City Engineer's Office.

WATER. University Hts

F.B.175

175

Table showing the difference of latitude and departure in running 80 chains at any course from 1 to 60 minutes.

Minutes	Lks.	Minutes	Lks.	Minutes	Lks.
1	2⅓	21	49	41	95⅔
2	4⅔	22	51⅓	42	98
3	7	23	53⅔	43	100⅓
4	9⅓	24	56	44	102⅔
5	11⅔	25	58⅓	45	105
6	14	26	60⅔	46	107⅓
7	16⅓	27	63	47	109⅔
8	18⅔	28	65⅓	48	112
9	21	29	67⅔	49	114⅓
10	23⅓	30	70	50	116⅔
11	25⅔	31	72⅓	51	119
12	28	32	74⅔	52	121⅓
13	30⅓	33	77	53	123⅔
14	32⅔	34	79⅓	54	126
15	35	35	81⅔	55	128⅓
16	37⅓	36	84	56	130⅓
17	39⅔	37	86⅓	57	133
18	42	38	88⅔	58	135⅓
19	44⅓	39	91	59	137⅔
20	46⅔	40	93⅓	60	140

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City Hall, San Diego, Cal.

TABLE FOR RUNNING ON SLOPES.

In the following table the first column shows the angle, the second the number of links to be added to a chain on the slopes, to make one chain, horizontal measurement.

Angle	Cor. in Links	Angle	Cor. in Links	Angle	Cor. in Links	Angle	Cor. in Links
°		°		°		°	
4	0.24	11	1.88	18	5.14	25	10.54
5	0.38	12	2.24	19	5.76	26	11.26
6	0.55	13	2.63	20	6.42	27	12.24
7	0.76	14	3.06	21	7.11	28	13.37
8	0.98	15	3.53	22	7.85	29	14.34
9	1.24	16	4.02	23	8.64	30	15.47
10	1.55	17	4.56	24	9.47	35	22.07

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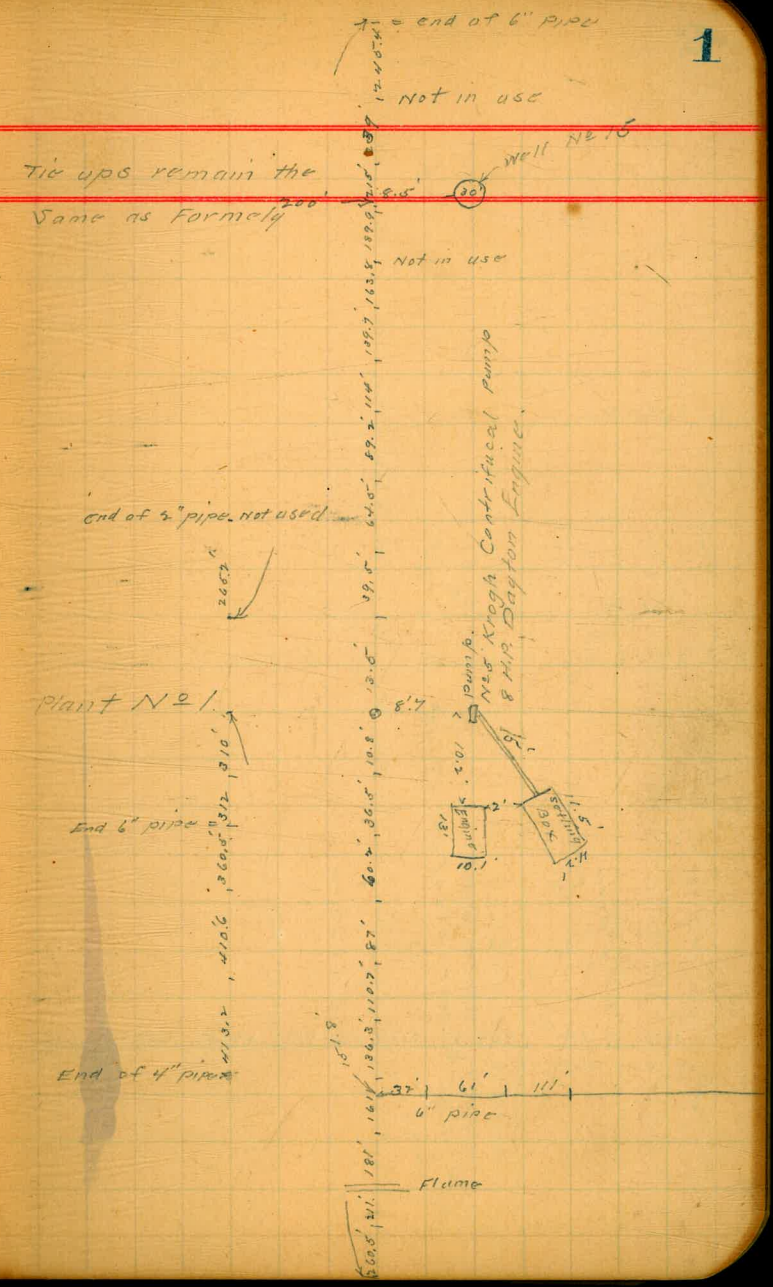
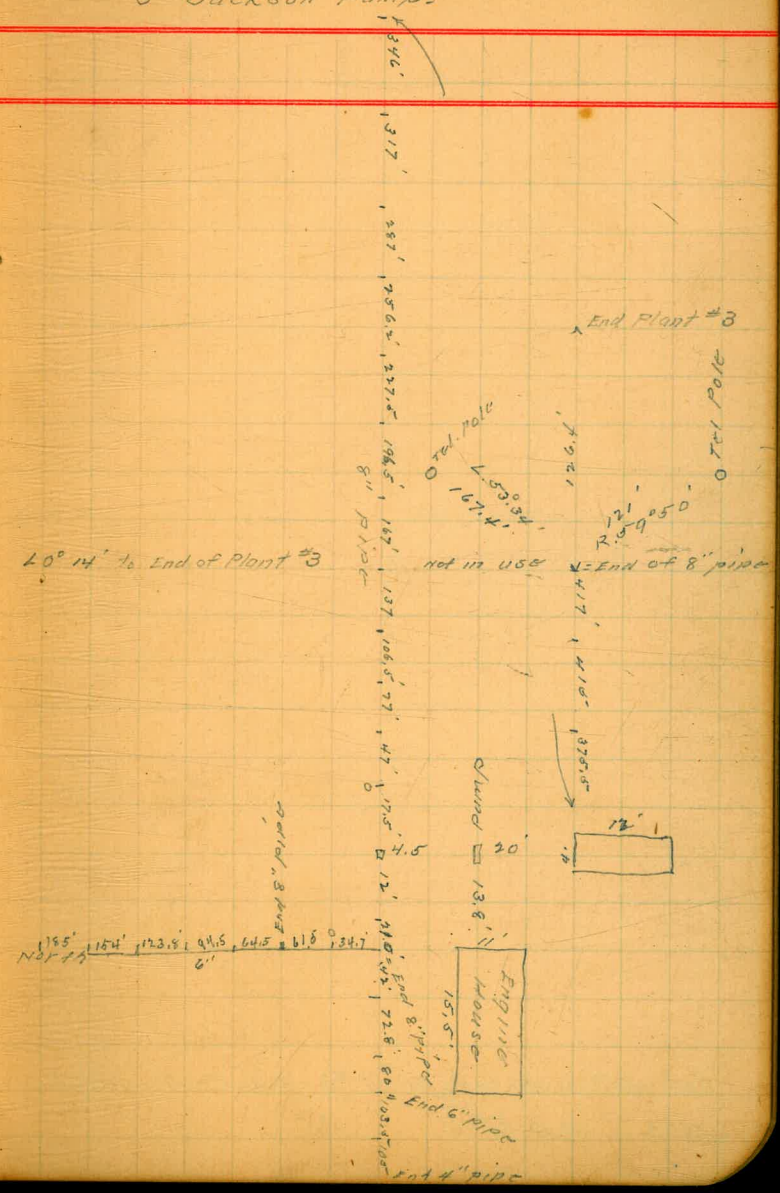
175



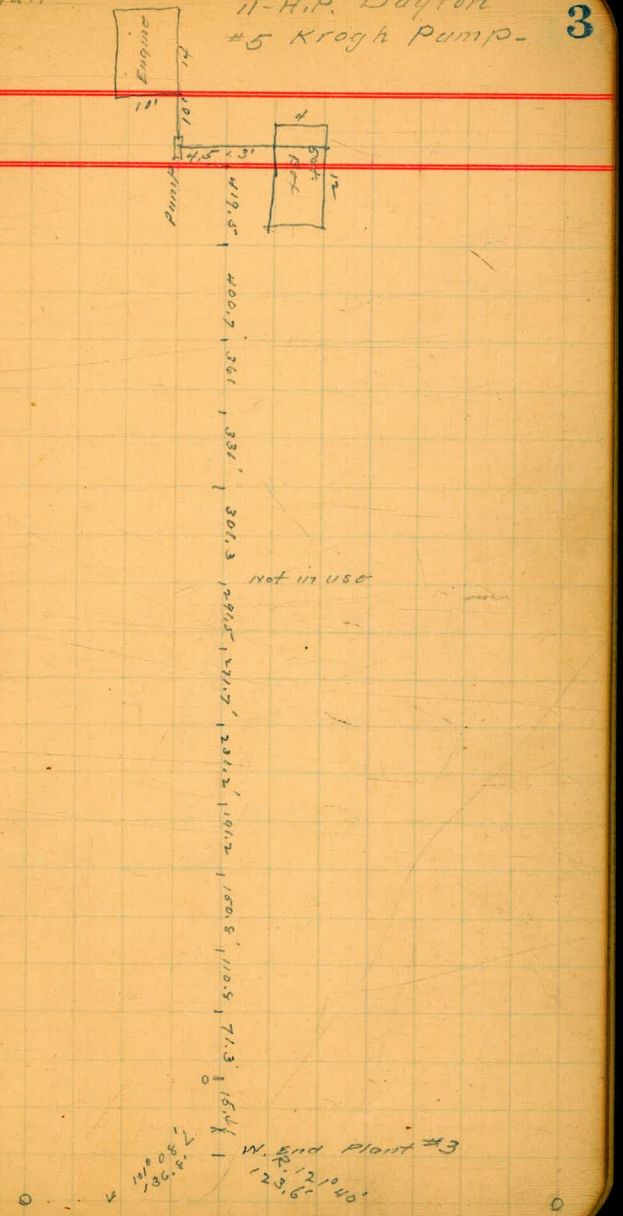
end of 6" pipe
Not in use
Tie ups remain the
Same as Formely
Well No 15
Not in use
End of 2" pipe Not used
Plant No 1
End 6" pipe
End of 4" pipe
No 5 Krogh Centrifucal pump
8 H.P. Dayton Engine
Engine
Setting Box
6" pipe
Flume

Plant No 2.

16 H.P. West Cost.
5" Jackson Pump.

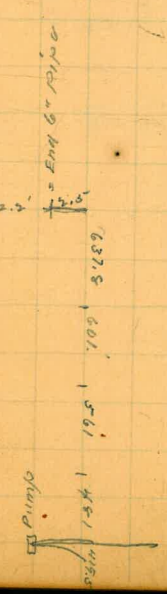


Plant No 3 11-H.P. Dayton
#5 Krogh Pump-

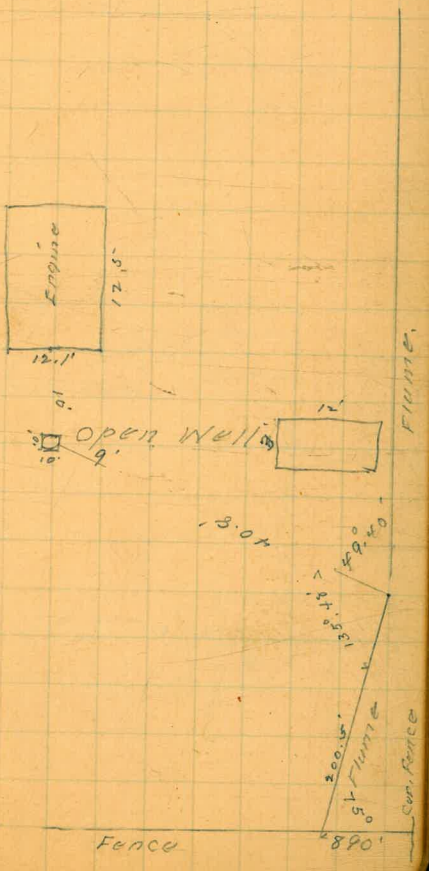


Set up on W. end plant #3 B.S. E end plant
No 2 R. 0° 05'

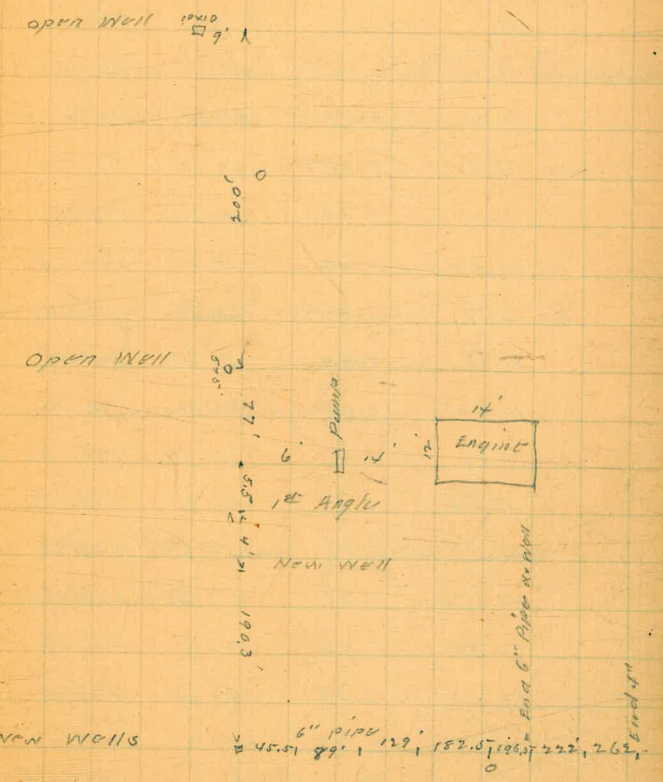
Plant No 3 continued.



Plant No 4
10 H.P. West Coast Engine.
#5 Krogh Pump.



