓
" 5' Lt		2.0	250.0	✓
" 5' Rt		6.1	245.9	✓
+89.87 on R.O.T.		4.68	247.27	✓
" " 5' Lt		3.0	249.0	✓
" " 5' Rt		6.5	245.5	✓

	(251.35)		
9+00 ℄		6.6	295.8
" " 5' Lt		4.5	297.5
" " 5' Rt		7.9	294.1
9+12		7.7	294.3
" " 5' Lt		6.0	296.0
" " 5' Rt		8.6	293.4
+18 ℄		7.9	294.1
" 5' Rt		9.0	293.0
" 5' Lt		5.9	296.1
+35		6.4	295.6
" 5' Rt		2.5	299.4
" 5' Lt		5.1	296.9
+50		4.8	297.2
+70		2.7	299.3
" 5' Rt		3.7	298.3
" 5' Lt		1.6	250.4
+87		2.2	299.8
10+00		2.7	299.3
" 5' Rt		3.5	298.5
" 5 Lt		1.0	251.0
+15 ℄		2.3	299.7
" 6' Rt Bottom Main Wash		6.6	295.8
" 5 Lt		1.3	250.7
T.P.	8.78 (258.30)	1.83	(250.12)
+31.20 Lt on 1x1" stk		8.48	250.82

	(258.90)		
+31.20 10' Rt Bottom Wash		11.3	247.6
+50		6.8	252.1
" 5' Rt		8.0	250.9
11+00		4.7	254.2
+30		3.5	255.4
+42		3.6	255.3
" " 3' Rt Bottom Wash		5.6	253.3
+50		4.4	254.5
" 3' Rt Bottom Wash		5.0	253.9
+60		2.7	256.2
+76		2.1	256.8
+80 Bottom Wash on ℄		3.9	255.0
+84		2.0	256.9
12+00		0.6	258.3
T.P. 11.81	(270.09)	0.52	(258.28)
+15		3.9	260.2
+30		2.3	261.8
+40		2.4	261.7
+55 in Wash		10.4	259.7
+87 " "		2.5	261.6
13+00		5.9	264.2
+04 33 on 1x1" stake		5.51	264.58
" 10' Lt Bottom Wash		8.1	262.0
+33		4.8	265.3
+34 in Wash		6.1	264.0

		⟨270.09⟩		
+50	14 Wash		5.3	269.8
+53			3.9	266.2
+60			2.9	267.2
" "	3' Lt 14 Wash		4.4	265.7
TP.	12.67	⟨282.48⟩	0.28	⟨269.81⟩
+87			11.5	271.0
14			10.9	271.6
+17			12.0	270.5
+21	14 Bottom Wash		13.8	268.7
+23			12.4	270.1
+50			9.3	273.2
+68	Bank		8.8	273.7
+71	ct. Bottom Wash		9.5	273.0
+75	Bank		8.3	274.2
15			4.7	277.8
+25			0.7	281.8
TP.	9.88	⟨291.91⟩	0.95	⟨282.03⟩
+37			12.4	279.5
+45	Top Bank		13.5	278.4
+47	Bottom Wash		15.0	276.9
+55	" "		14.7	277.2
+77	10 Wash		14.0	277.9
+80			12.1	279.8
+90			6.2	285.7
16+04			2.3	289.6

		⟨291.91⟩		
11.99		⟨303.62⟩	0.28	⟨291.63⟩
16+55	P.O.T.		11.44	292.18
+20			10.5	293.1
+50			8.9	294.7
17			7.4	296.2
"	5' Lt		9.0	294.6
+07			7.4	296.2
"	5' Lt		8.8	294.8
"	5' Rt		6.1	297.5
+20			5.8	297.8
"	5' Rt		3.8	299.8
"	4' Lt		8.4	295.2
"	11' Lt Bottom Wash	closest approach	15.8	287.8
+32			5.0	298.6
"	5' Lt		8.2	295.4
"	5' Rt		2.2	301.4
+50			1.3	301.7
"	5' Lt		3.8	299.8
"	5' Rt		1.0.3	303.9
TP.	7.94	⟨311.14⟩	0.41	⟨303.20⟩
+60			7.4	303.7
"	5' Lt		9.6	301.5
"	5' Rt		5.3	305.8
+75	℄		4.8	306.3
"	5' Lt		6.7	304.4
"	5' Rt		2.6	308.5

311.14

18+00			4.2	306.9	✓
" 5' Lt			5.8	305.3	✓
" 5 Rt			2.8	308.3	✓
+10			3.0	308.1	✓
TP +24.28 L	10.90	318.93	3.11	308.03	✓
" 5' Rt			9.2	309.7	✓
" 5' Lt			12.9	306.0	✓
+50			8.6	310.3	✓
" 5' Lt			9.6	309.3	✓
" 5' Rt			7.4	311.5	✓
+63 ℄			7.2	311.7	✓
" 5' Lt			9.1	309.8	✓
" 5' Rt			4.6	314.3	✓
+37 close approach To Pump House excavation			5.8	313.1	✓
" 5' Lt Top cut Bank			7.6	311.3	✓
" 13' " Bottom cut			17.0	301.9	✓
19+10			6.1	312.8	✓
" 8' Lt Top cut Bank			8.6	310.3	✓
" 11' Lt Bottom "			11.8	307.1	✓
" 5' Rt			4.9	314.0	✓
19+18			7.5	311.4	✓
+26.65 connect ex Sewer Top of 6" con pipe			9.71	309.22	✓
Set BM			9.73	309.20	2x2 RW Hub
T.P.	12.94	⟨331.75⟩	0.12	⟨318.81⟩	
T.P.	12.82	⟨343.59⟩	0.98	⟨330.77⟩	

⟨343.59⟩

T.P.	12.81	⟨355.88⟩	0.52	⟨343.07⟩	
T.P.	6.59	⟨361.03⟩	1.44	⟨354.88⟩ 44	Lt Tym of Bamo
T.P.	2.56	⟨363.05⟩	0.54	⟨360.49⟩	✓
T.P.	6.25	⟨361.57⟩	7.73	⟨355.32⟩	✓
Check BM SE 7º TK Edgeware Road + Adams			3.04	⟨358.53⟩	✓
				358.50 Record	
				0.03 error	

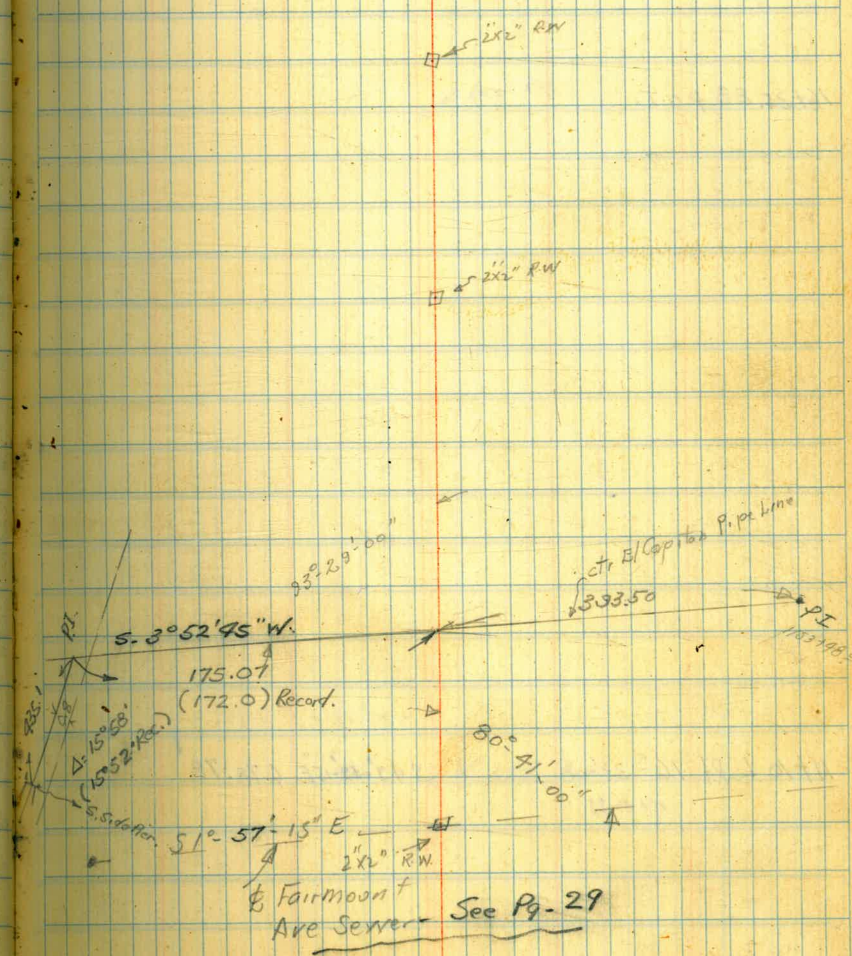
on ht of Sewer W.S. W line Talmadge Park

11/30/42

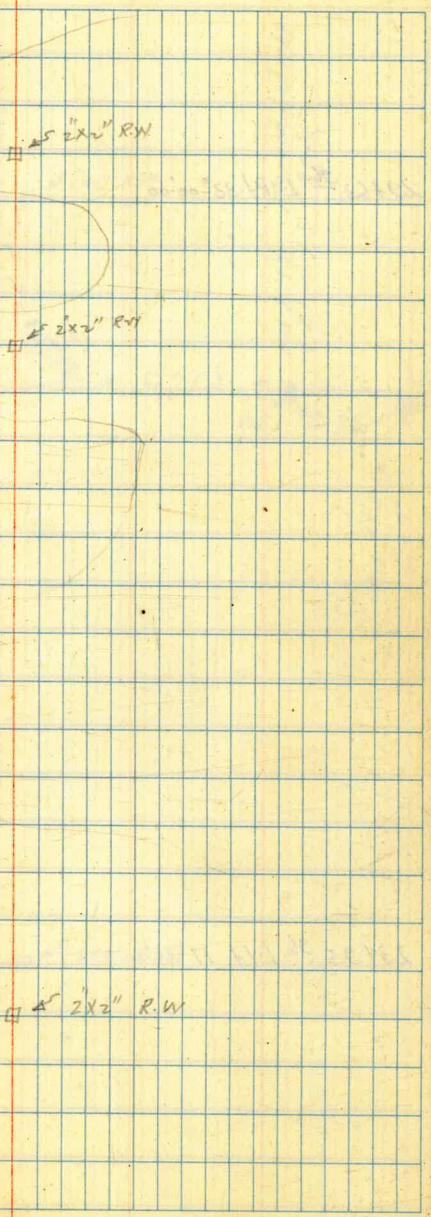
Alignment Notes Sewer from Sta 31+43.08 Fairmount Line = 0+00 to El Cerrito + College Park outfall

