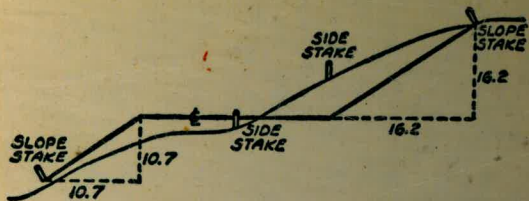


788



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.

1.414  
 .33  
 4242  
 4242  
 4.6662  
 60.00  
 59.53

MICROFILMED  
 JAN 14 1965



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	.79	.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	.885	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

Page 1

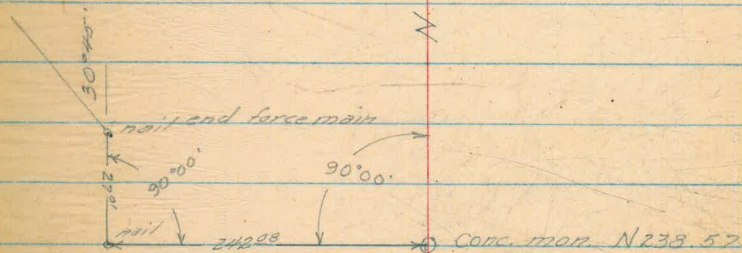
(Murray Pumping Plant)  
 Alignment & Profile - Pump Plant - Below Murray Dam - 1-5  
 Additional v-sects - Murray Pump Plant 6-8  
 Murray P.P. & P.L. Below Murray Dam. Re loc. & Profile 9-13  
 " " " " " " REV. Alignment 14  
 " " " " " " REV. Profile 15-19  
 " " " " " " Extension of X-sects 18-19  
 " " " " " " Profile 20-21  
 GRADES set for Murray pump plant 22-25  
 & PROFILE BRINE LINE 29-51  
 alicee  
 alicee



Jan. 6, 1949  
clear warm

Rainey Notes  
King &  
Shipman  
West  
Transit: Bergier  
#15094

LOCATION FOR PROPOSED PUMPING PLANT  
AT ALVARADO - CONNECT TO FORCE LINE



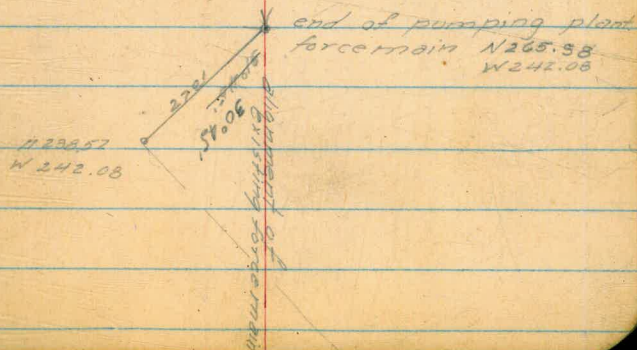
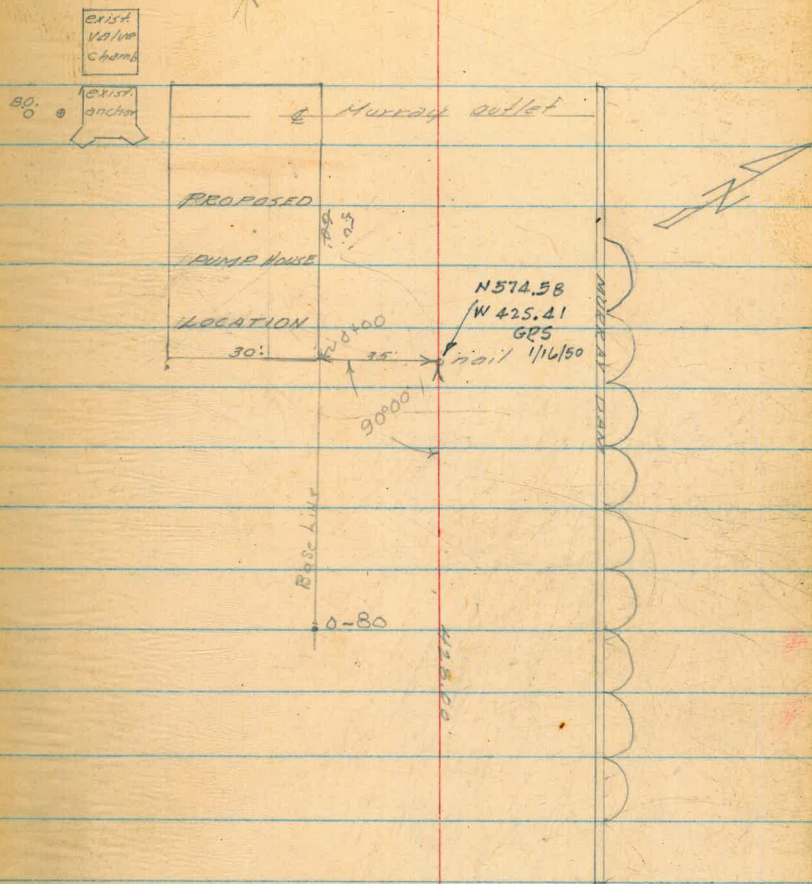
N-S axis of filter plant



Jan 6, 1950

same crew  
clear warm

Location for proposed pump house  
at Alvarado Reservoir

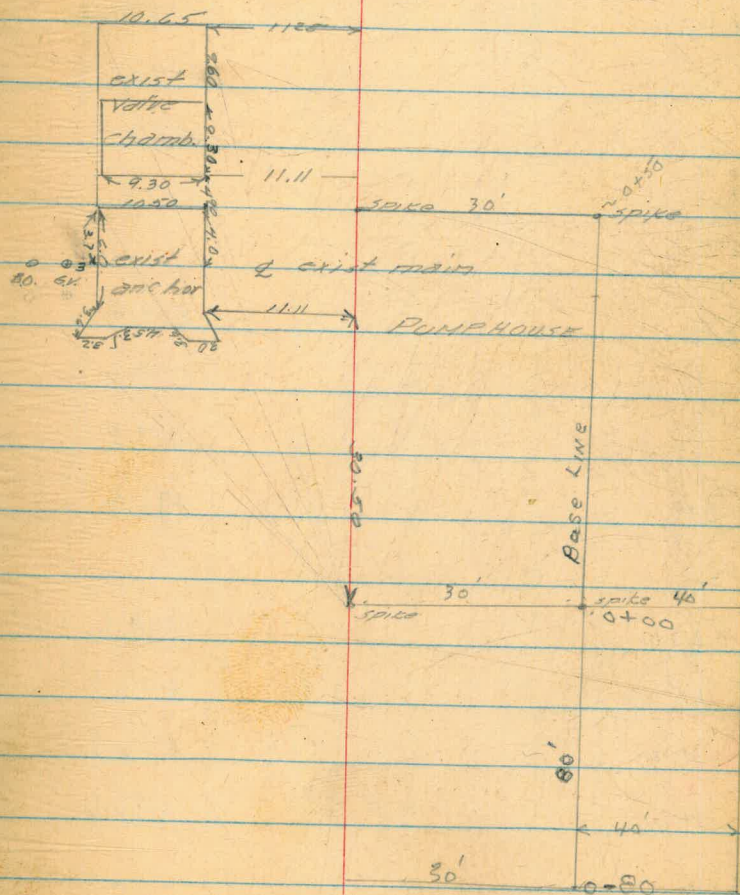




Jan. 6, 1950  
same crew

clear warm

Location for proposed  
pumphouse at Alvarado





X-sects. Pump House  
below Murray Dam  
Near 48" Outlet.