Plant # 5
#6 Jackson Pump
20 H.P. Dayton-



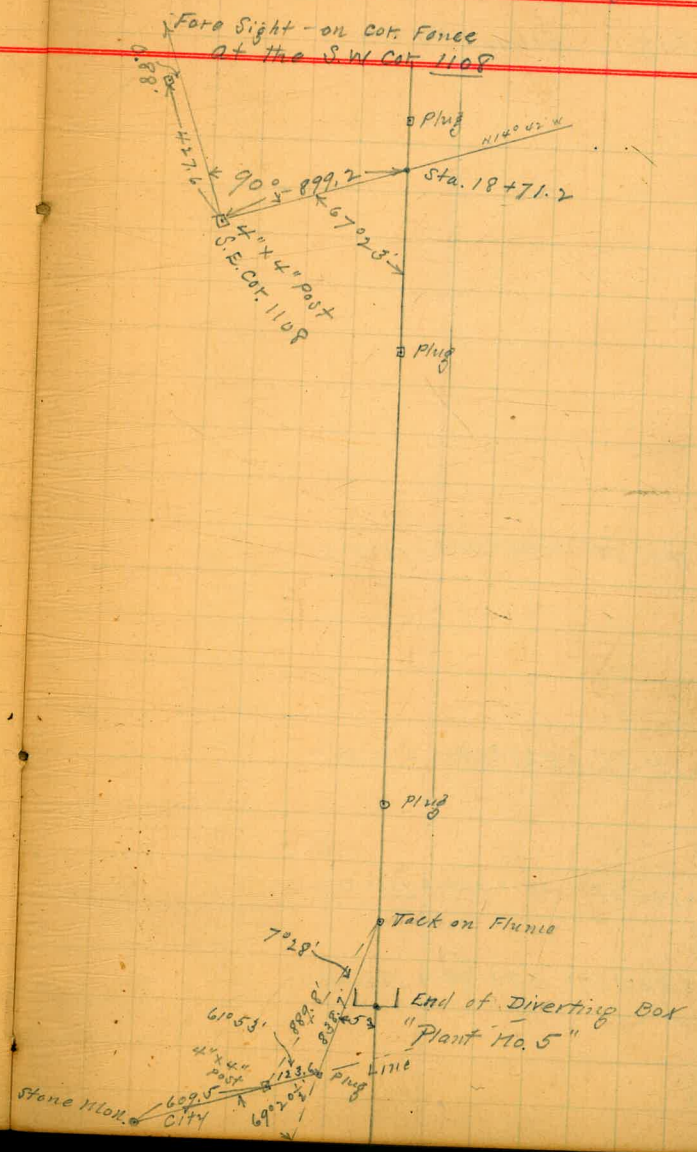
12/9/02

Levels at La Jolla to determine Elev. of Reservoir and Meacker Well.

	+	−	I.H.	Elev.	96+36	
Sta 2+50	11.82	0.78	108.18	96.36		Sta 2+50 from intersection of State & Grand on Boulevard Survey
	11.21	0.59	118.61	107.40		
	11.82	0.05	129.84	118.02		
	11.11	0.40	140.90	129.79		
	11.52	0.20	152.02	140.50		
	11.22	0.65	163.04	151.82		Depth of Shaft 184.0' from top of plank.
	11.70	0.40	174.09	162.39		
	11.62	0.05	185.31	173.69		Shaft 4' in diameter
	11.80	0.47	196.96	185.16		
	11.50	0.81	207.99	196.49	Rod	
	10.48	x8.67	217.66	207.18	8.67	208.88 = Elev. top of sill of Drum near auger hole
	10.50	1.99	219.38	208.88		
	11.32	0.92	228.71	217.39		
	12.10	0.38	239.89	227.79		
	11.88	x2.82	251.39	239.51		
		8.82		248.57	=	Top of wall La Jolla Reservoir
				242.57	=	Bottom of " " " 5' of Water

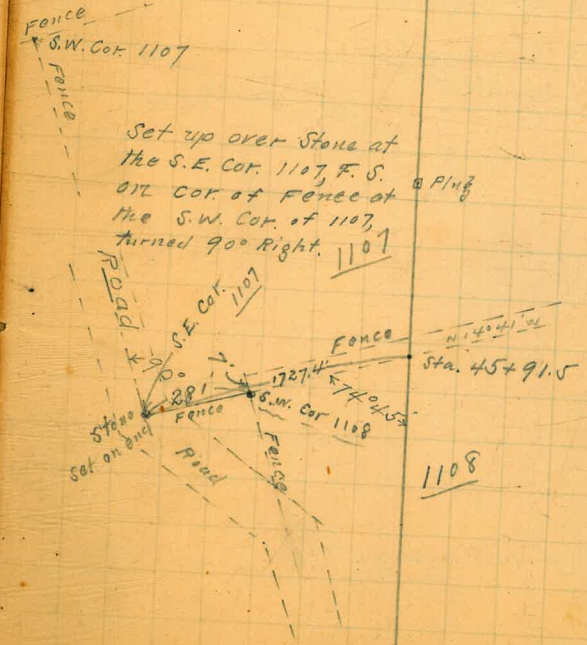
Ramsay
McCarthy } Survey of Flume from "Plant No. 5" to Main Pumping Works,
Lambert } 1/17/03 Mission Valley

Sta.		Ang	Bearing	Mag. Bear.
18 +98		L 21° 54'	S 76° 01' W	S 60° 40' W
17				
16	627'			
15				
14				
13		R 10° 27'	N 82° 05' W	S 83° 35' W
12 +71				
11				
10				
9				
8	868'			
7				
6				
5				
4 +03		R 14° 42'	S 87° 28' W	S 72° 25' W
3				
2	235'			
1 +68		L 6° 53'	S 72° 46' W	S 57° 10' W
0	168		S 79° 39' W	S 64° 0' W



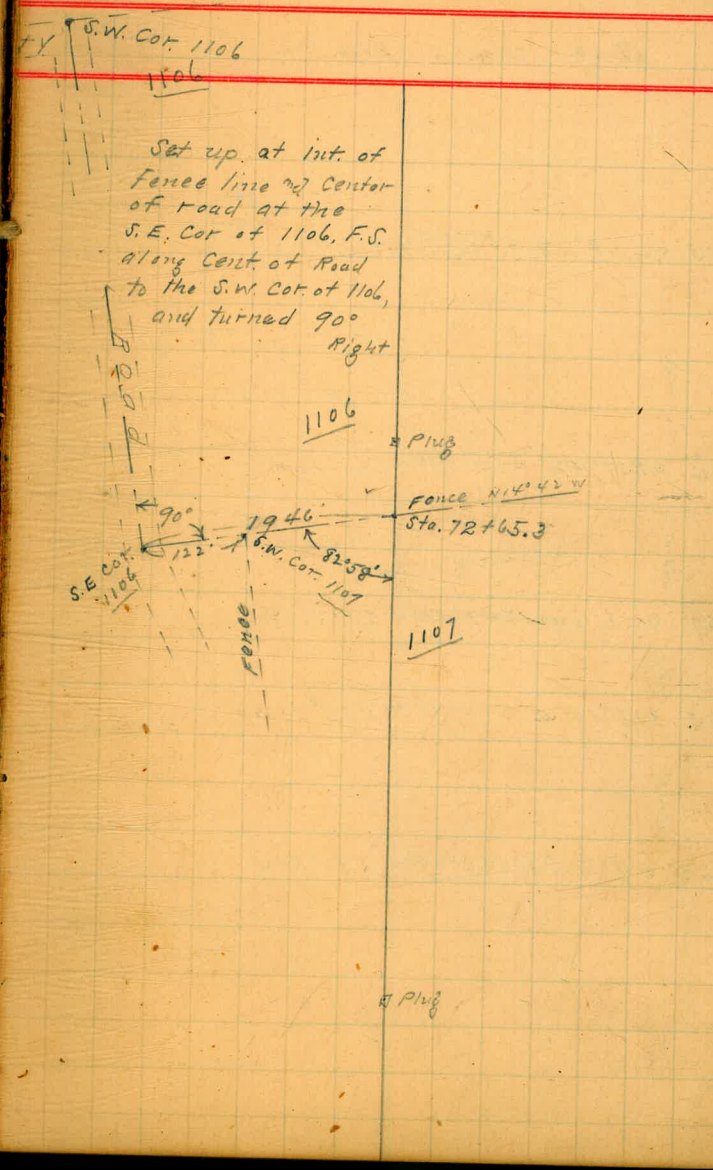
Stat.		Ang.	Bearing	Way Bear		
39						
38						
37						
36						
35						
34						
33						
32						
31						
30	+51	R 4° 55'	N 89° 26' W	S 75° 30' W		Tack on Flume
29						
28	440'					
27						
26	+11	13° 59' R	S 85° 39' W	S 70° 25' W		Tack on Flume
25						
24	279'					
23	+52	L 25° 18'	S 71° 40' W	S 56° 30' W		Plug
22	180					
21	+72	R 20° 57'	N 83° 02' W	S 81° 40' W		Plug
20						
19	274					

Sta.		Ang	Bearing	Mag. Bear.		
60						
59						
58						
57	1312'					
56						
55						
54						
53						
52						
51						
50	+33	121°02'	S69°32'W	S54°40'W		
49						
48						
47						
46						
45						
44						
43						
42	1982'					
41						
40						

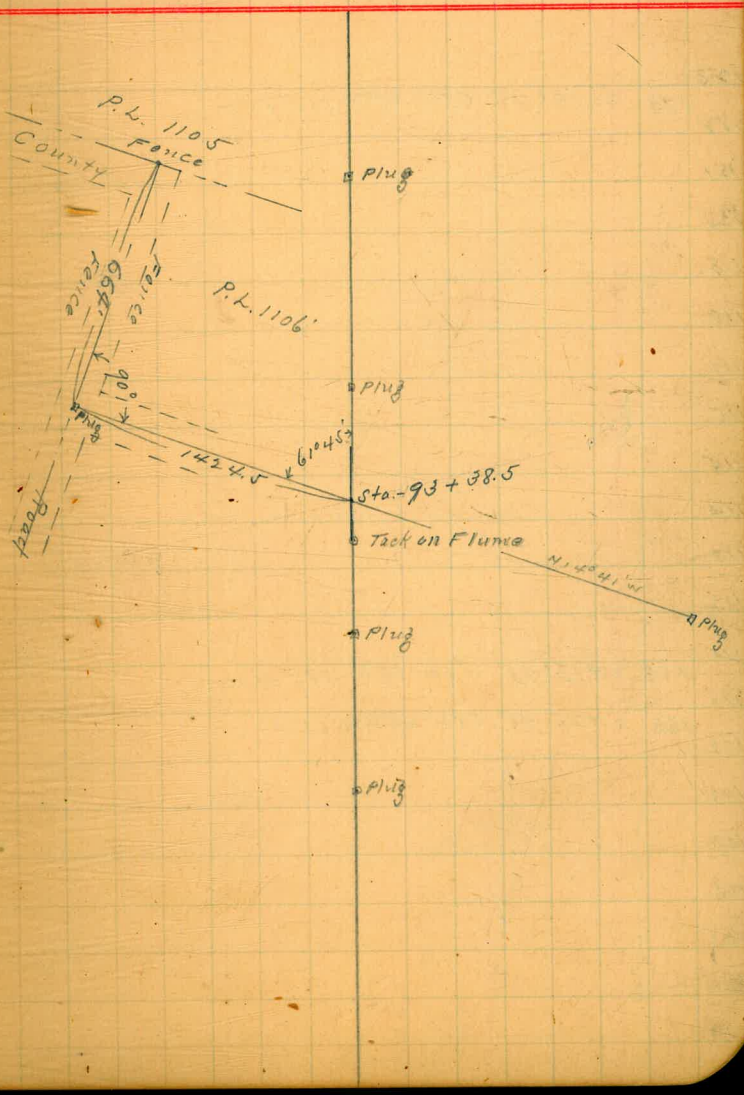


Sta.	Ang	Bearing	Mag. Bear.		Fence Crown
81					
80					
79	1206'				
78					
77					
76					
75 +16	∘L 25°44'	S56°36'W	S41°40'W		
74					
73					
72					
71					
70					
69	1166'				
68					
67					
66					
65					
64					
63 +50	∘R 12°48'	S82°20'W	S67°20'W		
62					
61					

1105



Sta.		Ang	Bearing	Mag. Bear.
102				
101				
100	+05	L 18°18'	S56°28'W	S41°40'W
99				
98	421'			
97				
96				
95	+84	R27°42'	S74°46'W	S60°00'W
94				
93	325'			
92	+59	L 6°04'	S47°04'W	S32°20'W
91				
90	+65	13°10' L	S53°08'W	S38°30'W
89	194'			
88				
87	+22	9°42' R	S66°18'W	S51°50'W
86	343'			
85				
84				
83				
82				

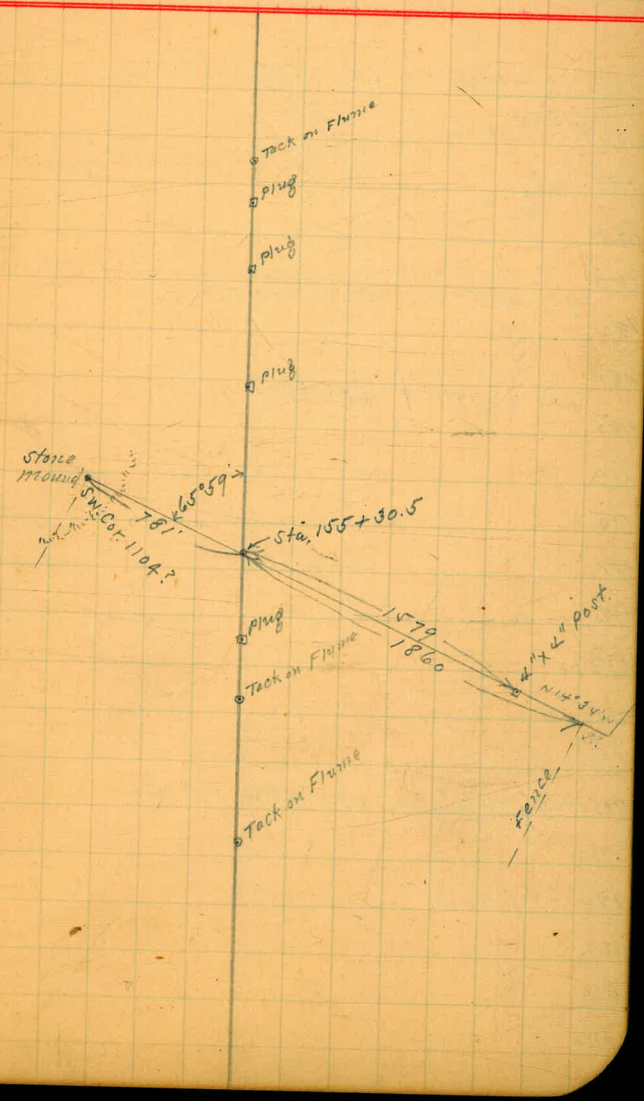


1/22/03

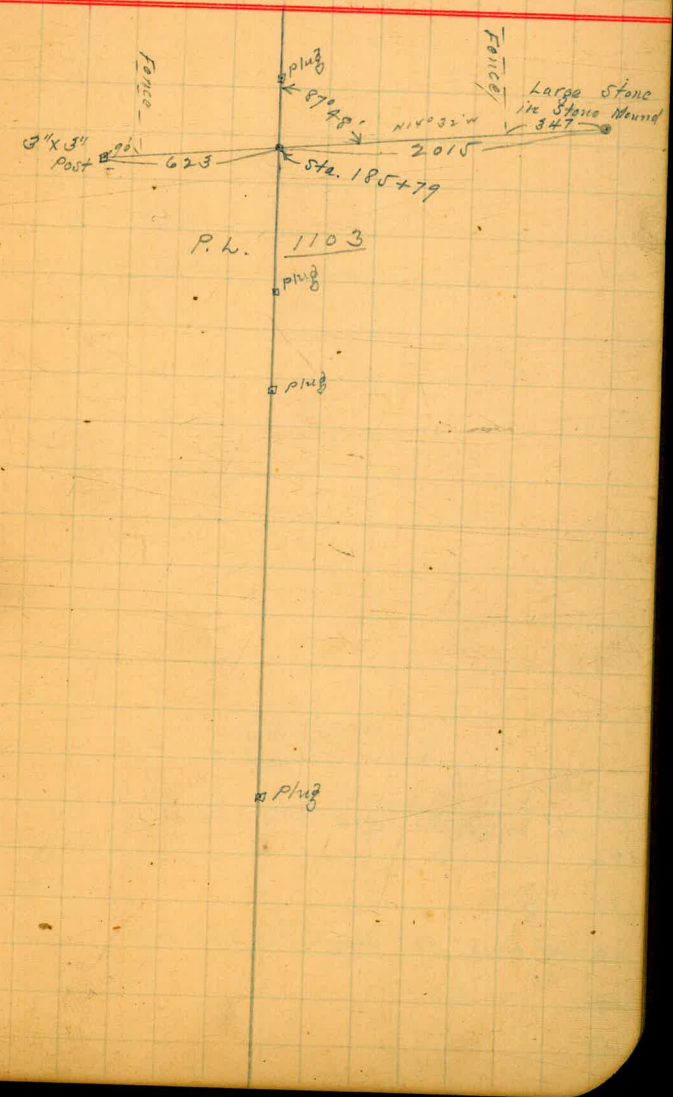
Sta.	Ang.	Bearing	Mag. Bear.		
123					
+73	L19°42'	S76°09'W	S60°50'W		Plug
122					
121					
120					
119					
118					
117					
116	1190'				
115					
114					
113					
112					
111					
+83	R13°43'	N84°09'W	S80°45'W		Plug
110	12'				
+62	R25 40'	S82°08'W	S67°20'W		Plug
109					
108					
107					
106					
105	957'				
104					
103					