		Bearing	Dist	Mag Bearing
7+00 P.O.T.				
= 4+88.31 / 4+75.78 equation	L. Rt 16°-06'-00	S 66-32-15" E	621.69	✓
0+61.08	int 36" El Capitan Pipe Line.		See Mr Pyles office for Grades	
Fairmount line 31+43.08 = 0+00		S 82°-38'-15" E	475.78	✓

248.5
45
203.5



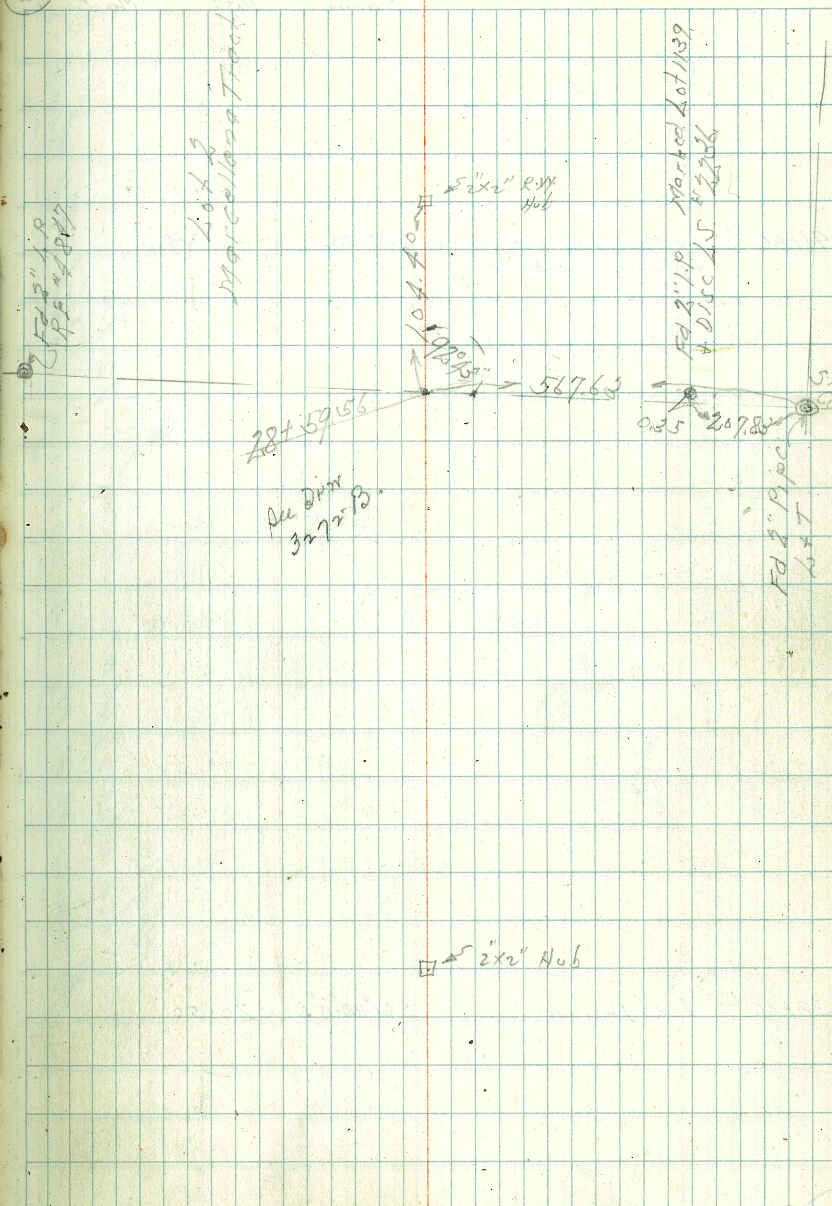
	Bearing	Dist	M. Bearing
17+88.78 L. Ft 25°-30'-00"	S 75°-29'-15" E	607.18	
16+35.88 P.O.T.			
11+10 L. Rt 16°-33'-00"	S 49°-59'-15" E	678.78	
11+16.32			



		Bearing	Dist	Mag. Bearing
29+63.96	L. Rt 33°-00'00"	S60°04'15"E	902.14	
23+95.96	Lt. 17°35'00"	N86°55'45"E	568.0	

Indexed
C.S.K.

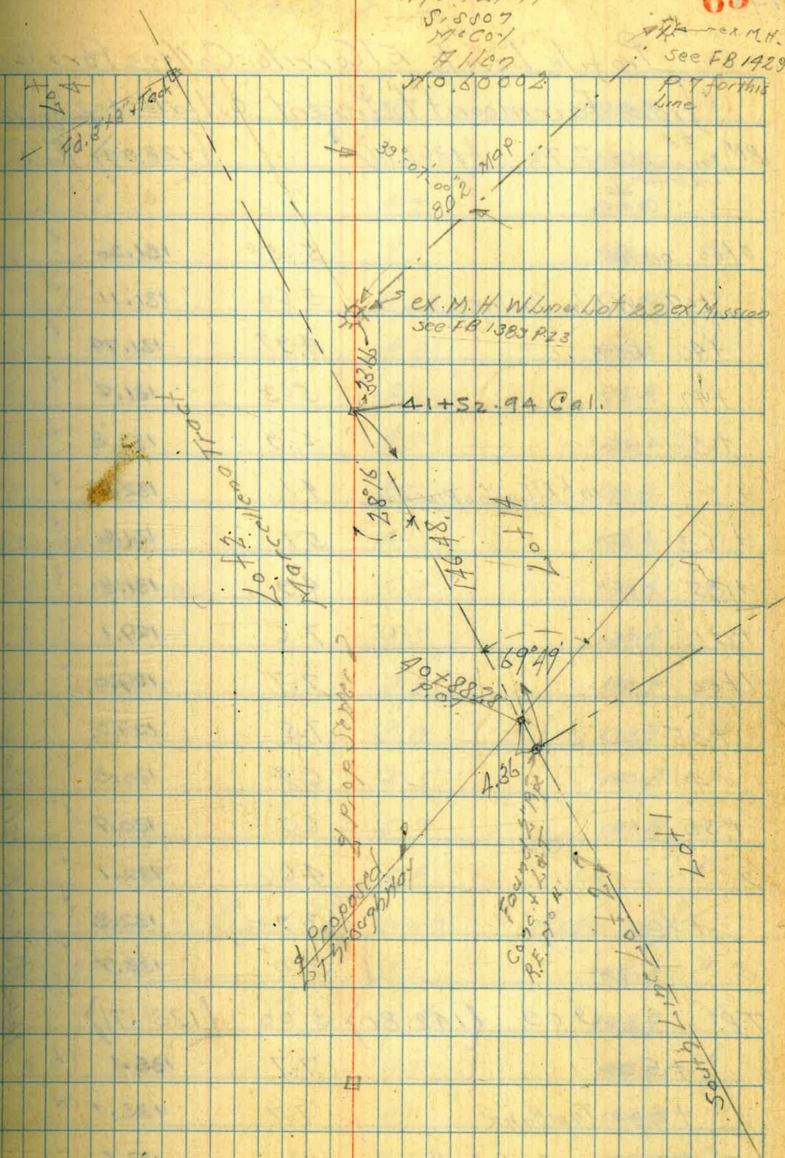
☆ROS 1186



	Bearing	Dist	Mag. Bearing
41+86 60 ex M.H. L Rt 39°-07'-00" End Line To ex Sewer	S22°-28'-15" E	802 Map	
38+66 10 L Lt 1°-31'-00	S61°35'15"E	320.50	

after
See change on Sheet 1072 D
to throw M.H. No 84 out of Road Fill Allen M.

Tie Made
April 24-47
S. Ssoo7
McCoy
Allen
M.O. 60002



12/3/42

Profile Levels El Cerrito College Park Canyon from Fairmount to Present Outfall

BM #4 Fairmount Line See page 38		7.72	⟨136.71⟩ ✓		⟨128.99⟩ ✓	Chiseled Hi Spot in Culvert Headwall
0+00 on Hub				5.51	131.20	✓
+67	W Edge Paving			5.60	131.11	✓
+90	E " "			4.97	131.74	✓
+47				5.3	131.4	✓
+56				2.9	133.8	✓
+	int El Capitan Pipe Line			4.1	132.6	✓
+63				5.1	131.6	✓
+85				4.9	131.8	✓
+91				7.6	129.1	✓
1+00				7.7	129.0	✓
+35				7.5	129.2	✓
+40				6.4	130.3	✓
+50				6.3	130.4	✓
2				4.6	132.1	✓
+50				3.9	132.8	✓
3				3.0	133.7	✓
T.P.		9.09	⟨142.80⟩	3.00	⟨133.71⟩	
+50				7.7	135.1	✓
+83	Top Bank			7.7	135.1	✓
+84	in Wash Bottom			9.2	133.6	✓
+91	" "			8.2	134.6	✓
4				7.9	134.9	✓

Notes Reduced 12/14/42 [initials]

⟨142.80⟩

4+27 in Wash			8.1	134.7	✓
+50			6.2	136.6	✓
+ " 3' Lt			4.9	137.9	✓
+65			4.7	138.1	✓
+75 equation 78 = +88 31			4.34	138.46	✓
5+00			4.8	138.0	✓
+25			6.0	136.8	✓
+35			4.7	138.1	✓
+50			4.5	138.3	✓
+60 Top Bank			4.2	138.6	✓
+64 N. Side Wash			5.8	137.0	✓
+73 S " "			5.5	137.3	✓
+80 Top Bank			3.9	138.9	✓
6			3.9	138.9	✓
+43			2.5	140.3	✓
+50			1.9	140.9	✓
+74			0.8	142.00	✓
T.P.	7.64	⟨150.25⟩ ✓	0.19	⟨142.61⟩ ✓	
+74 5' Rt			5.2	145.1	✓
+86			6.4	143.9	✓
" 3' Rt			5.0	145.3	✓
" 3' Lt			8.0	142.3	✓
7+00 P.O.T. on Hub			6.58	143.67	✓
" 3' Rt			5.6	144.7	✓
" 3' Lt			7.2	143.1	✓

