

W
447

ENGINEER
LEVEL BOOK

EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and
SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

Distances from Center of Roadway for Cross-Sectioning
Roadway 16 feet wide. Side Slopes 1 on 1.
For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	0
1	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	1
2	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	2
3	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	3
4	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	4
5	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	5
6	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	6
7	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	7
8	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	8
9	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	9
10	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	10
11	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	11
12	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	12
13	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	13
14	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	14
15	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	15
16	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	16
17	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	17
18	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	18
19	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	19
20	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	20
21	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	21
22	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	22
23	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	23
24	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	24
25	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	25
26	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	26
27	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	27
28	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	28
29	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	29
30	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	30
31	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	31
32	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	32
33	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	33
34	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	34
35	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	35
36	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	36
37	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	37
38	46.0	46.1	46.2	46.3	46.4	46.5	46.6	46.7	46.8	46.9	38
39	47.0	47.1	47.2	47.3	47.4	47.5	47.6	47.7	47.8	47.9	39
40	48.0	48.1	48.2	48.3	48.4	48.5	48.6	48.7	48.8	48.9	40

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 30.6. For same slopes but other widths of roadbed, correct above figures by one-half difference in width of roadbed; thus in example above, for 20 ft. roadbed distance will be $30.6 + (20 - 16) \div 2$ or 2 ft. added to 30.6 = 32.6. For slopes of 1 on 1½ see inside of back cover.

Copyright, 1914, by Eugene Dietzgen Co.

208

0400

447

El Capitan Dam

Construction Book

Property of City of San Diego

MICROFILMED

JAN 12 1965

Index

Page

Movement of monuments on dam

28-29-30

41-42-46

48-49-53

56-81

Core Trench Final Profile

5, 13, 55.

B.M.s on 700' Berm

p. 50-51-

Miscellaneous Construction Notes

1-45

MICROFILMED

JAN 15 1985

Bench Level

Oct. 16th

2

	+	H.I.	-	
B.M.	11.29	738.15		726.84
F	11.84	749.85	0.16	737.99
F	12.08	760.61	1.32	748.53
EST. B.M. ON FLUME LEVEL			7.55	753.06
F			10.81	749.80
EST. B.M. ON FLUME LEVEL	6.99	756.79	6.37	750.42
F	1.55	746.02	12.32	744.47
F	1.49	734.93	12.58	733.44
CHECK ON B.M.			11.22	723.71
				$\begin{array}{r} 723.71 \\ 723.69 \\ \hline .02 \end{array}$

5490.67

5418.67

5405.67

5280.67

5278.67

5145.67

5144.67

5035.67

5005.67

4971.92

4946.92

4894.92

4836.92

4736.92

4594.92

4594.92

4516.92

700

750

750

750

700

650

600

575

100.3

100.3

100.3

100.3

37.5
2.75
18.0
75.0
9.37
5270.65
93.75
5176.90
5176.90
511.5

4836.9
75
4811.9

680
1117

97.5

Downstream 15 15 Upstream 763

18.85	20.92	750
19.96	23.49	40
21.46	26.07	30
22.96	28.64	20
24.46	31.22	10
25.96	33.79	700
27.47	36.37	90
28.97	38.94	80
30.47	41.52	70
31.97	44.09	60
33.47	46.67	50
34.98	49.24	40
36.48	51.82	30
37.98	54.39	20
39.48	56.97	10
		600

Jan 20-34

4960

4960
100
5060

Elev 683
5050
15.8
659

Dec. 2, 1933: Set flags in Puddle core for Elev. 685 Plus 10', E. 5045¹, E 4963³

Note: Use 27.47 and 36.37 at 680 and slope to 15' at 750. H.W. Mar 13-1934

Inst. Slope = .17813
Up = .130529

Elev. 662 plus settlement allowance

July 9-33 4

E47912

1461

Downstream

B.M	2.86	651.87		649.01	
O.G			8.8	662.0	Fill 189
3800			4.7	643.1	
				662.9	
3840			4.7	647.2	Fill 152
				662.9	
Well #6			4.4	647.3	Fill 155
			7.0	644.9	
#3			3.3	648.6	
#2			3.3	648.6	
#7			0.5	651.4	
		653.5			
3260				662.0	
O.G			7.6	46.9	Fill 162
				662.5	
3300			5.1	48.4	Fill 142
				662.8	
3360			6.1	47.4	Fill 154
				663.2	
3420			5.6	47.9	Fill 153

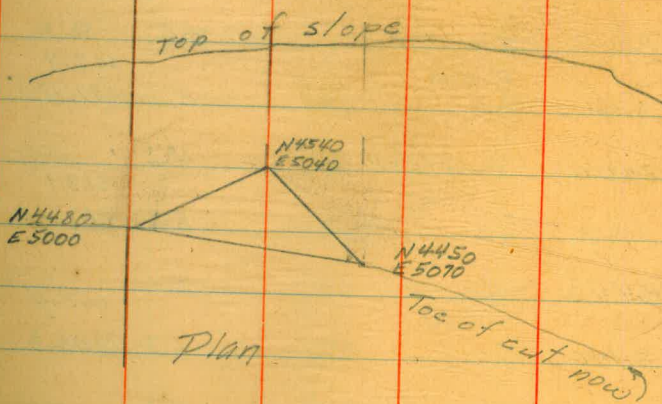
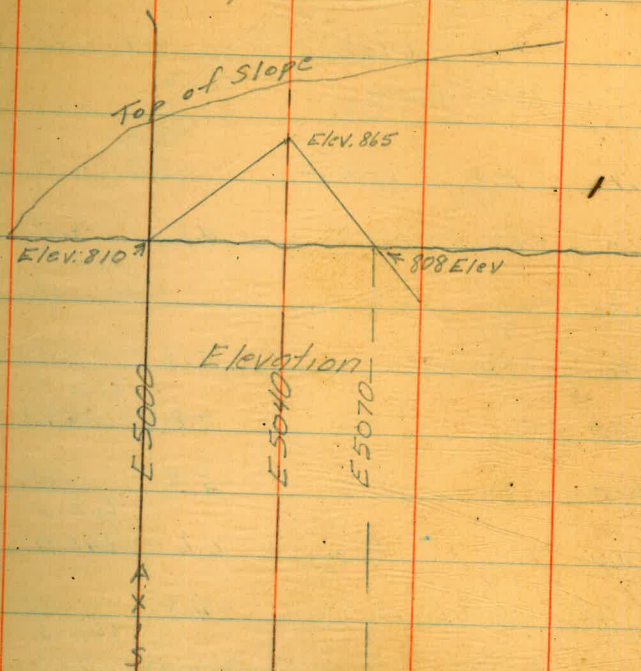
Final Profile Core Trench
July 10 - 1933

B.M.	9.02	678.02	669.00
3980	9.8	68.2	✓
3990	9.8	68.2	✓
3999	10.0	68.0	✓
4000	5.0	73.0	✓
4005	4.6	73.4	✓
4009	4.8	73.2	✓
4010	0.2	77.8	✓
4025 ^E	+0.3	678.3	✓
4025 ^S	+10.3	688.3	✓

Grout Holes

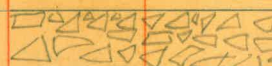
3982 E
3990 W
3998 E
4006 W
4014 E
4022 W

July 12 - 1933



July 13 - 1933

Elev. 662 + allowance



Downstream

Wall 0.0 652.5

3260 Shoulder 4.8

3260 Toe 662.0

3280 Shoulder 5.2

3280 Toe 662.0 644.7

3300 Shoulder 5.3

3300 Toe 662.5 645.9

3320 Shoulder 4.8

3320 Toe 662.6 647.7

3360 Shoulder 4.5

3360 Toe 662.8 647.4

3400 Shoulder 4.6

3400 Toe 663.1 646.2

3440 Shoulder 5.1

3440 Toe 663.4 646.3

3480 Shoulder 4.8

3480 Toe 663.6 646.6

Elliott
Simpson
Soper
Tremick

Fill 16¹

Fill 17²

Fill 16⁶

Fill 14²

Fill 15⁴

Fill 16³

Fill 17¹

Fill 17¹

652.5

3520 Shoulder 5.1 647.4

3520 Toe 3.8 648.7 Fill 14²

3560 Shoulder 5.1 663.7

3560 Toe 5.5 647.0 Fill 16²

3600 Shoulder 6.2

3600 Toe 6.5 663.9 646.0 Fill 17³

3640 Shoulder 4.4

3640 Toe 5.4 663.8 647.1 Fill 16²

3680 Shoulder 4.9

3680 Toe 5.5 663.7 647.0 Fill 16²

Upstream July 15 - 1933

0.0 651.1

N. 3960 Shoulder 7.1 662.9

3960 Toe 8.6 42.5 Fill 20⁴

3920 Shoulder 5.8 663.2

3920 Toe 7.5 43.6 Fill 19⁶

3880 Shoulder 5.0

3880 Toe 7.7 43.4 Fill 20¹

3840 Shoulder 4.3 663.6

3840 Toe 8.0 643.1 Fill 20⁵

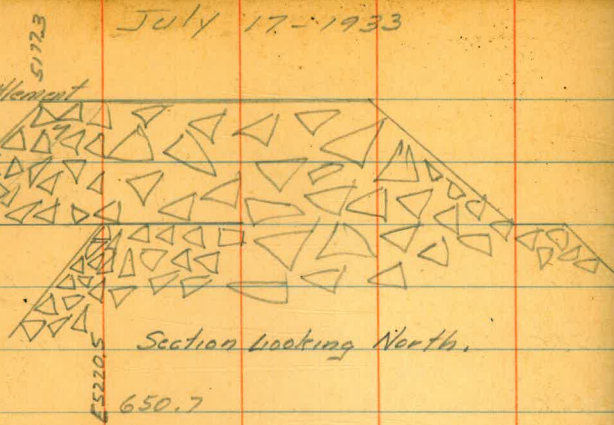
July 17-1933

7

Elev 662 + Settlement

Elev 650

E 51652



Section looking North.

650.7

one 51652

N3800

+0.8 651.5

N3700

+0.8 651.5

N3600

+0.8 651.5

N3500

+0.8 651.5

N3400

+0.2 650.9

N3300

-0.4 650.3

N3187 O.G.

-0.7 650.0

July 15, 1933 Finish Rock Grades

B.M.	3.57	629.98		626.41
K 3880			4.1	625.7
3920			2.6	625.4
3960			4.7	625.3

July 18-1933

E 52802 Elev. 650+

	0.0	664.6		664.6
	0.1	651.7	12.8	651.8
3780			0.4	651.5
3820			0.5	651.4
3860			0.5	651.4
3900			0.8	651.1
3940			1.1	650.8
3980			1.4	650.5

July 21-1933

47602 - 662+

3220		666.6	4.6	662.0
3260			4.6	662.0
3300			4.0	662.6

July 21-1933

666.6

3340				3.8	662.8
3380				3.6	663.0
3420				3.4	663.2
3460				3.0	663.6
3500				3.0	663.6
3540				3.0	663.6
3580				2.9	663.7
3620				2.7	663.9
3660				2.8	663.8
3700				2.9	663.7
3740				3.0	663.6
3780				3.2	663.4
3820				3.6	663.0
3860				3.8	662.8
3900				4.0	662.6

Slope Stakes So. End Core Wall
 July 19-1933

Grade

B.M.	12.81	698.81		686.00		
3120	W.		9.6	689.2	680.8	684 114
"	E.					Vert. Cut
					686.6	
3110	W		6.0	692.8		662 92
"	E		3.6	695.2		682
T.P.	12.48	710.94	0.35	698.46		112
3100	W.		10.8	700.1	691.0	692 122
"	E		4.9	706.0		652 182
3080	W		3.6	707.3	702.6	642 72
"	E		2.3	708.6		660 92
T.P.	11.10	721.71	0.33	710.61		
3060	W.		0.0	721.7	715.1	666 696
"	E		2.3	719.4		643 73

Slope Stakes, No. end Core Trench
 Oct. 6, 1933.

B.M.	9.49	712.08		702.59		
4040	West		5.2	706.9	702.7	642 72
"	East		5.4	706.7	"	642 72
4050	"		5.2	706.9	702.9	

Rock Grades July 21-1933

E4726.9 - E1650.1

B.M.	5.3	655.3	650.0	3890
N3280		5.3	650.0	
3320		4.8	650.5	
3360		4.7	650.6	3340
3400		4.4	650.9	3300
3440		4.1	651.2	3260
3480		3.9	651.4	

July 24-1933

B.M.	5.8	655.8	650.00	N3620
3480		4.4	651.4	3660
3520		4.4	651.4	3700
3560		4.3	651.5	3740
3600		4.1	651.7	3780
3640		4.2	651.6	3820
3680		4.3	651.5	3860
3720		4.3	651.5	3900
3760		4.5	651.3	
3800		4.9	650.9	
3840		5.1	650.7	

655.8

5.3 650.5

July 28-1933 E4760.9 E662.4

0.0 667.5 667.5

4.7 662.8

4.9 662.6

5.1 662.3

0.0 666.7

59.5

7.2

2.7 663.9

2.9 663.8

3.0 663.7

3.1 663.6

3.3 663.4

3.7 663.0

4.0 662.7

662.5
62

Aug 1 - 1933

E 5280.67 - Elev. 650+

B.M.	3.23	661.75	658.52
Set B.M.		5.97	655.78
	0.0	658.63	3.12 658.63
3240		8.6	650.0
60		8.6	650.0
80		8.4	650.2
3320		8.2	650.4
3360		8.0	650.6
3400		7.7	650.9
3440		7.4	651.2
3490		7.2	651.4
3520		7.1	651.5
3560		7.1	651.5
3600		7.1	651.5

Aug 1 - 1933

11

E 5240.67 - Elev. 662+

B.M.	8.26	664.05	655.79
3200			662.0
3220			662.1
3240			1.8 662.2
3280			7.6 662.4
3320			1.4 662.6
3360			1.2 662.8

12
15
60
12
80

663.5 Aug 2 - 1933

3280		1.1	662.4
3320		0.9	662.6
3360		0.7	662.8
3400		0.4	663.4
3440		0.1	663.4
3520		+0.2	663.7

664.2

3600		0.5	663.7
3680		0.5	663.7
3760		0.5	663.7

Aug 4 - 1933
E 52802 - Elev. 650 +

B.M.	0.0	664.56	664.56
	3.72	655.3	12.98 651.58
3620			3.8 651.5
3640			3.8 651.5
3680			3.8 651.5
3740			3.8 651.5
3780			3.8 651.5
3820			3.9 651.4
3860			3.9 651.4
3900			4.2 651.1
3940			4.5 650.8
3980			4.8 650.5
4020			5.0 650.3

E 5240⁶⁷ - Elev. 662'

12

664.8
628

3400		1.7	663.1
3440		1.4	663.4
3320		2.2	662.6
3520		1.1	663.7

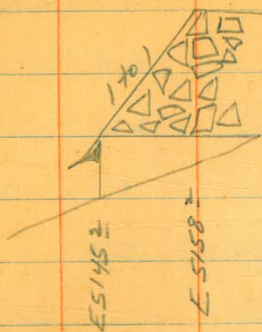
Aug 8 - 1933

	0.0	666.4	666.4
3680		2.7	663.7
3740		2.7	663.7
3820		2.8	663.6
3900		3.1	663.3
3980		3.7	662.7
406		4.4	662.0

Aug 15 - 1933

B.M.	0.48	665.04	664.56
3900		1.7	663.3
3940		2.0	663.0 ✓
3980		2.3	662.7
4020		2.5	662.5

Grades for Beach Under
Rock Emb. Aug 7-1933



B.M.	0.0	667.8	667.8
113180		668.4	5.3 662.5
3300			5.4 663.0
3400			4.8 663.1
3500			4.2 664.2
3600			4.2 664.2
3700			4.2 664.2
3800			4.2 664.2
3900			4.6 663.8
4030			5.9 662.5

675.0
662.5 + 5000 ft

Final Profile Core Wall
Aug 7-1933

13

B.M.	13.27	671.77	658.52
			0.48 671.31 ✓
	12.66	683.97	
Set B.M.	4.16	687.80	0.33 683.64 ✓
T.P.			1.47 686.33 ✓
	3.73	690.06	
3121		18.9	691.2 ✓
3118		19.6	690.5 ✓
3105		18.0	690.1 ✓
3100		9.5	680.6 ✓
3094		9.8	680.3 ✓
3088		5.0	688.1 ✓
3080		2.6	687.5 ✓
3076		2.7	687.4 ✓
3073		+2.3	692.4 ✓
3062		+3.5	693.6 ✓
3056		+9.7	699.8 ✓
3052		110.7	700.8 ✓
3059		+17.0	707.1 ✓



Exploration Tunnel
4 ft wide

Not final
see # 2, 4, 5, 35

Aug 7 - 1933
Grout Holes

N3114W

N3105E

N3097⁵W

N3089 E

N3082 W

N3073⁵E

N3066⁵W

N3061 E

Concrete Grades

B.M.

4.28 690.61

686.33

3120

12.61 678.0

12.61 678.0

3112

8.61 682.0 step.