Sta.		Ang.	Bearing	Mag. Bear.	
144					
	+77	R20° 03'	S76° 48' W	S61° 00' W	Plug
143	132'				
142	+45	R10° 30'	S56° 45' W	S41° 05' W	Plug
141					
140	439'				
139					
138	+06	L17° 07'	S46° 15' W	S30° 30' W	Plug
137	210'				
136					
	+96	L12° 47'	S63° 22' W	S47° 45' W	Plug
135					
134					
133					
132					
131					
130					
129					
128	1323'				
127					
126					
125					
124					

Sta.		Ang.	Bearing	Mag. Bear.		
166						
165						
164 +53	75	R 21° 22'	N 67° 18' W	N 82° 50' W		
163 +78	170	R 41° 12'	N 88° 40' W	S 75° 35' W		
162 +08		R 28° 29'	S 50° 08' W	S 34° 30' W		
161	209					
160 +99		L 29° 46'	S 21° 39' W	S 6° 00' W		
159						
157						
156	185					
155						
154						
153 +44	122	L 24° 29'	S 51° 25' W	S 35° 40' W		
152 +22		L 3° 15'	S 75° 54' W	S 60° 15' W		
151						
150	300					
149 +22		R 2° 21'	S 79° 09' W	S 63° 30' W		
148						
147						
146	545					
145						

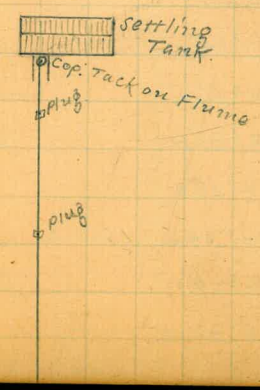


Sta.		Ang	Bearing	Mag. Bear.
187 +24		∘L 19°51'	S57°49'W	S42°15'W
186				
185	427'			
184				
183 +97		∘L 5°34'	S77°40'W	S62°05'W
182	213'			
181 +84		∘L 19°58'	S83°14'W	S67°15'W
180				
179				
178				
177				
176	920'			
175				
174				
173				
172 +34		∘L 9°30'	N76°48'W	S87°35'W
171				
170				
169				
168	781'			
167				



L 308° 54'
R 307° 25'
L 1° 29

Sta.	Ang.	Bearing	Mag. Bear.		
193 +88					
192 +79	100° R28° 53'	S78° 10' W	S62° 45' W		
191	275°				
190 +04	L 8° 32'	S49° 17' W	S33° 45' W		
189					
188	280°				



Dist.	Bearing	N	S	E	W	S	W	
168'	S79°39'W		30.2		165.2	30.2	165.2	1
235'	S72°46'W		69.6		224.4	99.8	389.6	2
868'	S87°28'W		38.4		867.1	138.2	1256.7	3
627'	N82°05'W	86.4			621.0	51.8	1877.7	4
274'	S76°01'W		66.2		265.9	118.0	2143.6	5
180'	N83°02'W	21.8			178.7	96.2	2322.3	6
259'	S71°40'W		81.5		245.9	177.7	2568.2	7
440'	S85°39'W		33.4		438.7	211.1	3006.9	8
1982'	N89°26'W	19.6			1981.9	191.5	4988.8	9
1317'	S69°32'W		460.5		1233.1	652.0	6221.9	10
1166	S82°20'W		155.5		1155.6	807.5	7377.5	11
1206'	S56°36'W		663.9		1006.8	= 1471.4	8384.3	12
343'	S66°18'W		137.9		314.1	1609.3	8698.4	13
194'	S53°08'W		116.4		155.2	1725.7	8853.6	14
325'	S47°04'W		221.4		237.0	1947.1	9090.6	15
421'	S74°46'W		110.6		406.2	2057.7	9496.8	16
957'	S56°28'W		528.7		797.7	2586.4	10294.5	17
121'	S82°08'W		16.6		119.8	2603.0	10414.3	18
1190'	N84°09'W	121.3			1183.8	2481.7	11598.1	19
1323	S76°09'W		316.7		1284.6	2798.4	12882.7	20
210'	S63°22'W		94.1		187.7	= 2892.5	= 13070.4	21
		249.1	3141.6			0	0	

Dist	Bearing	N	S	E	W	S	W	
489'	S46°15'W		303.6		317.1	303.6	317.1	22
132'	S56°45'W		72.4		110.4	376.0	427.5	23
545'	S76°48'W		124.4		530.6	500.4	958.1	24
300'	S79°09'W		56.5		294.6	556.9	1252.7	25
122'	S75°54'W		29.7		118.3	586.6	1371.0	26
655'	S51°25'W		408.5		512.0	995.1	1883.0	27
209'	S21°39'W		194.2		77.1	1189.3	1960.1	28
170'	S50°08'W		109.0		130.5	1298.3	2090.6	29
75'	N88°40'W	1.7			75.0	1296.6	2165.6	30
781'	N67°18'W	301.4			720.5	995.2	2886.1	31
850'	N76°48'W	194.1			827.5	801.1	3713.6	32
213'	S83°14'W		25.1		211.5	826.2	3925.1	33
427'	S77°40'W		91.2		417.1	917.4	4342.2	34
280'	S57°49'W		149.1		237.0	1066.5	4579.2	35
275'	S49°17'W		179.4		208.4	1245.9	4787.6	36
109'	S78°10'W		22.4		106.7	1268.3	4894.3	37

8/13/03 Alverson
McAuliffe
Johnson

Survey to determine the Location of the La Jolla Reservoir and its dimensions etc.

From South Cor of Blocks 63 & 64 (La Jolla Park Add) which is a 2½" x 2½ Post in Stone Md. I turn angle 90°R from S.W. Cor Blk 63. thence northerly

325' Set small nail for △ Sta.

Thence angle 21° 40' Rt

44' To roof of Reservoir

72 " crest of roof above 12"x12" - 8½ center post

95' " northerly edge of roof

115' " Foot of embankment

From same △ Sta Angle 43° Rt

64' To Easterly edge of roof.

From same △ Sta. Angle 5°30' Lt

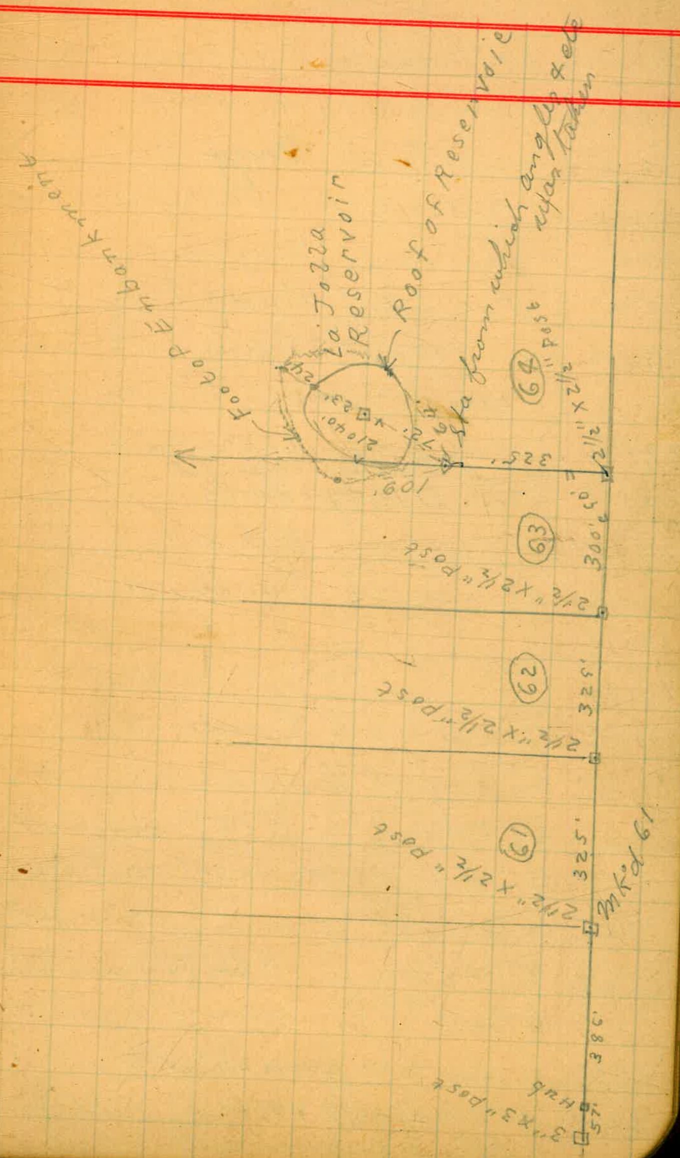
109' To foot of embankment

From same △ Sta line produced

58' To westerly edge of roof, and the line produced will cut off about 1' of the roof for about 10' then leaves the same

From same △ Sta angle 9°15' Rt

85.5' To N. Westerly edge of roof



Survey of new Pipe Line
from near Government Dyke
San Diego River. Old Town

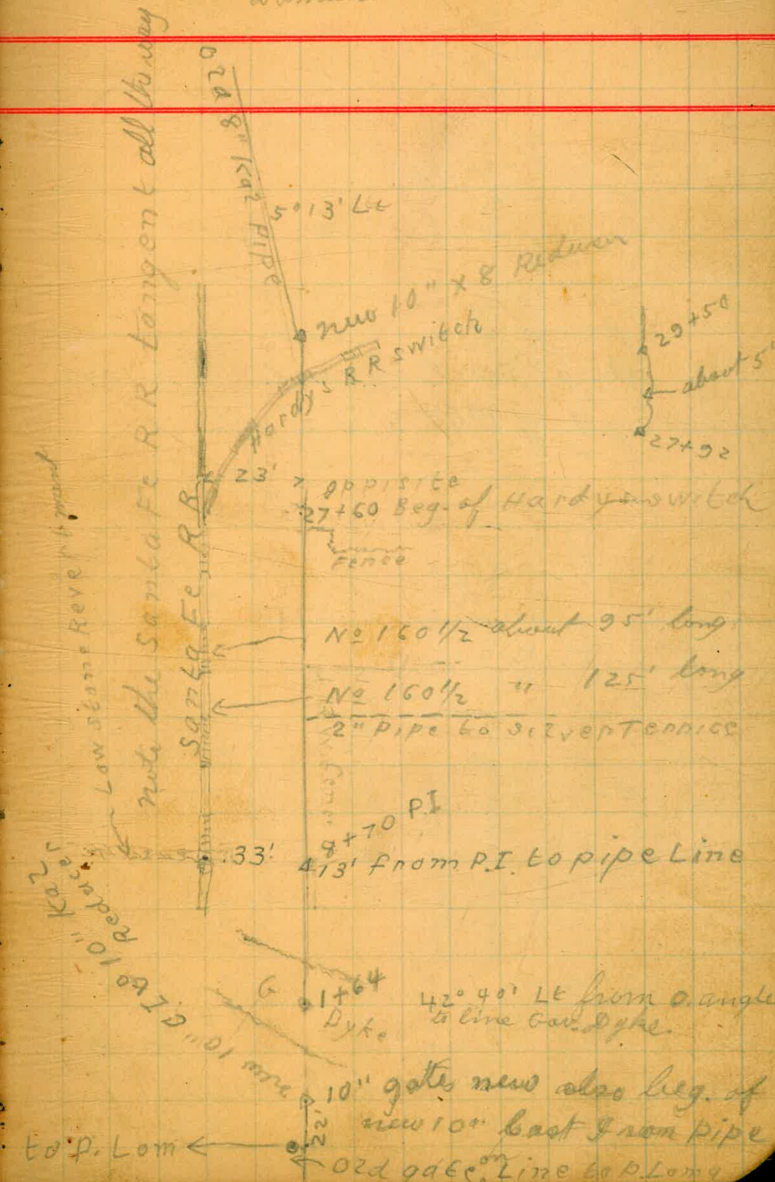
thence Northerly to Hardy's Slaughter

This pipe was laid by the Water Dept.
in the months of May 1903
and is new 10" dia Cast Iron pipe

Sta	angle		Mag. ○		
30+09	End of Sec 1 of new pipe				
29+76	Cross Hardy's Switch				
27+92	To new 10" gate				
Δ 27+74	9°20' Rt		N 26° 10' W		
27+35	N. E. of Trestle		No 160.		
26+95	Cross Hardy's fence				
Δ 25+58	4°25' Lt		N 36° 20' W		
24+20	"	S. end	Trestle	No 160	
19+10	"	"	" "	160¼	"
16+30	"	"	" "	160½	"
10+30	Opposite	N. end	Trestle	No 161	S.F.R.R.
10+00	on tangent of pipe Line				
Δ 8+70	24° 50' Rt		N. 32° W	P.I. of angles	
7+75	B.C. of angle or curve in pipe				
1+85	N Bank, foot government Dyke foot				
1+64	8° 40' Rt		N 56° 50' W		
1+37	S. Bank, foot of government Dyke foot of				
0.00			N 65° 30' W		

(note) the angle at 0.00 is 3° 10' Rt from the pipe line southerly on Riely St ← Whitman ?

