

299 B

299-B

W299B

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

- No. 380 LEVEL BOOK. Left and Right Hand Page the same as Left Hand Page of this Book.
- No. 382 FIELD BOOK. Left Hand Page as in this Book, Right Hand Page 4 x 4 to the inch, Center Line Red.
- No. 384 MINING TRANSIT BOOK. Left Hand Page as in this Book, Right Hand Page 8x8 to the inch, Center Line Red.
- No. 385 FIELD BOOK. Left Hand Page as in this Book, Right Hand Page 8 vertical and 4 horizontal lines to the inch, Center Line Red.

We also carry the Note Books listed above, bound in extra strong Fabri-Hide (otherwise the same quality of book), which can be furnished at a somewhat lower price.

In ordering Fabri-Hide covered books, add the letter "F" to catalog number.

THE FREDERICK POST CO.

ENGINEERING and DRAFTING SUPPLIES

IRVING PARK STATION

CHICAGO, ILL.

MICROFILMED

JAN 11 1963

INDEX

Points set to mark miles
Every $\frac{1}{4}$ mile from Otay Filter
Plant to Lantana Drive

Pages - 1-3 - Inc.

B.M.'s Transferred from First Main
Pipe line to Second Main Pipe
Line

Pages - 7-51-

Tabulation of All Appurtenances
as finally installed on the
Second main Pipe line - Pages - 54-69

Elevations at Chollas Wye Gate Valves
Tees etc. Page - 78

Cutover at Chollas Y 6/1/54	70-72
Ridgeway Road Xing 11/6/55	73-77

Otay Res. to San Diego Second

Main Pipe line

Pasts set to Mark Miles.

These mile points are set on actual
distance, allowing for all Equations.

	Sta.	mile
Set 2"x3" post at edge Trench	13+38	$\frac{1}{4}$
" " " " " "	26+58	$\frac{1}{2}$
" " " " " "	39+78	$\frac{3}{4}$
" " " " " "	52+98	1
" " " " " "	66+18	$1\frac{1}{4}$
" " " " " "	79+38	$1\frac{1}{2}$
" " " " " "	92+47	$1\frac{3}{4}$
" " " " " "	105+67	2
" " " " " "	118+87	$2\frac{1}{4}$
" " " " " "	132+07	$2\frac{1}{2}$
" " " " " "	145+27	$2\frac{3}{4}$
" " " " " "	158+39 ⁶	3
" " " " " "	171+59 ⁶	$3\frac{1}{4}$
" " " " " "	184+76	$3\frac{1}{2}$
Set 2"x3" post at edge Trench	197+96	$3\frac{3}{4}$
	211+16	4

10/30/30

clear and warm

Simpson

Soper

Remmen

10/31/30

inside Tunnel #1

inside Tunnel #2

inside Tunnel #3

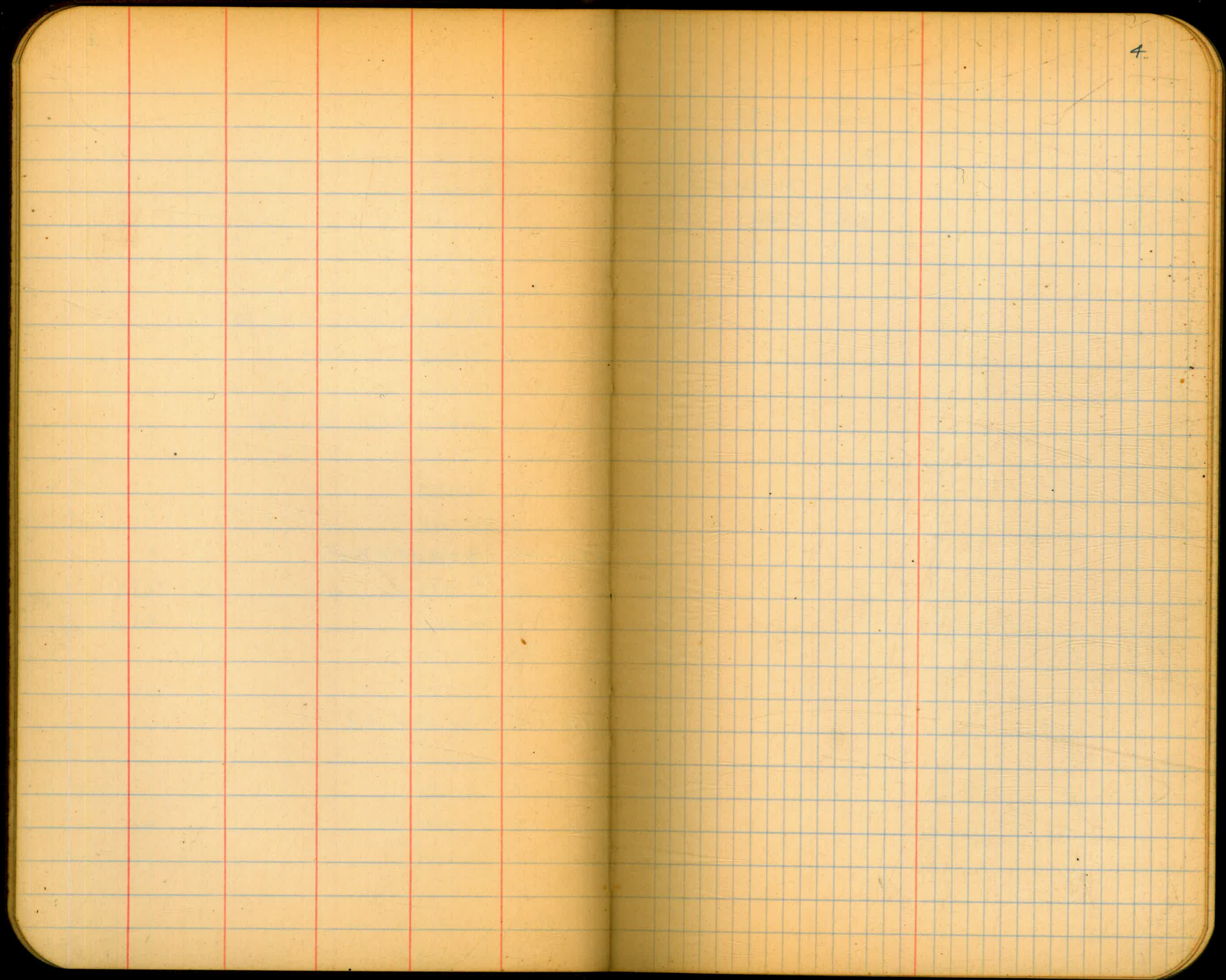
	Sta.	mile.
set 2" x 3" post at edge Trench	224+36	4 ¹ / ₄
" " " " " "	237+37 ⁶	4 ¹ / ₂
" " " " " "	250+57 ⁶	4 ³ / ₄
" " " " " "	263+77 ⁶	5
" " " " " "	276+97 ⁶	5 ¹ / ₄
set 5 ⁷ / ₁₆ miles on South face of Ent. Well. tunnel #7.	286+87 ⁶	
set 2" x 3" post at edge of Trench	303+33	5 ³ / ₄
" " " " " "	316+47	6
" " " " " "	329+67	6 ¹ / ₄
" " " " " "	342+87	6 ¹ / ₂
" " " " " "	356+07	6 ³ / ₄
" " " " " "	369+27	7
" " " " " "	382+47	7 ¹ / ₄
" " " " " "	395+67	7 ¹ / ₂
" " " " " "	408+87	7 ³ / ₄
" " " " " "	422+07	8
" " " " " "	435+27	8 ¹ / ₄
" " " " " "	448+47	8 ¹ / ₂
" " " " " "	461+67	8 ³ / ₄
" " " " " "	474+87	9
" " " " " "	488+07	9 ¹ / ₄
" " " " " "	501+27	9 ¹ / ₂
" " " " " "	514+33 ⁶	9 ³ / ₄

11/1/30
Simpson
Seber
Remmen
↓

11/3/30
Simpson
Seber
Remmen
↓

11/5/30
Simpson
Seber
Remmen
↓

	sta.	mile	
set 2x3" post at edge of trench	527+53 ^E	10-	
" " " " " "	540+73 ^E	10 ¹ / ₄	
" " " " " "	553+93 ^E	10 ¹ / ₂	
" " " " " "	567+13 ^E	10 ³ / ₄	
" " " " " "	580+33 ^E	11-	
" " " " " "	593+53 ^E	11 ¹ / ₄	11/2/30 North side of Paradise Valley Road
" " " " " "	606+73 ^E	11 ¹ / ₂	- About 50' South of Trestle #32
" " " " " "	619+93 ^E	11 ³ / ₄	
" " " " " "	633+13 ^E	12-	- About 100' north of National Ranch line
" " " " " "	646+33 ^E	12 ¹ / ₄	
" " " " " "	659+53 ^E	12 ¹ / ₂	
" " " " " "	672+73 ^E	12 ³ / ₄	
" " " " " "	685+93 ^E	13-	- 239' north of s. edge 65'st. Permit.
" 2x4"	699+13 ^E	13 ¹ / ₄	11/13/30 Simpson Clear and Warrat Super Romero
" 2x3"	712+33 ^E	13 ¹ / ₂	
" " " " " "	725+53 ^E	13 ³ / ₄	
" 2x4"	738+73 ^E	14-	
" 2x3"	751+93 ^E	14 ¹ / ₄	- 196' South of Brody. Ext.
" " " " " "	765+41	14 ¹ / ₂	Equation
" " " " " "	778+61	14 ³ / ₄	
" 2x4"	791+81	15-	- 150' South of Trestle #39
" 2x3"	803+46 ^E	15 ¹ / ₄	Equation
" " " " " "	816+66	15 ¹ / ₂	
" " " " " "	829+86	15 ³ / ₄	South side of Chollas Canyon
" " " " " "	843+06	16-	
" " " " " "	856+26	16 ¹ / ₄	



4

6.60 381.36 374.76

0400 20.44^{8.44} 360.92

10.6 370.76

0750 18.9^{18.9} 362.5

1400 6.87 374.49

15.5^{15.5} 365.9

11-9-35 PB
NC

5.

to check

Trench

to Trench Base Line

Trench

New Air Valves

 $2+22^{\circ}$ $7+39^{\circ}$ $14+63^{\circ}$ $17+80^{\circ}-2$ $23+20^{\circ}$ $23+22^{\circ}$ $25+00$ $26+50$

OTAY RES. TO SAN DIEGO SECOND MAIN
PIPE LINE

B.M.S' TRANSFERED FROM FIRST MAIN PIPE
LINE TO SECOND MAIN PIPE LINE.

		399.53 = old B.M. #2	
3.84	403.37		
T.P. B.M.	0.34	403.03	Set new
1.03	404.06		
New B.M. #1	1.93	<u>402.13</u>	
		399.53 = old B.M. #2	
0.12	399.65		
T.P. B.M.	10.06	389.59	Set new
2.10	391.69		
New B.M. #2	3.08	<u>388.61</u>	
		341.01 = old B.M. #3	
3.81	344.82		
new B.M. #3 -	7.87	336.95	Set new

11/20/30
Simpson
Soper
Remmen

clear and warm

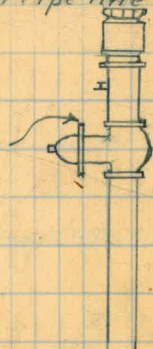
12-22-30
Underscored Elevations of
B.M.s. as reset by
Elliott, Soper, Remmen.

Top of Air Valve 60' Rt. sta. 5+69

B.M. on Top of Air Valve on 2nd second Main Pipe line, sta. 2+25

This A.V. Has 1-30" And 1-6" nipple

Cross on flange of Air Valve gate valve
Sta. 2+25



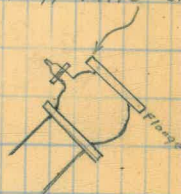
B.M. on Top of Air Valve on 2nd second Main Pipe line, sta. 7+39
This A.V. Has 1-30" And 1-6" nipple

Cross cut on flange of air valve gate valve, Sta. 7+39

Nail in sill of center Bent of old Trestle #2

B.M. on S.E. Cor of Pier #2, New Trestle #2 sta. 10+95²
Painted Cross on Top Pier

0.34	402.49	402.15	old B.M. #4	Top A.V. 60° at Sta 15+00
T.P. & B.M.	6.78	395.71	Set new	B.M. on top of Air valve on 2 nd second M.P.L. Sta 14+63 This A.V. Has 1-24" and 1-6" nipple
1.79	397.50			
New B.M. #4	2.73	<u>394.77</u>	Set B.M.	Cross cut on top of flange of air valve gate valve. Sta. 14+63
		293.48	= old B.M. #5	
4.48	297.96			
Set New B.M. #5	7.10	390.56	= Set new	B.M. on Highest point of outlet Flange of blow-off valve Sta 20+50 1-36" Nipple at 60°
		400.94	= old B.M. #6	
0.23	401.17			
T.P. & B.M.	8.60	392.57	= Set new	B.M. on Top of A.V. on 2 nd second Main pipe line Sta. 25+00 This A.V. has 1-24" and 1-6" nipple
2.94	395.51			
New B.M. #6	-3.85	<u>391.66</u>		Cross cut on top of flange of A.V. Gate Valve Sta. 25+00
		344.12	= old B.M. #7	11/21/30 Simpson Super Remmen + clear and ward
3.06	347.18			
New B.M. #7	8.58	338.60	Set new	B.M. on Top of S.E. Cor. of Pier #2, New trestle #3, Sta. 29+30 Painted with Black paint.