8.61 682.0

2.61 688.0

2.61 688.0

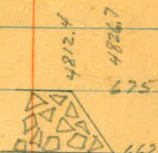
3088

+3.39 694.0

Grades for beach under 14
rock embankment. Aug 7 - 1933

B.M. 0.0 666.7

666.7



DNE 4826.2

3240

4.2

662.5

3300

3.6

663.1

3400

3.1

663.6

3500

2.6

664.1

3600

2.3

664.4

3700

2.5

664.2

3800

3.1

663.6

3900

3.6

663.1

Finish Rock Grades Aug 9 - 1933
 E 4760.9 - Elev 662 +

15

B.M.	0.0	667.9		667.9
N3820			4.9	663.0
3860			5.1	662.8
3900			5.3	662.6

B.M.	13.52	697.16		683.64
			10.54	686.62
			2.52	694.64
T.P.			0.0	697.16
		686.62		
3116			8.62	678.0 678.0
3108			4.80	681.82 682.0 Fol"

E 47262 - Elev 650 +

B.M.	6.63	655.64		649.01
N. 3947			5.64	650.0
N 3900			5.2	650.4

		694.64		
N3100			6.64	688.0 688.0
3092			6.52	688.12 688.0 60.14

E 47602 - Elev. 662 +

Aug 17 - 1933

B.M.	12.39	652.05		639.66
	12.45	664.23	0.27	651.78
3900			1.6	662.6
	6.18	668.44	1.97	662.26
3930			6.4	662.0
3860			5.6	662.8

	6.59	703.75		697.16
3084 T.P.	6.22	700.37	9.60	694.15 694.0
Step 3080			0.37	700.0 700.0
3072			0.37	700.0 700.0
			+5.63	706.0 706.0
3064			+5.63	706.0 706.0

T.P.	12.60	674.86		662.26
3900			+0.7	675.6
3860			+0.9	675.8

E 47869 Elev 675 +

Aug 22 - 1933

E 47882 - Elev. 676 ±

B.M.	10.27	680.05	669.78
N 3900 - E 4786.2	(All others)	4.4	675.6
B.M.	10.48	680.26	669.78
3860		3.5	676.8
3820		3.2	677.1
3780		2.9	677.4
3740		2.6	677.7
3700		2.4	677.9

Aug 23 - 1933

B.M.	11.04	680.82	669.78
3860		4.0	676.8
3900		4.2	676.6
3660		2.8	678.0
3620		2.8	678.0
3580		2.9	677.9
3540		3.0	677.8

Finish Rock Grades

16

E 4760[?] - Elev. 662[±]

Aug. 24 - 1933

B.M.	6.69	667.19	660.50
3220		5.2	662.0
3260		4.9	662.3
3300		4.6	662.6
3340		4.3	662.9
3380		4.1	663.1
3420		3.9	663.3
3460		3.6	663.6
3500		3.6	663.6
3540		3.6	663.6
3580		3.5	663.7
3620		3.4	663.8
3660		3.4	663.8
3700		3.5	663.7
3740		3.6	663.6

E 4788[?] - Elev. 676[±]

B.M.	9.94	680.12	670.18
3500		2.3	677.8
3460		2.3	677.8

E 4788³ - Elev. 676⁺ Aug. 24, 1933

.680.12

3420	2.5	677.6
3380	2.7	677.4
3340	2.9	677.2
3300	3.2	676.9
3260	3.5	676.6
3220		676.0

Aug. 29, 1933

B.M.	11.09	681.27	670.18
3620	3.3	678.0	
3580	3.4	677.9	
3540	3.5	677.8	
3500	3.5	677.8	
3460	3.5	677.8	
3420	3.7	677.6	
3380	3.9	677.4	

Aug. 29, 1933

17

E 5240³ - Elev. 662⁺

B.M.	12.51	668.30	655.79
3200	6.3	662.0	
3240	6.2	662.1	
3280	6.1	662.2	
3320	5.9	662.4	
3360	5.7	662.6	
3400	5.5	662.8	
3440	5.2	663.1	
3480	4.9	663.4	
B.M.	3.13	667.69	664.56
3520	4.1	663.6	
3560	4.0	663.7	
3600	4.0	663.7	
3640	4.0	663.7	
3680	4.0	663.7	
3720	4.0	663.7	
3760	4.0	663.7	
3800	4.0	663.7	
3860	4.1	663.6	
3900	4.4	663.3	

Aug 30, 1933
E 4788¹ - Elev. 676⁺

B.M.	1.89	680.07		670.18
3500			2.3	677.8
3380			2.7	677.4
3340			2.9	677.2
3300			3.2	676.9
3260			3.5	676.6
			4.1	676.0

Aug 30, 1933
E 5205⁷ - Elev. 676⁺

B.M.	0.0	681.0		681.0
3150			4.7	676.3
3300			4.1	676.9
3460			3.2	677.8
3540			3.1	677.9
3680			3.1	677.9
3760			3.1	677.9

18
E 5205⁷ - Elev. 676⁺ Sept. 1, 1933

0.0	679.30			679.3
3150			3.0	676.3
3200			2.9	676.4
40			2.7	676.6
80			2.5	676.8
3320			2.3	677.0

Sept 5 - 1933

680.4

3240			3.8	676.6
3280			3.6	676.8
3320			3.4	677.0
3360			3.2	677.2

Sept. 6 - 1933
681.9

3320			4.9	677.0
3360			4.7	677.2
3400			4.5	677.4

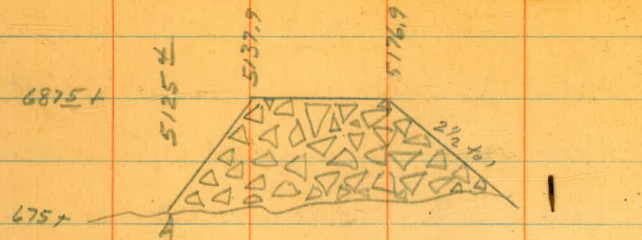
E. 5205⁶⁷ - Elev. 676⁺
Sept. 7, 1933
681.2

N 3400	3.8	677.4
3440	3.5	677.7
3480	3.4	677.8
3520	3.3	677.9
3560	3.3	677.9
3680	3.3	677.9
3880 ±	3.6	677.6

3669
220

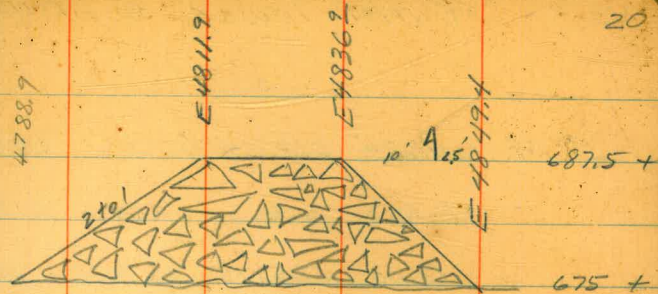
19

Grades on inside of upstr. Rock



B.M. 0.0 680.8 680.8

3200	5.3	675.5
3300	4.9	675.9
3400	4.2	676.6
3500	4.0	676.8
3600	3.9	676.9
3700	3.9	676.9
3800	3.9	676.9
3900	4.5	676.3
4000	5.2	675.6



0.0	679.7	679.7
0.6	4.7	675.0
3300	3.8	675.9
3400	3.1	676.6
3500	2.9	676.8
3600	2.7	677.0
3700	2.9	676.8
3800	3.5	676.2

Outlet Tower Sept 11-1933

B.M.	11.24	613.24		602.00
			0.49	612.75
	13.00	625.75		
			0.23	625.52
	8.95	634.47		
Set B.M.			3.82	630.65
	2.84	633.49		
Start of 1" Vert. steel	8.5	625.0		
Bottom of Bracket	7.21	626.28		
Top of Bracket	2.46	631.03		
" " "	F 2.46	"	631.03	
" " "	W. 2.46	"	631.03	



635.00
631.03
626.28

6.61
1.86
4.75
6.00
10.75

6.47
0.15
21

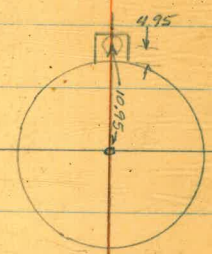
Check Elevs.

B.M.	0.36	631.01		630.65
			13.11	617.90
	0.33	618.23		
			10.73	607.50
	2.56	610.05		
B.M.			8.04 1/2	602.00 1/2 602.00

4.67
0.15
23.35
4.67
27.05

Outlet Tower Sept 14-1933

B.M.	7.53	638.18		630.65
Valve Base	7.17	631.01		



635. Valve

R.P. 43.13

55.94
43.13
12.81 ✓
10.95
1.86

Tower Sept 19 - 1933

B.M.	7.79	638.44	630.65
Top bracket Bolts (30" gate)	6.58	631.86	
Top bracket Bolts (6" gate)	5.91	632.53	
Top of forms	0.79	637.65	

outlet Tower - Sept. 23, 1933

B.M.	11.68	642.33	630.65
	6.15	647.46	1.02 641.31
8 Hooks	8.46	639.00	
Top of inside Forms	3.10	644.36	

Limits of Puddle Core on North Abutement

22

B.M.	8.73	752.29	743.56
15' E.			
15' W.			+ 10.71 763.0
20.9 E			
18.5 W.			12.29 740.0
T.P.	0.0	739.28	13.01 739.28
23.5 E			
20.0 W			9.3 730.0
T.P.			12.76 726.52
	0.19	726.71	
			11.7 715.0
T.P.	0.68	714.19	13.20 713.51
			14.2 700

Cross-section of Hydraulic Fill
Sept. 23, 1933

TOWER Sept 27

23

B.M.	0.00	679.1	679.1	B.M.	12.64	643.29	630.65	
							1.97	641.32
N 3620 E 5165		2.6			11.06	652.38		
5132		2.0		Top of form.		1.32 15 7/8"	651.06	Width 2' 8 1/2"
5128		4.2				1.32	651.06	Bottom Bracket 651.28
5110		6.2						Fill 0.22
5075		8.0	W.S.	30" stem Bracket bolts		2.52	649.86	

Tower Sept 29 - 1933

				B.M.	12.20	653.52	641.32	
4950		8.0	W.S.		8.16	659.15	2.53	650.99 Before 651.03
4862		2.9					3.12	656.03 Top Br.
4845		+ 9.0					7.87	651.28 Bottom Br.
4830		+ 9.0		width 2' - 7 3/8"			1.42	657.73 Top forms
							2.102 1.14	656.53 Top bolts 6" gate Br.

Finish Rock Grades

E. 4811¹ - Elev. 6875⁺

Oct. 2, 1933

B.M.	0.38	705.56		705.18
T.P.	2.35	695.88	12.03	693.53
Set B.M.			9.52	686.36
	4.99	691.35		
3175			3.9	687.5
3200			3.6	687.8
40			3.3	688.1
80			3.0	688.4
3320			2.7	688.7
3360			2.4	689.0
3400			2.1	689.3
3440			2.0	689.4
3480			1.9	689.5
B.M.	6.37	692.73		686.36
3520			3.2	689.5
3560			3.1	689.6
3600			3.1	689.6
3640			3.1	689.6
3680			3.1	689.6

Finish Rock Grades

E. 5176² - Elev. 6875⁺

Oct. 4, 1933

24

B.M.	0.44	708.97		708.53
T.P.	1.30	698.74	11.53	697.11
Set B.M.			11.94	686.80
	5.44	692.24		
3110 ⁺			4.7	687.5
3140			4.4	687.8
3180			4.2	688.0
3220			3.9	688.3
3260			3.8	688.4
3300			3.5	688.7
3340			3.4	688.8
3380			3.2	689.0
3420			2.9	689.3
3460			2.7	689.5
3500			2.6	689.6
T.P.	1.69	691.67	2.26	689.98
3540			2.1	689.6
3580			2.1	689.6
3620			2.1	689.6
3660			2.1	689.6

Simpson
Salgado
Kammen

Finish Rock Grades
E 5176² - Elev. 687.5⁺
Oct. 4, 1933
691.67

Converse
Alberts
Simpson

25

Cross-section of Hydraulic Fill
Oct. 5, 1933

3700		2.1	689.6				
3740		2.1	689.6	B.M.	6.9	687.1	680.2
3780		2.1	689.6	N3620 E 5140		+0.5	687.6
3820		2.2	689.5	5133		3.5	83.6
B.M.		4.90	686.77	686.80	5100	5.6	81.5
	Reset stakes.						
	Oct. 7, 1933				5077	6.9	80.2 = W.S.
B.M.	0.0	692.9	692.9		5062	7.9	79.2
3580	Reset	3.3	689.6		5054	10.9	76.2
3540	"	3.3	689.6		5046	14.9	72.2
3500	"	3.3	689.6		5040	16.4	70.7
3460	"	3.4	689.5		5030	18.9	68.2
3420	"	3.6	689.3		5000	23.4	63.7
3620	"	3.3	689.6		4985	21.9	65.2
3660	"	3.3	689.6		4970	17.9	69.2
3700	✓	3.3	689.6		4955	12.9	74.2
3740		3.3	689.6		4945	7.9	79.2
3780		3.3	689.6		4935	6.9	80.2 W.S.
3820		3.3	689.6		4900	5.5	81.6
3860		3.6	689.3		4855	2.7	84.4
					4840	+0.9	88.0

Finish Rock Grades
E 48113 - Elev. 687.5⁺

26

B.M.	6.16	692.52	686.36
3240		4.4	688.1
3200		4.7	687.8

Upstream TOC of rock slope (insite)
E 51058

	H.I.	Elev	Rod
On core wall	690.3		
N 3180		688.2	2.1
N 3260		688.5	1.8
N 3340		689.2	1.1
N 3420		689.6	0.7
N 3500		689.7	0.6
N 3580		689.7	0.6
N 3660		689.8	0.5
N 3740		689.7	0.6
✓ N 3820		689.7	0.6
✓ N 3900		689.0	1.3
N 3980		688.5	1.8
N 4060		688.1	2.2

at Elev 687.5
Downstream on E 4871.9
691.8

	Elev	Rod
On core wall		
	587.8	4.0
N 3200	588.2	3.6
N 3300	588.9	
N 3400	589.7	2.1
N 3500	589.7	2.1
N 3600	589.8	2.0
N 3700	589.7	2.1
N 3800	589.1	2.7
N 3900	588.3	3.5

Oct 9 - 33 27
Louden
Salgado
Remmen

Oct 9 - 1933

Elevs on core wall North end
for painting at N 4110 +

B.M	7.76	710.35	702.59
			5.35 705.00
			1.35 709.00

Louden
Remission
Saluda.
Oct 10, 1933

B.M. 9.24 711.83 702.59
N4153 E
Nail E 5125 E 8.00 703.83

0.75 704.58
Top of Rock Flays upstream South
abuttment.

700 S. Abutt.

Hub ms. beam 1 A 3 701.43 700.00
5.3 696.1 9.7 E of
berm line.
10.6 690.8 23' E of
berm line.
18.2 6832 42' E of
berm line.

downstream south abutt.

180 701.80 700.00
17.0 684.8 30.4 W of
berm line.
8.1 6937 12.6 W of
berm line.

downstream north abutt.

B.M. 1.39 697.48 696.09
A.2 693.3 13.4 W
of berm line.

670.18	659.98	661.00
0.24	1.02	9.96
<u>670.62</u>	<u>661.00</u>	<u>651.04</u>
10.64	11.64	
<u>659.98</u>	<u>649.35</u>	

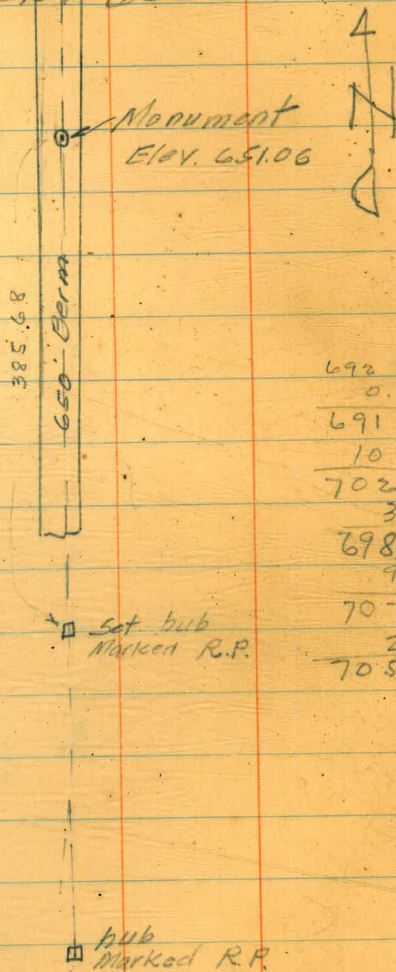
28

Oct 10 - 33
Louden.

Monument for movement on
downstream berm elev 650

B.M. 649.37
7.05
656.42
5.36
651.06

652.42
1.58
654.84
11.77
666.61
1.02
665.59
4.92
670.51
0.45
670.06
11.09
681.15
0.88
680.27
12.05
692.32
6.07
686.25



692.32
0.39
691.93
10.15
702.08
3.63
698.45
9.25
707.70
2.63
705.07

Oct 11-33

Monument for movement on
upstream 650' berm655.79 - B.M.
0.20655.99
A.66
651.33Set Hub on no. abutment
10/27/33Elev 651.33 Oct 10-33
Monument479.08
upstream 650' bermSet hub under pipe trestle
Marked R.R.Set hub
Marked R.P.

B.M. 0.29 605.62

605.15

4.77 600.87

Elev of Mon on 600' berm Oct 11-33

Elevs on downstream Monuments.