King-Notes 1-9-50  
West T  
Shipman

Clear 4  
Coat

B.M.	4.65	480.71		476.06	Top Conc Box N.W. cor. PK 691 P. 123
0+00		0.0	480.7		S.E. cor 0400 - Base Line East Side
10' W		1.3	479.4		
20' W		2.4	478.3		
30' W		3.5	477.2		S.W. cor.
0+10		1.3	479.4		
10' W		2.4	478.3		
20' W		2.9	477.9		
30' W		4.3	476.4		
0+20		2.1	478.6		
10' W		3.1	477.1		
20' W		3.9	476.8		
30' W		4.1	476.6		
0+30		3.4	477.3		
10' W		4.3	476.4		



x-sect. Pump House  
below Murray Dam

King-Notes  
West-T  
Shipman

1-9-50

5

480.71

20' W 4.9 475.8

30' W 5.9 474.8

0+40 4.9 475.8

10' W 5.4 475.3

20' W 5.7 475.0

30' W 6.7 474.0

0+50 5.3 475.4

N.E. Cor

10' W 6.2 474.5

20' W 6.7 474.0

30' W 7.3 473.4

N.W. Cor

12.92 <sup>289.0</sup> 488.98 4.64 476.07 476.06

0+10 9.5 480.5

10' E 7.3 481.7

20' E 5.0 484.0

30' E 6.7 483.3



X-sects. Pump House  
below Murray Dam

H.I.  
489.0  
488.98

King  
Shipman  
West

1-9-50

6

40' E	6.2	483.8
0+20	10.3	478.7
10' E	8.9	481.1
20' E	7.3	481.7
30' E	7.9	481.1
40' E	7.6	481.4

Reduced GRS Jan 15, 50

12.92	476.06	476.06	N.W. Cor. Conc. Box
-------	--------	--------	---------------------



Additional  
X-sects. Pump Plant  
below Murray Dam

King  
Shipman  
West 1-11-50

clear  
Cold

7

R.M. 12.92 489.0  
488.98 476.06

0-400 8.3 480.7

0-10 7.6 481.4

0-20 7.8 481.2

0-30 7.5 481.5

0-40 7.2 481.8

T.P. 4.23 492.7  
492.68 0.53 488.45

0-45 8.7 484.0

0-50 8.3 484.4

N.W. Coy. Top old CONC. Box BK. 691 P. 123

L.T. - towards Dam

484.3 83.8 14.3 81.5  
4.7 5.0 4.7 7.5  
40 30 20 10

86.8 85.2 84.0 82.6

22 30 50 64  
40 30 20 10

87.8 86.5 84.6 83.1

12 20 44 51  
40 30 20 10

88.2 87.5 85.7 84.8

08 10 30 70  
40 30 20 10

89.0 87.6 85.2 83.9

00 11 38 51  
40 30 27 20 10

89.2 88.5 86.9 84.9

92.7 35 40 58 70 84  
40 34 30 20 10

89.6 88.8 87.9 86.3 85.7

32 30 40 64 70  
40 33 30 20 10

Rt.

80.5 79.9 81.2 81.1

85 92 78 72  
10 15 20 30

77.8 77.7 77.2

92 11 11.8  
10 20 30

80.1 78.7 78.6

89 10 10 10.4  
10 20 30

81.1 80.7 78.5

79 80 80.7 78.5  
10 20 30

82.9 81.5 80.0

90 11.2 12.7  
10 20 30

83.3 81.9 81.4

94 10 11.3  
10 20 30



X-sects Pump Plant  
below Murray Dam

492.7

492.68

0-60

6.9

485.8

0-70

6.1

486.6

0-80

5.3

487.4

T.P.

1.46

484.25

9.89

482.79

B.m.

8.19

476.06

476.06

1-12-50

King  
Shipman  
West

92.7

26  
40

90.1

88.5

40

87.7

50

86.9

40

87.9

40

90.6

40

87.3

40

88.7

40

87.9

40

91.5

40

90.2

30

89.7

20

88.7

40

86.9

10

84.1

86

10

85.4

10

86.9

10

Reduced GRS Jan 13/50

84.1

83.4

84.3

83.4

86

93

84

93

85.4

84.4

85.6

85.6

86.9

86.6

85.2

84.3

Top NW Cor Conc. Box

Murray Res. Pumping Plant,  
Piping, etc.  
Below Murray Dam

King  
Stephan  
West

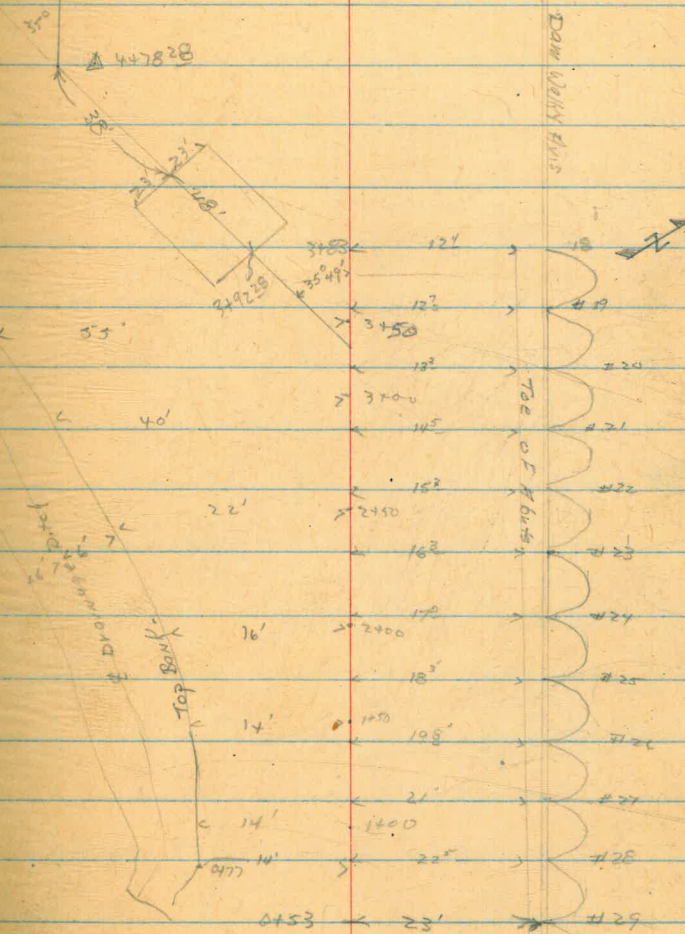
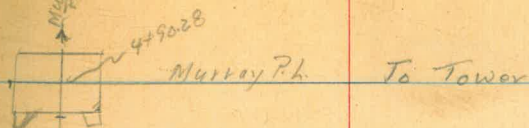
6-15-50

Cold, cloudy

9

$\Delta 35^\circ R.$   
4+78.28

$\Delta 35^\circ 49' 17''$   
3+40.48



6766

End P. Plant Force Main

0700 - End FT Force Main



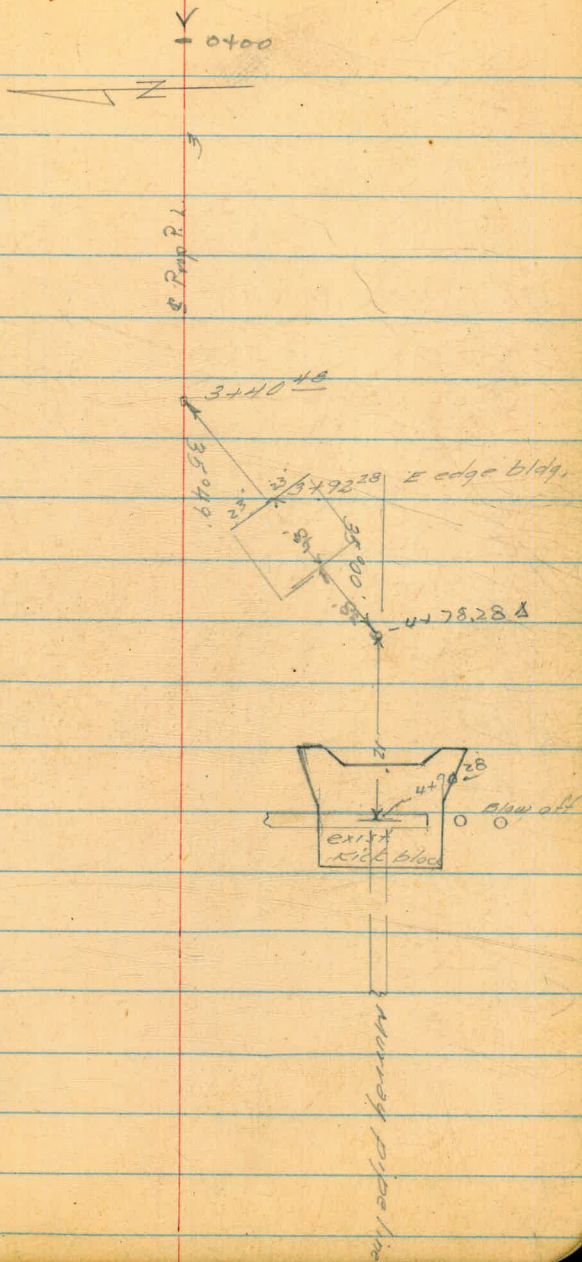
Murray Res. P.P. & Pipelines  
Below Murray Dam

