

W

507

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

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

507

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.

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Made in U. S. A.

Movement of Monuments

May 31-1935.

Simpson  
Soper  
Remmen

Mon. No. Total  
Move.

Monuments on Top of Dam

Mon. No.	Total Move.		B.M.	7.42	777.09	769.67	
1	0.04	E.	1			5.92	71.17 =inside 73-
						5.93	71.16 =outside 22-
2	0.13	E.	2			5.21	71.88 49-
						5.21	71.88 " 46-
3	0.22	E.	3			4.87	72.22 69-
						4.87	72.22 " 69-
4	0.28	E.	4			4.10	72.99 82-
						4.10	72.99 81-
5	0.32	E.	5			3.95	73.14 87-
						3.95	73.14 87-
			T.P.	4.68	777.22	4.55	772.54
6	0.37	E.	6			3.97	73.25 91-
						3.97	73.25 " 90-
7	0.41	E.	7			4.50	72.72 90-
						4.47	72.75 " 89-
8	0.40	E.	8			5.12	72.10 80-
						5.11	72.11 " 79-
9	0.30	E.	9			5.59	71.63 60-
						5.57	71.65 " 58-
10	0.15	E.	10			6.04	71.18 21-
						6.06	71.16 " 21-
			B.M.			7.69	769.53 $\frac{769.54}{6953}$ .01

May 31-1935.

Mon. No. Total Move.

725' - Upstream

B.M

7.70 731.39

723.69

1	0.10	E.	1	4.57	26.82	21-
2	0.18	E.	2	5.03	26.36	47-
3	0.23	E.	3	6.26	25.13	68-
4	0.24	E.	4	4.58	26.81	79-
5	0.27	E.	5	4.40	26.99	87-
6	0.36	E.	6	5.51	25.88	85-
7	0.38	E.	7	5.40	25.99	66-
8	0.17	E.	8	5.74	25.65	79-

700' - Upstream

B.M.

0.84 709.37

708.53

1	0.15	E.	1	12.74	696.63	12-
2	0.36	E.	2	11.92	697.45	41-
3	0.56	E.	3	10.96	698.41	52-
4	0.59	E.	4	10.46	698.91	60-
5	0.58	E.	5	9.24	700.13	1.21-
6	0.83	E.	6	7.42	701.95	72-
7	0.84	E.	7	6.29	703.08	80-
8	0.37	E.	8	3.97	705.40	19-

May 31-1935.

Mon. No. Total Move.

675' - Upstream

B.M. 6.60 679.87 673.27

1	0.30	E.	1	4.75	75.12	77-
2	0.50	E.	2	5.36	74.51	50-
3	0.52	E.	3	4.41	75.46	50-
4	0.60	E.	4	3.95	75.92	54-
5	0.63	E.	5	4.65	75.22	77-
6	0.53	E.	6	5.42	74.45	97-
7	0.30	E.	7	4.38	75.49	37-

650' - Upstream

B.M. 1.13 656.92 655.79

1	0.28	E.	1	6.56	50.36	40-
2	0.41	E.	2	6.18	50.74	51-
3	0.62	E.	3	6.50	50.42	91-
4	0.34	E.	4	7.09	49.83	46-
5	0.24	E.	5	6.77	50.15	36-

May 31-1935.

Men. No. Total Move.

725' - Downstream

B.M

4.25 731.11

726.86

1	0.06	E.	1	3.79	27.32	35-
2	0.16	E.	2	4.02	27.09	64-
3	0.20	E.	3	4.31	26.80	77-
4	0.18	E.	4	5.64	25.47	79-
5	0.16	E.	5	5.14	25.97	73-
6	0.12	E.	6	7.48	23.63	60-
7	0.00		7	7.29	23.82	27-

700' - Downstream

B.M

12.14 706.23

694.09

1	0.12	W.	1	5.23	701.00	29-
2	0.08	W.	2	4.69	701.54	32-
3	0.03	W.	3	4.45	701.78	59-
4	0.05	W.	4	4.68	701.55	33-
5	0.11	W.	5	4.91	701.32	32-
6	0.11	W.	6	5.27	700.96	11-

May 31-1935.

Mon. No. Total Move.

675'-Downstream

B.M. 647 681.20 674.73

1	0.07	w.	1	5.32	675.88	05-
2	0.13	w.	2	6.10	75.10	14-
3	0.16	w.	3	5.62	75.58	17-
4	0.16	w.	4	5.13	76.07	18-
5	0.13	w.	5	5.43	75.77	17-
6	0.12	w.	6	5.77	75.43	15-
7	0.08	w.	7	5.97	75.23	08-

650'-Downstream

B.M. 605 655.42 649.37

1	0.025	w.	1	5.09	50.33	03-
2	0.11	w.	2	4.91	50.51	08-
3	0.13	w.	3	5.48	49.94	11-
4	0.29	w.	4	4.68	50.74	32-
5	0.08	w.	5	4.46	50.96	10-
6	0.09	w.	6	4.70	50.72	09-
7	0.06	w.	7	5.02	50.40	04-

May 31-1935.

Mon. No. Total Move.

625'-Downstream

Mon. No.	Total Move.		B.M.	2.59	630.25	627.66	
1	0.02	w.	1			4.82	25.43 05-
2	0.06	w.	2			4.61	25.64 08-
3	0.04	w.	3			3.93	26.32 07-
4	0.00		4			3.84	26.41 07-

600'-Downstream

			B.M.	5.40	605.06	599.66	
1	0.03	w.	1			4.40	600.66 01-
2	0.13	w.	2			4.41	600.65 21-
3	0.01	w.	3			3.59	601.47 01-

Downstream Toe Wall

			B.M.	12.46	576.11	563.65	
1	0.035	w.	1			1.09	75.02 01+
2	0.00		2			1.10	75.01 01-
3	0.04	w.	3			1.19	74.92 02+





July-1-1935.

Mon. No. Total Move.

725' Upstream.

1.	.11	E.
2.	.20	E.
3.	.26	E.
4.	.27	E.
5.	.29	E.
6.	.37	E.
7.	.40	E.
8.	.20	E.

700' Upstream.

1.	.16	E.
2.	.38	E.
3.	.57	E.
4.	.63	E.
5.	.61	E.
6.	.84	E.
7.	.87	E.
8.	.38	E.

B.M. 9.00 732.69 723.69

1.	5.89	26.80	23-
2.	6.35	26.34	49-
3.	7.58	25.11	70-
4.	5.90	26.79	81-
5.	5.73	26.96	90-
6.	6.84	25.85	88-
7.	6.71	25.98	67-
8.	7.07	25.62	32-

B.M. 0.59 709.12 708.53

1.	12.47	96.65	10-
2.	11.66	97.46	40-
3.	10.71	98.41	52-
4.	10.20	98.92	59-
5.	8.99	00.13	121-
6.	7.17	01.95	72-
7.	6.05	03.07	81-
8.	3.74	05.38	21-

July-1-1935.

Mon. No. Total Move.

675' upstream.

1.	.34	E.
2.	.52	E.
3.	.55	E.
4.	.63	E.
5.	.66	E.
6.	.56	E.
7.	.32	E.

650' upstream

1.	.30	E.
2.	.41	E.
3.	.63	E.
4.	.37	E.
5.	.26	E.

B.M. 6.57 679.84 673.27

1.	4.74	75.10	24-
2.	5.33	74.51	50-
3.	4.38	75.46	50-
4.	3.93	75.91	55-
5.	4.63	75.21	73-
6.	5.40	74.44	93-
7.	4.35	75.49	37-

B.M. 0.09 655.88 655.79

1.	5.51	50.37	39-
2.	5.13	50.75	50-
3.	5.45	50.43	90-
4.	6.04	49.84	15-
5.	5.72	50.16	35-

July-1-1935.

Mon. No. Total  
More.

725' Downstream.

1.	.06	E.
2.	.15	E.
3.	.19	E.
4.	.17	E.
5.	.15	E.
6.	.11	E.
7.	.01	W.

700' Downstream

1.	.13	W.
2.	.08	W.
3.	.04	W.
4.	.04	W.
5.	.10	W.
6.	.10	W.

B.M. 4.36 731.22 726.86

1.	3.91	27.31	36-
2.	4.13	27.09	64-
3.	4.43	26.79	78-
4.	5.76	25.46	80-
5.	5.28	25.94	76-
6.	7.61	24.61	62-
7.	7.41	23.81	78-

B.M. 12.22 706.31 694.09

1.	5.31	01.00	79-
2.	4.78	01.53	33-
3.	4.53	01.78	59-
4.	4.76	01.55	33-
5.	5.00	01.31	33-
6.	5.37	00.94	13-

July-1-1935.

Mon. No. Total Move

675' Downstream.

1.	.07	W.
2.	.13	W.
3.	.16	W.
4.	.16	W.
5.	.14	W.
6.	.11	W.
7.	.08	W.