[150.25]

7+15 Top Creek Bank	5.7	149.6	✓
" " 3' Lt Bottom Ditch	8.3	142.0	✓
" " 3' Rt	4.6	145.7	✓
+17 Bottom Ditch	8.4	141.9	✓
+30 " "	8.1	142.2	✓
+50	6.7	143.6	✓
8	6.9	143.9	✓
" 3' Rt ex Bottom Ditch	7.4	142.9	✓
+13 in Wash	6.3	144.0	✓
+15 " "	6.7	143.6	✓
+29 " "	6.3	144.0	✓
+31 Note observation of creek Bottom	5.1	145.2	✓
+50	4.1	146.2	✓
+55	3.4	146.9	✓
9	3.2	147.1	✓
+25	2.8	147.5	✓
+50	1.8	148.5	✓
T.P. 5.33 [153.28]	2.30	[147.95]	✓
Set BM #1	3.20	150.08	20' Rt 9+50 Top Spike on Side of Willow Tree
10+00	3.8	149.5	✓
" " 5' Rt ctr channel	4.5	148.8	✓
+25 ctr channel	3.0	150.3	✓
+40 " "	3.4	149.9	✓
+65 " "	3.5	149.8	✓
+75 " "	2.3	151.0	✓

[153.28]

11+00 in channel	1.7	151.6	✓
+02 Top Bank	0.3	152.0	✓
+10 Lt Rt on 2x2 "Hub	0.62	152.66	✓
TP ont 9.39 [162.05]	6.62	[152.66]	✓
+10 5' Rt Top Bank	3.2	152.9	✓
" " 7 " Rt ctr channel	11.2	150.9	✓
+50	8.3	158.8	✓
" 13' Rt Top Bank Present channel	8.1	159.0	✓
12	6.8	155.3	✓
+50	5.7	156.4	✓
+92 Top Bank	4.5	157.6	✓
+95 N Edge channel	6.4	155.8	✓
13+00	6.1	156.0	✓
+15	6.1	156.0	✓
+50	3.5	158.6	✓
+80 Edge bank	3.1	159.0	✓
+90 channel	4.1	158.0	✓
14+17 channel	3.1	159.0	✓
+20 Top bank	1.1	161.0	✓
" " 1' Rt	3.4	158.7	✓
TP 7.72 [169.13]	0.64	[161.41]	✓
+50	7.7	161.4	✓
15	6.6	162.5	✓
+15	5.6	163.5	✓
+50 Top Bank	4.7	164.4	✓

	(169.13)		
+51	in channel	6.8	162.3
+63		5.7	163.9
16		4.1	165.0
+35 88	on P.O.T Hub	3.84	165.29
TP on POT	8.62 (173.91)	3.84	(165.29)
+50	in present channel	9.0	164.9
+55	" " "	9.0	"
+62		7.3	166.6
17		5.7	168.2
Set BM #2		3.18	170.73
+50		4.3	169.6
+54		4.1	169.8
+67	in channel	5.8	168.1
+74	" "	5.8	168.1
+75	Top Bank	4.5	169.9
TP on L +88.78 L.H.	7.04 (177.37)	3.58	(170.33)
18+00		7.0	170.9
+40		6.6	170.8
+43	in present channel	7.2	170.2
+60	" " "	6.8	170.6
+70		5.7	171.7
19+00		4.9	172.5
+50		3.9	173.5
20		2.6	174.8
+68	in channel	3.0	174.4
+15	" "	3.2	174.2

SPK in Willow Tree 25 Lt 17+90

	(177.37)		
+20	Top Bank	2.3	175.1
+50		1.4	176.0
TP 8.40	(169.98)	0.79	(176.58)
+90		8.6	176.8
21		7.4	177.6
+50		5.8	179.1
22		4.3	180.7
+50		4.1	180.9
23		3.8	181.2
" 3' Lt	Bank	4.6	180.8
" 4 "	channel	5.6	179.8
+37	Top Bank on ℄	2.9	181.1
+40	in present channel	4.0	181.0
+50	" " "	3.6	181.4
+60	in channel	2.8	182.2
+81	Top Bank	1.0	184.0
" 2' Rt	in channel	3.0	182.0
TP 6.70	(190.45)	1.23	(183.75)
L +95 96	L. on Hub	5.41	(185.04)
Set BM #3	4.61 (192.07)	3.05	(187.40)
+95 96	5 Rt Top Bank	8.3	183.7
"	6 Rt Bottom channel	9.9	182.1
+50		5.2	186.8
25		4.7	187.3
+50		3.3	188.7

Spike in Willow Tree 2.5' Rt 24+75

		⟨192.01⟩			
+65			2.3	189.7	✓
26			2.1	189.9	✓
+50			0.1	191.9	✓
T.P.	10.32	⟨201.71⟩	0.62	⟨191.39⟩	✓
+75	Top Bank		8.3	193.4	✓
+78	Bottom Present channel N. Side		10.9	190.8	✓
+94	E. Side + Bottom " "		10.4	191.3	✓
27+00	on Bank		8.5	193.2	✓
+50			7.7	194.0	✓
28			6.4	195.3	✓
+50			4.7	197.0	✓
+80	on Bank		4.4	197.3	✓
+86	in channel		5.0	196.7	✓
29	" "		5.1	196.6	✓
+05	on Creek Bank		4.3	197.4	✓
+50			2.6	199.1	✓
TP on L 2x2" Hub LRt +63.96	9.08	⟨208.70⟩	2.09	⟨199.62⟩	✓
+85	on creek Bank		8.1	200.6	✓
+92	in Present channel		8.7	200.0	✓
30			8.5	200.2	✓
+11			8.6	200.1	✓
+12			7.5	201.2	✓
+50			7.2	201.5	✓
+80			6.7	202.0	✓
+92	in present channel		7.8	200.9	✓

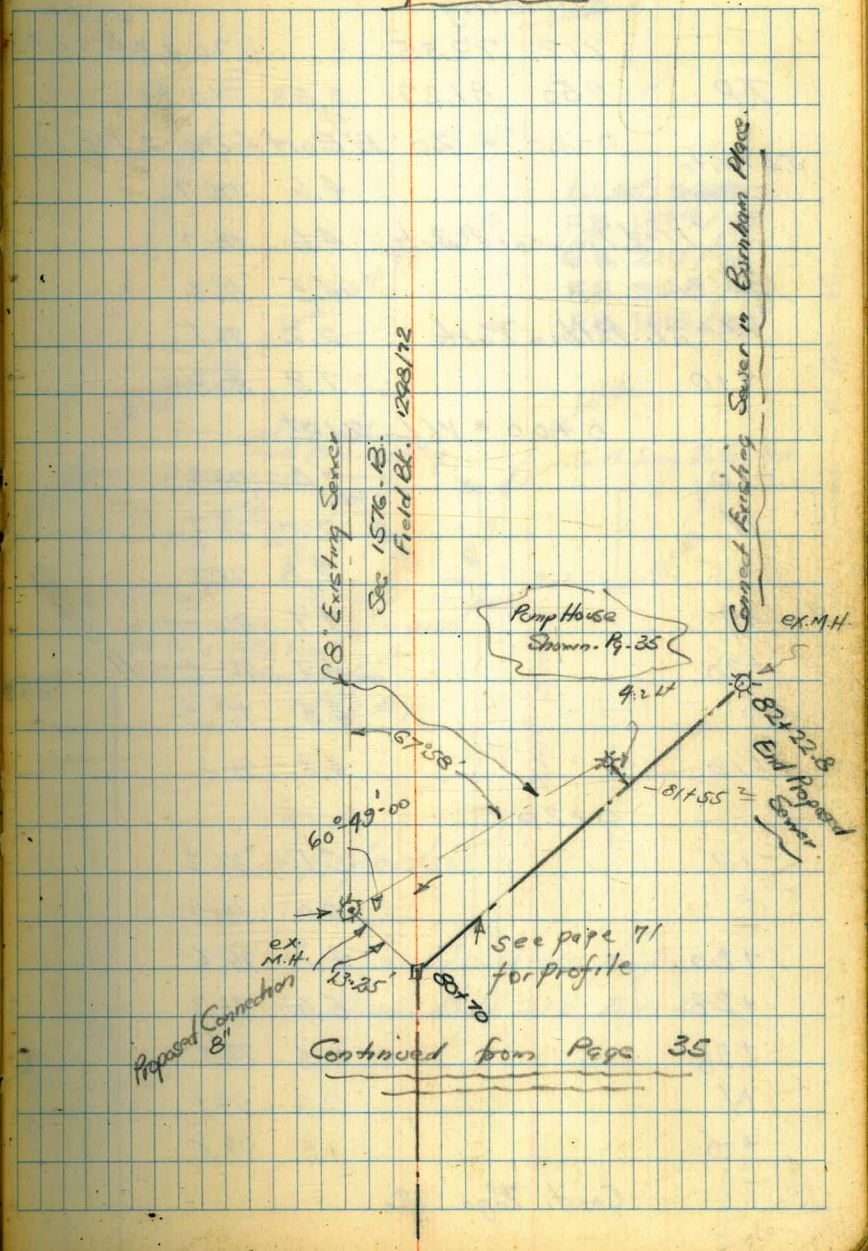
	⟨208.70⟩			
Set BM #4 Spike in Willow +- 12' Lt 30 +05		4.44	⟨204.26⟩	✓
31 in channel		7.8	200.9	✓
+16 in channel		7.4	201.3	✓
+14 on Bank		5.9	202.8 [corrected]	✓
+25		5.1	203.6	✓
+50		4.5	204.2	✓
32		4.1	204.6	✓
+10		3.0	205.7	✓
+50		2.8	205.9	✓
33		1.4	207.3	✓
T.P. 7.08	⟨214.42⟩	1.36	⟨207.34⟩	✓
+50		5.2	209.2	✓
+63 Creek Bank		5.2	"	✓
+78 Present creek channel		6.6	207.8	✓
+97 " " "		6.1	208.3	✓
34 " " "		5.6	208.8	✓
+05 Present Creek Bank		4.9	209.5	✓
+25		4.2	210.2	✓
+28 in Present channel		4.7	209.7	✓
+40		5.1	209.3	✓
+57 S. Side channel		4.1	210.3	✓
+60 Top creek Bank		1.9	212.5	✓
35		0.6	213.8	✓
T.P. 9.09	⟨222.99⟩	0.52	⟨213.90⟩	✓
+59		7.4	215.6	✓