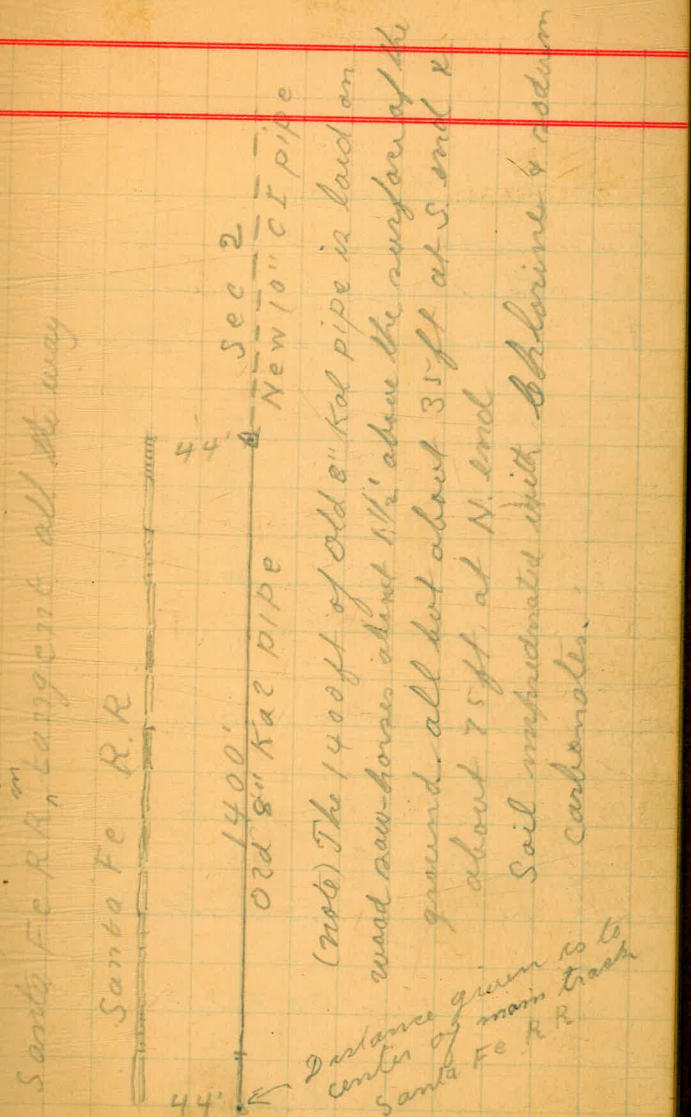
9/1/03 Alverson McAuliffe Lambert



Pipe Line continued

Beg of sec 2 of new 10" C I pipe
14+00 End of Old 8" Kal pipe

0.00 Beg. of Old 8" Kal. pipe
0.00 End of Sec 1 of new 10" C I Pipe



(note) The 1400 ft of Old 8" Kal pipe is laid on wood saw-horses about 1½' above the surface of the ground all but about 35 ft at S end & about 75 ft at N end

Soil impregnated with Chlorine & sodium carbonates.

Pipe Line continued

(Note) The information in regard to the two new 10" gates & the 4 reducers was obtained from John B. Symons Foreman of the Water Dept.

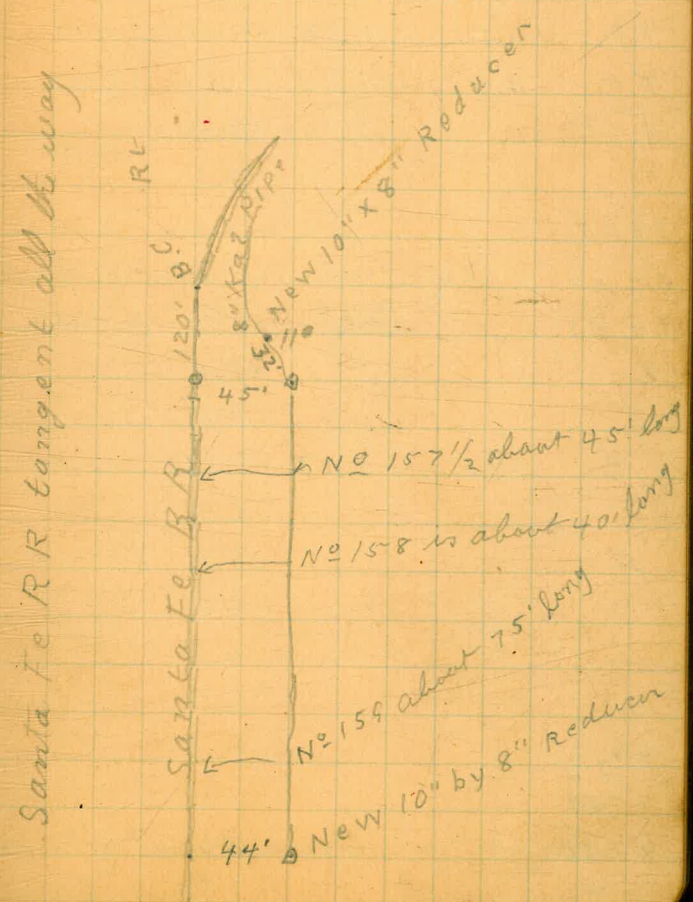
20+32 End Sec 2 of New 10" C.I. Pipe
20+00 11° Lt

12+84 N. End of pole Culvert No 157 1/2

7+25 N. End of Pole Culvert No 158
2+40 3/4" Water Hydrant 5' Rt
2+02 44' Rt of 263 mile Post S.F. R.R

1+00 N. End of pole Culvert No 159

0.00 Beg of new 10" C.I. pipe
End of Old 8" Kal. pipe.



Level Notes
Of Pipe Line on Pages 22-23-24

9/1/03 Alverson
McAuliffe
Lambert

Sta	+	H.I.	−	Elev	
	7.84	19.82		11.98	→ Copper tack top of East pier S. end of Iron Bridge Old Town
T.P.	3.57	17.87	5.52	14.30	
T.P.	3.83	16.30	5.40	12.47	
0.00			12.5		ground reading at new 10" gate
1			9.0		
1+37			8.0		S. foot of Gov. Dyke
1+64			4.0		Center of top of Gov. Dyke
1+87			9.7		N. foot of Gov. Dyke.
2			10.0		
3			9.5		
T.P.	2.21	9.17	9.36	6.94	
4			6.4		
5			5.2		
6			4.2		
7			4.6		
8			6.0		
8+12			6.2		
8+40			3.0		
8+70			3.0		→ Point of intersection of angles
T.P.			2.97	6.20	

(Pipe is laid on light sandy soil & silt

9/2/03 Levels continued

Davison
McAuliffe

Sta	+	H.S	−	Elev.
	4.47	10.67		6.20
9			6.7	
10			4.5	
11			5.6	
12			6.0	
13			6.6	
14			6.5	
15			7.0	
T.P	3.48	7.88	6.27	4.40
16			4.6	
17			4.7	
18			5.1	
19			4.4	
20			4.6	
21			5.1	
22			5.4	
23			5.7	
24			5.6	
T.P.	4.30	6.80	5.38	2.50
25			4.6	

Pipe is laid in light sand soil & silt

Levels continued

Sta	+	H I	−	Elv	
		6.80			
25+58			4.7		
26			7.7		
27			2.7		
T P	5.36	14.30	1.86	4.94	
			4.20		
B.M.			4.58		
27+74			3.00		
28			2.8		
+50			4.0		
29			5.7		
+76			5.9		
30			7.2		
+09			11.0		
T.P.	0.10	5.85	8.55	5.75	
			3.8		
T.P	1.64	5.12	3.48	2.37	
T.P	2.77	5.46	2.43	2.69	
0.00			4.0		→
1			4.1		
2			3.8		

(Note) From Sta 27 to Sta 30 the pipe is laid in conglomerate soil.

From 26+05 to 26+40 under water in Hardy's Slough.

Elv. of Top of Rail main track Santa Fe R.R at Beg Hardy's Switch

On East end of tie Beg of Hardy's switch

an pipe line pipe about 4 ft under ground

On pipe line

Center Hardy's switch

End of new 10" CI pipe + Beg of old 8" Kal

Top of Old 8" Kal pipe at 100 ft from beginning of same.

Note the 1400 ft of old 8" pipe is on low saw horses. and is approx level

End of old 8" Kal pipe + beg. of new 10" CI pipe

See 2

Levels continued

Sta	+	H.I.	−	Elv.
		5.46		
3			3.5	
4			1.8	
T.P.	5.42	9.85	1.03	4.43
5			5.7	
6			5.3	
7			4.0	
8			5.4	
9			6.3	
10			5.9	
11			7.5	
T.P.	3.03	6.53	6.35	3.50
12			4.0	
13			4.5	
14			6.2	
15			6.5	
16			6.9	
17			3.1	
T.P	4.30	7.80	3.03	3.50
18			1.8	
19			2.7	

(note) The rod readings on Sec 2 of the new 10" C I pipe were taken from top of dirt on pipe line which will average about 1 ft. above the general surface of the ground, almost the entire 2032' of length.

(note) Sec 2 of new 10" C.I. pipe is laid in light sandy soil. Rock at the N. end

Levels continued

Sta	+	H.I.	−	Elev
		7.80		
20		[illegible]	4.7	
20+32		[illegible]	6.8	
B M		3.[illegible]	3.88	3.92

End of sec 2 of new 10" C.I. pipe
Establish the same on Telephone Pole 2' Rt of Sta 20.
(Note) the preceding levels were run with old level & old rod & are only approx correct.

28/9/03. (Anderson, McAuliffe, Lambert, Davis) Levels from Logan to Webster ave. 28th st

Sta.	+	H.I.	−	Elev.	
B.M.				63.89	B.M. 29 & National ave. Elev 63.89
T.P. ⊙	0.34	64.23	6.22	58.01	
0.	10.65	68.66	3.07	65.59	Center of Logan & 28 st
+ 40			2.67	65.99	
1+40			0.90	67.76	
T.P.	10.89	78.59	0.96	67.70	T.P.
1+83			10.10	68.49	S. side of st.
2+13			9.20	69.39	center of Marshy st
2+43			8.50	70.09	N side of st
3+43			6.60	71.99	
4+28			4.70	73.89	S. side of st. Kearney ave
4+79			4.20	74.39	center of st.
5+30			3.50	75.09	N side of st.
6+30			1.50	77.09	
T.P. ⊙	10.73	88.49	0.83	77.76	T.P.
7+30			9.80	78.69	
8+30			8.20	80.29	
9+30			6.30	82.19	
10+30			4.10	84.39	

Levels continued 28th st

	+	H.I.	−	Elv.	
11+30		88.49	2.70	85.79	
12+30			1.90	86.59	
			0.80	87.69	
T.P. ⊙	9.92	97.49	0.92	87.57	T.P.
13+30			7.60	89.89	
14+30			5.00	92.49	
15+30			4.40	93.09	
16+30			6.30	91.19	
17+30			9.10	88.39	
T.P. ⊙	1.31	87.05	11.75	85.74	T.P.
18+30			2.40	84.65	
19+30			4.90	82.15	
20+30			6.90	80.15	
20+80			9.90	77.15	
21+30			10.90	76.15	
T.P. ⊙	2.85	78.71	11.19	75.86	T.P.
22+30			3.80	74.91	
23+30			5.40	73.31	
24+30			6.10	72.61	

Levels continued 28th st.

	+	H.I.	−	Elev.	
25+30		78.71	6.80	71.91	
26+30			7.80	70.91	Intersection 28th & Webster ave

28/9/03 { Anderson, Davis, McAuliffe, Lambert

Levels from — national ave to Boston ave 26th st

Sta.	+	H.I.	—	Elv		
B.M.	0.13	51.28		51.15		B.M. National ave & 26th st Elev 51.15
0.			1.80	49.48		center of National ave & 26th st
1.			5.60	45.68		(100 ft. sta.)
2.			9.60	41.68		
3.			11.20	40.08		
T.P. 0	0.22	39.74	11.76	39.52	— — —	T.P.
4.			2.90	36.84		
5.			4.50	35.24		
6.			6.60	33.14		
7.			9.10	30.64		
8.			11.70	28.04	— —	Boston ave

28/9/03 Anderson, Davis, McAuliffe, Lambert.

Levels from 25th and L to 32nd st. & L

Sta	+	H.I.	—	Elev.	
B.M.	2.82	70.64		67.82	B.M. 24th & L st. Elev 67.82
0.			4.70	65.94	Center of 25 & L st.
1.			3.20	67.44	
2.			0.40	70.24	
T.P. 0	7.72	77.06	1.30	69.34	T.P.
3.			6.80	70.26	
4.			5.30	71.76	
5.			4.10	72.96	
6.			4.40	72.66	
7.			6.70	70.36	
+75			9.90	67.10	
8.			9.30	67.76	
9.			5.10	71.96	
10.			3.60	73.46	
11.			3.80	73.26	
T.P. 0	7.42	81.92	2.56	74.50	
12.			5.90	76.02	
13.			5.20	76.72	
14			4.60	77.32	
15			6.10	75.82	

Levels continued L.st.

Sta	+	H I	−	Elev	
		81.92			
16.			6.70	75.22	
17.			7.90	74.02	
18.			4.20	77.72	
" +80			4.92	77.00	
19.			8.80	73.12	Bottom of Gulch 4 ft wide
20.			5.60	76.32	
21.			3.10	78.82	
T.P. ⊙	6.06	85.06	2.92	79.00	
22.			5.60	79.46	
23.			5.70	79.36	✓
24.			5.30	79.76	
25.			6.00	79.06	
26.			7.50	77.56	
27.			9.10	75.96	
28.			11.00	74.06	
T.P. ⊙	3.72	77.48	11.30	73.76	
29.			4.90	72.58	
30.			6.20	71.28	
31.			6.70	70.78	
32.			5.30	72.18	

Levels continued L. st.

Sta.	+	H.I.	−	Elv.
		77.48		
33.			4.80	72.68
34.			4.60	72.88
35.			3.80	74.18
36.			3.60	73.88
37.			1.80	75.68
38.			1.50	75.98
39.			1.60	75.88
T.P. ⊙	6.35	82.65	1.18	76.30
40.			6.30	76.35
41.			5.60	77.05
42.			4.80	77.85
43.			4.20	78.45
44.			5.20	77.45
45.			5.10	77.55
46.			5.60	77.05
47.			5.00	77.65

30/9/03 Level notes of Cleveland ave University to Jackson ave.