B.M. 5.80 680.53 674.73

1.	4.65	75.88	05-
2.	5.43	75.10	14-
3.	4.95	75.58	17-
4.	4.45	76.08	17-
5.	4.75	75.78	16-
6.	5.09	75.44	14-
7.	5.29	75.24	07-

650' Downstream

1.	.03	W.
2.	.10	W.
3.	.12	W.
4.	.28	W.
5.	.08	W.
6.	.09	W.
7.	.05	W.

B.M. 7.00 656.37 649.37

1.	6.05	50.32	04-
2.	5.86	50.51	08-
3.	6.42	49.95	10-
4.	5.62	50.75	31-
5.	5.40	50.97	09-
6.	5.65	50.72	09-
7.	5.96	50.41	03-

July-1-1935.

Mon. No. Total  
Move.

625' Downstream.

1. .02 W.  
2. .05 W.  
3. .05 W.  
4. .00

B.M. 2.93 630.59 627.66

1. 5.14 25.45 03-  
2. 4.93 25.66 06-  
3. 4.26 26.33 06-  
4. 4.17 26.42 06-

600' Downstream.

1. .035 W.  
2. .13 W.  
3. .01 W.

B.M. 5.80 605.46 599.66

1. 4.79 00.67 00  
2. 4.80 00.66 20  
3. 3.99 01.47 01-

Downstream Toe Wall

1. .02 W.  
2. .005 E.  
3. .02 W.

B.M. 11.44 575.09 563.65

1. 0.08 75.01 00  
2. 0.08 75.01 01-  
3. 0.18 74.91 01+

Movement of Monuments  
August - 1 - 1935

Simpson - Transit  
Louden - Level  
Soper - Remmen - chain

Mon. No. Total Move.

Monuments on Top of Dam.

Mon. No.	Total Move.	B.M.	7.26	776.93 ✓	769.67	
1.	.04 E.			inside 5.78	71.15	.25-
				outside 5.80	71.13	.25-
2.	.15 E.			inside 5.11	71.82	.53-
				outside 5.10	71.83	.51-
3.	.23 E.			inside 4.79	72.14	.77-
				outside 4.78	72.15	.76-
4.	.30 E.			inside 4.05	72.88	.93-
				outside 4.05	72.88	.92-
5.	.36 E.			inside 3.92	73.01	1.00-
				outside 3.91	73.02	.99-
		T.P.	4.80	777.26 ✓	4.41	772.46 ✓
6.	.39 E.			inside 4.10	73.16	1.00-
				outside 4.10	73.16	.99-
7.	.43 E.			inside 4.62	72.64	.98-
				outside 4.59	72.67	.97-
8.	.45 E.			inside 5.20	72.02	.88-
				outside 5.23	72.04	.86-
9.	.36 E.			inside 5.68	71.58	.65-
				outside 5.67	71.59	.64-
10.	.18 E.			inside 6.12	71.14	.25-
				outside 6.13	71.13	.24-
		B.M.			769.54	
					7.75	769.51
						.03

August 1-1935.

Mon. No. Total Move.

725' upstream.

B.M.

6.41 730.10 ✓

723.69 ✓

1.	.11 E.	3.26	26.84	.19-
2.	.19 E.	3.73	26.37	.46-
3.	.24 E.	4.99	25.11	.70-
4.	.26 E.	3.30	26.80	.80-
5.	.28 E.	3.12	26.98	.88-
6.	.36 E.	4.25	25.85	.88-
7.	.36 E.	4.13	25.97	.68-
8.	.19 E.	4.45	25.65	.29-

700' upstream.

B.M.

0.58 709.11 ✓

708.53 ✓

1.	.17 E.	12.45	696.66	.11-
2.	.40 E.	11.65	97.46	.40-
3.	.59 E.	10.70	98.41	.52-
4.	.64 E.	10.19	98.92	.59-
5.	.61 E.	8.98	700.13	1.21-
6.	.86 E.	7.16	701.95	.72-
7.	.88 E.	6.05	703.06	.82-
8.	.43 E.	3.71	705.40	.19-



August 1-1935

Mon. No. Total Move.

675' upstream

B.M.

9.93 683.20 ✓

673.27 ✓

1. .32 E.

8.09 75.11 .23-

2. .53 E.

8.70 74.50 .51-

3. .56 E.

7.74 75.46 .50-

4. .62 E.

7.29 75.91 .55-

5. .66 E.

8.00 75.20 .74-

6. .60 E.

8.76 74.44 .93-

7. .34 E.

7.74 75.46 .35-

650 upstream

B.M.

0.81 656.60 ✓

655.79 ✓

1. .29 E.

6.24 50.36 .39-

2. .41 E.

5.86 50.74 .51-

3. .63 E.

6.18 50.42 .91-

4. .35 E.

6.78 49.82 .47-

5. .24 E.

6.47 50.13 .38-

August 1-1935.

625 Upstream

Mon. No. Total  
Move

1 .33 E.

2 .39 E.

3 .37 E.

4 .22 E.

B.M. 5.03 631.19 ✓

626.16

1 5.35 25.84 .45 -

2 6.08 25.11 .41 -

3 5.20 25.99 .39 -

4 6.36 24.83 .24 -

August 1-1935.

725' downstream

Mon. No.	Total Move	BM	7.95	734.81	726.86
1	.05 E				7.50 27.31 .36-
2	.14 E.				7.73 27.08 .65-
3	.19 E.				8.03 26.78 .79-
4	.17 E.				9.37 25.44 .82-
5	.16 E.				8.88 25.93 .77-
6	.10 E				11.20 23.61 .62-
7	.02 W				11.00 23.81 .28-

700' downstream

BM	1182	705.91	694.09
1	.13 W		4.90 01.01 .28-
2	.09 W.		4.36 01.55 .31-
3	.04 W		4.12 01.77 .60-
4	.06 W.		4.36 01.55 .33-
5	.11 W.		4.60 01.31 .33-
6	.11 W.		4.93 700.98 .09-

August 1-1935.

675' downstream

Mon. No.	Total Move
1	.07W.
2	.13W.
3	.17W.
4	.17W.
5	.15W.
6	.12W.
7	.08W.

650' downstream

1	.03W
2	.11W
3	.14W
4	.29W
5	.10W
6	.08W
7	.07W

B.M.	8.55	683.28 ✓	674.73 ✓	
1.	7.40	75.88	.05-	
2.	8.20	75.48	.16-	
3.	7.72	75.56	.19-	
4.	7.23	76.05	.20-	
5.	7.54	75.74	.20-	
6.	7.86	75.42	.16-	
7	8.05	75.23	.08-	

B.M.	6.50	655.87 ✓	649.37 ✓	
1.	5.58	50.29	.07-	
2.	5.40	50.47	.12-	
3.	5.96	49.91	.14-	
4.	5.17	50.70	.36-	
5.	4.95	50.92	.14-	
6.	5.21	50.66	.15-	
7.	5.53	50.34	.10-	

August 1, 1935.

625' downstream

Mon. No.	Total Move
1	.02 W.
2	.05 W.
3	.05 W.
4	.02 W.

B.M.	4.44	632.10 ✓	627.66 ✓	
	6.66	25.44	.04 -	
	6.45	25.65	.07 -	
	5.78	26.32	.07 -	
	5.69	26.41	.07 -	

600' downstream

1	.04 W.
2	.14 W.
3	.02 W.

B.M.	5.69	605.35 ✓	599.66 ✓	
	4.68	600.67	.00	
	4.69	600.66	.20 -	
	3.87	601.48	.00	

Down-stream Toe Wall

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

B.M.	11.57	575.22 ✓	563.65 ✓	
	0.21	75.01	.00	
	0.21	75.01	.01 -	
	0.31	74.91	.01 +	

August 31, 1935  
 Movement of Monuments.  
 625 upstream

Simpson - Transit  
 Louden - Level  
 Soper - chain  
 Remmen - Rod.

Mon. No.	Total Move	BM	5.31	631.47	626.16	
1.	.33 E.	1			5.62	25.85 44-
2.	.40 E.	2			6.35	25.12 40-
3.	.36 E.	3			5.48	25.99 39-
4.	.21 E.	4			6.65	24.82 75-

650 upstream

		BM	0.99	656.78	655.79	
1.	.30 E.	1			6.36	50.42 34-
2.	.42 E.	2			5.96	50.82 43-
3.	.64 E.	3			6.27	50.49 84-
4.	.35 E.	4			6.87	49.89 40-
5.	.27 E.	5			6.58	50.20 31-

August 31, 1935

675' Upstream

Mon. No.	Total Move.	B.M.	8.81	682.08	673.27	
1.	.34 E.	1			6.96	75.12 22-
2.	.53 E.	2			7.56	74.52 49-
3.	.57 E.	3			6.61	75.47 49-
4.	.64 E.	4			6.15	75.23 76.93 62-
5.	.67 E.	5			6.86	76.22 72-
6.	.62 E.	6			7.64	74.44 92-
7.	.35 E.	7			6.59	75.49 22-

700' Upstream

		B.M.	0.52	709.05	708.53	
1.	.17 E.	1			12.38	696.67 06-
2.	.38 E.	2			11.57	97.48 38-
3.	.57 E.	3			10.61	98.44 49-
4.	.62 E.	4			10.10	98.95 56-
5.	.61 E.	5			8.88	700.17 1.17
6.	.85 E.	6			7.07	01.98 69-
7.	.87 E.	7			5.95	03.10 78-
8.	.39 E.	8			3.62	05.43 16-

August 31, 1935

775' Upstream.