B.M. 8.14 607.80 599.66

Mon in 600 Berm 7.11 600.69 downstream

T.P. 11.18 618.34 0.64 607.16

T.P. 7.16 624.99 0.51 617.83

Mon center E4650 5.63 619.36

Mon South E4650 6.29 618.70

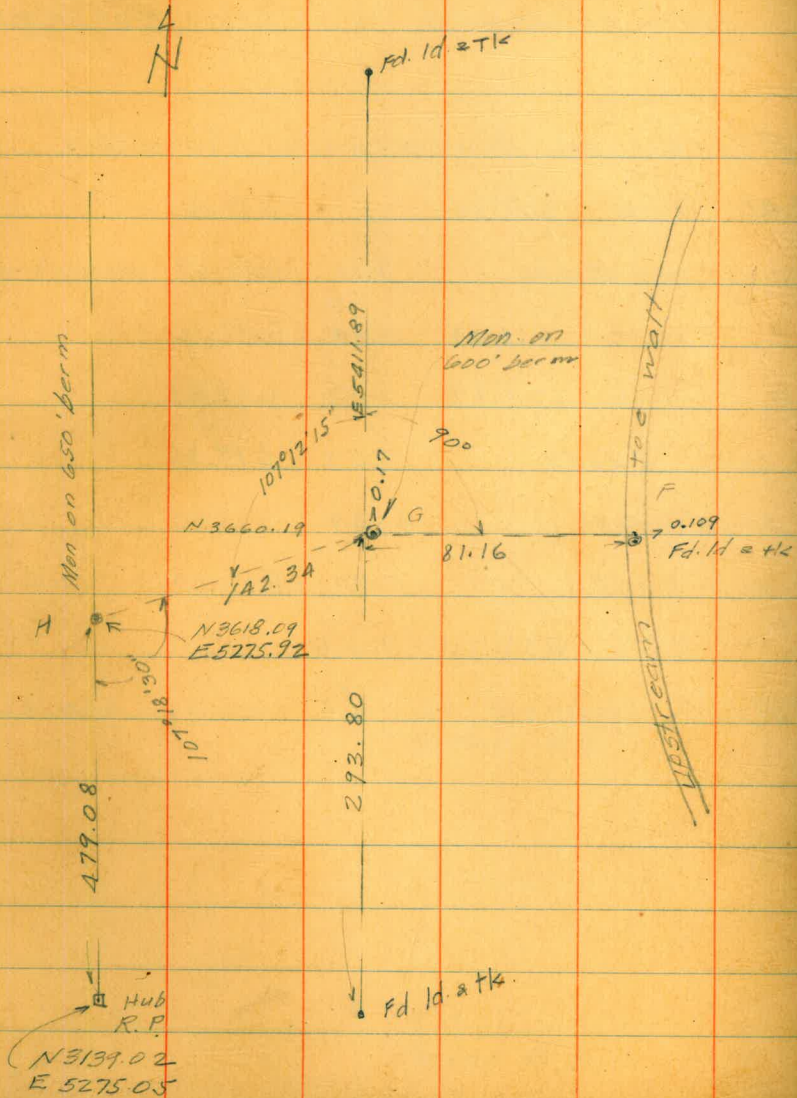
Mon North E4650 5.30 619.69

3.56 623.25

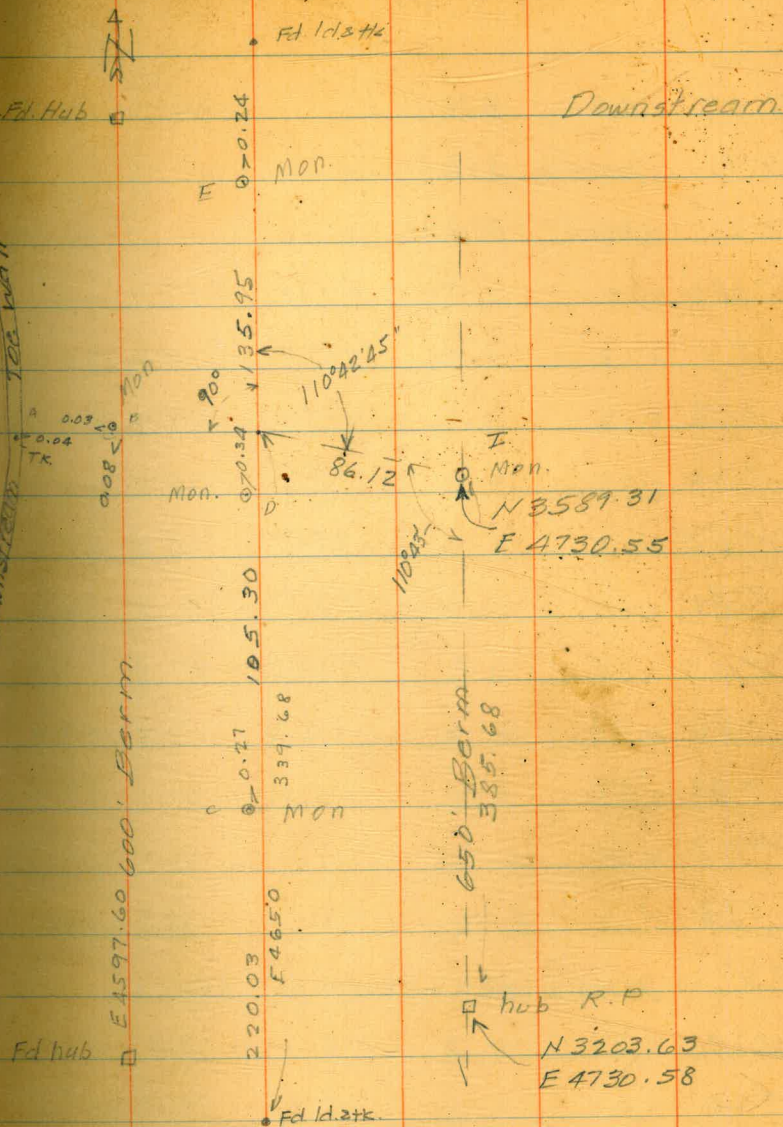
B.M. check 1.05 622.20 622.22

Oct 11 - 33
Ledda
Remmer
Salgado

Check movement on Monuments
on toe wall & 600' berm upstream



Downstream Toe Wall



Simpson
Salgado
Remmen

Finish Rock Grades

32

E. 51452 - Elev. 700'

Oct. 17, 1933

Point above spillway slope
0.15' south of original position

Oct 14 - 33 Loudon.

Finish Rock Grades

E. 51452 - Elev. 700'

Oct. 16, 1933

B.M. 1.54 705.37 703.83

4100 5.2 700.2

4060 4.9 700.5

4020 4.7 700.7

3980 4.4 701.0

3940 4.2 701.2

3900 3.9 701.5

3860 3.4 702.0

3820 3.2 702.2

3780 3.2 702.2

3740 3.2 702.2

3700 3.1 702.3

3660 3.1 702.3

3620 3.1 702.3

B.M. 1.79 705.62 703.83

T.P. 2.12 705.15 2.59 703.03

N 3780 3.0 702.2

3740 3.0 702.2

3700 2.9 702.3

3660 2.9 702.3

3620 2.9 702.3

3580 3.0 702.2

3540 3.0 702.2

Finish Rock Grades

E. 51763 - Elev. 687.5'

Oct. 16, 1933

B.M. 0.30 704.13 703.83

2.05 695.05 11.13 693.00

3.09 692.60 5.54 689.51

N 3900 3.7 688.9

3860 3.3 689.3

3820 3.1 689.5

3780 3.1 689.5

3740 3.1 689.5

3940 4.0 688.6

3980 4.2 688.4

N 4020 (E 51712) 2.5 690.1

Finish Rock Grades

E. 5145² - Elev. 700⁺
Oct. 19, 1933.

B.M.	2.12	705.95	703.83
T.P.	3.71	705.16	4.50 701.45
N 3620		2.9	702.3 ✓
3660		2.9	702.3 ✓
3700		2.9	702.3 ✓
3580		3.0	702.2 ✓
3540		3.0	702.2 ✓
3500		3.0	702.2 ✓
3460		3.0	702.2 ✓
3420		3.1	702.1
3380			701.8
3340			701.7
3300			701.4

Oct. 21, 1933.

E. 5145³ - Elev. 700⁺

704.4

3460	2.2	702.2
3500	2.2	702.2
3540	2.2	702.2
3580	2.2	702.2

Finish Rock Grades

E. 5145² - Elev. 700⁺
Oct. 21, 1933.

33

704.4

	2.4	702.3	3620	
	2.3	702.1	3420	
	2.6	701.8	3380	
	2.7	701.7	3340	
	3.0	701.4	3300	
	3.2	701.2	3260	
	3.5	700.9	3220	
	3.7	700.7	3180	
				Oct. 23, 1933.
	0.00	704.30	704.30	
	2.2	702.1	3420	
	2.1	702.2	3460	
	2.5	701.8	3380	
	2.6	701.7	3340	

B.M. 2.75 667.31 664.56

3940 4.3 663.0

T.P. 9.14 676.37 0.08 667.23

676.4
73
691
71
25
355
192
177

676.4
48
216
96
480
192
400

Core Trench Grades.
Oct. 18, 1933.

34

					Grade
B.M.	5.93	708.52		702.59	
T.R.	0.68	697.62	11.58	696.94	
N 4070			0.62	697.00	c-3° 694.0 c-7° 690.0 4'step.
N 4054			7.62	690.00	Grade 690.0 c-4° 686.0 "
N 4044			11.62	686.00	Grade 686.0 c-8° 678.0 "

Finish Rock Grades
E 51452 - Elev. 700+
Oct. 25, 1933.

B.M.	-0.62	703.21		703.83
4100			3.0	700.2

Oct. 26, 1933

704.4

3220			3.5	700.9
3180			3.7	700.7
3140			4.0	700.4
3260			3.2	701.2
3300			3.0	701.4
3340			2.7	701.7
3380			2.6	701.8

Outline And Profile of "Drop" in
Hydraulic Fill Beach Line,
Oct. 18, 1933. (East Side)

Simpson
Salgado
Remmen

35

B.M.	0.0	687.70	687.70		687.70		
					N3754 E5052		5.3 682.4
N4020 E5048		5.4	82.3	intersections North abutment	N3754 E5049 ² = W.S.		81.0
N4003 E5058 ⁵		5.3	82.4		N3700 E5057		5.6
N4003 E5055 ⁵ - W.S.			81.0		N3700 E5055 = W.S.		81.0
N3968 E5055 ⁵		5.1			N3660 E5055 ⁵ =		5.5
N3968 E5052 ⁵ - W.S.			81.0		N3660 E5053 = W.S.		81.0
N3940 E5057 ⁵		5.4			N3630 E5060		5.6
N3940 E5054 [?] - W.S.			81.0		N3630 E5058 = W.S.		81.0
N3907 E5052		5.7			N3588 E5066		5.7
N3907 E5049 ⁵ - W.S.			81.0		N3588 E5063 ⁵ = W.S.		81.0
N3863 E5058		5.3			N3505 E5058		5.9
N3863 E5054 [?] - W.S.			81.0		N3505 E5055 ⁵ = W.S.		81.0
N3820 E5051		5.3			N3463 E5061		5.9
N3820 E5047 ² - W.S.			81.0		N3463 E5060 = W.S.		81.0
N3798 E5052		5.5			N3415 E5058 ⁵		5.6
N3798 E5048 ² - W.S.			81.0		N3415 E5056 = W.S.		81.0
N3770 E5056 ⁵		5.6			N3370 E5066 ⁵		5.4
N3770 E5054 - W.S.			81.0		N3370 E5063 ⁵ = W.S.		81.0

		687.70			688.50		
N 3335							
E 5064			5.2			5.2	
N 3335				81.0			81.0
E 5060 = W.S.							
N 3280							
E 5066			5.2			6.5	
N 3280				81.0			81.0
E 5062 = W.S.							
N 3230							
E 5059			5.5			6.7	
N 3230				81.0			81.0
E 5056 = W.S.							
N 3185							
E 5066			5.3			6.5	
N 3185				81.0			81.0
E 5063 = W.S.							
N 3147							
E 5060			5.1			6.7	
N 3147				81.0			81.0
E 5056 = W.S.							
N 3140							
E 5049 =			5.9			6.7	
				intersection of Beach and South abutment			
West Side							
B.M.	0.0	688.50		688.5			
N 3195							
E 4900			5.9			6.7	
N 3195				81.0			81.0
E 4903 = W.S.							
N 3220							
E 4905			5.6			6.4	
N 3220				81.0			81.0
E 4910 = W.S.							
N 3248							
E 4915			5.7			6.7	
N 3248				81.0			81.0
E 4919 = W.S.							
N 3305							
E 4936							
N 3305							
E 4940 = W.S.							
N 3370							
E 4942							
N 3370							
E 4944 = W.S.							
N 3435							
E 4942 =							
N 3435							
E 4944 = W.S.							
N 3480							
E 4949 =							
N 3480							
E 4951 = W.S.							
N 3525							
E 4942 =							
N 3525							
E 4944 = W.S.							
N 3565							
E 4950							
N 3565							
E 4952 = W.S.							
N 3615							
E 4942 =							
N 3615							
E 4944 = W.S.							
N 3695							
E 4952 =							
N 3695							
E 4955 = W.S.							
N 3730							
E 4947 =							
N 3730							
E 4950 = W.S.							

Oct. 18, 1933

Simpson
Salgado
Remmen

688.50

N3770
E4958²

6.4

682.1

N3770
E4960 = W.S.

81.0

N3810
E4953⁸

6.2

N3810
E4956⁵ = W.S.

81.0

N3875
E4963¹

6.8

N3875
E4965² = W.S.

81.0

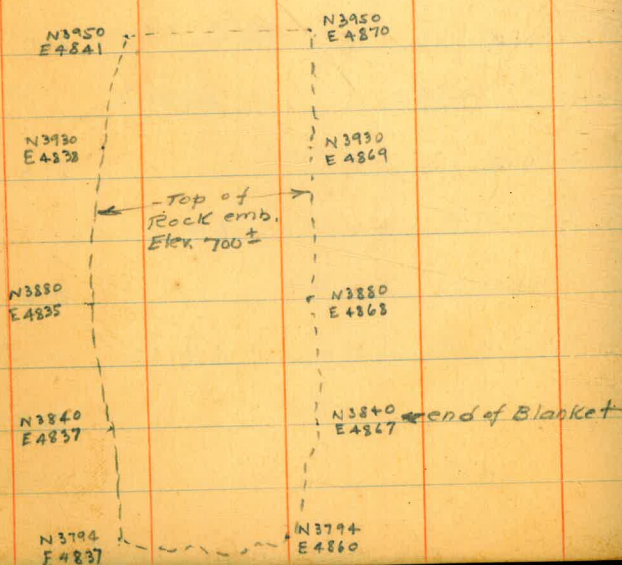
N3950
E4945²

6.8

N3950
E4950⁵ = W.S.

81.0

Outline of Top of Downstream Rock Emb.
Elev. 700 ± Oct. 18, 1933.



Toe of Blanket on
upstream Rock emb.
Elev. 683 ±

N4025
E5082

N3950
E5078

N3900
E5080

N3750
E5080

N3690
E5074

N3620
E5079

N3485
E5084

N3410 end of
E5076 = Blanket

Toe of Rock Emb.

N3320
E5100

N3230 end of
E5099 Rock Lift
Elev. 687 ± to 700

N3160
E5104

N3120
E5120

Oct. 18, 1933.

37
Top of Blanket and
West side of Rock Emb.
at Elev. 700 ±

N4025
E5107 = at No. abutment

N3950
E5106

N3900
E5104

N3750
E5104

N3690
E5102

N3620
E5105

N3485
E5112

N3410 - end of
E5119 = Blanket

N3320 West side of
E5120 Rock Emb.

N3230
E5117 - end of Rock
Emb.

East side of Rock
Embankment is
out to the Finish
line of E.5146

Cross-section of Puddle Core
Oct. 18, 1933

N3900

H.I.
687.9

E 5079

4.5

5053

5.5

5050

6.9

=W.S.

H.I.
681.0

5040

4.5

5030

6.3

5020

10.7

5010

8.0

5000

7.9

4990

6.8

4980

5.0

4970

3.3

4963

0.0

W.S.

4958

687.9

5.4

4930

4.4

4918

11.5

4905

10.5

4897

2.1

4892

2.1

Cross-section of Puddle Core 38
Oct. 18, 1933

N3630

686.6

E 4874

+2.9

689.5

4882

1.2

4900

3.0

4945

4.6

4997

5.6

W.S.

681.0

4960

6.0

4970

7.5

4980

9.8

4990

8.7

5000

10.0

5010

11.2

5020

11.5

5030

10.0

5040

6.6

5045

5.0

5057

0.0

W.S.

686.6

5060

4.5

5080

3.8

Top of
Blanket.

Cross-Section of Puddle Core
Oct. 18, 1933.

N3230

	687.4		
E 4870		+1.1	
4878		2.2	
4910		4.5	
4915		6.4	= W.S.
	681.0		
4931		4.0	
40		6.2	
50		11.2	
60		13.8	
70		15.5	
80		16.0	
90		16.0	
5000		15.6	
10		15.6	
20		13.8	
30		11.4	
40		8.1	
46		5.0	
5057		0.0	= W.S.
	687.4		
5060		5.0	
93		3.6	
5103		0.0	

Elliott
Converse

Oct. 18, 1933

39

Outline of Pit Dug in.
West Side of Hydraulic Fill
Beach.

check Movement on Monuments on 650' Berm at
600' Berm and Toe wall, Downstream

Oct. 26, 1933

688.5

N3790

4930	5.2	O.G.
23	9.6	
02	9.0	
4893	3.6	O.G.

B.M. 6.85 656.22 649.37
Mon. on 650' Berm 5.18 651.04

651.06
651.04
0.02

No Movement East & West on 650' Mon.

N3770

4897	3.4	O.G.
4908	12.7	
17	12.2	
25	5.3	O.G.