			397.47 = old B.M. #8	Sta. 31+83
0.45	397.92			
	T.P.	11.20	386.72	
5.65	392.37			
	T.P. & B.M.	9.69	382.68 set new	B.M. on top of Air Valve on 4 th second M.P.W. Sta. 31+57 This A.V. Has 1-48" and 1-6" Nipple
	1.32	384.00		
	New B.M. #8	2.25	<u>381.75</u> Set B.M.	Cross cut on top of flange of A.V. Gate Valve Sta 31+57
			364.22 = old B.M. #9	Sta. 33+36
0.06	364.28			
	New B.M. #9	9.65	354.63 Set NEW	B.M. on top of S.E. Cor. of pier #1, New Trestle #1, Sta. 33+07 Painted with Black paint.
			400.92 = old B.M. #10	Sta. 35+10
9.24	409.66			
	T.P. & B.M. #10	6.62	403.04 Set New	B.M. on top of A.V. on 4 th 2 nd M.P.W. Sta. 36+74 There is 3 Air Valves, about 2' apart here, the New B.M. is on top of the A.V. Farthest North. This A.V. Has 2-30" And 1-6" Nipples, same as A.V. at # B.M. 12
	1.07	409.11		
	New B.M. #10	2.00	<u>402.11</u> Cross	cut on top of flange of most northerly air valve gate valve of three Sta 36+74

			269.49 = old B.M. #11
4.76	274.25		
NEW	B.M. #11	6.56	267.67 set new
			294.97 = old B.M. #12
10.42	305.39		
	T.P.	1.72	303.67
9.05	312.72		
T.P. &	B.M.	2.61	310.11 = set new
1.02	311.13		
NEW	B.M. #12	1.95	<u>309.18</u> Cross

B.M. Cross chiseled into Flange of Blow-off valve, Sta. 42+31
In Bottom of Salt Canyon

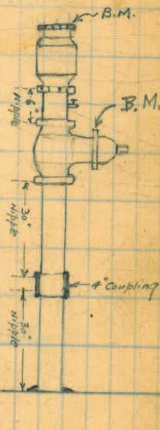
1-24" Nipple at 60°



Sta. 47+85

B.M. on top of A.V. on 2nd M.P. Sta. 47+45

This A.V. has 2-30" And 1-6" nipples



Cross cut in top of flange of air valve gate valve
Station 47+45

Note: This is a standard Air valve, except the Nipples on the Bottom vary in length.

			396.86 = Old B.M. #13 Sta. 56+72	
2.76	399.62			
T.P. & B.M.	8.34	391.78	set New	B.M. on top of Air Valve on 2 nd M.P.W., Sta. 54+85 ^E there is 2 A.V.'s about 2' apart here, This B.M. is on the A.V. Farthest North. This A.V. Has 1-30" and 1-6" Nipple.
1.15	392.43			
New B.M. #13	2.03	<u>390.40</u>	Cross	cut on top of flange of air valve gate valve (Most northerly air valve at Sta. 54+85 ^E)
			396.86 = old B.M. #13 Sta. 56+72.	
1.16	398.02			
T.P. & B.M.	10.84	387.18	set New	B.M. on top of A.V. on 2 nd M.P.W. Sta. 58+50 This A.V. Has 1-30" and 1-6" Nipple
1.65	388.83			
New B.M. #14	2.55	<u>386.28</u>	Cross	cut on top of flange of air valve gate valve 2nd Main Pipe Line Sta 58+50
			340.79 = old B.M. #14 Sta. 60+76	
6.55	377.34			
New B.M. #15	6.73	340.61	set new	B.M. on top of Conc. pier #2, S.E. Cor, New Trestle #5, Sta. 60+62 Painted with Black Paint

			340.79 - old B.M. #14	Rt. Sta. 67+76
11.38	352.17			
	T.P.	0.05	352.12	
10.93	363.05			
	T.P.	0.38	362.67	
12.04	374.71			
	T.P.	0.12	374.59	
12.59	387.18			
	T.P.	0.38	386.80	
12.68	399.48			
		0.62	398.86 = check on	old B.M. #15, Rec. El. = 398.52 This old B.M. Has been destroyed by a replacement of a shorter nipple on the A.V.
T.P. & B.M.		7.10	392.38 set new	B.M. on top of A.V. on 2 nd M.P. Sta. 63+00 This A.V. Has 1-24" And 1-6" Nipple
1.14	393.52			
New B.M. #16		2.03	<u>391.49</u> Cross	cut in top of flange of air valve gate valve
			313.92 old B.M. #16	60+ Sta. 67+56
8.20	322.12			
New B.M. #17		9.52	312.60 Set New	B.M. on top of S.E. cor. of Conc. pier #1, New Trestle #6 Painted with Black Paint. Sta. 67+46

			389.92	old B.M. #17	62 ft. sta. 70+48.
8.82	398.74				
	T.P. & B.M. #16	1.83	396.91	Set New	B.M. on Top of A.V. on R. 2 nd M.P.L. sta. 70+30 This A.V. Has 1-42" And 1-6" nipple
2.06	398.97				
	New B.M. #18	2.98	395.99	Cross	cut on flange of A.V. gate valve sta. 70+30 343.32 = old B.M. #18 76. sta. 72+20
4.00	347.32				
	New B.M. #19	7.72	339.60	Set New	B.M. on S.E. corner of Conc. pier #2, New Trestle #7, sta. 72+20 Painted with Black Paint
			399.14	= old B.M. #17	Sta. 77+35
4.50	403.64				
	T.P. & B.M.	2.32	401.32	Set New	B.M. on top of A.V. on R. 2 nd M.P.L. sta. 77+08 This A.V. Has 1-24" And 1-6" nipple This B.M. is at the West End of the big cut.
0.98	401.80				
	New B.M. #20	1.87	400.43	Cross	cut on top of flange of A.V. Gate valve at Sta 77+08
			332.92	old B.M. #20	Rt. sta. 81+40
5.38	338.30				
	New B.M. #21	7.70	330.60	Set New	B.M. on S.E. cor. of Conc. pier #2, new trestle #8, sta. 81+58 Painted with Black Paint.

5.98	398.39	398.41 = old B.M. #21	St. 89+20	
T.P. & B.M.	5.11	393.28 Set New	B.M. on Top A.V. on R. 2 nd M.P.W. Sta. 85+00	
1.54	394.82		This A.V. Has 1-3/8" And 1-6" Nipple	
New B.M. #22	2.48	<u>392.34</u> Cross	cut on top of flange of A.V. gate valve Sta 85+00	
3.79	400.23	396.44 = old B.M. #22	R. Sta. 89+90	
T.P. & B.M.	7.05	393.18 Set New	B.M. on Top A.V. on R. 2 nd M.P.W. Sta. 90+00	
2.15	395.33		This A.V. Has 1-3/8" And 1-6" Nipple	
New B.M. #23	3.02	<u>392.31</u> Cross	cut on top of flange of A.V. gate Sta. 90+00	
7.44	335.33	327.87 = old B.M. #23	Sta. 92+90 on old Trestle #13	
New B.M. #24	6.71	328.62 Set New	B.M. on S.E. cor of conc. pier #3, New Trestle #9, Sta. 93+26	Painted with Black Paint.
2.18	396.58	394.40 = old B.M. #24	Rt. Sta. 96+73	
T.P. & B.M.	5.92	390.66 = Set New	B.M. on Top of A.V. on R. 2 nd M.P.W. Sta. 96+65	
1.10	391.76		This A.V. Has 1-24" And 1-6" Nipple	
New B.M. #25	2.01	<u>389.75</u> Cross	cut on top of flange of A.V. gate Sta. 96+65	

12-23-30
B.Ms with underscored
elevations reset by
Elliott, Soper, Tremmer

11/22/30
Simpson
Soper
Remmer
↓

clear
Windy
Cool

11/22/30

			360.34	old B.M. #25	Rt. Sta. 98+45 on old Trestle #4
1.96			362.30		
				New B.M. #26	
	9.69		352.61	set New	B.M. on S.E. Cor. of Conc. pier #2, New Trestle #10, Sta. 98+56 ⁵
					Painted with Black Paint.
			396.95	old B.M. #26	Rt. Sta. 102+84
3.71			400.66		
				T.P. & B.M. #27	
	5.66		395.00	set New	B.M. on Top of A.V. on 4 th 2 nd M.P.K., Sta. 101+00
3.32			398.32		This A.V. Has 1-2" And 1-6" Nipple
				New B.M. #27	
	9.23		394.09	Cross	cut on top of flange of A.V. gate Sta 101+00
			316.57	old B.M. #27	Rt. Sta. 105+06 on old Trestle #15
3.55			320.14		
				New B.M. #28	
	7.53		312.61	set New	B.M. on S.E. Cor. of Conc. pier #3, New Trestle #11, Sta. 105+09
					Painted with Black Paint.
			390.07	old B.M. #28	Rt. Sta. 108+15
7.76			397.83		
				T.P. & B.M. #29	
	8.65		389.18	set New	B.M. on Top of A.V. on 4 th 2 nd M.P.K., Sta. 108+40
1.62			390.80		This A.V. Has 1-36" And 1-6" Nipple
				New B.M. #29	
	2.50		388.30	Cross	cut on top of flange of A.V. gate Sta. 108+40

			396.93 = old B.M. #29	Rt. Sta. 115+25	11/22/30 windy cool
0.34	397.27				
	new B.M. #30	12.67	384.60	Set new	B.M. on S.E. corner of conc. pier #3, new trestle #13, Sta. 112+81 Painted with Black Paint.
					11/24/30 clear and warm Simpson Super Remmert
			396.87 = old B.M. #31	Rt. Sta. 128+95, A.V.	
6.66	403.53				
	T.P.	12.74	390.79		
1.34	392.13				
	T.P.	12.72	379.41		
0.85	386.26				
	T.P.	12.94	367.32		
0.78	368.10				
	T.P.	12.61	355.49		
0.00	355.49				
	T.P.	12.86	342.63		
0.05	342.68				
	new B.M. #31-12.12		330.56	Set new	B.M. on N.W. corner of conc. pier #1, new trestle #14, Sta. 119+60 Painted with Black Paint.
			396.87 = old B.M. #31	A.V. Rt. Sta. 128+95	
6.66	403.53				
	T.P.	12.74	390.79		
1.34	392.13				
	T.P.				
T.P. on	B.M. #32	6.86	385.27	Set new	B.M. on Top A.V. on 4 th 2 nd M.P.L., Sta. 122+82 This A.V. Has 1-3/8" and 1-6" nipple
3.10	388.37				
	new B.M. #32	4.00	384.37	Cross	cut on top of flange of A.V. gate 122+82

			396.87 = old B.M. #31	A.V. at sta. 128+95
6.66	403.53			
T.P. & B.M. #32	5.79	397.74	Set New	B.M. on Top A.V. on $\frac{1}{2}$ 2 nd M.P.W., sta. 126+53
2.66	400.40			This A.V. Has 1-36" And 1-6" ripples
New B.M. #33	3.58	<u>396.82</u>	Cross	cut on top of flange of A.V. Gate sta 126+53
			385.19 = old B.M. #32	A.V. at coronado "etc"
10.07	395.26			
	T.P.	0.04	395.22	
6.39	401.61			
T.P. & B.M. #34	2.14	399.47	Set New	B.M. on Top A.V. on $\frac{1}{2}$ 2 nd M.P.W., sta. 134+45
				This B.M. is Near the west end of the Big cut
1.86	401.33			This A.V. Has 1-24" And 1-6" ripples
New B.M. #34	2.77	<u>398.56</u>	Cross	cut in top of flange of A.V. Gate 134+45
			365.04 = old B.M. #33	
8.29	373.33			
New B.M. #35	4.70	368.63	Set New	B.M. on S.E. corner of conc. pier #1, New trestle #15, sta. 136+41
				Painted with Black Paint.

6.27 402.81
 396.54 = old B.M. #34 A.V. R. 144+14
 New B.M. #36 5.28 397.53 Set new B.M. on S.E. corner of Entrance Well, Tunnel #1, Sta. 145+83.
 Painted with Black Paint.

1.71 423.83
 422.12 = B.M. on Top R.P. Bolt, Sta. 166+39⁸ (Tunnel #1)
 T.P. 12.63 411.20

1.31 412.51
 New B.M. #37 12.79 399.72 Set new B.M. on N.W. corner of Exit Well, Tunnel #1, Sta. 167+75
 Painted with Black Paint.

0.74 400.46
 399.72 = New B.M. #37
 New B.M. #38 0.88 399.58 Set new B.M. on S.W. corner of Entrance Well, Tunnel #2, Sta. 171+99
 Painted with Black Paint.

			395.41	old B.M. #39	A.V. Rt. Sta. 191+77
7.02	402.43				
	new B.M. #39	4.86	397.57	Set New	B.M. on N.E. corner of Exit Well, Tunnel #2, Sta. 192+31 ^E Painted with Black Paint.
			392.51	old B.M. #40	A.V. Lt. Sta. 204+56
10.48	402.99				
	new B.M. #40	6.97	396.02	Set New	B.M. on S.W. corner of Entrance Well, Tunnel #3, Sta. 205+10 ^Z Painted with Black Paint.
			399.92	old B.M. #43	A.V. Rt. Sta. 226+64
5.93	400.85				
	T.P.	5.86	394.99		
1.24	399.23				
	new B.M. #41	1.04	398.19	Set New	B.M. on N.W. corner of Exit Well, Tunnel #3, Sta. 224+30 ^Z Painted with Black Paint.

7.37 397.22
 New B.M. #42 1.31 395.91 Cross

389.85 old B.M. #44

Rt. Sta. 238+43, A.V.

cut on top of flange of A.V. gate sta 238+85
 This A.V. Has 1-54" Nipple

0.53 393.77
 T.P. 12.53 381.24
 1.36 382.60
 T.P. 12.97 369.63
 10.33 379.96

393.24 - old B.M. #45

A.V. Rt. Sta. 252+62

New B.M. #43 10.65 369.31 set new

B.M. in S.E. Corner of Conc. pier #5, new Trestle #16, Sta. 251+75

Painted with Black Paint.

11/25/30

Simpson

Seper

Remmen

clear and warm

363.50 - old B.M. #46

Rt. Sta. 255+17 - on old Trestle #20

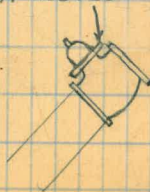
4.36 367.86

New B.M. #44 7.68 360.18 set new

B.M. cut cross into flange of Blow-off valve, Sta. 255+25

Not on out let flange

1-36" Nipple at 60° L.



