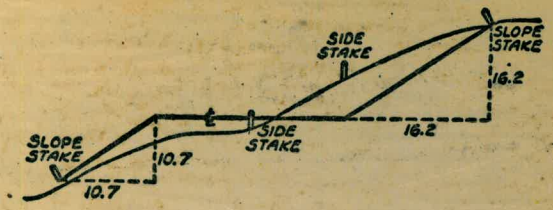


Distances from Side Stakes for Cross-Sectioning

Slope 1 to 1. Roadway of Any Width

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	0
1	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	1
2	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	2
3	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90	3
4	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	4
5	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	5
6	6.00	6.10	6.20	6.30	6.40	6.50	6.60	6.70	6.80	6.90	6
7	7.00	7.10	7.20	7.30	7.40	7.50	7.60	7.70	7.80	7.90	7
8	8.00	8.10	8.20	8.30	8.40	8.50	8.60	8.70	8.80	8.90	8
9	9.00	9.10	9.20	9.30	9.40	9.50	9.60	9.70	9.80	9.90	9
10	10.00	10.10	10.20	10.30	10.40	10.50	10.60	10.70	10.80	10.90	10
11	11.00	11.10	11.20	11.30	11.40	11.50	11.60	11.70	11.80	11.90	11
12	12.00	12.10	12.20	12.30	12.40	12.50	12.60	12.70	12.80	12.90	12
13	13.00	13.10	13.20	13.30	13.40	13.50	13.60	13.70	13.80	13.90	13
14	14.00	14.10	14.20	14.30	14.40	14.50	14.60	14.70	14.80	14.90	14
15	15.00	15.10	15.20	15.30	15.40	15.50	15.60	15.70	15.80	15.90	15
16	16.00	16.10	16.20	16.30	16.40	16.50	16.60	16.70	16.80	16.90	16
17	17.00	17.10	17.20	17.30	17.40	17.50	17.60	17.70	17.80	17.90	17
18	18.00	18.10	18.20	18.30	18.40	18.50	18.60	18.70	18.80	18.90	18
19	19.00	19.10	19.20	19.30	19.40	19.50	19.60	19.70	19.80	19.90	19
20	20.00	20.10	20.20	20.30	20.40	20.50	20.60	20.70	20.80	20.90	20
21	21.00	21.10	21.20	21.30	21.40	21.50	21.60	21.70	21.80	21.90	21
22	22.00	22.10	22.20	22.30	22.40	22.50	22.60	22.70	22.80	22.90	22
23	23.00	23.10	23.20	23.30	23.40	23.50	23.60	23.70	23.80	23.90	23
24	24.00	24.10	24.20	24.30	24.40	24.50	24.60	24.70	24.80	24.90	24
25	25.00	25.10	25.20	25.30	25.40	25.50	25.60	25.70	25.80	25.90	25
26	26.00	26.10	26.20	26.30	26.40	26.50	26.60	26.70	26.80	26.90	26
27	27.00	27.10	27.20	27.30	27.40	27.50	27.60	27.70	27.80	27.90	27
28	28.00	28.10	28.20	28.30	28.40	28.50	28.60	28.70	28.80	28.90	28
29	29.00	29.10	29.20	29.30	29.40	29.50	29.60	29.70	29.80	29.90	29
30	30.00	30.10	30.20	30.30	30.40	30.50	30.60	30.70	30.80	30.90	30
31	31.00	31.10	31.20	31.30	31.40	31.50	31.60	31.70	31.80	31.90	31
32	32.00	32.10	32.20	32.30	32.40	32.50	32.60	32.70	32.80	32.90	32
33	33.00	33.10	33.20	33.30	33.40	33.50	33.60	33.70	33.80	33.90	33
34	34.00	34.10	34.20	34.30	34.40	34.50	34.60	34.70	34.80	34.90	34
35	35.00	35.10	35.20	35.30	35.40	35.50	35.60	35.70	35.80	35.90	35
36	36.00	36.10	36.20	36.30	36.40	36.50	36.60	36.70	36.80	36.90	36
37	37.00	37.10	37.20	37.30	37.40	37.50	37.60	37.70	37.80	37.90	37
38	38.00	38.10	38.20	38.30	38.40	38.50	38.60	38.70	38.80	38.90	38
39	39.00	39.10	39.20	39.30	39.40	39.50	39.60	39.70	39.80	39.90	39
40	40.00	40.10	40.20	40.30	40.40	40.50	40.60	40.70	40.80	40.90	40
41	41.00	41.10	41.20	41.30	41.40	41.50	41.60	41.70	41.80	41.90	41
42	42.00	42.10	42.20	42.30	42.40	42.50	42.60	42.70	42.80	42.90	42
43	43.00	43.10	43.20	43.30	43.40	43.50	43.60	43.70	43.80	43.90	43
44	44.00	44.10	44.20	44.30	44.40	44.50	44.60	44.70	44.80	44.90	44
45	45.00	45.10	45.20	45.30	45.40	45.50	45.60	45.70	45.80	45.90	45
46	46.00	46.10	46.20	46.30	46.40	46.50	46.60	46.70	46.80	46.90	46
47	47.00	47.10	47.20	47.30	47.40	47.50	47.60	47.70	47.80	47.90	47
48	48.00	48.10	48.20	48.30	48.40	48.50	48.60	48.70	48.80	48.90	48
49	49.00	49.10	49.20	49.30	49.40	49.50	49.60	49.70	49.80	49.90	49
50	50.00	50.10	50.20	50.30	50.40	50.50	50.60	50.70	50.80	50.90	50

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 of table in same row and column gives distance from side stake to slope stake. If ground is not level estimate the difference in elevation between the side stake and slope stake, lower target by this amount if cut, elevate if fill. Add this amount to cut or fill and find distance in table. Set up rod at this point, and line of sight should cut target. If it does not make the slight adjustment necessary.

TABLE XIII—CORRECTIONS FOR TANGENTS AND EXTERNALS

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

FOR TANGENTS ADD

Central Angle	Degree of Curve													
	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°
10°	03	.06	09	13	16	19	.22	.25	.28	.31	34	38	42	.46
15°	04	10	14	19	24	.29	.34	.39	45	.51	.53	58	.63	.68
20°	06	.13	19	.26	.32	.39	.45	.51	.58	.65	.72	79	.84	.90
25°	.08	16	24	.33	40	49	.58	67	.75	.83	90	.99	1.06	1.14
30°	10	19	.29	39	49	.59	.69	79	.89	.99	1.09	1.20	1.29	1.39
35°	11	22	.34	47	.58	.69	.70	.81	.92	1.04	1.29	1.42	1.54	1.66
40°	13	.26	.40	.53	.67	.80	.93	1.06	1.20	1.34	1.49	1.64	1.79	1.94
45°	15	.30	44	60	76	91	1.06	1.21	1.37	1.52	1.70	1.87	2.04	2.21
50°	17	.34	.51	.68	.85	1.02	1.19	1.36	1.54	1.72	1.91	2.10	2.29	2.48
55°	19	38	.57	76	.95	1.14	1.32	1.52	1.72	1.92	2.14	2.35	2.56	2.77
60°	21	42	.63	.84	1.05	1.27	1.49	1.71	1.94	2.17	2.38	2.60	2.83	3.07
65°	23	46	.69	.93	1.16	1 40	1.64	1.88	2.13	2.38	2.63	2.88	3.13	3.39
70°	25	.51	76	1.02	1.28	1.54	1.80	2.06	2.33	2.60	2.88	3.16	3.44	3.72
75°	.27	.56	.83	1.12	1.40	1.69	1.98	2.27	2.57	2.87	3.16	3.47	3.78	4.09
80°	30	.61	.91	1.22	1.53	1.84	2.15	2.46	2 78	3.10	3.44	3.78	4.12	4.46
85°	33	66	1.00	1.33	1.68	2.02	2.36	2 70	3.05	3.40	3.77	4.14	4.55	4 89
90°	36	.72	1.09	1.45	1.83	2.20	2.57	2.94	3.32	3.70	4.10	4.50	4.91	5.32
95°	39	79	1.19	1.55	2.00	2.40	2.80	3.20	3.61	4.02	4.40	4.98	5.38	5.83
100°	43	.86	1.30	1.74	2.18	2.62	3.06	3.50	3.95	4.40	4.88	5.37	5.85	6.34
110°	51	1.03	1.56	2.08	2.61	3.14	3.67	4.21	4 76	5.31	5 86	6.43	7 01	7 60
120°	62	1.25	1 93	2.52	3.16	3.81	4 45	5.11	5.77	6 44	7 12	7.80	8.50	9 22

FOR EXTERNALS ADD

Central Angle	Degree of Curve													
	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°
10°	.001	.003	.004	.006	.007	.008	.009	.011	.012	.014	.015	.017	.018	.020
15°	.003	.007	.010	.014	.018	.023	.027	.029	.032	.035	.039	.043	.047	.051
20°	.006	.011	.017	.022	.028	.034	.038	.045	.051	.057	.063	.070	.076	.083
25°	.009	.018	.027	036	.046	.056	.065	.074	.083	.093	.106	120	127	135
30°	.013	.025	.038	.051	.065	.078	.090	.103	.116	.129	.149	.170	.179	.188
35°	.018	.035	.054	.072	.086	.109	.131	.153	.175	.197	.213	.230	.247	.264
40°	.023	.046	.070	.093	.117	.141	.172	.203	.234	.265	.277	.290	.315	.341
45°	.030	.060	.093	.119	.153	.184	.216	.254	.289	.325	.351	.378	.411	.445
50°	.037	.075	.116	.151	.189	.227	.266	.305	.345	.384	.425	.467	.508	.550
55°	.046	.093	.142	.188	.236	.283	.332	.381	.420	.479	.530	.582	.641	.700
60°	.056	.112	.168	.225	.283	.340	.398	.457	.516	.575	.636	.697	.774	.851
65°	.067	.135	.204	.273	.343	.412	.483	.554	.625	.697	.711	.845	.922	1.01
70°	.080	.159	.240	.321	.403	.485	.568	.652	.735	.819	.906	.994	1.08	1.17
75°	.095	.182	.286	.383	.480	.578	.678	.777	.877	.977	1.07	1.18	1.29	1.39
80°	.110	.220	.332	.445	.558	.671	.787	.903	1.02	1.13	1.25	1.38	1.50	1.62
85°	.128	.259	.391	.524	.657	.790	.926	1.06	1.20	1.34	1.47	1.62	1.76	1.91
90°	.149	.299	.450	.603	.756	.910	1.07	1.22	1.38	1.54	1.70	1.87	2.03	2.20
95°	.174	.350	.522	.706	.985	1.06	1.25	1.43	1.62	1.80	1.99	2.18	2.38	2.58
100°	.200	.401	.604	.809	1.01	1.22	1.43	1.64	1.85	2.06	2.28	2.50	2.73	2.96
110°	.268	.536	.806	1.08	1.35	1.63	1.91	2.20	2.48	2.76	3.05	3.35	3.66	3.96
120°	.360	.721	1.08	1.45	1.82	2.19	2.57	2.95	3.33	3.72	4.11	4.50	4.91	5.32

INDEX

℄ ALIGNMT PROPOSED
2nd MURRAY PIPELINE

W.O. 12401

7+29.49 P.O.T. 55°30' LT { 125.04 LT / 8.15 RT } 1"x1" HUB & TKS.

0+35.30 ℄ LM. LG.I. DIST 18" R.C.C. pipeline

0+12.5 6" wrapped steel, Sludge Drain line

0+00 Proposed 2nd Murray Pipeline
8+98.48 TROJAN AVE PIPELINE

Oct. 22, 1954
BEATTY
SHOREY
MARTELL
ALEXANDER

2

SEE FB 782 pg. 66

PRIVATE PROPERTY

42" MURRAY PL

℄ HIGHWAY

EC. 184+16.04

7+29.49

CITY PROPERTY

NOTE: SEE PAGE 70 REVISED LOCATION 7+06.29 TO 10+85

NOTE: See pgs. 11-12 for Alternate Align. 0+00 to 164+44.22

6" C.I. RETURN WATER FROM SLUDGE BASINS

4+11.52

PROPOSED PIPELINE

ALTERNATE

N 71°20'W MAG BRG

℄ TRAJAN

20'

0+35.30

18" R.C.C. MURRAY PL. L.M. & L.G. W.D. (Top of pipe 459.79 pg 15)

53°06'

EC. 9+71.90

1°25'30"

6" WRAPPED

0+00

PIPE JOINTS 5'±

STEEL SLUDGE DRAINLINE

AVE. PIPELINE

8+98.48

70'

Δ 9°59' RT
R. 1500.
T. 131.01
Def. ft. 1.14E

PI 8+42.59

AS PER F.B. 701-24
FD R.P. PI. 8+42.55

100'

60'

2nd Murray Pipeline (Cont.d.)

35+68 15' RT. 4" AVA

35+66.50 15' RT. L.&T. on AVA Conc. Top. (Phelps)

POT 35+65.87

33+71.4 16" Gas Crossing

31+99 B.O. Val. 11' RT.

N 71°00'W Mag. Brg.

POT 30+00

24+52 15' RT. 4" AVA

RE. 15.34

24+50.35 15' RT. L.&T. on A.V.A Conc. Top. (By Phelps)

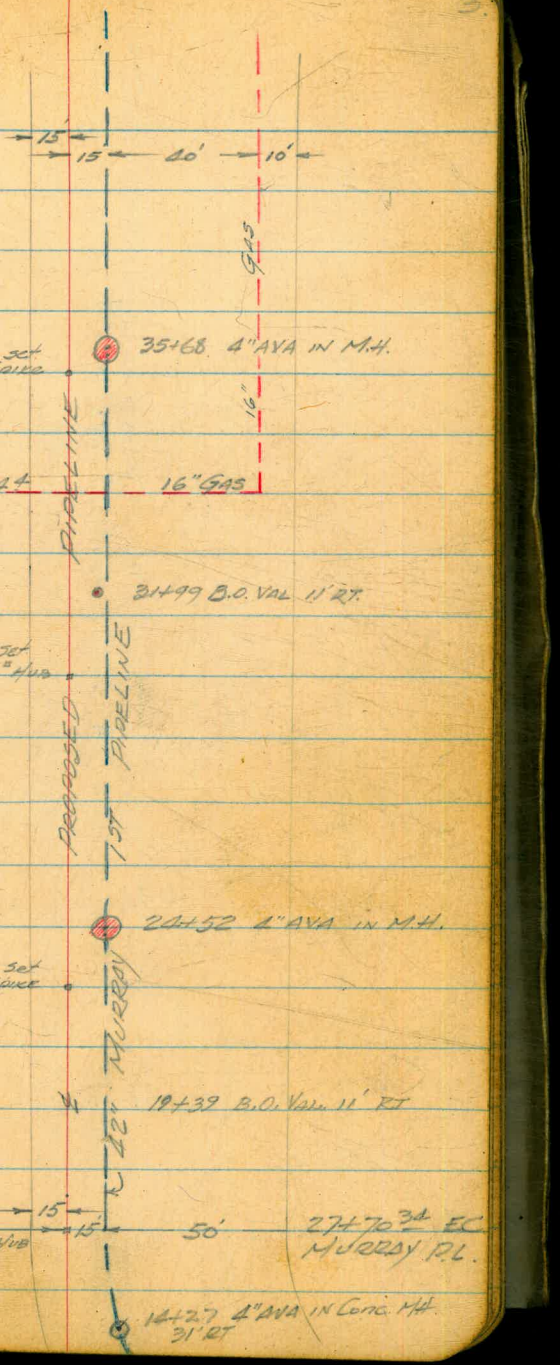
POT 24+50.15

16+48.44 POT. = (27+70.34 E.C. Murray #1.)

13+50 POT.

10/25/52

3.



2nd Murray Pipeline (Cont'd.)

45+50 P.O.T.

43+33.54 P.O.T.

N 89°30' W
Mag. Brg.

42+93.25 E.C. (15' RT = 54+19.90 EC Murray P.L. #1.)

Δ = 18°32' LT.
R = 1485'
T = 242.29
L = 480.35

ck'd LG 11/24/34

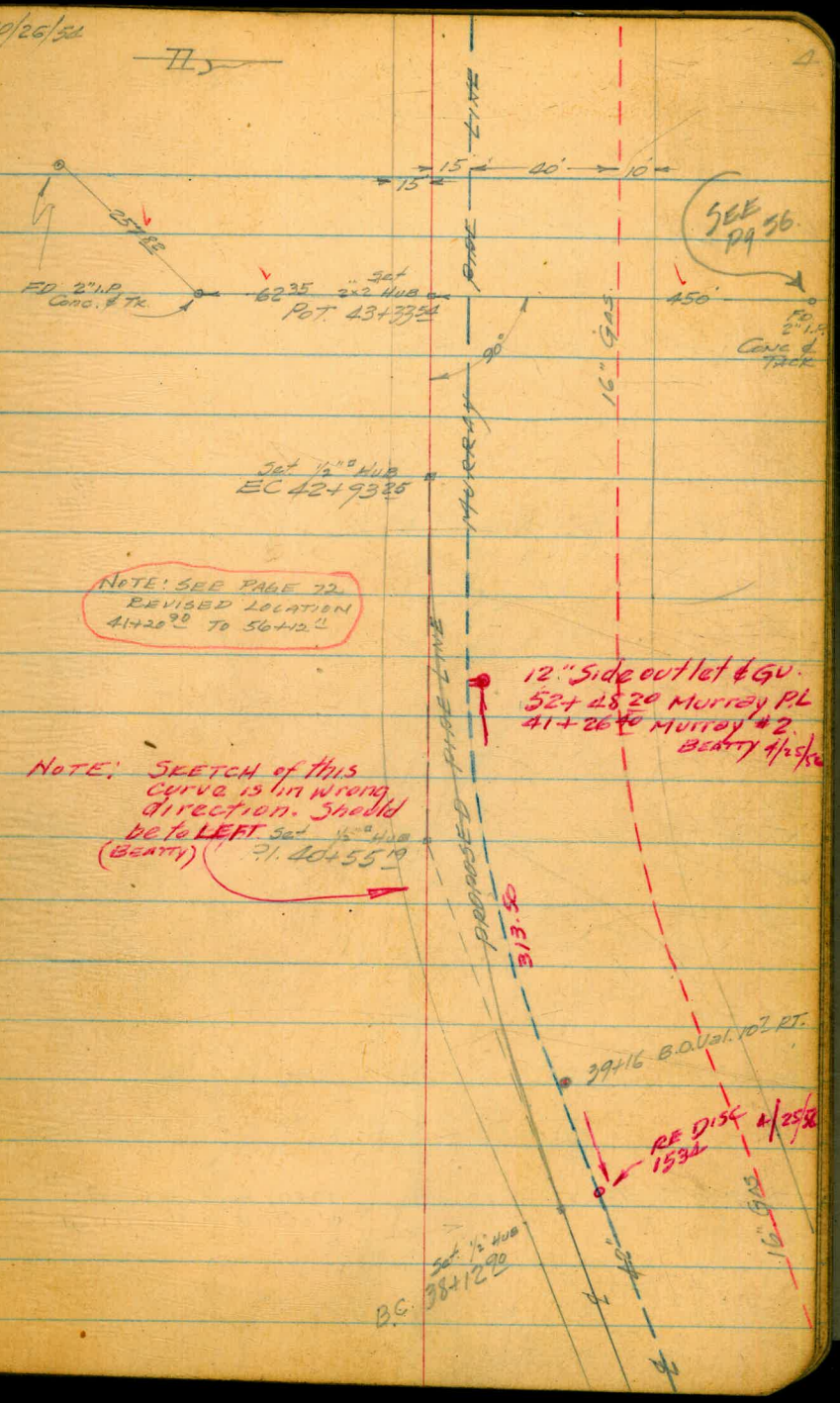
40+55.19 P.I.

39+16 10' RT B.O. Val.

38+12.90 B.C.

N 71°00' W
Mag. Brg.

10/26/34



10/27/54

2nd Murray Pipeline (Cont'd.)

68+77.25 P.O.T.

N 87°00'W

68+43 15' RT. 4" AVA.

61+95.55 P.I. Δ = 35°02' LT.

N 52°00'W

56+12.11 P.I. Δ = 38°03'30" RT. = (15' LT of P.I. 674.33 B.K. = 0+00 Ahd Murray P.L. #1.