	222.99		
+62		6.0	217.0
+87		5.7	217.3
36+00		6.3	216.7
+50		5.1	217.9
37+00		3.7	219.3
+50		2.6	220.4
TP.	5.67	1.84	221.15
	226.82		
37+50	3' Lt	7.2	219.6
"	3' Rt	6.0	220.8
38+00		5.1	221.72
"	3' Lt	5.7	221.12
"	3' Rt	3.9	222.9
+50		4.3	222.5
+66	10 Lt on 2"x2" Hub	4.25	222.57
+75		4.3	222.5
+80		4.9	221.9
39+00		5.6	221.2
"	5' Lt in present channel	7.1	219.7
+40		5.4	221.4
+44	Ctr Present channel	5.7	221.1
+47.5	Side " "	5.5	221.3
+50	Top Bank	3.0	223.8
+55		2.4	224.4
T.P.	7.83	3.01	223.81
	231.64		
+94		5.9	225.7

	231.64		
40+00		7.1	224.5
+15		5.6	226.0
+40		4.8	226.8
+50	in channel	6.0	225.6
+55	Ctr Present creek	7.9	224.2
+75	in channel	6.1	225.5
+87	Top Bank	4.0	227.6
41+00		4.0	"
+15		2.3	229.3
+50		1.3	230.3
T.P.	5.61	1.87	229.77
	235.38		
	End of Line		
+86	60 on Ground	3.9	231.5
Rim ex M.H.	X in Rim Directly over ex. outfall pipe	3.67	231.71
H.P.	" " Rim	3.63	231.75 (Miller) G. Book 181
			231.78
			0.03 error Page 78
Flow Line ex M.H.		7.77	227.61

Revision - Fairmount Ave Extension

Proposed Sewer



82+22.8 end line. ex. M.H.

80+70 L. Rt. 60°-50'-00

Walker
Osborne
9-22-43

City Barns

Cross Sections for Proposed Building

	7.12	77.35		70.23 S.E. BP B-4 20½
T.P.	7.50	81.27	3.58	73.77
	0-20' = 20' E. of East Line 21st St.			
S.L. Site →			4.6	76.7
20' N = ℄ Proposed Site			4.6	76.7
30' N			4.5	76.8
N = St. Balboa Park			2.2	79.1
+10			1.3	80.0
	0+00 = 21st L.			
-10			1.4	79.9
N			2.0	79.3
+5			2.8	78.5
+9			4.9	76.4
+20			4.7	76.6
S			4.8	76.5
+10			4.8	76.5
	0+20			
-10			5.1	76.2
S			5.0	76.3
+20			4.7	76.6
+28			5.0	76.3
+36			2.5	78.8
N			2.2	79.1
+10			1.8	79.5

Cont. Page 72

Indexed
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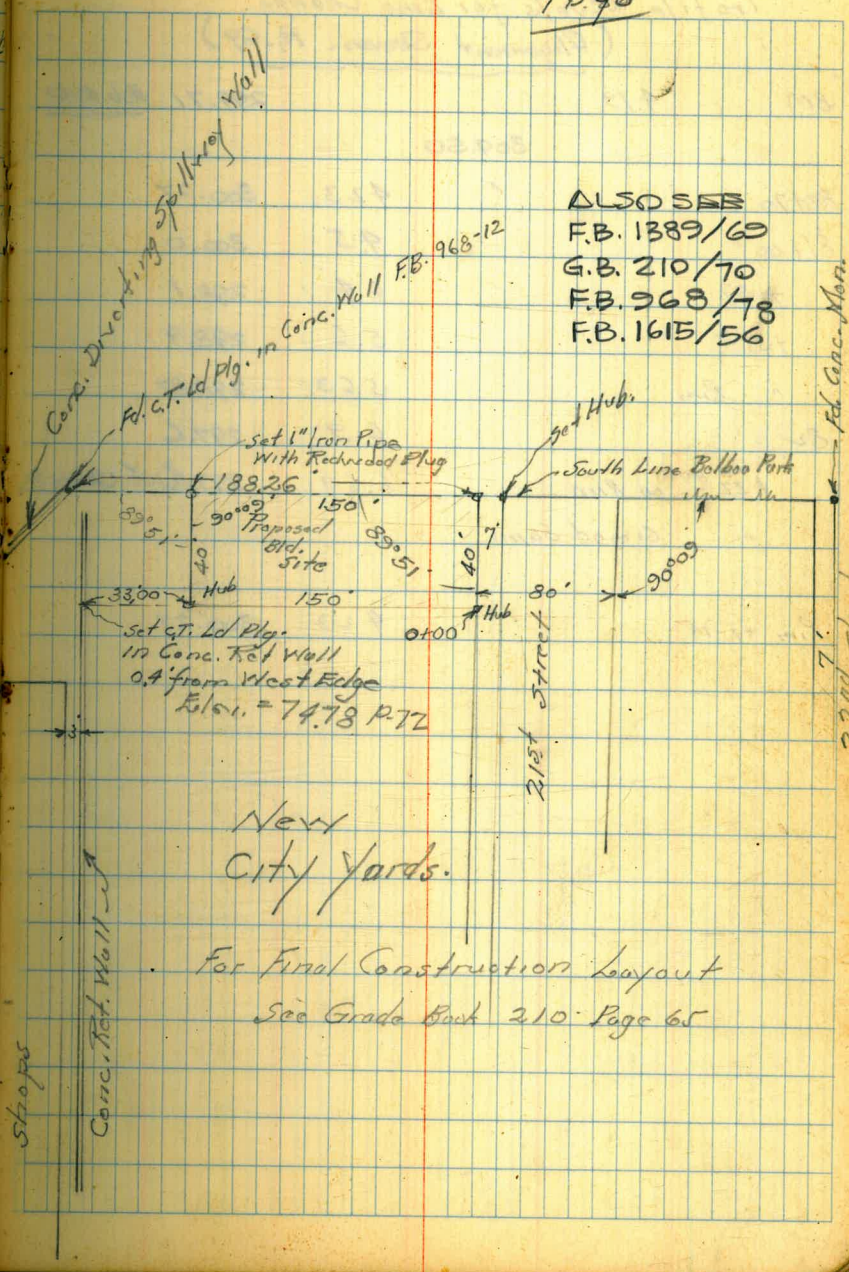
T.P. 98



ALSO SEE
F.B. 1389/60
G.B. 210/70
F.B. 968/78
F.B. 1615/56

New City Yards.

For Final Construction Layout
See Grade Book 210 Page 65

Profile Levels for Line Change.
(Alignment Shown. Pg. 69)

BM	4.79		299.71	Hub. 80+67
	304.50			
80+70		4.23	300.27	
81+00		4.5	300.0	
+37		6.4	298.1	
+55		5.6	298.9	
" Rim		5.63	298.87	
82		6.9	297.6	
+22 on Rim		6.69	297.81	✓ Checks
" Ground Same.				
Rim ex M		4.23	300.27	

Pg. 92. MH 2

City Barns
Levels for Proposed Bld
Cont. from Page 70

8.27

0+40

-10	1.9	79.4
N	2.4	78.9
+5	3.3	78.0
+13	5.1	76.2
+20	5.0	76.3
S	5.1	76.2
+10	5.1	76.2

0+60

-10	5.4	75.9
S	5.4	75.9
+20	5.3	76.0
+28	5.2	76.1
+32	4.4	76.9
N	2.5	78.8
+10	2.3	79.0

0+80

-10	2.4	78.9
N	3.1	78.2
+6	6.1	75.2
+20	5.5	75.8
S	5.8	75.5
+10	5.8	75.5

8.27

1+00

-10		6.1	75.2
S		6.1	75.2
+20		5.9	75.4
+33		6.2	75.1
N		2.8	78.5
+10		2.5	78.8
T.P.	4.89 80.00	6.16	73.11
on cop Tack 33' W. of S.W. Cor.		5.22	74.78

1+20

-10	1.3	78.7
N	1.9	78.1
+6	4.4	75.6
+20	4.6	75.4
S	5.0	75.0
+10	5.1	74.9

1+35

-10	5.2	74.8
S	5.2	74.8
+20	5.1	74.9
+35	4.5	75.5
N	2.0	78.0
+10	1.4	78.6

1+50

-10	1.6	78.4
N/-3	1.9	78.1

	80.00		
N on 1" Iron Pipe		3.05	76.95
+8		5.6	74.4
+20		5.4	74.6
S		6.0	74.0
+10		6.1	73.9
1+55 = ℄ Valley Gutter North & South			
-50 in Valley Gut.		6.3	73.7
S		6.1	73.9
+20		5.5	74.5
+32		5.6	74.4
N		3.8	77.0
+3		1.9	78.1
+10		1.6	78.4
T.P.	4.22 77.51	6.71	73.29
chk. BM B-20th st.		7.29	70.22
			70.23 = BM
			0.01