Mon. No.	Total Move.	B.M.	8.38	732.07	723.69	
1.	.11 E.	1			5.23	26.84 19-
2.	.20 E.	2			5.70	26.37 46-
3.	.24 E.	3			6.94	25.13 68-
4.	.27 E.	4			5.26	26.81 79-
5.	.29 E.	5			5.08	26.99 87-
6.	.39 E.	6			6.20	25.87 86-
7.	.40 E.	7			6.07	26.00 65-
8.	.21 E.	8			6.40	25.67 27-



August 31, 1935.

Top of Dam

Mon. No.	Total Move
1	.04E
2	.14E
3	.23E
4	.30E
5	.35E
6	.38E
7	.41E
8	.41E
9	.34E
10	.17E

B.M.	7.54	777.21	769.67
1	inside	6.06	71.15
1	outside	6.08	71.13
	15.	5.39	71.82
2	05.	5.39	71.82
	15.	5.08	72.13
3	05.	5.07	72.14
	15.	4.33	72.88
4	05.	4.33	72.88
	15.	4.20	73.01
5	05.	4.20	73.01
T.P.	496	777.40	4.77
	15.	4.26	73.14
6	05.	4.26	73.14
	15.	4.78	72.62
7	05.	4.74	72.66
	15.	5.39	72.01
8	05.	5.37	72.03
	15.	5.83	71.57
9	05.	5.82	71.58
	15.	6.26	71.14
10	05.	6.28	71.12
B.M.		7.87	769.53

August 31, 1935.

725' downstream

Mon. No.	Total Move.	BM	5.20	732.06	726.86
1.	.07 E.	1			4.73 27.33 34-
2.	.17 E.	2			4.96 27.10 63-
3.	.21 E.	3			5.26 26.80 77-
4.	.18 E.	4			6.59 25.47 79-
5.	.17 E.	5			6.09 25.97 73-
6.	.12 E.	6			8.41 23.65 58-
7.	.01 W.	7			8.21 23.85 74-

700' downstream

		BM	12.44	706.53	694.09
1.	.13 W.	1			5.53 701.00 79-
2.	.09 W.	2			5.00 01.53 33-
3.	.04 W.	3			4.74 01.79 58-
4.	.05 W.	4			4.96 01.57 31-
5.	.11 W.	5			5.20 01.33 31-
6.	.11 W.	6			5.55 700.98 11-

August 31, 1935,

675' downstream

Mon. No.	Total Move	B.M.	6.61	681.34	674.73		
1.	.07W.	1			5.46	75.88	05-
2.	.14W.	2			6.25	75.09	15-
3.	.16W.	3			5.76	75.58	17-
4.	.17W.	4			5.26	76.08	17-
5.	.15W.	5			5.56	75.78	16-
6.	.12W.	6			5.90	75.44	14-
7.	.07W.	7			6.11	75.23	08-

650' Downstream

		B.M.	6.69	656.06	649.37		
1.	.03W.	1			5.71	50.35	01-
2.	.11W.	2			5.53	50.53	06-
3.	.12W.	3			6.10	49.96	09-
4.	.29W.	4			5.29	50.77	19-
5.	.09W.	5			5.08	50.98	08-
6.	.09W.	6			5.32	50.74	07-
7.	.05W.	7			5.63	50.43	01-

August 31, 1935,

675' downstream

Mon. No.	Total Move
1.	.01 W.
2.	.05 W.
3.	.04 W.
4.	.00

Simpson-Transit  
Louden-Level  
S-per-chain  
Remmen-Red.

BM	0.56	628.22		627.66
T.P.	1.52	627.55	2.19	626.03
1			2.09	25.46 07-
2			1.88	25.67 05-
3			1.20	26.35 04-
4			1.12	26.43 05-

600' downstream

1.	.04 W.
2.	.13 W.
3.	.02 W.

BM	6.02	605.68		599.66
1			5.01	600.67 00
2			5.02	600.66 70-
3			4.20	601.48 00

Downstream Toe Wall

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

B.M.	12.69	576.34		563.65
1			1.32	75.02 01+
2			1.33	75.01 01-
3			1.43	74.91 01+

Movement of Monuments.  
Oct. 1, 1935.

Simpson  
Soper  
Remmen.

Monuments on Top of Dam.

Mon. No. Total Move.

1. 0.045 E.

2. 0.14 E.

3. 0.23 E.

4. 0.32 E.

5. 0.34 E.

6. 0.39 E.

7. 0.43 E.

8. 0.40 E.

9. 0.32 E.

10. 0.16 E.

B.M. 6.94 776.61

1. inside = 5.48

2. " 4.83

3. " 4.53

4. " 3.77

5. " 3.63

T.P. 4.64 777.04

6. inside = 3.95

7. " 4.48

8. " 5.08

9. " 5.50

10. " 5.91

B.M. 7.52

769.67

71.13 .27-

71.12 .26-

71.78 .57-

71.79 .55-

72.08 .83-

72.09 .82-

72.84 .97-

72.84 .96-

72.98 1.03-

72.99 1.02-

772.40

73.09 1.07-

73.09 1.06-

72.56 1.06-

72.60 1.04-

71.96 .94-

71.97 .93-

71.54 .69-

71.55 .68-

71.13 .26-

71.12 .25-

769.54

769.52

.02

Oct. 1-1935.

725' - Upstream

Mon. No. Total Move.

1 0.11 E.

2 0.20 E.

3 0.24 E.

4 0.27 E.

5 0.29 E.

6 0.39 E.

7 0.40 E.

8 0.19 E.

B.M. 7.62 731.31 723.69

1 4.50 26.81 .22-

2 4.98 26.33 .50-

3 6.23 25.08 .73-

4 4.57 26.74 .84-

5 4.38 26.93 .93-

6 5.50 25.81 .92-

7 5.36 25.95 .70-

8 5.66 25.65 .29-

Oct. 1 - 1935.

700' - Upstream

Mon. No. Total Move.

1	0.165	E.
2	0.40	E.
3	0.57	E.
4	0.63	E.
5	0.61	E.
6	0.85	E.
7	0.87	E.
8	0.39	E.

B.M. 1.03 709.56 708.53

1	12.92	696.64	.11-
2	12.12	97.44	.42-
3	11.18	98.38	.55-
4	10.68	98.88	.63-
5	9.46	700.10	1.24-
6	7.64	701.92	.75-
7	6.49	703.07	.81-
8	4.15	705.41	.18-

675' - Upstream

1	0.35	E.
2	0.54	E.
3	0.57	E.
4	0.64	E.
5	0.68	E.
6	0.60	E.
7	0.34	E.

B.M. 7.12 680.39 673.27

1	5.28	75.11	.23-
2	5.90	74.49	.52-
3	4.95	75.44	.52-
4	4.49	75.90	.56-
5	5.19	75.20	.74-
6	5.96	74.43	.94-
7	4.90	75.49	.32-

Oct. 1-1935.

650'-Upstream

Mon. No. Total Move.

1	0.30	E.
2	0.42	E.
3	0.64	E.
4	0.36	E.
5	0.27	E.

B.M.	131	657.10	3.19	655.79
	137	655.28		653.91

1	4.93	50.35	.41-
2	4.55	50.73	.52-
3	4.87	50.41	.92-
4	5.46	49.82	.47-
5	5.13	50.15	.36-

625'-Upstream

1	0.34	E.
2	0.40	E.
3	0.38	E.
4	0.22	E.

B.M.	542	631.58		626.16
------	-----	--------	--	--------

1	5.74	25.84	.45-
2	6.47	25.11	.41-
3	5.59	25.99	.39-
4	6.74	24.84	.23



Oct. 1 - 1935.

725' - Downstream

Mon. No.	Total	
	More.	
1	0.07	E.
2	0.17	E.
3	0.21	E.
4	0.19	E.
5	0.18	E.
6	0.12	E.
7	0.01	W.

B.M.	5.25	732.11	726.86
1	4.80	27.31	.36 -
2	5.05	27.06	.67 -
3	5.36	26.75	.82 -
4	6.69	25.42	.84 -
5	6.18	25.93	.77 -
6	8.50	23.61	.62 -
7	8.28	23.83	.26 -

700' - Downstream

1	0.13	W.
2	0.09	W.
3	0.05	W.
4	0.05	W.
5	0.11	W.
6	0.11	W.

B.M.	12.09	706.18	694.09
1	5.18	701.00	.29 -
2	4.67	01.51	.35 -
3	4.42	01.76	.61 -
4	4.64	01.54	.34 -
5	4.86	01.32	.32 -
6	5.20	700.98	.09 -

Oct. 1-1935.

