

W  
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ENGINEER'S  
LEVEL BOOK  
No. 412

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1.

For Single Track Embankment.

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

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 30.6. For same slopes but other widths of roadbed, correct above figures by one-half difference in width of roadbed; thus in example above, for 20 ft. roadbed distance will be  $30.6 + (20 - 16) \times 2$  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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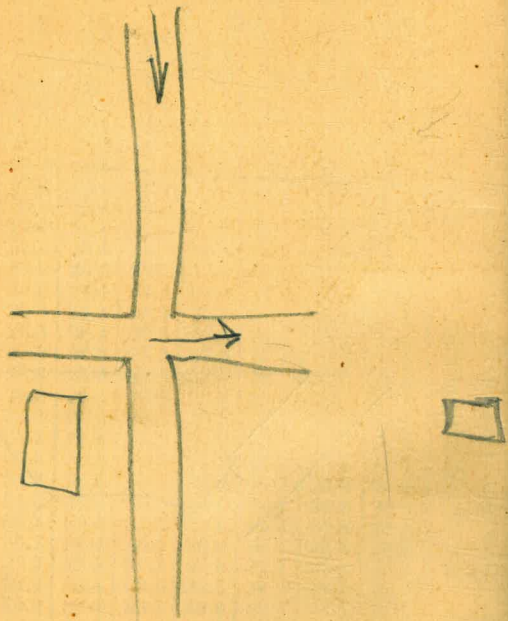
Thurston Insp. Spillway, Outlet Tower, Tunnel  
Care Hall Bx Btc 1-78.

571.0  
15.5  
555.5



MICROFILMED

JAN 12 1965



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JAN 13 1965

John Erickson  
Sus Tebonny  
Orville Horn  
Steve Norsghy  
J. E. Shomet  
Jim McNeiss  
Miles Burrey  
Art Payne

Apr. 1-1933.

Apr. 1-1933 - Shift #1

Spillway Excav. West Side.

Shovel #8 & crew working on "720"

Bench. Three trucks & drivers.

Trucks Nos. 15-18-23

1 foreman and 8 men drilling.

and 1 truck & driver.  
1 foreman & 7 men laying new air line.

Truck #	yds.	Time A.M.
18	5	7:06
15	5	7:12
18	5	7:17
23	4	7:22
15	3	7:26
18	4	7:33
15	4	7:41
18	4	7:48
15	4	7:55
18	5	7:59
23	4	8:04
<hr/>		
11 loads	47 yds	

Truck	yds.	Time A.M.	Truck	yds.	Time P.M.
18	5	9:02	18	5	11:22
18	4	9:14	23	4	11:27
23	5	9:18	15	4	12:38
15	5	9:23	Shovel #8 moved to		
18	5	9:40	"770" Bench and		
23	4	9:46	shovel #7 to "720"		
15	4	9:50	Bench. Three		
18	5	9:55	trucks added. #12, #18, #25		
23	5	10:01	18	5	12:42
15	5	10:05	12	5	12:49
18	4	10:09	23	5	12:52
23	4	10:26	15	5	12:54
15	4	10:33	12	5	1:01
23	5	10:42	25	5	1:03
15	5	10:46	15	5	1:06
18	4	10:49	23	5	1:13
23	5	11:05	18	4	1:17
23	5	11:15	12	5	1:21
<hr/>			<hr/>		
18 loads	83 yds		13 loads	62 yds	

Apr. 1 - 1933.

Truck	Yds.	Time P.M.	Truck	Yds.	Time P.M.
15	4	1:28	18	5	2:41
25	5	1:30	25	4	2:51
18	5	1:38	12	5	2:57
23	4	1:39	23	4	3:02
15	4	1:45	25	4	3:07
12	6	1:51	18	5	3:09
23	4	1:53	15	5	3:17
25	5	1:58	25	4	3:19
12	5	2:01	23	4	3:20
15	4	2:04	12	5	3:25
23	5	2:08	18	4	3:28
12	6	2:12	23	4	3:34
15	4	2:15	18	3	3:40
25	4	2:21	25	5	3:43
12	4	2:23	12	5	3:50
23	5	2:38	23	4	3:51
12	5	2:35	25	3	3:57
<u>17 loads</u>	<u>79 yds</u>		<u>17 loads</u>	<u>73 yds</u>	

Apr. 1 - 1933

Summary

11 47

10 46

18 83

13 62

17 79

17 73

Loads 86 390 yds Total  
Thurston

Apr. 2 - 1933

Sunday. No work.

Apr. 3-1933 Shift #1

Apr. 3-1933.

Spillway Excav. West Side.

Shovel #7 & crew working on "720" bench. Shovel #8 & crew on "770" bench.

Eight trucks and drivers.

Trucks Nos. 25-18-23-26-15-72-34

1 foreman-6 men drilling.

All material excavated went to downstream embankment.