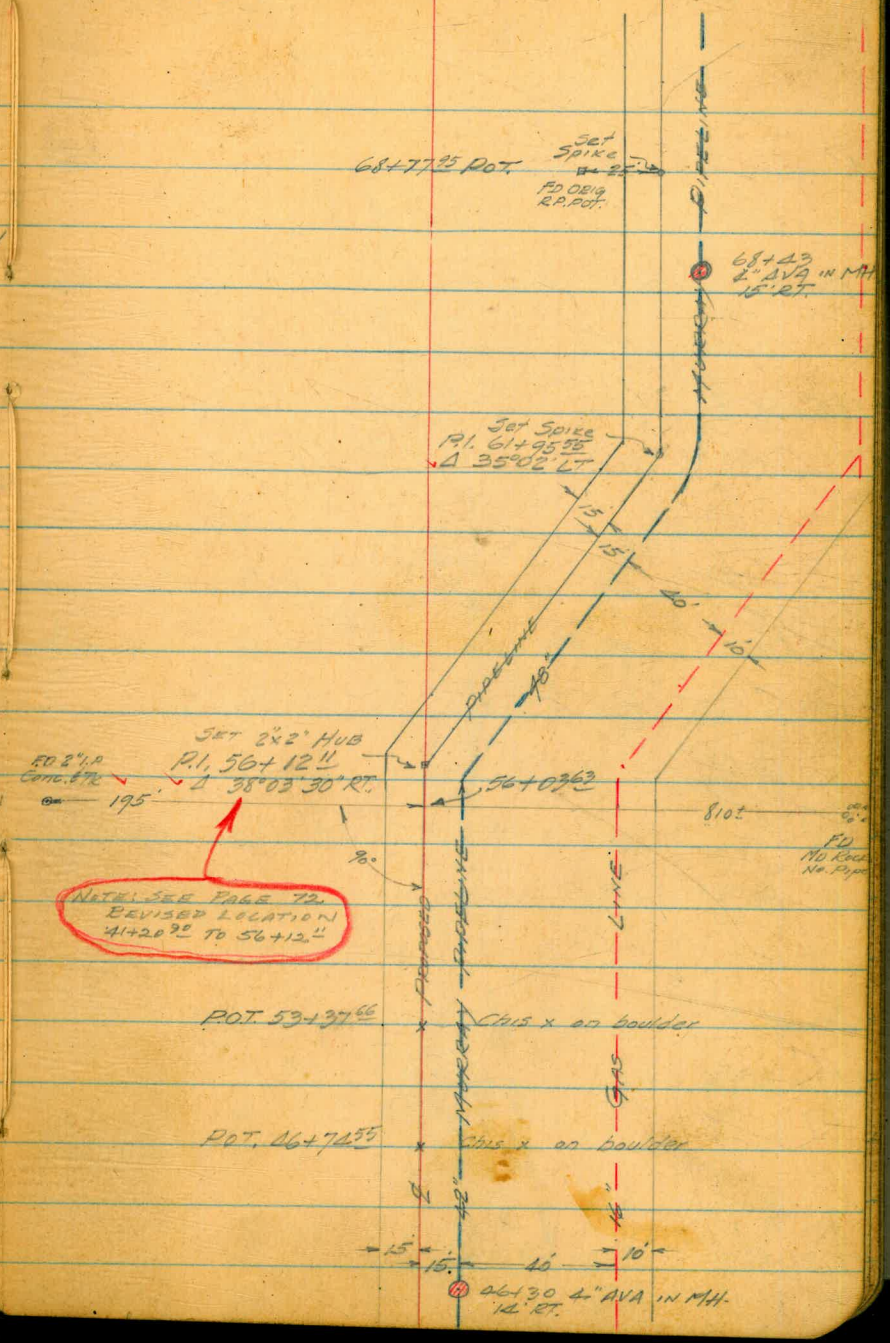
53+37.66 P.O.T.

51+93 4' LT (City of San Diego Cong. Mon. Δ

N 89°45'W

46+71.55 P.O.T.

46+30 14' RT 4" AVA



2nd Murray Pipeline (Cont.d.)

S 76°30' W

91+00.07 E.C.

90+09 14.5 RT. 4" AVA

↘ Δ - 29°01' LT.
↘ R. 985.
↘ T. 254.89 ck 889
↘ L 498.82
1.745'/Ft.

88+56.12 P.I.

86+01.23 B.C.

83+11 19' RT. B.O. Val. N 74°30' W

83+01.98 E.C.

↘ Δ = 12°37' RT.
↘ R 1015.
↘ T 112.21 ck 889
↘ L 223.51
1.6932'/Ft.

81+90.68 P.I.

81+01.5 15' RT. 4" AVA in Conc. M.H.

80+78.47 B.C.

Note: gtc. distance to Sta. 80+78.47 shows a difference of -0.03 compared to Orig. Chaining. But checks within 0.04 of Gasco chaining. 10-28-54 Beatty

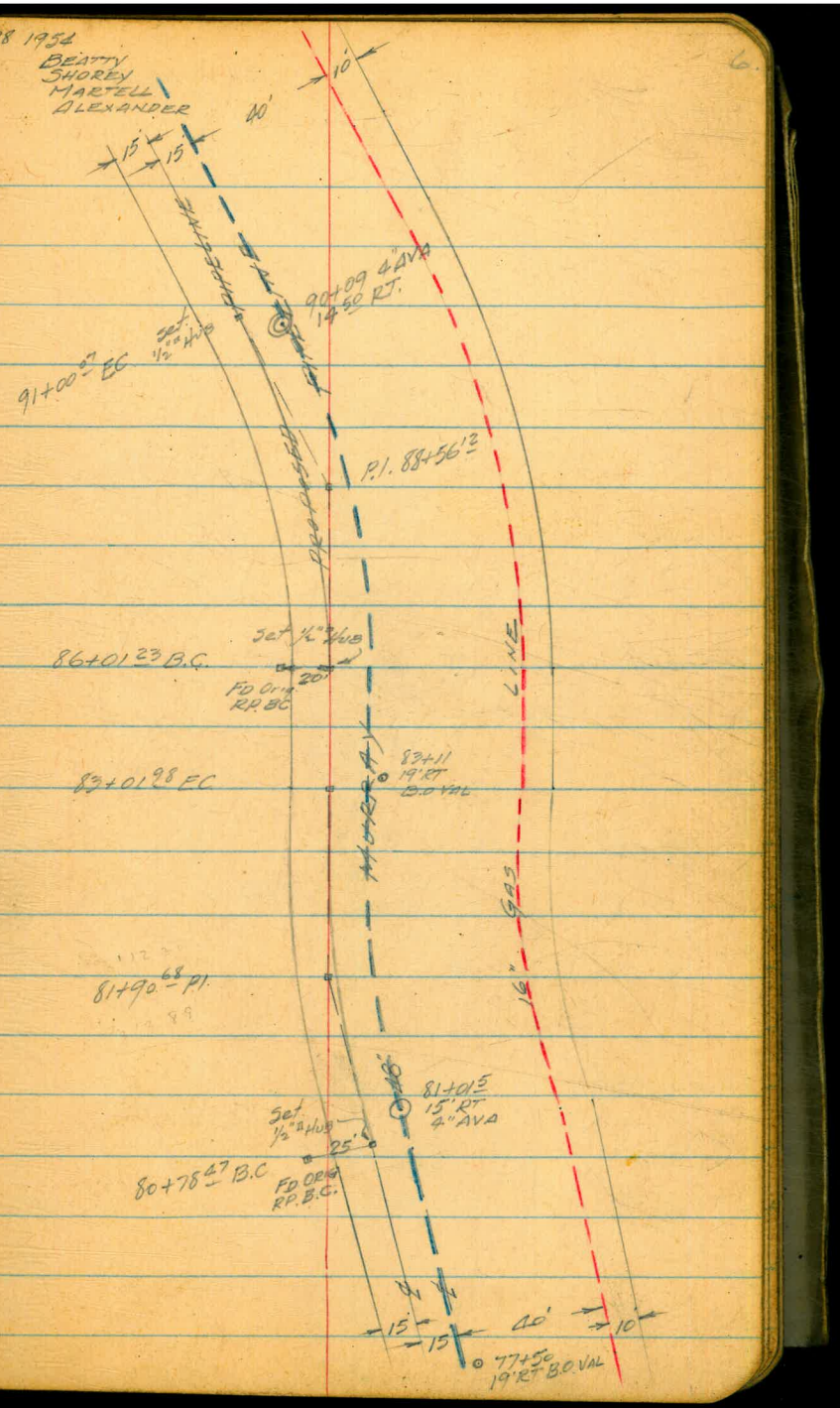
N 87°00' W

77+50 19' RT. B.O. Val.

Oct. 28 1954

Beatty
Shorey
Martell
Alexander

6.



2nd MURRAY PIPELINE (Cont.d)

S 68° 5' W

112+62.16 E.C.

Δ 6°46' LT.
R 1485'
T. 87.79
L 175.38
1.157 per ft.

111+74.57 P.I.

ck LGJ

110+86.78 B.C.

Note: 91+00 to 110+86.78 shows a difference of -0.99 Compared to Orig. chaining. Gasco chaining +0.39 longer than Orig. chaining. Party 10-29-52

S 75° W

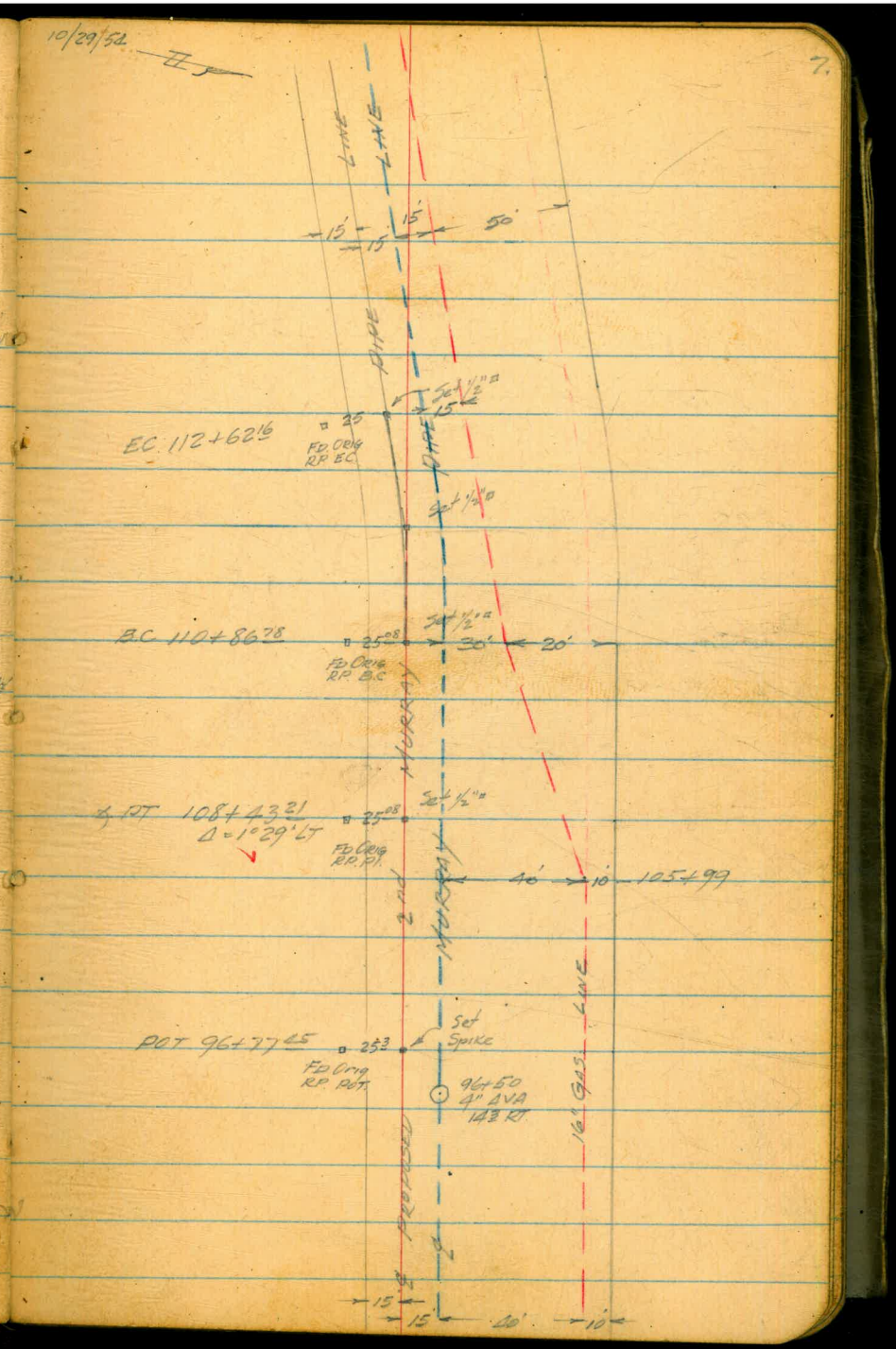
108+43.21 P.I. Δ 1°29' LT.

Note: 91+00 to 108+43.21 shows a diff. of +0.16 Compared to Orig. Chaining. No check on GASCO Party 10-29-52

96+77.45 (Orig. POT.)

96+50 14.3 RT 4" AVA in Conc. M.H.

S 76° 30' W



2nd MURRAY PIPELINE
(Cont.d)

118+39 15 Lt. 50°34' Lt. Inlet 72" RCP Cross Drain Culvert.

118+07 P.O.V.A. 123 Rt.

N 67°30 W

117+06.80 E.C.

Δ 44°24' Rt
R 200'
T. 81.62
L 154.98
8.59435 per ft.

116+33.44 P.I.

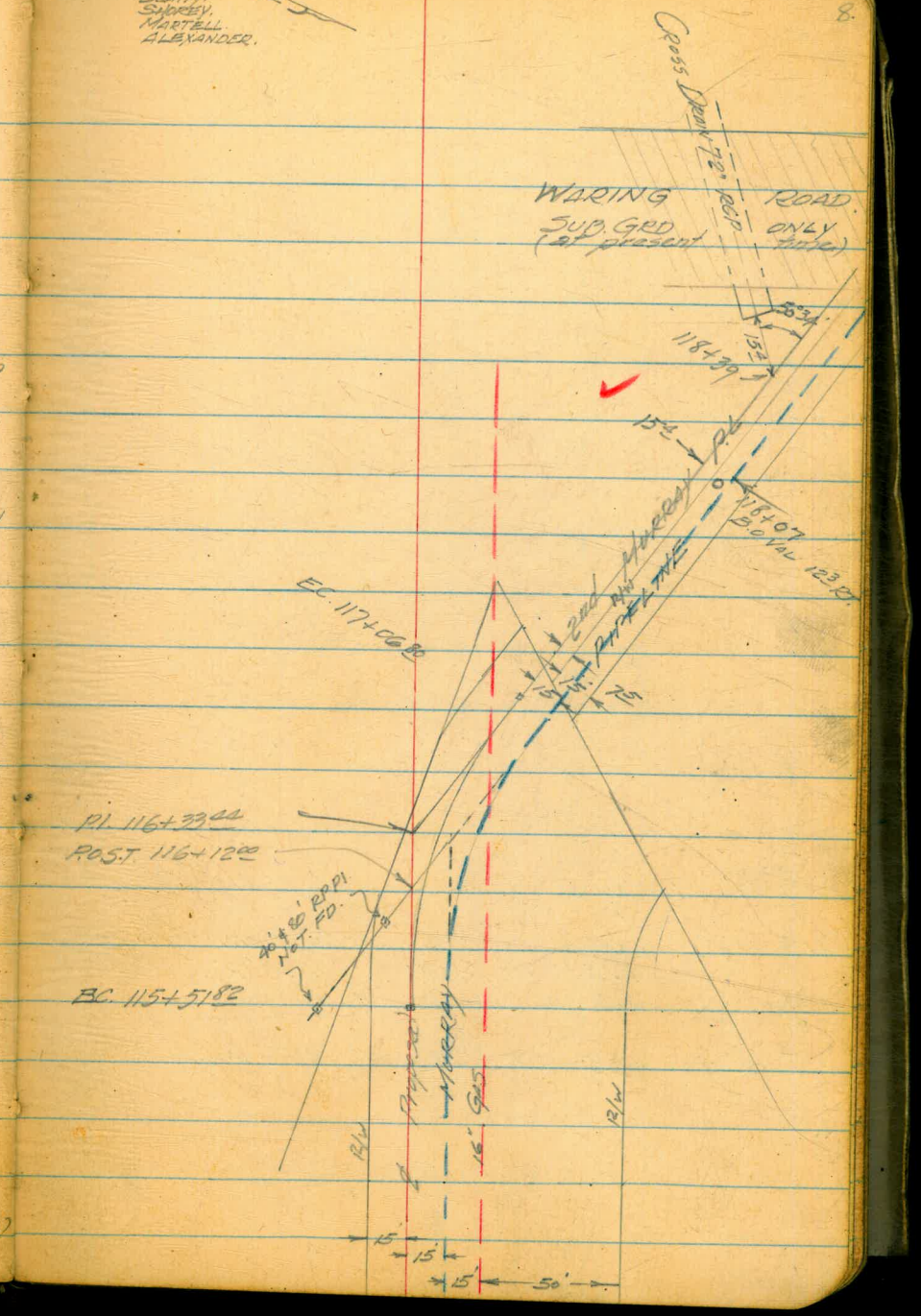
115+51.82 B.C.

116+12.00 P.O.S.T. Intersection with extension of Orig. Forward tang.

S 68°15' W

Nov. 1, 1950
BEATTY.
SHARKEY.
MARTELL.
ALEXANDER.

8.



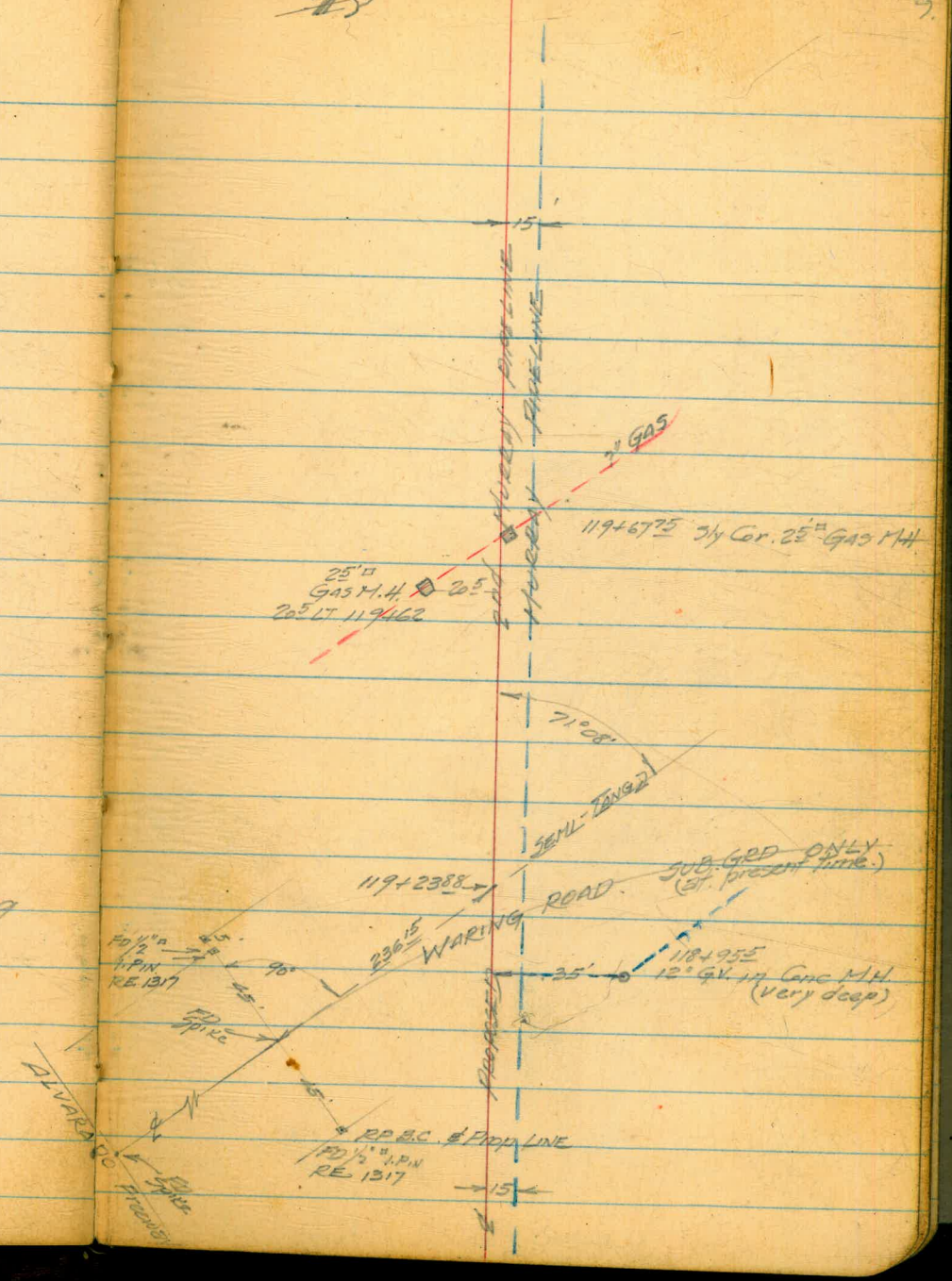
2nd MURRAY Pipeline (Cont.d.)

11/1/52

~~A-5~~

119+23⁸⁸ Intersection with semi-tang Waring Road 71°08' Rt.

118+95⁵ 35' Rt. 12" GV in Conc M.H.