Barney  
King  
Shipman  
West

6-15-50

Cool-

16



Murray T.P. & Piping  
Below Murray Dam

King  
West x  
Shipman

6-15-50

Clear

11

B.M.	0.74	537.3		536.79
0+00			2.1	535.0
0+50			8.2	529.9
T.P.	1.52	525.6	13.04	524.09
1+00			3.5	522.1
1+50			11.4	514.2
T.P.	0.34	512.87	13.08	512.53
2+00			5.9	507.0
2+50			11.9	501.0
T.P.	0.08	499.91	13.04	499.83

City Datum - Top Dam



Murray P.P. & Piping

King  
West  
Shipman

6-15-50

Clear

12

499.91

3400		3.4	496.5	
A 3440 <sup>10</sup>		8.2	491.7	
3450		9.2	490.9	
F.P.	0.39	488.13	12.17	487.74
3492 <sup>20</sup> E		3.8	484.3	
3492 <sup>20</sup> L		4.5	483.6	
3492 <sup>20</sup> R		2.2	485.9	
3400		6.5	481.6	
4138		11.2	476.9	
4440 <sup>20</sup>		9.6	478.5	

S.E. Cor

N.E. Cor

Murray T.P. 4 Piping

King  
West  
Shipman

6-15-50

clear

13

488.13

4440<sup>20</sup> 23' 21" 11.7 476.4

S.W. Cor

4440<sup>20</sup> 23' 24" 8.8 479.3

N.W. Cor

4450 10.5 477.6

T.P. 3.44 481.3 481.27 10.30 477.83

4459 5.4 475.9

4478<sup>20</sup> 8.9 472.4

4484<sup>20</sup> 9.5 471.8

Top Conc. around End Pipe

B.M. 5.22 474.85 477.85 476.06

N.W. Cor g.v. Box



LAKE MURRAY PUMP PLANT

REVISED ALIGNMENT  
48" FORCE MAIN FROM  
MURRAY RESERVOIR TO FILTER PLANT

SEPT. 27, 1950  
DEATY  
LEONARD  
BAKER

14

4+66.51 X PT. 24°59'30" RT = (Orig. X PT. 4+78.28)

X PT. 4+66.51  
Δ = 24°59'30" RT

3+41.48 X PT. 22°02' LT

X PT. 3+41.48  
Δ = 22°02' LT

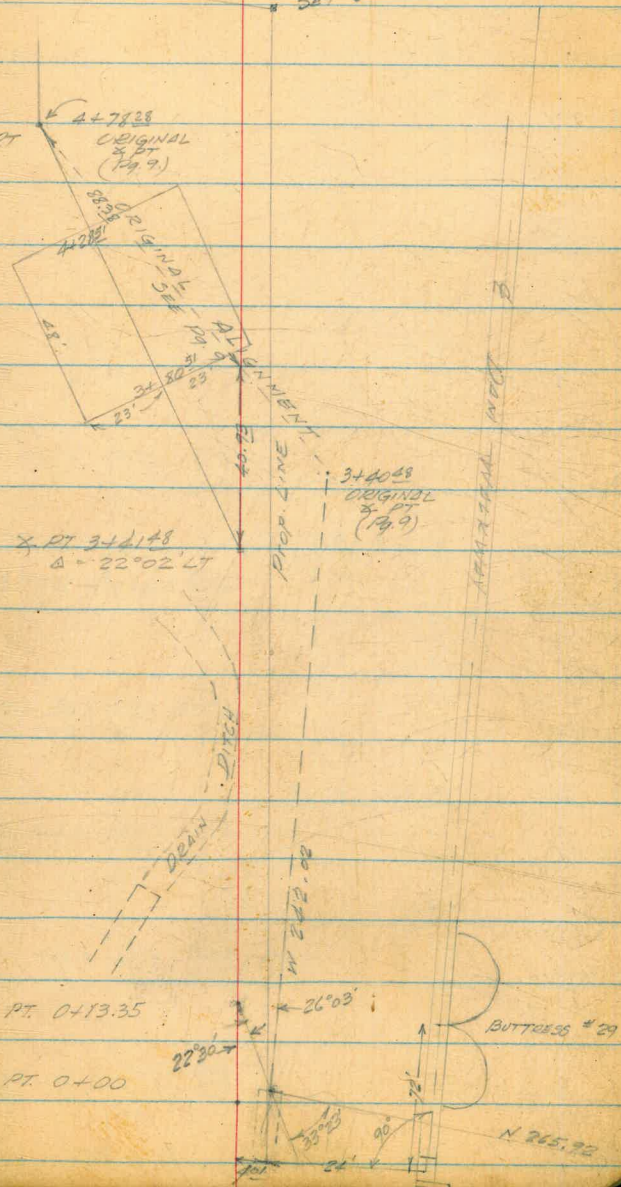
0+11.75 X PT. 22°30' RT

X PT. 0+13.35

0+00 = X PT. 26°03' LT.

X PT. 0+00

(N 265.92  
W 242.02)





LAKE MURRAY PUMP PLANT  
& PROFILE REV. ALIGN'NT

SEPT 27, 1950

BEATTY  
LEONARD  
BAKER

15

BM 0.17 536.56 536.39

0400 1.5 535.1

+1335 2.3 534.3

+18 3.4 533.2

+50 7.3 529.3

+65 9.3 527.3

0486 12.2 524.4

P rock 0.64 524.16 13.04 523.52

1400 19 522.3

1449 10.1 514.1

P (rock) 0.49 511.85 12.80 511.36

2400 7.6 504.3

+30 9.6 502.3

+50 12.3 498.6

P 0.07 498.93 12.99 498.86

(W) LEFT

529.2 527.3  
7.4 9.3  
31 \*

DEAN DITCH

524.0 514.0 514.0 515.2 524.2 524.4  
12.6 22.6 22.6 21.4 17.4 12.2  
18.5 15.5 8 5.5 2.5 \*

522.6 514.9 513.5 513.4 514.5 514.6 522.3 522.3  
16.7 10.7 10.8 9.7 9.6 1.9 1.9  
15 12.5 10 6 6 4.5 4 \*

515.5 512.8 511.3 510.3 509.9 514.1  
8.7 11.4 12.9 13.9 14.3 10.1  
15 12.5 10 8.5 5 \*

506.4 503.8 503.7 504.3 506.5  
5.5 8.1 8.2 7.6 5.4  
15 10 6.5 \* 2

502.4 500.8 500.6 502.3 502.8  
9.5 11.1 11.3 9.6 9.1  
16.5 13.5 2.5 \* 3

499.2 497.1 497.0 497.8 499.1 499.6  
13.7 14.8 16.9 15.1 12.8 12.3  
18 13 6 4.3 2 \*



9/27/50

16.