675' - Downstream

Mon. No.	Total Move.	B.M.	5.45	680.18	674.73
1	0.08 w.	1			4.30 75.88 .05-
2	0.14 w.	2			5.10 75.08 .16-
3	0.17 w.	3			4.63 75.55 .20-
4	0.17 w.	4			4.13 76.05 .20-
5	0.15 w.	5			4.43 75.75 .19-
6	0.12 w.	6			4.76 75.42 .16-
7	0.08 w.	7			4.94 75.24 .07-

650' - Downstream

		B.M.	6.19	655.56	649.37
1	0.03 w.	1			5.22 50.34 .02-
2	0.12 w.	2			5.05 50.51 .08-
3	0.13 w.	3			5.62 49.94 .11-
4	0.29 w.	4			4.82 50.74 .32-
5	0.09 w.	5			4.60 50.96 .10-
6	0.10 w.	6			4.84 50.72 .09-
7	0.06 w.	7			5.13 50.43 .01-

Oct. 1-1935.

625' - Downstream

Mon. No.	Total Move.		B.M.	2.58	630.24	627.66
1.	0.02	W.	1			4.79 25.45 .03-
2	0.05	W.	2			4.59 25.65 .07-
3	0.04	W.	3			3.91 26.33 .06-
4	0.00		4			3.80 26.44 .04-

600' - Downstream

			B.M.	5.73	605.39	599.66
1	0.04	W.	1			4.73 600.66 .01-
2	0.13	W.	2			4.74 600.65 .21-
3	0.02	W.	3			3.91 601.48 .00

Observation Wells.

	Water Depth	Elev.	Bottom Depth	Elev.
#1	86.1	577.3	90.3	573.1
#3	131.7	611.4	143.7	599.4
#5	87.8	621.2	138.0	571.0
#6	115.2	586.8	116.5	585.5

Movement of Monuments  
November 1 1935

Total  
Mon. No. Move. 625 Upstream

1 0.34 E.

2 0.40

3 0.38

4 0.22

650 Upstream

1 0.30 E

2 0.41

3 0.65

4 0.39

5 0.26

Converse - Chief - Simpson - Transit.  
Soper - Level - Remmen - Rod,

B.M. 4.67 630.83 ✓ 626.16

1 5.03 25.80 ✓ .49-

2 5.76 25.07 ✓ .45-

3 4.85 25.98 ✓ .40-

4 5.98 24.85 ✓ .22-

B.M. 0.63 656.42 ✓ 655.79

1 6.10 50.32 ✓ 43-

2 5.75 50.67 ✓ 58-

3 6.06 50.36 ✓ 97-

4 6.62 49.80 ✓ 49-

5 6.27 50.15 ✓ 36-

Nov. 1 1935

Total 675 Upstream  
Mon. No. Motc.

1 0.34 E  
2 0.55  
3 0.57  
4 0.63  
5 0.68  
6 0.59  
7 0.33

B.M. 6.53 679.80 ✓

673.27

4.72 75.02 ✓ .26 -  
5.37 74.43 ✓ .58 -  
4.40 75.40 ✓ .56 -  
3.93 75.87 ✓ .59 -  
4.61 75.19 ✓ .75 -  
5.37 74.43 ✓ .94 -  
4.30 75.50 ✓ .31 -

700 Upstream

0.11 E  
0.140 E  
0.57 E  
0.63 E  
0.61  
0.80  
0.86  
0.39

B.M. 0.86 709.39

708.53 ✓

12.78 696.61 ✓ .14 -  
12.01 699.38 ✓ .48 -  
11.09 698.30 ✓ .63 -  
10.59 698.80 ✓ .71 -  
9.93 700.06 ✓ 1.28 -  
7.50 701.89 ✓ .78 -  
6.33 703.06 ✓ .82 -  
3.96 705.43 ✓ .16 -

Nov. 1 1935

725 Upstream

No. No. Total  
More.

1 0.12 E  
2 0.20 E  
3 0.25 E  
4 0.26  
5 0.30  
6 0.36  
7 0.41  
8 0.20

~~B.M. 6.86 730.55 723.69~~

~~1 3.69 26.86  
2 4.21 26.34  
3 5.48 25.07  
4 3.78 26.77  
5 3.57 26.98  
6 4.66 25.89  
7 4.49 26.06  
8 4.76 25.79~~

725 Upstream

B.M. 10.01 733.70 ✓ 723.69

1 6.90 26.80 ✓ .23-  
2 7.40 26.30 ✓ .53-  
3 8.66 25.04 ✓ .77-  
4 6.99 26.71 ✓ .89-  
5 6.80 26.90 ✓ .96-  
6 7.91 25.79 ✓ .94-  
7 7.77 25.93 ✓ .72-  
8 8.06 25.64 ✓ .30-

Nov. 1 1935

Monuments on top of Dam

Mon. No.	Total Move.	B.M.	7.01	776.68	769.67	
1	0.05E	1	5.59	771.10	771.10	inside - 30-
2	0.14E	2	5.59	771.09	771.09	outside - 29-
3	0.74E	3	4.96	771.72	771.72	63-
4	0.31E	4	4.95	771.73	771.73	61-
5	0.35E	5	4.65	72.03	72.03	88-
6	0.40E	6	4.65	72.03	72.03	88-
7	0.47E	7	3.89	72.79	72.79	1.02-
8	0.41E	8	3.89	72.79	72.79	1.01-
9	0.33E	9	3.73	72.95	72.95	1.06-
10	0.15E	10	3.72	72.76	72.76	1.05-
		B.M.	4.51	776.89	772.38	
			3.82	73.07	73.07	1.09-
			3.92	73.07	73.07	1.08-
			4.34	72.55	72.55	1.07-
			4.30	72.59	72.59	1.05-
			4.94	71.95	71.95	.95-
			4.92	71.97	71.97	.93-
			5.36	71.53	71.53	.70-
			5.34	71.55	71.55	.68-
			5.75	71.14	71.14	.25-
			5.77	71.12	71.12	.25-
		B.M.	7.36	769.53	769.53	
					769.54	
					69.53	
					.01	

Nov. 1 1935

725 Downstream

Mon. No.	Total Mote.	B.M.	6.49	733.35 ✓	726.86
1	0.07 E.	1			6.06 27.29 ✓ .38-
2	0.175 E	2			6.32 27.03 ✓ .70-
3	0.20 E.	3			6.63 26.72 ✓ .85-
4	0.20 E	4			7.96 25.39 ✓ .87-
5	0.16 E	5			7.45 25.90 ✓ .80-
6	0.14 E	6			9.75 23.60 ✓ .63-
7	0.015 W.	7			9.53 23.82 ✓ .27-

700 Downstream

		B.M.	12.72	706.81 ✓	694.09
1	0.175 W	1			5.81 701.00 ✓ .29-
2	0.085 W	2			5.30 701.51 ✓ .35-
3	0.045 W	3			5.05 701.76 ✓ .61-
4	0.06 W	4			5.27 701.54 ✓ .34-
5	0.10 W	5			5.49 701.32 ✓ .32-
6	0.11 W	6			5.83 700.98 ✓ .09-



Nov. 1 1935

675 Downstream

Total  
Mora

1	0.075 W
2	0.135 W
3	0.17 W
4	0.18 W
5	0.16 W
6	0.14 W
7	0.10 W

B.M. 652 681.25 ✓ 674.73

1	5.37	75.88 ✓	.05-
2	6.17	75.08 ✓	.16-
3	5.70	75.55 ✓	.20-
4	5.20	76.05 ✓	.20-
5	5.50	75.75 ✓	.19-
6	5.82	75.43 ✓	.15-
7	6.01	75.24 ✓	.07-

650 Downstream

1	0.075 W
2	0.11 W
3	0.13 W
4	0.30 W
5	0.10 W
6	0.09 W
7	0.065 W

B.M. 6.22 655.59 ✓ 649.37

1	5.24	50.35 ✓	.01-
2	5.08	50.51 ✓	.08-
3	5.65	49.94 ✓	.11-
4	4.85	50.74 ✓	.32-
5	4.63	50.96 ✓	.10-
6	4.87	50.72 ✓	.09-
7	5.17	50.42 ✓	.02-

Nov. 1 1935

625 Downstream

Mon. No. Total  
More

1 0.015W

2 0.06W

3 0.05W

4 0.0

B.M. 2.48 630.14 ✓ 627.66

1 4.69 625.45 ✓ .03-

2 4.49 625.65 ✓ .07-

3 3.81 626.33 ✓ .06-

4 3.70 626.44 ✓ .04-

600 Downstream

1 0.04W

2 0.13W

3 0.015W

B.M. 5.87 605.53 ✓ 599.66

1 4.87 600.66 ✓ .01-

2 4.88 600.65 ✓ .21-

3 4.05 601.48 ✓ .00

Observation Wells. 11/1/35

No.	Water Depth.	Elev.	Bottom Depth.	Elev.
# 1	87.0	576.4	90.3	573.1
# 3	<sup>2.</sup> 128.2 128.0	614.9	143.6	599.5
# 5	89.2	619.8	137.8	571.2
# 6	115.6	586.4	116.5	585.5

Movement of Monuments  
Nov. 30 1935

625 Upstream

1 .34 E.  
2 .40 E.  
3 .39 E.  
4 .25 E.