0+76 9' South of Park Line = ℄ 12" Elec. Pole

Curb Levels South East Return
F St + 32nd

Indexed
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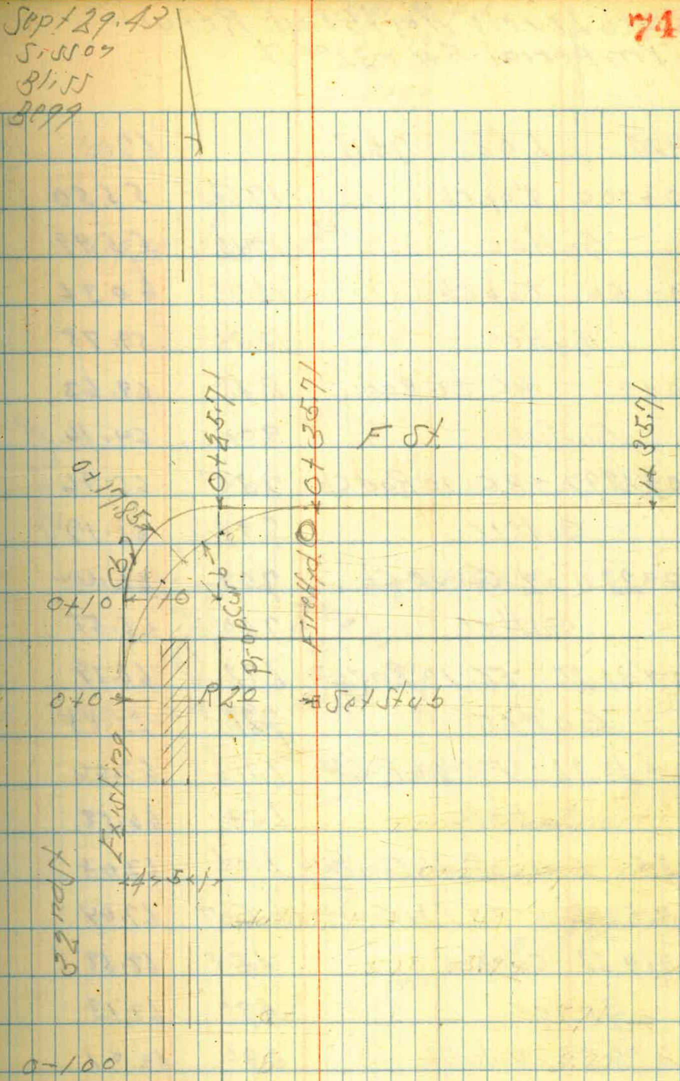
BM	1.15	95.31		94.16	SW Mon F + 32nd
0-100	Top Curb		11.23	84.08	
	Gutter		11.84	83.47	
0-50	Top Cb		9.27	86.04	
	Gutter		8.39	86.92	
0+0	= B.C. 20' Rad Cb		5.98	89.33	
	Gutter		5.60	89.71	
0+0	4' E Cb = Wly Walk		5.57	89.74	
	9' E Cb = Ely Walk		5.39	89.92	
0+06	= S.L.F Top Cb		5.30	90.01	
	Gutter		5.60	89.71	
	4' E Cb = Wly Walk		5.20	90.11	
	9' E Cb = Ely "		5.00	90.31	
0+10	= B.C. 10' Rad Cb		5.26	90.05	
	Gutter		5.59	89.72	
0+17.85	= ℄ Ret Top Cb		5.25	90.06	
	Gutter		5.69	89.62	
0+25.71	= E.C. 10' Rad Top Cb		5.35	89.96	
	Gutter		6.09	89.22	
0+35.71	= E.C. 20' Rad Top Cb		5.84	89.47	
	Gutter		6.56	88.75	
0+85.71	Top Cb		8.45	86.86	
	Gutter		9.10	86.21	
1+35.71	Top Cb		11.08	84.23	
	Gutter		11.72	83.59	

Sept 29.43
S:55 07
81:55
80 99

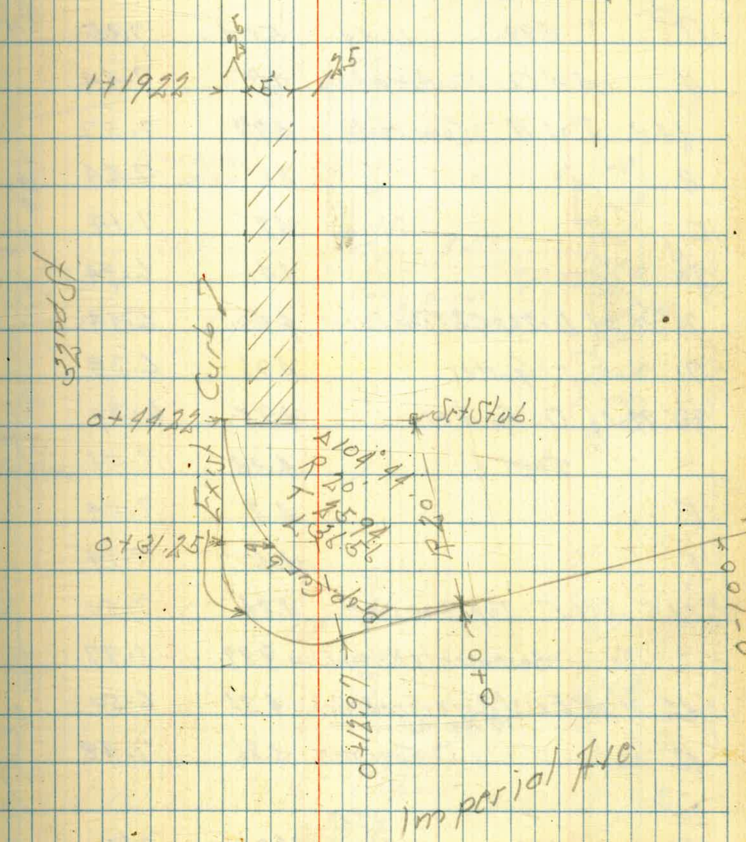


Curb Levels North East Return
Imperial Ave + 32nd St.

BM	6.08	73.11		67.03	N.H. BP Imperial + 32nd St
0-100 Top Cb			17.61	55.50	
Gutter			17.12	55.99	
0-50 Top Cb			12.75	60.36	
Gutter			13.36	59.75	
0+0 = B.C. 20' Rad.			8.48	64.63	
Gutter			9.01	64.10	
0+12.97 = B.C. 10' Rad Cb			7.35	65.76	
Gutter			7.94	65.17	
0+22.11 = ℄ Curve Cb			7.09	66.02	
Gutter			7.60	65.51	
0+31.25 = E.C. 10' Rad Cb			6.92	66.19	
Gutter			7.26	65.85	
0+44.22 = E.C. 20' R Cb			6.11	67.00	
Gutter			6.53	66.58	
2.5 E of Cb = Wly Conc Walk			6.06	67.05	
7.5 E " " = Ely Conc Walk			6.07	67.04	
0+69.22 Curb			4.53	68.58	
Gutter			4.98	68.13	
0+79.22 = Brk Cb			3.90	69.21	
Gutter			4.41	68.70	
0+99.22 Curb			3.12	69.99	
Gutter			3.55	69.56	
1+19.22 Cb			1.84	71.27	
Gutter			2.35	70.76	

Indexed
C.S.K.

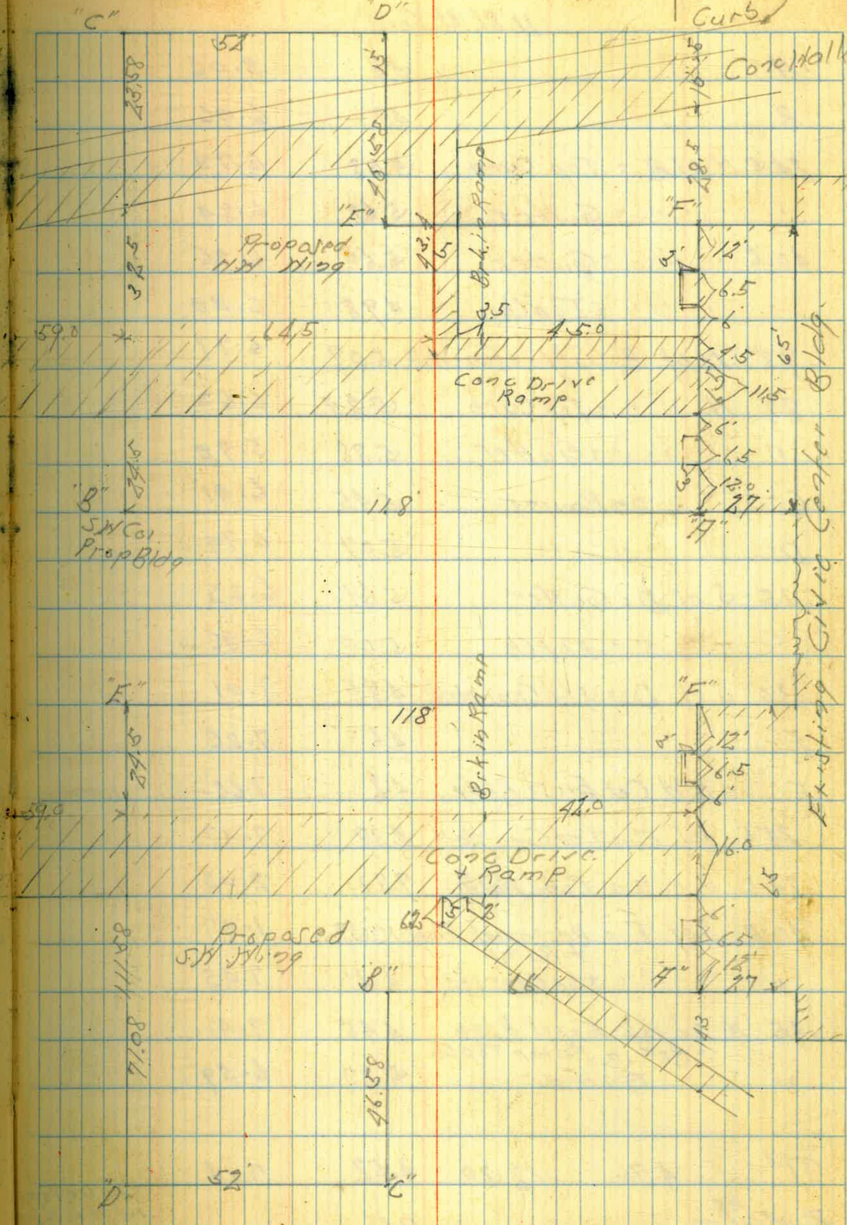
Sept. 29-43
Sisson
Bliss
Begg



Dec 27-43
Sissor
Begg

Levels Proposed South West Wing of Civic Center

				City Datum	Std Dist Vert
BM USGS H5	0.24	12.39		12.15	35' N of SE cor Civic Center 18.299 165 P21
TP	3.99	11.34	5.04	7.35	
A = SW Cor Existing Bldg			3.9	7.44	
14.3 S of "A" = Conc Walk			3.77	7.57	
B			4.1	7.24	
C			4.2	7.14	
D			4.4	6.94	
71' W of D = Top Cb Conc Drive			4.40	6.94	
71 " " " = Gutter			4.96	6.38	
87' W of D = Gutter			4.95	6.39	
" Top Cb.			4.33	7.01	
E			4.3	7.04	
F			3.6	7.74	
24.5 S of F = Top Conc Wall			3.84	7.50	
" " = Basement + Ramp Floor			9.87	1.47	
42' W of Exist Bldg = Grade Brk in Ramp			4.84	6.50	
42' " " " = Top Conc Wall			3.86	7.48	
TP	3.23	11.86	2.71	8.63	