Truck	yds.	Time A.M.	Truck	yds.	Time P.M.
18	5	8:55	18	5	11:14
15	3	9:02	15	5	11:20
25	5	9:07	23	5	11:30
26	5	9:12	18	4	12:42
25	5	9:19	25	5	12:48
23	5	9:32	18	5	12:56
25	5	9:36	25	4	1:02
15	5	9:40	18	5	1:07
23	5	9:44	25	5	1:15
25	5	9:54	18	4	1:24
15	5	10:05	18	4	1:35
25	5	10:14	25	5	1:41
25	4	10:28	5	5	1:52
18	5	10:37	25	4	1:58
23	5	10:50	23	5	2:04
18	5	10:58	18	5	2:11
25	5	11:04	25	5	2:18

Truck	yds.	Time A.M.	Truck	yds.	Time A.M.
26	4	7:13	18	5	8:22
26	4	7:30	26	5	8:27
26	5	7:44	23	4	8:32
25	5	8:01	25	4	8:36
26	5	8:02	15	5	8:42
15	4	8:11	23	5	8:45
26	2	8:12	25	5	8:50

7 loads 29 yds

7 loads 33 yds

17 loads 82 yds

17 loads 80 yds

Apr. 3-1933

Truck	Yds.	Time P.M.
23	5	2:26
18	5	2:34
25	4	2:41
18	5	2:56
23	3	3:24
25	4	3:47
23	4	3:59
7	30 yds.	

Summary

7	29
7	33
17	82
17	80
7	30
<b>Total</b>	<b>Loads 55</b>

Five holes have been drilled in the toe of the bench at the foot of the "720-770" incline. These were #7, started sprung & loaded, Apr. 1. Today shovel excavating across and over these holes. Besides being dangerous, the procedure is slow, costly and wholly unnecessary.

Apr. 4-1933 Shift #1  
 Spillway Excav. West Side.  
 Shovel #7 & crew on "720" Bench  
 Shovel #8 & crew on "770" Bench.  
 Foreman & 12 men drilling.  
 Six trucks & drivers. Trucks Nos. 26-25-23-31-15-18  
 All material excavated went to downstream embankment.

Truck	yds.	Time P.M.	Truck	yds.	Time
26	5	7:15	25	4	8:36
23	5	7:28	23	4	8:54
15	4	7:47	15	3	9:01
15	5	7:59	26	1	9:15
25	5	8:05	23	4	9:27
15	4	8:16	15	5	9:35
23	4	8:28	26	5	9:47
<b>7 loads</b>	<b>32 yds</b>		<b>7 loads</b>	<b>26 yds</b>	

Apr. 4 - 1933.

Truck	Yds.	Time	Shovel #	to	Time
15	4	10:05	Bench	#7	11:00 A.M.
25	4	10:21	Shovel #8	repair	
15	2	10:33	ing	until	1:15 P.M.
18	3	10:52	Truck	Yds	Time
26	5	12:50	26	5	2:01 P.M.
15	5	1:09	18	5	2:05
18	5	1:20	15	4	2:17
25	5	1:25	26	4	2:22
26	5	1:27	18	5	2:32
23	4	1:29	23	5	2:35
15	4	1:33	15	4	2:37
25	5	1:38	25	4	2:43
18	4	1:40	26	5	2:50
26	5	1:43	18	4	2:54
23	4	1:47	15	4	3:05
15	4	1:48	26	4	3:08
25	4	1:52	23	3	3:12
<u>19 loads</u>	<u>172 yds</u>		<u>13 loads</u>	<u>56 yds</u>	

Apr. 4-1933.

5

Truck	Yds.	Time
18	4	3:23
26	3	3:27
15	4	3:34
26	5	3:49
<u>4 loads</u>	<u>16 yds</u>	

### Summary

7	32
7	26
17	72
13	56
4	16
<u>Loads 68</u>	<u>202 yds</u>

*Thurston*



Apr. 5-1933 Shift #1  
 Spillway Excav. West Side.  
 Shovel #7 & crew at foot of  
 "720-770" incline. Shovel #8  
 and crew-repairing.

1 foreman and 13 men drilling.

Four trucks and drivers.

Trucks Nos. 18-25-23-39

Truck	yds.	Time	All material
25	4	1:00 P.M.	went to West
23	4	1:27	Erri bankment.
25	3	1:40	Total 8 Loads
18	5	2:03	30 yds.
25	3	2:17	Thurston.
18	3	2:38	
18	4	3:06	
18	4	3:42	
<u>8 loads</u>		<u>30 yds</u>	

6  
 Apr. 6-1933. Shift #1  
 Spillway Excav. West Side.  
 Shovel #7 & crew-repairing.  
 Shovel #8 & crew-repairing.  
 1 foreman & 15 men drilling.  
 Broken motor removed  
 from Shovel #7 and replaced  
 by motor from Shovel #10.  
 No trucks. No hauling.

Apr. 7-1933 Shift #1.  
Spillway Excav. West Side.  
Shovel #7 at foot of  
"720-770" incline.

1 foreman and 15 men drilling.  
3 trucks and drivers.

Trucks Nos. 26-31-39-20

Truck	yds.	Time
		A.M.

26	5	7:04
----	---	------

26	3	7:18
----	---	------

26	4	11:06
----	---	-------

26	4	11:20
----	---	-------

		P.M.
26	4	12:42

26	4	12:56
----	---	-------

26	3	1:05
----	---	------

26	3	1:16
----	---	------

26	4	3:56
----	---	------

~~9 loads~~ ~~34 yds~~

Apr. 8-1933 Shift #1  
Spillway Excav.

All 3 shovels now on "800"  
Bench. No work on West Side.  
Shovels Nos. 7-8 & 11.

1 foreman 13 men drilling.

2 men drilling on "600" road.

Trucks Nos. 70-26-72-15-45-31-23-77

(12 Trucks) 24-18-19-25-7-39

Truck	yds.	Time	Truck	yds.	Time
		A.M.			P.M.