650 Upstream

1 .32 E.  
2 .43 E.  
3 .65 E.  
4 .38 E.  
5 .26 E.

Simpson - Transit  
Soper - Level.

B.M.	3.70	629.86 ✓	626.16
1			4.03 25.83 ✓ .46-
2			4.76 25.10 ✓ .42-
3			3.88 25.98 ✓ .40-
4			5.03 24.83 ✓ .24-

B.M.	0.29	656.08 ✓	655.79
1			5.75 50.33 ✓ .42-
2			5.37 50.71 ✓ .54-
3			5.69 50.39 ✓ .94-
4			6.27 49.81 ✓ .48-
5			5.94 50.14 ✓ .37-

Nov. 30 1935

675 Upstream

1. .34E.  
2. .54E.  
3. .60E.  
4. .64E.  
5. .67E.  
6. .58E.  
7. .32E.

700 Upstream

1. .17E.  
2. .40E.  
3. .57E.  
4. .64E.  
5. .62E.  
6. .86E.  
7. .87E.  
8. .41E.

B.M. 9.09 682.36 ✓ 673.27

1 7.25 75.11 ✓ .23-  
2 7.88 74.48 ✓ .53-  
3 6.93 75.43 ✓ .53-  
4 6.47 75.29 ✓ .57-  
5 7.17 75.19 ✓ .75-  
6 7.94 74.42 ✓ .95-  
7 6.87 75.49 ✓ .32-

B.M. 0.15 708.68 ✓ 708.53

1 12.05 696.63 ✓ .12-  
2 11.26 697.42 ✓ .44-  
3 10.32 698.36 ✓ .57-  
4 9.82 698.86 ✓ .65-  
5 8.60 700.08 ✓ 1.26-  
6 6.78 701.90 ✓ .77-  
7 5.63 703.05 ✓ .83-  
8 3.27 705.41 ✓ .18-

Nov. 30 1935

725 Upstream

1	.11 E.
2	.20 E.
3	.25 E.
4	.27 E.
5	.31 E.
6	.39 E.
7	.43 E.
8	.25 E.

B.M	9.24	732.93 ✓	723.69
1		6.12	26.81 ✓ .22-
2		6.62	26.31 ✓ .52-
3		7.88	25.05 ✓ .76-
4		6.21	26.72 ✓ .88-
5		6.03	26.90 ✓ .96-
6		7.13	25.80 ✓ .93-
7		6.99	25.94 ✓ .71-
8		7.28	25.65 ✓ .29-

Nov. 30 1935

Monuments on top of Dam

- 1 .05E
- 2 .16E
- 3 .24E
- 4 .30E
- 5 .33E
- 6 .38E
- 7 .42E
- 8 .40E
- 9 .35E
- 10 .19E

Very Windy on top of Dam

B.M.	6.64	776.31	✓	769.67	
1			5.20	71.11 ✓	inside -.29 -
			5.21	71.10 ✓	outside .28 -
2			4.56	71.75 ✓	.60 -
			4.56	71.75 ✓	.59 -
3			4.28	72.03 ✓	.88 -
			4.27	72.04 ✓	.87 -
4			3.54	72.77 ✓	1.04 -
			3.54	72.77 ✓	1.03 -
5			3.39	72.92 ✓	1.09 -
			3.38	72.93 ✓	1.08 -
TP	3.50	775.84	✓	772.34	
6			2.81	73.03 ✓	1.13 -
			2.81	73.03 ✓	1.12 -
7			3.33	72.51 ✓	1.11 -
			3.29	72.55 ✓	1.09 -
8			3.93	71.91 ✓	.99 -
			3.91	71.93 ✓	.97 -
9			4.34	71.50 ✓	.73 -
			4.32	71.52 ✓	.71 -
10			4.73	71.11 ✓	.28 -
			4.75	71.09 ✓	.28 -
B.M.			6.32	769.52	✓
					769.54
					69.52
					.02

Nov. 30 1935

725 Downstream

		B.M.	6.17	733.03	726.86
1.	.07E.	1			5.74 27.29 ✓.38-
2.	.18E.	2			6.00 27.03 ✓.70-
3.	.22E.	3			6.31 26.72 ✓.85-
4.	.20E.	4			7.65 25.38 ✓.88-
5.	.20E.	5			7.14 25.89 ✓.81-
6.	.14E.	6			9.44 23.59 ✓.64-
7.	00	7			9.21 23.82 ✓.27-

700 Downstream

		B.M.	11.36	705.45	694.09
1.	.13W.	1			4.47 700.98 ✓.31-
2.	.09W.	2			3.97 701.48 ✓.38-
3.	.05W.	3			3.72 701.93 ✓.64-
4.	.05W.	4			3.94 701.51 ✓.37-
5.	.11W.	5			4.14 701.31 ✓.33-
6.	.12W.	6			4.47 700.98 ✓.09-

Nov. 30 1935

675 Downstream

		B.M.	5.71	680.44 ✓	674.73	
1.	.08 W.	1			4.56	75.88 ✓ .05-
2.	.14 W.	2			5.37	75.07 ✓ .17-
3.	.16 W.	3			4.91	75.53 ✓ .22-
4.	.19 W.	4			4.91	76.03 ✓ .22-
5.	.15 W.	5			4.71	75.73 ✓ .21-
6.	.12 W.	6			5.02	75.42 ✓ .16-
7.	.03 W.	7			5.21	75.23 ✓ .08-

650 Downstream

		B.M.	615	655.52 ✓	649.37	
1.	.03 W.	1			5.17	50.35 ✓ .01-
2.	.11 W.	2			5.01	50.51 ✓ .08-
3.	.14 W.	3			5.59	49.93 ✓ .12-
4.	.31 W.	4			4.79	50.73 ✓ .33-
5.	.10 W.	5			4.56	50.96 ✓ .10-
6.	.10 W.	6			4.80	50.72 ✓ .09-
7.	.07 W.	7			5.02	50.44 ✓ 00



Nov. 30 1935

625 Downstream

		B.M.	4.20	631.86 ✓	627.66	
1.	.01 W.	1			6.41	25.45 ✓ .03-
2.	.06 W.	2			6.22	25.64 ✓ .08-
3.	.05 W.	3			5.54	26.32 ✓ .07-
4.	.01 W.	4			5.43	26.43 ✓ .05-

600 Downstream

		B.M.	5.53	605.19 ✓	599.66	
1.	.04 W.	1			4.53	600.66 ✓ .01-
2.	.14 W.	2			4.54	600.65 ✓ .21-
3.	.01 W.	3			3.71	601.48 ✓ 00

Observation Wells.

#	Water Depth.	Water Elev.	Bottom Depth	Bottom Elev.
# 1	87.4	576.0	90.3	573.1
# 3	129.6	613.5	143.6	599.5
# 5	90.3	618.7	137.8	571.2
# 6	116.4	585.6	116.6	585.4

Movement of Monuments

Dec. 31 1935

625 Upstream

1	.34	E.
2	.40	E.
3	.39	E.
4	.25	E.

650 Upstream

1	.30	E.
2	.43	E.
3	.66	E.
4	.37	E.
5	.24	E.

Simpson - Transit.  
Soper - Level  
Remmen - Rod

B.M. 4.17 630.33 ✓ 626.16

1	4.50	25.83	✓	46-
2	5.23	25.10	✓	42-
3	4.35	25.98	✓	40-
4	5.50	24.83	✓	24-

B.M. 0.20 655.99 ✓ 655.79

1	5.66	50.33	✓	42-
2	5.28	50.71	✓	54-
3	5.60	50.39	✓	94-
4	6.19	49.80	✓	49-
5	5.86	50.13	✓	38-

Dec 31 1935

## 675 Upstream

			B.M	7.71	680.98	673.27	
1	.37	E.	1			5.88	75.10 ✓ 24-
2	.56	E.	2			6.50	74.48 ✓ 53-
3	.60	E.	3			5.56	75.42 ✓ 54-
4	.65	E.	4			5.10	75.88 ✓ 58-
5	.70	E.	5			5.80	75.18 ✓ 76-
6	.61	E.	6			6.57	74.41 ✓ 96-
7	.36	E.	7			5.50	75.48 ✓ 33-

## 700 Upstream

			B.M	0.35	708.88	708.53	
1	.17	E.	1			12.25	696.63 ✓ 12-
2	.40	E.	2			11.47	97.41 ✓ 45-
3	.60	E.	3			10.53	98.35 ✓ 58-
4	.64	E.	4			10.04	98.84 ✓ 67-
5	.62	E.	5			8.92	700.06 ✓ 1.28-
6	.86	E.	6			6.99	701.89 ✓ 78-
7	.87	E.	7			5.85	703.03 ✓ 85-
8	.41	E.	8			3.49	705.39 ✓ 20-