1.82 373.84
 T.P. & B.M. 11.08 382.76 = set new
 0.77 383.53
 New B.M. #45 1.68 381.85 Cross

392.02 = old B.M. #47

A.V. Rt. Sta. 257+85

B.M. on top A.V. on 2nd m.P.L., Sta. 256+75

This A.V. Has 1-3/4" And 1-6" nipple

cut on top of flange of A.V. gate Sta. 256+75

1.67 394.10

T.P. 12.73 381.37

0.45 381.82

T.P. 12.38 369.44

6.05 375.49

New B.M. #46 9.74 365.75 Set new

392.43 = old B.M. #48

A.V. Rt. Sta. 261+37

on S.E. corner of Conspier #1, New trestle #17, Sta. 260+07

Painted with Black Paint.

4.51 350.51

New B.M. #47 7.26 343.25 set new

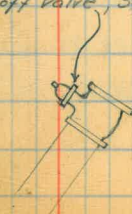
346.00 = old B.M. #49

Rt. Sta. 265+10 = old Trestle #22

cut cross into Flange of Blow-off valve, Sta. 265+00

Not on out Let Flange

1-3/4" nipple at 60°



			393.29 = old B.M. #50	A.V. Rt. Sta 268+83
4.41	397.70			
T.P. & B.M.		11.02	386.68 set new	B.M. on Top A.V. on E 2 nd M.P.L., Sta. 268+83
0.74	387.42			This A.V. Has 1-30" And 1-6" nipple
New B.M. #48		1.64	<u>385.78</u> Cross	cut on top of flange of A.V. gate Sta 268+83.
			386.68 = new B.M. #48	
0.53	387.21			
	T.P.	12.58	374.63	
0.27	374.90			
	T.P.	11.34	363.56	
2.12	365.68			
New B.M. #49		7.58	358.10 set new	B.M. on S.E. corner of concrete Pier #1, new Trestle #18, Sta. 270+38
				Painted with Black Paint.
			392.97 = old B.M. #51	A.V. Rt. Sta 272+60
4.06	397.03			
T.P. & B.M.		8.60	388.43 set new	B.M. on Top Air valve on E 2 nd M.P.L., Sta. 272+72
0.49	388.92			This A.V. Has 1-24" And 1-6" Nipple
New B.M. #50		1.41	<u>388.51</u> Cross	cut on top of flange of A.V. gate Sta 272+72

			391.91 - old B.M. #52	A.V. Rt. Sta. 277+80
4.01	395.92			
	T.P. & B.M.	7.29	388.62 set New	B.M. on Top A.V. on E. 2 nd M.P.L., Sta. 277+97 This A.V. Has 1-3" And 1-6" nipple
1.66	390.34			
	New B.M. #51	2.58	<u>387.76</u> Cross	cut on top of flange of A.V. gate Sta 277+97
			395.18 - old B.M. #54	Top conc cap So. Por. old Tunnel #4
6.73	401.91			
	T.P.	8.67	393.24	
4.02	397.26			
	New B.M. #52	0.85	396.41 Set New	B.M. on S.W. corner of conc. Entrance Well, Tunnel #4, Sta. 286+99 Painted with Black Paint.
			394.49 - old B.M. #55	S.E. corner conc. cap No. Por. old Tunnel #4
4.13	398.62			
	T.P.	7.72	390.90	
4.94	395.84			
	New B.M. #53	0.64	395.20 Set New	B.M. on N.E. corner of conc. Exit Well, Tunnel #4, Sta. 298+17 ² Painted with Black Paint.


			391.48 = old B.M. #56	A.V. Lt. Sta. 306+10
1.87	393.85			
	new B.M. #54	6.14	387.21 set new B.M.	on Top Bolt Head set in concrete on N.E. corner of Gate valve Box, Sta. 306+21. Painted with Black Paint
			336.42 = old B.M. #57	A.V. Rt. Sta. 312+00
7.51	343.93			
	T.P. & B.M.	1.42	342.51 set new	B.M. on Top A.V. on & 2 nd M.P.W., Sta. 312+00
1.01	343.52			This A.V. Has 1-30" And 1-6" ripple
	New B.M. #55	1.90	341.62 Cross	cut on top of flange of A.V. gate Sta 312+00
			392.29 = old B.M. #58	A.V. Rt. Sta. 321+37
0.83	393.12			
	T.P.	12.63	380.49	
2.74	383.23			
	T.P. & B.M.	8.18	375.05 set new	B.M. on Top A.V. on & 2 nd M.P.W., Sta. 321+30
2.14	377.19			This A.V. Has 1-30" And 1-6" ripple
	New B.M. #56	3.01	374.18 Cross	cut on top of flange of A.V. gate Sta 321+30

12-23-30
 B.M.s with underscored
 elevations set by
 Elliott, Soper, Tremmen

2.30	392.94		390.64 = old B.M. #59	A.V. Rt. Sta. 324+18
	T.P.	8.85	384.09	
2.15	386.24			
T.P. B.M.		7.76	378.48 set new	B.M. on Top A.V. on E 2 nd M.P.W., Sta. 326+00
				There is 2 A.V.'s About 2' Apart Here, This B.M. is on The A.V. Farthest North.
0.16	378.64			This A.V. Has 1-42" And 1-6" nipple
New B.M. #57		1.04	<u>377.60</u> Cross	cut on top of flange of A.V. gate, Most northerly of two Air Valves at Sta 326+00
			390.86 = old B.M. #60	on A.V. Rt. Sta. 333+15
7.70	398.56			
T.P. B.M.		6.81	391.75 set new	B.M. on Top A.V. on E 2 nd M.P.W., Sta. 333+25
				There is 2 A.V.'s About 2' apart Here, This B.M. is on The A.V. Farthest North.
1.12	392.87			This A.V. Has 1-42" And 1-6" nipple
New B.M. #58		2.05	<u>390.82</u> Cross	cut on top of flange of most northerly A.V. gate of two at Sta. 333+25
			390.64 = old B.M. #61	A.V. Rt. Sta. 338+20
6.92	397.56			
T.P. B.M.		4.44	393.12 set new	B.M. on Top A.V. on E 2 nd M.P.W., Sta. 338+73
2.07	395.19			This A.V. Has 1-30" And 1-6" nipple
New B.M. #59		2.97	<u>392.22</u> Cross	cut on top of flange of A.V. gate Sta. 338+73

12-24-1930
 B.M.s with underscored
 elevations set by
 Elliott, Soper, Remmen

26

			389.76 = old B.M. #62	A.V. Rt. sta. 347+33
2.58	392.34			
T.P. B.M.		8.50	383.84 set new	B.M. on top A.V. on 2 nd M.P.W., sta. 347+54
				The Brass Top part on this A.V. is an old used one.
0.64	384.48			This A.V. Has 1-48" And 1-6" nipple
New B.M. #60		1.64	<u>382.84</u> Cross	cut out top of flange of A.V. gate Sta 347+54
				5 ⁵⁰ From top pipe to B.M.
				11/26/30 Clear And Warm.
			320.87 = old B.M. #63	Simpson Soper Remmen
3.67	324.54		Hub Rt. Sta. 351+50	
New B.M. #61		5.12	319.42 set new	B.M. cut cross into Flange of Blow-off valve, sta. 351+00
				Not on out let Flange
				1-36" Nipple at 60°
				
			386.34 = old B.M. #64	A.V. Rt. sta. 356+00
3.60	389.94			
T.P. B.M.		5.58	384.36 set new	B.M. on top A.V. on 2 nd M.P.W., sta. 355+50
1.23	385.59			This A.V. Has 1-30" And 1-6" nipple
New B.M. #62		2.12	<u>383.47</u> Cross	cut on top of flange of A.V. gate Sta 355+50

5.10 381.01
 T.P. B.M. 2.18 375.91 = old B.M. #65 A.V. Rt. Sta. 367+63
 1.29 380.12
 New B.M. #63 2.18 377.94 Cross B.M. on Top A.V. on 2nd M.P.L., Sta. 367+18
 This A.V. Has 1-30" And 1-6" Nipple
 cut on top of flange of A.V. gate, Sta 367+18

3.62 386.82
 T.P. B.M. 3.33 383.20 = old B.M. #66 A.V. Rt. Sta. 374+29
 1.94 385.43
 New B.M. #64 2.82 382.61 Cross B.M. on Top A.V. on 2nd M.P.L., Sta. 374+50
 This A.V. Has 1-30" And 1-6" Nipple
 cut on top of flange of A.V. gate, Sta. 374+50

2.79 393.72
 T.P. B.M. 4.65 390.93 = old B.M. #67 A.V. Rt. Sta. 385+16
 1.14 390.21
 New B.M. #65 2.05 388.16 Cross B.M. on Top A.V. on 2nd M.P.L., Sta. 385+00
 This A.V. Has 1-42" And 1-6" Nipple
 The 6" nipple on this A.V. is An old used one.
 cut on top of flange of A.V. gate, Sta 385+00

12-24-30
BMs with underscored
elevations set by
Elliott, Soper, Remmen

28

- 370.71 = old B.M. #68 A.V. Rt. Sta. 393+21
- 2.71 373.42
T.P.B.M. 4.25 369.17 Set new B.M. on top of A.V. 2nd M.P.L. Sta 392+45
There are 4 A.V.s about 2' apart. T.P.B.M. is most northerly A.V.
- 1.87 371.04
New B.M. #66 2.78 368.26 Cross cut on top of flange of gate of most northerly
air valve of 4 at Sta 392+45
- See Page 51 For New B.M. #66-A in Bottom of Merch Canyon
- 376.80 = old B.M. #70 A.V. Rt. Sta 414+40
- ~~3.47 380.27~~
T.P.B.M. 3.25 376.42 Set New B.M. on Top A.V. on 2nd M.P.L. Sta. 413+75 Moved
There is 4 A.V.s About 2' Apart Here, This B.M. is on the
A.V. Farthest North.
This A.V. Has 1-3/4" And 1-6" nipple
- 2.01 378.81
New B.M. #67 3.28 375.53 Cross cut on top of flange of gate of most northerly
air valve of 4 at Sta. 413+75 2nd Main Pipeline
- 373.93 = old B.M. #71 A.V. Rt. Sta. 430+00
- 1.97 375.90
New B.M. #68 5.45 370.45 Set New B.M. on N.E. corner of concrete Gate valve Box on Bonita Branch
line, Sta. 430+40.
There is also A valve Box on the main line opposite
this one. This B.M. is on the valve Box on Branch line

		305.64 = old B.M. #73	A.V. Rt. Sta. 443+37
2.71	308.35		
T.P. B.M.	3.77	304.58 Set new	B.M. on Top Air Valve on 2 nd M.P.W., Sta. 443+83
			There is 2 A.V.'s About 4' Apart here, This B.M. is on The A.V. Fartherest North.
2.18	306.76		This A.V. Has 1-48" And 1-6" nipple
New B.M. #69	3.11	303.65 Cross	cut on top of flange of A.V. gate of most northerly A.V. of two at Sta 443+83
		185.57 = old B.M. #74	A.V. Rt. Sta. 457+00
4.22	190.39		
T.P. B.M.	3.42	186.97 Set new	B.M. on Top A.V. on 2 nd M.P.W., Sta. 457+00
			The Brass Top part And the 6" nipple on this A.V. are old used parts.
2.78	189.75		This A.V. Has 1-30" And 1-6" nipple
New B.M. #70	3.76	185.99 Cross	cut on top of flange of A.V. gate Sta. 457+00
		107.53 = old B.M. #75	on sill old trestle #28, Sta. 468+00
6.99	114.52		
T.P. B.M.	8.59	105.93 set New	B.M. on Top A.V. on 2 nd M.P.W., Sta. 469+25, Top Hill So. side Sweet water River.
4.32	110.25		This A.V. Has 1-48" And 1-6" nipple
New B.M. #71	5.22	105.03 Cross	cut on top of flange of A.V. gate Sta. 469+25

8.10 64.64
 new B.M. # 72 3.87 60.77 Set New B.M. on west end of concrete Headwall for culvert
 under neath Paved Road to Bonita. About 150'
 East of $\frac{1}{2}$ 2nd M.P.L. Sta, 471+00⁺
 set Iron Plug in Lead in the concrete Headwall

5.50 67.10
 new B.M. # 73 8.92 58.18 set new B.M., small T.R. spike in north side of west Pile,
 west Pile Bent Support north side Sweetwater
 River, Sta. 483+70

1.50 162.76
 T.P. 12.61 150.15
 1.65 151.80
 new B.M. # 74 8.62 143.18 Set New B.M. on N.W. corner of concrete pier #1, New Trestle # 21.
 Sta. 493+78, Painted with Black Paint.

56.54 = old B.M. # 76 = Flange Gate Valve Rt. Sta. 471+19

61.60 = old B.M. # 77. Nail in First Pile N.E. Wingwall North end Bonito Bridge

161.26 = old B.M. # 78 Rt. Sta. 494+15

220.62 = old B.M. #80
New B.M. #75 = Same as old B.M. #80

2.68	235.96	2.33.28	old B.M. #81
T.P. B.M.	6.17	229.79	Set new
2.14	231.93		
New B.M. #76	3.03	<u>228.90</u>	Cross

3.66	179.01	175.35 =	old B.M. #82
New B.M. #77	8.51	170.50	Set new

11/28/30 Part cloudy and cool
Simpson
Soper
Remmer

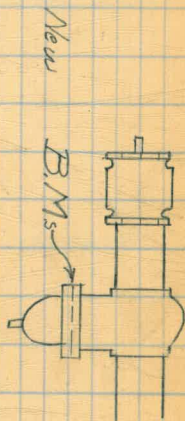
31-

35' Rt. Sta. 501+20, Nail in 6" x 6" corner Fce. Post,
except nail in Fce. post is Replaced by
small R.R. spike, same Elevation
This B.M. is About At Mile 9 1/2

A.V. Rt. Sta. 511+50

B.M. on Top A.V. on \angle 22nd M.P.W., Sta. 512+12

This A.V. has 1-3" and 1-6" ripple
cut on flange of A.V. gate Sta 512+12



Rt. Sta. 517+20 on old Trestle

B.M. on S.W. corner of concrete pier #3, new Trestle #2, Sta 516+76^s
Painted with Black Paint

12-24-30
B.Ms with underscored
elevations set by
Elliott, Soper, Tremmen

32.