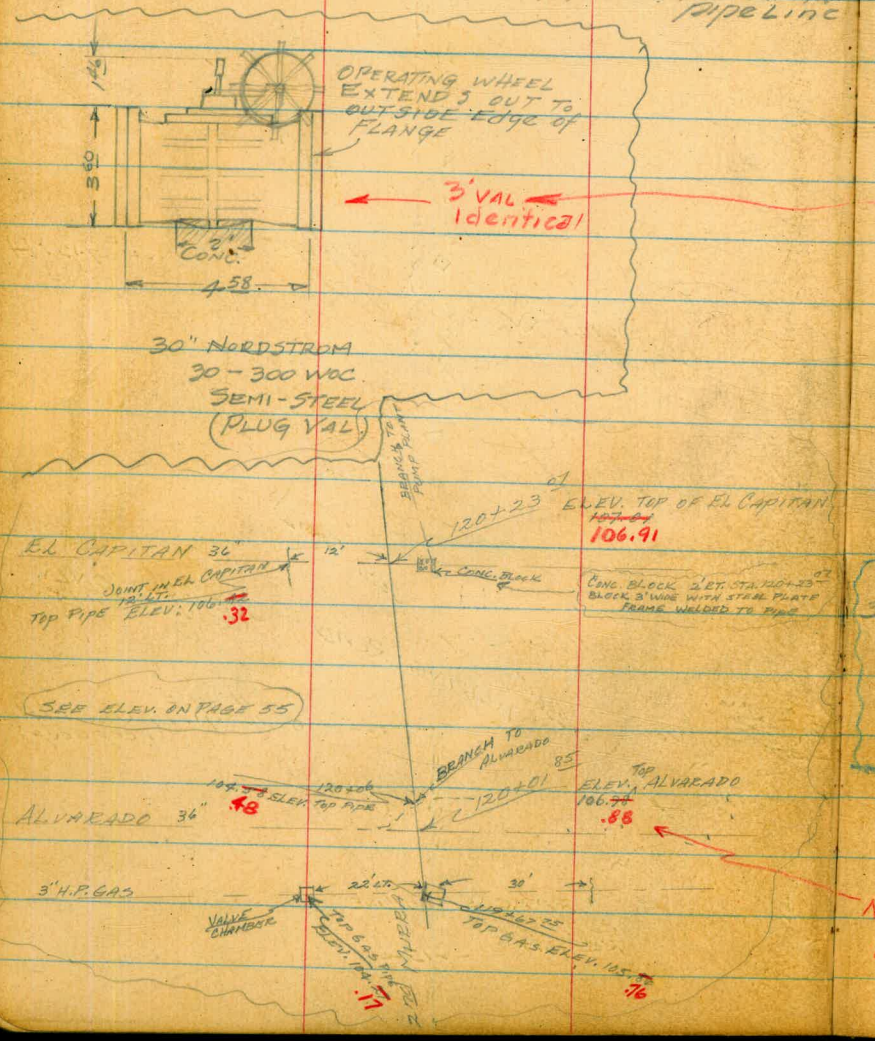


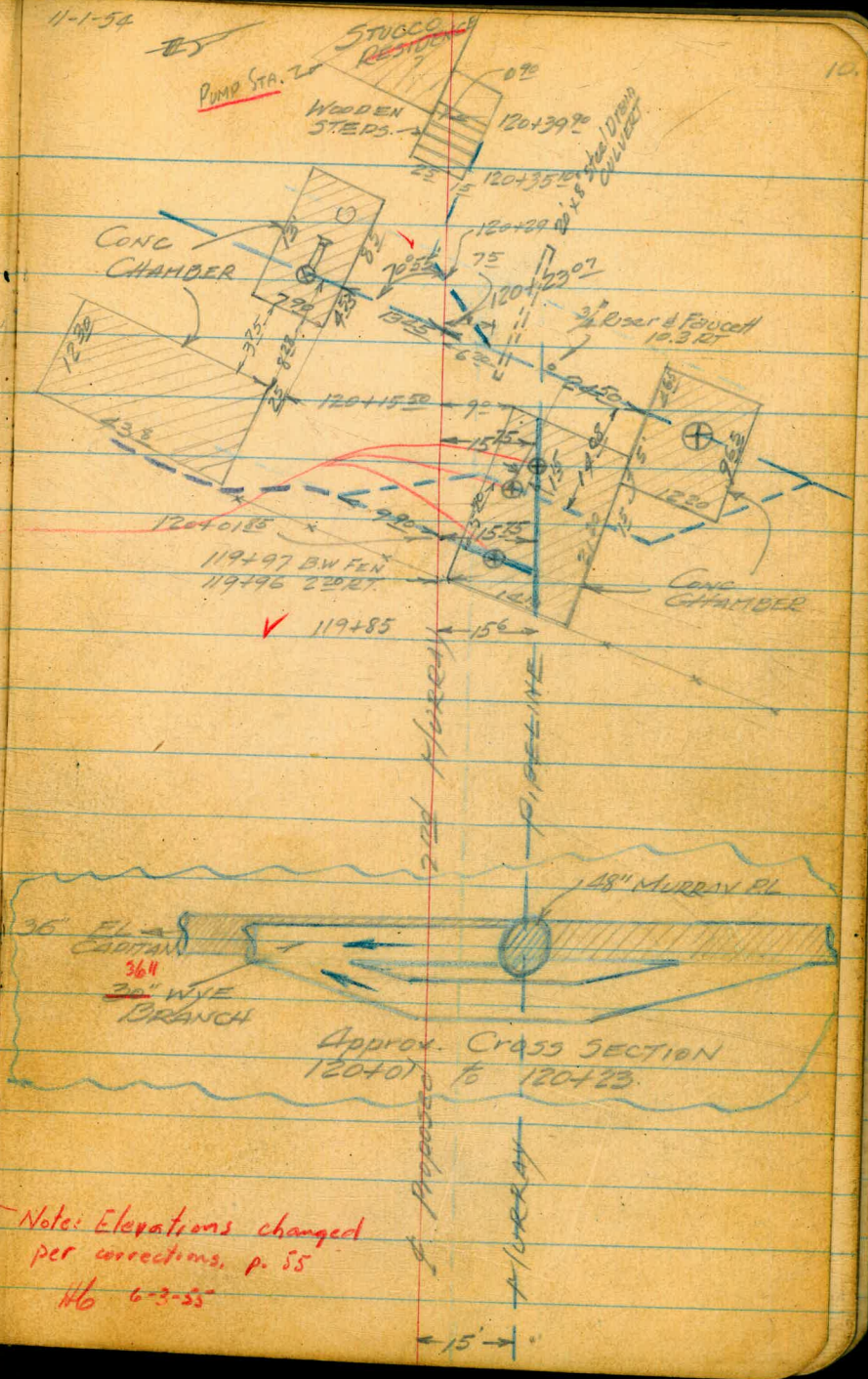
2nd Murray Pipeline (Cont'd.)

11-1-54

E5

10.





℄ ALIGNMT PROPOSED
2nd MURRAY PIPELINE.
Alternate Alignmt 0+00 to 16+48 44

8+07 & 8+10 28" Steel DRAINS Inlets 2' LT.
8+04 10.5 RT BO Val

N 87°00' W

7+45 P.I. Δ 31°53'30" LT.

N 55°00' W

5+09 POT.
81.70 see profile #6
3+81.70 6" C.I. Return water line from Sludge BASIN.
2+00 POT
0+86.16 POT

0+38± ℄ 18" RCC. pipe LM. LG. Wat. DIST.
0+10.8 6" Wrapped steel, Sludge Drain line
0+00 69°06' RT.

Nov. 3 1954
BEATTY
MARTELL
ALEXANDER.

50'
15' 15'
8+04 10.5 RT
B.O. VAL.
31°53'30" RT
NOTE: SEE PAGE 70
REVISED LOCATION
7+26.07 TO 10+85.
30" Steel 8+07
Cross Drain 8+04
6' LT
Excess Elevation
FD 1"x1" HUB & TK.
PRIVATE PROPERTY
101.24 Meas
101.30 REC.
116.90
FD 2"x2" HUB & TK
FD 1"x1" HUB & TK
SEE F.B. 782 pg. 66
℄ MURRAY P.L.
CITY PROPERTY
Return Water Line
6" C.I.
3+81.70
Sludge Basin
69°06'
Tel. RCP Pipeline
18" RCC LM. LG Wat DIST
0+38 0+39.5
Top of pipe pg. 79
EC. 9+72.90
0+10.80
0+00
6" Wrapped Steel SLUDGE DRAIN LINE
8+98.48
AVE PIPELINE

2nd MURRAY PIPELINE
Alternate Alignment
(Cont.d.)

N 71°00'W.

17+03.03 EC. = 16+48.44 P.O.T.

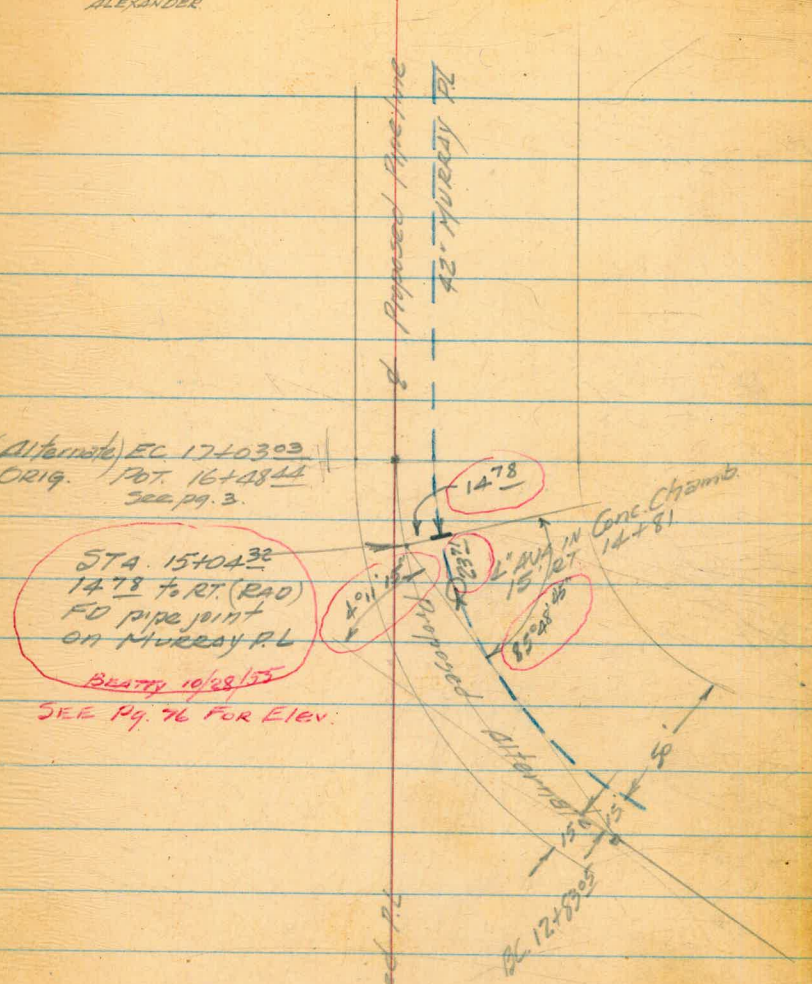
Δ 15°53' RT. (RECORD Δ 15°55' RT.)
R 1515'
T 211.35
L. 419.98

14+94.40 P.I.

N 87°00'W.

11+19.07 P.O.T.

Nov. 4 1954
BEATTY
SHOREY
MARTELL
ALEXANDER



(Alternate) EC. 17+03.03
ORIG. POT. 16+48.44
See pg. 3.

STA. 15+04.32
14.78 ℄ RT. (RAD)
FD pipe joint
on Murray P.L.

BEATTY 10/28/55

SEE Pg. 76 FOR Elev.

Nov. 4 1954

Proposed 2nd Murray Pipeline & Profile, Cross-Sections, Etc.

NOTE The notes have been reduced and checked 9+66 ones 12/15/54

B.M.	4.37	540.76		536.39	City Datum — So. End Murray Dam. (F.B. 698 pg 3.)
T.P.	3.10	535.38	8.48	532.28	
			2.92	532.46	= 532.48 (painted on reservoir)
T.P.	1.35	526.58	10.15	525.23	
T.P.	0.02	516.32	10.28	516.30	
CK BM			3.20	513.12	= 513.08 Top 2nd Step porch of house SE Cor Delaware & Penn. (F.B. 698 pg. 4)
T.P.	0.14	503.41	13.05	503.27	
T.P.	0.24	490.30	13.35	490.06	
T.P.	0.16	477.51	12.95	477.35	
	4.44	470.18	11.77	465.74	
CK BM.			6.19	463.99	= 463.97 Top of Bldr 10' Lt 9+42 Trojan Ave P.L. (F.B. 698 pg 5)
SET BM	12.78	469.86	13.10	457.08	SET Spike in power pole # A-72599 13± Lt. E.C. 9+729 Trojan P.L.
0+00			1.70	468.16	Lt. (Sly.) 467.3 2.6/10 c 469.9 0.1/10 Rt. (Nly.)
5' Lt.	Top 54" RCP Water — Trojan Ave P.L.		6.83	463.03	
4' Rt	" " " "		5.29	462.57	
0+11.5			2.7	467.2	
0+12	Top 6" Wrapped Steel Sludge Drain Line		1.95	467.91	
0+16			3.6	466.2	
0+29			6.3	463.6	462.5 7.2/10 c 462.5 5.2/10
0+35.30			8.0	461.9	462.8 7.9/10 462.5 7.3/10
0+35.30	Top 18" RCC.		10.07	459.79	

2nd Murray Pipeline Cont'd.

		469.86		
0+47			9.1	460.8
0+50			10.0	459.9
0+58			13.0	456.9
PI	0.57	457.41	13.02	456.84
0+71			3.0	454.4
0+78			5.6	451.8
0+83			6.6	450.8
0+89			9.3	448.1
0+95			10.3	447.1
PI				
1+00	0.11	444.52	13.00	444.41
1+03			0.8	443.7
1+16			6.5	438.0
1+22			8.1	436.4
1+36			12.8	431.7
PI	0.24	431.62	13.14	431.38
1+50			5.3	426.3
1+54			6.7	424.9
1+55			8.1	423.5
PI	0.58	418.85	13.35	418.27
1+77			2.6	416.3

End of Shattered Rock & Boulders Begin Virgin Ground, rock outcrop,

460.8 — 9.3/10 — c — 461.8 — 8.2/10

456.2 — 13.2/10 — c — 456.1 — 12.1/10

2nd Murray Pipeline (Cont.d.)

		418.85		
1+94			2.2	409.7
1+95			12.3	406.7
H	0.38	406.06	13.17	405.68
2+00			1.2	404.9
2+09			4.9	401.2
2+24			11.1	395.0
2+25			12.9	393.2
H	0.03	392.80	13.29	392.77
2+30			1.5	391.3
2+32			4.4	388.4
2+50			12.8	380.0
2+53			13.3	379.5
H	0.77	380.64	12.93	379.87
2+54			3.7	376.9
2+57			4.5	376.1
2+61			8.7	371.9
2+92			9.4	371.2
2+94			5.6	375.0
3+00			3.9	376.7
3+09			1.7	378.9
3+05			1.8	378.8

{ 1+77 TO 1+94 ROCK OUT CROP

{ ROCK OUT CROP
"
"
"

NATURAL GROUND

{ ROCK OUT CROP
"
"
"

S/y. SIDE CREEK BED

NW/y. SIDE CREEK BED & BEGIN ROCK OUT CROP

2nd Murray P.L. (Contd.)

		380.64		
TP ON ROCK	12.01	391.25	1.40	379.24
3+10			10.2	381.1
3+18			7.5	383.8
3+50			3.9	387.4
3+63			1.6	389.7
TP ON Rock	9.28	399.60	0.93	390.32
4+00			6.8	392.8
4+07			5.6	394.0
4+11			5.6	394.0
4+11.50			4.73	394.9
4+17			5.7	393.9
4+24			6.1	393.5
4+25			4.8	394.8
4+50			4.1	395.5
4+90			2.6	397.0
5+00			1.6	398.0
TP ON Rock	1.28	399.78	1.10	398.50
5+39			1.6	398.2
5+50			2.4	397.4
6+00			7.2	392.6
6+50			11.9	387.9
6+79			17.5	382.3
6+80			18.4	381.4

END ROCK OUT CROP

TOP 6" BETWEEN PIPE FROM SLUDGE BASINS

ROCK OUT CROP

" " "

NATURAL GROUND

& DIRT ROAD - 20' WIDE

	LT	RT	
	394.5	399.0	398.5
	5.1	+0.6	+1.0
	10	6	10
	395.2	398.5	399.8
	3.9	1.3	0.0
	10	2	10
	385.8	389.1	
	14.0	10.7	
	10	10	

2nd Murray Pipeline (Cont.d)

		399.78		
6+83			19.6	380.2
6+85			17.4	382.4
6+91			15.5	384.3
7+00			12.8	387.0
7+17			7.5	392.3
7+29 43			6.0	393.8
7+32			5.6	394.2
7+36			4.6	395.2
7+46			5.6	394.2
7+50			5.2	394.6
PI 7+60	7.57	407.00	0.35	399.43
TBM	5.60	411.72	0.88	406.12
7+70			10.7	401.0
8+00			6.4	405.3
8+25			2.9	408.8
TP on Rock	13.16	423.19	1.69	410.03
8+50			10.8	412.4
8+73			6.0	417.2
9+00			2.1	421.1
TP on Rock	13.01	435.94	0.26	422.93
9+50			6.5	429.4
9+63			5.0	430.9
9+66			2.5	433.4
9+71			1.9	434.0

E OF WASH

INTERS. OF PROP LINE

SLY. EDGE DIRT ROAD 10' WIDE

NLY. " " " "

TOP OF 6" ELBOW ON B.O. ON MURRAY LINE

BEGIN ROCK OUT CROP

END " " "

2nd Murray Pipeline (Cont'd)

		425.24		
TP	12.96	448.60	0.30	435.64
10+00			11.7	436.9
10+29			7.6	441.0
10+31			6.1	442.5
10+37			5.5	443.1
10+50			1.7	446.9
TP on Rock	13.09	461.14	0.55	448.05
10+80			2.2	451.9
10+83			8.5	452.6
11+00			7.5	453.6
11+50			4.8	456.3
12+00			3.4	457.7
12+50			1.9	459.2
13+00			0.5	460.6
TP	4.50	465.60	0.04	461.10
13+30			3.5	462.1
13+50			3.4	462.2
13+70			3.2	462.4
14+00			2.3	463.3
14+25			1.3	464.3
14+50			1.5	464.1
15+00			2.4	463.2

11/5/54

2nd Murray Pipeline (Cont'd.)

11/5/54

		465.60		
15+50			4.2	461.4
16+00			6.3	459.3
TBM 16+48 44	0.87	458.39	8.08	457.52
16+50			1.0	457.4
17+00			3.4	455.0
17+50			5.4	453.0
18+00			7.2	451.2
18+50			8.9	449.5
19+00			11.1	447.3
19+39			12.6	445.8
	19+39 11"ET. B.O. VAL.		10.68	447.71
19+50			12.5	445.9
20+00			12.0	446.4
20+25			11.5	446.9
20+50			12.1	446.3
21+00			12.8	445.6
21+50			12.1	446.3
21+63			12.0	446.4
22+00			8.8	449.6
22+50			7.4	451.0

P.O.T. & B.C. 27+70 34 ON ORIGINAL LINE

Top 6" Pipe on B.O. VAL.

2nd Murray Pipeline (Cont.d)

		458.39	
23+00		7.1	451.3
23+50		6.6	451.8
24+00		5.8	452.6
24+50 15' R.O.T		5.5	452.9
24+52	0.01	454.01	4.39 454.00
25+00		1.9	452.1
25+50		2.0	452.0
26+00		3.4	450.6
26+50		5.8	448.2
27+00		7.3	446.7
27+50		8.7	445.3
27+70		9.1	444.9
28+00		11.4	442.6
28+25		13.3	440.7
TT on Rock	0.91	441.75	13.17 440.84
28+50		2.2	439.6
28+60		2.7	439.1
28+76		1.8	437.0
28+87		4.8	437.0
29+00		6.5	435.3

LET ON AVA M.H. (PHELPS) 15' RT.

2nd Murray Pipeline (Cont.d)

		44.75		
29+34			8.1	433.7
29+50			7.4	434.4
29+60			6.8	435.0
29+67			8.2	433.6
30+00			8.9	432.9
TP ON Rock	0.46	429.01	13.20	428.55
30+50			1.0	428.0
30+67			2.4	426.6
31+00			6.7	422.3
31+19			8.6	420.4
31+37			12.2	416.8
31+50			13.5	415.5
TP	5.20	421.30	12.91	416.10
31+75			8.3	413.0
32+00			9.0	412.3
Set TBM	12.31	425.60	8.01	413.29
32+19			12.2	413.4
32+50			7.6	418.0
32+85			0.3	425.3
TP ON Rock	12.42	137.86	0.16	425.44

See pg. 69 for X-section extensions 30+75 — 32+00

Top 6" pipe B.O.

Nov. 8, 1956
Same Party

2nd Murray Pipeline (Cont.d)

		437.86		
33+00			10.1	427.8
33+30			3.4	434.5
33+50			0.6	437.3
TP	11.89	449.72	0.03	437.83
34+00			8.3	441.4
34+18			6.3	443.4
34+50			1.2	448.5
TP ON ROCK	8.14	457.59	0.27	449.45
34+59			7.8	449.8
35+00			6.3	451.3
35+25			5.4	452.2
35+50			5.6	452.0
P.O.T 35+65.87			5.00	452.59
CK. TBM 35+68 15' RT			3.25	454.34 = 454.48
36+00			5.0	452.6
36+20			5.6	452.0
36+30			5.5	452.1
36+32			4.9	452.7
36+41			5.3	452.3
36+44			4.4	453.2
36+46			5.6	452.0
36+50			5.8	451.8

AVA M.H. L&T (PHELPS)

2nd Murray Pipeline (Cont'd.)