24	5	8:06	26	6	12:33
----	---	------	----	---	-------

15	6	8:14	23	6	12:37
----	---	------	----	---	-------

26	5	8:52	26	6	12:44
----	---	------	----	---	-------

24	5	9:21	15	7	12:54
----	---	------	----	---	-------

24	5	10:21	26	5	1:13
----	---	-------	----	---	------

24	5	10:32	23	5	1:37
----	---	-------	----	---	------

26	6	10:47	23	4	1:50
----	---	-------	----	---	------

~~7 loads~~ ~~37 yds~~

~~7 loads~~ ~~39 yds~~

Apr. 8-1933

Truck	yds.	Time P.M.
24	5	1:56
26	6	2:08
24	6	2:16
26	5	2:36
24	5	2:51
26	4 <sup>1/2</sup>	3:00
24	5	3:24
26	5	3:39
24	4 <sup>1/2</sup>	4:03
<u>9 Loads</u>		<u>46</u>

Summary	7	37
	7	39
	9	46

Loads 23 122 yds  
Thru water

8

Apr. 9-1933 Shift #1

Spillway Excav.

Shovel #7 & crew and truck #6

on east end of "670" road, material being dumped alongside present road.

Shovel #8 - repairing.

Shovel #11 and trucks #31 45 & 39

excavating d.g. only, which is being placed on roads, for surfacing.

1 foreman and 14 men drilling.

1 man on "670" road.

Approx. 15 yds. of surface rock shot down on road and placed in downstream embankment.

In P.M. - d.g. hauled to east embankment, in 6 trucks.

Apr. 10-1933 Shift #1

Spillway Excav.

Shovel #8 & Shovel #11 on  
"800" Bench.

1 foreman - 14 men drilling.

Trucks Nos. 18-7-8-24-15-25-23-

3 of these men drilling boulders  
above slope line.

Truck yds. Time

25 6 8:24

23 7 8:35

18 5 8:43

24 6 10:14

4 24

Contractor shut down  
work at noon. Thurston

9  
Apr. 11-1933

Shovel #6 - 2 men repairing.

Shovel #7 1 man repairing.

Shovel #9 1 man repairing.

No other activity, except  
at repair shops.

Shovel #10 moved to shops  
1:30 to 2:30 P.M.

Apr. 12-1933. Shift #1  
Shovel #7 - 2 men repairing  
Shovel #9 - 2 men repairing

No other activity.

Added water to pool  
from 12 Noon to 1 P.M.

Thurston

Apr. 13-1933.

Shift #1.

Shovel #7 repairing.

2 Shovel runners and  
1 welder working.

All hands laid off  
at noon.

Thurston.

Apr. 24-1933.

Road. Shovel #8 & crew casting. No trucks. One man drilling. N.W. Quarter, and outside dam area.

Road. N.E. Quarter and outside dam area. Shovel #11 & crew. 2 trucks - #34 & #45.

All material wasted. One foreman & 1 man drilling. One Cat and driver.

S.E. Quarter. Stripping. Shovel #7 and crew. 2 trucks & drivers #31 & #39. 2 men drilling and 2 men clearing. All material to hydraulic fill side of east embankment.

Rock to upstream embankment.

Truck	yds.	Time
#3	9	2:50 P.M.

11

Apr. 25-1933 Shift #1.

Weather: Light Rain.

Road N.W. Quarter. Shovel #8 casting to road below.

Road N.E. Quarter. Shovel #11 & crew. Earth to east Embankment. 3 trucks - #34 - #45 - 14. 1 foreman & 3 men drilling. 2 portable compressors.

S.E. Quarter. Shovel #7 & crew in puddle core area. 2 trucks #31 - #39. 3 men clearing.

Earth to east embankment.

Truck	yds.	Time	Location
#3	8	1:37 P.M.	S.E.Q.
#3	6	2:10	"
#3	6	2:23	"
#3	6	2:37	"

Apr. 26 - 1933 Shift #1.  
New Road. N.W. Quarter.  
Shovel #8 - casting.

Road. N.E. Quarter. Shovel #11.  
Down until 8:30 A.M. - repairing.  
1 foreman & 3 men drilling.  
1 Truck & driver #60.

S.E. Quarter. Shovel #7.  
3 trucks & drivers - #31-39-42.  
1 man clearing.

12  
Apr. 27 - 1933 - Shift #1.  
Shovel #8 & crew, at end of downstream  
embankment, clearing old road.  
Shovel #11 & crew, clearing old road.  
Shovel #7 & crew, stripping S.E. Q.  
Shovel #10 & crew, " " north  
embankment.

Trucks, Nos. <sup>N.W.</sup>14 - <sup>SE</sup>1 - <sup>SE</sup>5 - <sup>SE</sup>13 - 9 - 14 - 39 - 2 - 3  
<sub>NE NW SE NE</sub>

SE - 3 men clearing - 1 man drilling.

N. - 1 foreman - 4 men drilling. 1 Dumpman

Truck	yds	Time	Location
13	6	7:07	SE.
14	5	7:12	N.W.
9	7	7:15	N.E.
13	7	7:16	S.E.
1	4	7:20	NW
14	7	7:23	NE
13	6	7:24	SE
5	6	7:28	N.W.
<hr/>			
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Apr. 27-1933			
TRUCK	yds	Time	Location
14	5	7:30	N.E.
13	7	7:33	S E
1	5	7:35	NW
9	6	7:38	S E
1	6	7:40	N.E.
5	4	7:41	N.W.
13	6	7:42	S E
14	6	7:45	N.E.
9	6	7:49	S E
1	6	7:53	N.E.
13	5	7:54	S.E.
14	7	7:57	NW
14	6	7:59	N.E.
5	7	8:00	NW
9	6	8:01	S E
1	6	8:06	N E
14	7	8:05	NW
<hr/>			
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Apr. 27-1933			
TRUCK	yds	Time	Location
14	6	8:14	N.E.
5	6	8:16	N.W.
9	4	8:17	S E
1	6	8:25	N.E.
14	7	8:26	N.W.
2	6	8:28	H.F.
5	6	8:32	N.W.
9	5	8:33	S.E.
14	7	8:53	N.E.
9	5	8:57	S.E.
1	6	9:00	N.W.
14	6	9:04	N.E.
2	6	9:06	H.F.
9	5	9:12	S.E.
14	7	9:15	N E
3	6	9:22	N E
9	6	9:26	S E
<hr/>			
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Apr. 27-1933  
 Rock from Road, but  
 Outside dam Area, N.W.Q.