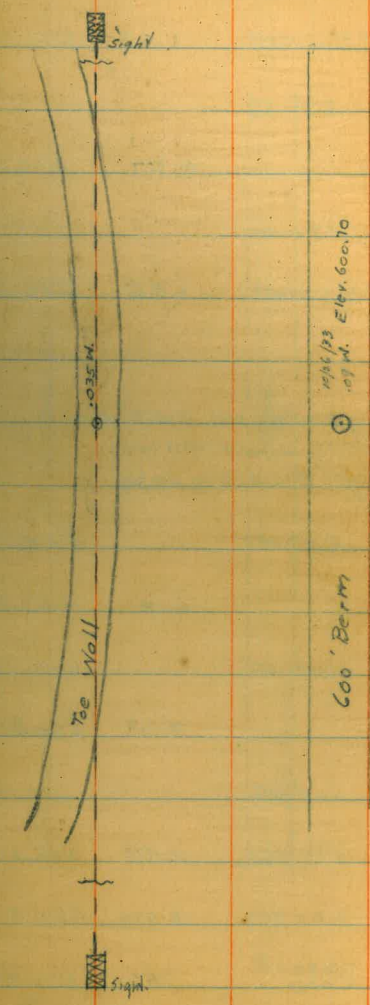
N3750

4935	5.8	O.G.
29	12.4	
08	12.3	
4900	4.0	O.G.

N3735

49.05	4.7	O.G.
20	11.9	
30	11.6	
37	5.9	O.G.

N3725 is O.G.



599.66
6.10
605.76
5.06
600.70

Finish Rock Grades
 E. 5176² - Elev. 6875⁺
 Oct. 30, 1933

B.M.	0.69	704.52		703.83
T.P.	1.04	692.72	12.84	691.68
3860			3.4	689.3
3820			3.1	689.6
3780			3.1	689.6

E. 5145² - Elev. 700⁺
 Nov. 2, 1933

B.M.	1.11	704.94		703.83
3820			2.7	702.2
3860			2.9	702.0
3900			3.4	701.5
3940			3.7	701.2
3980			3.9	701.0
4020			4.2	700.7
3880	on E 5185 ²		19.4	685.5
3940	on E 5185 ²		19.9	685.0

Nov. 4, 1933

B.M.	1.42	705.25		703.83
3900		700	3.7	701.5 ✓
3940		4	4.0	701.2 ✓
3980			4.2	701.0

Finish Rock Grades
 E 4836² - Elev. 700⁺
 Nov. 2, 1933

B.M.	4.16	705.48		701.32
3880			4.6	700.9
3840			4.3	701.2
3800			3.9	701.6
3760			3.6	701.9
3720			3.5	702.0
3680			3.2	702.3
3640			3.2	702.3
3600			3.2	702.3
3560			3.3	702.2
3520			3.3	702.2

E. 5145² - Elev. 700⁺
 Nov. 8, 1933

B.M.	2.56	706.39		703.83
3900			4.9	701.5
3940			5.2	701.2
3980			5.4	701.0
4020			5.7	700.7

Finish Rock Grades
E 4836? - Elev. 700+
Nov. 8, 1933

B.M.	3.70	705.02		701.32
3720			3.0	702.0
3760			3.1	701.9
3800			3.4	701.6
3840			3.8	701.2
B.M.	3.50	704.82		701.32
3680			2.5	702.3
3640			2.5	702.3
3600			2.5	702.3
3560			2.6	702.2
3520			2.6	702.2
3480			2.6	702.2
3440			2.6	702.2
3400			2.6	702.2
3360			3.0	701.8
3320			3.3	701.5
3280			3.8	701.0
3240			4.2	700.6
3200			4.5	700.3

Finish Rock Grades
E 5145? - Elev. 700+
Nov. 17, 1933

44

0.68	704.51	703.83
3940		3.3 701.2
3980		3.5 701.0
4020		3.8 700.7
4060		4.1 700.4
4100		4.4 700.1

Finish Rock Grades.

E. 48362 - Elev. 700+

Nov. 22, 1933.

B.M.	4.09	705.41		701.32
3560			3.2	702.2
3520			3.2	702.2
3480			3.2	702.2
3440			3.2	702.2
3400			3.2	702.2
3360			3.6	701.8
3320			3.9	701.5
3280			4.4	701.0
3240			4.8	700.6
3600			3.1	702.3
3640			3.1	702.3
3680			3.1	702.3
3720			3.4	702.0
3760			3.5	701.9

B.M.	1.10	706.28		705.18
T.P.			12.17	694.09
	10.44	704.53		
3400			2.3	702.2
3360			2.7	701.8
3320			3.0	701.5
3280			3.5	701.0
3240			3.9	700.6
3200			4.2	700.3
B.M.	5.09	706.41		701.32
3920			5.9	700.5

700.5
70
686.4
700

Levels to Upstream Monuments,

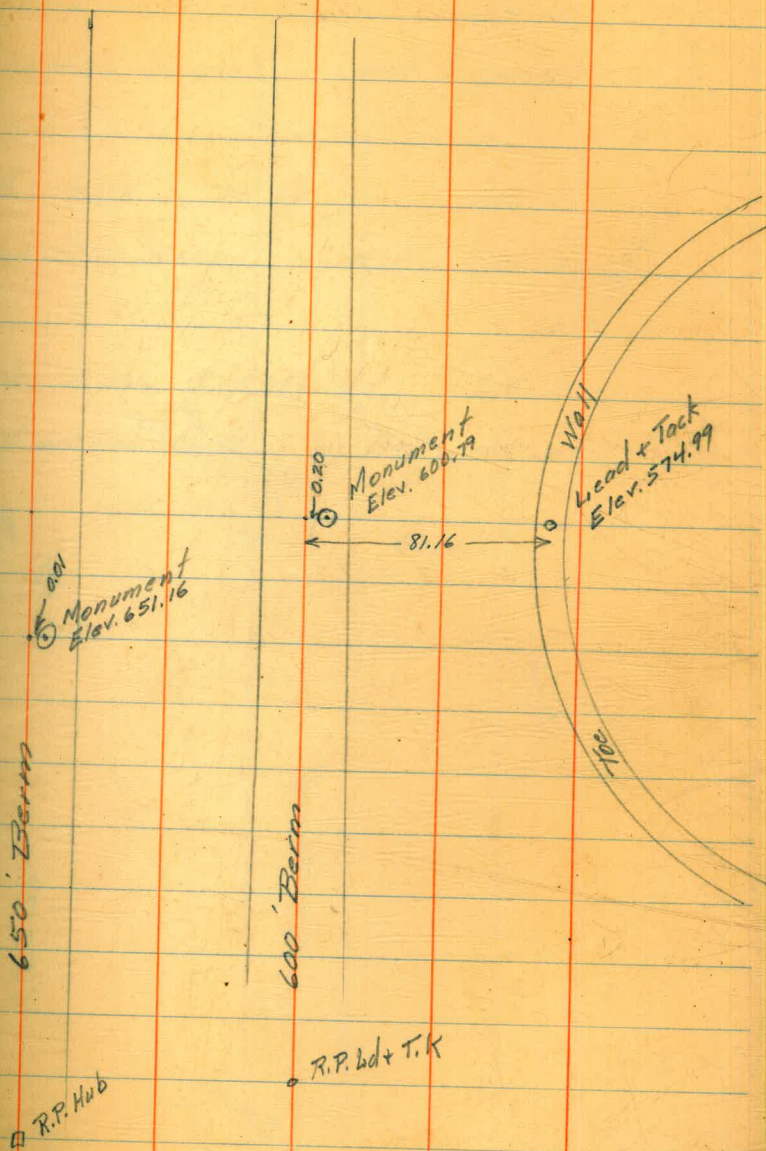
B.M.	0.21½	605.34½	605.13
Mon. on 600 Berm		4.55½	600.79
T.P.		12.96	592.38½ ←
B.M.	1.25½	657.04½	655.79
Mon. on 650 Berm		5.89	651.155
T.P.	0.70	593.08½	592.38½ ←
		12.04	581.04½
	1.57½	582.62	
Point in Top Wall		7.63½	574.985

Movement of Upstream Monuments
Jan 15 - 1934

□ R.P. Hub

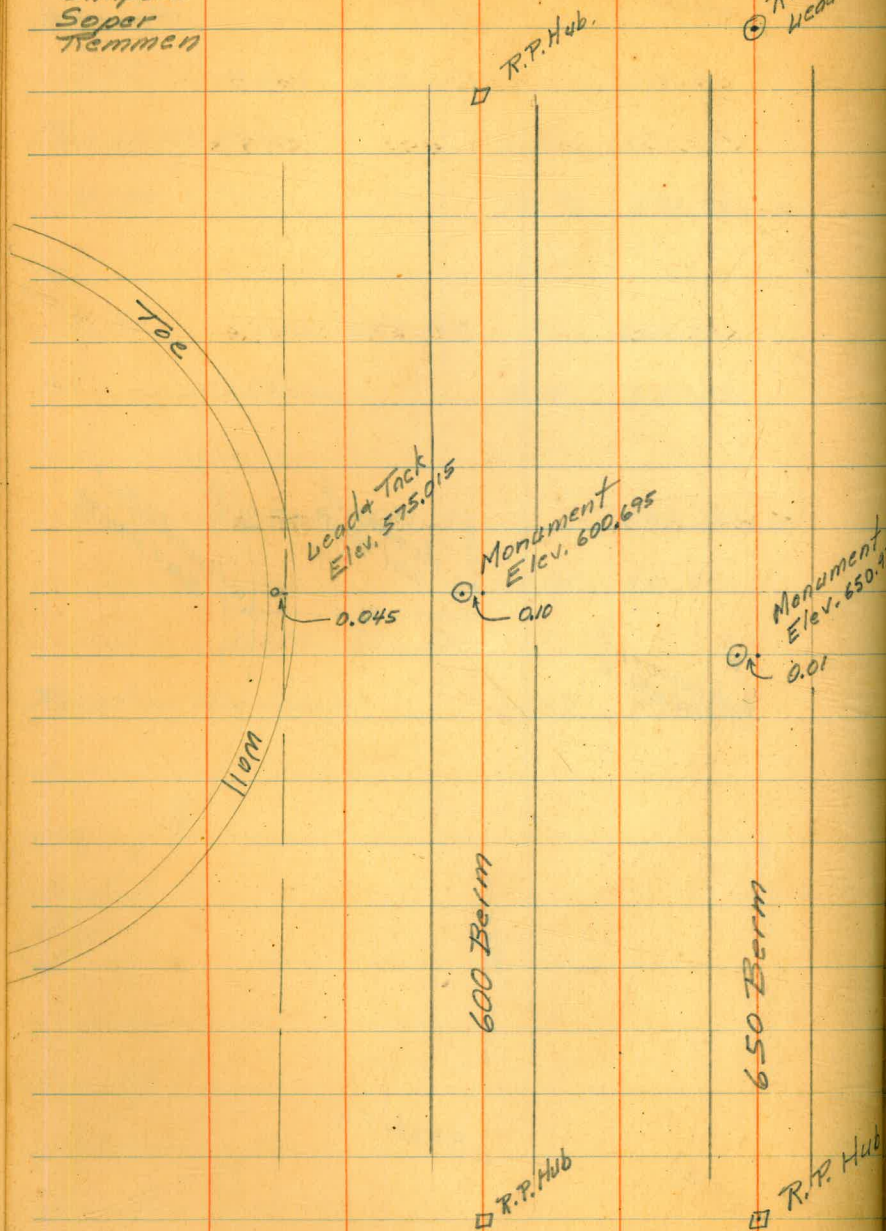
○ R.P. Ldt + T.K

Elliott 46
Super
Remmen



Movement of Downstream Monuments
 Elliott
 Simpson
 Soper
 Kemmen

Jan 15 - 1934



Levels to Downstream Monuments 47

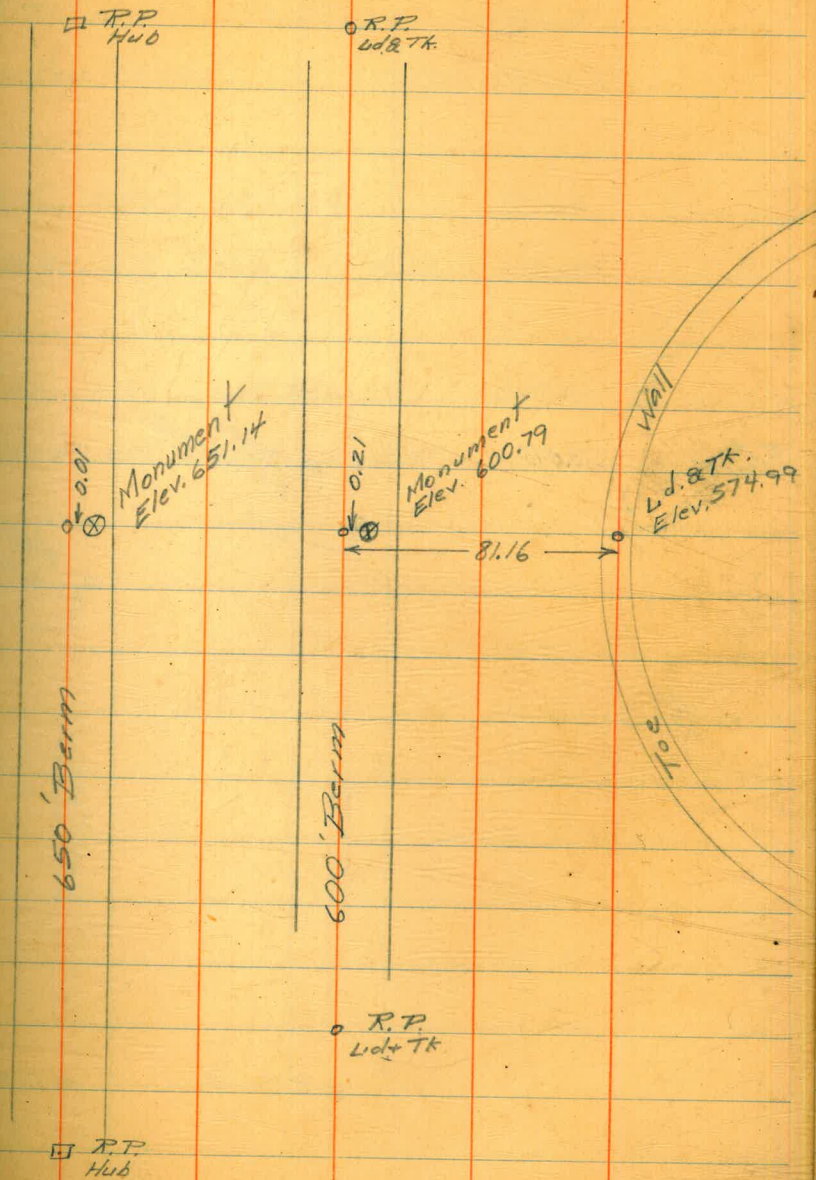
B.M.	6.56 1/2	655.93 1/2	649.37
Mon. on	650 Berm	4.97	650.965
B.M.	5.68	605.34	599.66
Mon. on	600 Berm	4.64 1/2	600.695
B.M.	11.69 1/2	575.34 1/2	563.65
Point on	Toe Wall	0.33	575.015

Levels to Upstream Monuments

B.M.	0.14	605.27	605.13
Mon. on 600' Berm	4.48	600.79	
T.P.	12.31 $\frac{1}{2}$	592.95 $\frac{1}{2}$	
B.M.	1.05 $\frac{1}{2}$	656.84 $\frac{1}{2}$	655.79
Mon. on 650' Berm	5.70 $\frac{1}{2}$	651.14	
T.P.	1.55	594.50 $\frac{1}{2}$	592.95 $\frac{1}{2}$
		12.20	582.30 $\frac{1}{2}$
	1.61	583.91 $\frac{1}{2}$	
Point in Toe Wall	8.92 $\frac{1}{2}$	574.99	

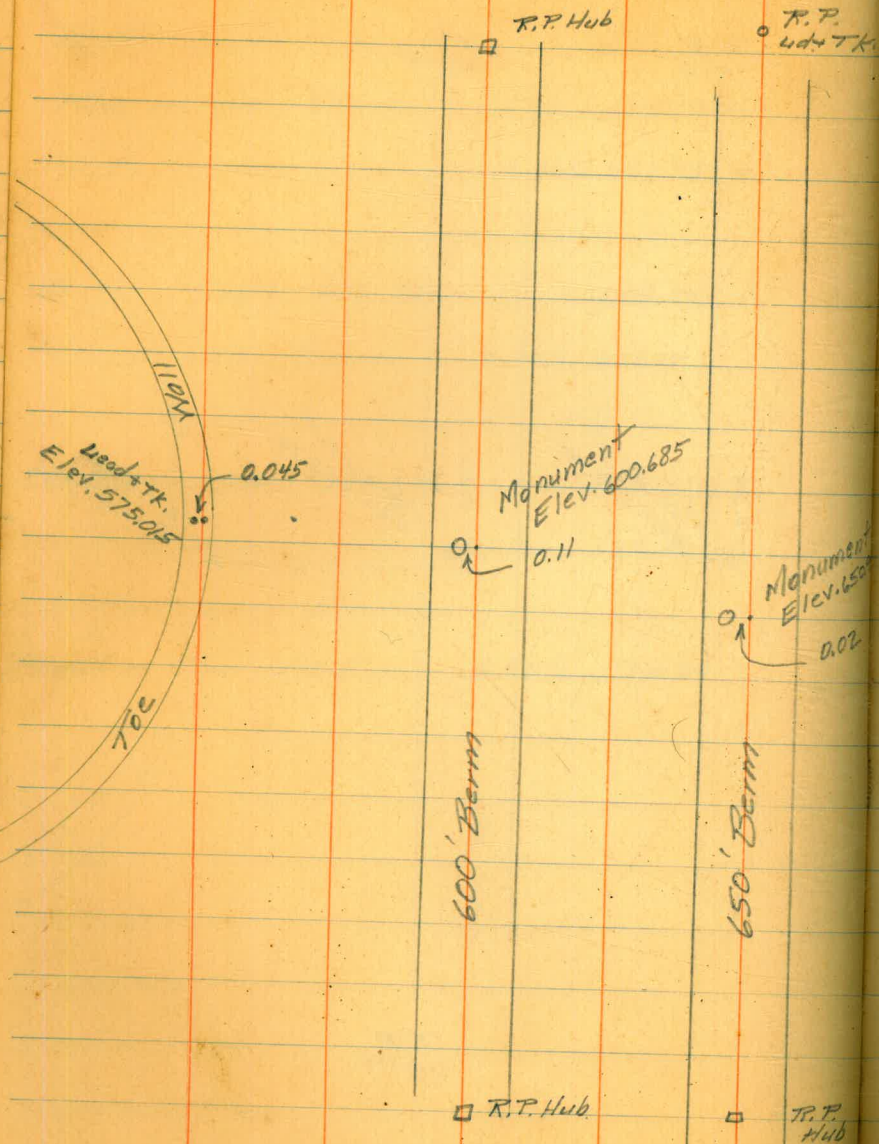
Movement of Upstream Monuments
Feb 26 - 1934