8.43 244.95
T.P. B.M. 2.70 242.25 Set New

1.61 243.86
New B.M. #78 2.55 241.31 Cross

7.21 156.75
New B.M. #79 5.89 150.86 set New

149.54 - old B.M. #84

4.18 324.74
T.P. B.M. #80 8.51 316.23 Set New

0.80 317.03
New B.M. #80 1.75 315.28 Cross

A.V. Rt. Sta. 522+05

B.M. on Top A.V. on 2nd M.P.L., Sta. 522+25

There is 2 A.V.'s About 2' Apart Here, This B.M. is on the A.V.
Farthest North.

This A.V. Has 1-6" And 1-6" Ripples

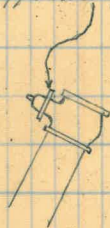
cut on top of flange of A.V. gate of most northerly
air valve of two at Sta. 522+25

on inner Blow-off Flange Rt. Sta. 526+15

B.M. cut cross into Flange of Blow-off valve, Sta. 526+15

Not on out-let Flange.

1-36" Ripples at 60°



A.V. Rt. Sta. 536+00

B.M. on Top A.V. on 2nd M.P.L., Sta. 535+75

There is 2 A.V.'s About 3' Apart Here, This B.M. is on the
A.V. Farthest North.

This A.V. Has 1-30" And 1-6" Ripples.

cut on top of flange of A.V. gate of most northerly
air valve of two at Sta. 535+75

1.04 298.75
298.71 = old B.M. #86

T.P. & B.M. 10.43 288.32 Set new

3.09 291.71
New B.M. #81 3.97 287.44 cross

7.26 281.98
New B.M. #82 8.44 273.57 set new

0.87 382.48
T.P. & B.M. 8.89 373.59 set new

9.41 383.00
New B.M. #83 10.31 372.69 cross cut

A.V. Rt. Sta. 547+90

B.M. on Top A.V. on 2nd M.P.W., Sta. 545+00

This A.V. Has 1-30" And 1-6" Nipple

cut on Top of flange of Gate Valve of A.V., Sta. 545+00

Nail in Sill of old Trestle #32, Rt. Sta. 549+85

B.M. on S.W. Corner of concrete pier #1, New Trestle #24 Sta. 549+42
Painted with Black Paint.

A.V. Rt. Sta. 556+00

B.M. on Top A.V. on 2nd M.P.W., Sta. 556+75

There is 2 A.V.'s About 2' Apart Here, This B.M. is on the
A.V. Farthest North.

This A.V. Has 1-30" And 1-6" Nipple

on Top of flange of Gate Valve of Most Northerly A.V.
of Two at Sta. 556+75

12/29/30
Simpson
Super
Tanner
↓

11/29/30

clear and warm.

Simpson

Soper

Remmer

34

5.16 275.97
 270.81 = old B.M. #89

Nail in side valve box Rt. Sta. 564+70

New B.M. #84 9.40 266.57 set new

B.M. on S.W. corner of concrete pier #7, New Trestle #25, Sta. 564+35
 Painted with Black Paint.

4.67 368.79

364.12 = old B.M. #70

A.V. Rt. Sta. 566+10

T.P.B.M. 6.92 361.87 set new

B.M. on Top A.V. on 2nd M.P.W., Sta. 565+75

6.54 368.71

There is 2 A.V.'s About 2' Apart Here, This B.M. is on the

A.V. Farthest North. This A.V. Has 1-6" and 1-6" ripple

new B.M. #85 7.44 360.97 = cross cut

on top of flange of Gate Valve of most northerly A.V.
 of Two at Sta. 565+75

4.36 324.30

319.94 = old B.M. #90-A

Nail in old Trestle #33 - Rt. Sta. 571+12

New B.M. #86 7.60 316.70 set new

B.M. on S.W. corner of concrete pier #1, New Trestle #27, Sta. 571+12

Painted with Black Paint.

		354.77 = old B.M. #91	Rt. Sta. 569+50 A.V.
12.20	366.97		
	T.P. & B.M.	8.83 358.14 Set New	B.M. on Top A.V. on 2 nd M.P.H., Sta 574+58 This A.V. Has 1-18" And 1-6" Nipple
3.10	361.24		
	New B.M. #27	4.05 357.19 cut cross	on Top of flange of Gate Valve of A.V. at Sta. 574+58
		377.64 = old B.M. #94	A.V. Rt. Sta. 579+15
8.65	386.29		
	T.P. & B.M.	4.81 381.48 Set New	B.M. on Top A.V. on 2 nd M.P.H., Sta 579+10 This A.V. Has 1-84" Nipple The Brass Top Part of this A.V. is an old used Part, Painted with Red Paint.
4.58	386.06		
	New B.M. #28	5.61 380.45 cut Cross	on Top of flange of Gate Valve of A.V. at Sta. 579+10
		369.85 = old B.M. #95	A.V. Rt. Sta. 588+10
13.07	382.92		
	T.P. B.M.	0.04 382.88 Set New	B.M. on Top A.V. on 2 nd M.P.H., Sta 587+90 There is 2 A.V.'s About 2' Apart Here, This B.M. is on The A.V. Farthest North This A.V. Has 1-30" And 1-6" Nipple
0.18	383.06		
	New B.M. #29	1.13 381.93 cut cross	on Top of flange of Gate Valve of most northerly Air Valve at Sta. 587+90

12/1/30

Simpson
Seper
Remmen

Clear And Warm.

36

		263.75 = old B.M. #96	on flow-off valve Rt. sta. 592+90
3.07	266.84		
NEW B.M. #90	6.23	260.61 Set New	B.M. on S.W. Cor. pier #4, New Trestle #28, Sta. 592+58. Painted with Black Paint. Bottom of Paradise Canyon.
		381.53 = old B.M. #77	A.V. Rt. sta. 603+00
4.53	386.06		
T.P.B.M. -	3.10	382.96 Set New	B.M. on Top A.V. on 2 nd M.P.W., Sta. 601+50 There is 2 A.V.'s About 2' Apart Here, This B.M. is on The A.V. Farthest North This A.V. Has 1-2" And 1-6" Ripples.
3.03	385.99		
NEW B.M. #91	3.99	382.00 Cut cross	on top of flange of Gate Valve of most northerly Air Valve at Sta. 601+50
		332.95 = old B.M. #98	Spike in old Trestle #37, Rt. Sta. 608+15
5.90	338.85		
NEW B.M. #92	7.91	330.94 Set New	B.M. on S.W. corner of concrete pier #7, New Trestle #32, Sta. 607+83 - (Painted with Black Paint)

			381.80 = old B.M. #99	A.V. Rt. Sta. 610+85
2.79	384.59			
	New B.M. #93	12.92	371.67 Set New	B.M. on S.W. corner of concrete pier #2, New Trestle #33 Sta. 611+97,-
			379.37 = old B.M. #100	A.V. Rt. Sta. 614+70
1.40	380.77			
	New B.M. #94	10.02	370.75 Set New	B.M. on S.W. corner of concrete pier #7, New Trestle #34, Sta. 614+62
			239.71 = old B.M. #101	Belt Head N.E. Cor. P.O. Valve Rt. Sta. 621+26
9.06	248.77			
	New B.M. #95	5.39	243.38 Set New	B.M. on S.W. corner concrete pier #2, New Trestle #35, Sta. 621+48 ^S , In Bottom of First Canyon south of National Trench line

Note: U.S.G.S. datum is
used from Otay Filter Plant
to new B.M. #95, and City Datum
is used from new B.M. #96 to
San Diego.

Difference = 6.12 U.S.G.S. = Highest.

City Datum

348.00 = old B.M. 102 A.V. Rt Sta 634+65

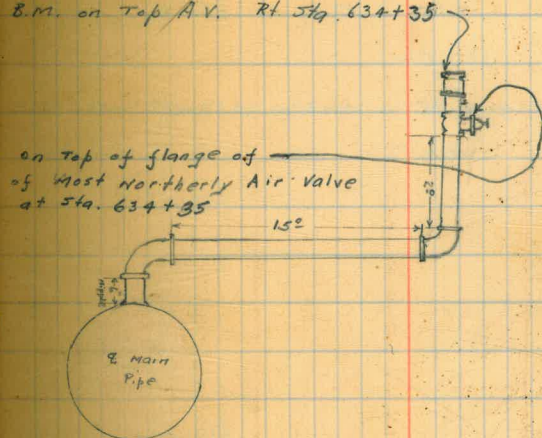
3.94 351.94

T.P. B.M. -

2.27 349.67 Set new B.M. on Top A.V. Rt Sta. 634+35

2.47 352.14

New B.M. #96

3.42 348.72 cut cross on top of flange of
gate valve of most northerly Air Valve
at Sta. 634+35

373.17 = old B.M. 103

A.V. 21 Lt Sta 644+89

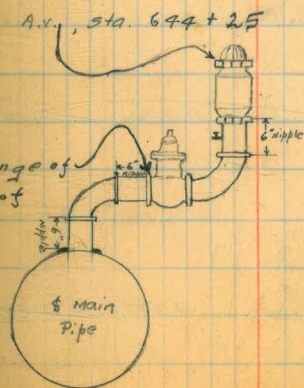
3.74 376.91

T.P. B.M. -

5.42 371.49 Set new B.M. on Top A.V., Sta. 644+25

5.09 376.58

New B.M. #97

6.33 370.25 cut cross on top of flange of
Gate Valve of Air Valve at
Sta. 644+25

373.37 old B.M. #104 A.V. Rt. Sta. 653+58

1.83 375.20
 T.P. 7.7 12.80 362.40
 0.64 363.04
 New B.M. #98 10.77 352.27 set new B.M., steel plug set in head in S.W. corner of concrete Gate Valve Box, Sta. 657+90

373.52 = old B.M. #106 A.V. Rt. Sta. 665+66

5.90 379.42
 T.P. 8 B.M. — 4.81 374.61 set new B.M. on top A.V. on 2nd M.P.H., Sta. 667+55
 This A.V. Has 1-30" And 1-6" Nipple
 There is 2 A.V.'s About 2' Apart Here, This B.M. is on The A.V. Farthest North.

5.22 379.83
 New B.M. #99 6.20 373.63 cut cross on top of flange of Gate Valve of most northerly Air Valve at Sta. 667+55.

330.26 = old B.M. #102 = nail in Power Pole

4.48 334.74
 New B.M. #100 3.19 331.55 set new B.M., small R.R. spike in Power Pole #70900, 10'± Rt. Sta. 672+73, Directly opposite Mile 12³/₄

269.56 = old B.M. #110

1.51	271.07	12.90	258.17
0.91	259.08	12.81	246.27
0.87	247.14	12.95	234.19
0.69	234.88	12.47	222.41
0.89	223.30		

A.V. R1. Sta. 688+63

NEW B.M. #101

11.59	232.24	0.27	231.97
12.49	244.46	0.20	244.26
12.82	257.08	0.08	257.00
12.90	269.90	0.06	269.84
12.77	282.61	0.17	282.48
12.42	294.90	0.11	294.79
12.70	307.49	0.07	307.42
12.88	320.30	0.24	320.06
12.12	332.18	0.59	331.59 = check

set new B.M. Plug set in lead near the North edge of sidewalk at Imperial Ave on & 2nd m.P.L. Sta. 678+20±

Record Elev = 331.55
B.M. new B.M. #100

269.56 = old B.M. #110

4.8C 274.42

New B.M. #102 4.94 269.48 set new

241.78 = old B.M. #110-A

9.67 251.45

A.V. R1. Sta. 688+63

B.M. R.R. Spike in North side of 20" Euc. Tree, 30' left of Sta. 688+93 About 300' west of Encanto School House

Nail in old Trestle #39 at Sta. 691+14

NEW B.M. #103 5.35 246.10 Set new

B.M. on S.W. corner of concrete pier #2, new Trestle #36, Sta. 691+15.

230.48 = old B.M. #111 - A.V. W/ Sta. 700+6
 2.86 333.34
 T.P. & B.M. 2.45 330.89 set new B.M. on top A.V. on 2nd M.P.L., Sta. 700+00
 This A.V. Has 1-3/4" And 1-6" nipple
 2.66 333.55
 New B.M. #104 3.58 329.97 cut cross on Top of flange of Gate Valve of Air Valve at Sta. 700+00.