Truck	yds.	Time
14	6	8:38
5	5	8:55
14	6	9:00
5	5	9:04
13	6	9:09
5	6	9:13
13	6	9:17
5	5	9:22
13	7	9:25
5	5	9:36
13	6	9:40
	<u>63</u>	

14  
 Apr. 27-1933

Truck	yds.	Time	Location
13	6	10:20	N.W.
2	5	10:21	H.F.
3	6	10:22	N.E.
5	6	10:25	NW
13	5	10:28	N.W.
5	5	10:32	NW
13	6	10:35	NW
3	6	10:36	N.E.
5	6	10:41	NW
3	8	10:44	NE
2	5	10:47	H.F.
13	6	10:47	N.W.
5	6	10:52	N.W.
13	6	10:55	NW
3	6	11:00	N.E.
13	5	11:03	NW
5	6	11:06	NW

99

Apr. 27-1933

TRUCK	Yds.	Time	Location
2	5	9:29	H.F.
14	6	9:36	NE
9	6	9:40	S.E.
3	5	9:42	N.E.
14	7	9:47	NE
5	6	9:50	N.W.
2	5	9:54	H.F.
13	6	9:55	N.W.
3	6	9:58	NE
5	6	10:00	NW
14	8	10:02	NE
13	5	10:05	N.W.
5	6	10:08	NW
3	5	10:12	NE
13	6	10:13	NW
5	6	10:15	N.W.
14	5	10:17	NE

99

15

Apr. 27-1933

TRUCK	Yds.	Time	Location
14	7	11:10	NE
13	6	11:11	NW
2	5	11:14	H.F.
5	6	11:15	NW
9	5	11:16	SE
3	6	11:17	NW
13	6	11:20	N.W.
14	5	11:23	NE
5	5	11:25	N.W.
13	7	11:29	NW
9	5	11:30	SE.
5	6	11:30	NW
3	5	11:30	NE
3	5	12:38	NE
13	5	12:39	NW
2	4	12:47	H.F.
14	5	12:50	NE

93

Apr. 27-1933

Truck	yds.	Time P.M.	Location
5	5	12:51	NW
3	5	12:56	NE
9	5	12:57	SE
14	6	1:02	N.E.
2	4	1:10	H.F.
3	5	1:11	NE
9	5	1:15	SE
3	5	1:21	NE
13	6	1:27	NW
2	3	1:29	H.F.
9	6	1:30	SE
5	6	1:32	N.W.
3	4	1:37	NE
13	5	1:38	NW
5	7	1:47	NW
14	7	1:50	NE
13	5	1:52	NW.

89

Shovel #7 quit at 1:40 P.M. Rain.

16

Apr. 27-1933

Truck	yds.	Time	Location
3	5	1:57	NE
5	5	1:58	N.W.
2	4	2:00	H.F.
13	5	2:03	NW
14	6	2:05	NE
5	5	2:07	NW
13	6	2:11	NW
5	5	2:14	NW
13	5	2:22	NW
5	5	2:26	NW
2	4	2:28	H.F.
3	5	2:29	NE
14	6	2:32	NE
13	5	2:33	NW
5	5	2:40	NW
3	5	2:41	NE
2	2	2:43	H.F.

83

Apr. 27-1933

Truck	yds.	Time	Location
3	5	2:48	NE
13	5	2:51	NW
14	5	2:56	NE
14	4	3:01	NE
5	6	3:03	NW
13	6	3:10	NW
3	6	3:12	NE
2	4	3:13	HF
5	5	3:19	NW
14	5	3:21	NE
13	6	3:24	NW
3	5	3:28	NE
2	3	3:29	HF
5	5	3:34	NW
14	5	3:36	NE
13	6	3:40	NW
5	<del>5</del>	3:44	NW
	86		

17  
Apr. 27-1933

13	6	3:49	NW
5	4	3:55	NW
	<del>10</del>		

Grand Total 871 yds.

#  
-34  
-25  
20  
45  
40

Apr. 28-1933 Shift #1.

S.W. Quarter- 5 men

hand stripping.

No trucks- Rain.

Work stopped at 7:50 A.M.

Rain.

Apr. 29-1933

No work. Rain.

May 1-1933 Shift #1  
 Shovel #8 & crew-repair-  
 ing until 10:00 A.M.  
 Loading material from  
 road to repair river  
 crossing. 5 Trucks and  
 drivers. #31-39-40-42-60.  
 1 Cat and driver & 1 foreman.  
 Total time 1 1/2 hrs.  
 1 cat & scraper on roads.

May 2-1933- Shift #1  
 Shovel #11 & crew clearing  
 "640" road. 3 Trucks -#3-14-31  
 Shovel #10 & crew & 1 Truck #13  
 removing rock from Hy. Fill.  
 All material to east em-  
 bankment.