Dec 31 1935

725. Upstream

			B. M.	9.17	132.86 ✓	723.69	
1	.12	E.	1			6.07	26.79 ✓ 24-
2	.20	E.	2			6.57	26.29 ✓ 54-
3	.26	E.	3			7.84	25.02 ✓ 79-
4	.26	E.	4			6.17	26.69 ✓ 91-
5	.28	E.	5			5.99	26.87 ✓ 99-
6	.38	E.	6			7.09	25.77 ✓ 96-
7	.41	E.	7			6.94	25.92 ✓ 73-
8	.20	E.	8			7.23	25.03 ✓ 31-

Dec 31 1935

## Monuments on top of Dam

			B.M.	6.59	776.26 <sup>✓</sup>	769.67	
1	.055 E.					5.16	71.10 <sup>✓</sup> inside 30-
						5.17	71.09 <sup>✓</sup> outside 29-
2	.155 E.		2			4.53	71.73 <sup>✓</sup> 62-
						4.53	71.73 <sup>✓</sup> 61-
3	.24 E.		3			4.25	72.01 <sup>✓</sup> 90-
						4.24	72.02 <sup>✓</sup> 89-
4	.31 E.		4			3.50	72.76 <sup>✓</sup> 1.05-
						3.50	72.76 <sup>✓</sup> 1.04-
5	.34 E.		5			3.36	72.90 <sup>✓</sup> 1.11-
						3.36	72.90 <sup>✓</sup> 1.11-
			TP	4.30	776.62 <sup>✓</sup>	3.94	772.32 <sup>✓</sup>
6	.41 E.		6			3.62	73.00 <sup>✓</sup> 1.16-
						3.62	73.00 <sup>✓</sup> 1.15-
7	.43 E.		7			4.14	72.48 <sup>✓</sup> 1.14-
						4.11	72.51 <sup>✓</sup> 1.13-
8	.41 E.		8			4.73	71.89 <sup>✓</sup> 1.01-
						4.72	71.90 <sup>✓</sup> 1.00-
9	.35 E.		9			5.14	71.48 <sup>✓</sup> .75-
						5.12	71.50 <sup>✓</sup> .73-
10	.18 E.		10			5.51	71.11 <sup>✓</sup> 28-
						5.53	71.09 <sup>✓</sup> 28-
			B.M.			7.10	769.52 <sup>✓</sup>

Dec. 31, 1935

## 725 Downstream

1	.06	E.
2	.18	E.
3	.23	E.
4	.19	E.
5	.19	E.
6	.13	E.
7	.00	

## 700 Downstream

1	.13	W.
2	.09	W.
3	.05	W.
4	.06	W.
5	.12	W.
6	.12	W.

B.M	5.16	732.02 ✓	726.86	
1			4.73	27.29 ✓ 38-
2			4.99	27.03 ✓ 70-
3			5.31	26.71 ✓ 86-
4			6.65	25.37 ✓ 89-
5			6.14	25.88 ✓ .82-
6			8.44	23.58 ✓ 65-
7			8.21	23.81 ✓ 28-

B.M	12.04	706.13	694.09 ✓	
1			5.14	700.99 ✓ 30-
2			4.64	01.49 ✓ 37-
3			4.40	01.73 ✓ 64-
4			4.61	01.52 ✓ 36-
5			4.82	01.31 ✓ 33-
6			5.15	00.98 ✓ 09-

Dec. 31 1935

## 675 Downstream

			B.M	6.25	680.98 ✓	674.73	
1	.08	w.	1			5.10	75.88 ✓ 05-
2	.14	w.	2			5.91	75.09 ✓ 17-
3	.16	w.	3			5.44	75.54 ✓ 21-
4	.18	w.	4			4.94	76.04 ✓ 21-
5	.15	w.	5			5.24	75.74 ✓ 20-
6	.13	w.	6			5.56	75.42 ✓ 16-
7	.10	w.	7			5.75	75.23 ✓ 08-

## 650 Downstream

			B.M	6.31	655.68 ✓	649.37	
1	.035	w.	1			5.34	50.34 ✓ 02-
2	.12	w.	2			5.18	50.50 ✓ 09-
3	.15	w.	3			5.76	49.92 ✓ 13- 50.12
4	.32	w.	4			4.95	50.73 ✓ 33-
5	.10	w.	5			4.74	50.94 ✓ 12-
6	.12	w.	6			4.97	50.71 ✓ 10-
7	.07	w.	7			5.26	50.42 ✓ 02-

Dec. 31 1935

## 625 Downstream

			B.M	3.99	631.65 ✓	627.66	
1	.02	w.	1			6.20	25.45 ✓ 03-
2	.06	w.	2			6.00	25.65 ✓ 07-
3	.06	w.	3			5.32	26.33 ✓ 06-
4	.02	w.	4			5.22	26.43 ✓ 05-

## 600 Downstream

			B.M	5.81	605.47 ✓	599.66	
1	.04	w.	1			4.81	600.66 ✓ 01-
2	.13	w.	2			4.83	600.64 ✓ 22-
3	.02	w.	3			4.00	601.47 ✓ 01-

## Observation Wells

	Water Depth	Water Elev.	Bottom Depth	Bottom Elev.
#1	87.9	575.5	90.3	573.1
#3	132.1	611.0	143.5	599.6
#5	90.7	618.3	137.8	571.2
#6	—		116.5	585.5



Movement of Monuments

Jan 31 1936

625 Upstream

1	.33	E.
2	.40	E.
3	.37	E.
4	.25	E.

650 Upstream

1	.30	E.
2	.42	E.
3	.65	E.
4	.37	E.
5	.25	E.

Cloudy - Windy  
Simpson - Transit  
Soper - Level  
Remmen - Rod

B.M 4.67 630.83 ✓ 626.16

1	5.00	25.83 ✓	46-
2	5.73	25.10 ✓	42-
3	4.85	25.98 ✓	40-
4	6.01	24.82 ✓	25-

B.M 0.11 655.90 ✓ 655.79

1	5.58	50.32 ✓	44-
2	5.19	50.71 ✓	54-
3	5.51	50.39 ✓	94-
4	6.10	49.80 ✓	49-
5	5.77	50.13 ✓	38-

Jan. 31, 1936

675 Upstream

1	.37	E.
2	.56	E.
3	.59	E.
4	.65	E.
5	.70	E.
6	.61	E.
7	.36	E.

700 Upstream

1	.17	E.
2	.40	E.
3	.60	E.
4	.64	E.
5	.62	E.
6	.86	E.
7	.87	E.
8	.40	E.

B.M

7.11

680.38 ✓

673.27 ✓

1

5.30

75.08 ✓

26-

2

5.92

74.46 ✓

55-

3

4.97

75.41 ✓

55-

4

4.52

75.86 ✓

60-

5

5.22

75.16 ✓

78-

6

6.00

74.38 ✓

99-

7

4.92

75.46 ✓

35-

B.M

0.16

708.69 ✓

708.53

1

12.06

696.63 ✓

12-

2

11.28

97.41 ✓

45-

3

10.34

98.35 ✓

58-

4

9.85

98.84 ✓

67-

5

8.62

700.07 ✓

1.27-

6

6.80

01.89 ✓

78-

7

5.65

03.04 ✓

84-

8

3.29

05.40 ✓

19-

Jan. 31, 1936

725 Upstream

			B.M.	6.81	730.50 ✓	723.69	
1	.11	E.	1			3.71	26.79 ✓ 24-
2	.20	E.	2			4.21	26.29 ✓ 54-
3	.26	E.	3			5.48	25.02 ✓ 79-
4	.26	E.	4			3.81	26.69 ✓ 91-
5	.28	E.	5			3.63	26.87 ✓ 99-
6	.38	E.	6			4.73	25.77 ✓ 96-
7	.41	E.	7			4.58	25.92 ✓ 73-
8	.20	E.	8			4.87	25.63 ✓ 31-

Jan. 31, 1936

Monuments on top of Dam

			B.M.	6.66	776.33 ✓	769.67	
1	.055 E.	1			5.23	71.10 ✓	inside 30-
					5.25	71.08 ✓	outside 30-
2	.155 E.	2			4.62	71.71 ✓	64-
					4.62	71.71 ✓	63-
3	.24 E.	3			4.34	71.99 ✓	92-
					4.33	72.00 ✓	91-
4	.31 E.	4			3.60	72.73 ✓	1.08-
					3.60	72.73 ✓	1.07-
5	.34 E.	5			3.46	72.87 ✓	1.14-
					3.45	72.88 ✓	1.13-
			T.P.	3.66	775.96 ✓	4.03	772.30 ✓
6	.41 E.	6			2.98	72.98 ✓	1.18-
					2.98	72.98 ✓	1.17-
7	.44 E.	7			3.50	72.46 ✓	1.16-
					3.46	72.50 ✓	1.14-
8	.41 E.	8			4.09	71.87 ✓	1.03-
					4.07	71.89 ✓	1.01-
9	.34 E.	9			4.49	71.47 ✓	.76-
					4.47	71.47 ✓	.75-
10	.165 E.	10			4.86	71.10 ✓	29-
					4.88	71.08 ✓	29-
			B.M.		6.44	769.52 ✓	769.54 52 02