Anderson
Davis
McAuliff
Lambert

Sta	+	H.I.	—	Elv.	
B.M.				283.12	Spike in Electric pole S.E cor University & 9th
	6.87	289.99			
0.			7.30	282.69	center of University & Cleveland ave.
1.			6.60	283.39	
2.			5.70	284.29	
3.			3.90	286.09	
4.			2.50	287.49	
5.			1.00	288.99	
6.			0.20	289.79	
T.P. ⊙			0.11	289.88	T.P.
7.	11.00	300.88	9.80	291.08	
8.			8.00	292.88	
9.			7.10	293.78	
10.			5.40	295.48	
+45			5.20	295.68	
11.			11.40	289.48	
+35			5.90	294.98	
+50			4.70	296.18	
12.			3.20	297.68	
13.			1.70	299.18	
T.P. ⊙			0.70	300.18	

Levels Cleveland Ave continued

Sta	+	H.I.	−	Elv.	
				300.18	
	10.37	310.55			
14.			10.40	300.15	
15.			9.70	300.85	
16.			9.00	301.55	
17.			8.70	301.85	
+56			12.30	298.25	
18.			7.80	302.75	
19.			6.80	303.75	
20.			6.20	304.35	
21.			6.30	304.25	
+40			8.30	302.25	
22.			4.90	305.65	
23			2.60	307.95	
T.P. ⊙	11.49	319.64	2.40	308.15	T.P.
24.			10.00	309.64	
25.			8.90	310.74	
26			9.20	310.44	
27			7.90	311.74	
28			7.50	312.14	

Levels Cleveland ave continued

Sta	+	H.I.	−	Elv	
		319.64			
29			8.00	311.64	
30			7.70	311.94	
+70			9.50	310.14	S. side of gulch.
+90			21.00	298.64	Bottom of Gulch
31,			15.00	304.64	
+20			7.60	312.04	N. side of gulch
32,			1.90	317.74	
T.P. ⊙	13.25	331.68	1.21	318.43	
33,			10.20	321.48	
34,			3.30	328.38	
T.P. ⊙	12.12	342.59	1.21	330.47	
35,			7.60	334.99	
36.			6.90	335.69	
37,			3.60	338.99	
38,			1.40	341.19	
T.P. ⊙	10.04	351.87	0.76	341.83	
39.			9.20	342.67	
40.			8.70	343.17	
41			8.00	343.87	

Levels Cleveland ave continued

Sta	+	H.I.	−			
		357.87				
42.			6.90	344.97		
43.			6.90	344.97		
44.			4.90	346.97		Intersection of Cleveland & ~~Jackson ave~~ Meade
T.P. 0	3.53	349.17	6.23	345.64		
B.M.			3.64	345.53	S.W. cor	Campus & University on nozzel of Hydrant

Levels Robinson ave from 10th to Vermont.

Sta	+	H.I.	−		
B.M.	6.20	289.32		283.12	Spike in Electric pole S.E. cor University & 9th st
T.P. 0	7.46	290.18	6.60	282.72	
0.			7.10	283.08	From center of 10th & Robinson ave
1.			6.30	283.88	
2.			4.50	285.68	
3.			4.70	285.48	
4.			3.90	286.28	
5.			2.50	287.68	
6.			1.10	289.08	Center of Vermont & Robinson ave.

Levels from University to Cypress on center line of Vermont st.

Sta.	+	H.I.	—	Elv.		
	12.05	294.77		282.72	— —	T.P.
0.			4.40	290.37		Center of University ave & Vermont st
1.			4.80	289.97		
2.			5.10	289.67		
3.			6.50	288.27		
4.			6.40	288.37		
5.			6.50	288.27		
6.			6.30	288.47		
7.			6.10	288.67		
8.			7.90	286.87		
9.			9.30	285.47		
10.			9.60	285.17		
11.			9.90	284.87		
12.			11.40	283.37		
0	3.15	286.72	11.20	283.57	T.P.	
13.			2.30	284.42		
14.			3.60	283.12		
+70			7.30	279.42		
+85			11.10	275.62		
15.			14.00	272.72		

2/10/03. (Oak) now Pennsylvania

Anderson
McAuliffe
Lambert.

Levels on Thornton ave from Richmond to 10th st

Sta	+	H.I.	−	Elv.		
	10.13	292.85		282.72		On T.P.
T.P. ⊙	4.29	291.24	5.90	286.95	T.P.	
" " ⊙	3.29	292.89	1.64	289.60	T.P.	
0			0.90	291.99		Center of Richmond & Thornton ave
1			3.50	289.39		
+75			6.90	285.99		
2.			10.40	282.49		
+43			14.10	278.79		
+73			5.50	287.39		
3.			3.70	289.19		
4.			4.00	288.89		
5.			4.90	287.99		
6.			6.60	286.29		
7.			9.90	282.99		
+65			12.70	280.19		
T.P. ⊙	0.42	280.69	12.62	280.27	T.P.	
8			12.70	267.99		
+50			17.50	263.19		
9			14.80	265.89		
T.P.			13.00	267.69		

2/10/03.

Levels of Shoonton ave continued

Sta	+	H.I.	−	ELv
				267.69
	0.48	268.17		
9+50			5.30	262.87
10,			13.90	254.27
T.P. 0	0.43	255.38	13.22	254.95
+50			9.50	245.88
+75			7.10	248.28
11.			9.00	246.38
+30			15.50	239.88
+85			11.00	244.38
12,			7.50	247.88
+25			3.60	251.78

Intersection of Shoonton & 10th st

2/10/03.

Levels. center of Richmond & Thomas ave to Cypress ave

Sta	+	H.I.	−	Elv.	
T.P.				289.60	T.P.
	5.68	295.28			
0.			3.30	291.98	
1.			5.00	290.28	
2.			6.40	288.88	
+50			9.50	286.78	
T.P. ⊙	0.65	282.88	13.05	282.23	T.P.
+90			9.40	273.48	
3.			13.70	269.18	
T.P. ⊙	0.24	270.56	12.56	270.32	T.P.
T.P. ⊙	0.67	258.29	12.94	257.62	" "
" " ⊙	0.09	245.48	12.90	245.39	" "
4.			14.60	230.88	— —
T.P. ⊙			12.46	233.02	

Intersection of Richmond & Cypress ave
Pt. on rock 14 ft. W. of water pipe

3/10/03

Anderson
McAuliff
Lambert

Levels, center of Cypress ave and Richmond

Sta	+	H.I.	−	Elv.	
		244.60		233.02	
	11.58				
0.			11.00	233.60	Intersection of Cypress & Richmond ave
+47			14.00	230.60	
⊙	12.36	256.45	0.51	244.09	T.P.
1,			9.80	246.65	
+30			0.40	256.05	
⊙	12.27	268.22	0.50	255.95	T.P.
2,			9.80	258.42	
3,			0.50	267.72	
⊙	12.01	280.03	0.20	268.02	T.P.
+65			4.40	275.63	
⊙	10.75	288.95	1.83	278.20	T.P.
+85			4.60	284.35	
4,			3.50	285.45	
5.			3.00	285.95	
+80			6.10	282.85	
6,			12.60	276.35	
⊙	11.16	277.92	12.19	276.76	
+50			10.00	267.92	
⊙			11.65	266.27	

3/10/03.

Levels over center of Cypress ave. continued

St	+	H.I.	—	Elv	
	0.31	266.58		266.27	
+80			11.70	254.88	
⊙	11.63	277.98	0.23	266.35	T.P.
7.			7.60	270.38	
+10			5.00	272.98	— — Road.
⊙	9.86	286.97	0.87	277.11	
+35			4.60	282.37	
8.			4.00	282.97	
9.			5.70	281.27	
10.			4.60	282.37	
11.			5.60	281.37	
12.			7.30	279.67	Intersection of 10th st & Cypress, ave
13.			8.70	278.27	

3/11/04 } Cadwell
Davis

Levels over First St. from Stockton to N. line P.L. C.

Sta +	+ −	H.I. −	H.I. +	Red	Elev.	
					assumed	
			104.30	4.30	100.00	
0				4.30	100.00	N. line Stockton.
+50				3.90	100.4	
1				4.60	99.7	
+50				4.70	99.6	
2				8.40	95.9	
+25				11.90	92.4	
T.P.	0.52	11.89	92.93		92.41	
+45		~~11.60~~		4.40	88.5	
T.P.	3.37	11.60	84.70		81.33	
+95				15.70	69.0	
3+20				6.90	77.8	
+40				7.00	77.7	
T.P.	8.40	0.60	92.50		84.10	
+70				0.50	92.00	N. Line Block 3
T.P.	10.65	1.02	102.13		91.48	
4+20				8.30	93.83	
+70				7.35	94.78	S. line Dickinson St.
5+20				5.40	96.73	N. " " "
+70				3.00	99.13	
6+20				2.10	100.03	N. line P.L. "C"

100.00
4.30
104.30
11.89
92.41
0.52
92.93
11.60
81.33
3.37
84.70
0.60
84.10
8.40
92.50
1.02
91.48
10.65
102.13

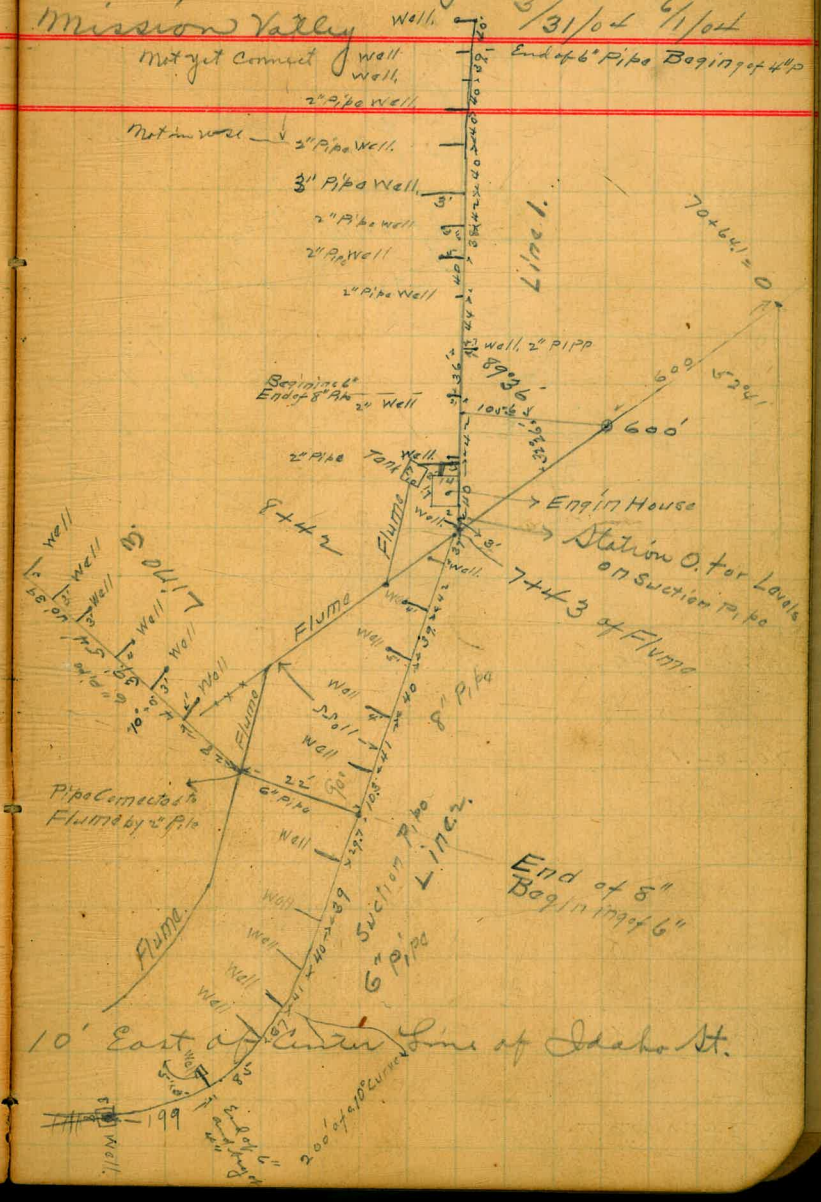
Alignment Pipe Line from Resivoy El Cajon & Idaho

Hutchison

49

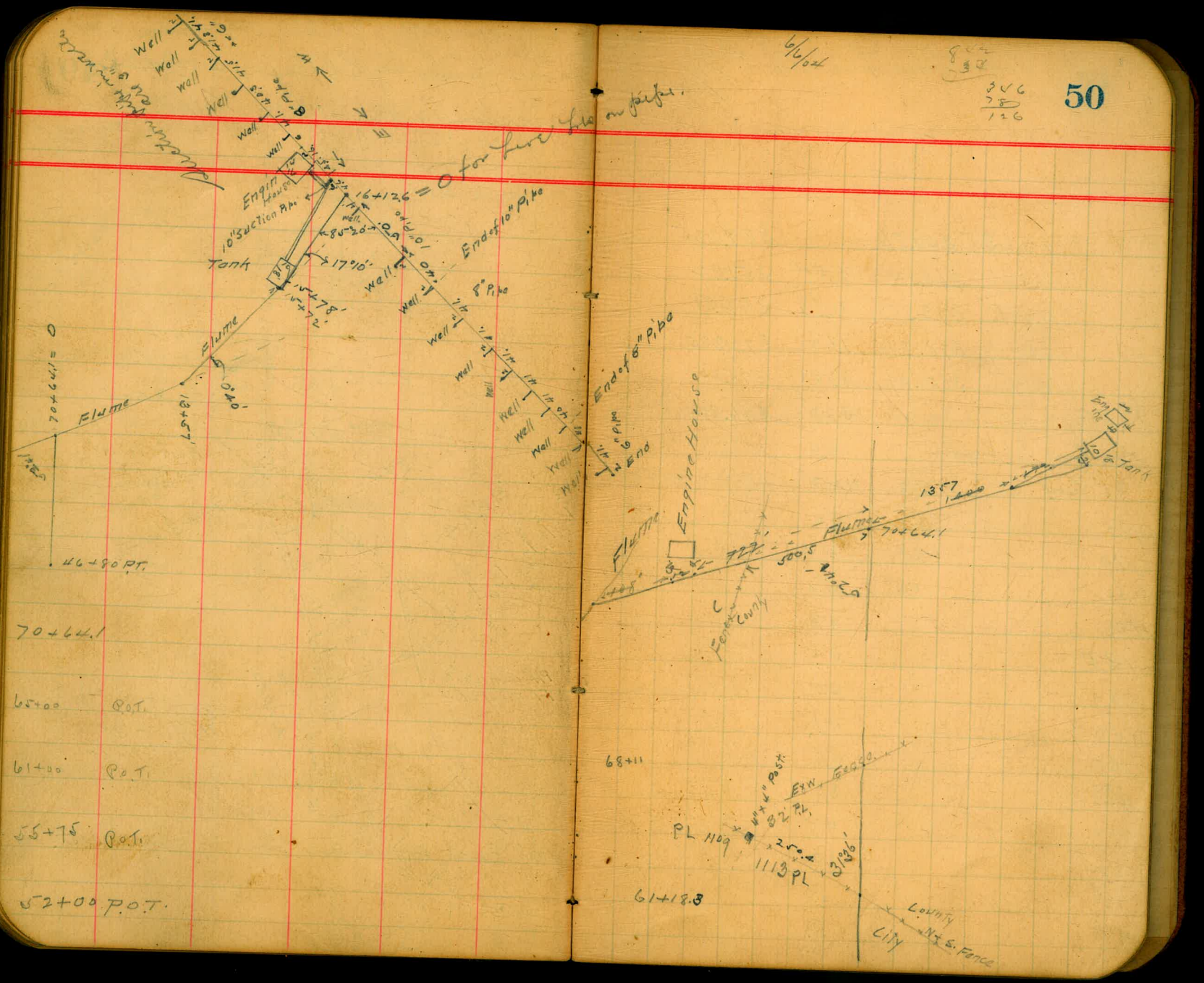
10' East of Center Line Idaho to Mission Valley 5/31/04 6/1/04

49+~~55~~ 50	P.O.T.		
47+55	P.O.T.		
46+80	P.T.	1~~4~~36 13°36'	29°12 ~~27°12~~
39+50	P.C. 4° L		
36+50	P.T.	2°13½	34°27'
35+38.6	P.O.T.	15°00	~~30°00~~
27+88.6	P.C. 4° R.	So Line Adams St	
15+10	No Line		
8+30	No Line Meade Ave.		
0=	So. Line of El Cajon Ave and		



6/6/04

346
78
126



Pipe Line Levels 6/1/04

Alignment see page 49.