Truck	yds.	Time	Location
13	3	7:20	HF
13	2	7:38	HF
3	5	7:40	NE
14	5	7:48	NE
31	5	7:55	NE
3	6	8:04	NE
13	4	8:11	HF
14	5	8:12	NE
31	4	8:19	NE
3	6	8:27	NE
14	6	8:40	NE

51

May 2-1933.

TRUCK	yds.	Time	Location
13	4	8:40	HF
3	5	8:55	NE
14	6	9:12	NE
13	4	9:20	HF
3	7	9:22	NE
14	7	9:37	NE
3	6	9:48	NE
14	7	9:56	NE
13	4	10:01	HF
14	2	11:05	NE
13	4	11:10	HF
3	4	11:15	NE
14	4	11:30	NE
14	6	12:38	NE
		P.M. PM	
14	5	12:59	NE
14	5	1:12	NE
14	6	1:42	NE
<hr/>			
	86		

May 2-1933

20

TRUCK	yds.	Time	Location
14	5	2:06	NE
14	5	2:20	NE
14	5	2:40	NE
14	5	3:47	NE
<hr/>			
	20		

May 3-1933. Shift #1.  
 Shovel # 11 & crew - clearing  
 Road "640" - N.W. Q. - 3 TRUCKS  
 Nos. 3-13-31. Truck went  
 to Upstream Embankment.

Truck	yds	Time A.M.
3	5	7:07
13	6	7:17
13	7	7:36
13	7	7:54
13	5	8:13
13	6	8:28
13	5	8:41
31	5	8:46
3	5	8:51
3	4	9:06
13	5	9:16
3	5	9:24
13	5	9:30
		<hr/>
		70

May 3-1933

Truck	yds.	Time
13	5	9:39
3	4	9:48
13	3	9:59
		<hr/>
		12

After 10:15 A.M. Shovel # 11 &  
 2 trucks clearing road "640" out-  
 side of dam area. In again  
 at 3:00 P.M.

### Core Trench

Shovel # 7 & crew started at southern end  
 of Core Trench at 1:00 P.M. & 2 Trucks  
 Nos. 31 & 42

Truck	yds	Time
31	5	1:13
31	5	1:32
31	5	1:47
31	3	2:03
		<hr/>
		18



May 3 - 1933.

Shovel #7 moved at 2:15 P.M.  
to Upstream Embankment

Shovel #10 moved to  
S.W. Quarter at 2:15 P.M.

Truck	Yds	Time
13	5	3:12
3	5	3:18
13	5	3:26
	<u>15</u>	

May 4 - 1933. 22

Shovel #10 & crew stripping  
SW Quarter. 2 Trucks Nos. 31-42  
starting at 8:30 A.M.  
1 man hand stripping.

Shovel #7 & crew & 2 Trucks - 3-13  
clearing incline road "640" to  
high line. Shovel broke down  
at 8:15 A.M. Started at 9:30 A.M.  
on high line in Spillway Area.

Truck	yds	Time	
13	5	9:39	Sp.
3	6	9:47	"
13	6	10:05	"
3	6	10:12	"
13	6	10:20	"
3	7	10:29	"
13	6	10:34	"
3	6	10:43	
13	6	10:49	

54

May 4-1933

Truck	Yds.	Time
3	6	11:00 Sp.
13	6	11:10 Sp.
3	7	11:19 "
13	5	12:35 P.M. "
3	7	12:42 "
13	6	12:50 "
3	6	12:56 "
13	5	1:08 "
13	5	1:24 "
3	5	1:36 "
13	6	1:55 "
3	5	2:11 "
13	6	2:25 "
3	6	2:32
13	6	2:37
3	6	2:50
13	6	3:00

99

Truck	Yds	Time
3	6	3:08 Sp.
13	5	3:12 "
3	5	3:24 "
13	5	3:36 "
3	5	3:48 "
13	5	3:55 "

31

604.55  
 45.55  
 -----  
 559.00

31  
 99  
 544  
 184

May 5-1933  
 Shovel #7 & crew clearing  
 road on west side of  
 spillway. 1 Truck & driver #13  
 1 man drilling boulders  
 on "670" road.

Truck	yds.	Time	
13	6	7:12	Sp.
13	6	8:14	"
13	5	3:29 <sup>P.M.</sup>	N.W.
13	5	3:40	"
13	6	3:56	"
		<u>28</u>	

24

May 6-1933  
 Spillway  
 1 man drilling boulders  
 along road, west side spill-  
 way.  $\frac{1}{2}$  shift.  
 Shovel #8 & crew-clearing "640"  
 road, N.W.Q. - 1 Truck #13

Truck	yds.	Time	
13	5	12:36 <sup>P.M.</sup>	N.W.
13	5	12:47	"
13	5	12:55	
13	6	1:03	
13	5	1:12	
13	6	1:44	
13	5	2:00	
13	5	2:08	
13	5	2:15	
		<u>47</u>	

May 6-1933.

Truck	yds	Time
13	5	2:38
13	4	3:00
13	6	3:27
	<u>47</u>	
	62	

May 8-1933

Shovel #11 & crew of 82 men  
& 1 truck  
#43 clearing road "640" & N.W. Q  
Rock to south embankment.

Truck	yds	Time	
13	6	2:24	P.M.
03	6	3:04	
03	5	3:15	
3	6	3:39	
3	5	3:50	
3	5	4:00	
	<u>33</u>		

2 hours.

May 9-1933 Shift #1  
Shovel #11 & crew stacking  
rock on Upstream Em-  
bankment. - 2 hours

2 men - hand stripping  
N.W. Quarter.