Jan. 31, 1936

725 Downstream

			BM	6.31	793.17 ✓	726.86	
1	.07	E.	1			5.89	27.28 ✓ 39-
2	.18	E.	2			6.16	27.01 ✓ 72-
3	.23	E.	3			6.48	26.69 ✓ 88-
4	.19	E.	4			7.81	25.36 ✓ 90-
5	.19	E.	5			7.30	25.87 ✓ 83-
6	.13	E.	6			9.61	23.56 ✓ 24.56 ✓ 67-
7	.00		7			9.37	23.80 ✓ 29-

700 Downstream

			B.M	12.19	706.28 ✓	694.09	
1	.13	w.	1			5.30	700.98 ✓ 31-
2	.09	w.	2			4.80	701.48 ✓ 38-
3	.05	w.	3			4.56	01.72 ✓ 65-
4	.06	w.	4			4.77	01.51 ✓ 37-
5	.11	w.	5			4.98	01.30 ✓ 34-
6	.11	w.	6			5.31	700.97 ✓ 10-

Jan. 31, 1936

675 Downstream

			B.M	5.99	680.72 ✓	674.73
1	.08	w.	1			4.84 75.88 ✓ 05-
2	.15	w.	2			5.65 75.07 ✓ 17-
3	.18	w.	3			5.18 75.54 ✓ 21-
4	.18	w.	4			4.69 76.03 ✓ 22-
5	.17	w.	5			4.99 75.73 ✓ 21-
6	.13	w.	6			5.31 75.41 ✓ 17-
7	.11	w.	7			5.49 75.23 ✓ 08-

650 Downstream

			B.M	6.16	655.53 ✓	649.37
1	.035	w.	1			5.18 50.35 ✓ 01-
2	.12	w.	2			5.02 50.57 ✓ 08-
3	.15	w.	3			5.60 49.93 ✓ 12-
4	.31	w.	4			4.80 50.73 ✓ 33-
5	.11	w.	5			4.58 50.95 ✓ 11-
6	.10	w.	6			4.81 50.72 ✓ 09-
7	.07	w.	7			5.11 50.42 ✓ 02-

Jan. 31, 1936

625 Downstream

1	.02	w.
2	.06	w.
3	.06	w.
4	.02	w.

600 Downstream

1	.04	w.
2	.14	w.
3	.02	w.

Observation Wells

#	Water Depth	Water Elev.	Bottom Depth	Bottom Elev.
1	88.5	574.9	90.1	573.3
3	134.7	608.4	143.6	599.5
5	91.4	617.6	137.7	571.3
6	—		116.3	585.7

B.M	3.76	631.42 <sup>✓</sup>	627.66
1		5.98	25.44 <sup>✓</sup> 04-
2		5.78	25.64 <sup>✓</sup> 08-
3		5.10	26.32 <sup>✓</sup> 07-
4		5.00	26.42 <sup>✓</sup> 06-

B.M	5.83	605.49 <sup>✓</sup>	599.66
1		4.83	600.66 <sup>✓</sup> 01-
2		4.85	600.64 <sup>✓</sup> 22-
3		4.02	601.47 <sup>✓</sup> 01-

Downstream Toe wall

#	total Move.	
1	.02	w
2	.00	
3	.025	w

Movement of Monuments

Feb 29 1936

625' Monuments under water.

650 Upstream

1	.33	E.
2	.43	E.
3	.67	E.
4	.40	E.
5	.27	E.

675 Upstream

1.	.37	E.
2	.56	E.
3	.59	E.
4	.67	E.
5	.70	E.
6	.63	E.
7	.36	E.

Simpson - Transit.  
Soper - Level  
Remen - Rod.

B.M.	1.85	657.64 <sup>✓</sup>	655.79
1			7.33 50.31 <sup>✓</sup> 44-
2			6.95 50.69 <sup>✓</sup> 56-
3			7.27 <del>49.37</del> <sup>50</sup> 96-
4			7.85 49.79 <sup>✓</sup> 50-
5			7.52 50.12 <sup>✓</sup> 39-

B.M	7.19	680.46 <sup>✓</sup>	673.27.
1			5.44 75.02 <sup>✓</sup> 32-
2			6.04 74.42 <sup>✓</sup> 59-
3			5.10 75.36 <sup>✓</sup> 60-
4			4.62 75.84 <sup>✓</sup> 62-
5			5.32 75.14 <sup>✓</sup> 80-
6			6.11 74.35 <sup>✓</sup> 1.02-
7			5.03 75.43 <sup>✓</sup> 38-



Feb. 29, 1936

700 Upstream

1	.17	E.
2	.44	E.
3	.62	E.
4	.68	E.
5	.68	E.
6	.88	E.
7	.91	E.
8	.40	E.

B.M. 0.15 708.68 ✓ 708.53

1	12.04	696.64	✓	11-
2	11.27	97.41	✓	45-
3	10.33	98.35	✓	58-
4	9.84	98.24	✓	67-
5	8.61	700.07	✓	1.27-
6	6.78	01.90	✓	77-
7	5.64	03.04	✓	84-
8	3.26	05.42	✓	17-

725 Upstream

1	.12	E.
2	.21	E.
3	.26	E.
4	.27	E.
5	.29	E.
6	.38	E.
7	.42	E.
8	.22	E.

B.M. 6.81 630.50 ✓ 723.69

1	3.72	26.78	✓	25-
2	4.22	26.28	✓	55-
3	5.49	25.01	✓	80-
4	3.82	26.68	✓	92-
5	3.64	26.86	✓	1.00-
6	4.74	25.76	✓	97-
7	4.58	25.92	✓	73-
8	4.87	25.63	✓	01-

Feb. 29, 1936

Monuments on top of Dam

			B.M	6.72	776.39	769.67	
1	.05 E.		1		5.30 5.31	71.09 ✓ 71.08 ✓	crosside 31- eastside 30-
2	.155 E.		2		4.68 4.67	71.71 ✓ 71.72 ✓	64- 62-
3	.24 E.		3		4.40 4.39	71.99 ✓ 72.00 ✓	92- 91-
4	.32 E.		4		3.66 3.66	72.73 ✓ 72.73 ✓	1.08- 1.07-
5	.34 E.		5		3.53 3.52	72.86 ✓ 72.87 ✓	1.15- 1.14-
			B	4.12	776.41	4.10	772.29 ✓
6	.40 E.		6		3.44 3.44	72.97 ✓ 72.97 ✓	1.19- 1.18-
7	.45 E.		7		3.95 3.92	72.46 ✓ 72.49 ✓	1.16- 1.15-
8	.43 E.		8		4.54 4.52	71.87 ✓ 71.89 ✓	1.03- 1.01-
9	.34 E.		9		4.94 4.92	71.47 ✓ 71.49 ✓	76- 74-
10	.165 E.		10		5.30 5.32	71.11 ✓ 71.09 ✓	28- 28-
			B.M		6.89	769.52 ✓	769.54 69.52 .02

Feb. 29, 1936

725 Downstream

1	.06	E.
2	.17	E.
3	.22	E.
4	.21	E.
5	.17	E.
6	.14	E.
7	.01	E.

B.M 6.29 733.15 ✓ 726.86

1	5.89	27.27 ✓	40-
2	6.15	27.00 ✓	73-
3	6.47	26.68 ✓	89-
4	7.81	25.34 ✓	92-
5	7.30	25.85 ✓	85-
6	9.60	23.55 ✓	68-
7	9.36	23.79 ✓	30-

700 Downstream

1	.14	W.
2	.09	W.
3	.05	W.
4	.06	W.
5	.13	W.
6	.14	W.

B.M 12.32 706.41 ✓ 694.09

1	5.44	700.97 ✓	32-
2	4.94	01.47 ✓	39-
3	4.70	01.71 ✓	66-
4	4.92	01.49 ✓	39-
5	5.13	01.28 ✓	36-
6	5.46	00.95 ✓	12-

Feb. 29, 1936

675 Downstream

1	.085 w.
2	.15 w.
3	.18 w.
4	.18 w.
5	.17 w.
6	.14 w.
7	.11 w.

650 Downstream

1	.035 w.
2	.125 w.
3	.145 w.
4	.31 w.
5	.10 w.
6	.11 w.
7	.055 w.