48
Elliott
Soper
Remmen



Elliott Movement of Downstream Monument
Remmen Feb 27-1934

Levels to Downstream Monuments



B.M.	12.15 1/2	575.80 1/2	563.65
Point on Top Wall	0.79	575.015	
B.M.	5.52 1/2	605.18 1/2	599.66
Mon. on 600' Berm	4.50	600.685	
B.M.	6.37	655.74	649.37
Mon. on 650' Berm	4.79	650.95	

B.Ms on 700' Berm
(Copied from back of book 443)
Upstream Feb 3-1934

Original Elevations (Feb 3-1934)

B.M. #1 South N3330 ± 701.28
B.M. #2 Middle N3620 ± 704.27
B.M. #3 North N3860 ± 704.24

Downstream

B.M. #1 South N3320 ± 700.20
B.M. #2 Middle N3570 ± 699.825
B.M. #3 North N3770 ± 700.885

Check on Feb 7-1934

Upstream

B.M. #1 701.275
#2 704.27
#3 704.24

Upstream Feb 13-1934

#1 701.26
#2 704.255
#3 704.22

Check on Feb. 15-1934

Upstream

B.M. #1 701.26
#2 704.25
#3 704.21

Downstream on Feb 16-1934

#1 700.175
#2 699.80
#3 700.855

Upstream Feb 19-1934

#1 701.24
#2 704.23
#3 704.205

Downstream Feb 19-1934

#1 700.165
#2 699.785
#3 700.845

Upstream Feb 26-1934

#1 701.235
#2 704.22
#3 704.19

Elliott
Remmen

Check of B.M.s on Dnstr. Emb.
Feb 27 - 1934

51

B.M.	9.28	703.37	694.09
B.M. #1			3.22 700.15
	6.01	706.16	
B.M. #2			6.39 699.77
	4.36 1/2	704.13 1/2	
B.M. #3			3.30 700.835

Mar 5 - 1934

Reset B.M.s on Upst. Emb.

B.M.	1.85	710.38	708.53
Set B.M.		8.11	702.27
		Upstream	
B.M.	2.51 1/2	711.04 1/2	708.53
		10.67	700.37 1/2
	3.67 1/2	704.05	
B.M. #1		2.81	701.24
	6.67 1/2	707.91 1/2	
Reset B.M. #2		3.27	704.64 1/2
	4.72	709.36 1/2	
Well #5		9.75	699.6
		5.15	704.21 1/2

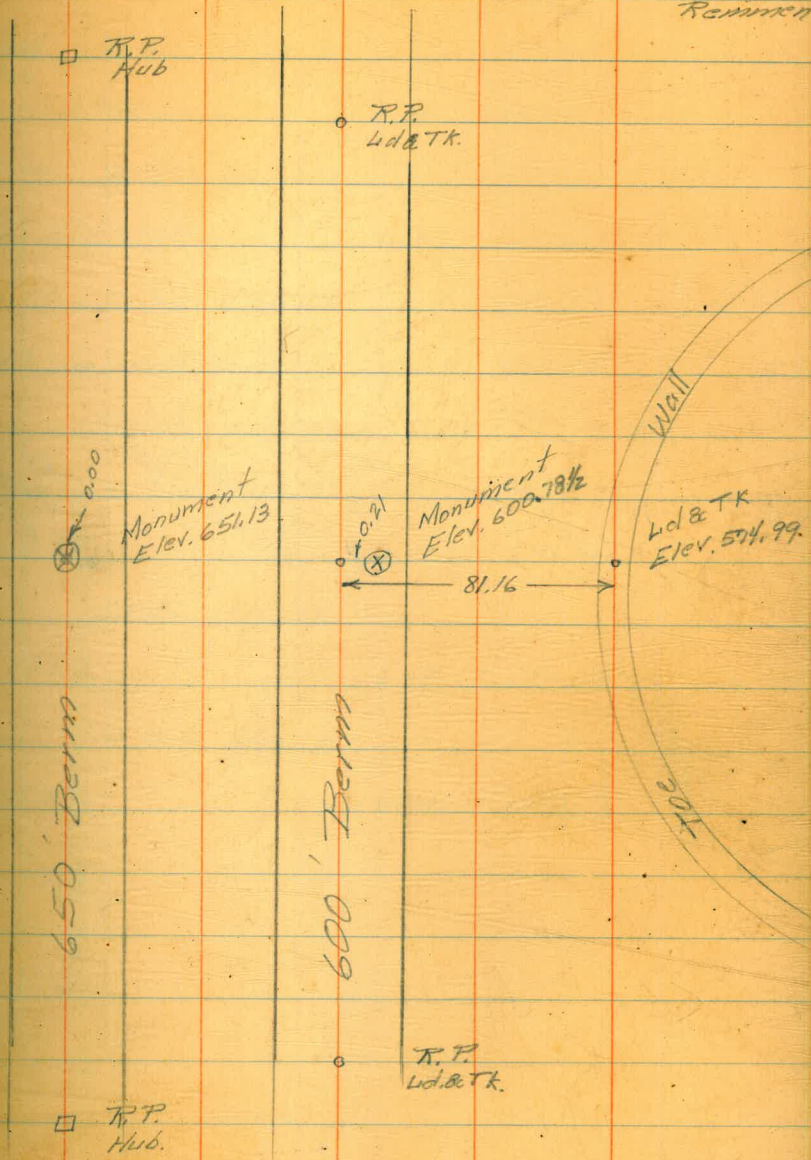
B.M.	6.41	706.18	699.77
Well #6		5.0	701.2

Levels to Upstream Mon.
Mar 12 - 1934

B.M.	0.02	605.15		605.13	
Mon. on 600 Berm			4.36 1/2	600.78 1/2	
T.P.			12.20 1/2	592.94 1/2	←
B.M.	0.95 1/2	656.74 1/2		655.79	
Mon. on 650 Berm			5.61 1/2	651.13	
Monuments on About 700 Elev.					
B.M.	1.66 1/2	710.19 1/2		708.53	
			5.28 1/2	704.36	11.12
B.M. #1	6.52 1/2	707.73 1/2	3.115	701.21	
New B.M. #2	2.83	707.44	3.12 1/2	704.61	Original Elev. on Mar. 5 704.64
B.M. #3			3.25 1/2	704.18 1/2	
T.P.	4.97	597.91 1/2		592.94 1/2	←
			12.92	584.99 1/2	
	1.31	586.30 1/2			
Point on Top Wall			11.31 1/2	574.99	

Movement of upstream Monuments 52
Mar 12 - 1934

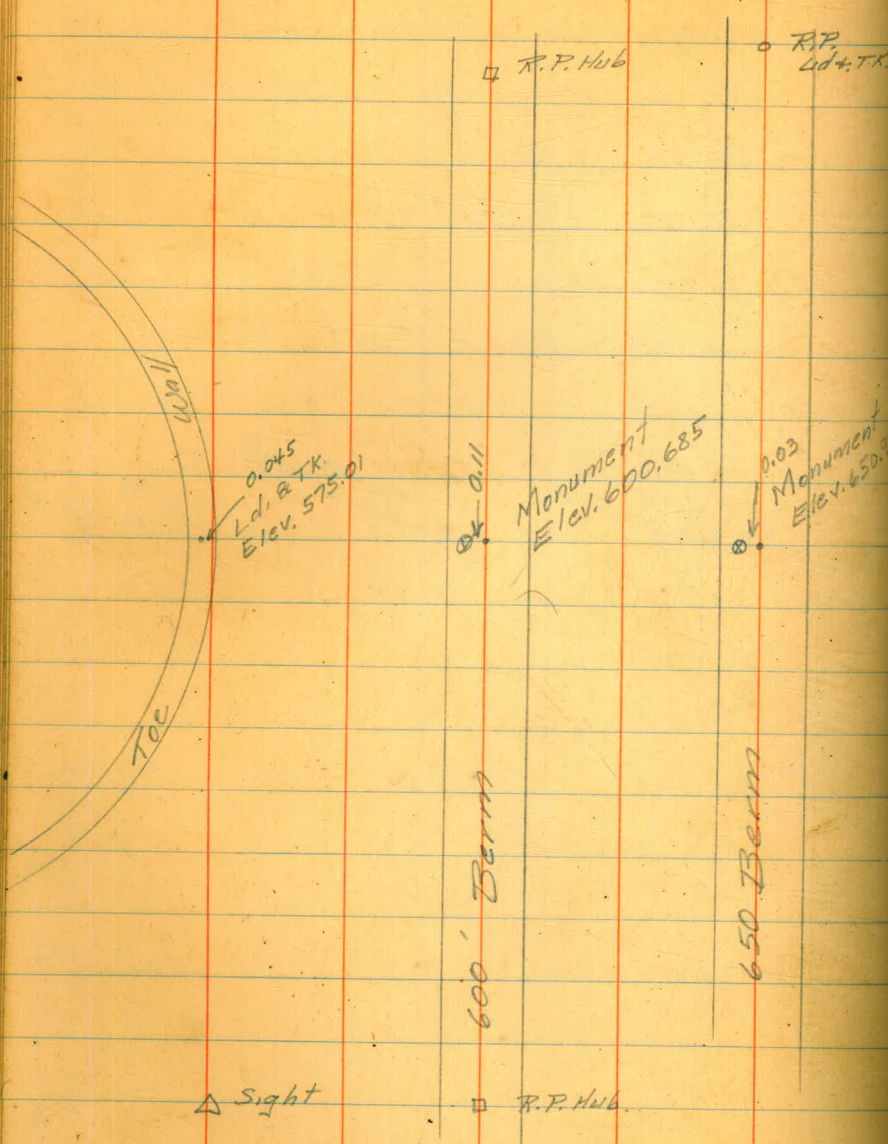
Elliott
Soper
Remmen



Movement of Downstream Mons.
Mar 12 - 1934

Elliott
Soper
Remmen

△ Sight



Levels to Downstr. Mons. 53

B.M.	11.81	575.46	563.65
Point in Toe Wall	0.45	575.01	
B.M.	5.62½	605.28½	599.66
Mon. on 600' Berm	4.60	600.685	
B.M.	7.13	656.50	649.37
Mon. on 650' Berm	5.56	650.94	
B.Ms on about 700' Berm			
B.M.	9.13	703.22	694.09
B.M. #1	3.08½	700.135	
	5.79½	705.93	
B.M. #2	6.18	699.75	
	4.86½	704.61½	
B.M. #3	3.79	700.82½	

Toe of Rock So. Abutement
Mar 14-1934

Elliot
Soper
Remick

B.M.	10.99	757.44		746.45
			0.41	757.03
	12.96	769.99		
E 5013			0.0	770.0
E 4987			0.0	770.0
5032°			10.0	760.0
4969 ⁵			10.0	760.0
B.M.	10.68	757.13		746.45
4958.1			3.6	753.5
5046 ⁵			4.8	752.3
5045.2			4.1	753.0
T.P.			12.84	744.29
	1.79	746.08		
N3060				
4937.5			0.8	745.3
N3080				
4917 ⁵			10.8	735.3
T.P.	1.36	735.57	11.87	734.21
N3100.				
4898.3			9.9	725.7
4982.5			16.7	718.9

Toe of rock Cont. 54

B.M.	1.51	757.50		755.99
E 5052 ²			8.5	749.0
T.P.	0.72	745.26	12.96	744.54
5073 ²			7.3	738.0
5073 ¹			7.0	738.3
T.P.	0.55	732.70	13.11	732.15
N3050				
E 5097 ¹			7.0	725.7
N3065				
5117 ²			17.7	715.0

Final Profile Core Wall Trench
Mar 19 - 1934

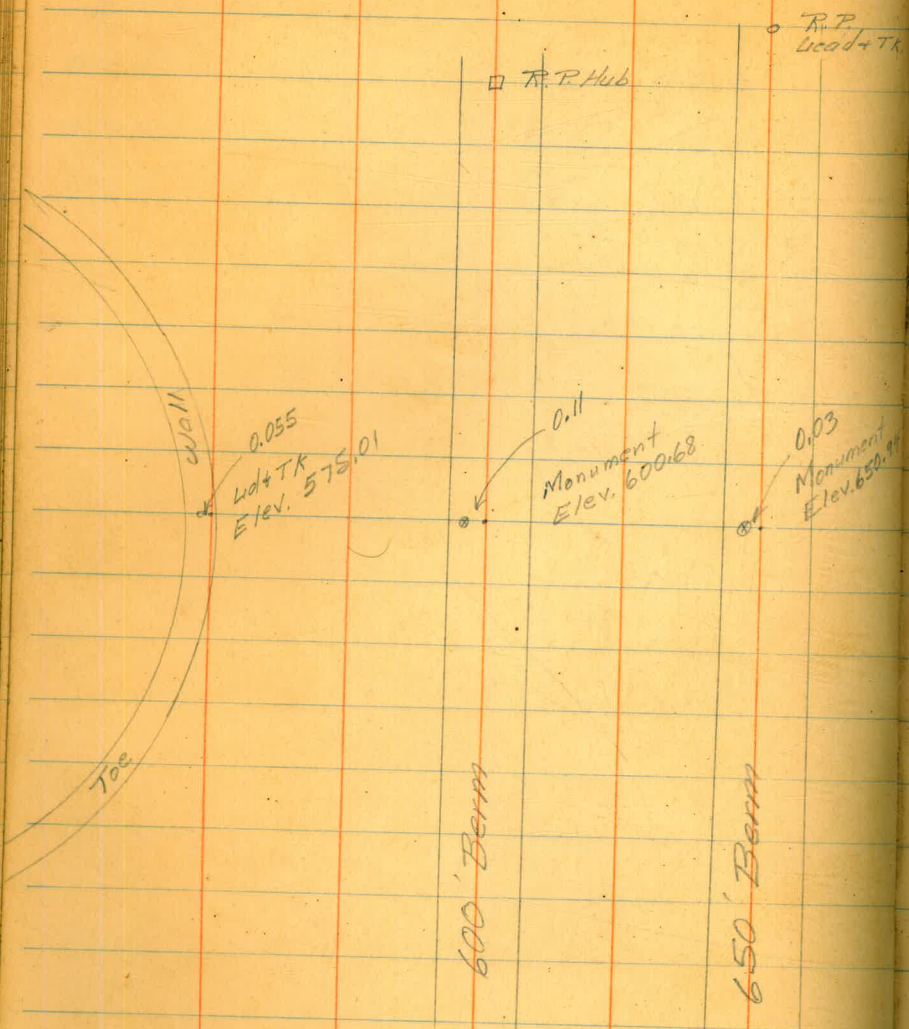
55

B.M.	-29.8	711.1	740.9
0+40		5.6	705.5
0+30		5.7	705.4
0+20		5.8	705.3

used
to profile
trench

Movement of Downst. Monuments
April 20 - 1934

△ Sight



▽ Sight

□ R.P. Hub
• R.P. Lead+TK

B.M.	7.32 1/2	656.69 1/2	649.37
Min. on 650 Berm	5.76		650.935
B.M.	9.74	703.83	694.09
# 1 on 700 berm	3.75		700.08
	6.13	706.21	
# 2 on 700 berm	6.55		699.66
	5.80	705.46	
# 3 on 700 berm	4.71		700.75
B.M.	6.08	605.74	599.66
Min. on 600 berm	5.06		600.68
B.M.	13.13	576.78	563.65
Point in toe wall	1.77		575.01

Movement of upstream Monuments
 April 20-1934

57

B.M.	0.38	708.91	708.53
		5.48	702.43
	4.89	707.32	
B.M. #2 on 700 berm	3.81	703.51	N.G.
B.M. #1 and #3 also destroyed.			
B.M.	2.91	658.70	655.79
Mon. on 650 Berm	7.59	651.11	
B.M.	1.76	606.89	605.13
Mon. on 600 Berm	6.19	600.79	
T.P.		12.50	594.39
	0.89 1/2	595.28 1/2	
T.P.		12.97 1/2	582.31
	3.60	585.91	
Point in tee wall	10.92	574.99	