10 AM - Shovel #10 & crew &  
2 Trucks #34-42 - stripping  
S.E. Quarter.

26  
May 10-1933  
Rain. No work.

May 11-1933  
2 men drilling boulder  
on "670" Road. N.W. Q.

May 12-1933.

2 men drilling boulder on "670" road. N.W.Q.  
Shovel #9 & crew & 3 trucks started removing rock on "600" Bench of downstream Embankment. Start at 9:53 A.M.

TRUCKS

30 loads @ 4 yds each

Total 120 yds.

May 13-1933

Spillway

1 Foreman - 4 men drilling.

2 jackhammers - 1 Compressor.

Tractor & grader with 2 men

working roads.

May-15-1933

Quarry Rock to Upstream  
Embankment. 1 Supt. & 2 cat.

Trucks #3-13-2-5-9-6-4

Shovel #7 & crew working at  
toe of upstream embankment.  
Casting.

Shovel #10 & crew, S.E. Quarter.

1 man drilling boulder on "670"  
road N.W.Q.

~~1 Foreman - 4 men & 1 compress-~~  
~~or man~~ <sup>4 hours</sup> drilling on Spillway

Shovel #9 & crew on new  
high line, north of contractor's  
camp.

28

May 16-1933

Quarry rock to upstream Em-  
bankment. 1 Supt. - 8 men & 2 Cats

6 Trucks - #9-13-5-2-4-3

Shovel #10 stripping S.E.Q.

& truck #42-31-34

1 man drilling boulders on  
"High Line" road; east of dam.

May 17-1933

Shovel #10 & crew & 3 trucks  
45# 31 & 42 - stripping SE  
Quarter. Material to down-  
stream embankment.

1 Supt. - 1 foreman - 7 men  
placing rock on upstream  
embankment. 1 cat & driver.

Tunnel

Hole in Arch at 1+48

Thin at 2+12

Hole at 2+30

" " 3+02

Cement sack & 2 boards

sticking thru at 3+23-¢

604.55  
47.55  
557.00



June 6-1933 Shift #1  
Tunnel & Shaft.  
Shaft-Shovel #10 - Runner  
and oiler - 1 foreman  
and 5 men - 2 jackhammers.  
Drilling in Inlet drift  
and sinking. El. bottom  
of shaft 559.00'

Tunnel - 1 Compressor - 2 spaders.  
1 foreman - 3 men on Invert.  
2 men on Arch.  
2 men on Walls.

At Sta. 4+00, where invert  
was drilled for a survey  
station, engineers report  
invert to be 0.4' to 0.45'  
thick.

June 7-1933 Shift #1  
Shaft-Shovel #10 - Runner & oiler.  
1 foreman - 5 men and  
3 men added at noon.  
Inlet adit 10'  
Outlet adit 3'  
Tunnel.

1 foreman - 7 men - cleaning.  
Hole in Arch at 3+52  
Re-ent. steel showing  
at Angle Pt. 4+20

Approx. Area of Shaft.

845.086 <sup>sq</sup> feet  
and 31.3 cu. yds. per foot  
of depth.

June 8-1933 Shift #1  
Shaft. Shovel #10  
Runner & oiler  
1 foreman - 8 men

Tunnel

1 foreman - 5 men.  
Hole at 4+27 in Arch

June 9-1933  
Shift #1  
Shaft Shovel #10  
Runner and oiler  
1 foreman - 8 men.  
Ave. El. Bot. of Shaft.

Tunnel

1 foreman - 5 men.  
moving forms.

June 10-1933 Shift #1  
Tunnel - 1-30" Cat.

1 foreman - 3 men.  
moving forms & repairing  
belt conveyor, for 1/2  
shift. Then 1/2 shift - laying  
8" pipe from upstream dam to

Shaft. Shovel # 10  
1 foreman - 7 men  
timbering - mucking.  
El. bottom of shaft 556'

Pipe Line "8"

Location. From pond  
above earth dam to  
Puddle Core Area  
Labor.

1 foreman - 5 men and  
3 carpenters - 1/2 shift.

32  
June 11-1933 Shift #1  
Tunnel - no work

Shaft

Shovel # 10 moved to  
upstream rock embankment.  
1 foreman - 2 men trimming  
bottom of shaft.  
Ave. El. of bottom 555.5'  
Need Line points for  
outlet Adit in Tower.

Spillway

Shovel # 11 & 2 trucks # 17 & 25  
cleaning roads.

Loads

25	7	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1
#17	7	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1
#25	5	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1
	25																				

Material to downstream embank.

7.5  
37 1/5  
34 5/5  
148 5  
166 5

June 12-1933 Shift<sup>4</sup>  
Tunnel - No work.

### Pipe Line.

1 foreman - 7 men laying 8"  
pipe from upstream  
pond to Core Wall Area.

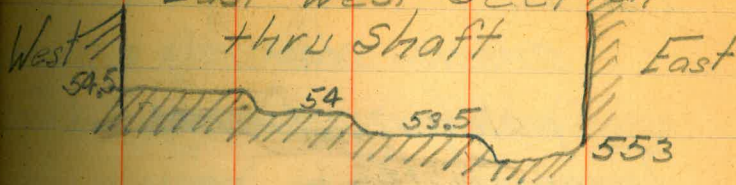
### Tower Shaft.

Shovel #10 - Runner and  
oiler. 1 foreman - 7 men.  
Mucking.

