

W

493

ENGINEERS'
LEVEL BOOK

No. 412 F

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1.
For Single Track Embankment.

A93

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 $1\frac{1}{2}$ see inside of back cover.

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493.

Meyer. Inst.

Index.

Check Monuments on Dam Align^{ment} El ⁶² 5-78

Original Eler on New Monuments 3-4

Bench Marks - Up + Down Stream 79

Check Mons. on 650 Berm.

Oct. 4, 1934

Osborne
Salgado
Adams

Upstream

Starting at the South #

#	Period	Direction	Movement
1	.01	East	0.01 E
2 = #18	.01	"	0.01 E
3 = #8	.19	"	0.0
4	.02	"	0.02 E
5 = #19	.01	"	0.0

700 Elevation

Starting at the South #1

#	Period	Direction	Movement
1	0.0	East	0.0
2 = #11	0.06	East	0.0
3	0.0	"	0.0
4	0.04	"	0.04 E
5 = #10	.06	"	0.02 E
6	0.0	"	0.0
7 = #12	0.11	"	0.0
8	0.0	"	0.0

Levels on Monuments

B.M.	1.05	656.84	655.79	Period Move.
# 1			6.08	650.76
2 = #18			5.60	651.24 0.0
I.P. = 3 = #8 457		655.50	5.91	650.93 0.0
4			4.98	650.52
5 = #19			5.00	650.50 0.02 +

B.M.	1.105	709.635	708.53	
# 1			12.885	696.750
# 2 = #11			11.875	697.760 0.0
# 3			10.705	698.930
# 4	8.12	707.64	10.125	699.510
# 5 = #10			6.86	700.78 0.0
6 =			4.97	704.67
7 = #12			3.925	703.695 0.01 +
8			2.05	705.59

Downstream 700 Berm

Starting at south #1

1-#13 0.03 West

2 0.01 "

3-#14 0.01 East

4 0.0

5-#15 0.03 West

6 0.02 "

Downstream 650 Berm.

1 0.01 West

2 0.02 West

3-16 0.01 West

4-9 0.17 "

5 0.03 East

6-17 0.01 West

7 0.0

Levels on Monuments

B.M. 13.08 707.17 69A.09 Period more.

#1-13 5.99 701.18 0.00

2 5.31 701.86

3-14 5.03 702.14 0.01-

4 3.15 705.03 5.29 701.88

5-15 3.46 701.57 0.01+

6 3.96 701.07

B.M. 6.22 655.59 649.37

1 5.23 650.36

2 5.00 650.59

3-16 5.535 650.055 0.0

4-9 4.74 650.85 0.01-

5 4.53 651.06

6-17 4.785 650.805 0.0

7 5.15 650.44

Original elevations on new monuments
Upstream 600 Berm.

B.M.	2.04	608.17		605.13
1		7.89	600.28	
$\gamma = \#7$		7.40	600.77	0.0
3		7.49	600.68	

600 Berm Upstream Side

B.M.	9.66	614.79		605.13 ✓
T.P.	11.54	625.73	0.60	614.19
Rock, Edge of Fill				
B.M.			7.02	618.71 618.72 ✓
		637.15		
T.P.	12.35	636.15	0.93	624.80
N3340 E				626.21
B.M. Nail in Rock			10.94	625.21
		648.805		636.42
T.P.	12.385	647.805	0.73	635.42
B.M. Rock, Painted			7.60	641.20 ✓
T.P.	9.13	656.98	0.85	647.85
B.M.			1.30	655.68 655.79 ✓

Original elevations on new monuments
Downstream 600 Berm.

B.M.	5.695	605.355		599.66
#1		4.69	600.665	Period more
$\gamma = \#7$		4.69	600.665	0.0
3		2.875	601.480	

Rock, Painted

B.M.	11.29	652.49		641.20 ✓
T.P.	6.91	658.80	0.605	651.89
B.M.			3.00	655.80 655.79 ✓

Oct 4 1934
A.V. Meyer
Walton
Remmen

4

Check Levels for B. Ms.

Rock

B. M. 12.06 667.85 655.79

T.P. 12.63 679.63 0.85 667.00

Nail in Rock

B. M. 6.31 ~~673.32~~ 673.27 ✓

T.P. 11.85 690.01 1.47 678.16

T.P. 12.65 701.66 1.00 689.01

T.P. 10.54 710.76 1.44 700.22

B. M. 2.18 ~~708.58~~ 708.53 ✓

B. M. 0.69 702.96 702.27 ✓

T.P. 1.13 691.43 12.66 690.30

T.P. 1.48 681.89 11.02 680.41

B. M. 8.62 673.27 ✓

Movement of Monuments Meyer
Salgado
Walton

Upstream 600 Berm.

1

2

3

Upstream 625 elevation

1

2

3

4

Upstream 650 Berm.

1

2

3

4

5

Oct. 5, 1934

Coniense
Remmen.

5

Levels on Monuments.

B.M. 2.53 607.66 605.13

1 7.385 600.275 00

2 6.885 600.775 00

3 6.975 600.685 00

B.M. 7.09 633.50 626.21

1 7.01 626.79 00

2 7.78 625.57 00

3 6.97 626.38 00

4 8.735 625.065 00

B.M. 1.15 656.94 655.79

1 6.19 650.75 01-

2 5.695 651.745 00

3 5.995 650.945 01-39

4 6.47 650.57 00

5 6.44 650.50 00-01

Movement of Monuments.
 Contd. Oct. 5. 1934.
 Upstream 675 elevation

1
 2
 3
 4
 5
 6
 7

Levels on Monuments

B.M. 8.18	681.45	673.27	
1		6.11	675.34 00
2		6.445	675.005 00
3		5.49	675.96 00
T.P.A. 7.115	683.57	4.995	676.455 00
5		7.635	675.935 00
6		8.205	675.365 00
7		7.765	675.805 00

Upstream 700 elevation

1
 2
 3
 4
 5
 6
 7
 8

B.M. 0.525	709.055	708.53	
1		17.31	696.745 00
2		21.795	697.760 00 ⁻¹⁰
3		10.11	698.945 +01
4		9.52	699.515 00
5		8.78	700.775 00 ⁻⁵⁷
T.P. 6 6.875	709.475	6.405	702.650 -02
7		5.79	702.685 -01 ⁻²⁰
8		3.895	705.580 -01

Movement of Monuments Contd.
Oct. 5, 1934

Downstream 72.5 elevation

Levels on Monuments

12435

- 1
- 2
- 3
- 4
- 5
- 6
- 7

Downstream 700 Berm.

	B.M. 12.435	706.525	694.09	
1			5.34	701.185 00 ⁻¹¹
2			4.66	701.865 00
3			4.38	702.145 00 ¹⁰
4			4.63	701.895 +01
5			4.94	701.585 +01 ⁻⁰⁶
6			5.445	701.080 +01

Movement of Monuments - Contd.
Oct. 5, 1934.

8

Downstream 650 Berm.

Levels on Monuments

B.M.	6.895	656.265	649.37	
1			5.905	650.360 00
2			5.675	650.590 00
3			6.705	650.060 -00 ⁻⁰¹
4			5.41	650.855 00 ⁻²¹
5			5.195	651.070 +01
6			5.45	650.815 +01 ⁰⁰
7			5.805	650.460 +02

Downstream 600 Berm.

B.M.	5.89	605.55	599.66	
1			4.88	600.67 00
2			4.88	600.67 00 ⁻¹⁹
3			4.065	601.485 00

Downstream Slope Oct. 5 '34

Downstream 625
Levels on Monuments

B.M.	1.15	628.81	✓	627.64
Mon.				
# 1		3.33	✓	625.48
2		3.09	✓	625.72
3	5.40	631.99	✓	2.42 626.39
4		5.51	✓	626.48

Downstream 675

B.M.	4.48	679.21	✓	674.73
1		3.28	✓	675.93
2		3.97	✓	675.24
3		3.46	✓	675.75
4	3.99	680.24	✓	2.96 676.25
5		4.30	✓	675.94
6		4.66	✓	675.58
7		4.93	✓	675.31

Downstream 725

B.M.	4.98	731.84	✓	726.86
1		4.17	✓	727.67
2		4.11	✓	727.73
3		4.27	✓	727.57
	3.67	731.24	✓	
4		4.98	✓	726.26
5		4.54	✓	726.70
6		7.01	✓	724.23
7		7.15	✓	724.09

Meyer Movement of Monuments
Salgado
Walton
Oct. 6, 1934.

Upstream 650 Barm.

Mon. No. Total Move.

1 0.02 E

2 0.02 E

3 0.18 E

4 0.02 E

5 0.03 E

Upstream 675±

1 0.05 E

2 0.04 E

3 0.02 E

4 0.05 E

5 0.02 E

6 0.02 W

7 00

5.83

10

Converse
Remmen

Levels on Monuments

B.M. 0.14 655.93 655.79

1 5.18 650.75

2 4.685 651.245

3 4.985 650.745

4 5.41 650.52

5 5.43 650.50

B.M. 7.93 681.20 673.27

1 5.86 675.34

2 6.20 675.00

3 5.735 675.925

4 4.735 676.465

5 5.265 675.935

6 5.84 675.36

7 5.20 675.80

Movement of Monuments-Contd.
Oct. 6, 1934

Upstream 700.

Mon. No. Total Marc.

1	00	
2	0.01	E
3	0.03	E
4	0.02	E
5	0.04	E
6	00	
7	0.09	E
8	0.04	W

11

B.M.	0.655	709.185	708.53
1			12.45 696.735
2			11.13 697.755
3			10.245 698.94
4			9.66 699.525
5			8.40 700.785
6			6.525 702.660
7			5.495 703.690
8			3.595 705.590

Movement of Monuments - Contd.

Oct. 6, 1931

725 Downstream.

Mo. Mon. No. Total Move.

1 0.02 E

2 0.02 E

3 0.03 E

4 00

5 0.04 E

6 00

7 00

700 Downstream

1 0.03 W

2 0.01 W

3 00

4 00

5 0.03 W

6 0.03 W

B.M 4.98 731.84 726.86

1 4.17 727.67

2 4.11 727.73

3 3.67 731.24 4.27 727.57

4 4.98 726.26

5 4.54 726.70

6 7.01 724.23

7 7.15 724.09

B.M 12.37 706.46 694.09

1 5.275 701.185

2 4.59 701.87

3 4.31 702.15

4 4.56 701.90

5 4.875 701.585

6 5.37 701.09

Movement of Monuments - Contd.

Oct. 6, 1934.