0.00 Monument
 Elev. 651.11

0.22 Monument
 Elev. 600.79

8.16

0.00

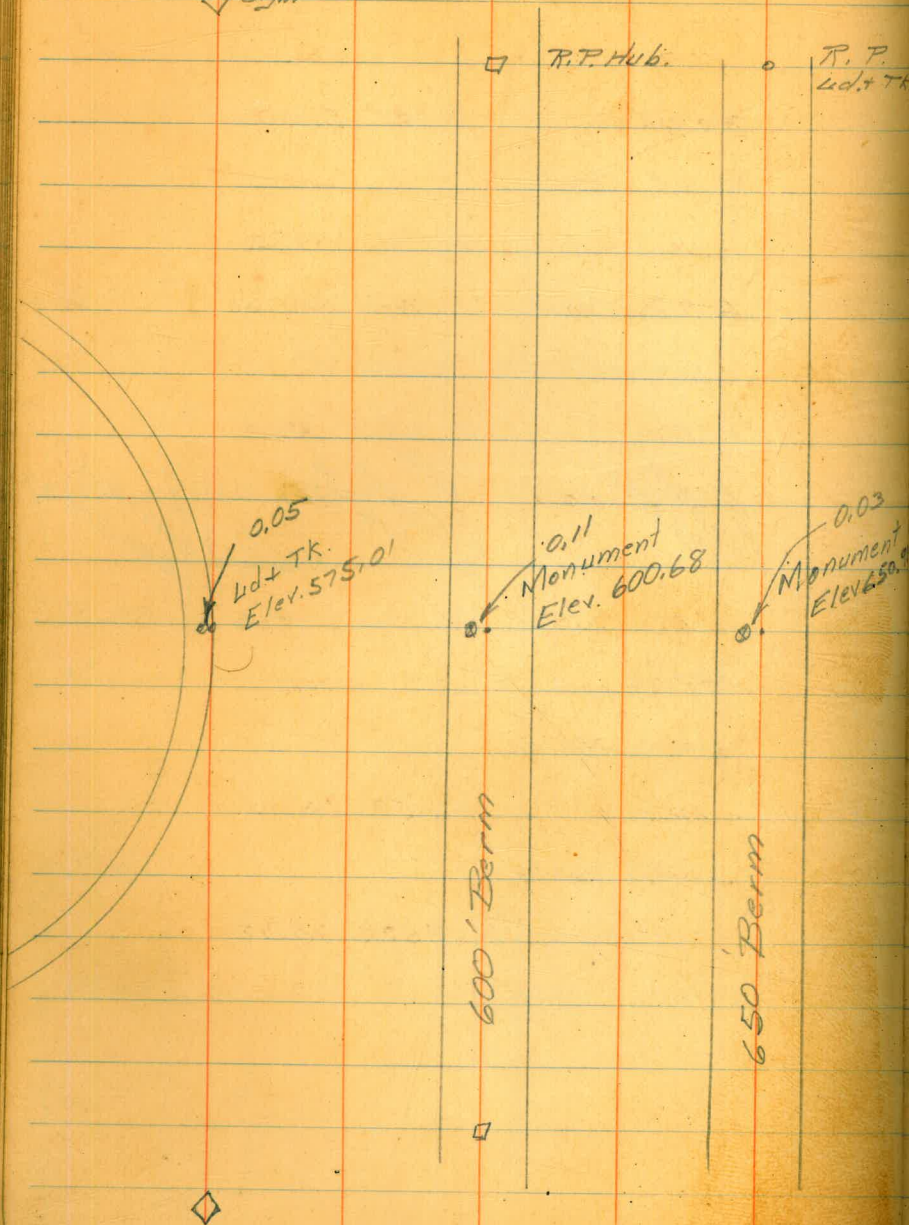
tee wall
 Lead + Tack
 Elev. 574.99

650' Berm

600' Berm

tee

◇ Sight



R.P. Hub.	0	R.P. Ld + TK.	B.M.	11.99	575.64	563.65
			Point on toe wall	0.63	575.01	
			B.M.	5.76	605.42	599.66
			B.M. on 600 Berm	4.74	600.68	
			B.M.	6.85	656.22	649.37
			Mon. on 650 Berm	5.31	650.91	
			B.M.	11.61	705.70	694.09
			#1 Mon. on 700 Berm	5.63	700.07	
				6.15	706.22	
			#2 Mon. on 700 Berm	6.58	699.64	
				5.62 $\frac{1}{2}$	705.26 $\frac{1}{2}$	
			#3 Mon. on 700 Berm	4.52 $\frac{1}{2}$	700.74	

Movement of Upstr. Mans. 59
May 17-1934

B.M. 2.16 657.95 655.79

Mon. on 650 Berm 6.84 651.11

B.M. 2.11 607.24 605.13

Mon on 600 Berm 6.46 600.78

T.P. 12.86 594.38

0.77 595.15

T.P. 12.51 582.64

1.14 583.78

Point in Top wall 8.79 574.99

Monument above Spillway Cut.

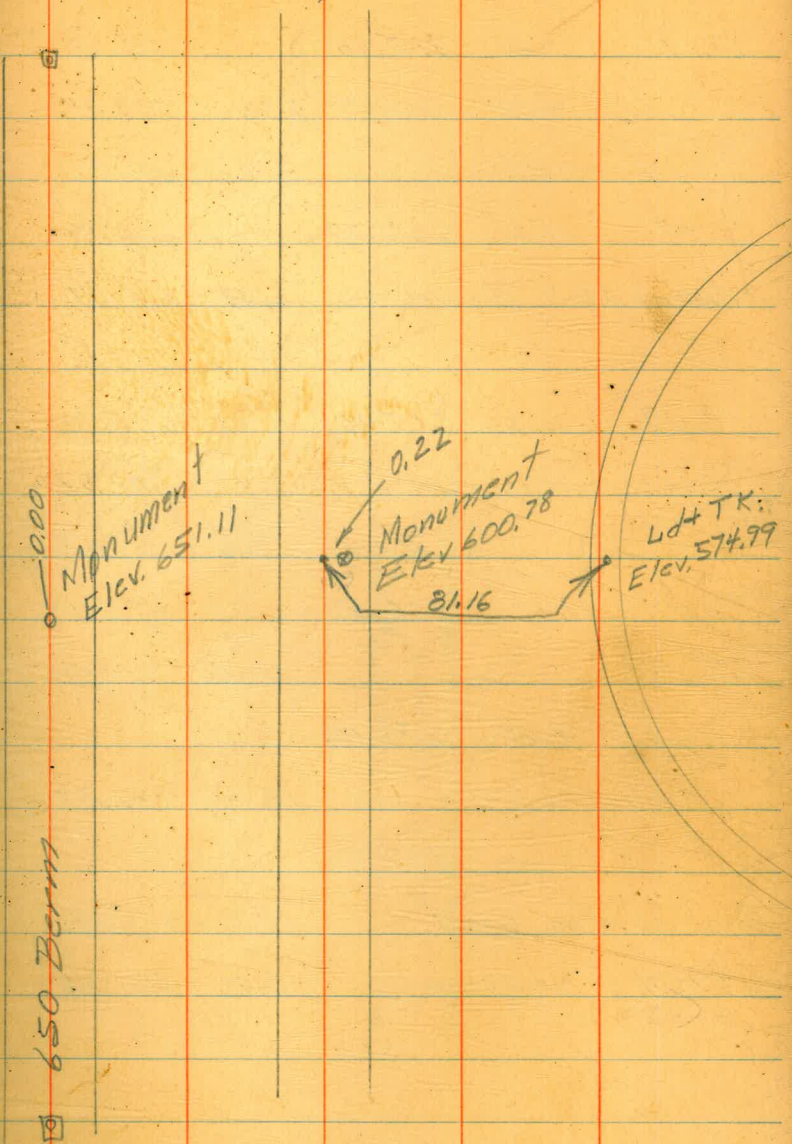
B.M. 12.77 949.07 936.30

2.76 946.31

12.66 958.97

Monument 6.14 952.83

Total movement Sp. = 0.24

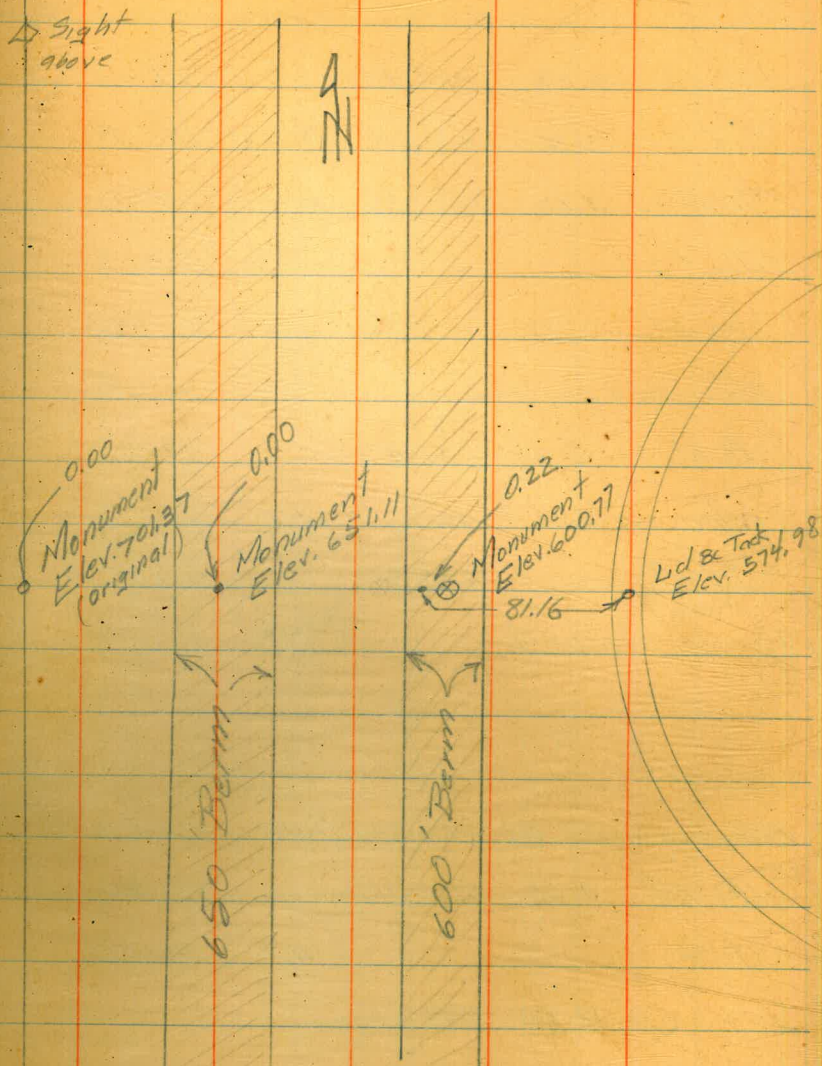


Check on Elevs. of Upstream
Monuments on June 18 - 1934

60

B.M.	1.71	710.24	708.53
	4.95	708.37	6.82
Original Elev.			703.42
Mon. on 700 Elev.		7.00	701.37
B.M.	1.51	657.30	655.79
Mon. on 650 Berm		6.19	651.11
B.M.	3.13	608.26	605.13
Mon. on 600 Berm		7.47	600.77
B.M.	1.49	606.62	605.13
T.P.		12.22	594.40
	0.65	595.05	
		12.48	582.57
	2.42	584.99	
Point on toe wall		10.01	574.98
Set B.M. on Stamp so. end of core wall.		3.73	581.26

△ Sight
above



Check on Elevs. of Mons. June 19-1934

Downstream

Elliott - Simpson - Seper - Remm

B.M.	9.33	703.42		694.09
Mon. #1	5.80	705.84	3.38	700.04
Mon #2	3.88	703.48	6.24	699.60
Mon #3			2.77	700.71
B.M.	7.03	656.40		649.37
Mon on 650 Berm			5.47	650.93
B.M.	5.81	605.47		599.66
Mon. on 600 Berm			4.79	600.68
B.M.	12.24	575.89		563.65
Point on toe wall			0.88	575.01

Monument above spillway cut

B.M.	9.60	945.90		936.30
T.P.			4.86 1/2	941.03 1/2
	12.60	953.63 1/2		
	9.87	962.84 1/2	0.66	952.97 1/2
Monument.			10.01 1/2	952.83

Total Movement South = 0.24

A
N

0.05
Lid + Jack
Elev. 575.01

0.11
Monument +
Elev. 600.68

0.03
Monument +
Elev. 650.93

600 Berm

650 Berm

Check on downst. monuments
July 19 - 1934

Elliott - Simpson - Remmen

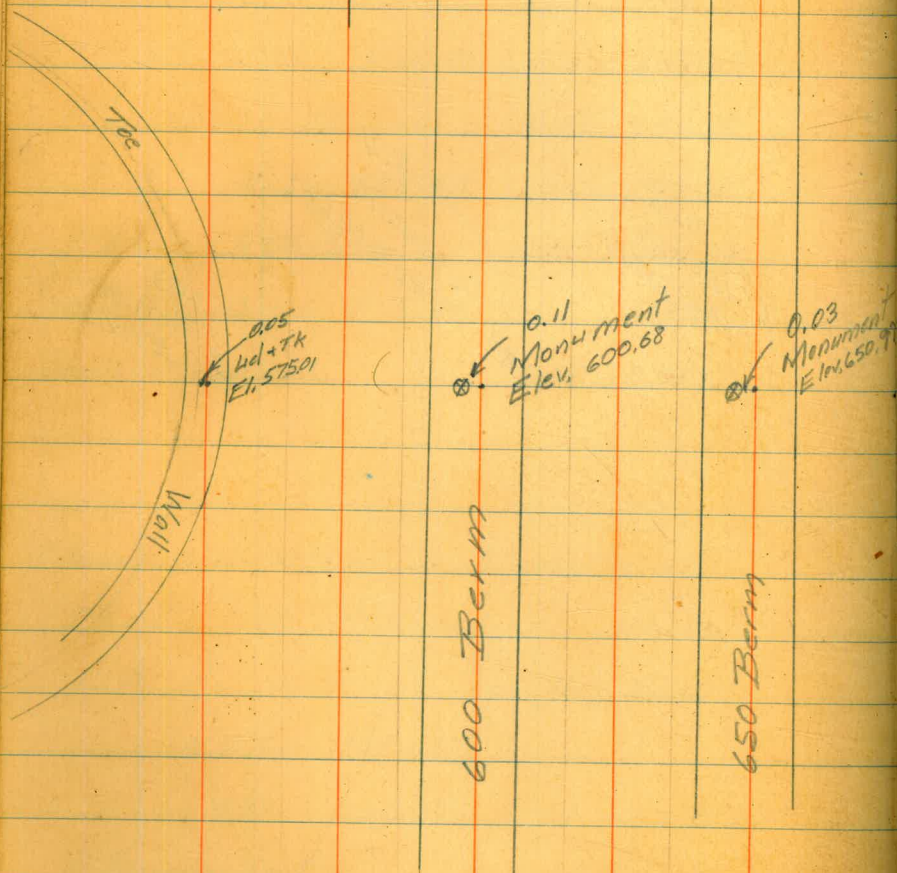
Levels to Monuments

62

Sight \diamond

R.P. Hub. R.P. Lid. & TR.

N



B.M. 11.95 575.60 563.65

Point on toe wall 0.59 575.01

B.M. 5.89 605.55 599.66

Mon. on 600 Berm 4.87 600.68

B.M. 7.27 656.64 649.37

Mon. on 650 Berm 5.72 650.92

B.M. 9.14 703.23 694.09

B.M.#1 3.24 699.99

6.14 706.13

B.M.#2 6.61 699.52

4.86 704.38

B.M.#3 3.74 700.64

Sight \diamond

R.P. Hub.

R.P. Lid & TR.

Levels to Upstr. Monuments
July 20-1934

B.M.	0.67	605.80	605.13
Mon. on 600 Berm		5.03	600.77
B.M.	1.24	657.13	655.79
Mon. on 650 Berm		6.03	651.10
B.M.	4.37	712.90	708.53
Monument 10		11.56	701.34
B.M.	0.22	581.48	581.26
Point on toe wall		6.50	574.98