					LT	RT
		457.59				
36+55			6.8	450.8		
37+00 P.O.T			10.1	447.5		447.7 / 448.8
37+12			11.2	446.4		9.9 / 8.8
P on Rock	0.87	445.10	13.36	444.23		5 / 13
37+50			3.1	443.6 ↑ 442.0		442.0 / 443.8
38+00			9.9	435.2		5.1 / 1.3
38+12 22° B.G.			12.0	433.1	435.5	5 / 14
P on Rock	0.21	432.32	12.99	432.11		3.6 / 8.8
38+30			1.5	430.8		9 / 10
38+50			3.8	428.5		
38+61			5.4	426.9		
38+75			8.0	424.3		
39+00			13.0	419.3		
P on Rock	4.32	423.48	13.16	419.16		
39+16 B.O. Val. 10" Rt.			6.12	417.4	Top 6" B.O. Val.	
39+35			10.0	413.5		
39+50			9.3	414.2		
39+70			7.5	416.0		
39+80			7.3	416.2		
39+90			8.0	415.5		
40+00			7.5	416.0		

448.5 & pumps
417.4
31.1

2nd Murray Pipeline (Cont'd)

		423.48		
40+07			6.3	417.5 417.2
40+25			3.1	420.4
40+38			0.8	422.7
TP on Rock	12.44	434.94	0.98	422.50
40+50			10.2	424.7
40+60			8.3	426.6
40+75			6.0	428.9
40+80			3.7	431.2
40+93			2.5	432.4
41+00			1.9	433.0
TP on Rock	11.04	445.18	0.80	434.14
41+25			7.6	437.6
41+40			4.8	440.4
41+50			4.2	441.0
41+60			2.1	443.1
TP on Rock	12.02	456.52	0.68	444.50
41+75			11.1	445.4
41+88			9.0	447.5
42+00			7.6	448.9
42+05			6.7	449.8

2nd Murray Pipeline (Cont.d)

	456.52		
42+25		4.8	451.7
42+50		2.6	453.9
42+60		1.6	454.9
TP ON ROCK	11.45	467.61	0.36 456.16
E.C. 42+93 25		10.2	457.4
43+00		9.6	458.0
43+13		8.4	459.2
43+26		7.2	460.4
43+29		7.6	460.0
43+33 54 P.O.T		7.2	460.4
43+40		6.3	461.3
43+50		6.4	461.5
43+65		5.2	462.4
43+77		4.4	463.2
44+00		3.6	464.0
44+10		3.5	464.1
44+20		1.4	466.3 x 466.2
44+28		2.8	464.8
44+38		3.1	464.5
44+50		2.9	464.7

	LT	RT
	463.1 463.4	464.4
	4.5 4.2	3.2
	10 3	10
ROCK OUT CROP	464.0 464.3	465.1 465.1
	3.6 3.3	2.5 2.5
	10 5	6 10

2nd Murray Pipeline (Cont'd)

11/8/54

		467.61		
44+61			2.4	465.2
44+67			1.0	466.6
44+70			0.7	466.9
TP ON ROCK	7.66	475.27	0.00	467.61
44+86			7.0	468.3
45+00			4.0	471.3
45+10			6.0	469.3
45+20			4.3	471.6
45+27			5.3	470.0
45+37			4.8	470.5
45+50			5.1	470.2
45+65			5.2	470.1
45+80			4.9	470.4
45+90			5.5	469.8
46+00		GROUND	5.1	470.2
46+05			5.4	469.9
46+15			5.1	470.2
46+30			4.6	470.7
46+30 TBM	7.16	475.59	6.84	468.43

LT	RT
BEGIN ROCK OUT CROP OR SPOIL ON E	
~~467.9~~ ~~467.5~~ ~~466.1~~	~~467.6~~ ~~467.8~~
2.7 2.3 0.5	2.0 1.8
10 6 3	4 10
464.9 465.3 467.1	465.6 465.8
467.6 ~~466.6~~	466.1 ~~459.1~~
7.7	8.2
10	10
~~464.6~~ 6.7 464.6	~~463~~ 8.2 467.1
10	10
469.5 ~~467.4~~	468.3 ~~463.2~~
5.8	7.0
10	10
470.3 ~~465.2~~	474.1 ~~469.0~~
5.0	1.2 Large Rock (5'x6'x3')
10	X
	469.2 ~~467.1~~
	6.3
	10
4" AVA M.H. SHIV EDGE (CHISL D) 14' RT	

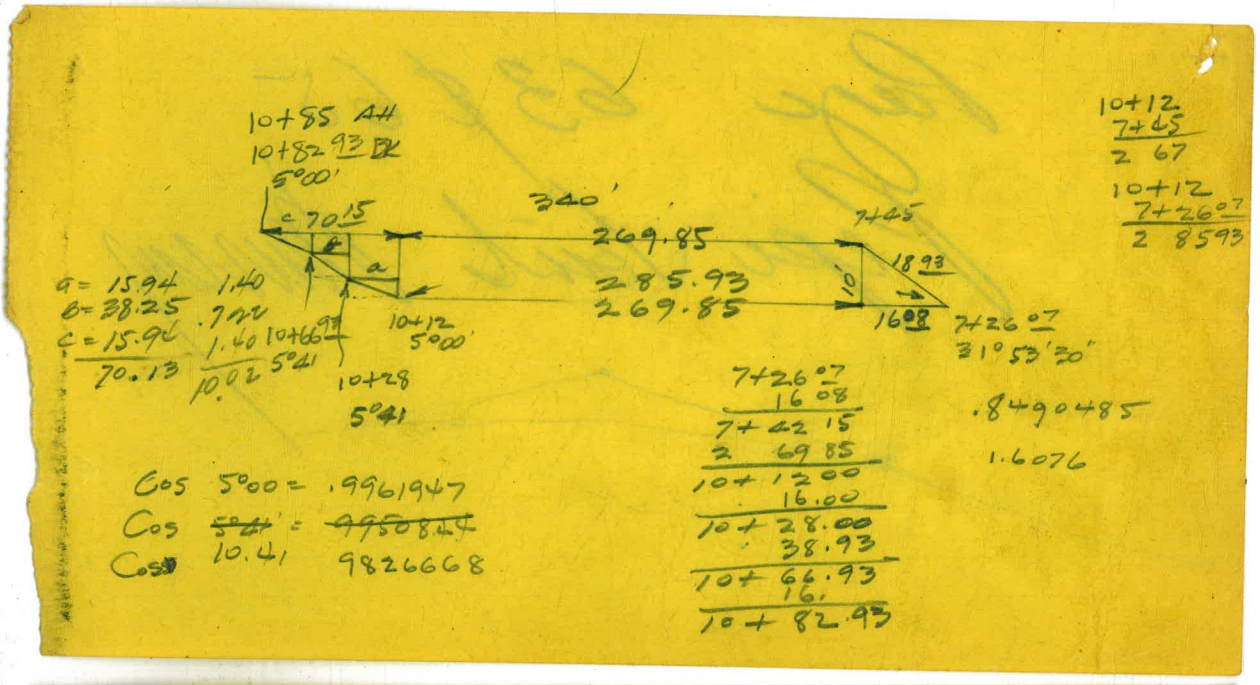
2nd Murray Pipeline (Contd.)

11/8/54

				LT	RT
	475.59				
46+40		5.5	470.1	470.1 / 470.1 / 5.5 / 10	468.7 / 468.0 / 6.7 / 10
46+50		5.7	469.9		
46+55		3.7	471.7		
46+65		4.2	471.4		
46+73		3.7	471.9		
46+74.55	P.O.T on Rock 7'x7'x4'	0.7	474.9		
46+85		6.6	469.0		
47+00		7.0	468.6		
47+30		7.1	468.5		
47+58		7.8	467.8		
47+63		6.8	~~469.5~~ 468.8		
47+68		7.1	468.5		
47+73		6.4	469.2		
47+75		7.2	468.4	END Rock Spoil	468.3 / 468.3 / 7.4 / 10 ; 468.8 / 468.8 / 6.8 / 9 ; 470.2 / 470.2 / 5.4 / 10 ; 470.0 / 468.7 / 468.7 / 6.9 / 4 ; 469.3 / 469.3 / 5.6 / 7 ; 469.3 / 469.3 / 6.3 / 10
47+81		6.6	469.0		
47+90		5.0	470.6		
47+95		6.1	469.5		
48+00		5.9	469.7		
48+17		2.1	473.5	BEGIN Rock Spoil	467.6 / 467.6 / 8.0 / 10 ; 468.3 / 468.3 / 7.3 / 10 ; 7'x5'x4' Rock on ℄
					469.9 / 469.9 / 5.7 / 10 ; 469.2 / 469.2 / 6.4 / 4 ; 469.1 / 469.1 / 6.5 / 10

Sec 33 T95 R51W

81 23
342.29
18°32'
.3352424
42+93 25
16+48 44
16. 4481
4.85
16 4966 = .01
54+19 90
27+70 34
16. 49 56
1485 : 1500 :: 480.35 : x
1500 : 1485 :: x : 480.35
1500
485.20
240175.00
480 35
1485
720525.00
5940
12652
11880
7725
7425
3000
2970
300
485.20
480.35
485
242
.33
726
726
6



DELTA HAND LANTERN

2nd Murray

PoT 16+48.44

BC 38+12.90
16+48.44
21.6446

39+16
38+12.90
1+03.10

1ST Murray

= 27+70.34 EC.
21 64.46

= 49+34.80 BC
3+10 50

52+45.30
3

52+48.30

49+34.70
2 13.50
52+48.20

STA of side outlet for ?

2nd Murray RL. (Cont.d)

				LT	RT
	475.59				
48+21		4.1	471.5		
+25		2.4	473.2		
+40		3.2	472.4		
+45		2.2	473.4		
48+50		2.8	472.8		
+55		3.9	471.7		
+64		3.2	472.4		
+74		6.3	469.3		
+85		5.4	470.2		
+90		6.2	468.7		
49+00		7.5	468.1		
+50		9.4	466.2		
50+00		9.9	465.7		
+50		10.0	465.6		
51+00		10.8	464.8		
+36		11.3	464.3		
+43		9.4	466.2		
+50		10.9	464.7		
TP ON Rock	4.81	470.94	2.46	466.13	

471.9 / ~~468.6~~ / 4.2 / 10

469.8 / ~~464.0~~ / 5.8 / 7

469.8 / ~~467.0~~ / 5.8 / 10

468.0 / ~~461.1~~ / 7.6 / 10

END Rock Spoil

469.1 / ~~461.6~~ / 6.5 / 5

467.9 / ~~460.9~~ / 7.7 / 10

468.3 / ~~461.7~~ / 7.3 / 10

467.6 / ~~460.1~~ / 8.6 / 10

464.0 / ~~452.4~~ / 11.6 / 10

BEGIN Rock Spoil

464.5 / ~~453.4~~ / 11.1 / 10

463.3 / ~~452.6~~ / 12.3 / 10

464.9 / ~~454.0~~ / 10.7 / 7

464.6 / ~~453.6~~ / 11.0 / 10

2nd Murray P.L. (Cont.d)

11/8/54

470.24

				LT	RT
51+55		4.9	~~464.0~~ 466.0		
+60		5.9	465.0		
+69		5.3	465.6		
+68		6.6	464.3		
+77		3.4	467.5		
+90		2.4	468.5		
52+00		2.5	468.4		
+27		4.0	466.9		
+45		3.0	467.9		
+50		3.7	467.2		
+60		3.8	467.1		
52+75		7.2	463.7		
+96		7.9	463.0		
53+00		6.3	464.6		
53+15		8.2	462.7		
+25		5.6	465.3		
53+37.66	P.O.T ON 3'x3'x2' Rock	3.6	467.3		
+46		5.5	465.4		
+50		5.4	465.5		

				LT	RT
				467.7 ~~465.2~~ 3.2/10	466.9 ~~467.4~~ 4.0/5 464.0 ~~461.5~~ 6.9/10
				467.7 ~~464.6~~ 3.2/10	467.2 ~~463.5~~ 3.7/6 464.1 ~~460.1~~ 6.8/12
END Rock Spoil				463.4 ~~456.2~~ 7.5/10	463.7 ~~456.5~~ 7.2/10
BEGIN Rock Spoil				462.7 ~~454.4~~ 8.2/10 462.5 ~~454.3~~ 8.4/10	463.1 ~~456.8~~ 7.8/10 462.9 ~~454.9~~ 8.0/10
				465.8 ~~460.4~~ 5.1/10	465.0 ~~459.1~~ 5.9/5 463.2 ~~455.8~~ 7.7/10

2nd Murray P.L. (Cont.d)

					LT	RT	
		470.94					
53+77			5.4	465.5			
54+00			6.9	464.0	464.7 ~~454.6~~ 6.2 10	463.7 ~~456.6~~ 7.2 3	461.8 ~~454.9~~ 9.1 10
+09			7.7	463.2			
+22			10.5	460.4			
+50			12.4	458.5	459.3 ~~446.9~~ 11.6 10	458.0 ~~445.6~~ 12.9 10	
IP	1.66	459.55	13.05	457.89			
55+00			4.6	455.0	455.1 ~~450.5~~ 4.5 10	454.8 ~~450.2~~ 4.8 10	
+32			7.8	451.8			
+50			8.7	450.9			
+71			10.0	449.6			
56+00			12.8	446.8			
IP	0.27	446.90	12.92	446.63			
56+12 11" Rt.			0.9	446.0			
+50			3.1	443.8			
57+00			5.2	441.7			
+50			6.9	440.0			
58+00			7.5	439.4			
+50			6.5	440.4			
59+00			5.5	441.4			

End Rock Spoil

2nd Murray Pipeline (Cont.d)

		446.90		
59+10		5.6	441.3	ELY EDGE DIRT ROAD
+23		5.3	441.6	WLY " " "
+50		4.5	442.4	
60+00		5.6	441.3	SWLY. EDGE OF ROAD (DIRT)
+50		6.8	440.1	
61+00		7.9	439.0	
+50		8.2	438.7	
61+95 55	△ PT.	8.8	438.1	
TBM	0.47	440.65	6.22	432.38 SELY. COR. GAS Co. M.H 52' RT △ PT. STA. 61+95 55
62+00			2.5	438.0
62+50			4.3	436.2
63+00			6.2	434.3
63+50			9.2	431.3
64+00			10.9	429.6
64+50			12.4	428.1
TP	1.97	439.88	12.54	427.91
65+00			3.6	426.3
65+25			4.8	425.1
65+50			5.4	424.5

2nd Murray Pipeline (Cont'd)

		429.88		
66+00			6.0	423.9
66+38			5.9	424.0
66+50			5.6	424.3
67+00			5.1	424.8
67+50			4.5	425.4
67+66			4.0	425.9
68+00			4.7	425.2
68+25			4.5	425.4
68+50			5.6	424.3
TBM	1.88	426.55	5.21	424.67	5 RIM CONC. M.H 4" AVA.
68+78			3.1	423.5
69+00			3.6	423.0
69+50			4.9	421.7
70+00			7.2	419.4
70+18			9.0	417.6
70+50			11.2	415.4
TP	0.02	413.21	13.36	413.19
71+00			2.2	411.0
71+25			4.1	409.1

2nd Murray Pipeline (Cont'd)

		413.21		
71+50			6.4	406.8
72+00			12.0	401.2
P	0.90	401.09	13.02	400.19
72+50			5.1	396.0
72+75			6.8	394.3
73+00			7.6	393.5
73+50			7.8	393.3
73+75			7.8	393.3
74+00			8.1	393.0
74+50			9.8	391.3
P	1.02	389.13	12.98	388.11
75+00			1.0	388.1
75+50			5.4	383.7
76+00			9.7	379.4
76+35			12.8	376.3
P	0.65	376.49	13.29	375.84
76+50			2.6	373.9
77+00			7.2	369.3
P	12.54	377.41	11.62	364.87

Top 6" discharge
B.O.

387.6 — 386.0 — 385.0 — 1.5/10 — 1.1/4 — 3.1/10 — 386.3
383.9 — 380.9 — 5.2/2 — 2.8/10 — 382.0
381.7 — 6.2/10 — 380.7 — 8.2/7 — 7.1/10
378.7 — 10.4/10

373.6 — 376.3 — 2.9/10 — 1.9/5 — 0.2/10 — 369.3
369.2 — 368.9 — 2.3/10 — 2.6/5 — 2.2/10

2nd Murray Pipeline (Cont.d.)

		377.41		
77+50			7.3	370.1
78+00			1.8	375.6
P	9.90	387.31	0.00	377.41
78+50			9.2	378.1
79+00			6.3	381.0
79+43			4.3	383.0
79+50			3.1	384.2
P	9.63	396.66	0.28	387.03
79+75			10.4	386.3
80+00			9.2	387.5
80+50			7.4	389.3
80+78.47 B.C			6.0	390.7
81+00			5.9	390.8
TBM	7.22	394.85	9.03	387.63
81+50			4.6	390.3
82+00			7.5	387.4
82+50			12.0	382.9
P	6.05	387.54	13.36	381.49
82+75			7.2	380.3

372.0 371.7 366.0
5.4 5.7 11.4
376.4 372.2
4.0 5.2
379.3 378.7 377.4 375.7
8.0 8.6 9.9 11.6
381.8 380.3 379.2
5.5 7.0 8.4
385.9 382.2
4.6 5.1
389.0 386.1 385.3
7.2 10.6 11.6
390.4 387.7
6.3 8.9
391.5 387.7
5.2 9.0
S. rim MH. 391.3 389.9 388.5
4" AVA Conc Chan. 3.6 5.0 6.4
388.2 386.8 385.4
6.7 8.1 9.5
383.7 381.1
11.2 12.5 13.8
382.4

2nd Murray Pipeline (Cont'd.)

		387.54		
83+00			7.0	380.5
83+01.98 EC			7.3	380.2
TP	11.35	388.30	10.59	376.95
83+50			5.8	382.5
84+00			1.4	386.9
TP	9.36	397.57	0.09	388.21
84+50			7.5	390.1
84+75			5.9	391.7
85+00			5.7	391.9
85+50			5.0	392.6
86+00			4.7	392.9
86+01.23 BC			4.8	392.8
86+50			2.8	394.8
TP	11.38	408.43	0.52	397.05
87+00			11.5	396.9
87+50			8.2	400.2
88+00			4.9	403.5
88+50			1.8	406.6
TP	7.97	416.20	0.20	408.23
89+00			7.5	408.7

Top 6" discharge B.O.

381.1 − 6.4/10 = 379.9 − 7.6/5 = 378.3 − 9.2/10

343.3 − 5.0/10 = 381.3 − 7.0/10

388.0 − 0.3/10 = 386.6 − 1.7/10

391.2 − 6.2/10 = 390.7 − 7.4/7 = 389.6 − 8.0/10

2nd Murray Pipeline (Cont'd.)

		416.20			
89+50			6.4	409.8	
90+00			5.4	410.8	
TBM	3.19	414.37	5.02	411.18	5 Rim MH Conc Chamber 4"AVA
90+50			3.8	410.6	
91+00.07 EC			5.2	409.0	
91+50			6.7	407.7	
92+00			8.6	405.8	
92+50			10.2	404.2	
TP	2.50	405.97	10.90	403.47	
93+00			2.50	403.5	
93+50			4.5	401.5	
94+00			5.5	400.5	
94+50			5.5	400.5	
95+00			4.7	401.3	
95+50			4.8	401.2	
96+00			4.9	401.1	
96+50			4.4	401.6	
TBM	2.46	405.93	2.50	403.47	5 rim MH Conc. AVA Chamb.
96+77.45 POT			4.7	401.2	

2nd Murray Pipeline (Cont'd)

		405.93		
97+00			4.3	401.6
97+50			6.0	399.9
97+90			8.3	397.6
98+00			9.4	396.5
98+19 66 P.O.T			11.0	394.9
98+37			12.2	393.7
TP	0.91	393.86	12.98	392.95
98+50			1.6	392.~~6~~ 3
98+85			4.8	389.1
99+00			6.8	387.1
99+35			11.1	382.8
99+50			13.1	380.8
TP	0.53	381.04	13.35	380.51
99+60			1.0	380.0
100+00			6.5	374.5
TP	2.06	369.86	13.24	367.80
100+10			0.8	369.1
100+50			2.3	367.6
101+00			10.1	359.8

399.7 ~~397.9~~ 6.2/10 — 400.2 ~~394.2~~ 5.7/7 — 401.D ~~395.0~~ 4.9/10

396.5 ~~389.1~~ 9.4/10 — 396.6 ~~390.2~~ 9.3/6 — 397.3 ~~387.9~~ 8.6/10

391.9 ~~390.6~~ 2.0/10 — 392.5 ~~391.2~~ 1.2/5 — 394.4 ~~393.1~~ +0.5/10

386.6 ~~379.8~~ 7.3/10 — 387.6 ~~380.8~~ 6.3/2 — 389.5 ~~382.7~~ 4.9/10

380.2 ~~369.1~~ 12.7/10 — 383.D ~~369.7~~ 10.9/10

373.7 ~~364.2~~ 7.3/10 — 375.6 ~~369.1~~ 5.4/4 — 376.6 ~~370.0~~ 4.5/10

366.2 ~~359.9~~ 3.7/10 — 366.7 ~~364.4~~ 3.2/3 — 362.7 ~~359.4~~ 2.2/10

358.1 ~~348.0~~ 11.8/10 — ~~348.3~~ 11.5/5 — ~~359.1~~ 7.7/10 — 362.2

358.1

2nd Murray Pipeline (Cont.d)

			369.86		
9	P	0.87	357.39	13.34	356.52
9	101+17			0.6	356.8
9	+50			6.4	351.0
9	+63			8.4	349.0
9	P	0.72	345.01	13.10	344.29
9	102+00			2.0	343.0
9	102+10			3.3	341.7
9	102+50			9.7	335.3
9	102+71			12.1	332.9
99	P	0.23	332.00	13.24	331.77
99	102+90			2.6	329.4
99	103+00			4.3	327.7
9	103+13			6.5	325.5
99	103+50			11.6	320.4
100	P	0.57	319.29	13.28	318.72
1	103+75			2.4	316.9
100	103+90			4.1	315.2
100	104+00			5.4	313.9
10	104+15			7.5	311.8

349.1 ~~347.0~~ 8.0/10 | 349.5 ~~347.7~~ 7.6/6 c | 353.3 ~~346.9~~ 6.1/10

341.6 ~~339.6~~ 3.4/10 | 341.6 ~~339.6~~ 3.4/4 c | 344.9 ~~342.9~~ 0.1/10

334.0 ~~332.0~~ 11.0/10 | 331.5 ~~329.5~~ 10.5/3 c | 336.7 ~~334.7~~ 8.3/10

326.9 ~~324.9~~ 5.1/10 | 329.2 ~~327.2~~ 2.8/10 c

319.6 ~~317.6~~ 12.4/10 | 321.2 ~~319.2~~ 10.8/3 c | 332.0 ~~330.0~~ 12.0/10

313.0 ~~311.0~~ 6.3/10 | 313.3 ~~311.3~~ 6.0/3 c | 314.9 ~~312.9~~ 1.4/3 | 315.9 ~~313.9~~ 3.4/10

2nd Murray Pipeline (Cont'd)

		319.29		
104+50			11.3	308.0
P	1.04	307.36	12.97	306.32
105+00			4.2	303.2
105+20			5.5	301.9
105+50			~~7.3~~ 7.3	~~303.1~~ 300.1
105+75			8.5	298.9
106+00			10.0	297.4
106+25			11.5	295.9
106+50			12.7	294.7
P	1.08	295.21	13.23	294.13
107+00			3.1	292.1
107+18			4.0	291.2
107+50			6.0	289.2
107+83			8.2	287.0
108+00			9.4	285.8
108+17			10.3	284.9
108+43.2' Pl.			12.9	282.3
P	0.35	282.61	12.95	282.26
108+50			0.9	281.7