675 Downstream

13

Mon. No	Total Move		B.M.	676	680.99	674.73	
1	0.02	W	1	5.065	675.925	00	
2	00		2	5.765	675.225	-01	
3	0.03	W	3	5.21	675.75	00	
4	0.02	W	4	4.74	676.25	00	
5	0.01	W	5	5.06	675.93	-01	
6	00		6	5.43	675.56	-02	
7	00		7	5.695	675.295	-01	

650 Downstream

			B.M.	664	656.01	649.37	
1	0.01	W	1	5.65	650.36	00	
2	0.03	W	2	5.42	650.59	00	
3	0.01	W	3	5.95	650.05	-01	
4	0.17	W	4	5.16	650.85	00	
5	0.02	E	5	4.94	651.07	00	
6	00		6	5.20	650.81	00	
7	0.02	W	7	5.555	650.455	00	

Movement of Monuments
Oct. 8, 1934
600 Upstream

Meyer
Salgado
Walton

14

Mon. No. Total Move

1 .010 W
.270 E
2 .270 E
.010 E
3 .010 E

B.M. 1.04 ~~604.09~~ 606.17 605.13

600.27
5.90 598.19 0.01-
600.777
5.40 598.69 0.22-
600.627
5.55 598.54 0.06-

625 Upstream

.020 E
1 .010 E
.030 E
2 .020 E
.000
3 .010 E
.020 W
4 .010 W

B.M. 4.47 630.68 626.21

4.39 626.29 ✓
5.16 625.52 ✓
4.31 626.37 0.01-
5.62 625.06 0.01-

650 Upstream

.010 E
1 .010 E
.020 E
2 0.00
.190 E
3 .190 E
.020 E
4 .010 E
.020 E
5 .020 E

B.M. 12.3 657.02 655.79

6.27 650.75 01-
5.78 651.24 01-
6.08 650.94 039-
6.51 650.51 01-
6.52 650.50 01-

Movement of Monuments Cont.

Oct. 8, 1934

675 Upstream

Mon. No.

	0.00	
7	0.00	
	.040	W
6	.040	W
	0.00	
5	0.00	
	.060	E
4	.040	E
	.020	E
3	.020	E
	.030	E
2	.040	E
	.050	E
1	.050	E

B.M. 7.26 680.53 673.27

7	4.73	675.80	01-
6	5.17	675.36	01-
5	4.60	675.93	01-
4	4.07	676.46	00
3	4.57	675.96	00
2	5.53	675.00	01-
1	5.19	675.34	00

700 Upstream

	.02	E
1	.00	E
	.05	E
2	.03	E
	.05	E
3	.04	E
	.07	E
4	.06	E
	.01	W
5	.06	W
	.05	E
6	.02	E
	.07	E
7	.03	E
	.05	E
8	.00	E

B.M. 0.65 709.18 708.53

700 upstream

1	12.46	696.72	03-
2	11.445	697.735	12-
3	10.27	698.91	02-
4	9.69	699.49	02-
5	8.43	700.75	59-
6	6.55	702.63	04-
7	5.51	703.67	11-
8	3.61	705.57	02-

725 Downstream

Mon. No.

B.M.

7.15 734.01

726.86

1	.05 .03	E	1	6.37	727.64	003-
2	.04 .04	E.	2	6.33	727.68	005-
3	.04 .05	E	3	6.48	727.53	00-
4	.02 .02	E	4	7.80	726.21	05-
5	.08 .06	E.	5	7.37	726.64	06-
6	.00 .00		6	9.83	724.18	05-
7	.03 .01	E.	7	9.94	724.07	02-

700 Downstream

B.M.

12.53 706.62

694.09

1	.04 .05	W.	1	5.45	701.17	012-
2	.01 .03	W.	2	4.77	701.85	01-
3	.02 .01	E.	3	4.49	702.13	24-
4	.01 .01	E.	4	4.74	701.88	00
5	.04 .03	W.	5	5.05	701.57	07-
6	.00 .00		6	5.54	701.08	01+

675 Downstream

			B.M.	6.23	680.96	674.73
1	.00 .02	W.	1			5.03 675.93 00
2	.00 .01	W.	2			5.74 675.22 02-
3	.02 .02	W.	3			5.22 675.74 01-
4	.02 .04	W	4			4.72 676.24 01-
5	.01 .02	W.	5			5.04 675.92 02-
6	.01 .00.	E	6			5.40 675.56 02-
7	.00 .00		7			5.66 675.30 01-

650 Downstream

			B.M.	6.13	655.50	649.37
1	.01 .01	W.	1			5.14 650.36 00
2	.03 .04	W	2			4.91 650.59 00
3	.03 .03	W	3			5.46 650.04 01-
4	.18 .18	W	4			4.65 650.85 21-
5	.01 .01	E	5			4.43 651.07 01+
6	.00 .02	W	6			4.69 650.81 00
7	.03 .04	W	7			5.05 650.45 01+

625 Downstream

Mon. No.

1	.02 .01	E
2	.01 .00	E
3	.01 .00	E
4	.02 .01	E

B.M. 4.44 632.10 627.66

1	6.62	625.48	00
2	6.40	625.70	02-
3	5.72	626.38	01-
4	5.64	626.46	02-

600 Downstream

1	.00 .00	
2	.10 .11	W
3	.01 .01	E

B.M. 5.525 605.185 599.66

1	4.51	600.675	00
2	4.51	600.675	18-
3	3.69	601.495	01+

Oct. 8, 1934

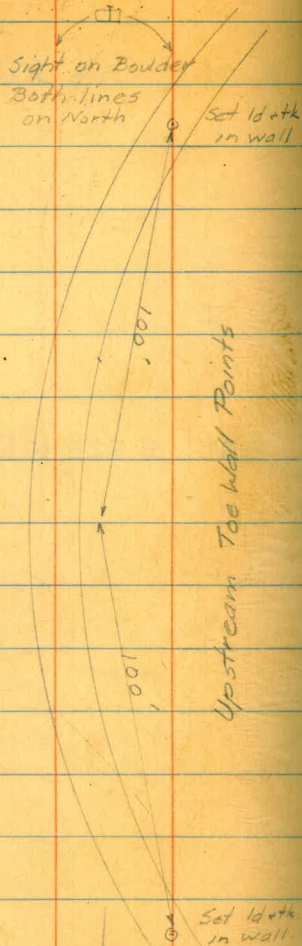
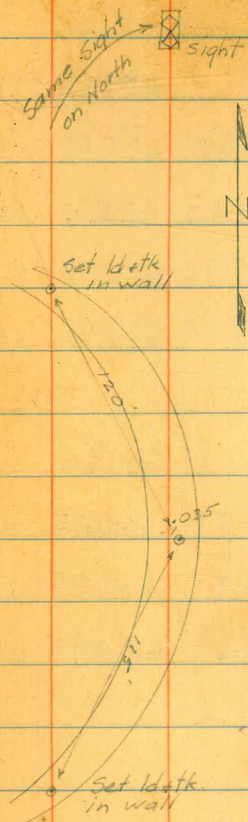
Osborne
Salgado
Remmen
Adams

Meyer
Salgado
Walton

Check on Mon. on Upstream Toewall
Oct. 10, 1934

19

Downstream Toe Wall Points

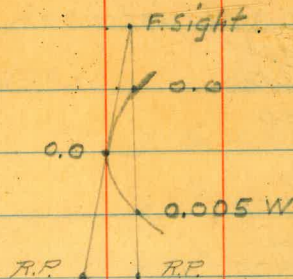


Upstream Toe Wall Points

Id + tk. in Boulder
Id + tk. in Boulder
above Outlet
Exc.

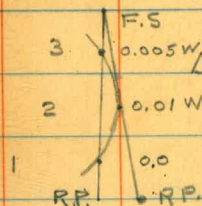
Id + tk. in Boulder

3
2
1



Level on Upstream Toewall

B.M.	0.05	581.31	581.26
1			6.32 574.99
2			6.325 574.985
3			6.35 574.96



Downstream Toewall

B.M.	11.35	575.00	563.65
T.P.	5.91	580.06	0.85 574.15
1			5.01 575.05
2			5.02 575.04
3			5.12 574.94

Movement of Monuments

Oct. 9, 1934

600 Upstream

Mon. No Move

Meyer
Salgado
Walton

+

H.I.

-

B.M. 2.27 607.40 605.13

1	0.00 .01	W	1		7.13	600.27	01-
2	.27 .27	E	2		4.62	600.78	21-
3	.01 .01	E	3		6.72	600.68	00

625 Upstream

B.M. 3.95 630.16 626.21

1	.02 .01	E	1		3.84	626.30	01+
2	.03 .02	E	2		4.43	625.53	01+
3	.01 .01	E	3		3.77	626.39	01+
4	0.00 0.00		4		5.08	625.08	01+

650 Upstream

B.M. 1.13 656.92 655.79

1	.02 .01	E	1		6.17	650.75	01-
2	.02 .01	E	2		5.67	651.25	00
3	.18 .19	E	3		5.97	650.95	28-
4	.02 .02	E	4		4.39	650.53	01+
5	.02 .02	E	5		4.41	650.51	00

Movement of Monuments Cont.
Oct 9, 1934
675 Upstream

Mon. No		
1	.05	E
	.05	
2	.02	E
	.03	
3	.02	E
	.02	
4	.02	E
	.04	
5	.01	W
	.00	
6	.05	W
	.04	
7	.00	
	.00	

700 Upstream

1	.00	
	.00	
2	.03	E
	.03	
3	.02	E
	.02	
4	.05	E
	.06	
5	.03	W
	.05	
6	.03	E
	.03	
7	.04	E
	.03	
8	.03	E
	.01	

675 Upstream

B.M	7.90	681.17	673.27
1			5.84 675.33 01-
2			6.18 674.99 02-
3			5.22 675.95 01-
4			4.72 676.45 01-
5			5.25 675.92 02-
6			5.82 675.35 02-
7			5.37 675.80 01-

700 Upstream

B.M.	0.37	708.90	708.53
1			12.17 696.73 02-
2			11.17 697.73 13-
3			10.00 698.90 03-
4			9.41 699.49 02-
5			8.15 700.75 59-
6			6.27 702.63 04-
7			5.23 703.67 21-
8			3.33 705.57 02-

Movement of Monuments Cont.

Oct 9, 1934

725 Downstream

Mon. No.

B.M.

452

725 Downstream

260

22

Mon. No.			B.M.			
	.05	E		731.48	724.84	
1	.03		1	4.04	727.62	05-
	.04					
2	.02	E	2	4.01	727.67	06-
	.05					
3	.03	E	3	4.14	727.52	05-
	.03					
4	.04	E	4	5.47	726.21	05-
	.09					
5	.09	E	5	5.04	724.44	04-
	.01					
6	.00	E	6	7.49	724.19	04-
	.02					
7	.02	E	7	7.40	724.08	01-

700 Downstream

B.M.

12.33 706.42

694.09

1	.04	W	1	5.25	701.17	12-
	.05					
2	.02	W	2	4.58	701.84	02-
	.02					
3	.02	E	3	4.30	702.12	25-
	.02					
4	.01	E	4	4.56	701.86	02-
	.01					
5	.04	W	5	4.87	701.55	09-
	.04					
6	.01	W	6	5.34	701.06	01-
	.01					

Movement of Monuments Cont.