	12.635	351.86		339.225
	11.82	363.14	0.54	351.32
	11.645	373.955	0.83	362.31
	6.37	378.705	1.62	372.335
	4.89	380.09	3.505	375.20
B.M.			3.27	376.82
So Line El Cajon			4.4	
35' Sof "			5.0	
55			5.0	
70			4.4	
85			5.1	
100			5.0	
130			5.5	
135			5.0	
150			3.9	
165			5.5	
~~200~~ 185			6.0	
200			4.2	
220			6.0	
235			6.2	
255			5.9	
265			4.2	

Spk in Tel Pole center of Idaho & So Line El Cajon

280 So of El Cajon 380.09	5.8
300 " " "	5.5
3 " " "	6.7
No Line of	6.9

Pipe Line

		380.09		
0	So Line El Cajón		~~38~~ 4.4	375.7
+50			4.4	375.7
+60			4.0	376.1
+75			4.7	375.4
100			4.7	375.4
1+40			4.7	375.4
+50			4.2	375.9
+55			4.8	375.3
2+00			4.8	375.3
+50			4.6	375.5
3+00			4.7	375.4
+40			4.7	375.4
+50			4.2	375.9
	4.80	380.89	4.00	376.09
+60			4.3	376.6
+75			5.4	375.5
4+00			5.8	375.1
+45			5.7	375.2
+50			5.1	375.8
+60			4.7	376.2
+75			5.8	375.1

5+00	380.89	4.6	376.3
+10		5.2	375.7
+25		5.7	375.2
+50		3.8	377.1
+65		5.7	375.2
+75		5.4	375.5
6+00		6.0	374.9
+25		3.5	377.4
+40		5.7	375.2
+50		6.1	374.8
700		5.7	375.2
+10		5.7	375.2
+30		4.2	376.7
+40		5.4	375.5
+50		5.4	375.5
+75		5.1	375.8
+85		4.0	376.9
8+00		5.2	375.7
+10		5.7	375.2
+30		5.2	375.7
+50		3.8	377.1

8+70		380.89	5.6	375.3
+85			5.6	375.3
9			3.8	377.1
	5.01	380.77	5.13	375.76
B.M.			4.66	376.11
+15			3.4	377.4
+30			5.3	375.5
+50			3.5	377.3
+65			5.0	375.8
+80			3.5	377.3
10+00			4.4	376.4
+10			4.9	375.9
+30			4.9	375.9
+50			3.2	377.6
+60			3.2	377.6
+75			5.1	375.7
11+00			3.9	376.9
+10			4.9	375.9
+20			4.6	376.2
+30			5.4	375.6
+50			3.4	377.4
+55			3.4	377.4

	14.1		
+65	380.77	4.8	376.0
+90		2.9	377.9
12+00		4.1	376.7
+10		5.4	375.4
Sph. in Tel Pole N.E. Cor. Meadow Idaho			
+35		5.0	375.8
+50		3.4	377.4
+60		3.5	377.3
+70		5.2	375.6
13+00		4.8	376.0
+20		3.4	377.4
+35		5.1	375.7
+50		5.2	375.6
+65		5.1	375.7
+80		3.1	377.7
14+00		4.8	376.0
+40		4.9	375.9
+50		5.4	375.4
	5.32 381.19	4.90	375.87
+75		5.6	375.6
15		4.1	377.1
+15		5.6	375.6

+35		381.19	3.8	377.4
+50			5.2	376.0
+65			3.8	377.4
+80			5.4	375.8
+85			4.8	376.4
+95			5.0	376.2
16+00			5.8	375.4
+05			6.4	374.8
+25			4.7	376.5
+45			6.1	375.1
+50			5.8	375.4
+70			5.0	376.2
+85			4.4	376.8
17+00			4.7	376.5
+15			6.3	374.9
+30			4.6	376.6
+50			3.5	377.7
+55			3.7	377.5
+65			5.8	375.4
+75			4.7	376.5
18+00			6.0	375.2
+15			5.1	375.5

+40		381.19	6.4	374.8
+50			5.8	375.4
+60			5.3	375.9
+85			4.3	376.9
19+00			5.4	375.8
+15			6.0	375.2
+25			5.2	376.0
+50			5.9	375.3
	6.26	382.77	4.68	376.51
20+00			7.5	375.3
+20			5.5	377.3
+30			6.2	376.6
+50			6.3	376.5
+65			6.0	376.8
+75			6.2	376.6
21			4.6	378.2
+25			5.2	377.2
+35			5.2	377.6
+50			4.0	378.8
+60			5.2	377.6
+75			5.3	377.5
+90			4.2	378.6

Pipe Line. 6/1/04

22+00		382.77	4.8	378.0
BM.			5.30	377.47
+30			5.0	377.8
+50			3.2	379.6
+60			4.0	378.8
V3			3.9	378.9
+50			4.0	378.8
+75			3.6	379.2
24			2.1	380.7
+10			2.4	380.4
+25			3.3	379.5
+40			2.0	380.8
+50			1.9	380.9
	7.58	387.845	2.505	280.265
+75			7.5	380.3
25+00			5.7	382.1
+10			6.7	381.1
+25			5.6	382.2
+40			6.4	381.4
+50			5.4	382.4
+75			3.9	383.9
+90			5.5	382.3

Spk in Tel Pole S.E. Cor. Madison + Idaho

26+00		387.845	
–		4.9	382.9
+15		4.4	383.4
+40		4.7	383.1
+50		3.6	384.2
+60		3.1	384.7
+70		4.3	383.5
+80		4.1	383.7
27+00		3.2	384.6
+05		4.0	383.8
+20		3.3	384.5
+30		3.7	384.1
+50		3.6	384.2
+60		3.5	384.3
+75		2.4	385.4
+90		3.0	384.8
V8+00		3.3	384.5
BM.		2.995	384.85

Spk. in Tel. Pole S.E. Cor. Adams + Idaho

	6.53	391.38	~~391.38~~	384.85
+20			5.6	385.8
+50			6.3	385.1
29			6.0	385.4
+20			4.7	386.7
+50			5.5	385.9
+75			5.1	386.3
30			4.6	386.8
+15			4.9	386.5
+35			4.1	387.3
+50			4.4	387.0
+60			4.8	386.6
+85			3.2	388.2
31			4.0	387.4
+40			2.3	389.1
+50			2.7	388.7
+75			3.5	387.9
32			2.3	389.1
+10			2.0	389.4
+30			3.0	388.4
+50			1.7	390.7
+75			2.5	388.9

33		391.38	2.2	389.2
	7.86	396.98	2.26	389.12
+20			6.9	390.1
+35			7.5	389.5
+50			6.8	390.2
+65			6.3	390.7
34			6.3	390.7
+50			5.6	391.4
35			5.2	391.8
+50			4.6	392.4
+65			4.2	392.8
36			4.7	392.3
+50			4.2	392.8
37			4.0	393.0
+25			3.3	393.7
+50			3.9	393.1
38			3.7	393.3
	7.34	396.27	3.05	393.93
+50			3.2	393.1
39			3.3	393.0
+50			3.1	392.6
40			4.2	392.1

Pipe Line

6/1/04 Hutchison

University Hights Resivoy to Mission Valley pump

+50		396.27	4.8	391.5
41			5.4	390.9
+50			5.8	390.5
42			6.1	390.2
+50			6.2	390.1
43			6.2	390.1
+15			5.8	390.5
+20			6.5	389.8
+50			6.6	389.7
44			6.6	389.7
	6.03	395.94	6.36	389.91
+50			5.9	390.0
+80			4.3	391.6
45			5.5	390.4
+40			5.4	390.5
+50			4.8	391.1
~~46~~ 70			4.2	391.7
+90			5.9	390.0
46			5.6	390.3
+50			5.1	390.2
47			6.0	389.9

		H.I.		
+35		395.94	5.8	390.1
+50			7.5	388.4
B.M.			7.17	388.77
Hub 10' R of Sta 47+50				
~~T.P.~~ +60			9.4	386.5
T.P.	0.605	383.995	12.55	383.39
48			7.2	376.8
	0.61	372.23	12.375	371.62
+50			4.7	367.5
+75			9.6	362.6
49			11.3	360.9
+15			12.7	359.5
	0.72	360.30	12.65	359.58
+45			6.3	354.0
+50			7.4	352.9
B.M.	0.215	347.86	12.655	347.645
Hub 5' R of 49+60				
+75			7.3	340.6
	0.725	335.88	12.705	335.155
50+00			6.6	329.3
	0.455	323.41	12.925	322.955

+25		323.41	6.3	317.1	
+40			10.8	312.6	
	0.58	311.26	12.73	310.68	
+45			2.5	308.8	
+50			4.6	306.7	
+65			8.8	302.5	
+75			12.1	299.1	
	−0.10	299.39	11.77	299.49	
+90			2.8	296.6	
51.			6.3	293.1	
+10			9.2	290.2	
+25			11.8	287.6	
	1.105	289.055	11.44	287.95	
+40			6.3	282.8	
+50			10.0	279.1	
+60			12.4	276.7	
	0.465	276.85	12.67	276.385	
+75			7.3	269.6	
	0.195	264.475	12.57	264.28	
+90			3.2	261.3	
52			6.4	258.1	

+10		264.475	9.1	255.4
	0.03	251.495	13.01	251.465
+20			3.0	248.5
+25			5.3	246.2
	0.46	239.185	12.77	238.725
+50			6.9	232.3
	1.07	227.69	12.565	226.62
+75			10.3	216.4
	0.73	215.41	13.01	214.68
53			11.2	204.2
	2.165	204.915	12.66	202.75
+25			13.2	191.7
	0.22	192.57	12.565	192.35
B.M.	2.56	182.62	12.51	180.06 ~~178.06~~

5' L of 53+40. Brush Hub.

+50			5.0	177.6
	0.17	170.24 ~~168.26~~	12.55	170.07 ~~168.07~~
+75			5.3	164.9
	0.47	158.20 ~~156.20~~	12.51	157.73 ~~155.73~~
54			6.1	152.1
	0.33	145.65	12.88	145.32

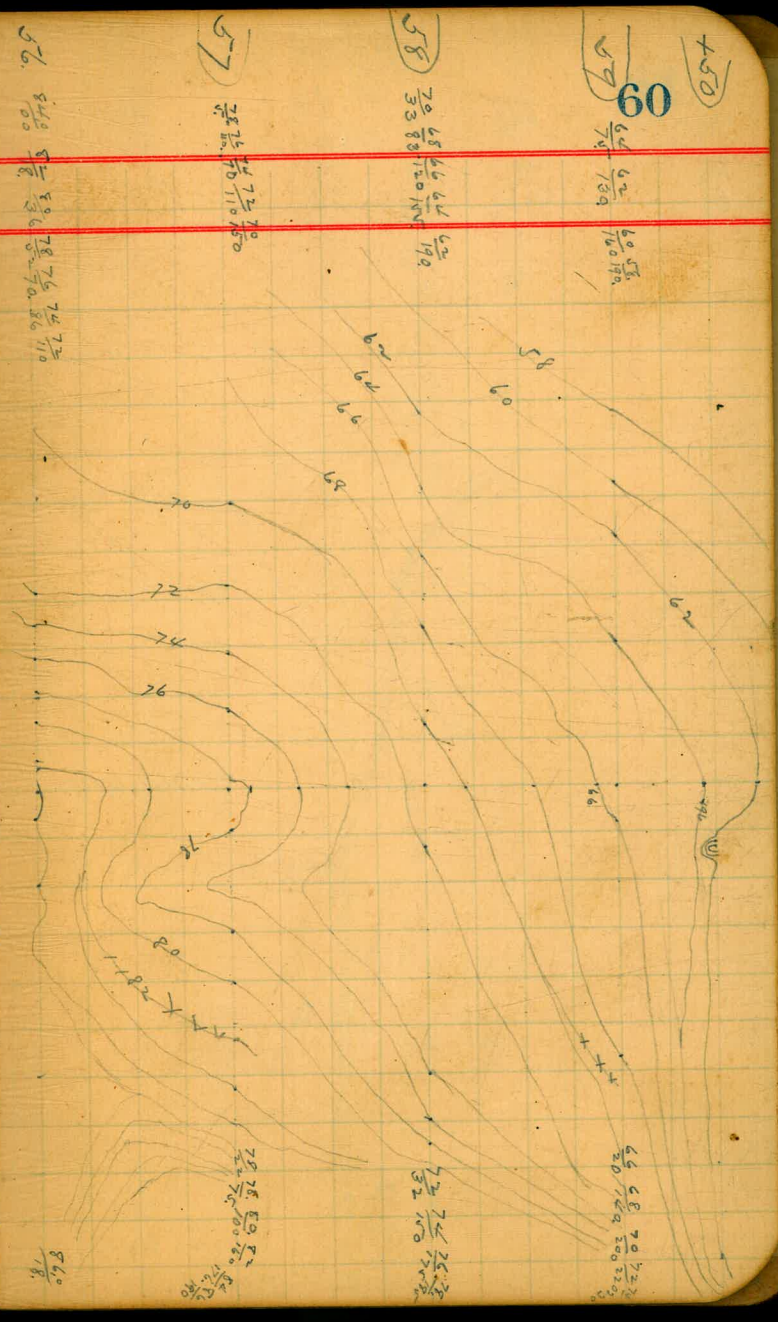
+25		145.65	4.5	141.2	
	1.08	133.89	12.4	132.81	
+50			2.8	131.1	
+75			12.1	121.8	
	0.23	121.41 ~~119.41~~	12.7	121.18 ~~119.18~~	
55			8.7	112.7	
	0.60	110.04 ~~108.04~~	11.97	109.44	
+25			5.9	104.1	
B.M.	0.35	97.75 ~~95.75~~	12.4	97.40 ~~95.40~~	
+50			2.0	95.8	
+75			9.4	88.4	
+90			12.7	85.1	
	0.35	85.51	12.59	85.16	
56			1.4	84.1	
+50			5.0	80.5	
57			7.4	78.1	
+50			10.7	74.8	
T.P.	0.87	73.98	12.40	73.11	
58			2.9	71.1	
+50			5.6	68.4	
59			8.6	65.4	
B.M.	1.4	66.15	9.07	64.91	