Levels Proposed North West Wing of Civic Center

		11.86 Bt. Ford			
A			3.8	8.06	
B			4.9	6.96	
24.5 N of B = Top Curb			5.08	6.78	
" " " " = Gutter			5.62	6.24	
40.5 " " " = Gutter			5.60	6.26	
" " " " = Top Cb			4.98	6.88	
73' N of B = S'ly 10' Conc Walk			5.09	6.77	
88 N " " = Top Curb			5.23	6.63	
" " " " = Gutter			5.88	5.98	
C on Paving			5.45	6.41	
D " "			5.07	6.79	
15 S of D = Gutter			5.61	6.25	
" " " " = Top Cb			5.00	6.86	
30 S of D = S'ly Conc Walk			4.85	7.01	
E			4.6	7.26	
F = NW Cor Exist Bldg			4.2	7.66	
24.5 S of F = Top Conc Wall			4.39	7.47	
24.5 " " " = Conc Walk			9.83	2.03	
40.5 S of F = Basement Floor + Ramp			10.39	1.47	
" " " " Top Conc Wall			4.41	7.45	
45' N of N.L. Exist Bldg = Brk in Ramp Top Cb			4.45	7.41	
" " Gutter			5.27	6.59	
TP	4.96	12.30	4.52	7.34	
B.M. 4565 (48)			0.16		Std Conc Mon 35 W of NE 18.386

Winona Ave. West Side Walk & Curb Levels
Trojan North 294'

60' Wide 12' Curbs

BM	0.50	376.61		376.11	NW BP Trojan & 50th W
TP	2.53	366.19	12.95	363.66	
BM			3.36	362.83	NW BP Trojan & Winona
0+0 = W.L. Trojan					
W L			3.1	363.1	
+3.5 = W Edge Side Walk			2.83	363.37	
+8.5 = E " "			2.94	363.28	
+12 = W Cb Top			3.08	363.11	
0+10					
W L			3.3	362.9	
+3.5 = W. Edge Conc Walk			3.16	363.03	
+8.5 = E " " "			3.30	362.89	
+12 = W Cb Top			3.60	362.59	
0+25					
W L			3.5	362.7	
+3.5			3.51	362.68	
+8.5			3.68	362.51	
+12 = W Cb			3.86	362.33	
0+35					
W L			3.9	362.3	
+3.5 W Edge Conc Walk			3.74	362.45	
+8.5 E " " "			3.92	362.27	
+12 = W Curb			4.24	361.95	

Indexed
C.S.K.

July 22-44
Simons & Osborne

78

366.19

0+50

W L	4.8	361.4
+3.5 = W Edge Conc Walk	4.32	361.87
+8.5 = E " " "	4.39	361.80
+12 = W Cb Top	4.52	361.67
0+75		
W L	5.0	361.2
+3.5 =	4.81	361.38
+8.5	4.89	361.30
+12	5.21	360.98
1+0		
W L	5.2	360.9
+3.5	5.19	361.0
+8.5	5.20	360.99
+12 = W Cb	5.55	360.34
+12 = Inlet Top Grating	6.30	359.89
1+25		
W L	5.9	360.3
+3.5	5.22	360.97
+8.5	5.25	360.94
+12	5.75	360.44
1+50		
W L	5.9	360.3
+3.5 = W Edge Conc Walk	4.99	361.20
+8.5 = E " " "	5.04	361.15

	366.19	
+12 = WCb Top	5.53	360.66
1+75		
WL	5.5	360.7
+3.5 = W Edge Conc Walk	4.67	361.52
+8.5 = E " " "	4.70	361.49
+12 = WCb	5.32	360.87
2+0		
WL	4.5	361.7
+3.5	4.46	361.73
+8.5	4.57	361.62
+12	5.21	360.98
2+25 = W/L 5' Walk on West		
WL	4.7	361.5
+3.5 = W Edge Conc Walk	4.32	361.87
+8.5 = E " " "	4.44	361.75
+12 = W	5.03	361.16
2+50		
WL	4.7	361.5
+12	4.90	361.29
2+75		
WL	4.7	361.5
+12	4.74	361.45
2+94 = 7' Conc Walk		
WL on 8' Conc Walk	4.65	361.54
+12 = Curb & Walk	4.65	361.54

IMPROVED TABLES AND INFORMATION

HORIZONTAL STADIA CORRECTIONS

2°—00′ — 0.1	21°—00′ — 12.8	33°—00′ — 29.7
3°—00′ — 0.3	21°—30′ — 13.4	33°—15′ — 30.1
4°—00′ — 0.5	22°—00′ — 14.0	33°—30′ — 30.5
5°—00′ — 0.8	22°—30′ — 14.7	33°—45′ — 30.9
6°—00′ — 1.1	23°—00′ — 15.3	34°—00′ — 31.3
7°—00′ — 1.5	23°—30′ — 15.9	34°—15′ — 31.7
8°—00′ — 1.9	24°—00′ — 16.5	34°—30′ — 32.1
9°—00′ — 2.5	24°—30′ — 17.2	34°—45′ — 32.5
10°—00′ — 3.0	25°—00′ — 17.9	35°—00′ — 32.9
10°—30′ — 3.3	25°—30′ — 18.6	35°—15′ — 33.3
11°—00′ — 3.6	26°—00′ — 19.2	35°—30′ — 33.7
11°—30′ — 4.0	26°—30′ — 19.9	35°—45′ — 34.1
12°—00′ — 4.3	27°—00′ — 20.6	36°—00′ — 34.6
12°—30′ — 4.7	27°—30′ — 21.3	36°—15′ — 35.0
13°—00′ — 5.1	28°—00′ — 22.0	36°—30′ — 35.4
13°—30′ — 5.5	28°—30′ — 22.8	36°—45′ — 35.8
14°—00′ — 5.9	29°—00′ — 23.5	37°—00′ — 36.2
14°—30′ — 6.3	29°—30′ — 24.3	37°—15′ — 36.6
15°—00′ — 6.7	30°—00′ — 25.0	37°—30′ — 37.1
15°—30′ — 7.2	30°—15′ — 25.4	37°—45′ — 37.5
16°—00′ — 7.6	30°—30′ — 25.8	38°—00′ — 37.9
16°—30′ — 8.1	30°—45′ — 26.2	38°—15′ — 38.3
17°—00′ — 8.5	31°—00′ — 26.5	38°—30′ — 38.7
17°—30′ — 9.0	31°—15′ — 26.9	38°—45′ — 39.1
18°—00′ — 9.5	31°—30′ — 27.3	39°—00′ — 39.6
18°—30′ — 10.1	31°—45′ — 27.7	39°—15′ — 40.0
19°—00′ — 10.6	32°—00′ — 28.1	39°—30′ — 40.5
19°—30′ — 11.2	32°—15′ — 28.5	
20°—00′ — 11.7	32°—30′ — 28.9	
20°—30′ — 12.3	32°—45′ — 29.3	

Chains to Feet	
1	66
2	132
3	198
4	264
5	330
6	396
7	462
8	528
9	594
10	660

Feet to Chains	
100	1.515
200	3.030
300	4.545
400	6.060
500	7.575
600	9.090
700	10.606
800	12.121
900	13.636
1,000	15.151