LAKE MURRAY PUMP PLANT  
 & Profile REV. ALIGNMENT

2+60	498.93	0.2	498.7	497.5	495.9	495.1	495.6	497.7	498.7
				1.4	3.0	3.8	3.3	1.2	0.2
				17	16	13	5.5	2.5	*
3+00		5.3	493.6	491.7	489.8	490.5	492.1	493.6	
				7.2	9.1	8.4	6.3	5.3	
				31	28	18	15	*	
2+41.48	X-PT	9.5	489.4						
+50		10.8	488.1						
4+00	0.71	486.76	12.88	486.05					
+87		-3.5	483.3						
4+00		6.2	480.6						
+16		9.6	477.2						
+32		9.6	477.2						
+50		11.2	475.6						
+52		10.7	476.1						

9/27/50

17

LAKE MURRAY PUMP PLANT  
& Profile REV. ALIGNMENT

486.76

4+6651    x PT    14.5    472.3

CK BM    13.35    473.41 = 479.24

CK BM    10.73    476.03 = 476.06

NW Cor. Q.V. Box



9/28/50

18

LAKE MURRAY PUMP PLANT  
 Extension of Cross-Sections  
 See Page 3 for Base Line

BM 11.52 487.58 476.06

0-10

(W) To Right of B.L. (Away from Dam)

480.4 479.9 478.2 477.5 476.5  
 7.2 7.7 9.4 10.1 11.1  
 10 14 17 20 30

0-20

480.0 478.8 478.1 477.8 477.0  
 7.6 8.8 9.5 9.8 10.6  
 10 16 18 20 30

0-30

478.9 478.4 477.5  
 7.7 9.2 10.1  
 10 20 30

0-40

481.3 480.6 480.5 478.4 478.6  
 6.3 7.0 7.1 9.2 9.0  
 10 16 20 28 30

0-50

480.2  
 483.5 482.3 481.7 482.8 481.3 479.1 476.8  
 4.1 5.3 5.9 4.8 6.3 7.6 8.5 10.8  
 10 14 20 24 30 34 40 50  
 475.4 475.6 475.8  
 12.2 12.0 11.8  
 80 70 60

0-60

483.0  
 484.3 483.5 484.8 484.6 480.0 477.5 477.2  
 3.3 4.1 2.8 3.6 2.5 7.6 10.1 10.2  
 10 16 20 28 30 40 50 60  
 477.2 476.7  
 10.4 10.9  
 80 70

0-70

485.8 482.4  
 485.4 484.6 485.9 484.5 484.1 480.9 478.4  
 2.2 3.0 1.8 1.7 3.1 3.5 5.2 6.7 9.2  
 10 18 20 25 28 30 38 40 50

479.7 478.4 479.0 479.6 479.4  
 8.9 7.2 8.6 8.0 9.2  
 80 70 60 56 55

SEPT. 28, 1950

19.

LAKE MURRAY PUMP PLANT  
Extension of Cross-Sections (Cont'd)

487.58

0-80

487.6

488.9  
489.1  
486.8 486.6 487.7 83.3 82.1 81.0 83.1  
0.8 1.0 2.7 2.9 4.3 5.5 6.6 4.5  
10 20 30 32 34 40 45 46  
41.5 41.0 82.2  
25 71 66 34  
80 70 60 50

10

3.94 480.99 10.53 477.05

0-100

481.0

477.0 74.9 74.5 73.8 73.6 73.1 72.0  
40 61 65 72 74 79 90  
33 38 40 50 57 60 65  
70.1 71.5  
10.9 9.5  
80 70

0-10

74.3 74.2 74.0 71.5 71.0 71.2  
6.7 6.8 2.0 9.5 10.0 9.8  
40 50 54 60 70 80

0-20

75.8 76.5 76.8 74.9 74.7 72.6 72.2  
5.2 6.5 4.2 6.1 6.3 8.4 8.8  
35 36 40 50 60 70 80

0-30

77.2 76.9 71.7 76.6 74.3 73.2 72.9  
3.8 4.1 3.3 4.4 6.7 7.8 8.1  
35 40 43 50 60 70 80

0-40

78.7 77.4 76.3 75.7 75.4 75.0 74.1  
2.3 3.6 4.7 5.3 5.6 6.0 6.9  
34 40 50 52 60 70 77 80

CK. BN

4.93 476.06 = 476.06



Lake Murray P. Plant  
Profile on New Line

King  
Robert  
West

10-20-59

20

B.M. 116	0.87	537.24		516.39
0+00			2.2	535.1
0+50			8.4	529.9
T.P.	0.59	525.07	12.78	524.48
1+00			3.2	521.9
1+50			11.1	514.0
T.P.	0.32	512.29	13.10	511.97
2+00			5.5	506.8
2+50			12.1	500.2
T.P.	0.54	499.63	13.20	499.09
3+00			5.8 <sup>4</sup>	494.2
Δ 3+21 <sup>93</sup>			7.9 <del>6.2</del>	491.7
3+50			11.5	488.1
T.P.	0.20	486.52	13.31	486.32
3+81			2.7	483.8
4+00			5.6	480.9
4+10			8.2	478.3
4+29			10.0	476.5

City Datum on So. End Dam

Lake Murray P. Plant  
New Profile

486.52

~~487.52~~

4450 10.9 475.6

4452 10.4 476.1

4456<sup>26</sup> 14.3 472.2

B.M. 10.53 475.99 476.03

KING  
Baker  
West

10-20-50

21

Checked & Reduced 10/23/50 RM

N.W. cor. G.V. Box



GRADES SET FOR  
MURRAY PUMP PLANT

MAR 6 1951

DEATY  
LEONARD  
WELKER

22

8.26	484.39	476.03	NW Cor	GY. CHAMBER
6.4	478.0			NW Cor Pump Platform (Neat Corner)
5.85	478.54	476.5 ✓ 475.83 ✓		⑤ C271 to subgrade NW Cor Pump Platform
10.19	474.20	475.63 476.30 ✓		SW Cor. Pump Platform F 143 Neat Cor
9.72	474.67	475.63 ✓		⑩ F096 to subgrade
8.91	475.48	475.00 ✓		② PUMP BASE N°1 Nor C048 to subgrade
7.65	476.74	475.00 ✓		② " " N°1 So C174 " "
5.89	478.50	477.00 ✓		② " " N°2 Nor C150 " "
5.68	478.71	477.00 ✓		② " " N°2 So C171 " "
4.77	479.62	479.00 ✓		② " " N°3 Nor C062 " "
1.79	482.60	479.00 ✓		② " " N°3 So C36 " "
6.07	478.32	476.50 478.50 ✓		C225 to subgrade } NECOR PUMP PLAT #2 C049 " }
7.45	476.94	476.50 478.50 ✓		C112 to subgrade } NW COR PUMP PLAT #2 F089 to subgrade }
11.60	472.79	476.50		F302 to subgrade EL 475.83 ④ " " "
10.78	473.61	478.50		F422 to subgrade EL 477.83 ④ " " "
7.12		MONK RIVER		② Conc Anchor Pier Nor (4+40.5)
7.79				② " " " So "
6.70	477.69	475.17	MIN	② Conc Pier C252 Nor (4+20.33)
8.05	476.34	475.17		② Conc Pier C117 So "



MAR. 6 1951

23

GRADES SET  
FOR MURRAY  
PUMP PLANT

484.39

4.45 479.94 475.19

6.22 478.17 "

3.37 481.02 477.29

3.31 481.08 "

IP

7.44 488.52 3.31 481.08

3.78 484.74 479.83

4.10 484.42 "

3.62 484.90 484.67

3.98 484.54 480.08  
484.67

2.53 485.99 480.08

3.10 485.42 "

ID

4.75 492.93 0.34 488.18

3.30 489.63 484.67

3.35 489.58 "

4.40 488.57 "

4.78 488.15 "

1.61 491.32 489.5

1.19 491.74 489.5

0.37 492.56 489.5

1.30

② Conc Dier Nor 'C475 (4+0996)

② " " So 'C298 "

② " " Nor 'C373 (3+9596)

② " " So 'C379 "

⑤ NE Cor Pump platform 'C491 ✓

NE Cor " " 'C459

SW Cor Transfer Pad 'C023 Both slab

⑦ SE Cor Control House 'C446 sub

⑤ SW " Transf Pad 'P013 Both slab

⑤ NW Cor Transf Pad, NE Cor Cont. Use 'C132  
'C075

" " " " " " 'C534

⑤ NE COR TRANSF PAD 'C496

NE COR " " 'C491

SE COR " " 'C386

⑤ SE COR " " 'C348

⑥ So 'C182

④ NW 'C224

④ NE 'C306

Center of N.G. &amp; P.T.