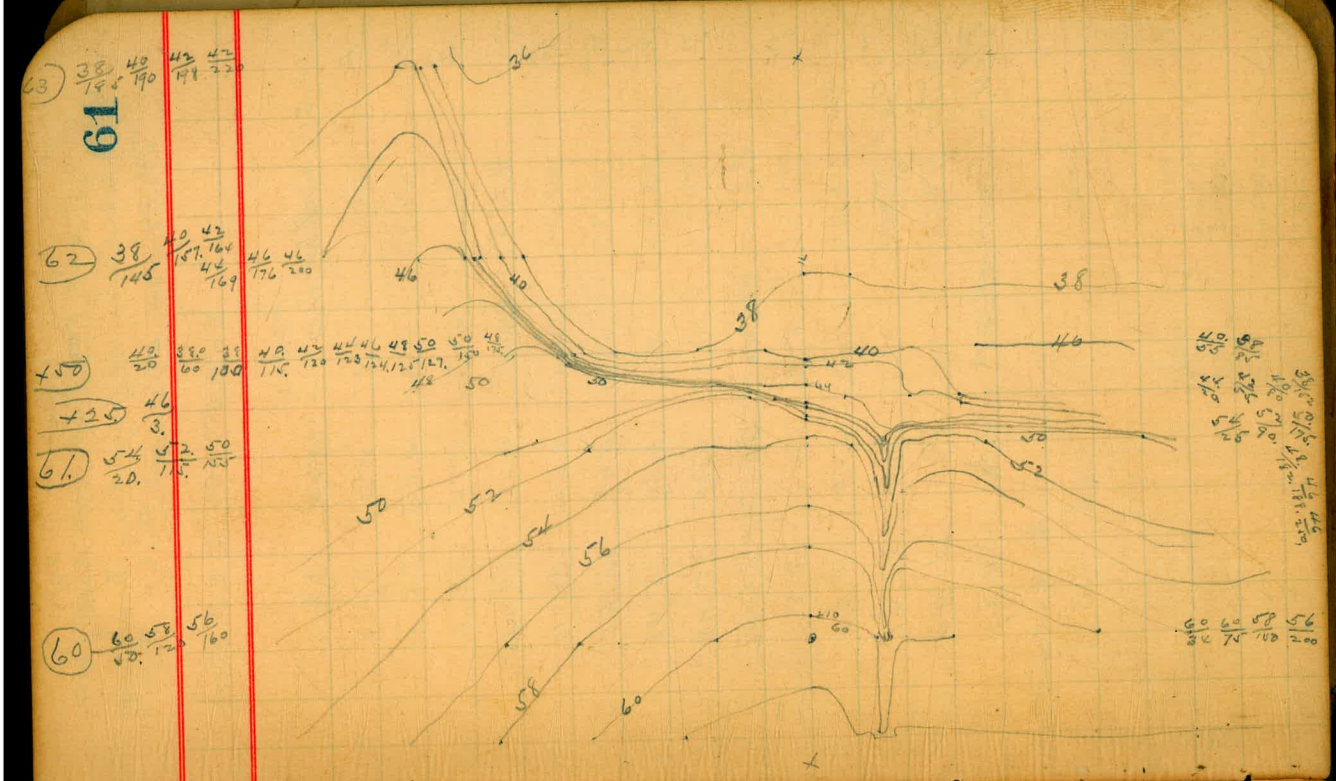
+50		66.15	2.6	63.5
60			5.7	60.5 ~~58.8~~
+50			8.4	57.8
+80			11.4	54.8
61			12.0	54.2
	1.06	56.16	11.05	55.10
+15			3.0	53.2
+20			8.1	48.1
T.P. ~~+35~~	1.51	45.03	12.64	43.52
Hub 5' R of 55+50				40.6
+35			4.4	
+50			5.3	39.7
62			7.4	37.6
+50			7.7	37.3
63			8.1	37.0
64			8.8	36.2
	3.17	40.76	7.44	37.59
65			4.3	36.5
66			4.3	36.5
	5.83	42.68	3.91	36.85
67			6.3	36.4
+60			6.4	36.3

Hub No Side of Road 60' East of Store

6/3/04

		42.68 ~~42.86~~		
70+90			4.9	37.8
68			4.9	37.8
69			4.7	38.0
70			4.7	38.0
	3.945	42.325	4.30	38.38
70+55 ~~51~~			4.6	37.7
70+64.1	Center of Flume		5.15	37.18
	Continued on Page 62			
B.M. Nail in Flume			3.79	38.535
				Center Line




63
62
+50
+25
61.
60
36
38
40
42
44
46
48
50
52
54
56
58
60
Center Line

Levels on Flume South West from Intersection of Pipe line Tangent.

Bottom of Flume

70+64.1 = Station 0		42.325	5.15	37.18
1			5.3	37.0
2			5.53	36.8
3			5.75	36.6
	2.285	40.33	4.28	38.045
4			4.22	36.11
5			4.68	35.65
6			4.87	35.46
7			5.25	35.08
	3.81	40.27	3.87	36.46
8			5.45	34.82
8+42			5.50	34.77
Top of Tank			3.20	37.07
Bottom of "			7.97	32.30
Floor of Engin House		40.27	9.0	31.27

Levels on Suction Pipe.

Top of Pipe.

Line No. 2 See Page 49.

	3.81	40.27		36.46
0			8.8	31.47
1			8.76	31.51
2			8.86	31.41
3			9.32	30.95
4			10.05	30.22
5			10.80	29.47
6			11.80	28.47
+83 End			12.30	27.97

Line No. 3. See page 49

2+122 of Line 2 = 0			8.93	31.34
1			9.60	30.67
2			10.0	30.27
+62 End.			10.6	29.67

Line No. 1 See Page 49.

0 of Line 2 = 0 of 1

	7.51	38.97		36.46
0				
1			7.44	31.53
2			7.64	31.33
3			7.94	31.03
4			8.37	30.60
4+89 End			9.27	29.70

Levels on Flume North
from Intersection of pipe line tangent produced.
Bottom of Flume

6/13/06 Hutchison

70+641 = =D	5.52	44.055		38.535
1			6.65	37.41
2			6.35	37.71
3			6.20	37.86
4			5.90	38.16
	5.925	45.43	4.55	39.505
5			6.90	38.53
6			6.55	38.88
7			6.20	39.23
8			6.05	39.38
	4.87	45.61	4.69	40.74
9			5.85	39.76
10			5.70	39.91
11			5.35	40.26
12			5.00	40.61
13			4.75	40.86
14			4.50	41.11
	3.70	46.18	3.13	42.48
15			4.80	41.38

North or New Pump Station

Top of Tank	46.18	3.03	43.15
Over flow "		4.25	41.93
Bottom of "		7.54	38.64
Floor of Engine House		10.54	35.64

Levels on Suction pipe. Top of Pipe

Stat. 0 begins at point on flume Line Survey 16+12.6

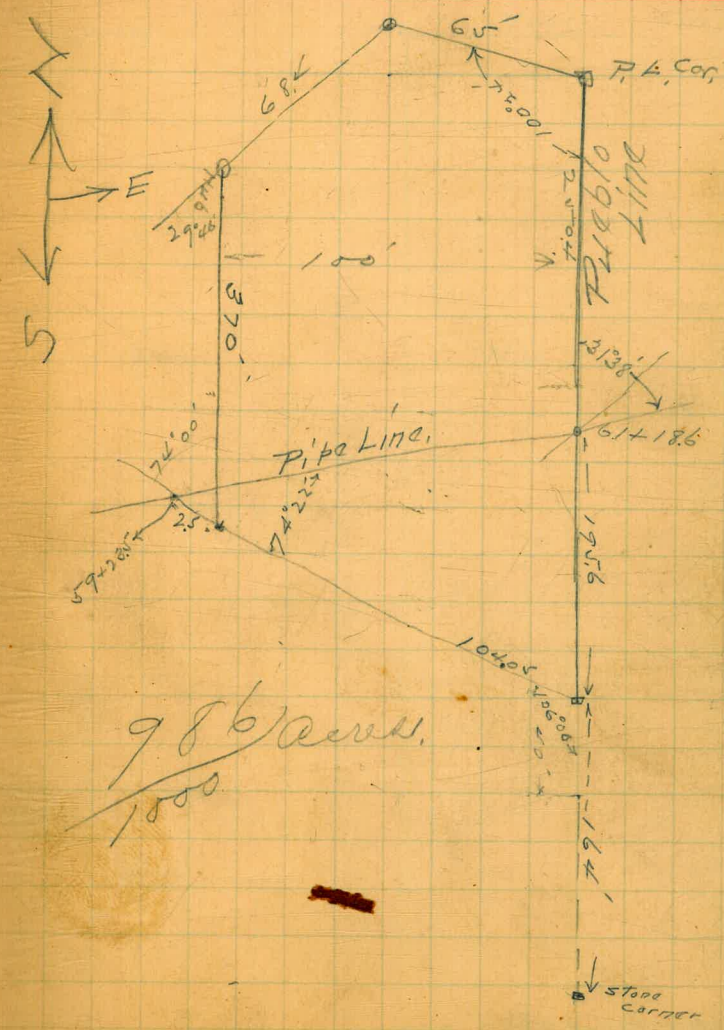
0 ~~north~~ West	46.18	10.00	36.18
1 "		10.70	35.48
2 "		11.55	34.63
2+49		12.10	34.08
0 ~~South~~ East		10.00	36.18
1		10.52	35.66
2		10.85	35.33
3		11.15	35.03
4		12.10	34.08
+23		12.35	33.83

Wells are 35' to 40' deep measuring from ~~to~~ top of Suction.

B.M.		7.71	43.47

Nail in So. E. Cor. of Tank

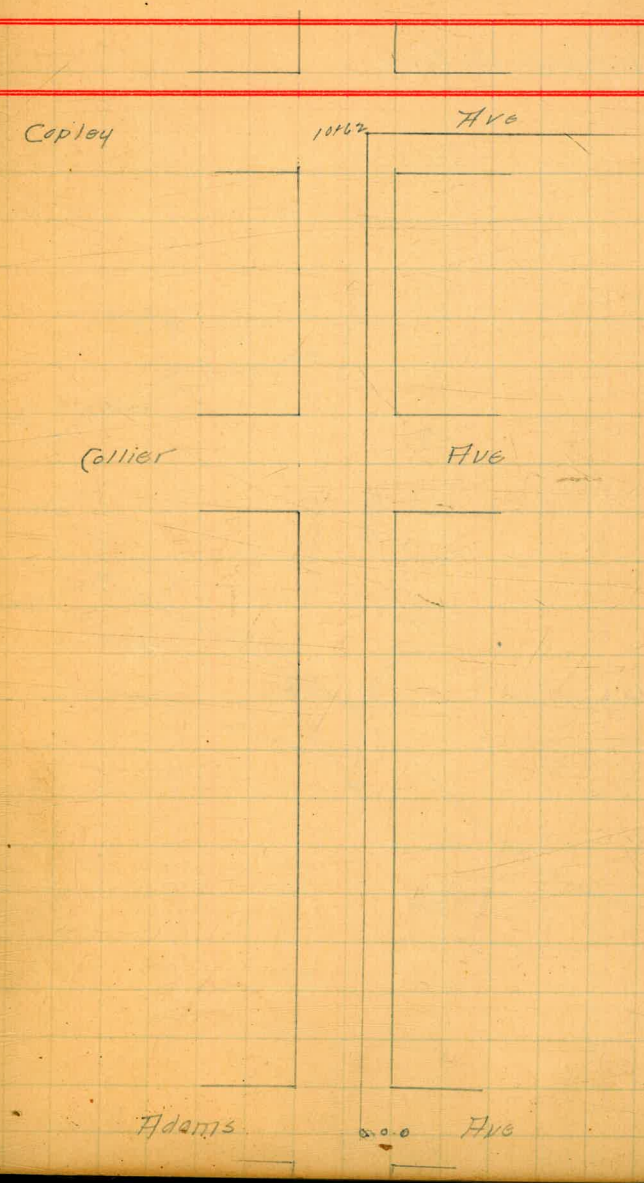
Mission Valley
11/17/04.



4/5/05 Davis, Brooks, Shaw — Alignment of Pipe Line connecting with old survey at stations 28+18.6 & 46+80.

+62
10
9
8
1
7
+50
6
5
4
3
2
1

0=28+18.6 Old Line.



+283 = 46+80 Old Line

22

21

20

19

18

17

16

+59.5 Δ 104°44'

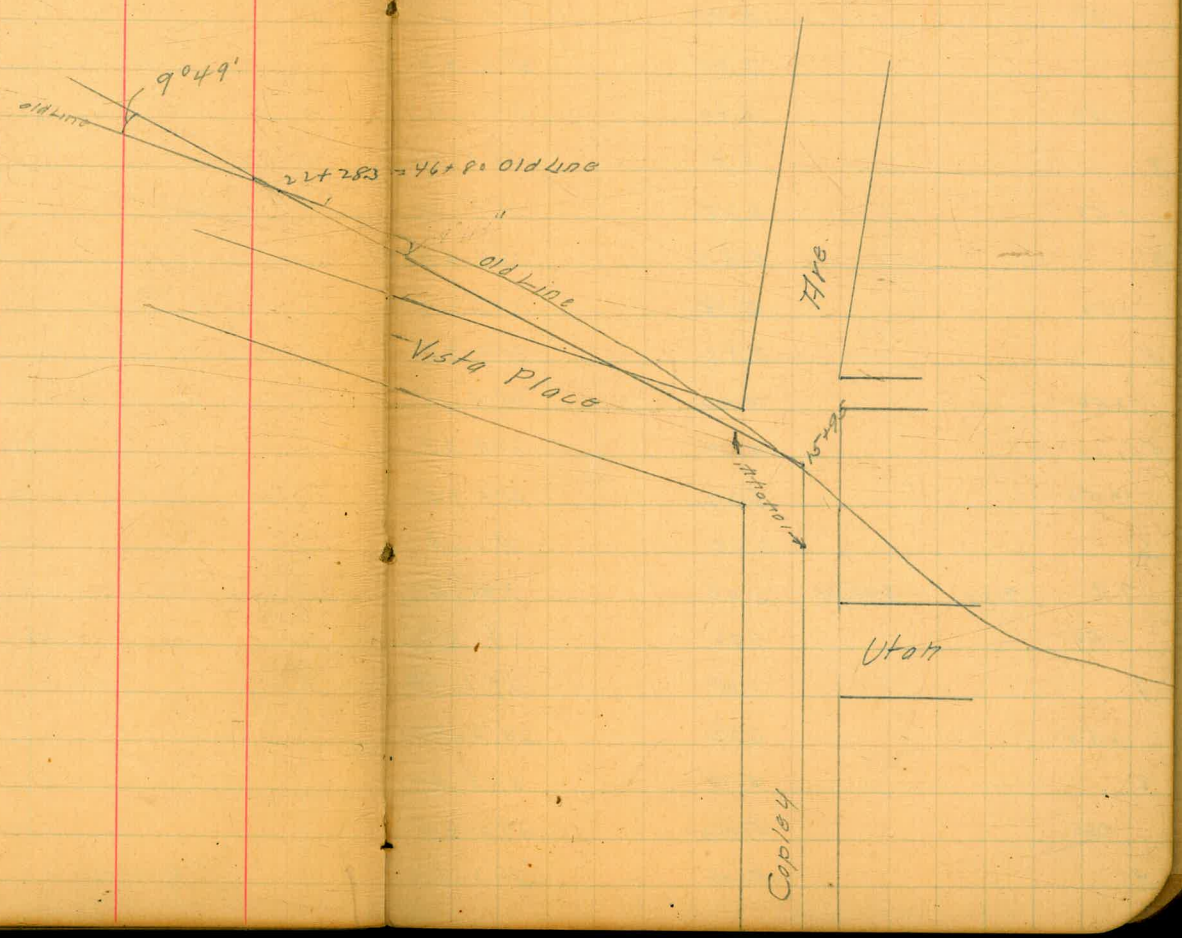
15

14

13

12

11



Levels over Pipe Line Connecting with Old Survey 4/6/05 Davis, Brooks, Shaw

	8.72	393.57			384.85
0			8.20		385.37
+50			8.30		385.27
1			7.05		386.52
+50			6.66		386.91
2			6.81		386.76
+50			6.78		386.79
3			5.52		388.05
+50			5.38		388.19
4			3.82		389.75
+50			4.40		389.17
5			4.50		389.07
+50			4.22		389.35
6			3.28		390.29
T.P.	7.97	398.48	3.06		390.51
+50			7.96		390.52
7			7.04		391.44
+50			6.22		392.26
8			5.18		393.30
+50			5.43		393.05
9			5.05		393.43