Oct 9, 1934

675 Downstream

Mon. No. Total Move

1	.02	W
2	.03	W
3	.04	W
4	.04	W
5	.02	W
5	.03	W
6	.02	W
7	.01	W

B.M. 7.18 681.91

674.73

1	5.98	675.93	00
2	6.09	675.23	01-
3	6.16	675.75	00
4	5.66	676.25	00
5	5.98	675.93	01-
6	6.37	675.54	04-
7	6.43	675.28	03-

650 Downstream

1	.01	W
1	.02	W
2	.03	W
2	.04	W
3	.03	W
3	.03	W
4	.10	W
4	.20	W
5	.02	E
5	.01	E
6	.01	W
6	.02	W
7	.02	W
7	.03	W

B.M. 6.24 655.63

649.37

1	5.28	650.35	01-
2	5.04	650.59	00
3	5.57	650.06	01+
4	4.78	650.85	21-
5	4.57	651.06	00
6	4.83	650.80	01-
7	5.20	650.43	01-

Movement of Monuments Cont.

Oct 9, 1934
625 Downstream

Mon. No	Total Move		B.M.	403	431.69	627.66
1	.01 .00	E	1		622	625.47 01-
2	.00 .01	E	2		597	625.72 00
3	.00 .00		3		531	626.38 01-
4	.00 .01	E	4		524	626.45 03-

600 Downstream

			B.M.	550	605.14	599.66
1	.01 .01	W			448	600.68 01+
2	.11 .11	W			448	600.68 18-
3	.01 .01	E			368	601.48 00

Movement of Monuments
Oct. 10, 1934
600 Upstream

Meyer
Salgado
Walton

25

Mon. No. Total Move

1	.01 .00	W
2	.27 .27	E
3	.00 .00	

B.M. 327 608.40 605.13

1	8.12	600.28	00
2	7.62	600.78	01
3	7.72	600.68	00

625 Upstream

1	.04 .02	E
2	.03 .03	E
3	.01 .01	E
4	.00 .01	E

B.M. 498 531.19 626.21

1	4.90	626.29	00
2	5.68	625.51	01
3	4.82	626.37	01
4	6.12	625.07	00

650 Upstream

1	.03 .02	E
2	.03 .02	E
3	.10 .19	E
4	.02 .01	E
5	.03 .02	E

B.M. 0.80 654.59 655.79

1	5.82	650.77	01+
2	5.33	651.26	01+
3	5.64	650.95	38
4	6.06	650.53	01+
5	6.09	650.50	01

Movement of Monuments Cont.

Oct. 10, 1934

675 Upstream

Mon. No. Total Move

1	.04 .05	E
2	.05 .04	E
3	.02 .02	E
4	.05 .04	E
5	.02 .01	W
6	.05 .05	W
7	.00 .00	

B.M. 9.59 682.86 673.27

1	7.52	675.34 00
2	7.87	674.99 02
3	6.90	675.96 00
4	6.40	676.46 00
5	6.94	675.92 02
6	7.50	675.34 01
7	7.04	675.80 01

700 Upstream

1	.00 .00	
2	.04 .03	E
3	.05 .03	E
4	.04 .05	E
5	.02 .04	W
6	.02 .02	E
7	.05 .03	E
8	.03 .01	E

B.M. 700 Upstream 0.03 708.56 708.53

1	11.82	696.74 01
2	10.82	697.74 12
3	9.65	698.91 02
4	9.05	699.51 00
5	7.79	700.77 51
6	5.91	702.65 02
7	4.89	703.67 21
8	2.98	705.58 01

Movement of Monuments Cont.

Oct. 10, 1934

725 Downstream

27

Mon. No.	Total Move		B.M.	5.14	732.00	726.86
1	.04 .02	E	1			4.38 727.62 05"
2	.04 .03	E	2			4.32 727.68 05"
3	.05 .04	E	3			4.48 727.52 06"
4	.04 .04	E	4			5.78 726.22 04"
5	.08 .07	E	5			5.35 726.65 05"
6	.02 .00	E	6			7.80 724.20 03"
7	.01 .01	E	7			7.90 724.10 01"

700 Downstream

			B.M.	12.25	706.34	694.09
1	.04 .05	W	1			5.18 701.16 13"
2	.01 .02	W	2			4.50 702.84 06"
3	.00 .00		3			4.20 702.14 13"
4	.00 .00		4			4.45 701.89 01"
5	.03 .04	W	5			4.76 701.58 06"
6	.03 .04	W	6			5.24 701.10 02"

Movement of Monuments Cont.
Oct. 10, 1934

675 Downstream

Mon. No	Total Move		B.M.	5.07	679.80	674.73
1	.02 .02	W	1			3.85 675.95 01*
2	.02 .03	W	2			4.56 675.24 00
3	.03 .04	W	3			4.05 675.75 00
4	.03 .04	W	4			3.53 674.27 01*
5	.03 .03	W	5			3.85 675.95 01*
6	.04 .04	W	6			4.22 675.58 00
7	.02 .01	W	7			4.49 675.31 00

650 Downstream

			B.M.	4.47	655.84	649.37
1	.01 .03	W	1			5.49 650.35 01*
2	.03 .04	W	2			5.25 650.59 00
3	.03 .03	W	3			5.78 650.06 01*
4	.10 .20	W	4			4.95 650.86 00*
5	.01 .01	W	5			4.77 651.07 01*
6	.03 .03	W	6			5.03 650.81 00
7	.01 .02	W	7			5.39 650.45 01*

Movement of Monuments Cont.

Oct. 10, 1934

625 Downstream

Mon. No. Total Move

1	.00	
2	.01	E
3	.00	
4	.01	E

B.M. 375 631.41 627.66

1	5.93	625.48 00
2	5.68	625.73 01
3	5.01	626.40 01
4	4.94	626.47 01

600 Downstream

1	.01	W
2	.12	W
3	.01	E

B.M. 572 605.38 599.66

1	4.70	600.68 00
2	4.70	600.68 18
3	3.88	601.50 00

Movement of Monuments

Oct. 11, 1934

600 Upstream

Meyer
Salgado
Walton

30

Mon. No.	Total Move		B.M.	007	605.20	605.13
1	.00 .00					4.92 600.28 00
2	.37 .27	E				4.42 600.78 21-
3	.00 .00					5.52 600.68 00

625 Upstream

B.M. 3.14 629.35 626.21

1	.03 .03	E				3.06 624.29 00
2	.03 .03	E				3.84 625.51 01-
3	.02 .01	E				2.98 626.37 01-
4	.00 .01	E				4.29 625.06 01-

650 Upstream

B.M. 1.20 654.99 655.79

1	.04 .03	E	1			4.24 650.75 01-
2	.02 .01	E	2			5.75 651.24 01-
3	.19 .20	E	3			6.04 650.92 40-
4	.02 .03	E	4			4.47 650.52 00
5	.02 .02	E	5			6.49 650.50 01-

Movement of Monuments Cont.

Oct. 11, 1934
675 Upstream

Mon. No.	Total Move		B.M.	8.77	682.04	673.27
1	.06 .05	E	1			6.71 675.33 01-
2	.04 .04	E	2			7.05 674.99 02-
3	.02 .02	E	3			6.10 675.94 02-
4	.04 .03	E	4			5.59 676.45 01-
5	.00 .01	W	5			6.12 675.92 02-
6	.03 .05	W	6			6.69 675.35 02-
7	.00 .00		7			6.23 675.81 00

700 Upstream

			B.M.	0.13	708.66	708.53
1	.00 .00		1			11.93 694.73 02-
2	.04 .03	E	2			10.93 697.73 12-
3	.03 .03	E	3			9.77 698.89 04-
4	.05 .05	E	4			9.18 699.48 03-
5	.01 .03	W	5			7.92 700.74 60-
6	.02 .02	E	6			6.04 702.62 05-
7	.04 .05	E	7			5.00 703.66 22-
8	.01 .01	W	8			3.08 705.58 01-

Movement of Monuments Cont.

Oct. 11, 1934
725 Downstream

Mon. No.	Total Move		B. M.	2.76	729.62	726.86
1	.02 .03	E	1		2.00	727.62 05-
2	.05 .05	E	2		1.94	727.66 07-
3	.05 .05	E	3		2.12	727.50 07-
4	.03 .03	E	4		3.42	726.20 06-
5	.05 .06	E	5		2.99	726.63 07-
6	.01 .00	E	6		5.44	724.18 05-
7	.01 .01	E	7		5.54	724.08 01-

700 Downstream

			B. M.	12.25	706.34	694.09
1	.03 .05	W	1		5.16	701.18 11-
2	.02 .03	W	2		4.50	702.84 02-
3	.01 .01	E	3		4.20	702.14 23-
4	.00 .01	W	4		4.45	701.89 01+
5	.03 .05	W	5		4.74	701.58 06-
6	.03 .04	W	6		5.24	701.10 03+

Movement of Monuments Cont.

Oct. 11, 1934
675 Downstream

Man. No. Total Move

1	.02 .03	W
2	.02 .04	W
3	.05 ✓ .06	W
4	.04 .05	W
5	.04 .04	W
6	.03 .03	W
7	.01 .02	W

B.M. 4.61 679.34

674.73

1	3.38	675.96	02+
2	4.08	675.26	02+
3	3.57	675.77	02+
4	3.07	676.27	02+
5	3.39	675.95	01+
6	3.74	675.58	00
7	4.03	675.31	00

650 Downstream

1	.01 .02	W
2	.03 .05	W
3	.03 .05	W
4	.20 .20	W
5	.02 ✓ .00	E
6	.02 .03	W
7	.02 .03	W

B.M. 6.10 655.47

649.37

1	5.11	650.34	00
2	4.88	650.59	00
3	5.41	650.06	01+
4	4.62	650.85	21-
5	4.40	651.07	01+
6	4.66	650.81	00
7	5.02	650.45	01+

Movement of Monuments Cont.

Oct. 11, 1934

625 Downstream

34

Mon. No. Total Move

B. M. 2.67 630.33 627.66

1 .01 E
.01

1 4.83 625.50 02+

2 .01 E
.00

2 4.58 625.75 03+

3 .00
.00

3 3.92 626.41 02+

4 .01 E
.02

4 3.85 626.48 00

600 Downstream

B. M. 5.58 605.24 599.66

1 .01 W
.01

1 4.54 600.68 001+

2 .12 W
.12

2 4.54 600.68 18-

3 .00
.00

3 3.75 601.49 01+

Movement of Monuments

Oct. 12, 1934

600 Upstream

Meyer
Salgado
Walton

Mon. No.	Total Move		B.M.	3.55	608.68	605.13
1	.00 .01	W	1		8.40	600.28 00
2	.27 .27	E	2		7.90	600.78 00
3	.00 .00		3		8.00	600.68 00

625 Upstream

			B.M.	5.50	631.71	626.21
1	.02 .02	E	1		5.42	626.29 00
2	.02 .02	E	2		6.20	625.51 00
3	.02 .02	E	3		5.34	626.37 00
4	.01 .00	E	4		6.65	625.06 00

650 Upstream

			B.M.	2.58	656.37	655.79
1	.03 .02	E	1		5.62	650.75 00
2	.01 .01	E	2		5.13	651.24 00
3	.20 .20	E	3		5.44	650.93 00
4	.01 .02	E	4		5.85	650.62 00
5	.01 .00	E	5		5.88	650.49 00

Movement of Monuments Cont.