} CONC. ANC. 3+2193



MURRAY PUMP PLANT  
 GRADES SET FOR  $\frac{1}{2}$  PIPE  
 ON 24' OFFSET HUBS.  
 24' RT of  $\frac{1}{2}$  of PIPE

MAR. 26, 1951  
 BEATTY  
 LEONARD  
 G. NELSON

24

BM.				$\frac{1}{2}$ PIPE EL.	
	10.95	484.36	473.41		
4+66 <sup>96</sup>			9.15 475.21	468.60	C661
4+40 <sup>45</sup>			6.00 478.36	479.65	F129
4+23 <sup>46</sup>			4.04 480.32	482.06	F174
4+09 <sup>96</sup>			2.07 482.29	479.73 ✓	C256
①	13.07	497.20	0.23 484.13	483.97	F168 ✓
2+95 <sup>96</sup>			12.79 484.41	481.71 ✓	C270 ✓
3+79 <sup>96</sup>			10.81 486.39	484.04	C235
3+49 <sup>73</sup>			7.36 489.84	489.49	C035 ✓
3+39 <sup>46</sup>			6.48 490.72		
3+21 <sup>93</sup>			4.63 492.57	492.50	F193
3+21 <sup>93</sup>			3.65 493.55	494.30	F095
①	12.64	508.93	0.91 496.29		
2+89 <sup>53</sup>			11.26 497.67	498.72	F105
2+62 <sup>01</sup>			8.78 500.15	502.32	F217
2+34 <sup>50</sup>			5.85 503.08	505.92	F284
2+06 <sup>93</sup>			2.69 506.24	509.52	F328
①	13.18	521.87	0.24 508.69		
1+79 <sup>47</sup>			11.43 510.44	513.12	F268
1+51 <sup>95</sup>			7.63 514.24	516.72	F248
1+24 <sup>43</sup>			3.63 518.24	520.32	F208
①	11.74	533.01	0.60 521.27		

$$\begin{array}{r} 1.0162 \\ \hline 30686 \end{array}$$

	533.01				
0+96 <sup>98</sup>		10.46	522.55	523.92	F137
0+69 <sup>65</sup>		6.65	526.36	527.48	F112
0+58		5.25	527.76	529.00	F124
P	6.16	537.56	1.61	531.40	
0+00		2.11	535.45	529.00	8/45
OK BM.		1.17	536.39	= 536.39	

B.M.	13.28	489.34	476.06	485.5 484.67	GRADE ROD 4.64			
					Trans	NE	4.20	G044
					FAD	SE	4.57	C027
						SW	7.34	F470
						NW	8.85	F421

	480.75	8.59			Cont Use	SE	9.55	F029
	480.08	7.26				NE	8.86	C040
						NW	9.43	F017

3+797	Nor.	8.81	480.53	480.10 481.10	F037
3+36 <sup>5</sup>	So	0.51	488.83	491.87 488.87	F004

$$\begin{array}{r} 1807 \\ \hline 5421 \end{array}$$



# MURRAY PUMP PLANT

CHECK ON Elev. of End of PIPE  
East End of Cross.

April 18, 1951  
Beatty  
Leonard  
Nelson

26

P.M.	0.97	477.00	476.03	"
P.M.			3.59	473.41
			5.21	471.79
			5.31	471.69
			5.24	471.76
			5.21	471.79

OK. See pg. 13.  
Top of Conc around end of pipe E. Side of Cross  
Top of steel pipe Conc removed E. " " "  
on top of Conc around pipe S. side of Cross  
" " " " " " W. " " "

471.8

2

469.8

1

April 23, 1951

27

MURRAY PUMP PLANT

Elevations of Bottoms of Pier  
EXCAVATIONS AS DUG.

	12.67	503.67		491.00		Plan.
3+2193			14.03	489.64	=	489.5
2+8953			9.65	494.02	=	493.5
7P	7.23	509.08	1.82	501.85		
2+6201			11.45	497.63	=	496.5
2+3450			8.40	500.68	=	500.0
2+0698			4.85	504.23	=	504.0
TP	11.61	519.81	0.88	508.20		
1+7947			11.60	508.21	=	508.0
CK TP			1.56	518.25	=	518.24
1+5195						Dug but filled in
1+2443			"	"	"	"
0+9692			"	"	"	"
0+6965			"	"	"	"
				<u>5/3/51</u>		
TP	6.51	524.76		518.25		
1+7947			16.8	508.00		
1+5195			12.6	512.2		
1+2443			9.5	515.3		
0+9698			5.4	519.4		
TP	9.50	534.03	0.23	524.53		
0+6965			10.5	523.50		
0+58			9.6	524.40		
CK TP			6.26	= 527.77	=	527.76





§ PROFILE  
 & CROSS-SECTIONS

BRINE LINE

(Continued from Book 791 129, 79)

44 Rock 2.15 69.45 62.30

349+75 3.0

350+00 1.5

+24 3.8

+50 4.5

351+00 4.9

+50 5.6

+74 5.9

+84 7.1

352+00 } CRK 7.4

+06 } 7.2

+07 6.3

+40 5.9

+50 4.4

+67 5.4

+95 5.2

353+00 4.6

+20 5.7

+23 6.9

MARCH 12 1951

BRATTY  
 LEONARD  
 WELKER

29

0.8  
 10 \* 1.9 4.0 5.3 5.2  
 7 9 14 20

4.7  
 15 \* 5.1  
 15

5.2 5.1 7.0  
 15 11 7 \* 7.0 6.1 5.7  
 4 10 15



3/12/51

30

± PROFILE  
± X-SECTS

BRINE LINE

64.45

34 353+37 7.1

+42 5.5

35 +50 7.2

+65 5.5

+75 6.0

3 354+00 6.7

+22 7.3

+42 (± CREEK) 8.5

+50 7.8

3 355+00 8.1

+50 9.0

+84.95 (PI) 9.7

356+00 9.7

+20 9.6

+50 10.3

Peak) 11.63 66.43 9.65 54.80

35 CK BM 0.96 65.47 = 65.47 CITY BM.

TD 3.01 57.81 54.80

+5870 3.4

9.5 9.3 9.5 10.1 10.0 9.2  
20 15 3 5 12 20

30 1/2 LT & STA 47+11 FED BLVD BRANCH WABASH FREEWAY  
ON CONC. CURB OF DIVIDING ISLAND.

MAR. 12 1951

31

E PROFILE  
 & X-SECTS

BRINE LINE

57.81

44	356+5870	+3.73
3	357+00	3.7
3	357+00	+6.25
	+69	3.6
	+69	+8.90
	+75 <sup>96</sup> P.I	4.4
	+75 <sup>96</sup>	+10.20
	358+00	4.7
	+11	4.7
	+12	5.2
	+50	4.5
	359+00	5.1
	+14	5.0
	+50	6.2
	360+00	6.9
	+50	7.1
3	361+00	7.5
	+50	8.1
	362+00	8.2

Bottom Slab of Bridge

" " " "

" " " "

" " " "



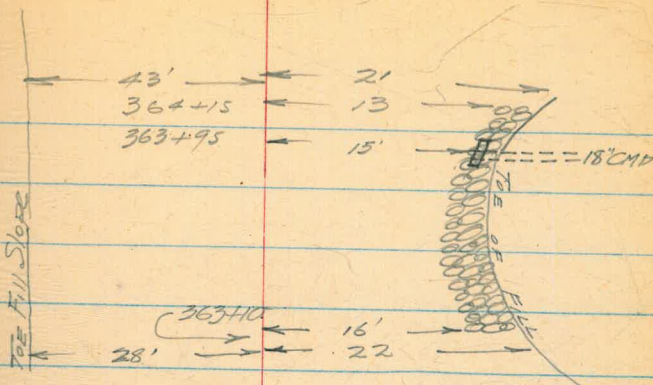
± PROFILE  
± X-SECTS

BRINE LINE

362+50	57.81	8.5	
363+00		9.1	
364 rock	2.89 51.78	8.92	48.89
+50		3.4	
+75		2.6	
		3.4	
364		3.5	
SET TBM		0.71	51.07
+50		3.7	
365+00		4.3	
+50		5.1	
366+00		5.6	
+50		6.2	
366+86 P.I.		6.1	
367+00		6.2	
+50		6.2	
368+00		6.7	
+28.99		6.7	
+28.77			