TABLE IX. TANGENTS AND EXTERNALS TO A 1° CURVE

I	T	E	I=10°	I	T	E	I=20°	I	T	E	I=30°
1°	50.00	.218	+	11°	551.70	26.500	+	21°	1061.9	97.577	+
10′	58.34	.297	5° C.	10′	560.11	27.313	5° C	10′	1070.6	99.155	5° C
20′	66.67	.388	T	20′	568.53	28.137	T	20′	1079.2	100.75	T
30′	75.01	.491	.03	30′	576.95	28.974	.06	30′	1087.8	102.35	.10
40′	83.34	.606	E	40′	585.36	29.824	E	40′	1096.4	103.97	E
50′	91.68	.733		50′	593.79	30.686		50′	1105.1	105.60	
2°	100.01	.873	.001	12°	602.21	31.561	.006	22°	1113.7	107.24	.013
10′	108.35	1.024		10′	610.64	32.447		10′	1122.4	108.90	
20′	116.68	1.188		20′	619.07	33.347		20′	1131.0	110.57	
30′	125.02	1.364		30′	627.50	34.259		30′	1139.7	112.25	
40′	133.36	1.552		40′	635.93	35.183		40′	1148.4	113.95	
50′	141.70	1.752		50′	644.37	36.120		50′	1157.0	115.66	
3°	150.04	1.964	10° C.	13°	652.81	37.070	10° C.	23°	1165.7	117.38	10° C.
10′	158.38	2.188	T	10′	661.25	38.031	T	10′	1174.4	119.12	T
20′	166.72	2.425	.06	20′	669.70	39.006	.13	20′	1183.1	120.87	.19
30′	175.06	2.674	E	30′	678.15	39.993	E	30′	1191.8	122.63	E
40′	183.40	2.934	.003	40′	686.60	40.992	.011	40′	1200.5	124.41	.025
50′	191.74	3.207		50′	695.06	42.004		50′	1209.2	126.20	
4°	200.08	3.492		14°	703.51	43.029		24°	1217.9	128.00	
10′	208.43	3.790		10′	711.97	44.066		10′	1226.6	129.82	
20′	216.77	4.099		20′	720.44	45.116		20′	1235.3	131.65	
30′	225.12	4.421		30′	728.90	46.178		30′	1244.0	133.50	
40′	233.47	4.755		40′	737.37	47.253		40′	1252.8	135.35	
50′	241.81	5.100	15° C.	50′	745.85	48.341	15° C.	50′	1261.5	137.23	15° C.
5°	250.16	5.459	T	15°	754.32	49.441	T	25°	1270.2	139.11	T
10′	258.51	5.829	.09	10′	762.80	50.554	.19	10′	1279.0	141.01	.29
20′	266.86	6.211	E	20′	771.29	51.679	E	20′	1287.7	142.93	E
30′	275.21	6.606	.004	30′	779.77	52.818	.017	30′	1296.5	144.85	.038
40′	283.57	7.013		40′	788.26	53.969		40′	1305.3	146.79	
50′	291.92	7.432		50′	796.75	55.132		50′	1314.0	148.75	
6°	300.28	7.863		16°	805.25	56.309		26°	1322.8	150.71	
10′	308.64	8.307		10′	813.75	57.498		10′	1331.6	152.69	
20′	316.99	8.762		20′	822.25	58.699		20′	1340.4	154.69	
30′	325.35	9.230		30′	830.76	59.914		30′	1349.2	156.70	
40′	333.71	9.710	20° C.	40′	839.27	61.141	20° C.	40′	1358.0	158.72	20° C.
50′	342.08	10.202	T	50′	847.78	62.381	T	50′	1366.8	160.76	T
7°	350.44	10.707	.13	17°	856.30	63.634	.26	27°	1375.6	162.81	.39
10′	358.81	11.224	E	10′	864.82	64.900	E	10′	1384.4	164.86	E
20′	367.17	11.753	.006	20′	873.35	66.178	.022	20′	1393.2	166.95	.051
30′	375.54	12.294		30′	881.88	67.470		30′	1402.0	169.04	
40′	383.91	12.847		40′	890.41	68.774		40′	1410.9	171.15	
50′	392.28	13.413		50′	898.95	70.091		50′	1419.7	173.27	
8°	400.66	13.991		18°	907.49	71.421		28°	1428.6	175.41	
10′	409.03	14.582		10′	916.03	72.764		10′	1437.4	177.55	
20′	417.41	15.184	25° C.	20′	924.58	74.119	25° C.	20′	1446.3	179.72	25° C.
30′	425.79	15.799	T	30′	933.13	75.488	T	30′	1455.1	181.89	T
40′	434.17	16.426	.16	40′	941.69	76.869	.32	40′	1464.0	184.08	.49
50′	442.55	17.065	E	50′	950.25	78.264	E	50′	1472.9	186.29	E
9°	450.93	17.717	.007	19°	958.81	79.671	.028	29°	1481.8	188.51	.065
10′	459.32	18.381		10′	967.38	81.092		10′	1490.7	190.74	
20′	467.71	19.058		20′	975.96	82.525		20′	1499.6	192.99	
30′	476.10	19.746		30′	984.53	83.972		30′	1508.5	195.25	
40′	484.49	20.447		40′	993.12	85.431		40′	1517.4	197.53	
50′	492.88	21.161		50′	1001.7	86.904		50′	1526.3	199.82	
10°	501.28	21.887	30° C.	20°	1010.3	88.389	30° C.	30°	1535.3	202.12	30° C.
10′	509.68	22.624	T	10′	1018.9	89.888	T	10′	1544.2	204.44	T
20′	518.08	23.375	.19	20′	1027.5	91.399	.39	20′	1553.1	206.77	.59
30′	526.48	24.138	E	30′	1036.1	92.924	E	30′	1562.1	209.12	E
40′	534.89	24.913	.008	40′	1044.7	94.462	.034	40′	1571.0	211.48	.078
50′	543.29	25.700		50′	1053.3	96.013		50′	1580.0	213.86	

T = R tan ½ I E = R exsec ½ I

TABLE IX. TANGENTS AND EXTERNALS TO A 1° CURVE

I	T	E	I=40°	I	T	E	I=50°	I	T	E	I=60°
31°	1589.0	216.3	+	41°	2142.2	387.4	+	51°	2732.9	618.4	+
10′	1598.0	218.7	5° C.	10′	2151.7	390.7	5° C.	10′	2743.1	622.8	5° C.
20′	1606.9	221.1	T	20′	2161.2	394.1	T	20′	2753.4	627.2	T
30′	1615.9	223.5	.13	30′	2170.8	397.4	.17	30′	2763.7	631.7	.21
40′	1624.9	226.0	E	40′	2180.3	400.8	E	40′	2773.9	636.2	E
50′	1633.9	228.4		50′	2189.9	404.2		50′	2784.2	640.7	
32°	1643.0	230.9	.023	42°	2199.4	407.6	.037	52°	2794.5	645.2	.056
10′	1652.0	233.4		10′	2209.0	411.1		10′	2804.9	649.7	
20	1661.0	235.9		20′	2218.6	414.5		20′	2815.2	654.3	
30′	1670.0	238.4		30′	2228.1	418.0		30′	2825.6	658.8	
40′	1679.1	241.0		40′	2237.7	421.4		40′	2835.9	663.4	
50′	1688.1	243.5		50′	2247.3	425.0		50′	2846.3	668.0	
33°	1697.2	246.1	10° C.	43°	2257.0	428.5	10° C.	53°	2856.7	672.7	10° C.
10′	1706.3	248.7	T	10′	2266.6	432.0	T	10′	2867.1	677.3	T
20′	1715.3	251.3	.26	20′	2276.2	435.6	.34	20′	2877.5	682.0	.42
30′	1724.4	253.9	E	30′	2285.9	439.2	E	30′	2888.0	686.7	E
40′	1733.5	256.5	.046	40′	2295.6	442.8	.075	40′	2898.4	691.4	.112
50′	1742.6	259.1		50	2305.2	446.4		50′	2908.9	696.1	
34°	1751.7	261.8		44°	2314.9	450.0		54°	2919.4	700.9	
10′	1760.8	264.5		10′	2324.6	453.6		10′	2929.9	705.7	
20′	1770.0	267.2		20′	2334.3	457.3		20′	2940.4	710.5	
30′	1779.1	269.9		30′	2344.1	461.0		30′	2951.0	715.3	
40′	1788.2	272.6		40′	2353.8	464.6		40′	2961.5	720.1	
50′	1797.4	275.3	15° C.	50′	2363.5	468.4	15° C.	50′	2972.1	725.0	15° C.
35°	1806.6	278.1	T	45°	2373.3	472.1	T	55°	2982.7	729.9	T
10′	1815.7	280.8	.40	10′	2383.1	475.8	.51	10′	2993.3	734.8	.63
20′	1824.9	283.6	E	20′	2392.8	479.6	E	20′	3003.9	739.7	E
30′	1834.1	286.4	.070	30′	2402.6	483.4	.116	30′	3014.5	744.6	.168
40′	1843.3	289.2		40′	2412.4	487.2		40′	3025.2	749.6	
50′	1852.5	292.0		50′	2422.3	491.0		50′	3035.8	754.6	
36°	1861.7	294.9		46°	2432.1	494.8		56°	3046.5	759.6	
10′	1870.9	297.7		10′	2441.9	498.7		10′	3057.2	764.6	
20′	1880.1	300.6		20′	2451.8	502.5		20′	3067.9	769.7	
30′	1889.4	303.5		30′	2461.7	506.4		30′	3078.7	774.7	
40′	1898.6	306.4	20° C.	40′	2471.5	510.3	20° C.	40′	3089.4	779.8	20° C.
50′	1907.9	309.3	T	50′	2481.4	514.3	T	50′	3100.2	784.9	T
37°	1917.1	312.2	.53	47°	2491.3	518.2	.68	57°	3110.9	790.1	.84
10′	1926.4	315.2	E	10′	2501.2	522.2	E	10′	3121.7	795.2	E
20′	1935.7	318.1	.093	20′	2511.2	526.1	.151	20′	3132.6	800.4	.225
30′	1945.0	321.1		30′	2521.1	530.1		30′	3143.4	805.6	
40′	1954.3	324.1		40′	2531.1	534.2		40′	3154.2	810.9	
50′	1963.6	327.1		50′	2541.0	538.2		50′	3165.1	816.1	
38°	1972.9	330.2		48°	2551.0	542.2		58°	3176.0	821.4	
10′	1982.2	333.2		10′	2561.0	546.3		10′	3186.9	826.7	
20′	1991.5	336.3	25° C.	20′	2571.0	550.4	25° C.	20′	3197.8	832.0	25° C.
30′	2000.9	339.3	T	30′	2581.0	554.5	T	30′	3208.8	837.3	T
40′	2010.2	342.4	.67	40′	2591.0	558.6	.85	40′	3219.7	842.7	1.05
50′	2019.6	345.5	E	50′	2601.1	562.8	E	50′	3230.7	848.1	E
39°	2029.0	348.6	.117	49°	2611.2	566.9	.189	59°	3241.7	853.5	.283
10′	2038.4	351.8		10′	2621.2	571.1		10′	3252.7	858.9	
20′	2047.8	354.9		20′	2631.3	575.3		20′	3263.7	864.3	
30′	2057.2	358.1		30′	2641.4	579.5		30′	3274.8	869.8	
40′	2066.6	361.3		40′	2651.5	583.8		40′	3285.8	875.3	
50′	2076.0	364.5		50′	2661.6	588.0		50′	3296.9	880.8	
40°	2085.4	367.7	30° C.	50°	2671.8	592.3	30° C.	60°	3308.0	886.4	30° C.
10′	2094.9	371.0	T	10′	2681.9	596.6	T	10′	3319.1	892.0	T
20′	2104.3	374.2	.80	20′	2692.1	600.9	1.02	20′	3330.3	897.5	1.27
30′	2113.8	377.5	E	30′	2702.3	605.3	E	30′	3341.4	903.2	E
40′	2123.3	380.8	.141	40′	2712.5	609.6	.227	40′	3352.6	908.8	
50′	2132.7	384.1		50′	2722.7	614.0		50′	3363.8	914.5	.340