Oct 12, 1934
675 Upstream

Mon. No. Total Move.

1	.06 .05	E
2	.04 .04	E
3	.02 .02	E
4	.04 .04	E
5	.00 .00	
6	.00 .02	W
7	.01 .00	E

700 Upstream

1	.02 .01	E
2	.04 .03	E
3	.05 .04	E
4	.04 .06	E
5	.01 .02	E
6	.02 .02	E
7	.02 .04	E
8	.01 .01	W

B.M. 8.95 682.22 673.27

1	6.89	675.33	02"
2	7.23	674.99	02"
3	6.27	675.95	02"
4	5.77	676.45	02"
5	6.30	675.92	02"
6	4.87	675.35	02"
7	6.42	675.80	02"

700 Upstream

B.M. 0.20 708.73 708.53

1	12.00	696.73	02"
2	11.00	697.73	02"
3	9.82	698.91	02"
4	9.24	699.49	02"
5	7.99	700.74	02"
6	6.11	702.63	04"
7	5.07	703.66	02"
8	3.17	705.56	02"

Movement of Monuments Cont.

Oct. 12, 1934
725 Downstream

37

Mon. No. Total Move

1	.03 .04	E
2	.05 .05	E
3	.06 .06	E
4	.03 .03	E
5	.07 .07	E
6	.02 .01	E
7	.03 .02	E

B.M. 3.84 730.72 726.86

1	3.09	727.63	04"
2	3.04	727.64	07"
3	3.22	727.50	07"
4	4.53	726.19	07"
5	4.10	724.62	08"
6	6.55	724.17	06"
7	6.64	724.08	07"

700 Downstream

1	.04 .05	W
2	.01 .02	W
3	.02 .00	E
4	.00 .00	
5	.02 .02	W
6	.02 .02	W

B.M. 11.93 706.02 694.09

1	4.85	701.17	17"
2	4.18	701.84	02"
3	3.89	702.13	24"
4	4.14	701.88	00"
5	4.45	701.57	07"
6	4.93	701.09	02"

Movement of Monuments Cont.

Oct. 12, 1934.

675 Downstream

Mon. No.	Total Move	
1	.01 .01	W
2	.02 .02	W
3	.04 .05	W
4	.03 .03	W
5	.02 .02	W
6	.00 .02	W
7	.02 .03	W

B.M.	5.59	680.32	674.73
1			4.39 675.93 00
2			4.09 676.23 01
3			4.57 675.75 00
4			4.07 676.25 00
5			4.38 675.94 00
6			4.75 675.57 01
7			5.01 675.31 00

650 Downstream

1	.02 .03	W
2	.05 .05	W
3	.03 .04	W
4	.19 .19	W
5	.00 .00	
6	.01 .02	W
7	.01 .01	W

B.M.	619	655.56	649.37
1			5.19 650.37 01*
2			4.96 650.60 01*
3			5.50 650.06 01*
4			4.71 650.85 01*
5			4.48 ^{651.} 650.08 01*
6			4.74 650.82 01*
7			5.09 650.47 02*

Movement of Monuments Cont.

Oct. 12, 1934

625 Downstream

Mon. No. Total Move

1	.01	E
	.01	
2	.00	
	.00	
3	.01	W
	.01	
4	.00	
	.00	

B.M. 2.77 630.43 627.66

1	4.95	625.98	00.
2	4.71	625.72	00
3	4.04	626.39	.00
4	3.97	626.46	00

600 Downstream

1	.01	W
	.02	
2	.12	W
	.12	
3	.01	W
	.00	

B.M. 5.46 605.12 599.66

1	4.44	600.68	01+
2	4.44	600.68	18
3	3.43	601.49	01+

Movement of Monuments

Oct. 13, 1934

650 Upstream

Meyer
Salgado
Walton

Mon. No. Total Move

B.M. 0.74 656.53 655.79

1 .02 E

1 5.79 650.74 02-

2 .02 E

2 5.31 651.22 03-

3 .20 E

3 5.61 650.92 41-

4 .02 E

4 6.03 650.50 02-

5 .02 E

5 6.05 650.48 03-

675 Upstream

675 Upstream
B.M. 7.59 680.86 673.27

1 .05 E

1 5.53 675.93 01-

2 .06 E

2 5.88 674.98 03-

3 .04 E

3 4.92 675.94 02-

4 .07 E

4 4.42 676.44 02-

5 .00

5 4.95 675.91 03-

6 .04 W

6 5.52 675.34 03-

7 .00 W

7 5.07 675.79 02-

Movement of Monuments Cont.

Oct. 13, 1934

700 Upstream

41

Mon. No. Total Move

B.M. 0.82 709.35 708.53

1	.02 .01	E	1	12.62	696.73	02-
2	.05 .05	E	2	11.62	697.73	13-
3	.06 .06	E	3	10.45	698.90	03-
4	.06 .06	E	4	9.87	699.48	03-
5	.02 .02	W	5	8.61	700.74	60-
6	.02 .02	E	6	6.73	702.62	05-
7	.04 .04	E	7	5.68	703.67	21-
8	.02 .02	W	8	3.77	705.58	01-

725 Downstream

B.M. 2.63 729.49 726.86

1	.03 .03	E	1	1.88	727.61	06-
2	.06 .05	E	2	1.84	727.63	10-
3	.06 .05	E	3	2.02	727.47	10-
4	.03 .03	E	4	3.33	726.16	10-
5	.08 .08	E	5	2.90	726.59	11-
6	.02 .00	E	6	5.34	724.15	08-
7	.02 .01	E	7	5.43	724.06	03-

Movement of Monuments. Cont.

Oct 13, 1934

42

700 Downstream

Mon. No.	Total. Move		B.M.	1205	706.14	694.09
1	.04 .06	W	1			4.98 701.14 13-
2	.02 .03	W	2			4.31 701.83 03-
3	.00 .00		3			4.03 702.11 26-
4	.02 .01	E	4			4.27 701.87 01-
5	.05 .06	W	5			4.57 701.57 07-
6	.02 .02	W	6			5.05 701.09 02+

675 Downstream

			B.M.	474	679.45	674.73
1	.02 .02	W	1			3.52 675.93 00
2	.02 .03	W	2			4.22 675.23 01-
3	.05 .06	W	3			3.71 675.74 01-
4	.05 .06	W	4			3.20 674.25 00
5	.03 .03	W	5			3.52 675.93 01-
6	.02 .03	W	6			3.89 675.56 02-
7	.02 .03	W	7			4.15 675.30 01-

Movement of Monuments Cont.

Oct. 13, 1934

650 Down stream

43

Mon. No.	Total Move		B.M.	642	655.79	649.37
1	.02 .02	W	1			5.44 650.35 01-
2	.04 .05	W	2			5.21 650.58 01-
3	.03 .04	W	3			5.74 650.05 00
4	.20 .20	W	4			4.94 650.85 11-
5	.00 .00		5			4.72 651.07 01+
6	.02 .02	W	6			4.98 650.81 00
7	.03 .05	W	7			5.34 650.43 01+

Movement of Monuments

Oct. 15, 1934

600 Upstream

Meyer
Salgado
Walton

44

Mon. No.	Total Move		B.M.	2.88	608.01	605.13
1	.01 .00	E	1			7.73 600.28 00
2	.28 .27	E	2			7.23 600.78 71
3	.00 .00		3			7.32 600.68 00

625 Upstream

			B.M.	4.09	632.30	626.21
1	.03 .03	E	1			6.02 626.28 01
2	.03 .04	E	2			6.79 625.51 01
3	.02 .01	E	3			5.93 624.37 01
4	.02 .00	E	4			7.24 625.06 01

650 Upstream

			B.M.	1.04	656. ⁸³ 28	655. ⁷⁹ 74
1	.03 .02	E	1			4.08 650. ⁷⁵ 70 01
2	.02 .01	E	2			5.59 650. ⁷⁴ 79 01
3	.19 .20	E	3			5.89 650. ⁹⁴ 89 39
4	.01 .01	E	4			6.32 650. ⁵¹ 44 01
5	.02 .01	E	5			6.34 650. ⁴⁹ 44 01

Moment of Monuments Cont.

Oct. 15, 1934

675 Upstream

Mon. No. Total
More

1	.07 .06	E
2	.04 .05	E
3	.03 .03	E
4	.05 ✓ .07	E
5	.00 .01	E
6	.05 ✓ .04	W
7	.02 ✓ .03	W

B.M. 9.73 483.00 673.27

1	7.64	675.34	00
2	8.00	675.00	01
3	7.05	675.95	01
4	6.55	676.45	01
5	7.08	675.92	02
6	7.65	675.35	02
7	7.21	675.79	02

700 Upstream

1	.01 .01	E
2	.04 .04	E
3	.06 .06	E
4	.06 .06	E
5	.02 .04	W
6	.03 .03	E
7	.05 .05	E
8	.01 .02	W

B.M. 0.28 708.81 708.53

700 Upstream

1	12.08	696.73	02
2	11.08	697.73	02
3	9.92	698.89	04
4	9.34	699.47	04
5	8.08	699.73 ⁷⁰⁰	61
6	6.20	702.61	06
7	5.15	703.66	02
8	3.24	705.57	02

Movement of Monuments Cont.

725 Oct. 15, 1934
Downstream

726.86
548
732.34
4.76
727.58

Mon. No.	Total Move		B.M.	341	730.27	726.86
1	.04	E	1			2.69 727.55 09'
2	.06	E	2			2.64 727.61 14'
3	.07	E	3			2.83 727.44 13'
4	.05	E	4			4.13 626.14 12'
5	.08	E	5			3.70 626.57 13'
6	.02	E	6			6.14 624.13 10'
7	.01	E	7			6.21 624.04 03'

700 Downstream

			B.M.	12.02	706.11	694.09
1	.05	W	1			4.93 701.17 12'
2	.03	W	2			4.27 701.54 02'
3	.02	W	3			3.98 702.13 24'
4	.01	W	4			4.23 701.58 00'
5	.03	W	5			4.54 701.57 07'
6	.04	W	6			5.02 701.09 02'

Movement of Monuments Cont.

Oct. 15, 1934.