3/12/51

32



± 18" GMP 15' RT 363+95

3rd Cor. Culv. Hdwall 15' RT 363+95

1:1  
Slope  
4.6  
38  
Toe  
5.3  
29  
4.0  
30

Edge of  
Excavated  
Channel  
4.5  
24  
Toe  
6.0  
10  
5.0  
20

(RT. & FWD TAN)  
1.4  
7  
Toe  
5.9  
2  
5.5  
20

± Proposed SECT B.  
WABASH Freeway

2.9  
30  
Toe  
3.4  
12  
6.8  
6

5.0  
30  
Toe  
6.5  
7  
7.3  
10  
6.5  
25

3/12/51

33

♀ PROFILE  
BRINE LINE

	51.78				
368+50		7.0			
369+00		7.0		6.6	7.0
HP (Rock)	10.35	54.43	7.70	44.08	27
CK B.M.		2.57	51.86	= 51.97	
HP	2.53	46.61	10.35	44.08	
369+37 <sup>24</sup>		2.6			
+45		2.9			
+45		+5.67			Bottom 6" x 16" Stringer of Wood BRIDGE
+70		3.4			" " " " " "
+83 <sup>2</sup>		+6.62			
+83		2.7			
+84		+4.33			Bottom 10" C.I. WATER
369+89 <sup>66</sup> P.I.		3.0			
+91		2.2			
369+93 <sup>9</sup>		3.44			Top 24" C.I. SEWER
370+00		4.0			337 344 357 LT 8 E 15 RT
+50		5.4		5.3	6.0 5.2 0.0 15 x 7 15 20
371+00		5.5		5.5	3.8 4.2 15 x 11 20
+38 <sup>22</sup> B.C.		6.5		6.6	5.9 6.0 15 x 7 18



Mar. 12, 1951

34

♀ PROFILE  
BRINE LINE

46.61

371 + 50

6.6

372 + 00

(E CRK)

6.8

5.5 6.8

20 15

6.8 0.8

11 24

+50

7.2

+30

6.6

+50

5.1

+75

4.6

+78

3.4

GROUND, LUMPY & IRREGULAR

373 + 00

3.1

5.7 5.9

20 5

3.1 3.1

1 4

5.2 5.6 7.5 7.5

8 22 26 50

CREEK

H Top str

2.46

46.29

2.78

43.83

Mar. 16, 1951 pm

BEATTY  
LEONARD  
WELKER

+31<sup>25</sup> (B.C)

3.1

+50

2.3

+67

4.7

374 + 00

5.7

1.8 3.1 5.3

25 15 10

5.3 6.7 7.4 7.9 7.4

7 9 20 26 29

CREEK

+17

5.8

+25

5.3

+40

5.9

+50

7.5

+70

8.1

center of creek

+90

7.4

MAR 16, 1951  
BETTY

35

♀ PROFILE  
♀ X-SECTS

BRINE LINE

46.29

375+00

6.7

2.6 7.6 7.9 7.9  
25 18 13 8 \* 6.2 5.5  
10 25  
CREEK

+22

6.3

+50

6.7

+78.50 P.I.

7.0

Rim N.H. 5.87 (Invert 7.40 lower)  
10.

376+00

7.2

6.7 8.2 8.7 6.8  
25 20 15 13 \* 7.1 3.1 3.1 4.5  
9 16 21 25  
CREEK DIKE

+50

7.8

377+00

7.8

8.0 8.6 8.6  
37 23 18 \* 6.9 3.1 3.1 4.5  
8 19 26 30  
CREEK DIKE

+50

7.9

378+00

8.2

3.4 9.4 10.0 9.5  
36 33 27 18 \* 6.7 3.3 3.3 4.6  
16 24 31 36  
CREEK DIKE

+42.20 P.I.

8.7

H<sup>1</sup> Top Hub. 4.96 42.55 8.70 37.59

379+00

4.1

5.8 6.8 6.7 6.8  
50 49 43 25 \* 4.1 4.4 4.4 4.6  
5 19 26 32  
CREEK DIKE

+24

4.1

+50

5.0

380+00

6.4

6.0 7.2 7.3 6.4  
36 29 9 7 \* 6.4 4.6 4.1 4.9  
6 16 25 31 35

+22

7.4

Edge Creek

+40

7.6

+50

7.4

381+00

7.7

6.0 7.0 7.8  
35 11 9 \* 7.5 5.4 0.8 0.8  
35 40 47 33



Q PROFILE  
& X-SECTS

BEINE LINE

42.55

Mar 16, 1951

BEATTY  
LEONARD  
WELKER

36

381+50 8.3

382+00 9.1

+25 9.5

+40 10.3

+50 9.8

+54.0 9.3

+66.85 P.1 9.4

382+93.70 +19.8

382+98.50 0.0

383+02.70 0.0

P on broken Aband. M.H. 5.41 39.91 8.05 34.50

383+60 +2.04

383+69.3 +3.82

383+69.3 6.9

P (on P.I. Hub) 5.50 40.31 5.10 34.81

384+00 7.6

384+23.25 P.1 6.9

+50 8.1

+75 8.0

381+75

Broken  
Conc.  
Riprap

12'

7.7  
12

9.3  
4

9.5  
12

7.0  
30

3.3  
10

Edge Creek

(Loose on Top)

Rim M.H. 7.70  
10

(Invert 7.07 lower)

(RT X Br. Tang) 8.2 8.1 9.6 10.4 9.6 9.0 3.0 2.8  
25 17 12 8 5 8 20 30

Bottom of Beam, Conc, Nor. Face of Bridge

Bottom of supported wooden TELE CONDUIT

" of Conc Beam

Bottom Conc Beam

" " " Se. Face of Bridge

9.0

7.6  
15

7.6  
6

6.4  
10

3.7  
17

0.8  
23

MAR. 17-51

CHATTY  
LEONARD  
WELNER

37

♀ PROFILE  
♀ X-SECTS

BRINE LINE

40.31

385+00	8.0
+15	8.0
+20	8.7
+50	8.6
386+00	9.2
386+00	
+50	9.3
387+00	9.8
+50	10.1
388+00	10.4
+50	11.1
+70 <sup>22</sup> P.I.	10.9
+90	10.6
389+00	9.7
+50	9.5
390+00	9.5
+30	10.0
+31	10.7
+41	10.0

J ST. CROSSING  
(Dir + ST)

94	81	95	95	9.0	8.5	7.1	5.3
30	17	11	9	3	12	20	23
							AT FEN.

4" Inv. To West 720 lower  
 4" Inv. To East 725 lower  
 20" Inv. To SE 923 lower  
 27" Invert. To south 134 lower

385+35±

RIM SEWER M.H.

3.96

50±

88	10.2	10.0	9.8	9.9	8.3	7.1	7.1
35	25	16	6	3	15	22	20

10.5	11.0	9.8	10.0
22	9	7	25

11.0	10.5	9.6
11	3	25

TO FEN.

(Top 6" Thru Sew. 62 Lower)

RIM SEWER M.H.

8.88

10

9.3	9.4	10.8	11.6	11.6	10.5
30	3	5	13	15	20

(level)



± PROFILE  
± X-SECT. 5

	40.31			
390+50			10.4	
+51			10.7	
+53			9.8	
TP. (Rock)	6.41	36.60	10.12	30.19
CK B.M.	2.29	34.84	4.05	32.55
+75			5.2	
391+00			4.5	
+50			5.4	
+85			5.7	
+95 <sup>87</sup>			4.6	
392+00			4.1	
+05			4.8	
+50			4.8	
393+00			4.7	
+27			4.4	
+50			4.8	
394+00			5.2	
+50			6.1	
+66 <sup>46</sup>			5.9	

V.C.P.

B.P. IN CONC MON S.W. COR 34<sup>th</sup> & J ST

2.6 2.6 4.9  
30 10 6  
New Fill for  
Lot Leveling

2.6 2.6 6.5 5.7 5.7  
30 6 8 20 30

391+95<sup>87</sup> Rim. Sewer M.H. 30.55  
4.29  
10

4.8 4.0 4.0 5.7 (Lot Levelled)  
6 FEN 6 1 25

4.8 4.7 6.0 7.5 (Lot Levelled)  
FEN 3.3 2 6 30

5.4 5.2 10.1 10.4 10.1  
25 18 32 37 42

Rt. X. Bx Tan 6.5 6.3 5.9 8.6 9.3  
30 10 3 11 30

MAR 19 1951

39

§ PROFILE  
§ X-SECT.S

BRINE LINE

34.81

394 +74

6.2

+85

9.1

395 +100

9.7

6.5 9.3

9.6 8.3

27 17 \* 21 30

+10

9.2

+11

10.1

+25

18.2

19 FT. 395 +23

RIM SEW M.H.