New B.M. #105 = 334.43 = Same as old B.M. #112, Highest point on Fire plug at S.W. cor. 63rd & Bach

12/2/30
 Simpson clear and warm
 Soper
 Remmen
 †

373.28 = old B.M. #113 A.V. W/ Sta. 709+80
 5.46 378.74
 T.P. & B.M. - 3.05 375.69 set new B.M. on Top A.V. on 2nd M.P.L., Sta. 711+50
 There is 2 A.V.'s About 2' Apart Here, This B.M. is on The A.V. Fartherest North.
 This A.V. Has 1-3/4" And 1-6" nipple
 2.90 378.59
 New B.M. #106 3.79 374.80 cut cross on Top of flange of Gate Valve of Most Northerly Air Valve of two at Sta. 711+50

			259.03		
3.07	262.10				
	NEW B.M. # 107	5.58	256.52	Set New	B.M. on S.W. corner of concrete pier # 4, New Trestle # 37, Sta. 716+27.5.
			364.59 - old B.M. #		115, A.V. by sta. 733+20.
12.98	377.57				
	T.P.	10.01	367.56		
8.74	376.30				
	T.P. & B.M.	0.77	375.53	Set New	B.M. on Top A.V. on 2 nd M.P.L., Sta. 724+00
					There is 2 A.V.'s About 2' Apart Here, This B.M. is on the A.V. Farthest North.
					This A.V. Has 1-48" And 1-6" nipple
1.31	376.84				
	NEW B.M. # 108	2.28	374.56	cut cross	on Top of flange of Gate Valve of most northerly Air Valve of Two at Sta. 724+00
			364.59 - old B.M. #		115 A.V. by sta. 733+20
2.37	366.96				
	T.P. & B.M.	2.47	364.49	Set New	B.M. on Top A.V. on 2 nd M.P.L., Sta. 732+50
					This A.V. Has 1-24" And 1-6" nipple
2.26	366.75				
	NEW B.M. # 109	3.17	363.58	cut cross	on Top of flange of Gate Valve of Air Valve at Sta. 732+50

			374.60 = old B.M. #116	A.V. 4 sta. 741+18
1.68	376.22			
	T.P. & B.M.	1.64	374.64 set new	B.M. on Top A.V. on 2 nd M.P.W., Sta. 741+00, 150. end Big cut Near Crouch's well
				This A.V. Has 1-60" And 1-6" nipple.
2.05	376.69			
	New B.M. #110	3.02	373.67 cut cross	on Top of flange of Gate valve of Air Valve at sta. 741+00
			374.60 = old B.M. #116	A.V. 4, sta. 741+18
2.72	377.32			
	T.P.	12.59	364.73	
0.22	364.95			
		13.07	351.88	
1.08	352.96			
		12.17	340.79	
0.07	340.86			
	T.P. & B.M.	9.03	331.83 set new	B.M. on Top A.V. on 2 nd M.P.W., Sta. 748+00 There is 2 A.V.'s About 2' Apart Here, This B.M. is on the A.V. Farthest North This A.V. Has 1-36" And 1-6" nipple.
5.01	336.84			
	New B.M. #111	5.91	330.93 cut cross	on Top of flange of Gate Valve of most northerly Air Valve at Sta. 748+00

			242.35 - old B.M. # 118	Nail in 2 nd guard Post Brdy. Bridge
2.89	275.24			
	New B.M. # 112	3.46	241.78 set new	B.M. steel plug set in head in N.W. concrete wing wall of Broadway Ext. Bridge., 125' Rt. of Sta. 753+50 [±]
			370.53 - old B.M. # 119	A.V. Lt. sta. 764+10
6.67	377.20			
	T.P. & B.M. -	5.05	372.15 set new	B.M. on Top A.V. on 2 nd M.P.L., Sta. 763+00
				This A.V. Has 1-30" And 1-6" nipple.
				There is 2 A.V.'s About 2' Apart Here, This B.M. is on the A.V. Farthest North.
7.61	376.76			
	New B.M. # 113	5.53	371.23 cut cross	on Top of flange of Gate Valve of most Northerly Air Valve of Two at Sta. 763+00
			317.39 = old B.M.	# 119 - A. Nail in Fill of old Trestle # 41
9.98	327.31			
	New B.M. # 114	2.82	324.49 set new	B.M. on N.W. corner of concrete Pier # 1, New Trestle # 38, Sta. 767+90 [±]

368.67 [±] old B.M. 120
 6.82 375.49
 T.P. & B.M. 3.94 371.55 Set New
 4.89 376.44
 New B.M. #115 5.87 370.57 Cut cross

372.82 [±] old B.M. 121
 4.23 377.05
 T.P. & B.M. - 7.11 369.94 Set New
 7.09 377.03
 New B.M. #116 8.02 369.01 Cut cross

369.74 [±] old B.M. 123
 5.49 375.23
 New B.M. #117 2.83 372.40 Set New

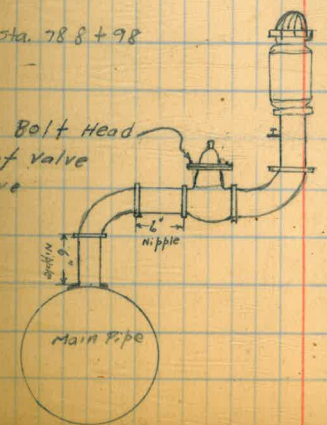
12/3/30 clear Aed warm.
 Simpson
 Soper
 Remmen
 45
 A.V. Lt. Sta. 772+17
 B.M. on Top A.V. on 2nd M.P.L., Sta. 770+93
 This A.V. Has 1-3/8" And 1-6" nipple.
 on Top of flange of Gate Valve of Air Valve at Sta. 770+93.

Center Pn A.V. Lt. Sta. 776+18
 B.M. on Top A.V. on 2nd M.P.L., Sta. 779+25.
 This A.V. Has 1-3/8" And 1-6" nipple.
 70' north of Mile Post 14 3/4

on Top of flange of Gate Valve of Air Valve at Sta. 779+25

A.V. Rt. Sta. 788+98

B.M. on Top Bolt Head
 in Flange of Valve
 of Air Valve
 Sta. 789+17



Near North Boundary
 of Balboa Vista
 Subdivision

			308.00 = Grade Hub	For Pier #3, Trestle #39,
5.66	313.66			
NEW B.M. #118	5.15	308.51	Set new	B.M. on S.W. corner of Concrete Pier #2, New Trestle #39, Sta. 793+0.9.
			368.38 = old B.M. 124	A.V. R.R. sta. 799+98.
2.83	371.21			
T.P. & B.M. -	2.85	368.36	Set new	B.M. on top A.V. on 2 nd M.P.H., sta. 800+69 - About 200' South of 90° Angle, Charles connection.
				This A.V. Has 1-24" and 1-6" nipple.
2.81	371.17			
NEW B.M. #119	3.81	367.36	cut cross	on top of flange of Gate Valve of Air Valve at sta. 800+69.

5.05 309.82

NEW B.M. #121

3.76

305.86

Set New

304.77 = old B.M. #126

A.V. Rt. sta. 809+65

B.M., Large spike in Power Pole #70433

8' Left. of Sta. 809+78

2 stakes nailed to Pole Just Above the spike,
with the B.M. Number Painted on them.

4.25 309.02

T.P.

6.23

302.79

304.77 = old B.M. #126

9.25 312.04

T.P.

8.60

311.44

11.14 322.58

NEW B.M. #122

1.85

320.73

Set new

B.M., steel plug set in lead in West side of Pavement,
Radio Road on $\frac{1}{2}$ M.P. W., Sta. 817+19
53' west of Mile Post 15 $\frac{1}{2}$

320.73 = new B.M. #122

2.89	323.57		
	T.P.	12.19	311.38
1.87	313.25		
	T.P.	13.02	300.23
0.48	300.71		
	T.P.	13.08	287.63
0.42	288.05		
	T.P. & B.M. #	10.03	278.02 set new
5.02	283.04		
	New B.M. #123	5.98	277.06 = cut cross
2.24	280.26	12.88	267.38
0.70	268.08		
	T.P.	12.81	255.27
0.63	255.90		
	T.P.	12.60	243.30
0.49	243.79		
	T.P.	12.90	230.89
0.18	231.07		
	New B.M. #124	13.10	217.97 set new
6.59	224.51		
		0.49	224.02
8.87	232.89		
		1.52	231.57
			Rec. Elev. 231.48

B.M. on Top A.V. on 2nd rd P.L., Sta. 826+07 - Top of Hill
 Just East of Chollas Canyon
 This A.V. Has 1-48" And 1-6" nipple
 on Top of flange of Gate Valve of Air Valve at Sta. 826+07.

B.M. cut cross into Flange of Blow-off Valve, Sta. 827+88
 in Bottom of Chollas Canyon
 5' West of Mile Post 15 3/4
 1-36" Nipple at 60°



check on B.M. #127-A.

319.77 = old B.M. 128[#] Top A.V. Rt. Sta. 840+16

2.97 322.74

T.P. & B.M. - 2.28 320.46 Set new B.M. on Top A.V. on 2nd M.P.L. Sta. 840+03

This A.V. Has 1-24" And 1-6" nipple.

2.03 322.49

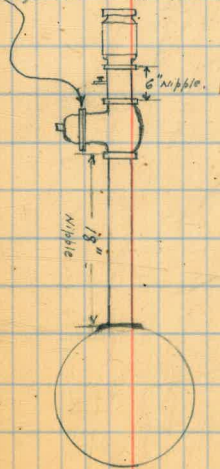
New B.M. #125 2.99 319.50 cut cross on Top of flange of Gate Valve of Air Valve at Sta. 840+03.

Same as B.M. #126 as in sketch shown Below

314.73 = old B.M. 129[#] A.V. Rt. Sta. 843+68

3.51 318.24

New B.M. #126 5.09 313.15 Set new B.M. Cut cross into Flange of A.V. on 2nd M.P.L. Sta. 845+50



251.68 - old B.M. #130 Nail in Power Pole 125' Rt. Sta. 851+30

1.58 253.26

New B.M. #127

5.25

248.01

Set new

B.M. cut cross into Flange of Blow-off Valve, Sta. 852+08

1-48" nipple at 60°



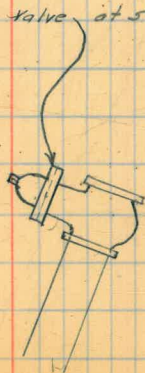
Bottom of
First Canyon East of
Lantana Drive

			376.80 = old B.M. 70	Top of Bl. sta. 719+40
2.85	377.65	12.76	366.89	
0.97	367.86	12.76	355.10	
1.20	356.30	13.03	343.27	
0.35	343.62	13.01	330.61	
0.68	331.29	12.85	318.44	
0.15	318.59	12.85	305.74	
0.20	305.94	13.00	292.94	
0.40	293.34	12.99	280.35	
0.17	280.52	12.94	267.58	
0.17	267.75	12.71	255.04	
0.33	255.37	12.89	242.48	
0.35	242.83	12.97	229.86	
0.16	230.02	13.05	216.97	
0.42	217.39	12.84	204.55	
0.43	204.98	12.94	192.04	
0.97	193.01			
	new B.M. #66-A.	7.24	185.77	Cut Cross
11.38	197.15	0.20	196.95	on top of flange of Blow-off valve at Sta. 401+65
12.93	209.88	0.02	209.86	4-60° - 1-36" nipple.
12.89	222.75	0.15	222.60	Bottom of Merck Canyon
12.90	235.50	0.12	235.38	
13.08	248.46	0.24	248.22	
13.07	261.29	0.05	261.24	
13.03	274.27	0.05	274.22	
12.77	286.99	0.10	286.89	

12/31/30

Simpson
Super
Remmen

↓



12.83	299.72		286.89
		0.05	299.67
12.93	312.60		
		0.21	312.39
13.01	325.40		
		0.06	325.34
13.02	338.36		
		0.05	338.31
12.82	351.13		
		0.00	351.13
12.87	364.00		
		0.02	363.98
8.96	372.94		
		4.62	368.32 = check

on new B.M. #66 - Record Elev. = 368.26^{32}
 .06

OTAY RES. TO SAN DIEGO SECOND
MAIN PIPE LINE

TABULATION OF ALL APPURTENANCES AS
FINALLY INSTALLED

Description	No.	Dia.	Item #	Sta.	Mile.	
Reducer	1	40" x 36" - 1/4"	18	306+25	5.8	At Tel. Canyon Gate Valve
"	1	40" x 36" - 1/4"	18	306+17	5.8	At Tel. Canyon Gate Valve
"	1	40" x 36" - 1/4"	18	135+84 ^S	2.6	At Coronado Gate Valve
"	1	40" x 36" - 1/4"	18	135+77 ^S	2.6	At Coronado Gate Valve
"	1	40" x 30" - 1/4"	19	430+47	8.2	At Bonita main line Gate Valve
"	1	40" x 28" - 1/4"	20	4+97	0.1	At South End of Venturi Meter tube
"	1	36" x 30" - 1/4"	21	802+13 ³	15.2	At Chollas Wye Gate Valve
"	1	36" x 30" - 1/4"	21	657+89 ^P	12.5	At Ridge Way Gate Valve
"	1	36" x 30" - 1/4"	21	657+96 ^Z	12.5	" " " "
"	1	36" x 30" - 1/4"	21	430+57	8.2	At Bonita Main Line Gate Valve
"	1	36" x 30" - 1/4"	21	430+37	8.2	At Gate Valve on Bonita Wye Branch - 12' From L. Main Line
Tee	1	36" x 36" x 20" - 1/4"	23	135+81 ⁷⁶	2.6	At Coronado connection
Wye	1	40" x 40" x 36" - 1/4"	24	430+37	8.2	At Bonita Wye

APPURTENANCES CONT.

Description	No.	Dia.	Item #	Sta.	Mile.	
Tee	1	36" x 36" x 30" $\frac{1}{4}$ "	25	801+27 ^E	15.2	chollas connection to 30" w.s. Pipe (Not Used)
Tee	1	36" x 36" x 30" $\frac{1}{4}$ "	25	Eq. $\frac{800+66^E}{802+21^E}$	15.2	chollas 90° Angle
Expansion Joint	1	40"	26	429+69	8.2	Near Bonita wye
Expansion Joint	1	40"	26	307+24	5.8	Near Tel. Canyon Gate Valve
Expansion Joint	1	40"	26	305+20	5.8	" " " " "
Expansion Joint	1	40"	26	136+94	2.6	Near Coronado Gate Valve
Expansion Joint	1	40"	26	134+50	2.6	" " " "
Expansion Joint	1	40"	26	6+22	0.1	Near Venturi meter tube
Expansion Joint	1	36"	27	801+12	15.2	Ahead of Eq., chollas 90° Angle
Expansion Joint	1	36"	27	802+10	15.2	Back " " " " "
Expansion Joint	1	36"	27	658+37	12.5	Near Ridge Way Gate Valve
Expansion Joint	1	36"	27	657+20	12.5	" " " "
Expansion Joint	1	36"	27	430+88	8.2	Near Bonita Gate Valve
Gate Valve	1	36"	28	800+82	15.2	Near chollas 90° Angle
Gate Valve	1	36"	28	135+81	2.6	Coronado
Gate Valve	1	36"	28	306+21	5.8	Telegraph Canyon
Gate Valve	1	30"	29	802+17	15.2	chollas "wye"
Gate Valve	1	30"	29	430+51	8.2	Bonita "wre"
Gate Valve	1	30"	29	657+93	12.50	Ridge way

APPURTENANCES CONT.