307.3 ~~296.0~~	307.5 ~~296.2~~	309.7 ~~296.4~~	
12.0 / 10	11.8 / 3	C	9.6 / 10
303.0 ~~298.8~~	302.8 ~~296.6~~	304.1 ~~299.9~~	
4.2 / 10	4.6 / 3	C	3.3 / 10
299.8 ~~295.5~~	299.7 ~~295.4~~	301.0 ~~296.7~~	
2.6 / 10	7.7 / 5	C	6.4 / 10
297.1 ~~291.1~~	296.7 ~~291.9~~	298.2 ~~288.2~~	
10.3 / 10	10.7 / 4	C	9.2 / 10
	294.3 ~~281.6~~	295.5 ~~287.8~~	
	13.1 / 10	C	11.9 / 10
292.0 ~~286.9~~		293.0 ~~289.9~~	
3.2 / 10		C	2.2 / 10
289.0 ~~283.0~~		290.3 ~~284.3~~	
6.2 / 10		C	4.9 / 10
285.7 ~~279.6~~	285.3 ~~279.9~~	286.1 ~~280.0~~	287.1 ~~277.7~~
9.5 / 10	9.9 / 2	C	8.8 / 2 — 8.1 / 10
280.1 ~~274.9~~	280.2 ~~274.9~~	282.1 ~~281.2~~	281.8 ~~280.7~~
2.0 / 10	2.4 / 3	C	0.5 / 2 — 0.8 / 10

2nd Murray Pipeline (Cont'd)

		282.61		
108+70			2.9	279.7
108+90			6.2	276.4
109+00			7.9	274.7
109+20			12.0	270.16
P	0.24	269.80	13.05	269.56
109+50			4.6	265.2
109+57			5.9	263.9
109+67			7.7	262.1
109+75			8.7	261.1
109+90			11.2	258.6
110+00			12.9	256.9
P	0.33	256.88	13.25	256.55
110+11			1.9	255.0
+18			3.6	253.3
+25			4.4	252.5
+37			6.1	250.8
110+50			8.4	248.5

273.5 ~~277.6~~ 273.3 ~~265.4~~ 275.2 ~~269.7~~ 277.0 ~~269.7~~
9.1/10 9.3/2 C 7.4/1 5.6/10

266.0 ~~260.7~~ 264.2 ~~257.6~~ 265.9 ~~261.2~~ 266.1 ~~262.7~~
4.8/10 5.6/2 C 4.0/2 4.7/10

257.2 ~~244.3~~ 256.2 ~~243.9~~ 254.4 ~~245.5~~ 259.4 ~~246.5~~
12.6/10 13.6/1 C 11.6/2 10.2/10

248.9 ~~246.5~~ 248.0 ~~239.6~~ 249.4 ~~241.0~~ 251.6 ~~242.2~~
8.0/10 8.9/1 C 7.5/2 5.3/10

2nd Murray Pipeline (Cont'd)

		256.88		
P.	0.57	244.53	12.92	243.96
110+86.78 B.C.			1.9	242.16
111+00			4.1	240.4
111+50			12.1	232.4
P.	0.28	231.97	12.84	231.69
111+75			3.2	228.8
112+00			7.0	225.0
112+25			10.3	221.7
112+50			13.4	218.6
P.	0.18	218.83	13.32	218.65
112+62.16			2.1	216.7
112+68			2.7	216.1
113+00			8.0	210.8
113+15			10.0	208.8
113+25			11.7	207.1
P.	0.03	205.21	13.15	205.68
113+50			3.4	202.3
113+75			8.0	197.7
114+00			12.8	192.9

240.9 241.7 244.2
3.6 2.8 0.3
10 2 10
C

232.8 239.7 236.2
11.7 10.8 8.3
10 2 10
C

225.6 226.8 228.7
6.4 5.2 3.7
10 3 10
C

219.0 219.1 222.0
13.0 12.9 10.0
10 3 10
C

211.4 211.1 211.9 212.8
7.4 7.7 6.9 6.0
10 3 4 10
C

200.5 202.3 202.3 203.4 203.7
5.7 3.4 3.4 2.3 2.0
11 9 4 6 10
C

192.9 192.9 194.3 193.7
12.8 12.8 11.4 11.8
10 3 8 10
C

2nd Murray Pipeline (Cont.d)

		205.71		
P	0.08	192.86	12.93	192.78
114+25			4.8	188.1
114+50			9.7	183.2
114+60			11.9	181.0
P	0.36	180.12	13.10	179.76
114+75			2.6	177.5
115+00			8.3	171.8
P	0.31	167.23	13.20	166.92
115+25			0.7	166.5
115+50			5.8	161.4
115+51.82	BC.		6.0	161.2
115+75			11.1	156.1
P	0.71	154.76	13.18	154.05
115+96			3.2	151.6
116+00			3.0	151.8
116+03			2.9	151.9
116+25			7.9	146.9
116+31			9.2	145.6
P	0.14	142.34	12.56	142.20

183.6 ~~175.9~~ 9.3/10 C — 183.2 ~~193.5~~ 9.7/2 — 183.4 ~~194.1~~ 9.1/5 — 184.3 ~~194.6~~ 8.6/9 — 183.9 ~~194.2~~ 9.0/10

172.3 ~~164.0~~ 7.8/10 C — 172.2 ~~163.9~~ 7.9/3 — 173.2 ~~164.9~~ 6.9/4 — 173.6 ~~165.7~~ 6.5/10

161.8 ~~155.0~~ 5.4/10 C — 161.6 ~~155.8~~ 5.6/3 — 162.3 ~~156.5~~ 4.9/5 — 162.4 ~~156.6~~ 4.8/10

149.9 ~~145.9~~ 4.9/10 — 150.8 ~~146.8~~ 4.0/2 C — 152.4 ~~149.4~~ 2.4/1 — 153.7 ~~152.6~~ 1.1/10

2nd Murray Pipeline (Cont.d)

		142.34						
116+50			1.6	140.7				
116+65			4.5	137.8				
116+75			2.1	135.2				
116+89			10.9	131.4				
P	0.52	129.61	13.25	129.09				
117+00			4.1	125.5				
117+06 80 E.C.			8.7	120.9				
117+11			10.9	118.7				
P	0.85	117.50	12.96	116.65				
117+25			3.1	114.4				
117+40			5.8	111.7				
117+50			7.1	110.4				
117+64			9.0	108.5				
118+00			10.5	107.0				
TBM.	8.64	116.80	9.34	108.16	on "T" discharge of B.O.			
118+16			9.3	107.5				
118+20			8.7	108.1				
118+25			10.8	106.0				
118+39			12.2	104.6				

					139.6 ~~138.0~~		142.1 ~~140.5~~	
					2.7 / 10	C	2.2 / 10	
					130.2 ~~119.7~~		129.7 ~~118.8~~	
					12.1 / 10	C	12.6 / 10	
					127.6 ~~123.5~~		125.0 ~~120.9~~	
					3.0 / 10	C	4.6 / 10	
					115.0 ~~111.9~~		114.5 ~~111.4~~	
					2.5 / 10	C	3.0 / 10	
					110.4 ~~103.3~~		110.4 ~~103.3~~	
					2.1 / 10	C	2.1 / 10	
					107.3 ~~96.8~~		107.6 ~~97.1~~	
					10.2 / 10	C	9.9 / 10	
					101.53 ~~90.03~~			
					12.27 / 15.4	C	# 72" RCP. Cross Drain.	

2nd Murray Pipeline (Cont.d)

		116.80			
118+44			12.0	104.8	
118+50			10.1	106.7	
118+62			2.6	114.2	
+74			1.3	115.5	
+75			2.0	114.8	
P	4.92	120.91	0.81	115.99	
119+00			3.8	117.1	
119+18			1.8	119.1	
119+20			1.1	119.8	
119+30			0.9	120.0	
119+33			0.6	120.3	
119+50					
CK BM.	1.82	113.69	9.04	111.87 = 112.13 off 0.26	
CK B.M.			5.43	108.26 = 108.53 off 0.27	
119+50			5.9	107.8	
119+67.5			4.50	109.2	
119+72			5.4	108.3	
119+88			4.7	109.0	
119+91			5.2	108.5	

Shldr of road.

Constructed to Subgrade

Shldr of road.

NW. Cor Val. Cham. Chis X — 9' RT 120+15.5

NE Cor Val. Chamb. Chis X — 17' LT. 120+15.5

These appear to be Orig. Const BM's by Wat. Dept.

Top gas Val. Cham.

106.9	107.0	
9.9	9.8	
116.7	117.5	
2.2	3.2	
108.5	107.7	
5.2	6.0	

2nd Murray Pipeline (Cont.d.)

113.69

120+00		5.3	108.4
120+23		5.2	108.5
Top. Val. Chamb.	2° RT 119+96±	1.85	111.84
Top Val. Chamb.	9° RT 120+15±	1.82	111.87
Top Val. Chamb.	24' RT 120+20±	1.79	111.90
Top Val Chamb	23' RT 120+15±	1.83	111.86
Top 48" (36") El Capitan	25' RT 120+23±	5.66	108.03
Top Val Chamb	13' LT 120+18±	5.59	108.10
" " "	13' LT 120+31±	5.70	~~108.10~~ 107.99
Top 48" (36") El Capitan	4' LT 120+22±	8.08	105.61
Top Val Cham	18' LT 120+15±	5.46	108.23
Top Val Cham	24' LT 120+06	5.45	108.24
Top 30" (36") pipe	24' LT 120+04	9.15	104.54
Top 30" (36") pipe (3.36 Cor)	4' RT 120+02	6.51	107.18
Top 30" (36") pipe	6' RT 120+07	10.23	103.86
Top 48" pipe	15± RT 120+11	5.85	107.84
BM (Brass Bolt SE Cor Val Cham) 24' RT 120+12±		1.70	111.99 =112.15 off 0.16
BM. Chis X on Val Chamber 125' LT 120+30		8.86	104.83 ~~=104.99 off 0.16~~ 104.99 off 0.16

107.7 ~~108.11~~ 6.0/10 ~~107.92~~ 5.3.4/5 108.4

107.9 ~~107.94~~ 5.8/10 c c

108.8 ~~108.75~~ 4.9/3 ~~107.97~~ 4.8/10 108.9

BM #24 painted yellow
BM #25 painted incorrectly

} These are City Engr. BM.s (Bench Book) #8

Proposed 2nd Murray Pipeline
& Profile, Alternate Alignment
0+00 to 16+48.44

11/5/52
Beatty
Alexander

BM.		5.43	469.42	463.99
ck BM.			12.34	457.08
0+00			1.3	468.1
0+10			1.5	467.9
0+10.80	Top 6" Steel (Wrapped) Sludge Drain Line		0.81	468.6
0+12			1.7	467.7
0+37			5.6	463.8
0+42			8.1	461.3
0+50			8.3	461.1
0+55			8.6	460.8
0+58			11.2	458.2
PI		0.20	456.50	13.12 456.30
0+86			6.8	449.7
1+00			12.4	444.1
PI		0.07	443.58	12.99 443.51
1+18			6.6	437.0
1+22			9.6	434.0
PI		0.10	430.93	12.75 430.83
1+50			9.3	421.6

(See pg. 15) Top of Boulder 40' LT 9+42 Trojan Ave PIPELINE

Spike in pole ± A-72599 (pg. 15)

{ End Shattered Rock & Boulders
{ Begin Virgin ground with some rock out-Croppings

2nd Murray Pipeline
Profile Alternate Alignment
(Cont.)

		430.93		
PI	0.23	418.29	13.37	417.56
1+65			2.3	416.0
1+71			6.0	412.3
1+81	Rock Outcrop		10.9	407.4
1+84	"	"	13.0	405.3
PI	0.51	405.64	13.16	405.13
2+00			10.8	394.8
PI	0.52	393.16	13.00	392.64
2+05			0.5	392.7
2+23			7.6	385.6
2+30			11.8	381.4
PI	3.58	384.22	12.52	380.64
2+34			7.6	376.6
2+40			10.4	373.8
2+50			11.2	373.0
2+56			11.6	372.6
2+57	Bed of Creek		12.2	372.0
2+60			12.3	371.9
2+65			10.6	373.6

2nd Murray Pipeline Profile Alternate Alignment (Cont.d.)

			384.22		
Tr	2+68	Solid Rock outcrop		8.0	376.2
1	2+78	Solid "	"	4.6	379.6
1	Tr	13.02	396.99	0.25	383.97
1	2+97	Solid Rock outcrop		2.4	394.6
1	3+00	" "	"	1.6	395.4
Tr	3+11			0.6	396.4
2	Tr	12.34	409.33	0.00	396.99
Tr	3+14			11.4	399.9
2	3+50			1.2	408.1
2	Tr	12.63	422.96 (422)	0.00	409.33
2	3+65			9.8	412.2
Tr	3+68			8.5	413.5
2	3+75			5.5	416.5
2	3+81			5.2	416.8
2	3+81.7			4.88	417.1
2	3+82			5.2	416.8
2	3+88			5.0	417.0
2	3+92			3.0	419.0
2	3+95			2.1	419.9

11/5/52

50

2T Wy 374.2 (~~376.7~~) 10.0/10 ℄ 379.9 (~~379.7~~) 4.3/10 ℄ 373.7 (~~376.7~~) 10.5/10 (~~374.5~~) 379.1 5.1/10 2T Ey

{ Begin Shattered rock

Top 6" C.I. Return water line from SLUDGE BASINS

2nd Murray Pipeline
Profile Alternate Alignmt. (Cont.d.)

		421.96		
4+00			1.2	420.8
TP	13.08	434.92	0.22	421.78
4+05			11.4	423.44
4+19			12.4	422.04
4+21			11.8	423.20
4+26			9.5	425.43
4+40			8.0	426.88
4+46			5.2	429.76
4+48	}	Trail Road	6.0	428.98
4+50	}	Trail Road	6.3	428.65
4+58	}	Trail Road	6.5	428.43
4+63			5.8	429.10
4+69			4.2	430.66
4+76			3.5	431.43
4+80			1.2	433.76
4+87			0.2	434.76
TP	5.01	439.69	0.14	434.78
5+00			3.6	436.21
5+06	Rock outcrop		2.1	437.76

2nd MURRAY Pipeline
Profile Alternate Align'mt. (Cont'd.)

		439.79			
5+09	POT		29	436.98	
5+11			2.1	437.76	
5+14			1.8	~~438.0~~ 437.9	
5+15			2.2	437.65	
5+21			3.3	436.51	
5+31			5.3	434.5A	
5+32			6.3	433.5A	
5+44			9.4	430.43	{ End Shattered rock
5+50			10.2	429.65	
PI	1.13	428.~~25~~ 13	12.69	427.~~12~~ 00	
6+00			4.6	423.75	
6+50			9.4	419.97	
6+95			11.7	416.64	
PI	1.28	418.~~12~~ 00	11.41	416.~~84~~ 72	
7+00			2.7	415.43	
7+10			3.2	414.98	
7+14			2.8	415.32	
7+18			1.4	416.96	
7+21			0.9	417.~~2~~ 1	

2nd Murray Pipeline
Profile Alternate Alignment
(Cont.d)

			418.00 12	
7+45	Bl.	3.44	414.8 56	
7+50		4.3	413.6 7	
7+75		8.7	409.1 3	
8+00		12.0	406.1 0	
CK TBM		11.97	406.15 = 406.12	(See pg. 19) Top 6" discharge Bo
8+07		13.7	404.1 3	
Inlet 30" Culvert 2' LT 8+04		13.8	404.8 2	
Inlet 30" Culvert 2' LT 8+07		13.5	404.6 5	
8+25		9.8	408.8 2	
8+50		5.1	413.0 412.9	
PI	12.70	430.66 54	0.16 417.96 84	
8+75		11.6	419.7 2	
9+00		6.6	424.1 423.9	
9+20		2.9	429.8 6	
9+25		1.4	429.7 2	
PI	12.95	443.35 23	0.26 430.20 28	
9+50		9.2	434.2 0	
10+00		2.5	440.9 7	
PI	12.82	456.15 03	0.02 443.35 21	

2nd Murray Pipeline

Profile Alternate Alignment (Cont'd)

		456.03		
10+25			10.0	446.20
10+50			6.3	449.97
11+00			0.6	455.6A
PI	9.36	465.23	0.16	455.99 87
11+19°7 POT			8.8	456.4 4
11+50			6.9	458.8 3
12+00			5.2	460.2 0
12+50			4.5	460.9 7
12+83°5 BC			4.1	461.3 1
13+00			3.7	461.7 5
13+50			2.4	~~463.0~~ 462.8
14+00			1.2	464.2 0
PI	3.97	468.77	0.43	464.80
14+50			4.1	464.8 7
TBM	0.46	468.07	1.16	467.61
15+00			3.4	464.8 7
15+50			4.1	464.1 0
16+00			6.0	462.2 1
16+50			8.5	459.7 6

5. rim MH. Conc Chamb 4"DIA

PROFILE 2nd MURRAY PIPELINE ALIGNMT. ALTERNATE (Cont'd)

		468.07		
17+00		10.9	457.2	
CK TBM		10.66	457.~~38~~ 41 = 457.52	pg. 21. ½" ø HUB 17+03.03 = 16+48.44
			6/3/53	
BM.	2.38	115.01 ~~115.11~~	112.03 ~~112.13~~	B.M. ON VALVE CHAMBER. (SEE PG. 46 & 47)
STA. 120+02 TOP ALVARADO 36"		8.13	106.88 ~~106.98~~	
STA. 120+06 TOP BRANCH ALVARADO 36"		10.53	104.48 ~~104.58~~	
STA. 117+67.75 TOP GAS MAIN.		9.25	105.76 ~~105.86~~	
" " TOP GAS MAIN 32 LT.		10.84	104.17 ~~104.27~~	
STA. 120+23.07 INTER. EL CAPITAN		8.10	106.91 ~~107.01~~	
" " TOP EL CAPITAN 12 LT.		8.69	106.32 ~~106.42~~	
CK BM # 24		2.86	112.15 ~~112.25~~ = 112.15	B.M. BRASS BOLT IN VAULT (Pg. 47)
CK BM		6.58	108.43 ~~108.53~~ = 108.53	CHISEL A IN VAULT. (Pg. 46)
CK BM # 25		10.02	104.99 ~~105.09~~ = 104.99	CHISEL A IN VAULT (Pg. 47)
STA 119+85 156 RT TOP 48" MURRAY		7.35	107.66	
CK BM # 26		11.21	103.80 = 103.76	VAL CHAM. BP. STA 1098 El Capitan P.C.

112.03
.65
112.68 H.I.
5.02
107.66
8.88
103.80

2nd Murray Pipeline

Additional Ties

April 4 1955

BEATTY
WILLIAMS
VARONFAKIS

FD Md
No pipe

FD Md
STONE SEC COR
(LOT 6)

80'± STADIA

POT
56+03.63

POT
53+43.63

℄ proposed pipeline

PI
56+12"

90°

260'

FD 2" I.P.
(See pg. 5.)

90°

N 89° 43' E 1322.02

90°

FD Md
of STONE
1/2 COR 14-15

FD CONC. MON
NoG. 4
1940

6635

CITY LINE

FD 3/4" I.P
LS 2334

LINE 2

BR. PLATE IN Boulder
& STA. PIPE
LA MESA N-11
SD. CO. Surveyors

FD 3/2" I.P
RE 8195

FD 3/2" I.P
& NAIL

619.22

Δ 1°46'20" LT.

FD
1" I.P (No Tag)

432.90

Δ = 6°03'30" RT

FD 2" I.P
CONC & TACK
(See pg. 4)

450.00

℄ proposed pipeline

POT 43+33.54

62.35

2" I.P
obliterated
By graders.
(See pg. 4)

FD 2" I.P.