July 21-1934

Monument above spillway cut

B.M.	12.51	948.81	936.30
		2.47	946.32
	12.44	958.76	
Monument		5.93	952.83

Total Movement Se. = 0.24

Check on Upstr. Monuments 63
July 20-1934

Elliott
Simpson
Remmer

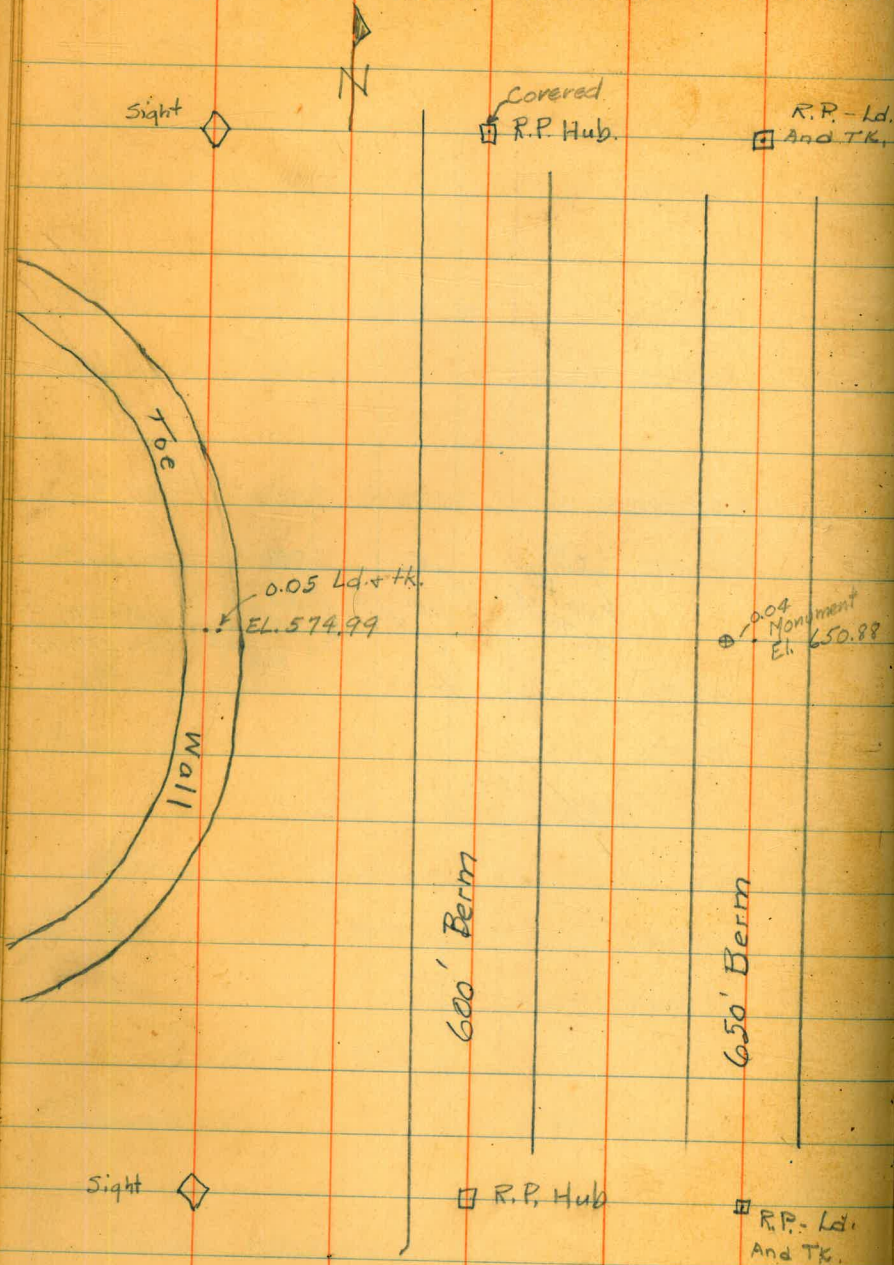


Check On Downstream Monuments

Osborne
Salgado
Remmen

Aug. 6, 1934

64



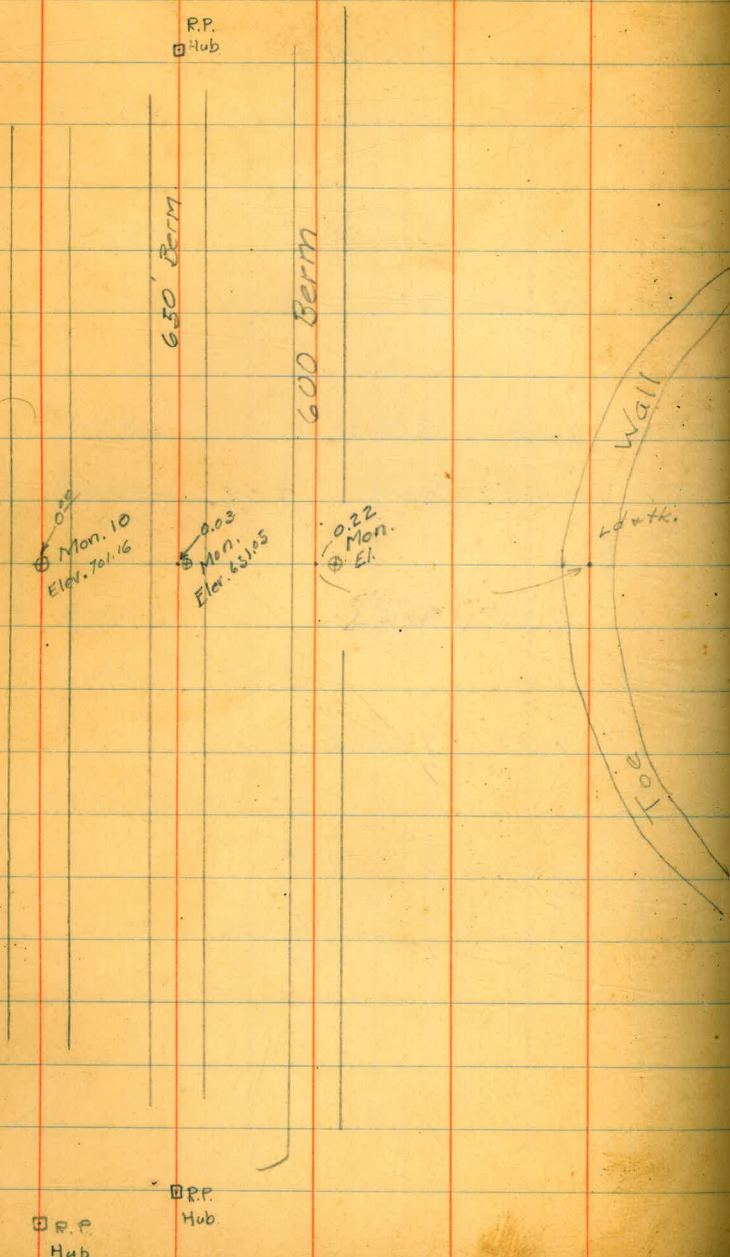
B.M.	11.72	575.37	563.65
Point on Toe Wall	0.38		574.99
B.M.	5.72	605.38 604.38	599.66
Mon. on 600 Berm	4.71		600.67
B.M.	6.36	655.73	649.37
Mon. on 650 Berm	4.84		650.89
B.M.	9.20	703.29	694.09
B.M. #1		3.32	699.97
	6.18	706.15	
B.M. #2		6.68	699.47
	5.00	704.47	
B.M. #3		3.86	700.61

◇ Sight

check on upstream Monuments - Aug-7-1934.

Simpson
Soper
Isabelle

65



B.M. 0.17 605.30 605.13

Mon. on 600 Berm 4.51 600.79

B.M. 1.79 583.05 583.05 581.26

Point in Toe Wall 8.07 574.98

B.M. 0.56 709.09 708.33

Monument 10 7.93 701.16

B.M. 1.32 657.11 653.79

Mon. on 650 Berm 6.06 651.05

B.M. 0.47 605.60 605.13

Mon. on 600 Berm 4.81 600.79 check Mon. on 600 Berm.

Elevations of Monuments on 700' Berm

Downstream

B.M.	12.43	706.52	694.09
South Mon.		5.23	701.29
♀ Mon (about N3600)		4.15	702.37

Upstream

B.M.	0.23	708.76	708.53
South Mon.		10.90	697.86
T.P.	4.51	702.37	
♀ Mon.		1.34	701.03
T.P.	4.40	705.43	
North Mon.		1.55	703.88

Sept. 1, 1934
Osborne
Remmen

Ld & H.
in Rock

Mon #3

about N3900

700' Berm Downstream

Mon #2

about N3600

Mon #1

about N3300

Ld & H.
in Rock

Sight

above
Spillway Cut.

Mon #3

about N3900

700' Elev. Upstream

Mon #2

about N3600

Mon #1

about N3300

Hub on

Turne Bench



Feb. 26 1934

Elev. of Point "A" in Center of Mass

Above Spillway Cut.

B.M.	10.615	946.915	936.30	
	9.565	954.625	1.855	945.06
	8.50	963.025	0.100	954.525

Mon. "A" 10.19 952.835

Total outward Movement = 0.21

Sept 8, 1934

Osborne
Remmen

Total Outward Movement = 0.25

B.M.	10.265	946.565	936.30
		2.64	943.925
	10.82	954.745	
		0.235	954.510
	4.825	959.335	

Mon. "A" 6.53 952.805

Check on Mon. Elev. Upstream

Sept. 12, 1934

Osborne
Salgado
Remmen

67

B.M. 740 Mark on North Corewall 740.

2.21 742.21

on boulder

B.M. N 3260 E. 5029 10.57 731.64

700 Elev

B.M. 0.77 709.30 708.53

Mon #1 11.47 697.83 "

T.P. 7.53 701.77

4.35 706.12

Mon #2 5.18 700.94 10

Mon #3 2.33 703.79 12

650 Berm

B.M. 0.89 656.68 655.79

5.70 650.98

600 Berm

B.M. 0.00 605.13 605.13

4.35 600.78

Toe Wall

B.M. 2.56 583.82 581.26

Point in Toe Wall 8.85 574.97

Check on Monument Elev. Downstream

Sept. 12, 1934

Osborne
Salgado
Remmen

68

B.M.	12.28	706.37 ✓	694.09
Mon #1		5.11	701.26 ✓ #13
Mon #2		4.07	702.30 ✓ #14

650' Berm

B.M.	6.70	656.07 ✓	649.37
Mon.		5.20	650.87 ✓

600' Berm

B.M.	5.70	605.36 ✓	599.66
		4.69	600.67 ✓

Toe Wall

B.M.	12.08	575.73 ✓	563.65
Tk. on Toe Wall		0.73	575.00 ✓

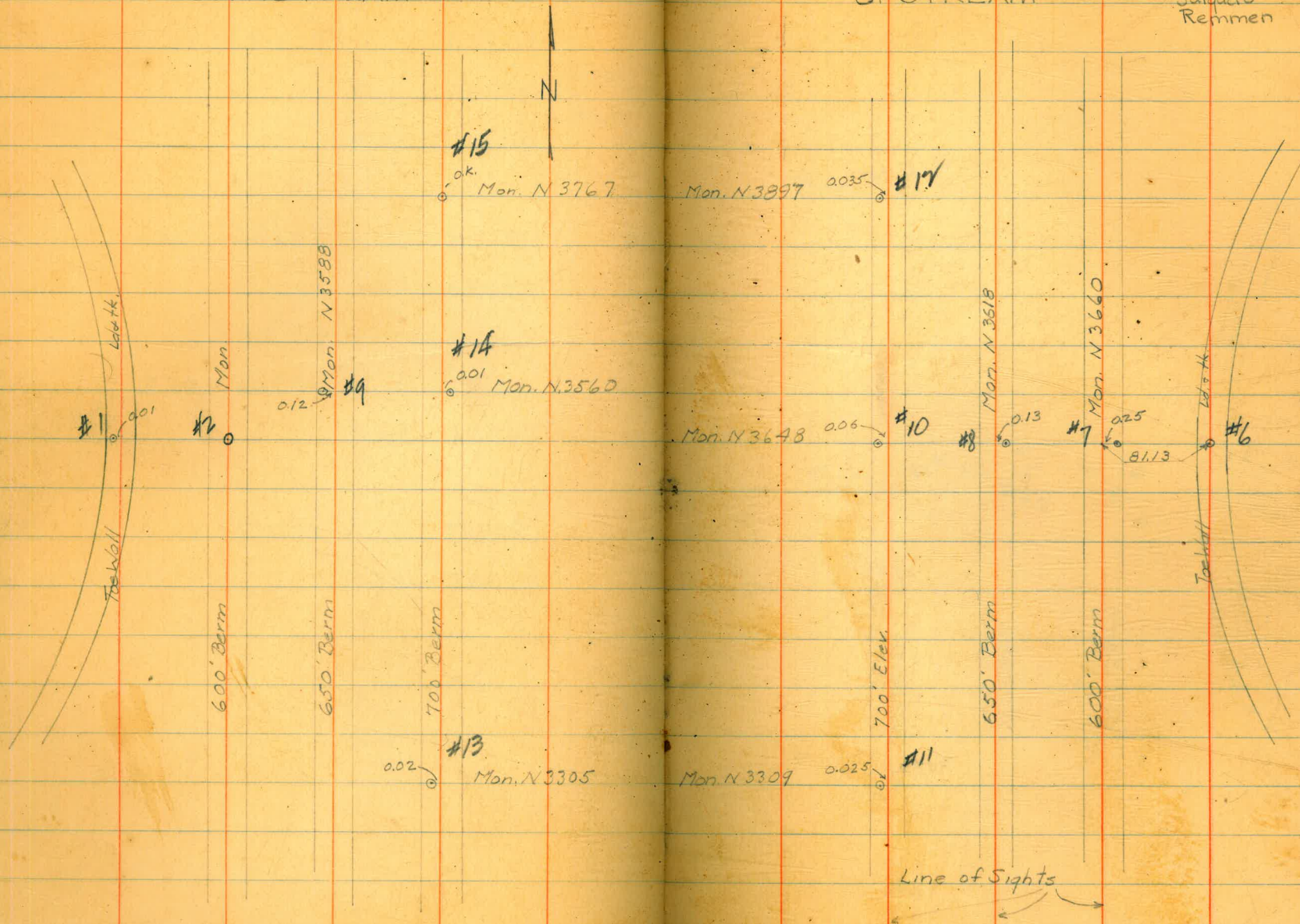
CHECK ON MONUMENTS
DOWNSTREAM.

Sept. 14, 1934

69

UPSTREAM

Osborne
Salgado
Remmen



CHECK ON MONUMENTS

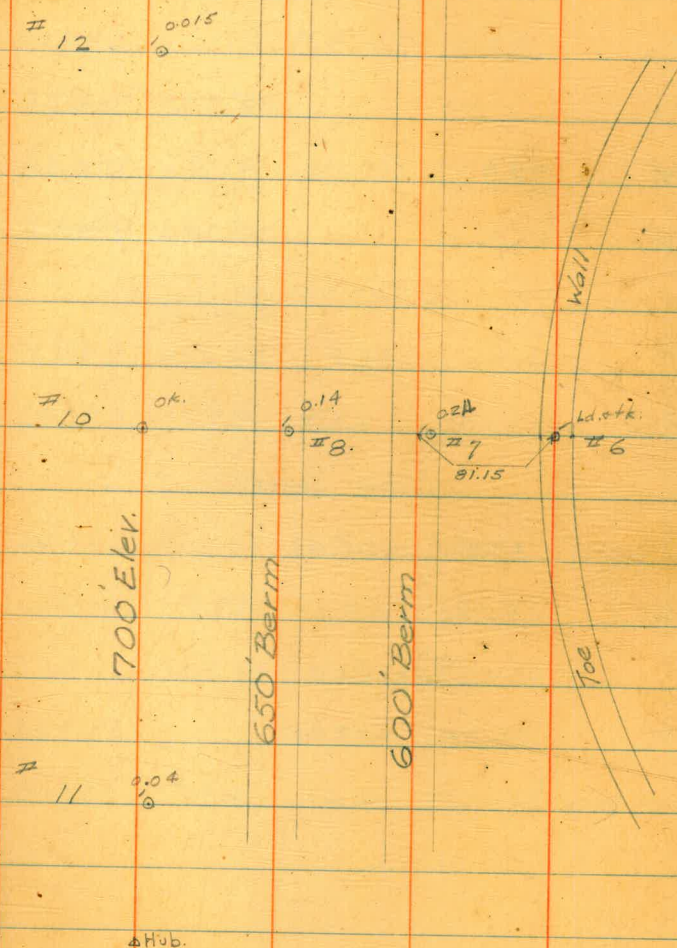
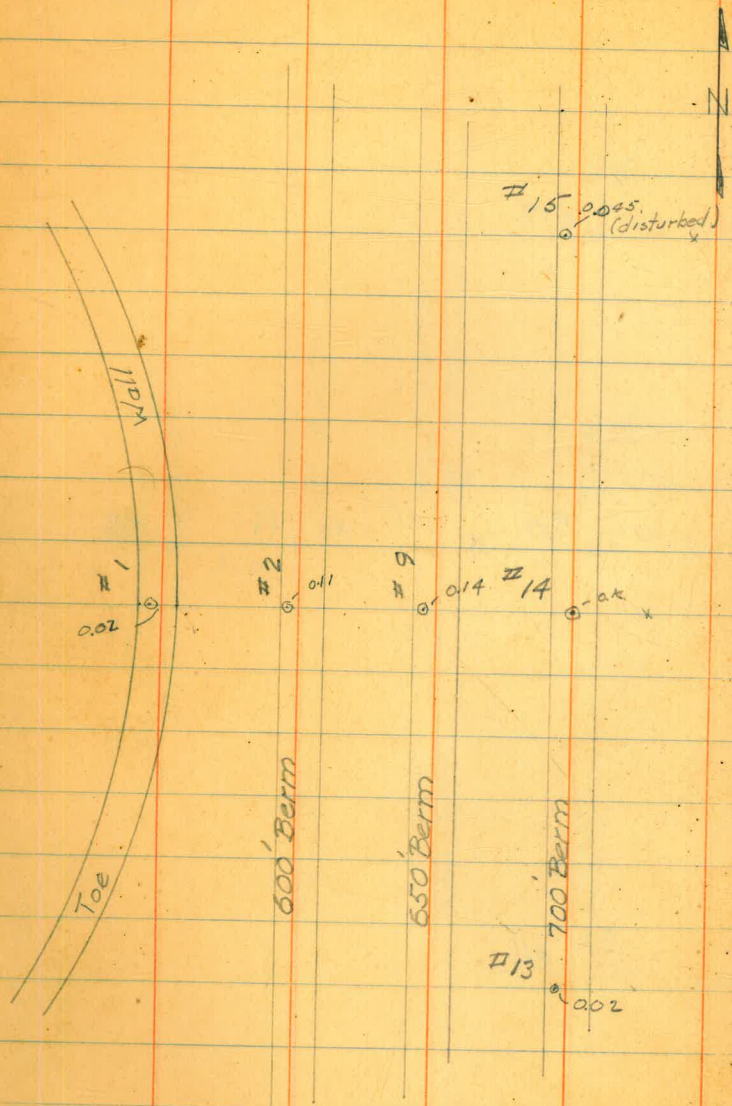
Downstream

Sept. 19-20, 1934
Osborne
Salgado
Remmen

70

Upstream

△ sight



LEVELS ON MONUMENTS

Sept. 19-20, 1934

Osborne
Salgado
Remmen

71

Downstream

Upstream

B.M.	2.88	747.63		744.75
	N 3800			
Rock B.M.	E 4925		7.59	

B.M.	4.45	749.20		744.75
T.P.	0.00	737.84	11.36	737.84
Rock B.M.			6.38	731.46

700' Berm

B.M.	12.26	706.35		694.09
# 13			5.12	701.23
# 14	4.54	706.78	4.11	702.24
# 15			5.14	701.64

Toe Wall				
B.M.	1.20	592.46		581.26
Tr. in Wall # 6			600' Berm	7.49
				<u>574.97</u>
B.M.	1.42	606.55		605.13
# 7			650' Berm	5.78
				<u>600.77</u>
B.M.	1.06	656.85		655.79
# 8				5.90
				<u>650.95</u>