Description No. Dia. Item # Sta. Mile.

Gate Valve 1 28" 30 430+50 8.2

on Banito "wre" Branch.

4" Air Valve Assemblies in Private R/W

Air Valves 2 4" 31 855+08 16.2

1-60" and 1-69" Nipple --- In Private Right of Way.

Air Valve 1 4" 31 845+50 16.0

1-18" " " " " " " " " " "

Air Valve 1 4" 31 840+00 15.9

1-24" " " " " " " " " " "

Air Valve 1 4" 31 826+07 15.6

1-48" " " " " " " " " " "

Air Valve 1 4" 31 818+00 15.5

1-48" " " " " " " " " " "

" " 1 4" 31 800+86 15.2

? " " " " " " " " " "

Air Valve 1 4" 31 800+69 15.2

1-30" " " " " " " " " " "

Air Valve 1 4" 31 799+90 15.2

1-24" " " " " " " " " " "

Air Valve 1 4" 31 779+25 14.8

1-30" " " " " " " " " " "

Air Valve 1 4" 31 775+50 14.7

1-30" " " " " " " " " " "

Air Valve 1 4" 31 770+93 14.6

1-24" " " " " " " " " " "

Air Valve 1 4" 31 765+50 14.5

1-36" " " " " " " " " " "

Air Valves 2 4" 31 763+00 14.5

1-30" " on each " " " " " "

Air Valves 2 4" 31 748+00 14.2

1-36" " on each " " " " " "

Air Valve 1 4" 31 742+28 14.1

1-60" " " " " " " " " " "

Air Valve 1 4" 31 741+00 14.1

1-60" " " " " " " " " " "

Air Valve 1 4" 31 732+50 13.9

1-24" " " " " " " " " " "

Air Valves 2 4" 31 724+00 13.7

1-48" " on each " " " " " "

Air Valves 2 4" 31 711+50 13.5

1-36" " on each " " " " " "

Air Valve 1 4" 31 709+50 13.45

1-36" " " " " " " " " " "

Air Valve 1 4" 31 700+00 13.26

1-36" " " " " " " " " " "

Air Valves 2 4" 31 667+55 12.65

1-30" " on each " " " " " "

Air Valve 1 4" 31 664+50 12.60

1-30" " " " " " " " " " "

APPURTENANCES CONT.

Description	No.	Dia.	Item#	Sta.	Mile.	
Air Valve	1	4"	31	654+50	12.40	1-30" nipple ----- In Private Right of Way.
Air Valves	3	4"	31	616+06	11.68	1-72" " on each -- " " " " "
Air Valve	1	4"	31	610+50	11.56	1-60" " ----- " " " " "
Air Valves	2	4"	31	601+50	11.40	1-24" " on each -- " " " " "
Air Valves	2	4"	31	587+90	11.16	1-30" " on each -- " " " " "
Air Valve	1	4"	31	579+10	11.00	1-84" " ----- " " " " "
Air Valve	1	4"	31	574+58	10.90	1-18" " ----- " " " " "
Air Valve	1	4"	31	570+00	10.80	1-30" " ----- " " " " "
Air Valves	2	4"	31	565+75	10.74	1-60" " on each -- " " " " "
Air Valves	2	4"	31	556+75	10.56	1-30" " on each -- " " " " "
Air Valve	1	4"	31	545+00	10.34	1-30" " ----- " " " " "
Air Valves	2	4"	31	535+75	10.16	1-30" " on each -- " " " " "
Air Valves	2	4"	31	522+25	9.90	1-60" " on each -- " " " " "
Air Valve	1	4"	31	512+12	9.70	1-30" " ----- " " " " "
Air Valves	2	4"	31	491+53	9.30	1-24" " on each -- " " " " "
Air Valve	1	4"	31	469+25	8.90	1-48" " ----- " " " " "
Air Valve	1	4"	31	464+44	8.80	1-48" " ----- " " " " "
Air Valve	1	4"	31	457+00	8.66	1-30" " ----- " " " " "
Air Valves	2	4"	31	443+83	8.42	1-48" " on each -- " " " " "
Air Valve	1	4"	31	436+75	8.28	1-30" " ----- " " " " "
Air Valve	1	4"	31	430+60	8.18	1-48" " ----- " " " " "
Air Valve	1	4"	31	430+00	8.16	1-48" " ----- " " " " "
Air Valve	1	4"	31	422+25	8.00	1-30" " ----- " " " " "

APPURTENANCES CONT.

Description	No.	Dia.	Item #	Sta.	Mile.					
Air Valves	4	4"	31	413+75	7.86	1-30"	Nipple	on each	—	In Private R/W.
Air Valves	4	4"	31	392+45	7.77	1-30"	"	on each	—	" " "
Air Valve	1	4"	31	385+00	7.30	1-42"	"	-----		" " "
Air Valve	1	4"	31	374+50	7.10	1-30"	"	-----		" " "
Air Valve	1	4"	31	367+18	6.96	1-30"	"	-----		" " "
Air Valve	1	4"	31	363+43	6.88	1-30"	"	-----		" " "
Air Valve	1	4"	31	355+50	6.75	1-30"	"	-----		" " "
Air Valve	1	4"	31	347+54	6.60	1-48"	"	-----		" " "
Air Valve	1	4"	31	338+73	6.47	1-30"	"	-----		" " "
Air Valves	2	4"	31	333+25	6.32	1-42"	"	on each	—	" " "
Air Valves	2	4"	31	326+00	6.18	1-42"	"	on each	—	" " "
Air Valve	1	4"	31	321+30	6.08	1-42"	"	-----		" " "
Air Valve	1	4"	31	312+00	5.92	1-42"	"	-----		" " "
Air Valve	1	4"	31	306+29	5.80	1-30"	"	-----		" " "
Air Valve	1	4"	31	306+10	5.80	1-30"	"	-----		" " "
Air Valve	1	4"	31	298+25	5.66	1-48"	"	-----		" " "
Air Valve	1	4"	31	287+00	5.44	1-6"	"	-----		" " "
Air Valve	1	4"	31	277+97	5.28	1-36"	"	-----		" " "
Air Valve	1	4"	31	272+72	5.18	1-24"	"	-----		" " "
Air Valve	1	4"	31	268+83	5.10	1-30"	"	-----		" " "
Air Valve	1	4"	31	262+50	4.98	1-24"	"	-----		" " "
Air Valve	1	4"	31	256+75	4.88	1-36"	"	-----		" " "
Air Valve	1	4"	31	253+00	4.80	1-54"	"	-----		" " "

APPURTENANCES CONT.

Description	No.	Dia.	Item #	Sta.	mile				
Air Valve	1	4"	31	238+85	4.54	1-54"	nipple	-----	In Private R/W.
Air Valve	1	4"	31	224+32	4.24	1-48"	"	-----	" " "
Air Valve	1	4"	31	205+02	3.88	1-48"	"	-----	" " "
Air Valve	1	4"	31	193+00	3.66	1-48"	"	-----	" " "
Air Valve	1	4"	31	167+77	3.18	1-48"	"	-----	" " "
Air Valve	1	4"	31	143+00	2.72	1-36"	"	-----	" " "
Air Valve	1	4"	31	134+45	2.54	1-24"	"	-----	" " "
Air Valve	1	4"	31	126+53	2.40	1-36"	"	-----	" " "
Air Valve	1	4"	31	122+82	2.34	1-36"	"	-----	" " "
Air Valve	1	4"	31	115+00	2.18	1-30"	"	-----	" " "
Air Valve	1	4"	31	111+38	2.10	1-54"	"	-----	" " "
Air Valve	1	4"	31	108+40	2.06	1-36"	"	-----	" " "
Air Valve	1	4"	31	101+00	1.92	1-36"	"	-----	" " "
Air Valve	1	4"	31	96+65	1.84	1-24"	"	-----	" " "
Air Valve	1	4"	31	90+00	1.70	1-30"	"	-----	" " "
Air Valve	1	4"	31	85+00	1.62	1-36"	"	-----	" " "
Air Valve	1	4"	31	77+08	1.46	1-24"	"	-----	" " "
Air Valve	1	4"	31	74+85	1.42	1-24"	"	-----	" " "
Air Valve	1	4"	31	70+30	1.32	1-42"	"	-----	" " "
Air Valve	1	4"	31	63+00	1.20	1-24"	"	-----	" " "
Air Valve	1	4"	31	58+50	1.10	1-30"	"	-----	" " "
Air Valves	2	4"	31	54+83	1.02	1-30"	"	on each	" " "
Air Valve	1	4"	31	47+45	0.90	1-60"	"	-----	" " "

APPURTENANCES CONT.

60

Description	No.	Dia.	Item #	Sta.	Mile				
Air Valves	3	4"	31	36+70	0.70	1-60"	Nipple	on each	-- In Private R/W
Air Valve	1	4"	31	34+50	0.65	1-60"	"	-----	" " "
Air Valve	1	4"	31	31+57	0.60	1-48"	"	-----	" " "
Air Valve	1	4"	31	26+50	0.50	1-24"	"	-----	" " "
Air Valve	1	4"	31	25+00	0.48	1-24"	"	-----	" " "
Air Valve	2	4"	31	23+20	0.44	1-24"	"	on each	-- " " "
Air Valve	2	4"	31	17+80	0.34	1-24"	"	on each	-- " " "
Air Valve	1	4"	31	14+63	0.28	1-24"	"	-----	" " "
Air Valve	1	4"	31	7+39	0.14	1-36"	"	-----	" " "
Air Valve	1	4"	31	2+25	0.04	1-30"	"	-----	" " "

4" Air Valve Assemblies in Streets And Roads.

Air Valve	1	4"	32	789+17	14.96	1-6"	Nipple	
Air Valve	1	4"	32	785+00	14.88	1-6"	"	
Air valve	1	4"	32	689+04	13.16	1-6"	"	
Air valve	1	4"	32	658+00	12.48	1-6"	"	
Air Valve	1	4"	32	648+00	12.28	1-6"	"	
Air Valve	1	4"	32	644+25	12.20	1-6"	"	
Air Valves	2	4"	32	634+35	12.05	1-6"	"	on each
Air Valves	2	4"	32	498+23	9.44	1-6"	"	" "

APPURTENANCES CONT.

61

4" Blow-off Assemblies on Trestles
Including 4" Gate Valves, Crane #481.

Description	No.	Dia.	Item #	Sta.	mile			
Blow-off	1	4"	33	793+00	15.04	on	Trestle #39	1-17" nipple - on Bottom pipe
Blow-off	1	4"	33	768+30	14.56	on	Trestle #38	1-17" nipple - " " "
Blow-off	1	4"	33	716+00	13.58	on	Trestle #37	1-17" nipple - " " "
Blow-off	1	4"	33	691+50	13.10	on	Trestle #36	1-24" nipple - " " "
Blow-off	1	4"	33	621+40	11.80	on	Trestle #35	1-24" nipple - " " "
Blow-off	1	4"	33	607+08	11.50	on	Trestle #31	1-24" nipple - " " "
Blow-off	1	4"	33	592+25	11.22	on	Trestle #28	1-24" nipple - " " "
Blow-off	1	4"	33	571+15	10.82	on	Trestle #27	1-24" nipple - " " "
Blow-off	1	4"	33	560+30	10.62	on	Trestle #25	1-24" nipple - " " "
Blow-off	1	4"	33	270+50	5.12	on	Trestle #18	1-24" nipple - " " "
Blow-off	1	4"	33	260+00	4.94	on	Trestle #17	1-24" nipple - " " "
Blow-off	1	4"	33	136+50	2.60	on	Trestle #15	1-24" nipple - " " "
Blow-off	1	4"	33	119+67	2.28	on	Trestle #14	1-24" nipple - " " "
Blow-off	1	4"	33	110+00	2.08	on	Trestle #12	1-24" nipple - " " "
Blow-off	1	4"	33	105+00	2.00	on	Trestle #11	1-24" nipple - " " "
Blow-off	1	4"	33	98+50	1.86	on	Trestle #10	1-24" nipple - " " "
Blow-off	1	4"	33	93+00	1.76	on	Trestle #9	1-24" nipple - " " "
Blow-off	1	4"	33	81+50	1.55	on	Trestle #8	1-24" nipple - " " "
Blow-off	1	4"	33	72+25	1.36	on	Trestle #7	1-24" nipple - " " "

APPURTENANCES CONT.

Description	No.	Dia.	Item #	Sta.	Mile	
Blow-off	1	4"	33	67+50	1.26	on Trestle #6 ----- 1-24" Nipple - on Bottom Pipe.
Blow-off	1	4"	33	60+56	1.16	on Trestle #5 ----- 1-24" Nipple - " " "
Blow-off	1	4"	33	33+16	0.62	on Trestle #4 ----- 1-24" Nipple - " " "
Blow-off	1	4"	33	29+25	0.55	on Trestle #3 ----- 1-24" Nipple - " " "
Blow-off	1	4"	33	10+90	0.20	on Trestle #2 ----- 1-24" Nipple - " " "
Blow-off	1	4"	34	516+70	9.80	on Trestle #22 B.O. Assembly including 4" Gate Valve, Crane #755 --- 1-24" Nipple - Bottom.