7.74

+27

11.2

TP TOP SEW  
M.H.

7.74 27.07

B.M.

5.46 38.01

32.55

TP

11.14 45.13

4.02 33.99

2.55 42.58

NAT. GRD. AT PUMP

1.88 43.25

Top 6" THICK 30" CONC. CAP over Well

Elev of Well

3402 J ST

See BK pg.

for Location



E PROFILE  
BRINE LINE

Mar. 22, 1951  
DEATY  
LEONARD

40

391	P rim M.H.	327	33.82	30.55	10' at 391+95.87		
	392+00			3.2			
39	+10			4.4			
	+50			5.0			
	393+00			5.7			
	+50			5.7		3.7 18	3.7 13
	+70			5.3			5.0 8
4	+92			7.8			6.4 15
10	394+00			8.1			
11	+13			9.0		4.3 10	9.2 4
	+50			8.0			9.3 18
	+80			8.6			
	395+00			9.3			
	+10			10.1			
CR 11	P	6.73	33.80	6.73	27.09 = 27.07	Creek bottom	8.3 9.1 " 9
	+12.73 P.L.			10.1		Rim of M.H.	9.2 9.2 10 20
	+25			9.4			
	+37			9.2			
	(+24.3)			+0.83			
	(+33.5)			+0.05			

} Bottom of Stringers

E PROFILE  
BRINE LINE

	33.80		
395+50		9.6	
+65		8.9	
+94 <sup>39</sup> P.I.		9.4	
P <sub>top</sub> P.I. H <sub>2</sub> O	7.26	31.63	9.43 24.37
396+00		7.2	
+15		7.1	
+35		8.5	
+40		9.1	
+52		8.9	
+60		6.5	
397+00		6.1	
+50		7.1	
398+00		7.8	
+50		7.8	
399+00		8.2	
+36 <sup>50</sup> P.I.		8.9	
+50		8.3	
+70		9.5	
400+00		10.0	

GROUND SURF  
AT WELL 182' RT  
395+90

8.7  
182' RT

395+90'

Rim Sew M.H. 7.34 16.38  
13.4 RT invert

} creek bottom

7.00  
10.

Rim M.H.



3/22/51

3/29/51

42

E PROFILE  
BRINE LINE

31.63

400+25 9.0

+50 9.3

401+00 10.2

+09 10.2

+12 11.7

CK B.M. 194 31.52 2.05 29.58 = 29.57

AP NEAR HANDRAIL OF BRIDGE  
ON E OF BRINE LINE

+50 11.5

+65 11.3

+80 12.1

402+00 12.0

+44.86 12.2

Edge BRIDGE

+44.86 6.03

Bottom of Conc Arch

+85.39 12.3

Edge BRIDGE

+85.39 6.03

Bottom of Conc Arch

403+00 12.4

+13.93 P.I. 12.5

10.64 RIM M.H.  
10.

+35 12.0

Edge CRK

+50 11.8

MAR. 29 1951

BETTY  
LEONARD

43

♀ PROFILE  
BRINE LINE

	31.52		
404+00		12.1	
+14			
+50		11.9	
405+00		11.2	
+50		11.6	
+61 <sup>13</sup>	P.I.	11.8	
HP Top H <sub>2</sub> O	608 25.78	11.82	19.70
+72		6.0	
+90		4.8	
406+00		5.8	
+20		7.7	
+24		8.6	
+40		9.1	
+46		8.0	
+60		7.5	
+75		8.9	
+88		8.8	
407+00		8.1	
+08		4.5	

Rim. M.H. 8.87  
10

Crossing +07



3/29/51

44

☉ PROFILE  
BRINE LINE

25.78

407+20	4.6
+33 <sup>63</sup>	6.06
+35 <sup>43</sup>	6.36
+50	5.8
+90 <sup>33</sup>	6.55
407+91 <sup>83</sup>	6.25
408+00	5.2
+25	5.3
+50	5.8
409+00	6.3
+49	6.5
+56 <sup>91</sup>	7.31
+58 <sup>41</sup>	7.61
+70	7.5
+85	7.7
410+00	7.3
+20	7.4
+30	7.0
+40	8.2
+70	8.0

Top of Curb

Edge of Gutter

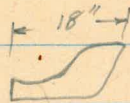
" " "

Top of Curb

Top Curb

Edge Gutter

☉ Durant St



7.4 } Ground  
Surface  
7.5 } at Well  
House

3/29/51

45

♀ PROFILE  
BRINE LINE

	25.78		
410+80		9.8	
411+00		10.0	
+23 <sup>3</sup>		10.50	
+45		11.8	
412+00		11.3	
+50		11.8	
+60		12.5	
413+00		12.4	
+08		13.4	
+35		12.5	
Ⓟ	4.28	19.90	10.16 15.62
+50		7.2	
+75		7.3	
+93		5.0	
414+00		5.1	
+50		5.2	
415+00		6.1	
+196 <sup>3</sup>	E.C.	6.1	
+50		6.1	

Top 1 1/2" WATER PIPE

Rim M.H. 8.13

Edge Creek

" "



§ PROFILE  
 § BRINE LINE

3/29/51

46

19.90

415+58	4.7
+85	5.1
416+00	6.8
+10	9.0
+25	7.3
+38	6.9
+55	7.5
+62	9.4
+74	9.3
+77	7.5
417+00	6.6
+15	5.2
+25	5.0
+45	5.5
+55	4.9
+70	6.3
+86	4.4
418+00	5.7
+50	5.7

Edge Creek

" "

(Top of Conc. 3.52) NAT GRD AT Well 417+25 5.0  
 Dia 33 Conc Dia. 10. 300'±  
 WATER 13.25

(Top Cover 4.31  
 WATER 13.06  
 55x6" Conc.  
 Lined with Rock  
 52" Dia) " " " " 5.7  
 418+00 175'±

(Top Conc 185. 4.90  
 WATER 13.12  
 Cir. 6" Dia  
 Stone-Brick) " " " " 5.6  
 419+13 50'±

2/29/50

47

♂ PROFILE

PRINE  
LINE

19.90

419+00 4.9

+25 5.5

+35 4.1

+50 5.0

+85 4.4

+90 4.8

+95 8.0

420+00 7.9

+25 10.8

+35 11.1

+43 10.7

+51 9.1

+56 6.0

+75<sup>80</sup> POT 5.4

421+00 4.3

IP 4.69 21.57 3.02 16.88

+50 6.6

+84<sup>08</sup> 6.7

422+00 6.7

Edge Creek

♂ 1

Edge "



3/29/51

48

E. PROFILE  
 BRINE  
 LINE

	21.57		
422+27 <sup>20</sup>	P.I.	7.0	
+50		7.2	
+82		7.3	
+86		6.4	Edge Driveway
+95		6.0	" " } DIET
423+06		6.8	
+16		4.3	
+227		3.73	Edge Sidewalk
+313		3.91	
+377		4.02	Top - face curb
+387		4.68	Gutter - (Conc)
+87		4.22	E Ocean View Blvd.
424+25 <sup>24</sup>	P.I.	5.34	
+26 <sup>24</sup>		5.36	Gutter line
+40 <sup>96</sup>		5.17	End Conc part
CK B.M.		4.55	City Datum
		17.02	= 17.22
+50		5.8	Top F.H. SE Cor 33 <sup>rd</sup> & Oceanview
425+00		8.8	
+50		10.0	

3/29/51

49

E PROFILE  
BRINE  
LINE

21.57

426+00 10.1

+50 10.7

427+00 10.9

+50 10.9

428+00 10.9

+50 11.4

429+00 11.7

+50 11.9

430+00 12.5

TBM. (SET) 0.93 11.80 10.70 10.87

+50 3.1

431+00 3.1

+50 3.5

432+00 3.4

+16 3.2

+20 2.7

+28 3.8

+50 4.2

433+00 5.0

430+28<sup>S</sup> 17<sup>RT</sup> Rim SEW MH

11.32 invert 6" 17.27  
17. -5.95

Top FH SE Cor Martini &  
Gregory

4.85  
3.23  
1.62

Typical ditch 3.2 3.6  
432+28- 6 2  
434+50-

2.8 3.8  
4 9



Mar. 29 1951

50

2 PROFILE  
BRINE LINE

11.80

4	433+50			4.7
	434+00			5.0
4	+50			5.1
	435+00			5.2
4	+50			5.1
	436+00			5.4
4	+50			5.5
	437+00			5.6
4	SET TBM	3.55	11.03	4.32 07.48
71	+35			4.7
	+50			4.9
4	+60			4.9
	+80			6.7
4	438+00			7.0
	+50			7.0
	+89 <sup>36</sup>	P.I.		6.8
	+96			5.4
	439+00			5.6
4	+30			5.7