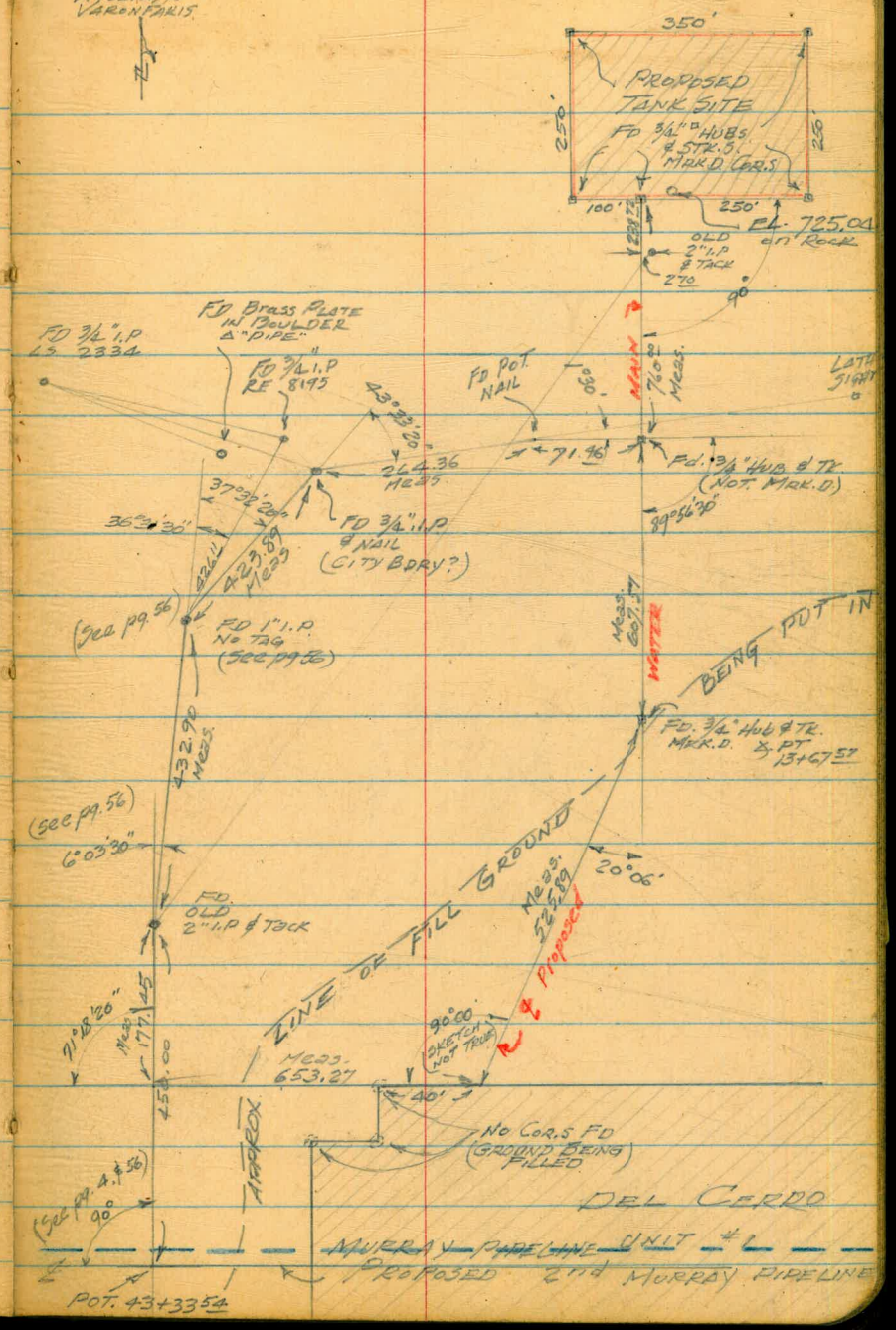
25.78

2nd Murray Pipeline

Proposed Tank Site & Water Main For Del Cerro Unit #1

April 8 1955

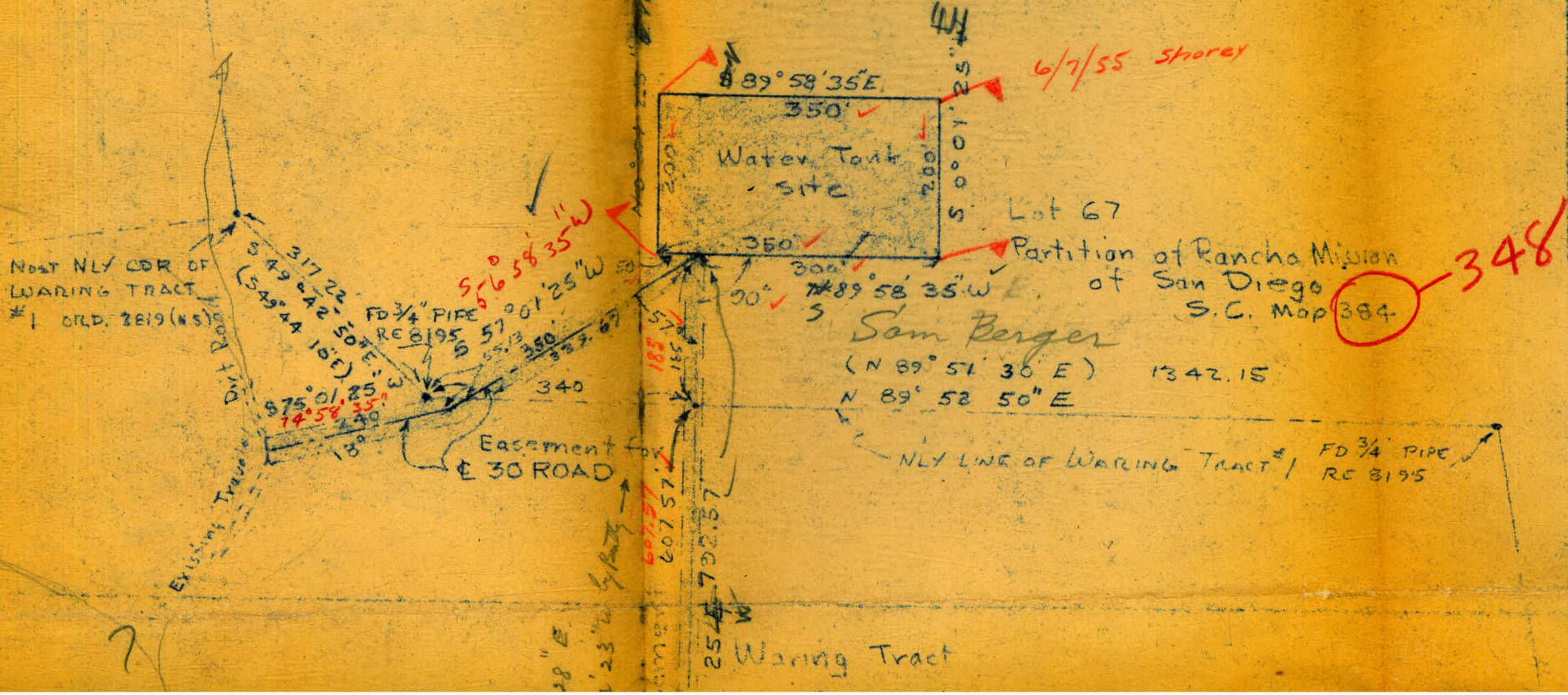
Beatty Williams Varon Fiklis

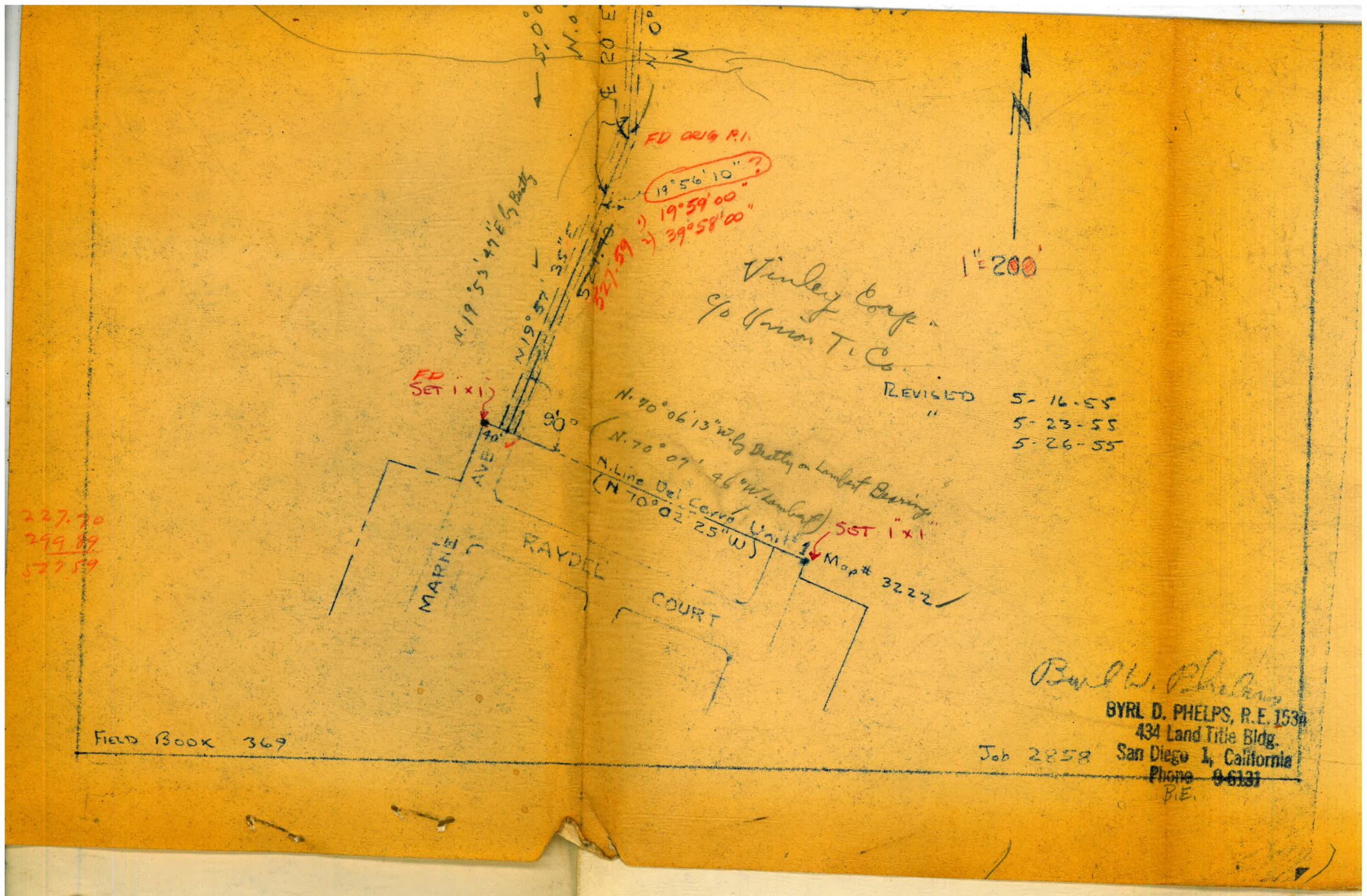


EASEMENTS
FOR Reservoir
WATER LINE, ~~TANK~~ SITE
AN CONSTRUCTION ROAD
POR OF LOT 67 RANCHO
MISSION & WARING TRACT

Rogers Surveyor for Phelps office

Stamper has been checking stakes for City Eg.




N.19°53'47"E. Bas.
N.19°57'35"E.
527.59
FD ORIG R.I.
19°56'10" ?
19°59'00"
39°58'00"
FD SET 1"x1"
90°
40'
AVE.
N.70°06'13"W. by Bearing on Lambert Bearing
N.70°07'46"W. Lambert
N. Line Del Cerro Unit 1
(N 70°02'25"W)
SET 1"x1"
Map # 3222
MARNEL
RAYDEL
COURT
N
1"=200'
Vinley Corp.
C/o Union T. Co.
REVISED 5-16-55
" 5-23-55
5-26-55
227.70
299.89
527.59
Field Book 369
Job 2858
BYRL D. PHELPS, R.E. 1534
434 Land Title Bldg.
San Diego 1, California
Phone ~~B-6131~~
B.E.

90'@10°00'

.9848 × 90 = 88.6320°

.9843 × 90 = 88.5870

12 + 83.05
10 + 88.59
1 94.46 BC

.0152 × 90 = 1.368°

15+04.32 Joint 14 78 RT

1.1346
1515 | 1718.87
1515
2038
1515
5237
4545
6920
6060
8600
7575
1025.0

1.1346 × 50 = 56.730
56.73 45"

15+04.50
12+83.05
2 21 45

1.1346 × 17 = 19.2882
79422
1346

1.1346 × 45 = 51057.0
56738
45384

1.1346 × 43 = 48787.8
34038
45384

13+00 0°19'-18"
13+50 1°16'-03"
14+00 2°12'-48"
14+50 3°09'-33"
15+00 4°06'-18"
15+04.5 4°11'-25"
15+04.32 4°11'15"
8548

Alvarado Pumping Plant
Elevations

0+00 = 120			
	0.83	112.98	112.15 Bk #
			Top of Pipe
0+15.5	23' Lt	8.19	104.79
			Bottom of Chamber
0+18	10' Lt	12.45	100.53
			Top of Pipe
0+25.5	on ℄	7.20	105.78
			Top of Pipe
0+29	6° Lt	8.09	104.89
	22.5 Lt		Top of Pipe
0+36		9.25	103.73
			Top of Pipe
0+45	on ℄	8.14	104.84
			Top of Pipe
0+50.5	6° Lt	9.05	103.93
			Bottom of Chamber
0+58.42	18' Lt	14.18	98.50
		0.83	112.15 = 112.15

Red. 6-17-55 HG

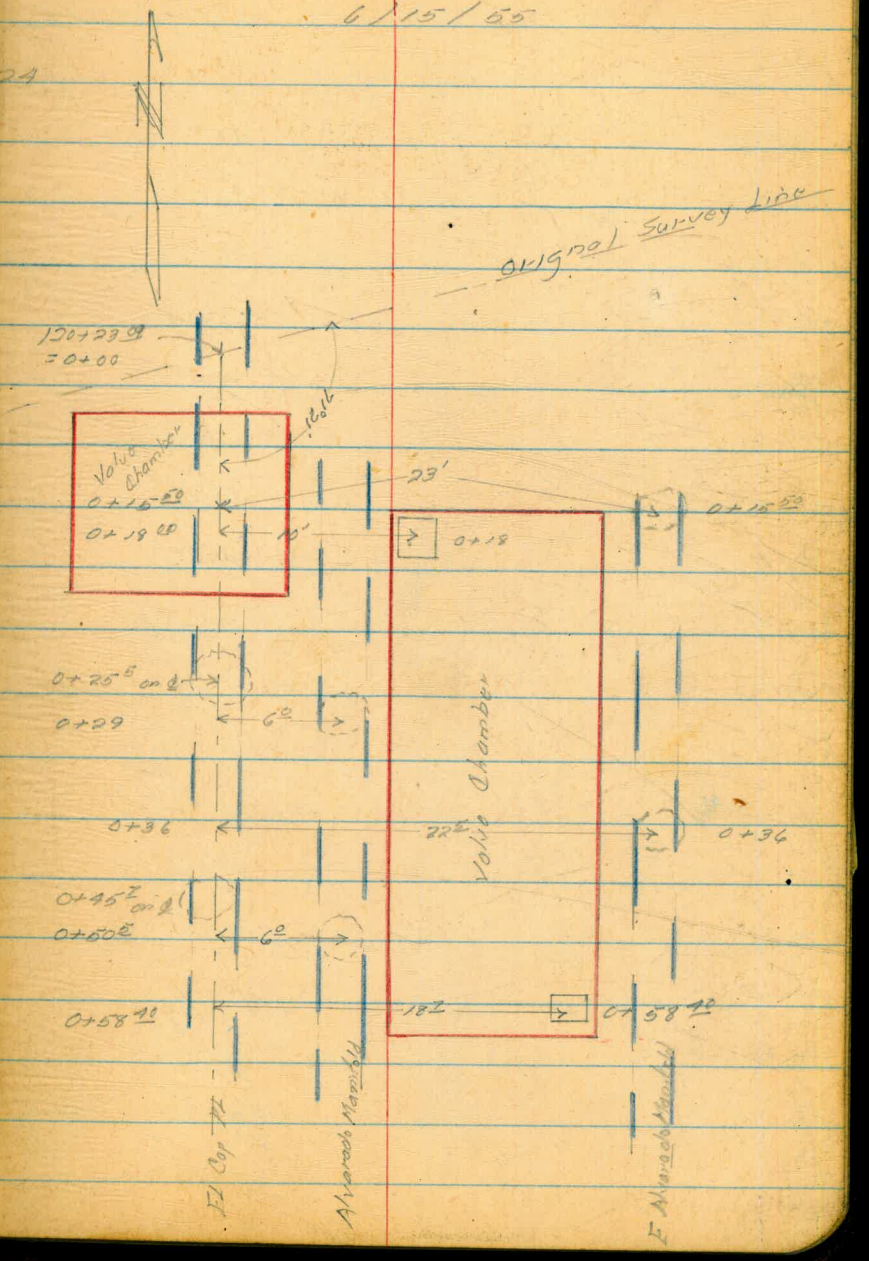
West
Martell
Varonfakis
Kellhofer

1.67
9.86
14.18

59

6/15/55

24



ADDITIONAL X-SECTIONS
46+00 TO 54+00
2ND MURRAY PIPELINE

7/20/55
SHIREY
KEMP
KELLHOFFER LT
HOLOHAN

"HOT"

RT

B.M.	7.80	476.27		468.47	B.P. IN M.H. 15' RT. 46+30 (A.V.A.)
46+00	TOP ROCK ON ℄		2.2	474.1	11.5/50 3.6/23 6.4/16 6.3/3 6.3 × GRD.
46+50	" " " "		4.1	472.12	10.6/50 3.4/21 8.7/18 6.7/15 5.7/4 5.7 × GRD.
47+00			7.6	468.7	10.0/50 9.3/21 6.8/33 8.5/27 ×
47+50			7.7	468.6	10.0/50 10.0/46 7.9/37 9.1/26 ×
48+00	TOP ROCK ON ℄		5.4	470.9	9.7/50 9.0/31 6.0/20 6.8/18 ×
48+50	" " "		2.8	473.5	9.1/50 7.8/27 4.1/24 3.9/4 3.5 × GRD
TP	6.13	473.47	8.93	467.34	
49+00			5.3	468.2	7.2/50 5.9/26 5.9/13 4.4/6 ×
49+50			7.2	466.3	8.8/50 7.8/26 ×
50+00			7.7	465.8	9.8/50 8.9/25 ×
50+50			7.9	465.6	10.6/50 9.4/25 ×
51+00			8.7	464.8	10.7/50 10.0/25 ×
51+50			8.6	464.9	11.4/50 10.3/25 9.6/7 ×
52+00			5.0	468.5	11.0/50 9.8/20 5.7/14 ×
52+50			6.0	467.5	10.0/50 9.4/30 8.6/18 6.1/14 ×
53+00			9.1	464.4	11.6/50 10.3/25 10.4/4 ×
53+50			7.8	465.7	11.5/50 11.2/25 11.0/19 9.4/10 7.3/7 ×
TP	6.74	472.06	8.15	465.32	
54+00			7.7	464.4	10.5/50 9.7/22 7.1/16 7.0/6
CK. B.M.			3.14	468.92	=468.87 CONC. MON. 51+93 4' LT.

ADDITIONAL X-SECTIONS
76+50 TO 78+50
2nd MURRAY PIPELINE

TBM	13.28	378.15		364.87
76+50			4.3	373.9
76+75			6.9	371.3
77+00			8.9	369.3
77+25			9.2	369.0
77+50			8.0	370.2
TP	5.28	378.33	5.10	373.05
77+75			5.1	373.2
78+00			2.7	375.6
78+25			2.0	376.3
TP	2.83	380.94	0.22	378.11
78+50			2.9	378.0 = 378.1 PG.36

7/20/55

SHOREY
KEMP
KELLHOFER LT
HOLOHAN

"HOT" 61

RT

TOP 6" B.O. Discharge

19' RT. 77+50 (Pg. 35)

5.1	8.8	8.8	8.3	4.7	X	+0.5	+1.6	+4.7	+5.6		
50	41	29	21	12		17	28	35	50		
1.2	3.5	4.8	9.3	9.1	11.7	X	3.6	2.2	+2.0	+2.6	
50	38	33	23	16	10		16	27	37	50	
+0.6		5.4	7.8		X	8.8	6.7	5.8	2.0	0.4	
50		23	14			10	22	27	37	50	
+5.3	1.9	4.7	8.0	8.4	X	11.4	10.4	8.3	4.9	4.4	3.7
50	30	21	16	4		10	16	29	37	47	50
+6.0	+0.3	5.4	6.0		X	12.8	13.6	13.8	12.5	9.8	7.7
50	27	16	5			10	15	23	30	36	50
+8.4	+3.7	+0.3	3.4	3.8	X	14.4	14.1	12.2	10.6		
50	30	20	16	4		27	34	40	50		
+11.7	+4.0	+2.2	1.8		X	13.3	16.2	15.2			
50	25	19	13			33	37	50			
+11.0	+3.2	0.3			X	11.8	16.0	16.2			
50	18	13				33	41	50			
+10.3	+2.4	1.5			X	13.6	18.0	18.5			
50	18	11				35	40	50			

ADDITIONAL X-SECTIONS
115+50 TO 117+50
25' STA.

	11.27	163.77		151.80
115+51.82 B.C.			2.7	161.1
115+75			7.6	156.2
TP	0.86	152.57	12.06	151.71
116+00			0.8	151.8
116+25			5.6	147.0
116+50			11.8	140.8
TP	2.62	142.51	12.68	139.89
116+75			7.2	135.3
TP	0.45	130.90	12.06	130.45
117+00			4.6	126.3
117+06.80 E.C.			9.9	121.0
TP	0.25	117.80	13.35	117.53
117+25			3.3	114.5
117+50			7.3	110.5
CK. TBM			2.44	108.36 = 108.16

7/21/55
SHOREY
KEMP
KELLHOFER LT
HOLOHAN

62

RT

STA. 116+00 (PG. 44)

16.3		15.5		1.7						2.7		4.9								
50		42		14						45		50								
20.7	20.1	19.0	12.5	8.2	7.2					6.1		7.4		12.2						
50	48	39	27	17	13					26		42		50						
14.2	13.6	12.1	8.6	4.7	1.7					0.1	1.1	2.5	2.5	5.4						
50	46	36	28	20	13					1	28	36	40	50						
12.3	15.8	15.5	7.6	7.5	6.4					5.2	4.6	5.8	5.3	17.0						
50	46	36	20	13	5					5	19	27	32	50						
17.2	17.1	14.0	14.2	12.5						11.0	11.5	11.3	23.3	27.0						
50	37	31	18	14						9	17	25	45	50						
11.0	10.1	8.8								5.9	13.7	22.1								
50	48	22								11	30	50								
7.6	7.0	5.9	2.8	4.3						4.7	8.7	12.6								
50	37	35	13	5						17	30	50								
9.7	9.2	7.5	5.9							10.2		15.2								
50	44	41	23							19		50								
0.3	+0.6	1.6								5.3										
50	41	20								50										
4.2	6.0	6.5								7.5										
50	44	34								50										

TOP B.O. TEE (PG. 45)

PIPE JOINTS & ELEV. ON 1ST MURRAY PIPELINE

B.M.	2.14	456.14		454.00
TOP OF PIPE ELEV.			11.99	444.15
PIPE JOINT IS BETWEEN THESE STA.			11.97	444.17
TBM			9.49	446.65
CK. B.M.			2.14	454.00 = 454.00
B.M.	13.09	470.17		457.08
			9.85	460.32
CK. BM			13.09	457.08 = 457.08
BM	3.09	457.48 ~~457.98~~		454.39 ~~454.89~~
	1.83	450.70 ~~451.20~~	8.61	448.87 ~~449.37~~
TOP OF PIPE ELEV.			11.43	439.27 ~~439.77~~
TP	1.28	446.28 ~~446.78~~	5.70	445.00 ~~445.50~~
TOP OF PIPE ELEV.			10.18	436.10 ~~436.60~~
TP	9.25	454.14 ~~454.64~~	1.39	444.89 ~~445.39~~
TP	4.77	~~458.20~~ 457.70	1.21	~~453.43~~ 452.93 454.40
CK. B.M.			3.30	~~454.90~~ = ~~454.89~~ 454.39

SHOREY
KEMP
KELLHOFER
HOLOHAN

63

L & T IN M.H. AT 24+50.15 P.O.T. 15' RT.