4" Blow-off Assemblies on Buried Pipe
Including 4" Gate Valves, Crane #481

Blow-off	1	4"	35	852+08	16.12	1-48" nipple < 60°
Blow-off	1	4"	35	842+00	15.94	1-24" " "
Blow-off	1	4"	35	829+88	15.70	1-36" " "
Blow-off	1	4"	35	806+00	15.27	1-18" " "
Blow-off	1	4"	35	782+10	14.82	1-36" " "
Blow-off	1	4"	35	774+05	14.68	1-24" " Plus 15 Feet, on Bottom pipe.
Blow-off	1	4"	35	752+50	14.26	1-36" " < 60°
Blow-off	1	4"	35	736+85	13.97	1-36" " "
Blow-off	1	4"	35	680+20	12.90	1-36" " "
Blow-off	1	4"	35	660+25	12.51	1-36" " "
Blow-off	1	4"	35	650+00	12.32	35 Feet

APPURTENANCES CONT.

63

Description	No.	Dia.	Item #	Sta.	Mile.	
Blow-off	1	4"	35	646+25	12.24	25 Ft nipple.
Blow-off	1	4"	35	636+65	12.08	36 Ft. nipple.
Blow-off	1	4"	35	583+50	11.08	1-36" " ∠ 60°
Blow-off	1	4"	35	576+75	10.94	1-24" " on Bottom pipe
Blow-off	1	4"	35	549+55	10.93	1-24" " " " "
Blow-off	1	4"	35	540+85	10.26	1-36" " ∠ 60°
Blow-off	1	4"	35	506+07	9.60	1-36" " "
Blow-off	1	4"	35	416+40	7.90	1-24" " on Bottom pipe
Blow-off	1	4"	35	401+65	7.60	1-36" " ∠ 60°
Blow-off	1	4"	35	378+65	7.18	1-36" " "
Blow-off	1	4"	35	369+00	7.00	1-36" " "
Blow-off	1	4"	35	364+70	6.92	1-36" " "
Blow-off	1	4"	35	361+25	6.84	1-36" " "
Blow-off	1	4"	35	351+00	6.66	1-36" " "
Blow-off	1	4"	35	343+25	6.50	1-36" " "
Blow-off	1	4"	35	335+50	6.36	1-36" " "
Blow-off	1	4"	35	329+17	6.24	1-36" " "
Blow-off	1	4"	35	309+87	5.88	1-36" " "
Blow-off	1	4"	35	302+05	5.72	1-24" " on Bottom pipe
Blow-off	1	4"	35	279+50	5.30	1-24" " " " "
Blow-off	1	4"	35	275+50	5.22	1-36" " ∠ 60°
Blow-off	1	4"	35	265+00	5.02	1-36" " "
Blow-off	1	4"	35	255+25	4.84	1-36" " "

APPURTENANCES CONT.

Description	No.	Dia.	Item #	Sta.	Mile		
Blow-off	1	4"	35	244+32	4.67	1-36" Nipple	∠60°
Blow-off	1	4"	35	234+50	4.45	1-36" "	"
Blow-off	1	4"	35	49+25	0.92	1-36" "	"
Blow-off	1	4"	35	20+50	0.40	1-36" "	"

4" Blow-off Assemblies on Buried Pipe
Including 4" Gate Valves, Crane #755

Blow-off	1	4"	36	526+15		1-36" nipple	∠60°
Blow-off	1	4"	36	453+15		1-36" "	"

No Item # 37

6" Blow-off Assembly on Trestle
Including 6" Gate Valve, Crane #755

Blow-off	1	6"	38	482+60		1-36" nipple	----- ∠60°
----------	---	----	----	--------	--	--------------	------------

6" Blow-off Assemblies on Buried Pipe
Including 6" Gate Valves, Crane # 481

Description	No.	Dia.	Item #	Sta.	Mile
Blow-off	1	6"	39	315+00	
Blow-off	1	6"	39	195+60	
Blow-off	1	6"	39	42+31	

1-36" nipple - - - - 60°
1-36" " " "
1-24" " " "

CONCRETE STRUCTURES

	Item #	
Trestle #1	43	1+08
Venturi Meter Box	43	5+20
Trestle #2	43	10+88
" #3	43	29+30
" #4	43	33+15
" #5	43	60+54
" #6	43	67+53
" #7	43	72+20
" #8	43	81+50
" #9	43	93+11
" #10	43	98+49

5 piers

Note: - All stations shown for
trestles are at the center
of the trestle.

2 piers

3 "

2 "

2 "

2 "

3 "

2 "

3 "

2 "

CONCRETE STRUCTURES CONT.

Description	Item #	Sta.	Mile	
Trestle #11	43	105+02		4 piers
" #12	43	110+08		2 "
" #13	43	112+74		4 "
" #14	43	119+68		2 "
" #15	43	136+56		3 "
Pipe Anchor	43	145+47		
" "	43	224+85		
Trestle #16	43	251+47		5 "
" #17	43	260+30		4 "
" #18	43	270+53		3 "
Pipe Anchor	43	286+67		
No Trestle #19				
Pipe Anchor	43	468+58		
" "	43	469+95		
Trestle #20	43	492+47		2 piers
" #21	43	493+56		2 "
Pipe Anchor	43	508+93		
Trestle #22	43	516+69		4 piers
" #23	43	548+72		2 "
" #24	43	549+64		4 "
" #25	43	560+50		3 "
" #26	43	567+54		4 "
" #27	43	571+20		2 "
" #28		592+35		4 "
No Trestle #29				

CONCRETE STRUCTURES CONT.

67

Description	Item #	Sta.	mile.	
Trestle #30	43	605+75		2 piers.
" #31	43	607+14		2 "
" #32	43	607+68		5 "
" #33	43	611+97		3 "
" #34	43	614+70		2 "
" #35	43	621+41		2 "

Encasement Under R.R. Crossing 43 679+45 5'x5'x30"

trestle #36	43	691+45		7 piers
" #37	43	716+05		4 "
" #38	43	768+22		5 "
" #39	43	793+09		3 "

28" Inlet And Outlet Cast Iron

Venturi Meter Tube 49 5+20

1-48" nipple

ADDITIONAL OUTLETS

(WORK ORDERS)

68

Description	Dia.	Position on Pipe	Item #	Sta.
Coupling	1"	Top	EW.O.*4 (A)	43+29
Flange	6"	W. Side	EW.O.*4 (D)	135+70
Flange	6"	W. Side	EW.O.*4 (D)	135+88
Coupling	1"	E. "	EW.O.*7 (A)	224+58
"	1"	E. "	" (A)	224+59
"	1"	E. "	" (A)	224+60
"	1"	E. "	" (A)	238+80
"	1"	E. "	" (A)	277+95
"	2"	E. "	" (B)	312+15
"	1"	E. "	" (A)	356+00
"	1"	E. "	" (A)	454+10
"	1"	E. "	" (A)	495+40
"	1"	E. "	" (A)	497+96
"	1"	E. "	" (A)	500+36
"	1"	E. "	" (A)	501+15
"	1"	E. "	" (A)	501+87
"	1"	E. "	" (A)	507+28
"	1"	E. "	" (A)	508+16
"	1"	E. "	" (A)	615+08
"	1"	W. "	" (A)	634+25
"	1"	E. "	" (A)	657+00
Flange	6"	E. "	" (D)	678+35
"	6"	W. "	" (D)	678+35

ADDITIONAL OUTLETS

(WORK ORDERS)

69

Description	Dia.	Position on Pipe	Item #	Sta.	Mile
Flange	10"	N. Side	E.W.O.#4 (E)	707+08	
Coupling	2"	N. "	" (B)	733+25	
Flange	4"	N. "	" (D)	742+81	
Flange	16"	N. "	" #1 (B)	816+86	
Flange	8"	S. "	" #1 (E)	816+90	

MISCELLANEOUS APPURTENANCES

(WORK ORDERS)

Air Valve	1	4"	E.W.O.#4 (C)	135+88
Reducer	1	40"x28" - 1/4"	E.W.O.#1 (A)	5+37
Flange	1	36"	E.W.O.#1 (D)	855+12
Gate Valve	1	10"	E.W.O.#4 (E)	707+08
Anchor Rings			E.W.O.#8	469+10
Anchor Rings			E.W.O.#9	800+66
Elboes & Flanges			E.W.O.#11	135+76
Valve Boxes	2	5'x7'	E.W.O.#12 +	657+95 430+37
Valve Boxes	2	5'x7'	E.W.O.#13 +	430+00 306+19
Valve Box	1	5'x7'	E.W.O.#14	135+75
Concrete Floor	1	6'x6'x6"	E.W.O.#19	5+20

1-48" nipple

North End of Venturi Meter.

connection to Cast Iron Pipe at Lantana Drive

Top Hill, South Side Sweet Water

Chollas "Wye"

at Coronado "Wye" connections.

at Ridgeway And Bonita Gate Valves.

at Bonita Branch And Tel Canyon Gate Valve

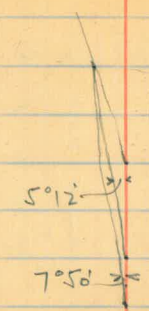
at Coronado Gate Valve

Venturi Meter Register House Floor

6-1-34

PB
NC 70

	16.1	116.1	100.0	On Ground Sta 0+035
0+00				
0+36			100.0	25° Lt.
0+57 ^E		16.1	107.1	
		9.0		
0+91 ^B		4.3	111.8	22 1/2° Rt.
0+59 ^E				
0+38 ^I		11.7	104.4	
1+14.5		4.8	111.3	
		16.1	100.0	
	4.5	104.5		
		7.6	96.9	



Chollas Reservoir Cut over to 2nd M. P.L. Thru pump

Mark on Gum Tree

to 0+57^E

- 96' 8'-12'
- 10' 1'-10'3"
- 0 1'-4' C+C
- 0 1'-6' C+C
- 0 1'-9'9" C+C
- 0 1'-5'8" S+S
- 0 1'-7' C+S

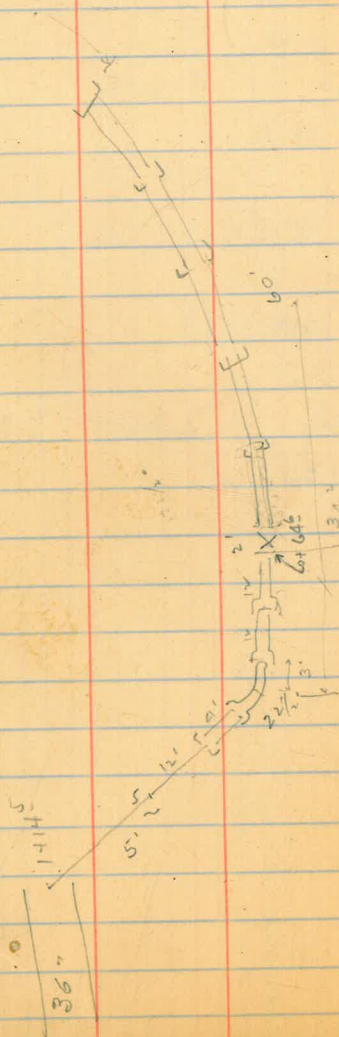
Ground over W.S. PL (Top of Pipe 3" under)

Top 36" W.S. Pipe (3" thick)

On Ground 0+035^E

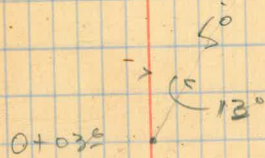
Top W.S. Pipe Sta. 0+035

- 1 24" Valve
- 1-90° L B+B
- 2 22 1/2° L B+S
- 1 ° L B+B
- 2-12' haunch
- have plugs various sizes.
- (1-12" with 4' hole)
- Do not use



0+03⁵ 3' Lt Gum Tree
 0+70 25' " " "

← Conc
 13' x 4'



291
 0+37⁶ Cross 2nd M.P.L.
 0+40 5' Lt Tree
 0+53 4' Rt. "
 0+70 15' Lt "
 0+82 2' " "
 1+01 15' R. "

LOWER CUTOVER.

0+19.2 El. Top of Pipe = -8.3. 19°47' H. Intersection with 2nd M.P.L.

0+03 30° Rt.

0+00 El. Top of Pipe = 0.0 End 30" C.I. Pipe

RIDGEWAY ROAD

B.M.	+ HI	- E.I.
B.M.	392 375.41	371.49
BM#97	5.08 370.33	370.25
	0.68 374.76	
0+00	4.6 370.8	
	5.2 370.2	
	13.7 361.7	
	13.8 361.6	
	9.25 366.16	
	6.26 369.15	
	13.8 361.6	
	4.8 370.6	
	14.4 361.0	
	7.5 367.9	
	15.0 60.4	
	5.0 70.4	
	5.6 69.8	
	6.6 68.8	
0+50	2.9 372.51	
	4.3 71.1	
	8.25 67.06	
	12.4 363.0	

CROSSING

11/2/25
Beermann +
Coots +

73

Base line 14' E of \pm 2nd MPL

Old # 103 See Pg. 38

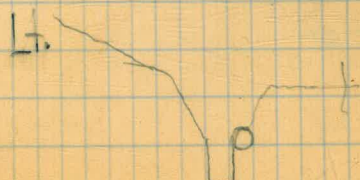
Edge Road	6 Lt.
	7 ✓
	12 ✓
Top 2 nd MPL	14 ✓
1 st ✓	17 ✓
	22 ✓
	4 Rt.
	5 ✓
on Bank	13 ✓
In Trench	13 ✓
	23 Lt.
0.9. Top 1 st MPL	-
2 nd "	-
a	-

3.5
Trench

0+00 on N Edge
of Trench

Old PL \pm
2nd MPL

7 Lt.
11
14
16



375.41
 12.5 62.9
 7.7 67.7
 2.6 72.8
 T.P. 0.65 374.76

10.02 384.78
 1+50 7.9 376.88
 .58 79.0
 5.4 79.4
 8.4 76.4
 6.8 78.0
 2.3 82.5

1+80 6.4 78.4
 6.5 78.3
 13.7 71.1
 1.7 83.1
 40.2 85.0

1+00 10.3 374.48
 9.1 75.7
 10.5 74.3
 8.6 76.2

2+00 1.2 83.6
 3.6 81.2
 5.8 79.0
 6.9 77.9

19 Lt.
 19
 23 ✓
 9
 7' Rt. w Edge Rd.
 20' ✓ & - - -
 12 Lt.
 17 "
 25 "

Bottom of Drain Ditch
 to be constructed
 to be at El.