675 Downstream

47

Mon. No.	Total Move		B.M.	5.06	679.79	674.73
1	.02 .03	W	1			3.85 675.94 01+
2	.03 .03	W	2			4.54 675.23 01-
3	.04 .06	W	3			4.04 675.75 00
4	.04 .06	W	4			3.54 676.25 00
5	.05 .05	W	5			3.84 675.93 01-
6	.05 .05	W	6			4.23 675.56 00-
7	.03 .03	W	7			4.48 675.31 00

650 Downstream

B.M. 5.78 655.15 649.37

1	.02 .02	W	1			4.80 650.35 01-
2	.04 .04	W	2			4.57 650.58 01-
3	.05 .05	W	3			5.09 650.06 01+
4	.10 .20	W	4			4.30 650.85 21-
5	.00 .00		5			4.09 651.06 00
6	.02 .03	W	6			4.35 650.80 01-
7	.02 .02	W	7			4.72 650.43 01-

Movement of Monuments Cont.
 Oct. 15, 1934
 625 Downstream

Mon. No. Total Move

1 .00
 .00
 2 .00
 .00
 3 .00
 .00
 4 .00
 .00

B.M. 2.93 430.59 627.66

1 5.10 625.49 01+
 2 4.84 625.73 01+
 3 4.19 626.40 01+
 4 4.12 626.47 01+

600 Downstream

1 .02 W
 .02
 2 .11 W
 .11
 3 .00 W
 .01

B.M. 5.49 605.15 599.66

1 4.47 600.68 01+
 2 4.47 600.68 18-
 3 3.66 601.49 01+

Movement of Monuments

Oct. 16, 1934

600 Upstream

Meyer
Salgado
Walton

49

Mon. No. Total Move

1	.00 .00	
2	.28 .27	E
3	.00 .00	

B.M. 3.37 608.50 605.13

1	8.22	600.28	00
2	7.72	600.78	01
3	7.81	600.69	01

625 Upstream

1	.04 .03	E
2	.05 .04	E
3	.02 .03	E
4	.00 .00	

B.M. 5.26 631.46 626.21

1	5.17	624.29	00
2	5.95	625.51	01
3	5.09	626.37	01
4	6.40	625.06	01

650 Upstream

1	.03 .02	E
2	.03 .02	E
3	.22 .22	E
4	.02 .03	E
5	.02 .02	E

B.M. 0.17 655.96 655.79

1	5.21	650.75	01
2	4.72	651.24	01
3	5.03	650.93	00
4	5.44	650.50	00
5	5.48	650.48	03

Movement of Monuments Cont.

Oct. 16, 1934.

675 Upstream

Mon. No.	Total Move		B. M.	8.81	682.08	673.27
1	.06 .07	E	1			6.74 675.34 00
2	.04 .04	E	2			7.08 675.00 01
3	.04 .04	E	3			6.12 675.96 00
4	.07 .07	E	4			5.42 676.46 00
5	.01 .00	E	5			6.15 675.93 01
6	.02 .03	W	6			6.73 675.35 02
7	.02 .01	E	7			6.28 675.80 01

700 Upstream

Mon. No.	Total Move		B. M.	0.52	709.05	708.53
1	.00 .01	E	1			12.33 696.72 02
2	.06 .06	E	2			11.33 697.72 14
3	.03 .05	E	3			10.16 698.89 04
4	.08 .08	E	4			9.59 699.46 05
5	.02 .02	W	5			8.32 700.73 61
6	.02 .01	E	6			6.44 702.61 06
7	.06 .05	E	7			5.40 703.65 13
8	.01 .01	E	8			3.48 705.57 02

Movement of Monuments Cont.

Oct. 16, 1934

725 Downstream

51

Mon. No. ^{Total} Move

B.M. 499 731.85 726.86

1 .05 E
.04

1 4.25 727.60 01'

2 .08 E
.06

2 4.24 727.61 01'

3 .07 E
.07

3 4.40 727.45 01'

4 .04 E
.04

4 5.71 726.74 01'

5 .09 E
.09

5 5.27 726.58 01'

6 .02 E
.02

6 7.72 724.13 01'

7 .02 E
.02

7 7.78 724.07 01'

700 Downstream

B.M. 12.37 706.46 694.09

1 .06 W
.06

5.26 701.20 01'

2 .02 W
.03

4.62 701.84 01'

3 .00
.00

4.32 702.14 01'

4 .00
.00

4.57 701.89 01'

5 .06 W
.06

4.87 701.59 01'

6 .04 W
.04

5.34 701.12 01'

Movement of Monuments Cont.

Oct. 16, 1934

675 Downstream

Mon. No. Move

B.M. 4.75 679.48 674.73

1 .02 W
.03

1 3.54 675.92 01

2 .03 W
.03

2 4.24 675.22 02

3 .05 W
.04

3 3.74 675.74 01

4 .05 W
.05

4 3.22 676.26 01

5 .02 W
.04

5 3.54 675.94 00

6 .05 W
.05

6 3.92 675.56 02

7 .04 W
.04

7 4.14 675.32 01

650 Downstream

B.M. 4.24 655.61 649.37

1 .01 W
.02

1 5.25 650.36 00

2 .04 W
.06

2 5.02 650.59 00

3 .02 W
.04

3 5.54 650.05 00

4 .20 W
.20

4 4.76 650.85 01

5 .00 W
.00

5 4.54 651.07 01

6 .02 W
.02

6 4.80 650.81 00

7 .02 W
.02

7 5.15 650.46 02

Movement of Monuments Cont.

53

Oct. 16, 1934
625 Downstream

Mon. No.	Total Move		B. M.			
	.01		2.24	429.92		627.66
1	.00	E			4.42	625.50 01+
	.00					
2	.00				4.19	625.73 01+
	.00					
3	.00				3.52	626.40 01+
	.00					
4	.00				3.44	626.48 00

600 Downstream

			B. M.			
	.00		5.49	605.35		599.66
1	.01	W			4.67	600.68 01+
	.12					
2	.12	W			4.67	600.68 18-
	.01					
3	.00	W			3.86	601.49 01+

Movement of Monuments
 Oct. 18, 1934
 650 Downstream

Meyer
 Salgado
 Walton

54

Mon. No.	Total Move		B. M.	630	655.67	649.37
1	.01 .02	W				5.31 450.36 00
2	.04 .05	W				5.09 450.58 01-
3	.01 .02	W				5.63 450.04 01-
4	.20 .20	W				4.83 450.84 22
5	.01 .01	E				4.62 451.05 01-
6	.00 .00					4.88 450.79 02-
7	.01 .01	W				5.23 450.44 00

675 Downstream

	B. M.	644	481.37	674.73
1	1			5.45 475.92 01-
2	2			6.14 475.21 03-
3	3			5.63 475.74 01-
4	4			5.14 476.23 02-
5	5			5.45 475.92 02-
6	6			5.81 475.56 02-
7	7			6.08 475.29 02-

Movement of Monuments Cont.

Oct. 18, 1934

Meyer
Salgado
Walton

55

Mon. No.	Total Move		B.M.	12.03	706.12	694.09
1	.06 .07	W	1			4.96 701.16 13-
2	.04 .04	W	2			4.31 701.81 05-
3	.01 .01	W	3			4.02 702.10 27-
4	.01 .01	W	4			4.27 701.85 03-
5	.04 .04	W	5			4.54 701.56 08-
6	.03 .03	W	6			5.04 701.08 01+

725 Downstream

			B.M.	4.58	731.44	726.86
1	.04 .04	E	1			3.85 727.59 08-
2	.06 .06	E	2			3.85 727.59 08-
3	.07 .07	E	3			4.02 727.42 12-
4	.03 .03	E	4			5.34 724.10 16-
5	.10 .10	E	5			4.90 726.54 16-
6	.00 .00		6			7.33 724.11 12-
7	.00 .00		7			7.39 724.05 04-

Movement of Monuments

Check on Upstream Toe wall Oct 19, 1934

See Page 19

Mon. No

3

F.S.

Total
Move

Meyer

Salgado

Walton

0.00

0.00

2

0.00

0.00

1

0.005 W

.005 W

R.P.

R.P.

Level on Upstream Toe wall

B.M. 002 581.28 581.26

1 6.29 574.99 00

2 6.29 574.99 00

3 F.S. 4.31 574.97 00

Downstream Toe wall 0.01 W 3 0.01 W

0.01 W 3

Total
Move

0.01 W

0.01 E 2 0.01 E

0.01 E

0.01 W 1 0.01 W

0.01 W

R.P.

R.P.

Levels on Downstream Toe wall

B.M. 13.01 576.66 563.65

1 1.42 575.04 00

2 1.43 575.03 00

3 1.73 574.93 00

Movement of Monuments
Oct. 19, 1934

600 Upstream

Meyer
Salgado
Walton

57

Mon. No.	Total Move		B.M.	2.33	407.44	605.13
1	.01 .00	E	1		7.19	600.27 01-
2	.27 .38	E	2		6.68	600.78 21-
3	.00 .00		3		6.78	600.68 00

625 Upstream

			B.M.	6.04	632.25	626.21
1	.03 .03	E	1		5.97	626.28 01-
2	.03 .03	E	2		6.75	625.50 02-
3	.03 .03	E	3		5.89	626.36 02-
4	.02 .02	E	4		7.19	625.06 01-

650 Upstream

			B.M.	0.27	656.06	655.79
1	.04 .03	E	1		5.31	650.75 01-
2	.04 .04	E	2		4.82	651.24 01-
3	.20 .21	E	3		5.13	650.93 40-
4	.03 .03	E	4		5.54	650.50 02-
5	.03 .03	E	5		5.57	650.49 02-

Movement of Monuments Cont.

Oct. 19, 1934

675 Upstream

Mon. No.	Total Move		B. M.	795	681.22	673.27
1	.07 .08	E	1			5.88 675.34 00
2	.05 .07	E	2			4.22 675.00 01-
3	.04 .05	E	3			5.27 675.95 01-
4	.04 .04	E	4			4.77 676.45 01-
5	.02 .02	E	5			5.30 675.92 02-
6	.03 .01	W	6			5.88 675.34 03-
7	.00 .00		7			5.43 675.79 02-

700 Upstream

700 Upstream

			B. M.	008	708.61	708.53
1	.02 .02	E				11.90 696.71 04-
2	.02 .03	E				10.90 697.71 15-
3	.04 .04	E				9.76 698.85 08-
4	.05 .07	E				9.18 699.43 08-
5	.02 .02	W				7.92 700.69 65-
6	.01 .02	E				6.04 702.57 10-
7	.02 .03	E				4.99 703.63 25-
8	.01 .01	E				3.08 705.53 06-

Movement of Monuments Cont.

Oct. 19, 1934

725 Downstream

Mon. No.	Total Move		B. M.	3.88	730.74	726.86
1	.04 .03	E	1			3.14 727.58 09-
2	.07 .07	E	2			3.16 727.58 15-
3	.08 .09	E	3			3.33 727.41 16-
4	.05 .05	E	4			4.64 726.08 18-
5	.10 .10	E	5			4.22 726.52 18-
6	.02 .01	E	6			4.64 724.10 13-
7	.02 .02	E	7			4.71 724.03 06-

700 Downstream

			B. M.	12.27	706.34	694.09
1	.05 .05	W	1			5.21 701.15 14-
2	.03 .03	W	2			4.56 701.80 06-
3	.01 .01	W	3			4.28 702.08 29-
4	.00 .00		4			4.53 701.83 05-
5	.04 .04	E	5			4.82 701.54 10-
6	.03 .02	E	6			5.30 701.06 01-

Movement of Monuments Cont.