26+99.50 2nd MURRAY = 38+21.40 1ST MURRAY

27+00.20 " " = 38+22.10 " "

TBM ON 3/4" HUB 27+03.23 2nd MURRAY PIPELINE

SPIKE IN P.P. # A-72599 13.8 LT. E.C. 9+72.2 TROJAN P.L. (PG. 15)

TOP LA MESA, LEMON GROVE 18" RCCP AT 0+39.5

L & T IN A.V. M.H. 35+68 15' RT

37+51.68 2nd MURRAY = 48+73.58 1ST MURRAY

41+28.26 2nd MURRAY = 52+50.16 1ST MURRAY

NOTE: THIS 13 ON CURVE - CHECK STA.

52+53.25 Calc. by Beahy 7/29/55

7/21/55

SHOREY
KEMP
KELLHOFER
HOLOHAN

Ω PROFILE 2nd MURRAY P/L
118+00 TO 119+60

TBM	3.02	111.18		108.16
118+00			3.9	107.3
118+41			5.2	106.0
118+45			4.7	106.5
118+48.9			4.2	107.0
TP	1.70	119.09	3.79	107.39
118+60			4.6	114.5
118+63.20			4.22	114.87
118+63.20			4.81	114.28
118+87			2.6	116.5
119+00			1.3	117.8
TP	6.24	124.93	0.40	118.69
119+04	35' RT. WAT. M.H.			
119+13	63' LT. SEW. M.H.			
119+29			4.06	120.87
119+29			3.41	121.52
119+32			4.3	120.6
TP	4.77	117.26	12.46	112.47
119+50			9.0	108.3
119+54			10.1	107.2
119+60			8.9	108.4
CK. B.M.			5.28	111.98 = 112.15

Top Discharge Tee @ B.O. (Pg. 45)

8' LT. TO WING WALL OF DRAIN

LT 10.46 6.6 — Conc. Apron to Drain + 6.5 — RT

TOE OF SLOPE – 3.5 LT. TO WING WALL OF DRAIN

TOP OF SLOPE

TOP OF CURB

GUTTER

G.V. 20' RT.

LT

RT

6.24 — 18.6 — 35 WAT. M.H. — 35 Bottom

SEW. F.L. 11.8 / 63 — 7.06 — 63 SEW. M.H.

GUTTER

TOP OF CURB

TOP OF SLOPE

BM #24 PAINTED YELLOW — (SEE PG. 47)

PIPE JOINTS & ELEV. ON 1ST MURRAY P.L.

BM	1.07	455.46	454.39	
TP	0.10	445.56	10.00 445.46	
TOP OF PIPE ELEV.		7.88	437.58	
TP	11.06	456.52	0.10 445.46	
CK. B.M.		2.13	454.39 = 454.39	
	7.90	129.42	121.52	
TP	12.97	141.60	0.79 128.63	
TOP OF 16" GAS		6.08	135.52	
CK TP		1.80	139.80 = 139.82	

L & T IN A.V.A. M.H. 35+68 15' RT.

TOP OF 1ST MURRAY P.L. AT 33+83.53 2ND MURRAY = 45+05.43 1ST MURRAY

TOP OF CURB AT 119+29 (PG. 64)

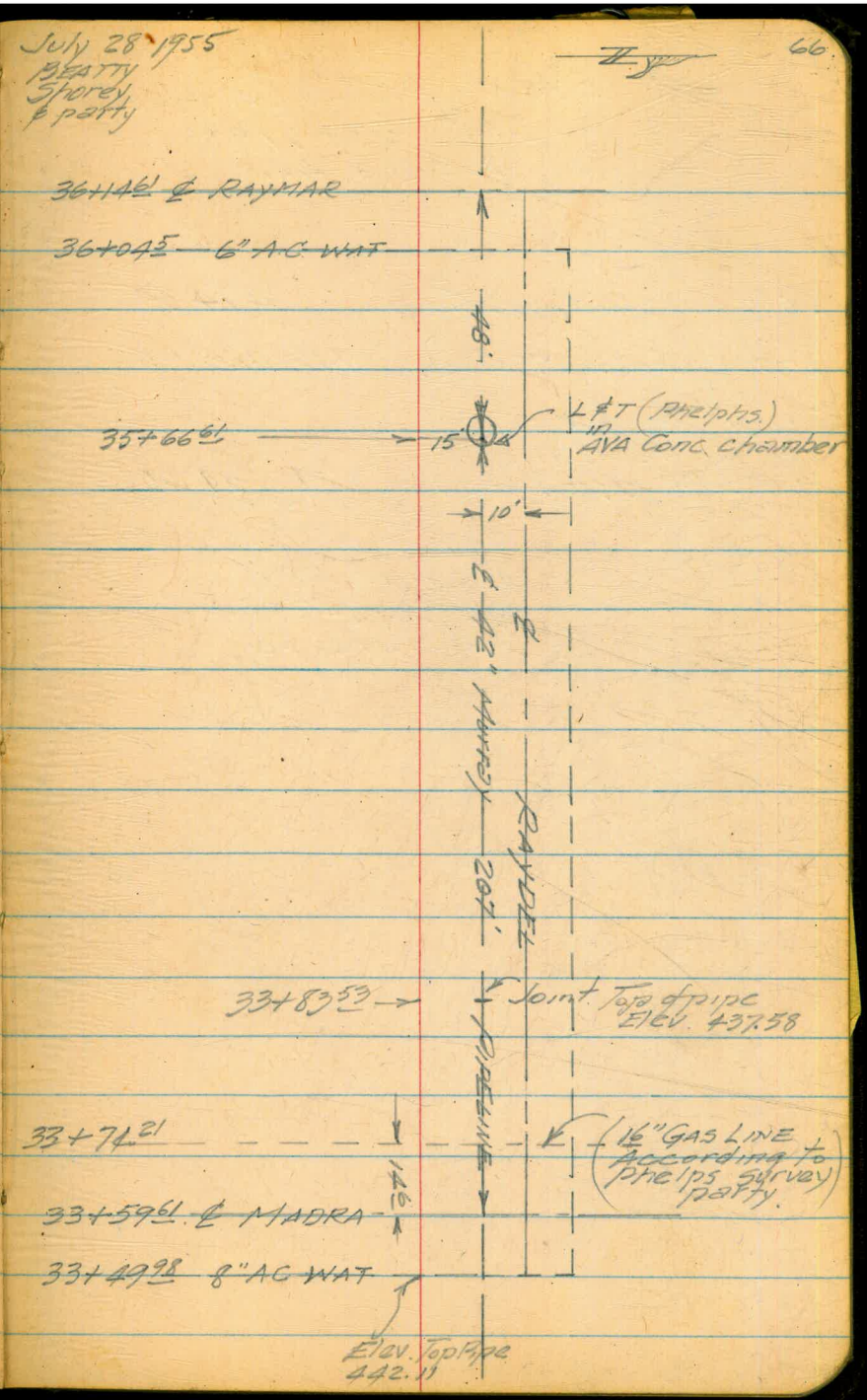
TOP 16" GAS AT 116+62. 2ND MURRAY P.L. STA. (PAGE 62)

MURRAY 2nd PIPELINE
Additional Ties at DEL CERRO SUB-DIV.

BM	1.22	455.61	454.39
Nail		11.53	444.08
		6.50	
Top 1ST Murray @ joint Sta. 33+89 53		18.03	437.58
Top 8" A.C wat. Sta. 33+49 98		13.50	442.11

July 28 1955
Beatty
Storey
& party

66



2nd MURRAY P.L.
Elev. of GAS Co. Hub
@ STA. 33+71.99
(Madra Ave)

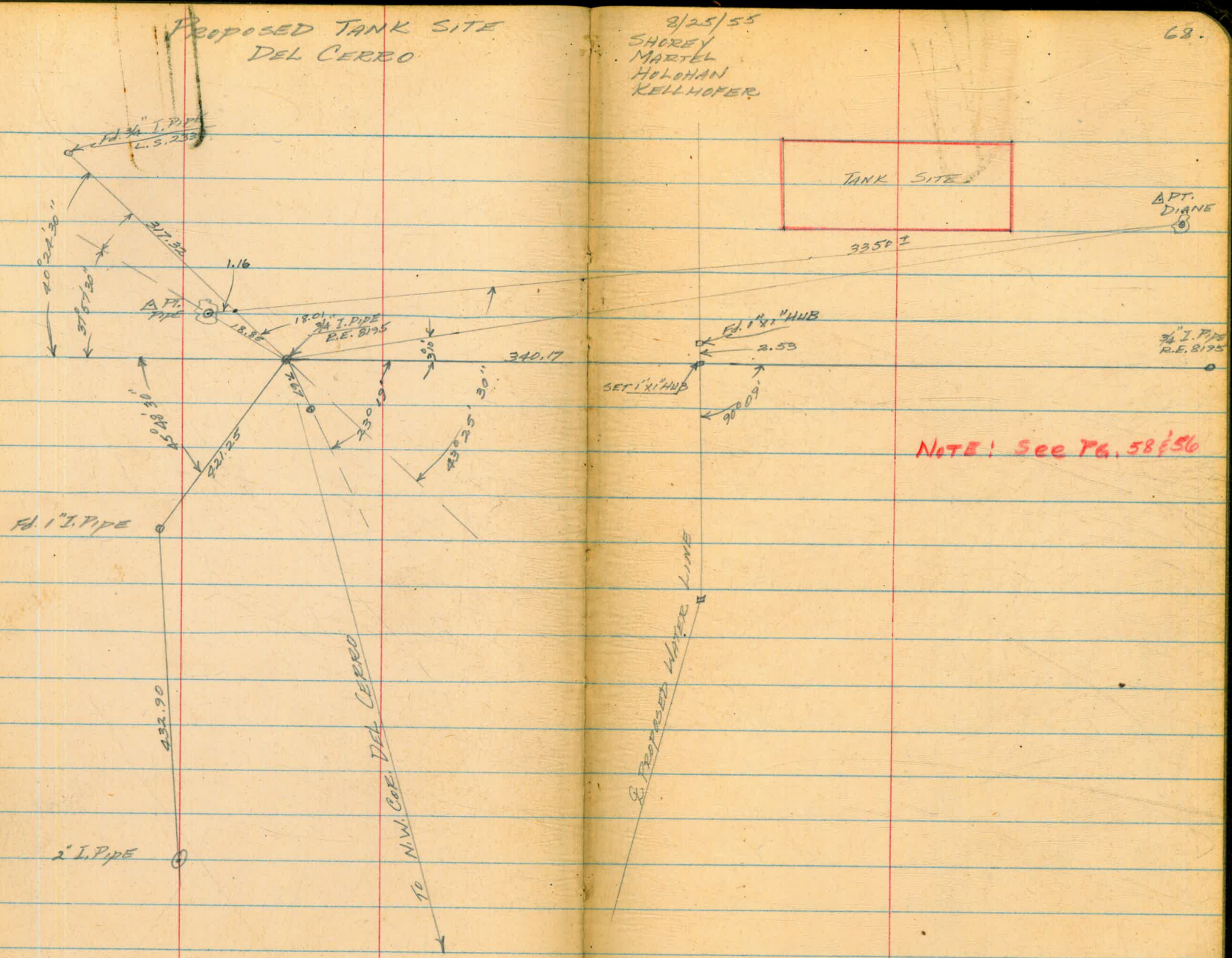
8/10/55 Shorey & party

67

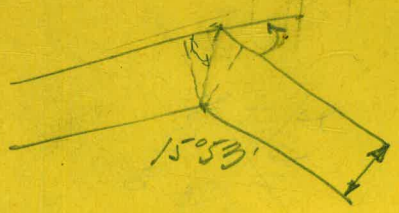
BM	0.70	455.09	454.39
Top of Hub Mrkd. C 11'-1" To Top of 16" GAS Line AT STA 33+74.5		11.15	443.94
		− 11.08	
Top of 16" Gas line at Sta. 33+74.5 & 2nd Murray PL			432.86

PROPOSED TANK SITE
DEL CERRO

8/25/55
SHOREY
MARTEL
HOLOHAN
KELLHOFER

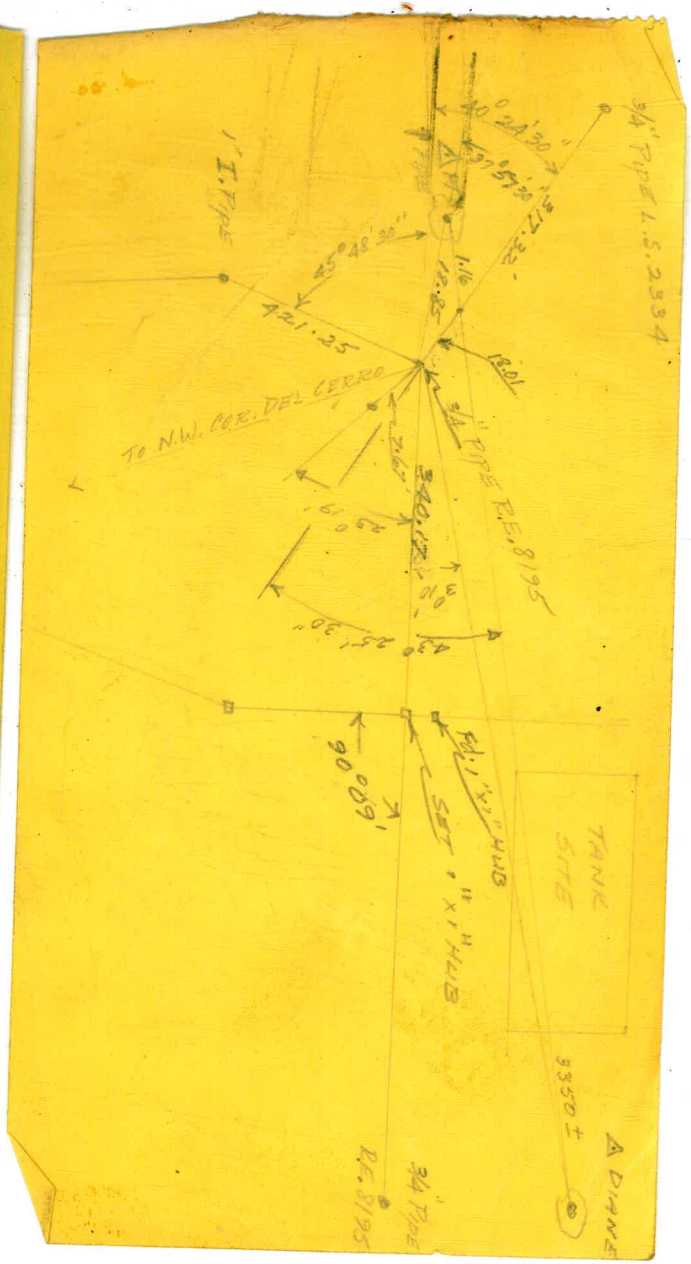


NOTE! See Pg. 58 & 56



97452
1.00970411
411
206
1.00972247
15
50486235
10097247
15.1458705

15°55'
164°05"
82°02'30"
7-57-30



PEOPLE - ADDITIONAL CROSS SECTIONS OF 2nd MURRAY PIPELINE

9/29/55
SHOREY
MARTEL
KEMP
HALOHAN

BM	3.54	457.54		454.00
26+00			4.2	453 3
26+50			3.8	453 7
27+00			4.3	453 2
27+50			6.0	451 5
27+75			7.5	450 0
28+00			11.2	446 3
TP	11.18	445.47	13.25	444.29
28+50			3.3	442 2
29+00			5.9	439 6
29+50			8.5	437 0
30+00			10.7	434 8
30+50			12.2	433 3
30+75			12.6	432 9
31+00			13.4	432 1
31+50			12.7	432 8
31+75			11.4	434 1
32+00			7.6	437 9
TP	11.27	456.76	0.68	444.79
CK. BM.			2.77	453.99 = 454.00

L.T. 24+50 35 15' RT.

Lt. Proposed Pipeline

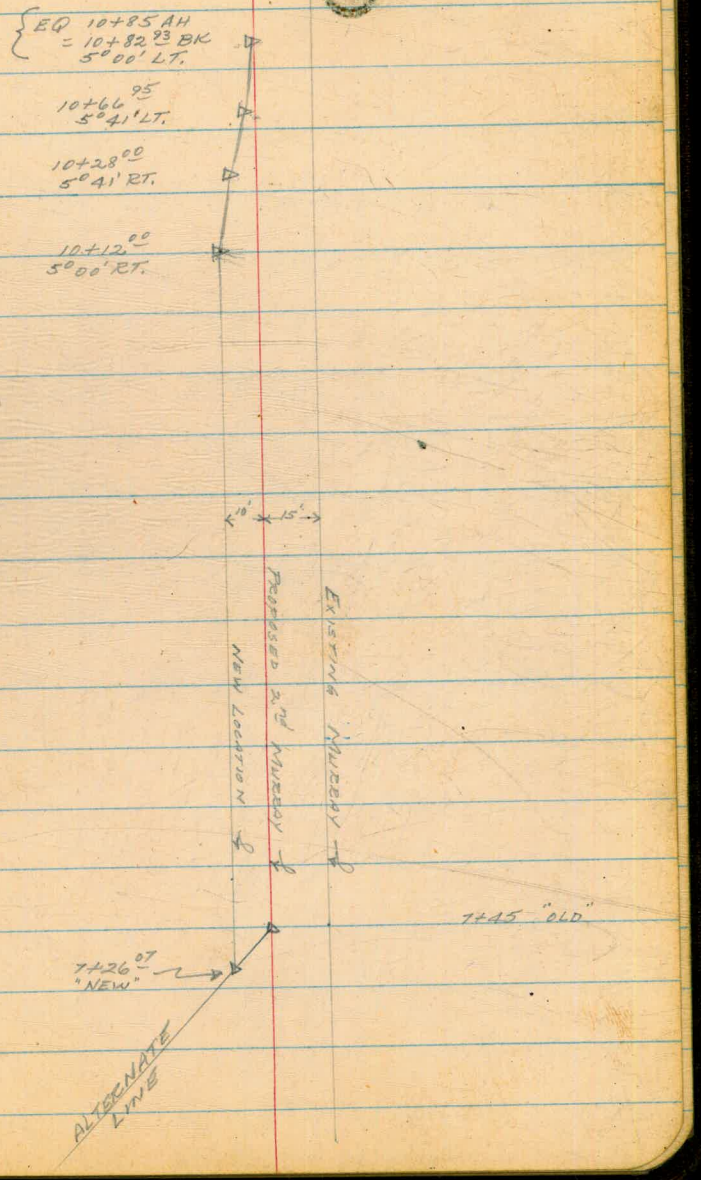
	421 1	421 1	422 2	426 3
	24.4	24.4	22.8	19.2
	75	66	50	25
	419 2	423 1	424 3	426 6
	26.0	22.4	21.2	19.0
	75	62	50	25
424 5	426 2	426 6	426 3	428 3	430 4
21.0	19.3	18.9	17.7	17.2	15.1
75	50	37	33	25	10
	429 3	430 7	432 2	432 6
	10.2	14.8	13.3	12.9
	75	50	25	10
		434 4	435.5	436 3
		11.1	10.0	8.2
		75	50	25

C C C C C

REVISED 2nd MURRAY P.L.
STA. 7+26.07 TO 10+85
℄ PROFILE & X-SECTION

NOTE: SEE PAGE 2

10/13/55
SHOREY
MARTEL
KEMP
HOLOHAN



2ND MURRAY P.L.