T = R tan ½ I E = R exsec ½ I

TABLE IX. TANGENTS AND EXTERNALS TO A 1° CURVE

I	T	E	I=70°	I	T	E	I=80°	I	T	E	I=90°
61°	3375.0	920.2		71°	4086.9	1308.2		81°	4893.6	1805.3	
10′	3386.3	925.9	+	10′	4099.5	1315.6	+	10′	4908.0	1814.7	+
20′	3397.5	931.6	5° C.	20′	4112.1	1322.9	5° C.	20′	4922.5	1824.1	5° C.
30′	3408.8	937.3	T	30′	4124.8	1330.3	T	30′	4937.0	1833.6	T
40′	3420.1	943.1	.25	40′	4137.4	1337.7	.30	40′	4951.5	1843.1	.36
50′	3431.4	948.9	E	50′	4150.1	1345.1	E	50′	4966.1	1852.6	E
62°	3442.7	954.8	.080	72°	4162.8	1352.6	.110	82°	4980.7	1862.2	.149
10′	3454.1	960.6		10′	4175.6	1360.1		10′	4995.4	1871.8	
20′	3465.4	966.5		20′	4188.5	1367.6		20′	5010.0	1881.5	
30′	3476.8	972.4		30′	4201.2	1375.2		30′	5024.8	1891.2	
40′	3488.3	978.3		40′	4214.0	1382.8		40′	5039.5	1900.9	
50′	3499.7	984.3		50′	4226.8	1390.4		50′	5054.3	1910.7	
63°	3511.1	990.2		73°	4239.7	1398.0		83°	5069.2	1920.5	
10′	3522.6	996.2	10° C.	10′	4252.6	1405.7	10° C.	10′	5084.0	1930.4	10° C.
20′	3534.1	1002.3	T	20′	4265.6	1413.5	T	20′	5099.0	1940.3	T
30′	3545.6	1008.3	.51	30′	4278.5	1421.2	.61	30′	5113.9	1950.3	.72
40′	3557.2	1014.4	E	40′	4291.5	1429.0	E	40′	5128.9	1960.2	E
50′	3568.7	1020.5	.159	50′	4304.6	1436.8	.220	50′	5143.9	1970.3	.299
64°	3580.3	1026.6		74°	4317.6	1444.6		84°	5159.0	1980.4	
10′	3591.9	1032.8		10′	4330.7	1452.5		10′	5174.1	1990.5	
20′	3603.5	1039.0		20′	4343.8	1460.4		20′	5189.3	2000.6	
30′	3615.1	1045.2		30′	4356.9	1468.4		30′	5204.4	2010.8	
40′	3626.8	1051.4		40′	4370.1	1476.4		40′	5219.7	2021.1	
50′	3638.5	1057.7	15° C.	50′	4383.3	1484.4	15° C.	50′	5234.9	2031.4	15° C.
65°	3650.2	1063.9	T	75°	4396.5	1492.4	T	85°	5250.3	2041.7	T
10′	3661.9	1070.2	.76	10′	4409.8	1500.5	.91	10′	5265.6	2052.1	1.09
20′	3673.7	1076.6	E	20′	4423.1	1508.6	E	20′	5281.0	2062.5	E
30′	3685.4	1082.9	.240	30′	4436.4	1516.7	.332	30′	5296.4	2073.0	.450
40′	3697.2	1089.3		40′	4449.7	1524.9		40′	5311.9	2083.5	
50′	3709.0	1095.7		50′	4463.1	1533.1		50′	5327.4	2094.1	
66°	3720.9	1102.2		76°	4476.5	1541.4		86°	5343.0	2104.7	
10′	3732.7	1108.6		10′	4489.9	1549.7		10′	5358.6	2115.3	
20′	3744.6	1115.1		20′	4503.4	1558.0		20′	5374.2	2126.0	
30′	3756.5	1121.7		30′	4516.9	1566.3		30′	5389.9	2136.7	
40′	3768.5	1128.2	20° C.	40′	4530.4	1574.7	20° C.	40′	5405.6	2147.5	20° C.
50′	3780.4	1134.8	T	50′	4544.0	1583.1	T	50′	5421.4	2158.4	T
67°	3792.4	1141.4	1.02	77°	4557.6	1591.6	1.22	87°	5437.2	2169.2	1.45
10′	3804.4	1148.0	E	10′	4571.2	1600.1	E	10′	5453.1	2180.2	E
20′	3816.4	1154.7	.321	20′	4584.8	1608.6	.445	20′	5469.0	2191.1	.603
30′	3828.4	1161.3		30′	4598.5	1617.1		30′	5484.9	2202.2	
40′	3840.5	1168.1		40′	4612.2	1625.7		40′	5500.9	2213.2	
50′	3852.6	1174 8		50′	4626.0	1634.4		50′	5517.0	2224.3	
68°	3864.7	1181.6		78°	4639.8	1643.0		88°	5533.1	2235.5	
10′	3876.8	1188.4		10′	4653.6	1651.7		10′	5549.2	2246.7	
20′	3889.0	1195.2	25° C.	20′	4667.4	1660.5	25° C.	20′	5565.4	2258.0	25° C.
30′	3901.2	1202.0	T	30′	4681.3	1669.2	T	30′	5581.6	2269.3	T
40′	3913.4	1208.9	1.28	40′	4695.2	1678.1	1.53	40′	5597.8	2280.6	1.83
50′	3925.6	1215.8	E	50′	4709.2	1686.9	E	50′	5614.2	2292.0	E
69°	3937.9	1222.7	.403	79°	4723.2	1695.8	.558	89°	5630.5	2303.5	.756
10′	3950.2	1229.7		10′	4737.2	1704.7		10′	5646.9	2315.0	
20′	3962.5	1236.7		20′	4751.2	1713.7		20′	5663.4	2326.6	
30′	3974.8	1243.7		30′	4765.3	1722.7		30′	5679.9	2338.2	
40′	3987.2	1250.8		40′	4779.4	1731.7		40′	5696.4	2349.8	
50′	3999.5	1257.9		50′	4793.6	1740.8		50′	5713.0	2361.5	
70°	4011.9	1265.0		80°	4807.7	1749.9		90°	5729.7	2373.3	
10′	4024.4	1272.1	30° C.	10′	4822.0	1759.0	30° C.	10′	5746.3	2385.1	30° C.
20′	4036.8	1279.3	T	20′	4836.2	1768.2	T	20′	5763.1	2397.0	T
30′	4049.3	1286.5	1.54	30′	4850.5	1777.4	1.84	30′	5779.9	2408.9	2.20
40′	4061.8	1293.6	E	40′	4864.8	1786.7	E	40′	5796.7	2420.9	E
50′	4074.4	1300.9	.485	50′	4879.2	1796.0	.671	50′	5813.6	2432.9	.910

T = R tan ½ I E = R exsec ½ I

TABLE IX. TANGENTS AND EXTERNALS TO A 1° CURVE

I	T	E	I=100°	I	T	E	I=110°	I	T	E	I=120°
91°	5830.5	2444.9		101°	6950.6	3278.1		111°	8336.7	4386.1	
10′	5847.5	2457.1	+	10′	6971.3	3294.1	+	10′	8362.7	4407.6	+
20′	5864.6	2469.3	5° C.	20′	6992.0	3310.1	5° C.	20′	8388.9	4429.2	5° C.
30′	5881.7	2481.5	T	30′	7012.7	3326.1	T	30′	8415.1	4450.9	T
40′	5898.8	2493.8	.43	40′	7033.6	3342.3	.51	40′	8441.5	4472.7	.62
50′	5916.0	2506.1	E	50′	7054.5	3358.5	E	50′	8468.0	4494.6	E
92°	5933.2	2518.5	.200	102°	7075.5	3374.9	.268	112°	8494.6	4516.6	.360
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° C.	10′	7224.7	3491.3	10° C.	10′	8684.0	4674.2	10° C.
20′	6073.1	2619.7	T	20′	7246.3	3508.2	T	20′	8711.5	4697.2	T
30′	6090.8	2632.6	.86	30′	7268.0	3525.2	.103	30′	8739.2	4720.3	1.25
40′	6108.6	2645.5	E	40′	7289.8	3542.4	E	40′	8767.0	4743.6	E
50′	6126.4	2658.5	.401	50′	7311.7	3559.6	.536	50′	8794.9	4766.9	.721
94°	6144.3	2671.6		104°	7333.6	3576.8		114°	8822.9	4790.4	
10′	6162.2	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	15° C.	50′	7444.6	3664.5	15° C.	50′	8965.0	4909.9	15° C.
95°	6252.8	2751.3	T	105°	7467.0	3682.3	T	115°	8993.8	4934.1	T
10′	6271.1	2764.8	1.30	10′	7489.6	3700.2	1.56	10′	9022.7	4958.6	1.93
20′	6289.4	2778.3	E	20′	7512.2	3718.2	E	20′	9051.7	4983.1	E
30′	6307.9	2792.0	.604	30′	7534.9	3736.2	.806	30′	9080.9	5007.8	1.09
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	20° C.	40′	7696.3	3865.2	20° C.	40′	9289.2	5184.5	20° C.
50′	6457.3	2903.1	T	50′	7719.7	3884.0	T	50′	9319.5	5210.3	T
97°	6476.2	2917.3	1.74	107°	7743.2	3902.9	2.08	117°	9349.9	5236.2	2.52
10′	6495.2	2931.6	E	10′	7766.8	3921.9	E	10′	9380.5	5262.3	E
20′	6514.3	2945.9	.809	20′	7790.5	3940.9	1.08	20′	9411.3	5288.6	1.46
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	25° C.	20′	7934.6	4057.4	25° C.	20′	9598.9	5449.2	25° C.
30′	6649.6	3047.9	T	30′	7959.0	4077.2	T	30′	9630.7	5476.5	T
40′	6669.2	3062.8	2.18	40′	7983.5	4097.1	2.61	40′	9662.6	5504.0	3.16
50′	6688.8	3077.7	E	50′	8008.0	4117.0	E	50′	9694.7	5531.7	E
99°	6708.6	3092.7	1.02	109°	8032.7	4137.1	1.36	119°	9727.0	5559.4	1.83
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	30° C.	10′	8208.2	4280.5	30° C.	10′	9957.5	5758.6	30° C.
20′	6868.8	3215.1	T	20′	8233.7	4301.4	T	20′	9991.0	5787.7	T
30′	6889.2	3230.8	2.62	30′	8259.3	4322.4	3.14	30′	10025.0	5817.0	3.81
40′	6909.6	3246.5	E	40′	8285.0	4343.6	E	40′	10059.0	5846.5	E
50′	6930.1	3262.3	1.22	50′	8310.8	4364.8	1.63	50′	10093.0	5876.1	2.20

T = R tan ½ I E = R exsec ½ I

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ENGINEERING DEPARTMENT
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