Oct. 19, 1934

675 Downstream

N. Mon. No. Total Move

1	.03	W
	.03	
2	.04	W
	.04	
3	.07	W
	.07	
4	.06	W
	.06	
5	.04	W
	.04	
6	.05	W
	.05	
7	.04	W
	.04	

B.M. 625 680.98

674.73

1	5.05	675.93	00
2	5.74	675.22	02-
3	5.24	675.74	01-
4	4.74	676.24	01-
5	5.04	675.92	02-
6	5.43	675.55	03-
7	5.68	675.30	01-

650 Downstream

1	.02	W
	.02	
2	.04	W
	.04	
3	.03	W
	.03	
4	.20	W
	.20	
5	.00	
	.00	
6	.04	W
	.03	
7	.03	W
	.03	

B.M. 638 655.75

649.37

1	5.38	650.37	00
2	5.16	650.59	00
3	5.68	650.07	00
4	4.90	650.85	21-
5	4.68	651.07	00
6	4.95	650.80	01-
7	5.30	650.45	00

Movement of Monuments Cont.
Oct. 19, 1934

61

625 Downstream

Mori. No.	Total Move
1	.01 .00
2	.00 .01
3	.00 .00
4	.00 .00

E
W

B.M. 2.05 629.71 627.66

1	4.22	625.49	00
2	3.94	625.75	00
3	3.32	626.39	00
4	3.24	626.47	01-

600 Downstream

1	.00 .01
2	.12 .12
3	.00 .00

W
W

B.M. 5.74 605.40 599.66

1	4.73	600.67	00
2	4.72	600.68	18-
3	3.91	601.49	00

Movement of Monuments

Oct. 20, 1934

650 Upstream

Meyer
Salgado
Walton

62

Mon. No.	Total Move		B.M.	0.24	656.03	655.79
1	.03 .03	E	1			5.29 650.74 02'
2	.03 .03	E	2			4.81 651.22 03'
3	.22 .22	E	3			5.12 650.91 04'
4	.04 .04	E	4			5.54 650.49 03'
5	.03 .03	E	5			5.55 650.48 03'

675 Upstream

B.M. 7.11 680.38 673.27

1	.09 .08	E	1			5.05 675.33 01'
2	.08 .07	E	2			5.40 674.98 03'
3	.05 .05	E	3			4.44 675.94 02'
4	.09 .09	E	4			3.95 676.43 02'
5	.05 .05	E	5			4.48 675.90 04'
6	.00 .00		6			5.04 675.34 03'
7	.02 .02	E	7			4.59 675.79 02'

Movement of Monuments Cont.

63

Oct. 20, 1934

700 Upstream

Mon. No Move

B.M. 0.05 708.58 708.53

1 .02 E

1 11.85 696.73 02'

2 .04 E

2 10.86 697.72 14'

3 .07 E

3 9.71 698.87 06'

4 .08 E

4 9.15 699.43 08'

5 .09

5 7.89 700.69 65'

6 .00 W

6 6.00 702.58 09'

7 .05 E

7 4.95 703.63 75'

8 .06 E

8 3.01 705.57 02'

725 Downstream

B.M. 4.06 730.92 726.86

1 .05 E

1 3.35 727.57 10'

2 .04 E

2 3.35 727.57 16'

3 .07 E

3 3.53 727.39 18'

4 .09 E

4 4.84 726.08 18'

5 .06 E

5 4.41 726.51 19'

6 .09 E

6 6.83 724.09 12'

7 .02 E

7 6.88 724.04 05'

7 .00

Movement of Monuments Cont.
 Oct. 20, 1934

700 Downstream

Mon. No. Total Move

B.M. 12.11 706.20

694.09

1	.06 .04	W
2	.03 .03	W
3	.03 .02	W
4	.02 .02	W
5	.06 .04	W
6	.05 .05	W

1	5.05	701.15	14"
2	4.41	701.79	07"
3	4.13	702.07	30"
4	4.37	701.83	05"
5	4.65	701.55	09"
6	5.12	701.08	01+

675 Downstream

B.M. 5.11 679.84

674.73

1	.02 .03 .04	W
2	.05	W
3	.07 .08	W
4	.04 .05	W
5	.04 .06	W
6	.03 .04	W
7	.05 .04	W

1	3.91	675.93	00
2	4.63	675.21	03"
3	4.11	675.73	02"
4	3.61	676.23	02"
5	3.93	675.91	03"
6	4.30	675.54	04-
7	4.54	675.30	01-

Movement of Monuments Cont.
Oct 20, 1934
650 Downstream

65

Mon. No.	Total Move		B. M.	4.58	455.95	649.37
1	.02 .02	W	1			5.60 650.35 01'
2	.04 .05	W	2			5.38 650.57 02'
3	.03 .04	W	3			5.91 650.04 01'
4	.20 .20	W	4			5.11 650.84 12'
5	.00 .00		5			4.89 651.06 00
6	.03 .03	W	6			5.14 650.81 00
7	.03 .03	W	7			5.50 650.45 01+

Movement of Monuments
 Oct. 29, 1934
 600 Upstream

Meyer
 Salgado
 Walton

66

Mon. No. Total Move

B.M. 191 607.04 605.13

1	.01 .00	E	1	6.77	600.27	01-
2	.29 .29	E	2	6.27	600.77	22-
3	.00 .01	E	3	6.37	600.67	01-

625 Upstream

B.M. 277 628.98 626.21

1	.04 .04	E	1	2.70	626.28	01-
2	.04 .04	E	2	3.48	625.50	02-
3	.02 .03	E	3	2.63	626.35	03-
4	.01 .00	E	4	3.94	625.02	05-

650 Upstream

B.M. 003 655.82 655.79

1	.04 .04	E	1	5.08	650.74	02-
2	.03 .03	E	2	4.61	651.21	04-
3	.22 .22	E	3	4.92	650.90	43-
4	.00 .01	E	4	5.54	650.28	01-
5	.02 .03	E	5	5.34	650.48	03-

Movement of Monuments Cont.

Oct. 29, 1934

675 Upstream

Mon. No. Total Move

1 .07 E
.08

2 .07 E
.07

3 .08 E
.07

4 .09 E
.11

5 .05 E
.05

6 .01 E
.01

7 .02 E
.04

700 Upstream

1 .02 E
.02

2 .07 E
.07

3 .07 E
.07

4 .09 E
.09

5 .00
.00

6 .06 E
.04

7 .06 E
.07

8 .01 W
.00

B.M. 829 681.56

673.27

1 4.24 675.32 02-

2 4.60 674.96 05-

3 5.65 675.91 05-

4 5.14 676.40 06-

5 5.68 675.88 06-

6 6.26 675.30 07-

7 5.78 675.78 02-

700 Upstream

B.M. 0.12 708.65

708.53

1 11.95 694.70 05-

2 10.96 697.69 17-

3 9.82 698.83 10-

4 9.26 699.39 12-

5 8.00 700.65 19-

6 6.11 702.84 13-

7 5.04 703.61 27-

8 3.13 605.52 07-

Movement of Monuments Cont.

68

Oct. 29, 1934

725 Upstream

Mon. No.	Total Move		B.M. 8.44	732.15	723.69	
	.01	W				
5	.02				4.30	727.85 01-
	.01	W				
6	.01				5.44	726.71 02-
	.02	W				
7	.01				5.54	726.61 04-
	.00					
8	.02	W			6.22	725.93 01-x

725 Downstream

			B.M. 2.77	729.63	726.86	
	.05	E				
1	.05				2.10	727.53 24-
	.09	E				
2	.09				2.13	727.50 23-
	.12	E				
3	.12				2.32	727.31 26-
	.08	E				
4	.08				3.64	725.99 27-
	.12	E				
5	.13				3.20	726.43 27-
	.05	E				
6	.04				5.60	724.03 20-
	.00					
7	.00				5.62	724.01 08-

Movement of Monuments Cont.

Oct. 29, 1934

700 Downstream

69

Mon. No.	Total Move		B.M.	12.13	704.22	694.09
1	.07 .07	W	1			5.09 701.13 16-
2	.05 .05	W	2			4.45 701.77 09-
3	.01 .01	W	3			4.17 702.05 32-
4	.02 .02	W	4			4.42 701.80 08-
5	.07 .07	W	5			4.70 701.52 12-
6	.06 .05	W	6			5.15 701.07 00

675 Downstream

B.M. 6.05 680.78 674.73

1	.02 .03	W	1			4.85 675.93 00
2	.05 .05	W	2			5.57 675.21 03-
3	.07 .09	W	3			5.07 675.71 04-
4	.06 .07	W	4			4.56 676.22 03-
5	.04 .07	W	5			4.87 675.91 03-
6	.05 .05	W	6			5.24 675.54 04-
7	.02 .03	W	7			5.49 675.29 02-

Movement of Monuments Cont.

Oct. 29, 1934

650 Downstream

Mon. No. Total Move

1	.02 .02	W
2	.06 .06	W
3	.05 .05	W
4	.21 .21	W
5	.01 .01	W
6	.04 .04	W
7	.03 .04	W

625 Downstream

1	.00 .00	
2	.00 .00	
3	.00 .00	
4	.00 .00	

600 Downstream

1	.03 .04	W
2	.12 .12	W
3	.00 .00	

B.M. 4.31 653.68 649.37

1	5.32	650.36	00
2	5.10	650.58	01-
3	5.43	650.05	00
4	4.84	650.84	22-
5	4.42	651.06	00
6	4.88	650.80	01-
7	5.21	650.47	03+

625 Downstream

B.M. 1.09 628.75 627.66

1	3.27	625.48	00
2	3.03	625.72	00
3	2.37	626.38	01-
4	2.29	626.46	02-

600 Downstream

B.M. 5.68 605.34 599.66

1	4.63	600.71	04+
2	4.67	600.67	19-
3	3.86	601.48	00

Movement of Monuments

Nov. 9, 1934

600 Upstream

Total

Mon. No. Move

1	.01	E
	.01	
2	.30	E
	.30	
3	.02	E
	.02	

Meyer
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Walton

B.M. 1.79 606.92 605.13

1	6.47	600.25	03-
2	6.15	600.77	22-
3	6.24	600.68	00

625 Upstream

1	.06	E
	.05	
2	.07	E
	.07	
3	.05	E
	.05	
4	.03	E
	.03	

B.M. 3.05 629.26 626.21

1	2.99	626.27	02-
2	3.77	625.49	03-
3	2.91	626.35	03-
4	4.19	625.07	00

650 Upstream

1	.05	E
	.04	
2	.05	E
	.05	
3	.23	E
	.23	
4	.00	E
	.00	
5	.03	E
	.03	

B.M. 0.38 656.17 655.79

1	5.42	650.75	01-
2	4.96	651.21	04-
3	5.27	650.90	43-
4	5.89	650.28	01-
5	5.69	650.48	03-

Movement of Monuments Cont.