ADDITIONAL & PROFILE ON REALIGNMENT STA. 7+26.07 TO 10+85

TBM 2.43	416.99		414.56
7+26.07 △ PT.		0.09	416.20
7+50		4.2	412.8
8+00		10.5	406.5
8+50		3.5	413.5
TP ON ROCK 13.08	428.82	1.25	415.74
8+00		4.8	424.0
TP 13.15	441.59	0.38	428.44
9+50		8.2	433.4
10+00		0.9	440.7
TP 13.22	454.62	0.19	441.40
10+12 △ PT.		11.5	443.1
10+28 △ PT.		8.0	446.6
10+58		4.8	449.8
TP 9.22	463.54	0.30	454.32
10+66.95 △ PT.		8.9	453.6
10+85 AH 10+82.93 BK } △ PT.		4.9	458.16
		13.78	449.76 = 449.7

10/13/55
SHOREY
MARTELL
KEMP
HOLOHAN

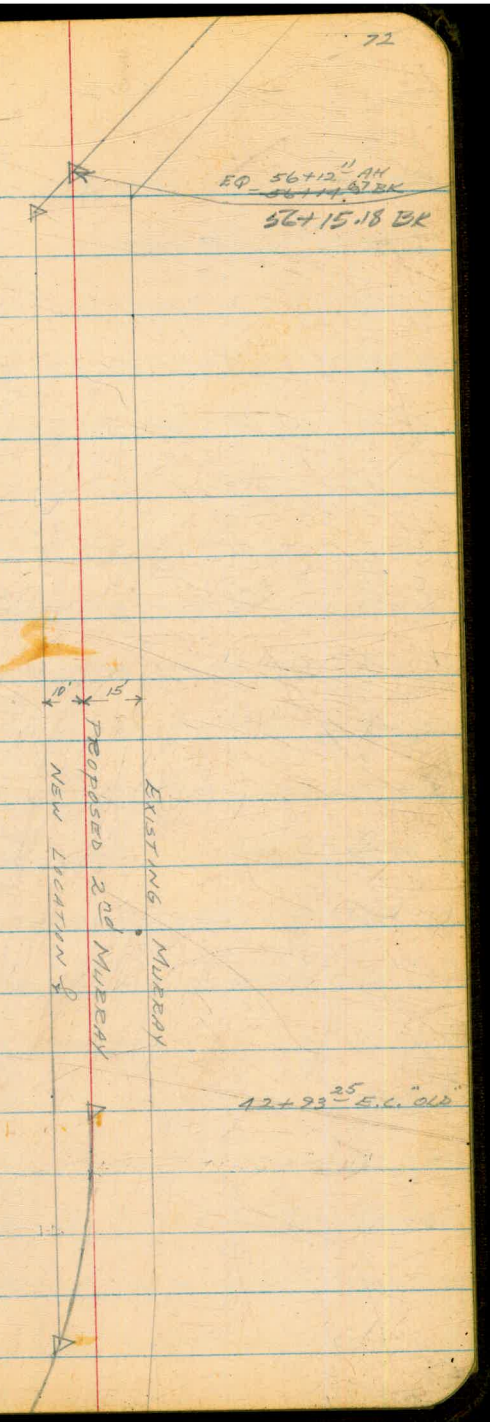
	LT	RT
△ PT. 7+45 ON ALTERNATE LINE - PG. 53		
7.4/25 4.9/15 4.6/10 0.9/4	X	0.1/10
11.7/25 7.6/10 6.7/6 4.9/4	X	3.6/10
17.1/25 13.6/15 18.2	X	10.5/6 11.6/10
6.2/25 4.5/17 4.0/10	X	3.5/10
4.9/25 4.7/12 5.5/10	X	4.4/10
9.2/25 8.4/10	X	7.3/10
1.1/25 1.1/10	X	0.4/10
12.0/25 12.1/10	X	11.3/10
7.8/25 8.7/18 TOE SLOPE 8.1/10	X	8.1/10
1.9/25 5.0/10 TOE SLOPE		4.6/10
6.2/25 8.8/10	X	10.5/10
4.4/25 4.3/10	X	4.7/10
10+58 ON ALTERNATE LINE PG. 54		

NOTE: STA'S. 10+66.95 & 10+82.93 ARE ON SUBD. FILL, AND ARE CHANGEABLE

REVISED 2ND MURRAY P.L.
STA. 41+20.90 TO 56+14.67
℄ PROFILE & X-SECTION

10/14/55
SHORBY
MARTELL
KEMP
HOLOHAN

NOTE: SEE PAGES 4 & 5



(CONT'D)

	5.18	446.18		441.00
41+20		90° E.C. & ΔPT.	9.9	436.3
41+40			5.8	440.4
41+50			5.3	440.9
TP	11.03	456.55	0.66	445.52
42+00			8.2	448.4
42+50			3.4	453.2
TP	10.19	466.40	0.34	456.21
CK. TP			10.24	456.16 = 456.16
43+00			9.2	457.2
43+30			5.8	460.6
43+50			5.1	461.3
44+00			3.4	463.0
44+50			1.8	464.6
44+67			1.4	465.0
TP	9.11	474.66	0.85	465.55
44+71			6.6	468.1
44+86			7.1	467.6
45+00			6.0	468.7
45+50			5.1	469.6

10/14/55
SHOREY
MARTELL
KEMP
HOLOHAN

ORIGINAL STA. 41+50

	LT			RT
	10.3/25	9.4/10	×	8.7/10
	8.3/25	5.3/10	×	5.0/10
	12.2/25	7.8/8	×	7.5/10
	7.1/25	4.7/10	×	2.6/10

PG. 27

14.3/25	11.5/14	×	8.4/10
6.8/25	5.6/10	×	4.8/10
3.9/25	3.7/12	×	3.0/8 2.4/10
2.8/25	2.3/12		1.7/10

TOE OF ROCK SPOIL

10.4/25	9.6/11	6.2/4	×	4.2/10
9.5/25	9.0/10	5.2/5	×	4.4/10

(CONT'D)

10/17/55
SHOREY
MARTELL
KEMP
HOLOHAN

				LT	RT
	474.66				
46+00 P.O.T.		4.5	470.2		
CK. T8M 5.58	474.01	6.22	468.44 = 468.43	P6. 28	9.1 7.9 4.8 X 4.7
					2.5 12 7 10
46+50		3.9	= 470.1		
46+75		2.9	471.1		
46+83		4.9	469.1		
47+08		5.8	468.2		
47+50		6.0	468.0		
47+93		6.0	468.0		
47+96		4.5	469.5		
48+00		4.2	469.8		
48+43		1.8	472.2		
48+50		2.7	471.3		
48+89		5.7	468.3		
49+00		6.3	467.7		
TP 4.61	473.04	5.58	468.43		
49+50		7.3	465.7		
50+00		8.0	465.0		
50+50		8.4	464.6		
51+00		8.8	464.2		
51+50		9.6	463.4		
51+57		9.4	463.6		

NOTE: SEE PAGE 60 FOR ADDITIONAL X-SECTIONS

10/17/55
SHOREY
MARTELL
KEMP
HOLOHAN

(CONT'D)

	473.04					
51+84		5.2	467.8			
52+00		5.2	467.8			
52+50		5.4	467.6			
52+72		9.1	463.9			
53+00		10.1	462.9			
53+18		10.5	462.5			
53+35		8.1	464.9			
53+50		7.6	465.4			
53+85		7.0	466.0			
54+00		8.3	464.7	LT		RT
SET TBM 134	466.13	8.25	464.79	54+00 ¾" HUB		
54+22		5.4	460.7			
54+50		6.6	459.5	7.0 / 2.5	6.4 / 11	7.6 / 10
54+80		8.3	457.8			
55+00		11.0	455.1	10.5 / 2.5	10.3 / 2.0	11.3 / 10
TP 2.30	455.91	12.52	453.61			
55+50		4.7	451.2	3.8 / 2.5	3.7 / 1.9	4.7 / 10 — 5.1 / 10
55+99 60 AHD		9.0	446.9	9.4 / 2.5		8.8 / 10
EP 56+12 11 AH 56+14 67 BK		9.85	446.0			
CK. ~~TP~~		9.26	446.65 = 446.63	PG. 32		

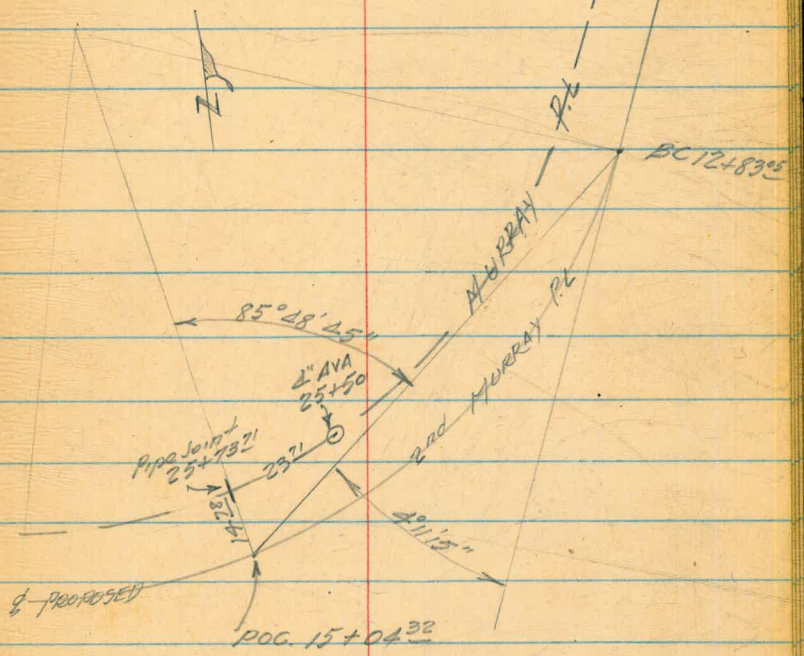
2nd Murray P.L
Location & Elev of Pipe Joint Sta 15+04.32

OCT. 28 1955
BEATTY
MARTEL
KEMP
HOLOHAN

TBM	4.70	472.31	467.61	pg. 56
25+73.2'		8.60	463.71	
25+73.7'		8.55	463.76	
25+74.2'		8.58	463.73	
25+83.7'		8.73	463.58	
CK TBM		4.70	467.61	

S. rim MH AVA CHAMBER

Elev. Top of 42" Conc Pipe
Murray P.L. Sta. using Sta 25+50 @ AVA



2nd Murray P.L.
Location & Elev. of Storm Drains Unit #3 & Unit #2 Del Cerro

12/30/55
Beatty
Shorey

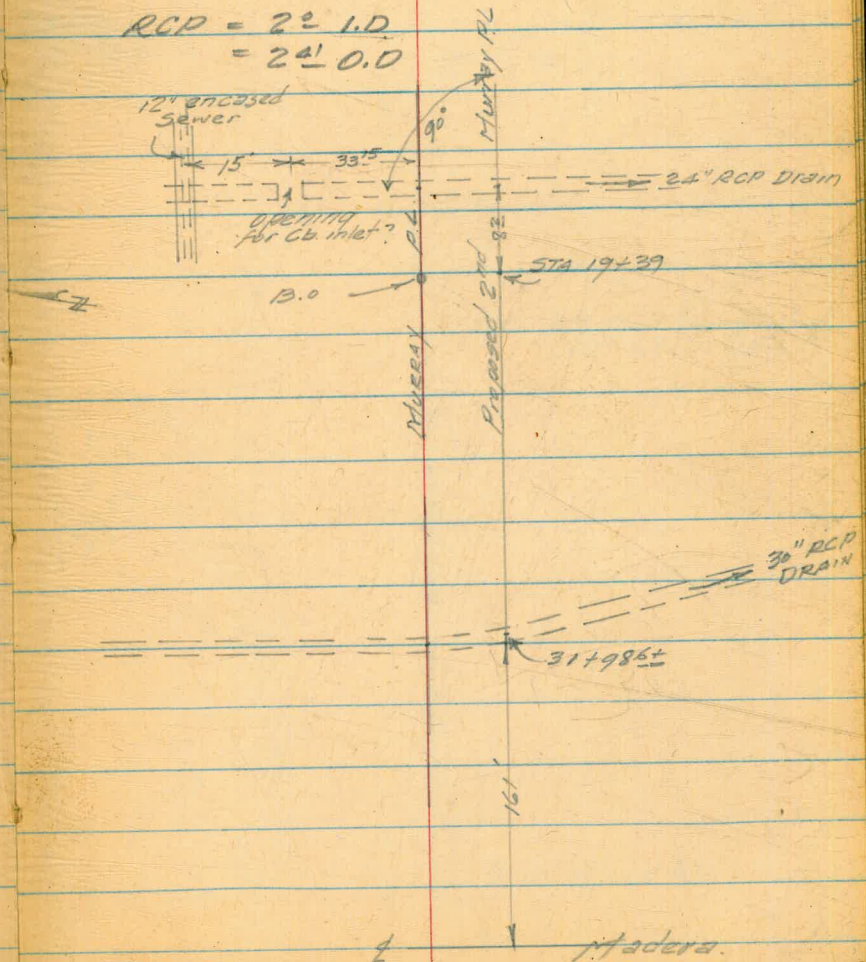
P	10.15	457.86	447.71
19+30±	Top 24" RCP	8.10	449.76
	Top 24" RCP	7.92	449.94

℄ opening in drain line 33.5± RT
19+30± for curb inlet
(See 12620-L)

30" RCP Crosses proposed
2nd Murray P.L @ 31+98.6 ±
F.L 426.7 as per 12584-L
(This drain constructed & backfilled
no chance to get elevation.)

Top 6" pipe B.o Sta 19+39 2nd Murray P.L. pg. 21
Top 24" RCP. Dr at ℄ 2nd Murray P.L.
Top 24" RCP Dr at ℄ 1st Murray P.L

RCP = 2± I.D.
= 2'± O.D

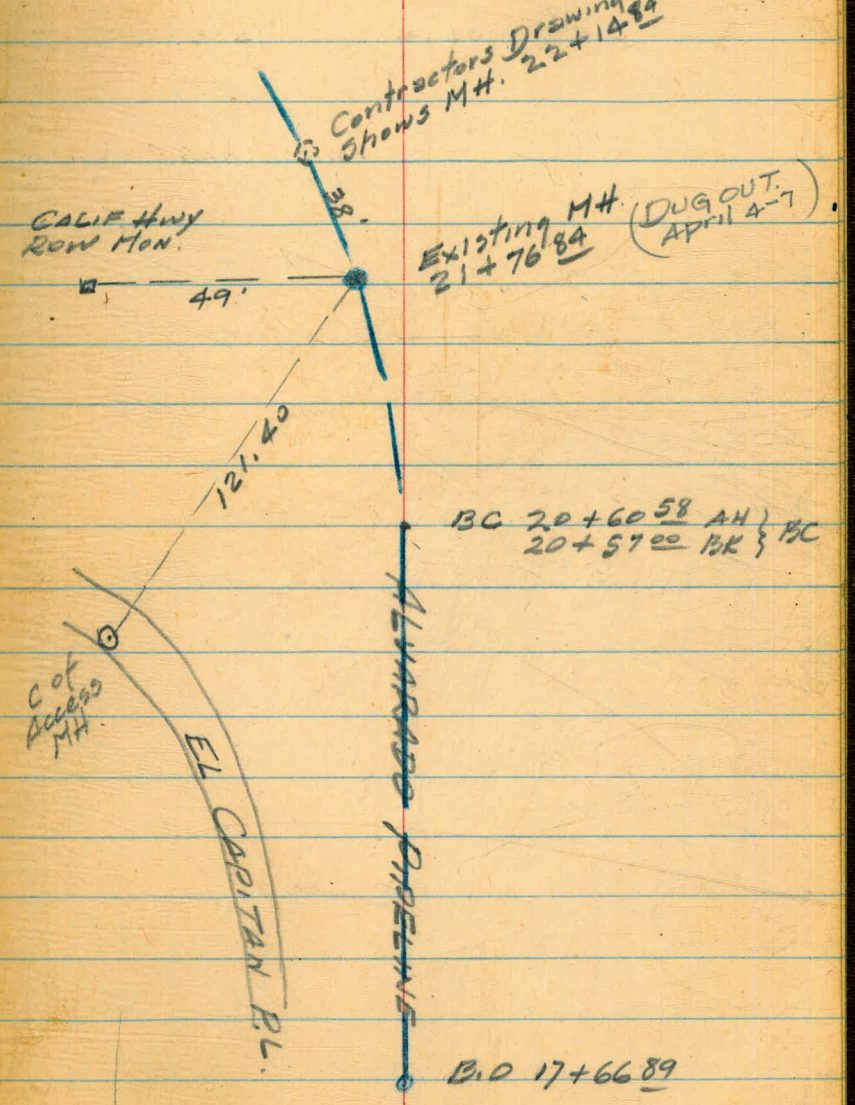


TIES TO ACCESS M.H
ALVARADO PIPELINE

April 7, 1955
Beaty
Williams
Varionakis

77

BM	0.48	400.48	400.00	Ass. Elev CALIF HWY MON
	13.50	386.98		Elev Top Access MH Sta 21+76.80



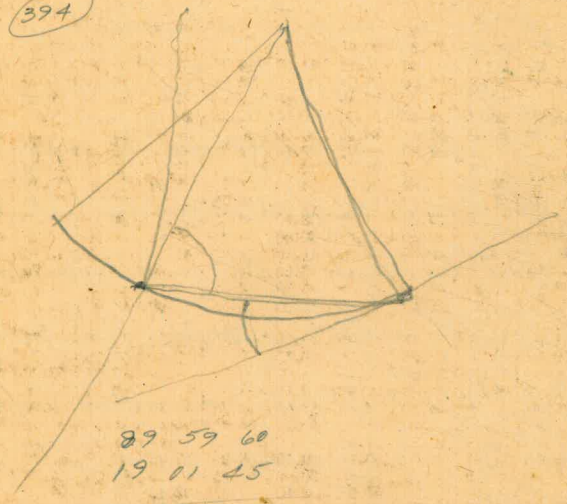
BM	2.68	478.71		476.03
GAUGE #4 ©			3.60	475.11
TBM	3.45	471.88		468.43
GAUGE #3 ©			2.81	469.07
BM	0.90	112.89		111.99
GAUGE #2			3.25	109.64
P	9.95	114.90	7.92	104.95
GAUGE #1			0.15	114.75

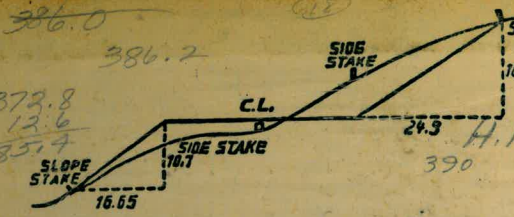
2.35
.90
3.25

79

					463.99
BM	BM	6.46	470.52		464.06
	T/P 5' W/y LT 0+00			7.42	463.10 463.03
	T/P 4' Ely RT 0+00			5.88	464.64 464.57
TBR					
	74.42		✓		
	0+35 30		✓		
BM	BM	4.51	468.57		464.06 = 463.99
	Top 18" RCC LH LGW Dist			8.71	459.86 459.79
P	0+00 Hub			0.31	468.23 468.16
	CK joint 5' LT 0+00			5.44	463.13 463.06

Please Return to
City of San Diego Water Dept.
Room 903 Civic Center





DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING.

SLOPE 1½ TO 1. ROADWAY OF ANY WIDTH.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0.00	0.15	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	0
1	1.50	1.65	1.80	1.95	2.10	2.25	2.40	2.55	2.70	2.85	1
2	3.00	3.15	3.30	3.45	3.60	3.75	3.90	4.05	4.20	4.35	2
3	4.50	4.65	4.80	4.95	5.10	5.25	5.40	5.55	5.70	5.85	3
4	6.00	6.15	6.30	6.45	6.60	6.75	6.90	7.05	7.20	7.35	4
5	7.50	7.65	7.80	7.95	8.10	8.25	8.40	8.55	8.70	8.85	5
6	9.00	9.15	9.30	9.45	9.60	9.75	9.90	10.05	10.20	10.35	6
7	10.50	10.65	10.80	10.95	11.10	11.25	11.40	11.55	11.70	11.85	7
8	12.00	12.15	12.30	12.45	12.60	12.75	12.90	13.05	13.20	13.35	8
9	13.50	13.65	13.80	13.95	14.10	14.25	14.40	14.55	14.70	14.85	9
10	15.00	15.15	15.30	15.45	15.60	15.75	15.90	16.05	16.20	16.35	10
11	16.50	16.65	16.80	16.95	17.10	17.25	17.40	17.55	17.70	17.85	11
12	18.00	18.15	18.30	18.45	18.60	18.75	18.90	19.05	19.20	19.35	12
13	19.50	19.65	19.80	19.95	20.10	20.25	20.40	20.55	20.70	20.85	13
14	21.00	21.15	21.30	21.45	21.60	21.75	21.90	22.05	22.20	22.35	14
15	22.50	22.65	22.80	22.95	23.10	23.25	23.40	23.55	23.70	23.85	15
16	24.00	24.15	24.30	24.45	24.60	24.75	24.90	25.05	25.20	25.35	16
17	25.50	25.65	25.80	25.95	26.10	26.25	26.40	26.55	26.70	26.85	17
18	27.00	27.15	27.30	27.45	27.60	27.75	27.90	28.05	28.20	28.35	18
19	28.50	28.65	28.80	28.95	29.10	29.25	29.40	29.55	29.70	29.85	19
20	30.00	30.15	30.30	30.45	30.60	30.75	30.90	31.05	31.20	31.35	20
21	31.50	31.65	31.80	31.95	32.10	32.25	32.40	32.55	32.70	32.85	21
22	33.00	33.15	33.30	33.45	33.60	33.75	33.90	34.05	34.20	34.35	22
23	34.50	34.65	34.80	34.95	35.10	35.25	35.40	35.55	35.70	35.85	23
24	36.00	36.15	36.30	36.45	36.60	36.75	36.90	37.05	37.20	37.35	24
25	37.50	37.65	37.80	37.95	38.10	38.25	38.40	38.55	38.70	38.85	25
26	39.00	39.15	39.30	39.45	39.60	39.75	39.90	40.05	40.20	40.35	26
27	40.50	40.65	40.80	40.95	41.10	41.25	41.40	41.55	41.70	41.85	27
28	42.00	42.15	42.30	42.45	42.60	42.75	42.90	43.05	43.20	43.35	28
29	43.50	43.65	43.80	43.95	44.10	44.25	44.40	44.55	44.70	44.85	29
30	45.00	45.15	45.30	45.45	45.60	45.75	45.90	46.05	46.20	46.35	30
31	46.50	46.65	46.80	46.95	47.10	47.25	47.40	47.55	47.70	47.85	31
32	48.00	48.15	48.30	48.45	48.60	48.75	48.90	49.05	49.20	49.35	32
33	49.50	49.65	49.80	49.95	50.10	50.25	50.40	50.55	50.70	50.85	33
34	51.00	51.15	51.30	51.45	51.60	51.75	51.90	52.05	52.20	52.35	34
35	52.50	52.65	52.80	52.95	53.10	53.25	53.40	53.55	53.70	53.85	35
36	54.00	54.15	54.30	54.45	54.60	54.75	54.90	55.05	55.20	55.35	36
37	55.50	55.65	55.80	55.95	56.10	56.25	56.40	56.55	56.70	56.85	37
38	57.00	57.15	57.30	57.45	57.60	57.75	57.90	58.05	58.20	58.35	38
39	58.50	58.65	58.80	58.95	59.10	59.25	59.40	59.55	59.70	59.85	39
40	60.00	60.15	60.30	60.45	60.60	60.75	60.90	61.05	61.20	61.35	40
41	61.50	61.65	61.80	61.95	62.10	62.25	62.40	62.55	62.70	62.85	41
42	63.00	63.15	63.30	63.45	63.60	63.75	63.90	64.05	64.20	64.35	42
43	64.50	64.65	64.80	64.95	65.10	65.25	65.40	65.55	65.70	65.85	43
44	66.00	66.15	66.30	66.45	66.60	66.75	66.90	67.05	67.20	67.35	44
45	67.50	67.65	67.80	67.95	68.10	68.25	68.40	68.55	68.70	68.85	45
46	69.00	69.15	69.30	69.45	69.60	69.75	69.90	70.05	70.20	70.35	46
47	70.50	70.65	70.80	70.95	71.10	71.20	71.40	71.55	71.70	71.85	47
48	72.00	72.15	72.30	72.45	72.60	72.75	72.90	73.05	73.20	73.35	48
49	73.50	73.65	73.80	73.95	74.10	74.25	74.40	74.55	74.70	74.85	49
50	75.00	75.15	75.30	75.45	75.60	75.75	75.90	76.05	76.20	76.35	50

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