B.M 5.94 680.67 ✓ 674.73

1	4.80	75.87 ✓	06-
2	5.61	75.06 ✓	18-
3	5.14	75.53 ✓	22-
4	4.64	76.03 ✓	22-
5	4.94	75.73 ✓	21-
6	5.26	75.41 ✓	17-
7	5.45	75.22 ✓	09-

B.M 5.94 655.31 ✓ 649.37

1	4.98	50.33 ✓	03-
2	4.82	50.49 ✓	10-
3	5.40	49.91 ✓	14-
4	4.60	50.71 ✓	35-
5	4.38	50.93 ✓	13-
6	4.61	50.70 ✓	11-
7	4.91	50.40 ✓	04-

Feb. 29, 1936

625 Downstream

1 .025 w.  
 2 .07 w.  
 3 .06 w.  
 4 .02 w.

600 Downstream

1 .04 w.  
 2 .14 w.  
 3 .02 w.

Observation Wells.

	Water Depth	Water Elev.	Bottom Depth	Bottom Elev.
" 1	81.8	581.6	90.1	573.3
" 3	135.2	607.9	143.6	599.5
" 5	92.5	636.5	137.8	571.2
" 6	—		116.3	585.7

B.M 3.41 631.07 ✓ 627.66

1 5.64 25.43 ✓ 05-  
 2 5.44 25.63 ✓ 09-  
 3 4.76 26.31 ✓ 08-  
 4 4.66 26.41 ✓ 07-

B.M 5.62 605.28 ✓ 599.66

1 4.62 600.66 ✓ 01-  
 2 4.64 600.64 ✓ 22-  
 3 3.81 601.47 ✓ 01-

Movement of Monuments

March 31 1936

Monuments on top of Dam

1 .06 - E.  
 2 .165 - E.  
 3 .26 - E.  
 4 .33 - E.  
 5 .37 - E.  
 6 .42 - E.  
 7 .47 - E.  
 8 .45 - E.  
 9 .36 - E.  
 10 .16 - E.

Simpson - transit  
 Soper - Level  
 Isbell  
 Remmen

B.M 6.99 776.66 ✓  
 1  
 2  
 3  
 4  
 5  
 TP 4.39 776.65 ✓  
 6  
 7  
 8  
 9  
 10  
 B.M.

5.58 769.67 ✓  
 5.60 71.08 ✓ inside .32  
 4.97 71.06 ✓ outside .32  
 4.97 71.69 ✓ .66  
 4.71 71.69 ✓ .65  
 4.70 71.95 ✓ .96  
 3.97 71.96 ✓ .95  
 3.97 72.69 ✓ 1.12  
 3.84 72.69 ✓ 1.11  
 3.83 72.82 ✓ 1.19  
 3.83 72.83 ✓ 1.18  
 4.40 772.26 ✓  
 3.70 72.95 ✓ 1.21  
 3.70 72.95 ✓ 1.20  
 4.22 72.43 ✓ 1.19  
 4.19 72.46 ✓ 1.18  
 4.81 71.84 ✓ 1.06  
 4.79 71.86 ✓ 1.04  
 5.20 71.45 ✓ .78  
 5.18 71.47 ✓ .76  
 5.55 71.10 ✓ .29  
 5.57 71.08 ✓ .29  
 7.13 769.52 ✓

769.54  
 69.52  
 .02

Raining - Windy

March 31 - 36

725 Upstream

1	.125	-E.
2	.22	-E.
3	.26	-E.
4	.27	-E.
5	.30	-E.
6	.40	-E.
7	.135	-E.
8	.22	-E.

B.M. 7.31 731.00 ✓ 723.69

1	4.22	26.78	✓.25-
2	4.73	26.27	✓.56-
3	6.00	25.00	✓.81-
4	4.34	26.66	✓.94-
5	4.16	26.84	✓1.02-
6	5.25	25.75	✓.98-
7	5.10	25.90	✓.75-
8	5.38	25.62	✓.32-

700 Upstream

1	.19	-E.
2	.46	-E.
3	.64	-E.
4	.71	-E.
5	.67	-E.
6	.88	-E.
7	.91	-E.
8	.41	-E.

B.M. 0.55 709.08 ✓ 708.53

1	12.46	696.62	✓.13-
2	11.70	97.38	✓.48-
3	10.75	98.33	✓.60
4	10.27	98.81	✓.70
5	9.03	700.05	✓1.29
6	7.20	01.88	✓.79
7	6.06	03.02	✓.86
8	3.69	05.39	✓.20

March 31 - 36

675 Upstream

1	.38	-E
2	.58	-E
3	.62	-E
4	.69	-E
5	.74	-E
6	.66	-E
7	.38	-E

B.M. 8.61 681.88 ✓ 673.27

1	6.89	74.99 ✓.35
2	7.48	74.40 ✓.61
3	6.56	75.32 ✓.64
4	6.07	75.81 ✓.65
5	6.76	75.12 ✓.82
6	7.54	74.39 ✓1.03
7	6.51	75.37 ✓.44

650 Upstream

1	.335	-E
2	.45	-E
3	.68	-E
4	.41	-E
5	.29	-E

B.M. 1.91 657.70 ✓ 655.79

1	7.38	50.32 ✓.43
2	7.00	50.70 ✓.55
3	7.33	50.37 ✓.96
4	7.91	49.79 ✓.50
5	7.58	50.12 ✓.39



March 31-1936

725 Downstream

			B. M.	6.36	733.22 ✓	726.86
1	.07	-E.	1		5.95	27.27 ✓.40
2	.18	-E.	2		6.23	26.99 ✓.74
3	.23	-E.	3		6.55	26.67 ✓.90
4	.20	-E.	4		7.98	25.34 ✓.92
5	.17	-E.	5		7.37	25.85 ✓.85
6	.14	-E.	6		9.67	23.55 ✓.68
7	.01	-W.	7		9.43	23.79 ✓.30

700 Downstream

			B. M.	12.47	706.56 ✓	694.09
1	.13	-W.	1		5.59	700.97 ✓.32
2	.095	-W.	2		5.10	01.46 ✓.40
3	.05	-W.	3		4.86	01.70 ✓.67
4	.06	-W.	4		5.07	01.49 ✓.39
5	.10	-W.	5		5.28	01.28 ✓.36
6	.12	-W.	6		5.61	700.95 ✓.12

March - 31 - 1936

675 Downstream

			B. M.	5.89	680.62 ✓	674.73
1	.075	-W.	1		4.74	75.88 ✓.05
2	.15	-W.	2		5.55	75.07 ✓.17
3	.18	-W.	3		5.09	75.53 ✓.22
4	.19	-W.	4		4.60	76.02 ✓.23
5	.17	-W.	5		4.90	75.72 ✓.22
6	.14	-W.	6		5.22	75.40 ✓.18
7	.09	-W.	7		5.40	75.22 ✓.09

650 Downstream

			B. M.	6.09	655.46 ✓	649.37
1	.035	-W.	1		5.13	50.33 ✓.03
2	.125	-W.	2		4.98	50.48 ✓.11
3	.15	-W.	3		5.56	49.90 ✓.15
4	.32	-W.	4		4.75	50.71 ✓.35
5	.105	-W.	5		4.53	50.93 ✓.13
6	.11	-W.	6		4.77	50.69 ✓.12
7	.08	-W.	7		5.06	50.40 ✓.04

March - 31 - 1936

625 Downstream

1	.03	-W.
2	.065	-W.
3	.065	-W.
4	.02	-W.

B.M.	4.13	631.79 ✓	627.66
1		6.37	25.42 ✓.06
2		6.17	25.62 ✓.10
3		5.49	26.30 ✓.09
4		5.39	26.40 ✓.08

600 Downstream

1	.04	-W.
2	.135	-W.
3	.02	-W.

B.M.	5.72	605.38 ✓	599.66
1		4.72	600.66 ✓.01-
2		4.74	00.64 ✓.22-
3		3.91	01.47 ✓.01-

Observation Wells.

	Water Depth	Water Elev.	Bottom Depth	Bottom Elev.
" 1	83.9	579.5	90.1	573.3
" 3	135.8	607.3	143.6	599.5
" 5	67.7	641.3	137.8	571.2
" 6	—		116.3	585.7

~~5.88~~  
~~5.83~~  
~~2.03~~

~~4.86~~  
~~2.03~~  
~~6.88~~

6.89  
4.86  
2.03

5.91  
3.88  
- 2.03

Well # 5  
○

← N ————— AXIS

Well # 3  
○

Well # 6  
○

Well # 1  
○

**CALCULATION OF EARTHWORK.**

Width	HEIGHT														
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15														
	.02 .04 .06 .07 .09 .11 .13 .15 .17 .18 .20 .22 .24 .26 .28 .30 .32 .34 .36 .38 .40 .42 .44 .46 .48 .50 .52 .54 .56 .58 .60 .62 .64 .66 .68 .70 .72 .74 .76 .78 .80 .82 .84 .86 .88 .90 .92 .94 .96 .98														
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	1.62	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	1.43	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.  $= 1.48 + .028 \times .089 = 1.597$  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	25.2	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  $41.9 + (20 - 16) \div 2$  or 2 ft. added to 41.9 = 43.9. For slopes of 1 on 1 see inside of front cover.