Nov. 9, 1934

675 Upstream

Mon. No. Move

Mon. No.	Move	
1	.11	E
2	.12	E
3	.12	E
4	.14	E
5	.09	E
6	.05	E
7	.03	E

700 Upstream

Mon. No.	Move	
1	.08	E
2	.12	E
3	.12	E
4	.14	E
5	.06	E
6	.08	E
7	.13	E
8	.07	E

72

B.M. 5.64 678.93

673.27

1	3.62	675.31	03-
2	3.98	674.95	06-
3	3.03	675.90	06-
4	2.54	676.39	07-
5	3.07	675.84	08-
6	3.63	675.30	07-
7	3.14	675.79	02-

700 Upstream

B.M. 0.08 708.61

708.53

1	11.91	696.70	05-
2	10.94	697.67	19-
3	9.82	698.79	14-
4	9.26	699.35	16-
5	8.01	700.60	74-
6	6.11	702.50	17-
7	5.04	703.57	31-
8	3.04	705.55	04-

Movement of Monuments Cont.

Nov. 9, 1934

725 Upstream

Total

Mon. No. Move

1	.05 .04	E
2	.03 .03	E
3	.03 .02	E
4	.03 .03	E
5	.01 .01	E
6	.02 .02	E
7	.01 .01	E
8	.01 .01	E

725 Downstream

1	.05 .04	E
2	.08 .08	E
3	.11 .11	E
4	.08 .08	E
5	.12 .12	E
6	.04 .04	E
7	.00 .00	

73

B.M. 6.93 730.62 723.69

1	3.64	724.98	05-
2	3.84	726.76	07-
3	4.90	725.72	09-
4	3.11	727.51	09-
5	2.90	727.72	14-
6	4.03	726.59	14-
7	4.04	726.56	09-
8	4.72	725.90	04-

725 Downstream

B.M. 2.88 729.74 726.86

1	2.25	727.49	18-
2	2.30	727.44	29-
3	2.52	727.22	35-
4	3.84	725.90	36-
5	3.40	726.34	36-
6	5.78	723.96	27-
7	5.75	723.99	10-

Movement of Monuments Cont.

Nov. 9, 1934

700 Downstream

Total

Men. No. Move

1	.08 .08	W
2	.07 .07	W
3	.03 .03	W
4	.03 .03	W
5	.07 .07	W
6	.06 .06	W

B.M. 12.09 704.18

694.09

1	5.04	701.12	17-
2	4.43	701.75	09-
3	4.15	702.03	34-
4	4.42	701.76	12-
5	4.69	701.49	15-
6	5.13	701.05	02-

675 Downstream

1	.04 .04	W
2	.06 .06	W
3	.09 .10	W
4	.09 .09	W
5	.08 .08	W
6	.07 .07	W
7	.07 .07	W

B.M. 4.91 679.64

674.73

1	3.71	675.93	00
2	4.44	675.20	04-
3	3.93	675.71	04-
4	3.43	674.21	04-
5	3.75	675.89	05-
6	4.10	675.54	04-
7	4.34	675.30	01-

Movement of Monuments Cont.
Nov. 9, 1934

75

650 Downstream

Mon. No.	Total Move		B.M.	630	655.67	649.37
1	.02 .02	W	1			5.32 650.35 01-
2	.07 .07	W	2			5.10 650.57 02-
3	.07 .07	W	3			5.64 650.03 02-
4	.22 .22	W	4			4.85 650.82 2d-
5	.04 .04	W	5			4.63 651.04 02-
6	.04 .04	W	6			4.89 650.78 03-
7	.04 .04	W	7			5.22 650.45 01+

625 Downstream

			B.M.	130	628.96	627.66
1	.00 .00		1			3.48 625.48 00
2	.01 .02	W	2			3.25 625.71 01-
3	.01 .02	W	3			2.59 626.37 02-
4	.00 .00		4			2.51 626.45 03-

600 Downstream

			B.M.	547	605.13	599.66
1	.03 .03	W				4.43 600.70 03+
2	.11 .11	W				4.46 600.67 19-
3	.00 .00					3.64 601.49 01+

Movement of Monuments

Nov. 10, 1934

675 Upstream

Meyer
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Walton

76

Mon. No.	Total Move		B.M.	677	680.04	673.27
1	.11 .11	E	1			4.73 675.31
2	.12 .10	E	2			5.10 674.94
3	.11 .11	E	3			4.15 675.89
4	.14 .14	E	4			3.44 676.38
5	.09 .08	E	5			4.19 675.85
6	.04 .05	E	6			4.76 675.28
7	.04 .04	E	7			4.27 675.77

700 Upstream

B.M. 700 Upstream
0.13 708.66 708.53

1	.05 .06	E	1			11.97 696.69
2	.10 .11	E	2			10.99 697.67
3	.08 .09	E	3			9.87 698.79
4	.11 .15	E	4			9.32 699.34
5	.03 .06	E	5			8.07 700.59
6	.07 .12	E	6			6.17 702.49
7	.09 .14	E	7			5.09 703.57
8	.03 .07	E	8			3.13 705.53

Movement of Monuments Cont.

Nov. 10, 1934

725 Upstream

Mon. No.	Total Move		B.M.	7.77	731.46	723.69
1	.05 .05	E	1		4.47	726.99
2	.05 .03	E	2		4.70	726.76
3	.02 .03	E	3		5.74	725.72
4	.03 .01	E	4		3.94	727.52
5	.02 .03	E	5		3.74	727.72
6	.01 .01	E	6		4.84	726.60
7	.01 .03	E	7		4.90	726.54
8	.03 .04	E	8		5.55	725.91

725 Downstream

			B.M.	3.39	730.25	726.86
1	.05 .04	E	1		2.74	727.49
2	.09 .08	E	2		2.83	727.42
3	.11 .10	E	3		3.04	727.21
4	.07 .07	E	4		4.34	725.89
5	.12 .12	E	5		3.91	726.34
6	.02 .03	E	6		6.30	723.95
7	.00 .00		7		6.29	723.96

Movement of Monuments Cont.
Nov. 10, 1934

78

700 Downstream

Mon. No.	Total Move		B.M.	12.08	706.17	694.09
1	.08 .08	W	1			5.06 701.11
2	.05 .06	W	2			4.44 701.73
3	.03 .03	W	3			4.17 702.00
4	.04 .04	W	4			4.41 701.76
5	.08 .08	W	5			4.67 701.50
6	.06 .06	W	6			5.12 701.05

675 Downstream

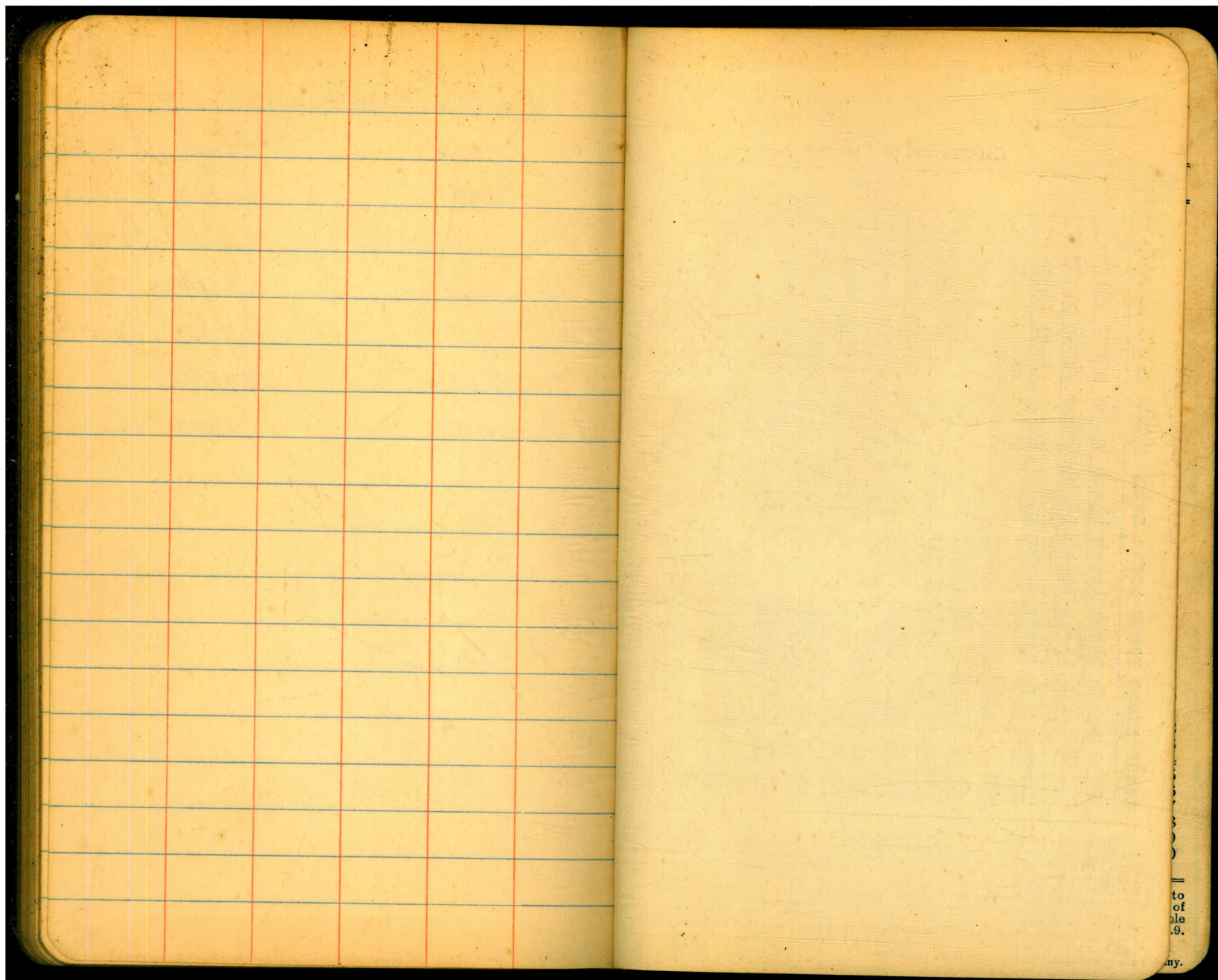
			B.M.	4.50	679.23	674.73
1	.04 .04	W	1			3.31 675.92
2	.07 .08	W	2			4.04 675.19
3	.10 .10	W	3			3.53 675.70
4	.10 .10	W	4			3.03 676.20
5	.08 .09	W	5			3.35 675.88
6	.07 .07	W	6			3.71 675.52
7	.07 .07		7			3.94 675.29

Bench Marks Downstream

± 575	563.65
± 600 Berm.	599.66
± 625	627.64
± 650 Berm	649.37
± 675	674.73
± 700 Berm	696.09
± 725	724.86

Bench Marks Upstream

± 575	581.26
± 600 Berm	605.13
± 625	618.72 626.21
± 650 Berm	655.79
± 675	673.27
± 700	708.53
± 725	723.69



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Oct. 5 Up. 753.5 Dn. 753.5
 Oct. 6 Up. 753.5 Dn. 756.0

CALCULATION OF EARTHWORK.