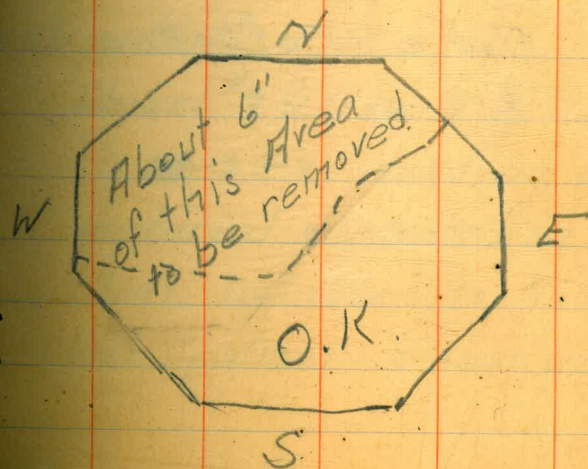
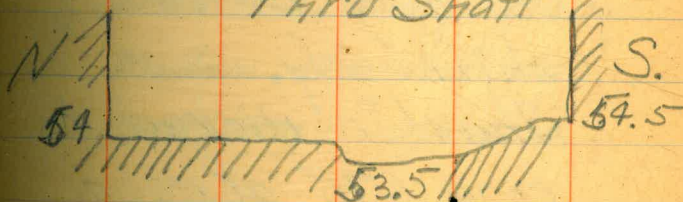
Ave. elev. of bottom of  
shaft 555 - with  
center at approx. 553  
Solid rock showing  
at south & southwest  
sides.

33

June 13-1933  
East-West Section  
thru Shaft



N-S section  
thru Shaft



June 13-1933 Shift #1

Tunnel

2 men - cleaning up and  
patching lining. 8 sx. Cement.

Tower Shaft

Shovel #10 - runner and  
oiler - 1 foreman - 7 men  
cleaning bottom,  $\frac{1}{2}$   
shift only.

Shovel #10 moved to  
road "670" at noon.

Ave. elev. of bottom 554'

34

June 14-1933 Shift #1

Tunnel

2 finishers  
patching tunnel lining  
used 10 sx. Cement.

Tower Shaft.

1 man running pump.  
Bottom cleaned and  
awaiting approval.

Hydraulic Fill

Shovel #7 & crew & 3 trucks  
#18-~~18~~-23-31 loading out  
material excavated in the  
Shaft. Delivered to hydraulic  
fill, upstream embankment.

June 15-1933 Shift<sup>4</sup>

Tunnel

2 men

patching lining

Tower shaft

1 man - running pump.

3 carpenters and 1

helper. Building  
chutes for concrete.

$\frac{1}{2}$  shift.

1 foreman - 4 men

2 hours - cleaning  
bottom of shaft.

35

June 16-1933 - Shift<sup>4</sup>

Tunnel

2 men - patching lining.

Used 5 sx. Cement

1 foreman and 2 men

moving steel forms.

Tower Shaft

No work.

June 17-1933 Shift #1

Tunnel

2 men - patching  
lining.

1 foreman - 3 men - 1 cat<sup>"30"</sup>  
moving & clearing forms.

Tower Shaft.

No work.

36

June 18-1933 Shift #1

Tunnel

2 men - patching lining.

Tower Shaft.

Steel gang - placing  
reinforcing steel for  
tower footing.

June 19-1933 Shift  
Tunnel  
2 men  
patching lining.

Tower Shaft  
Steel gang placed  
steel for tower  
base.  
Started pouring  
concrete base  
from 555.5' to  
560.0' at 10:45 A.M.

37  
June 20-1933 Shift #1  
Tunnel  
3 men - patching  
lining.

Tower  
1 foreman - 2 carpenters  
1 helper - repairing  
chutes - building forms.  
Steel gang - placing  
tower base steel.  
1 foreman and 4 men - 4 hrs.  
and 4 hrs. making scaf-  
folds for tunnel.



June 21-1933 Shift #1  
Tunnel

3 men

patching lining.  
used 5sx. Cement.

Steel gang

1 foreman and 1 man  
building scaffold for  
tunnel work.

Tower.

Poured tower base  
from 560.0 to 561.5  
also block below  
inlet adit from 559.0'  
to 568.0' - and from  
tunnel lining to edge  
of tower base.

June 22-1933. Shift #1  
Tunnel

3 men

patching lining.

Tower

1 foreman and 1 carpen-  
ter building forms.  
2 men stripping forms.

Jan. 23-1933 Shift #1  
Tunnel

3 men

patching lining

Special.

1 foreman - 1 carpenter  
and 2 helpers - building  
panels for spillway  
forms.

Tower.

1 man - trimming  
inlet adit.

1 foreman - 1 carpenter -  
1 helper - building  
forms - 2 hours.

455 June 24-1933 Shift #1.  
Tunnel

3 men

patching lining.

Thin place in  
tunnel arch at 4+55

Tower

1 foreman - 2 carpenters -  
3 helpers - placing steel  
and forms for floor  
of inlet adit.

Poured floor from  
tower to tunnel  
lining.

June 25-1933 Shift #1

Tunnel

3 men

patching lining

Tower

1 foreman & 2 men - 4 hrs.  
trimming inlet adit.

Tunnel

Trimming crew  
did not work.

Special and 1 bldr. "60"  
Shovel #8 and 2 trucks  
#43-#44 and 1 man drill-  
ing boulders. Making  
new incline road above  
road "670" and <sup>east</sup> above  
dam area.

June 26-1933 Shift #1

Tunnel

No work.

Patching finished from  
2+00 to 5+00.

Tower

1 foreman, 2 carpenters  
and 3 helpers, setting  
forms in inlet adit.