650' Berm

B.M.	6.46	655.83		649.37
# 9			4.97	650.86

700' Berm				
B.M.	0.70	709.23		708.53
# 11				11.43
				697.80
T.P.	3.37	705.43	7.17	702.06
# 10				4.56
				700.87
# 12				1.68
				703.75

600' Berm

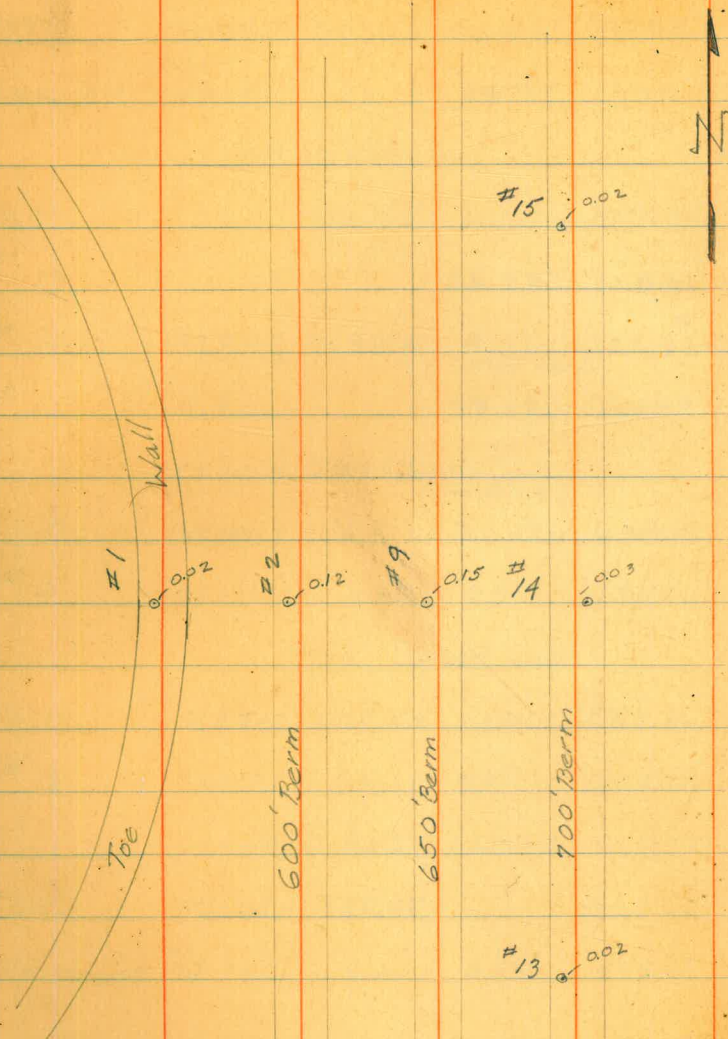
B.M.	5.75	605.41		599.66
# 2			4.75	600.66

Toe Wall

B.M.	12.30	575.95		563.65
Tr. in Wall # 1			0.95	575.00

CHECK ON MONUMENTS

Downstream

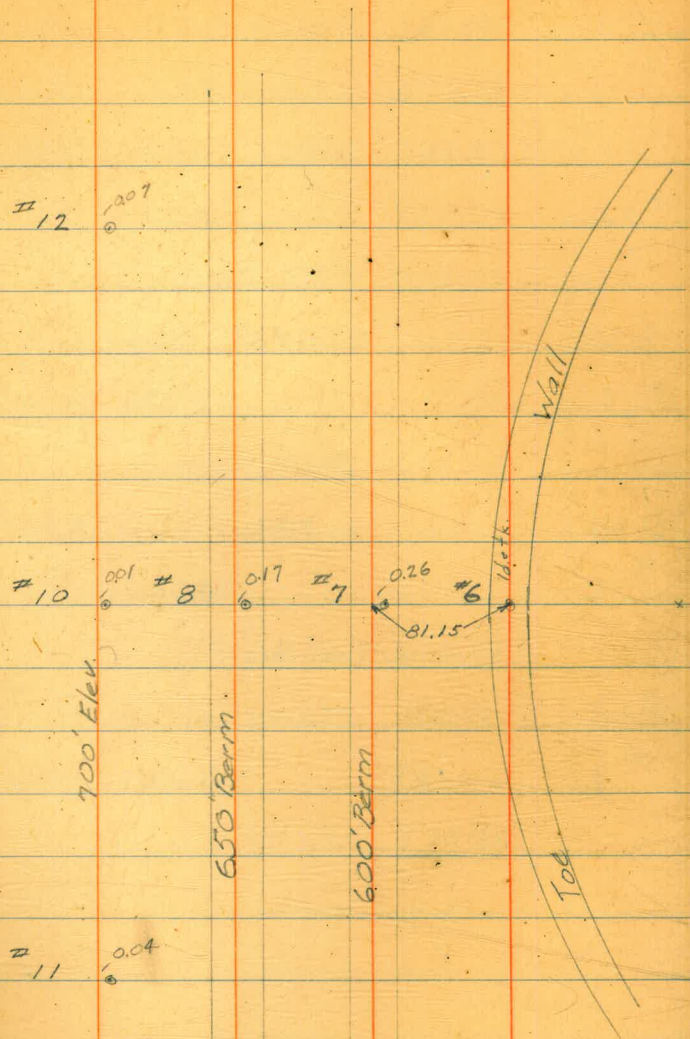


Sept. 26, 1934

72

Osborne
Salgado
Remmen

Upstream



LEVELS ON MONUMENTS

Downstream

B.M.	12.14	706.23		694.09
# 13			5.03	<u>701.20</u>
# 14 + T.P.	4.66	706.85	4.04	<u>702.19</u>
# 15			5.23	<u>701.62</u>

650' Berm

B.M.	6.48	655.85		649.37
# 9			5.00	<u>650.85</u>

600' Berm

B.M.	5.71	605.37		599.66
# 2			4.70	<u>600.67</u>

Toe Wall

B.M.	12.35	576.00		563.65
# 1			1.00	<u>575.00</u>

Sept. 26, 1934

Osborne
Salgado
Remmen

23

Upstream

B.M.	2.09	710.61		708.53
# 11			12.93	<u>697.78</u>
T.P.	3.30	707.27	6.64	703.97
# 10			6.44	<u>700.83</u>
# 12			3.55	<u>703.72</u>

650' Berm

B.M.	0.71	656.50		655.79
# 8			5.55	<u>650.95</u>

600' Berm

B.M.	1.25	606.38		605.13
# 7			5.60	<u>600.78</u>

Toe Wall

B.M.	1.94	583.20		581.26
# 6			8.22	<u>574.98</u>

MONUMENTS ON 650' BERMS

Osborne
Salgado
Reimann

▲ +k. + ld. in Rock

◆ Sight.



17

N3750
Mon.

N3860
Mon.

19

ok. Sept 28

Downstream Set Sept. 28, 1934

9

N3589
Mon.

N3618
Mon.

8

Upstream Set Sept. 27, 1934

16

N3500
Mon.

N3500
Mon.

18

ok. Sept 29

650' Berm

▲ Hub.

Note: # 8 + # 9 were in place.

Cemented them in same time

as the others

650' Berm

▲ Hub.

LEVELS ON MONUMENTS

74

Sept. 28, 1934

Downstream

B.M.	6.49	655.86	649.37
# 9		5.01	650.85

Upstream

B.M.	0.67	656.46	655.79
# 18		5.21	651.25
# 8	+T.P. 4.66	655.60	5.52 650.94
# 19		5.09	650.51

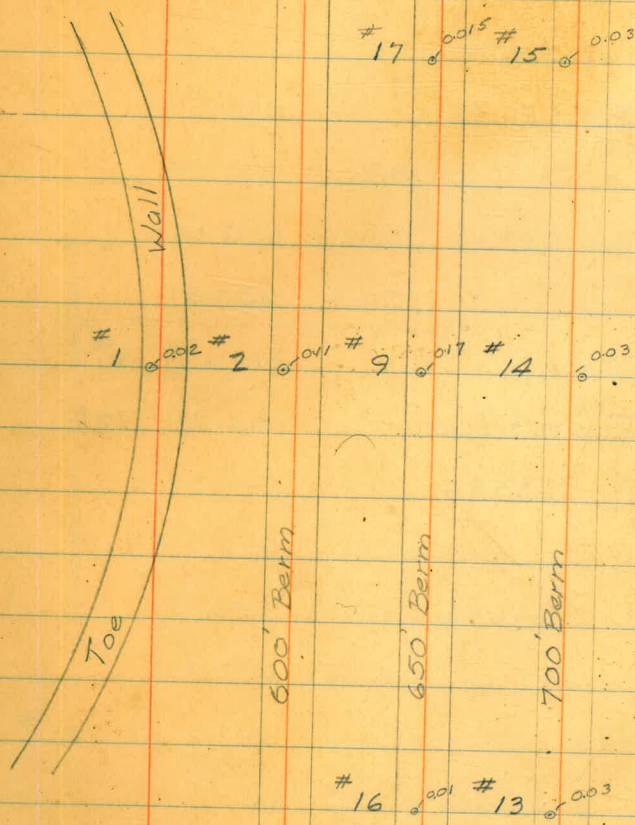
Downstream

Sept. 29, 1934

B.M.	6.59	655.96	649.37
# 16		5.91	650.05
# 9 = T.P.	5.21	656.06	5.11 650.85
# 17		5.25	650.81

CHECK ON MONUMENTS

Downstream



17 .005 # 15 .003

1 .002 # 2 .011 # 9 .017 # 14 .003

600' Berm

650' Berm

700' Berm

16 .001 # 13 .003

Oct. 2, 1934

75

Osborne
Salgado
Remmen

Upstream

12 .011 # 19 .002

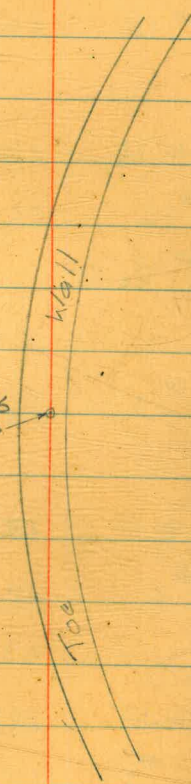
10 .045 # 8 .019 # 7 .029 # 6 .016

11 .065 # 18 .005

700' Elev.

650' Berm

600' Berm



LEVELS ON MONUMENTS

Oct. 2, 1934

76

Osborne
Salgado
Remmen

Downstream

Upstream

B.M.	13.09	707.18	694.09
# 13		6.00	701.18
# 14		5.03	702.15
# 15		5.62	701.56

B.M.	0.54	656.33	655.79
# 18		5.09	651.24
# 8		5.40	650.93
# 19		5.85	650.48

650' Berm

600' Berm

B.M.	6.57	655.94	649.37
# 16		5.89	<u>650.05</u>
# 9+T.P.		5.10	<u>650.84</u>

B.M.	0.055	605.185	605.13
# 7		4.41	<u>600.77</u>

	5.03	655.87	
# 17		5.06	<u>650.81</u>

Toe Wall

B.M.	2.22	583.48	581.26
# 6		8.50	<u>574.98</u>

600' Berm

700' Berm

B.M.	5.54	605.20	599.66
# 2		4.53	<u>600.67</u>

B.M.	0.86	709.39	708.53
# 11		11.63	<u>697.76</u>

Toe Wall

T.P.	0.64	704.19	5.84	703.55
# 10		3.42		<u>700.77</u>

B.M.	12.07	575.72	563.65
# 1		0.72	<u>575.00</u>

# 12		0.51	<u>703.68</u>
------	--	------	---------------

Toe of Rock Points around
Outside of Dam as revised
Plan of Oct. 16, 1933.

Simpson
Salgado
Remmer
Oct. 16-17-1933

77

B.M.	6.83	715.36		708.53	
N3080 E5131 ³			8.5	706.9 = Toe of	Rock
T.P.	11.59	726.69	0.26	715.10	
N3060 ⁹ E5106 ²			7.3	719.4 = Toe of	Rock
T.P.	12.01	738.35	0.35	726.39	
N3040 E5082 ¹			6.6	731.8 = Toe of	Rock
T.P.	11.85	749.90	0.30	738.05	
N3030 E5069 ²			12.0	737.9 = Toe of	Rock
N3020 ⁷ E5041 ²			+2.1	752.0 = Toe of	Rock
T.P.	9.50	757.78	1.62	748.28	
B.M.			1.81	755.97	Roe. Elev. 755.99
N3002 E5021 ¹			+4.5	762.3 = Toe of	Rock

Oct. 17, 1933

B.M.	1.75	757.74		755.99	
T.P.			11.64	746.10 +	
T.P.	11.33	768.77	0.30	757.44	
N3020 E4953 ¹			8.0	760.8 = Toe of	Rock
T.P.	10.38	756.48		746.10	
N3050 E4936 ²			6.5		
N3060 E4929 ²			10.0	746.5 = Toe of	Rock

731.28
4.98
726.30

731.29
4.54
726.75

T.P. 0.65 746.75 746.10

N 3080
E 4909.2

10.3 736.5 Toe of Rock.

T.P. 0.01 735.15 735.14

N 3100
E 4889.1

9.1 726.1 Toe of Rock.

T.P. 0.32 725.70 725.38

N 3120
E 4875.2

6.3 719.4 = Toe of Rock.

T.P. 1.97 715.67 713.70

N 3140
E 4850.1

9.1 706.6 = Toe of Rock.

B.M. 2.36 707.54 705.14
Toe elev. 705.18.

Oct 20, 1933

B.M. 2.25 752.25 750.00

T.P. 0.94 741.40 740.46

N 4150
E 5091.1

14.1 727.3 = Toe of Rock.

B.M. 5.43 763.77 758.34

N 4060
E 4944.1

9.0 754.8 = Toe of Rock.

B.M. 0.37 758.71 758.34

0.62 747.62 747.00

11.73 735.89

15.7
89
068
43.2
864

T.P. 0.95 736.84 735.89

9.50 735.06 11.28 725.56

N4003, E4900+ 3.5 731.6

1.70 727.26 725.56

T.P. 1.17 716.58 11.85 715.41

T.P. 2.54 708.72 10.40 706.18

B.M. 7.48 701.24

11.28 712.60

Set B.M. 3.45 709.15

Oct. 21, 1933
Revised Plan

T.P. 10.53 756.63 746.10

N3048± E4946± 6.6 750.0

T.P. 2.58 728.14 725.56

Elev. on Downstream
Mon. Oct 5 '34

79

+ H.I. -

B.M. 4.98 731.84 726.86

Mon. #1 4.17 727.77

Mon. #2 4.11 727.77

Mon. #3 3.67 4.27 427.67

24
731.28

Rec. Elev. Mon. #4 4.98 726.50

Mon. #5 4.54 726.74

Mon. #6 7.01 724.27

Mon. #7 7.15 724.13

B.M. 4.48 679.21 674.73

Mon. #1 3.28 675.93

Mon. #2 3.97 675.24

Mon. #3 3.46 675.75

Mon. #4 2.94 676.25

3.77 680.24

Mon. #5 4.30 675.94

Mon. #6 4.66 675.58

Mon. #7 4.93 675.31

Elevations of Wells
July 28-1933

	0.0	654.6	654.6
#4		+3.6	658.2
#5		+5.5	660.1
#6		+6.9	661.5
#2		+4.2	658.8
#3		+3.9	658.5
#7		+11.0	665.6

Elevations of Wells
Aug 11-1933

	0.0	665.5	
#5		+5.0	670.5
#4		+2.9	668.4
#7		+10.5	676.0
#3		+3.3	668.8
#2		+3.7	669.2
	0.0	667.8	
#6		+4.2	672.0

Elevations of Wells
Aug. 29-1933

	0.0	682.00	682.0
#5		1.4	680.6
#6		+0.2	682.2
#2		-2.6	679.4
		+2.6	684.6?

Elevs. of wells Sept 2-1933

	0.0	678.6	678.6
#3		+0.4	679.0
#4		0.0	678.6
#7		+7.6	686.2

Elevs of Wells Sept 20

	698.00		
#7		-1.8	696.2
#2		+1.4	699.4
	684.3		
#6		+7.6	691.9

Oct. 18, 1933

	697.3		
#4		+0.7	698.0

B.M. on Down Oct. 5-34
Stream Embankment.

	+	H.I.	-	
B.M.	1.07	635.59		634.52
EST. New B.M. For Mon. on 626. Elev.			7.93	627.66
B.M.	13.12	662.49		649.37
F	12.86	674.78	0.57	661.92
EST. New B.M. For Mon. on 675. Elev.	12.92	687.65	0.05	674.73
F	11.34	697.76	1.25	686.40
B.M.			3.64	694.12
B.M.	10.17	704.26		694.09
F	12.83	717.00	0.09	704.17
F	11.68	728.38	0.30	716.70
EST. New B.M. For Mon. on 725. Elev.	12.80	739.44	1.52	726.84
F	11.99	751.13	0.52	739.14
F	7.75	757.96	0.92	750.21
Check on Core Wall			2.94	755.02

617.34
708.53
16700
674.73
4.48
679.21
5.28
599.66
726.84
599.66
4.98
+12.99
7.18
635.59
731.98
7.93
4.17
627.66
649.37
+13.12
662.49
- .57
661.92
+12.84
674.78
637.59
731
427.61
618.35
674.78
12.96
687.69
708.53
1.58
-1.10
1.28
719.95
686.81
11.34
11.97
697.77
731.92
617.34
8.44
649.37
13.12
723.69
662.49
694.09
- .57
10.17
661.92
704.26
12.84
674.78
704.17
- .05
12.83
674.73
728.38
12.94
726.84
687.69
1.28
686.81
11.34
725.53
- .85
624.68
12.91
637.59
2.04
635.53
726.84
12.80
739.46
739.52
739.14
11.99
751.13
- .92
750.21
7.75
757.96
796

Reference points to tower in
concrete, inside of tower about elev. 618'