Width	HEIGHT														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	.02	.04	.06	.07	.09	.11	.13	.15	.17	.18	.20	.22	.24	.26	.28
2	.04	.07	.11	.15	.18	.22	.26	.30	.33	.37	.41	.44	.48	.52	.56
3	.06	.11	.17	.22	.28	.33	.39	.44	.50	.56	.61	.67	.72	.78	.83
4	.07	.15	.22	.30	.37	.44	.52	.59	.67	.74	.81	.89	.96	1.04	1.11
5	.09	.19	.28	.37	.46	.56	.65	.74	.83	.93	1.02	1.11	1.20	1.30	1.39
6	.11	.22	.33	.44	.56	.67	.78	.89	1.00	1.11	1.22	1.33	1.44	1.55	1.67
7	.13	.26	.39	.52	.65	.78	.91	1.04	1.16	1.30	1.42	1.55	1.68	1.81	1.94
8	.15	.30	.44	.59	.74	.89	1.04	1.19	1.33	1.48	1.63	1.78	1.92	2.08	2.22
9	.17	.33	.50	.67	.83	1.00	1.17	1.33	1.50	1.67	1.83	2.00	2.17	2.33	2.50
10	.18	.37	.56	.74	.93	1.11	1.30	1.48	1.67	1.85	2.04	2.22	2.41	2.59	2.78
11	.20	.41	.61	.82	1.02	1.22	1.43	1.63	1.83	2.04	2.24	2.44	2.65	2.85	3.06
12	.22	.44	.67	.89	1.11	1.33	1.56	1.78	2.00	2.22	2.44	2.67	2.89	3.11	3.33
13	.24	.48	.72	.96	1.20	1.44	1.68	1.92	2.16	2.41	2.65	2.89	3.13	3.37	3.61
14	.26	.52	.78	1.04	1.30	1.55	1.81	2.08	2.33	2.59	2.85	3.11	3.37	3.63	3.89
15	.28	.56	.83	1.11	1.39	1.67	1.94	2.22	2.50	2.78	3.06	3.33	3.61	3.89	4.17
16	.30	.59	.89	1.18	1.48	1.78	2.07	2.37	2.67	2.96	3.26	3.56	3.85	4.15	4.44
17	.31	.63	.94	1.26	1.57	1.89	2.20	2.52	2.83	3.15	3.46	3.78	4.09	4.41	4.72
18	.33	.67	1.00	1.33	1.67	2.00	2.33	2.67	3.00	3.33	3.67	4.00	4.33	4.67	5.00
19	.35	.70	1.06	1.41	1.76	2.11	2.46	2.82	3.17	3.52	3.87	4.22	4.57	4.92	5.28
20	.37	.74	1.11	1.48	1.85	2.22	2.59	2.96	3.33	3.70	4.07	4.44	4.81	5.18	5.56
21	.39	.78	1.17	1.55	1.94	2.33	2.72	3.11	3.50	3.89	4.28	4.67	5.06	5.44	5.83
22	.41	.81	1.22	1.63	2.04	2.44	2.85	3.26	3.67	4.07	4.48	4.89	5.30	5.70	6.11
23	.43	.85	1.28	1.70	2.13	2.56	2.98	3.41	3.83	4.26	4.68	5.11	5.54	5.96	6.39
24	.44	.89	1.33	1.78	2.22	2.67	3.11	3.56	4.00	4.44	4.89	5.33	5.78	6.22	6.67
25	.46	.92	1.39	1.85	2.31	2.78	3.24	3.70	4.17	4.63	5.09	5.56	6.02	6.48	6.94
26	.48	.96	1.44	1.92	2.41	2.89	3.37	3.85	4.33	4.82	5.30	5.78	6.26	6.74	7.24
27	.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00	6.50	7.00	7.50
28	.52	1.04	1.55	2.07	2.59	3.11	3.63	4.15	4.67	5.18	5.70	6.22	6.74	7.26	7.78
29	.54	1.07	1.61	2.15	2.68	3.22	3.76	4.30	4.83	5.37	5.91	6.44	6.98	7.52	8.06
30	.56	1.11	1.67	2.22	2.78	3.33	3.89	4.44	5.00	5.55	6.11	6.67	7.22	7.78	8.33
31	.57	1.15	1.72	2.30	2.87	3.44	4.02	4.59	5.17	5.74	6.32	6.89	7.46	8.04	8.61
32	.59	1.18	1.78	2.37	2.96	3.56	4.15	4.74	5.33	5.92	6.52	7.11	7.70	8.30	8.89
33	.61	1.22	1.83	2.44	3.05	3.67	4.28	4.89	5.50	6.11	6.72	7.33	7.94	8.55	9.17
34	.63	1.26	1.89	2.52	3.15	3.78	4.40	5.04	5.67	6.29	6.93	7.56	8.18	8.81	9.44
35	.65	1.30	1.94	2.59	3.24	3.89	4.53	5.18	5.83	6.48	7.13	7.78	8.42	9.08	9.72
36	.67	1.33	2.00	2.67	3.33	4.00	4.66	5.33	6.00	6.67	7.33	8.00	8.67	9.33	10.00
37	.68	1.37	2.06	2.74	3.42	4.11	4.79	5.48	6.17	6.85	7.54	8.22	8.91	9.59	10.28
38	.70	1.41	2.11	2.82	3.52	4.22	4.92	5.63	6.33	7.03	7.74	8.44	9.15	9.85	10.56
39	.72	1.44	2.17	2.89	3.61	4.33	5.05	5.78	6.50	7.22	7.95	8.67	9.39	10.11	10.83
40	.74	1.48	2.22	2.96	3.70	4.44	5.18	5.92	6.67	7.41	8.15	8.89	9.63	10.37	11.11

Table gives cu. yds. in 1 ft. of a triangle of given width and height. Corrections for tenths of width are one tenth the values found under each height considering the widths from 1 to 9 as tenths and similarly the corrections for tenths of height are one tenth the figures opposite width considering the heights from 1 to 9 as tenths. Thus if $w = 16.2$ and $h = 5.3$, cu. yds. $= 1.48 + .028 + .089 = 1.597$ cu. yds. or practically 160 cu. yds. per 100 ft. If w exceeds 40 ft., use one half and multiply result by 2, if both w and h are large use one half of each and multiply result by 4. Any cross-section may be divided into triangles by the following rule. To the triangle of the sum of the outside cuts (or fills) $= h$, and $\frac{1}{2}$ the roadbed $= w$, add the triangles formed by taking the distance out to each break in turn ($= w$'s) by the difference between the cuts (or fills) on each side of it ($= h$'s) always subtracting the outer from the inner.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1 1/2.
 For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.2	8.3	8.5	8.6	8.8	8.9	9.1	9.2	9.4	0
1	9.5	9.7	9.8	10.0	10.1	10.3	10.4	10.6	10.7	10.9	1
2	11.0	11.2	11.3	11.5	11.6	11.8	11.9	12.1	12.2	12.4	2
3	12.5	12.7	12.8	13.0	13.1	13.3	13.4	13.6	13.7	13.9	3
4	14.0	14.2	14.3	14.5	14.6	14.8	14.9	15.1	15.2	15.4	4
5	15.5	15.7	15.8	16.0	16.1	16.3	16.4	16.6	16.7	16.9	5
6	17.0	17.2	17.3	17.5	17.6	17.8	17.9	18.1	18.2	18.4	6
7	18.5	18.7	18.8	19.0	19.1	19.3	19.4	19.6	19.7	19.9	7
8	20.0	20.2	20.3	20.5	20.6	20.8	20.9	21.1	21.2	21.4	8
9	21.5	21.7	21.8	22.0	22.1	22.3	22.4	22.6	22.7	22.9	9
10	23.0	23.2	23.3	23.5	23.6	23.8	23.9	24.1	24.2	24.4	10
11	24.5	24.7	24.8	25.0	25.1	25.3	25.4	25.6	25.7	25.9	11
12	26.0	26.2	26.3	26.5	26.6	26.8	26.9	27.1	27.2	27.4	12
13	27.5	27.7	27.8	28.0	28.1	28.3	28.4	28.6	28.7	28.9	13
14	29.0	29.2	29.3	29.5	29.6	29.8	29.9	30.1	30.2	30.4	14
15	30.5	30.7	30.8	31.0	31.1	31.3	31.4	31.6	31.7	31.9	15
16	32.0	32.2	32.3	32.5	32.6	32.8	32.9	33.1	33.2	33.4	16
17	33.5	33.7	33.8	34.0	34.1	34.3	34.4	34.6	34.7	34.9	17
18	35.0	35.2	35.3	35.5	35.6	35.8	35.9	36.1	36.2	36.4	18
19	36.5	36.7	36.8	37.0	37.1	37.3	37.4	37.6	37.7	37.9	19
20	38.0	38.2	38.3	38.5	38.6	38.8	38.9	39.1	39.2	39.4	20
21	39.5	39.7	39.8	40.0	40.1	40.3	40.4	40.6	40.7	40.9	21
22	41.0	41.2	41.3	41.5	41.6	41.8	41.9	42.1	42.2	42.4	22
23	42.5	42.7	42.8	43.0	43.1	43.3	43.4	43.6	43.7	43.9	23
24	44.0	44.2	44.3	44.5	44.6	44.8	44.9	45.1	45.2	45.4	24
25	45.5	45.7	45.8	46.0	46.1	46.3	46.4	46.6	46.7	46.9	25
26	47.0	47.2	47.3	47.5	47.6	47.8	47.9	48.1	48.2	48.4	26
27	48.5	48.7	48.8	49.0	49.1	49.3	49.4	49.6	49.7	49.9	27
28	50.0	50.2	50.3	50.5	50.6	50.8	50.9	51.1	51.2	51.4	28
29	51.5	51.7	51.8	52.0	52.1	52.3	52.4	52.6	52.7	52.9	29
30	53.0	53.2	53.3	53.5	53.6	53.8	53.9	54.1	54.2	54.4	30
31	54.5	54.7	54.8	55.0	55.1	55.3	55.4	55.6	55.7	55.9	31
32	56.0	56.2	56.3	56.5	56.6	56.8	56.9	57.1	57.2	57.4	32
33	57.5	57.7	57.8	58.0	58.1	58.3	58.4	58.6	58.7	58.9	33
34	59.0	59.2	59.3	59.5	59.6	59.8	59.9	60.1	60.2	60.4	34
35	60.5	60.7	60.8	61.0	61.1	61.3	61.4	61.6	61.7	61.9	35
36	62.0	62.2	62.3	62.5	62.6	62.8	62.9	63.1	63.2	63.4	36
37	63.5	63.7	63.8	64.0	64.1	64.3	64.4	64.6	64.7	64.9	37
38	65.0	65.2	65.3	65.5	65.6	65.8	65.9	66.1	66.2	66.4	38
39	66.5	66.7	66.8	67.0	67.1	67.3	67.4	67.6	67.7	67.9	39
40	68.0	68.2	68.3	68.5	68.6	68.8	68.9	69.1	69.2	69.4	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 41.9. 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 $41.9 + (20 - 16) \times 2$ or 2 ft. added to 41.9 = 43.9. For slopes of 1 on 1 see inside of front cover.

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