9+50		ϕ (398.48)	4.89		393.59
10			4.96		393.52
+32			5.10		393.38
+62			5.34		393.14
11			4.70		393.78
+50			5.25		393.23
12			5.22		393.26
+50			5.40		393.08
13			5.47		393.01
+50			5.55		392.93
14			5.88		392.60
+50			6.00		392.48
15			6.21		392.27
+24			6.24		392.24
T.P.	2.98	395.66	5.80		392.68
+595			3.60		392.06
16			4.20		391.46
+50			4.83		390.83
17			5.05		390.61
+50			5.43		390.23
18			5.53		390.13

		(395.66)			
18+50			5.20		390.46
19			5.71		389.95
+50			4.35		391.31
20			4.93		390.73
+50			5.05		390.61
21			4.05		391.61
+50			4.76		390.90
22			5.23		390.43
+28.3			5.48		390.18
					388.77 B.M.
B.M.			6.85		388.81

No 13/1

		H.I.		
	~~4.28~~	100.00		100.00
0			4.48	95.52
	3.46	101.16	2.30	97.70
	2.21	101.05	2.82	98.84
	4.55	101.60	4.00	97.05
	2.15	105.59	3.16	98.44
	4.77	104.78	5.58	100.01
	4.73	106.18	3.33	101.45
	4.05	107.10	3.13	103.05
	4.54	106.50	5.14	101.96
	5.20	107.66	4.04	102.46
46			4.84	102.82
49.			4.60	103.06
B.M.	4.43	111.30	2.79	104.87
B.M.	3.76	107.29	7.86	103.44

107.22

46.40 4.44 102.78

Cut & Fill for flume from No. 1.
Plant to Well No. 13.

7/17/05 Hutchison
Evans
Sawyer.

Stat 0 is at End of New Flume at Well No. 13. Stat 49 is opposit Plant No. 1. at Stat 46 Elevation is Bottom of old flume.

	Grade	Hi.	Rod	Rod ~~Cut~~	Cut
46+00	102.86	107.22	4.36		
+50	102.78		4.44	-3.66	0.78
45	102.70		4.52	4.16	0.36
+50			4.60	4.16	0.44
44	102.54		4.68	4.55	0.13
+50			4.76	3.91	0.85
43	102.38		4.84	3.57	1.27
	2.04	105.69		3.57	103.65
+50	102.30		3.39	3.13	0.26
42	102.22		3.47	3.47	0.0
+50			3.55		00
41			3.63	2.83	0.8
+50			3.71	3.11	0.6
40	101.90		3.79	3.79	00
	4.64	106.54		3.79	101.90
+50	101.82		4.72	3.72	1.0
39	101.74		4.80	4.20	0.6
+50			4.88	4.88	-.0
38			4.96	4.96	0.0
+50			5.04	4.44	0.6

		Hi.			Cut
37	101.42	106.54	5.12	4.82	0.3
+50	101.34		5.20	4.20	1.0
	5.54	107.88		4.20	102.34
36	101.26		6.62	7.42 ~~6.62~~	-0.8
+50			6.70	8.20	-1.5
35	101.10		6.78	4.28	2.5
+50			6.86	3.50	3.36
34	100.94		6.94	4.40	2.15 ~~2.54~~
+50	100.86		7.02	3.88	3.14
	4.44	Hi. 108.45		3.87	104.01
33	100.78		7.67	4.53	3.14
+50	100.70		7.75	5.57	2.18
32	100.62		7.83	4.83	3.0
+50			7.91	4.67	3.24
31	100.46		7.99	4.08	3.91
	1.61	105.98		4.08	104.37
+50	100.38		5.60	3.2	2.4
30	100.30		5.68	3.06	+2.62
+50			5.76	3.33	2.43
29	100.14		5.84	4.06	1.78
+50			5.92	3.72	2.2

Flume Line

	Grade Line		Rod	Rod	Cut
28	99.98	105.98	6.0	4.0	2.0
+50			6.08	4.58	1.5
27	99.82		6.16	5.26	0.9
	3.01	103.72	5.27	100.71	
+50	99.74		3.98	3.98	0.0
26			4.06	4.06	0.0
+50	99.58		4.14	3.64	0.5
25	99.50		4.22	4.22	0.0
+50			4.30	4.30	0.0
24	99.34		4.38	4.38 ~~3.99~~	0.0 ~~+0.4~~
	5.40	104.74	4.38 ~~3.99~~	99.34	
+50	99.26		5.48	4.58	+0.9
23	99.18		5.56	4.56	1.0
+50			5.64	4.64	1.0
22	99.02		5.72	3.72	2.0
+50			5.80	3.20	+2.6
21	98.86		5.88	4.08	1.8
+50	98.78		5.96	4.46	1.5
	3.20	103.48		4.46	100.28
20	98.70		4.78	4.78	0.0
+50			4.86	4.18	0.7

			Rod		Cut
19	98.56	103.48	4.92	4.92	0.0
+50			5.00		0.0
18	98.40		5.08		0.0
	4.77	103.16	5.09		98.39
+50	98.32		4.84	4.84	0.0
17	98.24		4.92		0.0
+50			5.0	5.0	0.0
16	98.06		5.08		0.0
	3.13	101.59	4.70		98.46
+50	97.98		3.59		0.0
15	97.90		3.67		0.0
+50	97.82		3.75		0.0
14	97.74		3.85		0.0
	4.54 ~~5.06~~	102.29 ~~102.81~~	3.84		97.75
+50	97.66		4.63		0.0
13			4.71		0.0
+50	97.50		4.79		0.0
12			4.87		0.0
+50	97.34		4.95		0.0
11			5.03		0.0
+50	97.18		5.11		0.0
	4.23	101.41	5.11	97.18	

Flume Line

		H.I.			Cut
10	97.10 32	101.41	4.30	00	00
+50			4.39	3.49	0.9
9			4.47		0.0
+50			4.55		00
8	96.78		4.63	3.73	+0.9
+50			4.71		0.0
7	96.62		4.79	3.81	+1.0
	3.64	101.24	3.81	97.60	
+50	96.54		4.7		0.0
6	96.46		4.78		00
+50			4.86		0.0
5	96.30		4.94		00
+50			5.02	4.02	+1.0
4	96.14		5.10		
+50	96.06		5.18		00
	5.76	101.80	5.20	96.04	
3	95.98 48		5.82		00.
+50			5.90		+1.0
2			5.98		2.0
+50			6.06		2.0
1			6.14		2.0

0+50 101.80 6.22

0 95.50 6.30 Bottom of flume at Well #13

BM. 6.13 95.67

Top Nut on Lower band of Well (Brick) at S.E. Side

Note,

For flume line from Plant No. 1 to #2 See Misc. Work book.

7/19/05 Hutchison
Evans
Sawyer.

Robinson St Water Pipe Line.

Note - Pipe is 10' So + East of Center of Street.

0 = East Line of 1st St.
0+70 = West " " " "
3+45 East " " Albatross
4+15 West " " "
5+15 End of Pipe.

— Albatross St. — — — — —

3+70 of Robinson St Line = Sta. 0. of Albatross.
0
0+20 So Line of Robinson
4+70 So on Albatross

Ivy Lane.

0 = East Line of 5th St.
1+89 West " " 6th "
2+76 = 10' East of Ct of ~~x~~ 6th St.

6th St. North

2+76 on Dry Lane = Sta 0
0 = 10' So + 10' East of Ct. of Dry Lane + 6th
0+38 No Line of Dry Lane
1+88 North

6th St. So from Dry Lane.

2+26 of Dry Lane = Sta 0.
0
0+15 So Line of Dry Lane
2+19 Ct. of Alley.

Alley bet Brooks & Robinson

2+19 = Sta 0.
0
0+17 East Line of 6th St.
3+59.3
3+82.3 East Line of 7th St.

7th St. North

3+59.3 = Sta 0.
0
0+07.5 No Line of Alley
1+57.5 End

Bacon St. (2nd)
Ocean Beach.

7/24/05 240 Hutchison
Evans
Sawyer
Thomas

Stat 0 West Line of Newport.
2+99.4 East Line of Niagra.

6+89.2 East Line of Narragansett.

10+58.6 East Line of Del Monte

14+38.5 East Line Santa Cruz

14+88.5 = 10' So + 10' East of Intersection of Bacon + Santa Cruz Ave.

~~20+89~~

Santa Cruz Ave. 7/24/15

Ocean Beach.

14+88.5 Bacon St. Pipe Line = 0 of Santa Cruz Ave. Line

0+70 = East Line of Bacon St.

6+19.8 = West Line of Cable

6+79.8 East Line of Cable

12+80.3 West Line of De Foe St.

13+40.3 East Line of De Foe. "

19+40.1 West Line of Ebers

20+00.1 East Line of Ebers

25+98.6 West Froude

26+58.6 East Line of Froude

30+33.6 So Line of Ocean Beach

31+24.6 △ 19° 47' R

37+22 △ 19° 47' L

53+35 End of Pipe Intersection of Point Loma Pipe Line

Note Stakes from 37+22 to 53+35 are marked 0 to 16+13 at intersection

30°57'
47½
31°38½

10
1109
1113

37°58'
11026
148 24
31 36

66
20
12 20

44600
43540
44600
43560
1040

241	4"
19	6"
16	8"
3	10"
4	12"
2	16"
2	18"
1	24"
4	30"
2	

388.77

384.85
8.72
57
393.06
3
390.5 (4) 1389. (347
1.97
12
18
16
29
28
398.48
5.80
392.68
2.98
395.66
6.02
389.64

43

114
2
228
6
1368

27°15

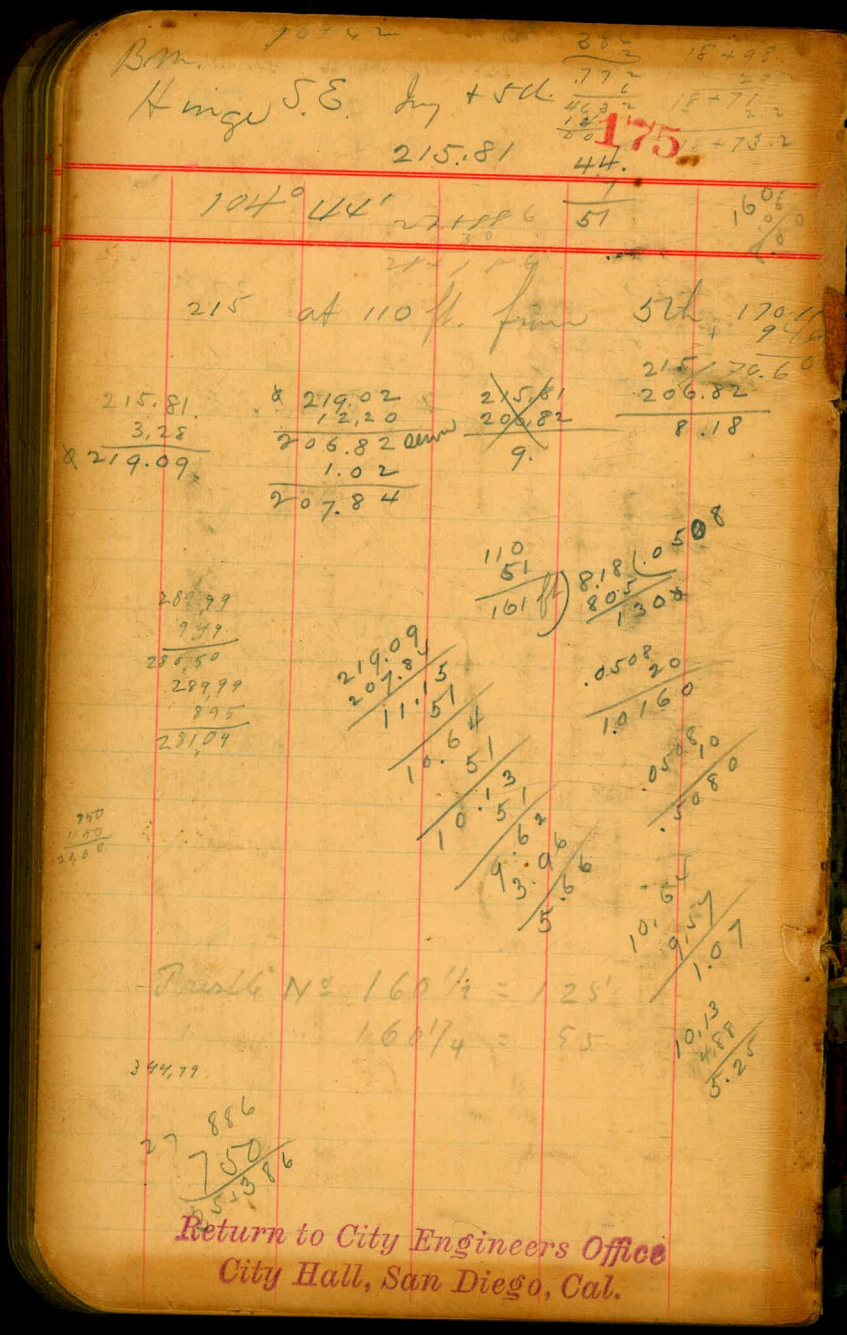
25000

44600
43560
1040

44600
43560
20) 1040. (41.
100
40

41
60
2050
1025

446
41
405



Return to City Engineers Office
City Hall, San Diego, Cal.

Return to City Engineers Office
City Hall, San Diego, Cal.

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.		

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