5.6  
4 Bottom ditch

Spikes in po. pole

Mar. 30 1951

♀ PROFILE

BRINE  
LINE

MAR. 30 1951  
BEATTY  
LEONARD  
NELSON

51

11.03

4	439+50		6.2	
	+60		6.9	
4	+94		6.7	
	+96		7.4	
4	+98		6.2	
	440+00		6.2	
4	+05		6.7	
	+35		7.4	
4	+50		7.1	
7	441+00		6.3	
	+13		6.4	
4	+20		6.9	
	+23 <sup>75</sup> P.O.T.		8.0	
4	+30		9.5	
	+35		11.9	-0.9
HD	6.25	12.21	5.10	05.93
CK B.M			6.25	05.96 = 06.40
CK B.M			0.66	11.55 = 11.64
			15.5	-03.3

Edge of water in Slough 110' Northwesterly  
OF BRIDGE ON NATIONAL AVE

Spike in 12x12" in Bridge (dont look too good)

B.P. SW Cor. 33 & National

High Tide channel 5' Nor of BRIDGE ON NATL AVE



19° 43' 30"

265.92  
N 206.75  
59.17

242.02  
207.08  
34.94

59.17

34.94

476.03

12.45

488.48

189

486.59 PD

8.75

495.34 d 495.34

4.30

495.10

491.00

SET. BM

12.76

507.86

0.04

507.82

12.22

520.04 d 1.002

1.60

518.44

12.43

530.87 d 2.48

2.48

528.39 PD

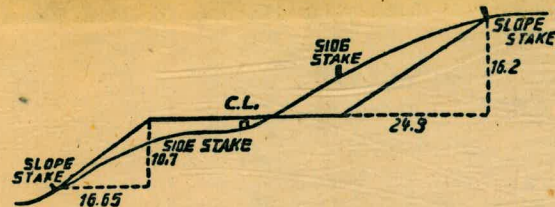
9.42

537.81

1.41

536.40

1.42 1.42  
3 35  
4.26 7.10  
426.  
5.0



**DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING.**

SLOPE 1 1/2 TO 1. ROADWAY OF ANY WIDTH.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0.00	0.15	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	0
1	1.50	1.65	1.80	1.95	2.10	2.25	2.40	2.55	2.70	2.85	1
2	3.00	3.15	3.30	3.45	3.60	3.75	3.90	4.05	4.20	4.35	2
3	4.50	4.65	4.80	4.95	5.10	5.25	5.40	5.55	5.70	5.85	3
4	6.00	6.15	6.30	6.45	6.60	6.75	6.90	7.05	7.20	7.35	4
5	7.50	7.65	7.80	7.95	8.10	8.25	8.40	8.55	8.70	8.85	5
6	9.00	9.15	9.30	9.45	9.60	9.75	9.90	10.05	10.20	10.35	6
7	10.50	10.65	10.80	10.95	11.10	11.25	11.40	11.55	11.70	11.85	7
8	12.00	12.15	12.30	12.45	12.60	12.75	12.90	13.05	13.20	13.35	8
9	13.50	13.65	13.80	13.95	14.10	14.25	14.40	14.55	14.70	14.85	9
10	15.00	15.15	15.30	15.45	15.60	15.75	15.90	16.05	16.20	16.35	10
11	16.50	16.65	16.80	16.95	17.10	17.25	17.40	17.55	17.70	17.85	11
12	18.00	18.15	18.30	18.45	18.60	18.75	18.90	19.05	19.20	19.35	12
13	19.50	19.65	19.80	19.95	20.10	20.25	20.40	20.55	20.70	20.85	13
14	21.00	21.15	21.30	21.45	21.60	21.75	21.90	22.05	22.20	22.35	14
15	22.50	22.65	22.80	22.95	23.10	23.25	23.40	23.55	23.70	23.85	15
16	24.00	24.15	24.30	24.45	24.60	24.75	24.90	25.05	25.20	25.35	16
17	25.50	25.65	25.80	25.95	26.10	26.25	26.40	26.55	26.70	26.85	17
18	27.00	27.15	27.30	27.45	27.60	27.75	27.90	28.05	28.20	28.35	18
19	28.50	28.65	28.80	28.95	29.10	29.25	29.40	29.55	29.70	29.85	19
20	30.00	30.15	30.30	30.45	30.60	30.75	30.90	31.05	31.20	31.35	20
21	31.50	31.65	31.80	31.95	32.10	32.25	32.40	32.55	32.70	32.85	21
22	33.00	33.15	33.30	33.45	33.60	33.75	33.90	34.05	34.20	34.35	22
23	34.50	34.65	34.80	34.95	35.10	35.25	35.40	35.55	35.70	35.85	23
24	36.00	36.15	36.30	36.45	36.60	36.75	36.90	37.05	37.20	37.35	24
25	37.50	37.65	37.80	37.95	38.10	38.25	38.40	38.55	38.70	38.85	25
26	39.00	39.15	39.30	39.45	39.60	39.75	39.90	40.05	40.20	40.35	26
27	40.50	40.65	40.80	40.95	41.10	41.25	41.40	41.55	41.70	41.85	27
28	42.00	42.15	42.30	42.45	42.60	42.75	42.90	43.05	43.20	43.35	28
29	43.50	43.65	43.80	43.95	44.10	44.25	44.40	44.55	44.70	44.85	29
30	45.00	45.15	45.30	45.45	45.60	45.75	45.90	46.05	46.20	46.35	30
31	46.50	46.65	46.80	46.95	47.10	47.25	47.40	47.55	47.70	47.85	31
32	48.00	48.15	48.30	48.45	48.60	48.75	48.90	49.05	49.20	49.35	32
33	49.50	49.65	49.80	49.95	50.10	50.25	50.40	50.55	50.70	50.85	33
34	51.00	51.15	51.30	51.45	51.60	51.75	51.90	52.05	52.20	52.35	34
35	52.50	52.65	52.80	52.95	53.10	53.25	53.40	53.55	53.70	53.85	35
36	54.00	54.15	54.30	54.45	54.60	54.75	54.90	55.05	55.20	55.35	36
37	55.50	55.65	55.80	55.95	56.10	56.25	56.40	56.55	56.70	56.85	37
38	57.00	57.15	57.30	57.45	57.60	57.75	57.90	58.05	58.20	58.35	38
39	58.50	58.65	58.80	58.95	59.10	59.25	59.40	59.55	59.70	59.85	39
40	60.00	60.15	60.30	60.45	60.60	60.75	60.90	61.05	61.20	61.35	40
41	61.50	61.65	61.80	61.95	62.10	62.25	62.40	62.55	62.70	62.85	41
42	63.00	63.15	63.30	63.45	63.60	63.75	63.90	64.05	64.20	64.35	42
43	64.50	64.65	64.80	64.95	65.10	65.25	65.40	65.55	65.70	65.85	43
44	66.00	66.15	66.30	66.45	66.60	66.75	66.90	67.05	67.20	67.35	44
45	67.50	67.65	67.80	67.95	68.10	68.25	68.40	68.55	68.70	68.85	45
46	69.00	69.15	69.30	69.45	69.60	69.75	69.90	70.05	70.20	70.35	46
47	70.50	70.65	70.80	70.95	71.10	71.25	71.40	71.55	71.70	71.85	47
48	72.00	72.15	72.30	72.45	72.60	72.75	72.90	73.05	73.20	73.35	48
49	73.50	73.65	73.80	73.95	74.10	74.25	74.40	74.55	74.70	74.85	49
50	75.00	75.15	75.30	75.45	75.60	75.75	75.90	76.05	76.20	76.35	50

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Loading & Unloading

Camp

Camp