8.5 Lt
 16.0
 14 on \neq 2^{normal}
 23'
 26 Top Drain.
 \neq

8.2
 Shaft 6.3

13 Rt.
 6 Lt.
 24 -
 \neq
 5 Lt
 5 "
 16.

	384.78		
2+00		38	81.0
		0.0	84.8
		+1.0	85.8
		0.8	84.0
+06		2.0	82.8

+3.25	388.03 ✓
-13.45	371.33
-16.95	367.83

+06	62	-13.68	371.10
		17.28	367.50

2+06		14.80	369.9
		15.13	6965

388.03	
5.29	393.32

1003	
27	
18	

20 Lt 2+00 - beginning of large exc

26 "

27 "

12 R Edge Road

⊥

Beginning of Deep bottom

Point on Paving ^{Directly over PL (2nd Main) 9'}
use as B.M. Sta 2+55-

Point top of 2nd M. PL under S edge Paving

Ditch (Drain) " " " "

" 2nd M PL 9' apart (etc) " " " "

Point top of 2nd MPL

Point in Ditch Sta 2+06 (Bott of Drain)

206	367.5
-----	-------

01.50	363.0
-------	-------

-156	4.5
------	-----

Sta 1+50	366.0
----------	-------

1+00	364.5
------	-------

Top of Woodstave 50

edge of Pavement.

Instrument at 2+60.2

Sedge of Paving on base line - Sta 2+46

1.51

Note Base line 14' East of $\frac{1}{2}$ 2nd M.P.

2+50 on Paving no section required

393.32

3+00 5.91 87.41

6.10 87.22

5.74 87.58

4.69 88.63

3+08 - 22.12 371.20

368 = Bottom

3+50 11.57 81.75

9.54 83.78

9.6 83.7

12.66 80.66

7.3 86.0

5.7 87.6

2.19 9.10 384.22

386.41

4+00 5.27 81.14

4.4 82.0

4.3 82.1

9.1 377.3

9.1 77.3

5.3 81.1

C.L. = West edge of Road

25' east edge Road

14' Left over $\frac{1}{2}$ 2nd M.P.

25' Left

Point on top of P.L.

15.75

6.37

(29' north of north edge Paving 22.12

Paving 23.5' wide along $\frac{1}{2}$ of R.L.

$\frac{1}{2}$ Base line

7' Right Wedge Road

20' " E " "

5' left

20' Left

26' "

Rock in Road

$\frac{1}{2}$ Base

8' R W edge Road.

21' R E " "

10' Left

19' Left

25' Left

386.41

4+50

10.0	76.4
7.0	79.4
6.7	78.7
11.6	74.8
10.7	75.7
7.5	78.9
-	-

At about sk 5+10 another A.V

7+00 Driveway

8+20 Road turns and crosses PL

3+80

15.4	371.01
18.45	367.96

250
450
70

2.90
1260
154

29
1565
18.45

77

to Base

7' R west edge Road

20' R East

3' Left

13' Left (over PL (2nd M) Air valve at

4+55

23' Left

5.9

12' Top 2nd M

6.75

15.6' Bottom

South end of Shaft

Top of Pipe (2nd M)

Bottom of Trench

5.8' - 5.2' inside dimension

← PL

Large Hole South of Road

36' wide top

21' bottom (both pipe exposed)

O.R. to S.D. 2nd M.P.L.

(78)

Elevations at Chollas wye Gate Valves,
Tees etc.

B.M. # 125		343.38 =
1.22	344.60	
Top of North Flange of 30" G.V. on 2 nd M.P.L.	7.14	337.46
Top of Highest Part of operating gear of 30" G.V.	2.54	342.06
Average Natural Ground El. at 30" G.V.	1.8	342.8
Top of West Flange of 36" G.V. on 2 nd M.P.L.	10.35	334.25
Top of Highest part of operating Gear of 36" G.V. 2 nd M.P.L.	5.00	339.60
Average Natural Ground El. at 36" G.V. on 2 nd M.P.L.	5.80	338.80
Top of West Flange of East Horizontal 36" G.V.	6.91	337.69
Top of West Flange of west Horizontal 36" G.V.	8.29	336.31
Average Natural Ground El. at West Horizontal 36" G.V.	5.80	338.80
Average natural Ground El. at East Horizontal 36" G.V.	4.60	340.00
Top of 36" Tee on 2 nd M.P.L.	7.60	337.00
" " " " " " Chollas Res line	7.69	336.91

39856

19

DIRECTIONS FOR USE OF TABLES

TABLE No. 1.

Distance of slope stake from side or shoulder
stake for any width roadway, slope 1% to 1:
If ground is nearly level, the cut or fill at side
stake is located by the double entry method in
left column and top row. The number in body

to take in same row and column gives distance
from side stake to slope stake. If ground is not

IMPROVED TABLES

AND

the side stake and slope stake tower later by this
amount if cut, elevate if fill. Add this amount
to cut or fill and find distance in table. Set up

INFORMATION

larger: tangent and line of sight should cut
necessary.

TABLE No. 2.

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

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

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

TABLE X.
MIDDLE ORDINATES OF RAILS
Length of Rail (feet)

C o /	R Feet	30 Inch	28 Inch	26 Inch	24 Inch	22 Inch	20 Inch	C o	R Feet	30 Inch	28 Inch	26 Inch	24 Inch	22 Inch	20 Inch
0-20	17189	.08	.07	.06	.05	.04	.03	8	716.8	1.88	1.64	1.42	1.20	1.01	.84
0-40	8594	.16	.14	.12	.10	.08	.07	9	637.3	2.12	1.84	1.60	1.35	1.14	.94
1-0	5730	.24	.20	.18	.15	.13	.10	10	573.7	2.36	2.05	1.78	1.50	1.27	1.04
1-20	4297	.31	.27	.23	.20	.17	.13	11	521.7	2.59	2.26	1.95	1.65	1.39	1.15
1-40	3438	.39	.34	.29	.25	.21	.17	12	478.3	3.83	3.47	3.15	2.81	2.48	2.15
2-0	2865	.47	.41	.35	.30	.25	.20	13	441.7	3.05	2.66	2.30	1.96	1.66	1.36
2-20	2456	.55	.48	.41	.35	.29	.23	14	410.3	3.30	2.87	2.48	2.10	1.78	1.46
2-40	2149	.63	.55	.47	.40	.33	.27	15	383.1	3.54	3.08	2.68	2.26	1.91	1.57
3-0	1910	.71	.62	.53	.45	.38	.31	16	359.3	3.76	3.28	2.83	2.40	2.04	1.67
3-20	1719	.78	.68	.59	.50	.42	.35	17	338.3	4.00	3.48	3.02	2.57	2.16	1.78
3-40	1563	.86	.75	.65	.55	.46	.38	18	319.6	4.21	3.67	3.18	2.70	2.28	1.87
4-0	1433	.94	.82	.71	.60	.50	.42	19	302.9	4.45	3.89	3.36	2.86	2.41	1.98
4-20	1323	1.02	.89	.77	.65	.55	.45	20	287.9	4.70	4.09	3.55	3.00	2.54	2.09
4-40	1228	1.10	.96	.83	.70	.59	.48	22	262.0	5.16	4.44	3.84	3.30	2.80	2.29
5	1146	1.18	1.03	.89	.75	.63	.52	24	240.5	5.64	4.92	4.20	3.59	3.04	2.50
6	955.3	1.41	1.23	1.06	.90	.76	.62	26	222.3	6.07	5.29	4.58	3.88	3.29	2.70
7	819.0	1.65	1.44	1.24	1.05	.89	.73								

TABLE XI.
SHORT RADIUS CURVES

Radius Feet	Chord Feet	Central Angle	Deflection Angle	Deflection for 1 Foot
35	10	16-26	8-13	49.3
45	10	12-46	6-23	38.3
50	15	17-16	8-38	34.5
60	15	14-22	7-11	28.8
75	15	11-30	5-45	23.0
100	20	11-30	5-45	17.3
120	20	9-34	4-47	14.3
150	20	7-39	3-49	11.5
190	25	7-32	3-46	9.15
200	25	7-10	3-35	8.6
225	25	6-25	3-12	7.7
240	25	5-58	2-59	7.2
250	25	5-44	2-52	6.9
275	25	5-12	2-36	6.2
288	50	9-58	4-59	6.0
300	50	9-32	4-46	5.7
350	50	8-12	4-06	4.9
376	50	7-40	3-50	4.6
400	50	7-10	3-35	4.3
410	50	7-00	3-30	4.2

To find length of curve divide angle from P. C. to P. T. by central angle of chord and multiply by length of chord.

TABLE XII.
INCLINED DISTANCE OF 100 FT. REDUCED TO HORIZONTAL

Slope	Horizontal Distance	Correction	Rise Per Foot	Slope	Horizontal Distance	Correction	Rise Per Foot
0°00'	100.000	0.000	0.000	8°00'	99.027	0.973	0.139
15'	99.999	0.001	0.004	15'	98.965	1.035	0.143
30'	99.996	0.004	0.009	30'	98.902	1.098	0.148
45'	99.991	0.009	0.013	45'	98.836	1.164	0.152
1 00	99.985	0.015	0.017	9 00	98.769	1.231	0.156
15	99.976	0.024	0.022	15	98.700	1.300	0.161
30	99.966	0.034	0.026	30	98.629	1.371	0.165
45	99.953	0.047	0.031	45	98.556	1.444	0.169
2 00	99.939	0.061	0.035	10 00	98.481	1.519	0.174
15	99.923	0.077	0.039	15	98.404	1.596	0.178
30	99.905	0.095	0.044	30	98.325	1.675	0.182
45	99.885	0.115	0.048	45	98.245	1.755	0.187
3 00	99.863	0.137	0.052	11 00	98.163	1.837	0.191
15	99.839	0.161	0.057	15	98.079	1.921	0.195
30	99.813	0.187	0.061	30	97.992	2.008	0.199
45	99.786	0.214	0.065	45	97.905	2.095	0.204
4 00	99.756	0.244	0.070	12 00	97.815	2.185	0.208
15	99.725	0.275	0.074	15	97.723	2.277	0.212
30	99.692	0.308	0.078	30	97.630	2.370	0.216
45	99.657	0.343	0.083	45	97.534	2.466	0.221
5 00	99.619	0.381	0.087	13 00	97.437	2.563	0.225
15	99.580	0.420	0.092	15	97.338	2.662	0.229
30	99.540	0.460	0.096	30	97.237	2.763	0.233
45	99.497	0.503	0.100	45	97.134	2.866	0.238
6 00	99.452	0.548	0.105	14 00	97.030	2.970	0.242
15	99.406	0.594	0.109	15	96.923	3.077	0.246
30	99.357	0.643	0.113	30	96.815	3.185	0.250
45	99.307	0.693	0.118	45	96.705	3.295	0.255
7 00	99.255	0.745	0.122	15 00	96.593	3.407	0.259
15	99.200	0.800	0.126	15	96.479	3.521	0.263
30	99.144	0.856	0.131	30	96.363	3.637	0.267
45	99.087	0.913	0.135	45	96.246	3.754	0.271

TABLE XIII.
MINUTES IN DECIMALS OF A DEGREE.

0 30"	.00833	10' 30"	.17500	20' 30"	.34167	30' 10"	.50833	40' 30"	.67500	50' 10"	.84167
1 00	.01667	11 00	.18333	21 00	.35000	31 00	.51667	41 00	.68333	51 00	.85000
30	.02500	30	.19167	30	.35833	30	.52500	40	.69167	30	.85833
2 00	.03333	12 00	.20000	22 00	.36667	32 00	.53333	42 00	.70000	52 00	.86667
30	.04167	30	.20833	30	.37500	30	.54167	30	.70833	30	.87500
3 00	.05000	13 00	.21667	23 00	.38333	33 00	.55000	43 00	.71667	53 00	.88333
30	.05833	20	.22500	30	.39167	30	.55833	30	.72500	30	.89167
4 00	.06667	14 00	.23333	24 00	.40000	34 00	.56667	44 00	.73333	54 00	.90000
30	.07500	30	.24167	30	.40833	30	.57500	30	.74167	30	.90833
5 00	.08333	15 00	.25000	25 00	.41667	35 00	.58333	45 00	.75000	55 00	.91667
30	.09167	30	.25833	30	.42500	30	.59167	30	.75833	30	.92500
6 00	.10000	16 00	.26667	26 00	.43333	36 00	.60000	46 00	.76667	56 00	.93333
30	.10833	30	.27500	30	.44167	30	.60833	30	.77500	30	.94167
7 00	.11667	17 00	.28333	27 00	.45000	37 00	.61667	47 00	.78333	57 00	.95000
30	.12500	30	.29167	30	.45833	30	.62500	30	.79167	30	.95833
8 00	.13333	18 00	.30000	28 00	.46667	38 00	.63333	48 00	.80000	58 00	.96667
30	.14167	30	.30833	30	.47500	30	.64167	30	.80833	30	.97500
9 00	.15000	19 00	.31667	29 00	.48333	39 00	.65000	49 00	.81667	59 00	.98333
30	.15833	30	.32500	30	.49167	30	.65833	30	.82500	30	.99167
10 00	.16667	20 00	.33333	30 00	.50000	40 00	.66667	50 00	.83333	60 00	1.00000

04 57.6
19.5

38.1

22.7
04 91.8

114.5

364.59
2.16

366.75
2.22

362.49

26.90
18.406

834.0

271.07
1.60

219.47

381.61
1.39

383.00
9.41

373.59

1217
341

76.58
5.11

71.47

381.53
4.46

385.99
3.03

382.96

372.87
4.21

377.03
2.10

369.73

364.12
4.29

368.41
6.53

361.88

30.48
2.07

33.55
2.66

30.89

377.64
5.01

386.06
4.59

381.47

376.84
64.59

12.25

3149
535

3149

5.35

252
1.86

170

388 part.

367