Steel gang - 2 men  
3 hrs. placing steel  
in inlet adit.

June 26-1933

11:45 A.M. to 2 P.M.

Spillway - West Side.

Top bench & Elev. "640"

Shovel #8 & truck #9.

Time	No	yds.
11:34	9	4
12:08	9	4
12:30	9	5

June 27-1933 Shift #2

Shovels #9 & 12 on "800" bench and

trucks - #23 #26 - #25 - #25 - ~~#7~~ - #8 - 102 - 104

Shovels #7 & 8 on "745"-800" incline

trucks #20-15- -142-40-42-43

1-60" bulldozer.

1 foreman and 4 men - drilling boulders.

23	6	3:06	20	5	3:36
26	5	3:08		5	3:41
25	6	3:11	26	6	3:47
23	5	3:19	25	6	3:51
	6	3:19	20	4	3:53
20	6	3:20	23	6	4:00
26	6	3:23	26	5	4:06
25	6	3:27		5	4:09
23	6	3:35	25	7	4:10
	<u>52</u>			<u>49</u>	

June 27-1933

20	6	4:12	20	4	6:15
23	6	4:15	15	5	6:20
26	6	4:21	20	5	6:25
25	6	4:26	23	6	8
15	6	4:28	25	5	8
20	5	4:30	17	6	8:05
23	5	4:31	15	6	8:10
	5	4:33	23	6	8:13
25	6	4:37	25	5	8:15
26	7	4:38	17	5	8:30
	5	5:03	23	5	8:31
15	5	5:21	20	6	8:46
20	6	5:28	20	7	10:03
23	6	5:31	15	6	10:24
15	6	5:48	17	6	10:43
15	5	6:00	23	7	10:52
23	5	6:00	17	6	11:00
20	4	6:01	23	5	11:05

100

101

42

26	6	11:35
23	6	11:40

12

Total 314 yds. to up-stream embankment.

52

49

100

101

12

314

June 28-1933 Shift #2

Shovel #9 on "800" bench.

Trucks #8-24-25-104-7-78

Shovel #12 on "750-800" incline  
1-60" Bulldozer and 1-30" Cat.  
2 Compressors - 3 jackhammers.

Shovel #8 on "750" bench.

① ~~40-26-43~~ 142-25-15-17  
-26-~~104~~-20-45-23-431 foreman and 5 men drilling  
boulders.

15 5 3:05 15 3 3:55

25 5 3:10 4 3:55

26 5 3:12 5 4:05

23 3 3:21 24 6 4:06

14 5 3:25 26 5 4:11

15 5 3:30 15 6 4:15

4 3:32 15 6 4:40

26 5 3:35 23 5 4:52

2 4 3:45 24 5 5:04

41

45

23 4 5:05 25 6 8:32

24 5 5:18 24 6 8:33

20 5 5:33 17 6 8:35

25 6 5:35 23 5 8:38

25 5 5:56 15 5 8:45

26 6 6:00 25 5 8:52

15 5 6:04 24 6 8:54

20 5 6:18 24 6 9:07

17 5 6:23 26 5 9:09

15 4 6:27 17 6 9:14

26 6 6:45 25 6 9:17

17 6 6:51 24 6 9:23

24 6 7:00 26 5 9:26

24 5 8:00 20 5 9:28

26 6 8:10 24 5 9:36

23 5 8:15 17 6 9:38

24 4 8:15 15 5 9:42

25 5 8:18 23 5 9:46

93

99

24	7	9:52	23	5	11:10
26	6	9:54	15	5	11:12
17	5	9:55	20	5	11:14
23	6	10:00	26	5	11:16
25	5	10:03	23	5	11:23
24	5	10:05	17	6	11:27
17	6	10:10	25	6	11:30
15	5	10:13	23	5	11:32
25	6	10:20	15	6	11:36
17	5	10:26		48	
15	5	10:29			
26	5	10:33		41	
25	6	10:35		45	
20	6	10:41		93	
17	5	10:45		99	
25	4	10:49		48	
15	7	10:57			
17	5	11:02			
				99	

42 ~~4~~ total

June 29-1933 Shift #2  
 Spillway  
 Shovel #9 on "800" Bench.  
 Shovel #8 on "750-800" Incline  
 Shovel #12 on "750" Bench  
 Trucks # <sup>Peak</sup> 26-~~42~~-8-7-25-78-104-24  
 25-142-31-9-17-20-23.  
 1 foreman and 5 men drilling boulders.  
 1-30" Cat. and 2 compressors.

5	3:10	26	6	4:34	
26	6	3:12	20	5	4:36
25	5	3:16	15	5	4:49
20	5	3:32	25	6	4:51
24	5	3:38	20	5	4:55
24	6	3:52	15	5	5:02
25	5	4:12	25	5	5:06
20	5	4:13	20	5	5:10
25	5	4:21	25	6	5:20
				48	
				48	

24	6	5:22	25	6	9:34
26	6	5:28	23	5	9:40
26	6	5:43	20	5	10:03
24	5	6:04	17	5	10:30
26	3	6:05	26	5	11:12
r. red 23	5	6:14	24	6	11:33
25	6	6:16		32	
17	5	6:18			
24	3	6:30			
23	6	8:06		32	
17	6	8:12		95	
20	6	8:17		48	
25	6	8:20		48	
17	5	8:26	Total	223	
25	6	8:35			
23	5	8:38			
25	5	8:58			
24	5	9:30			
	95				

June 30-1933 - Shift #2  
 Spillway: Shovel #9 on "800" Bench,  
 Shovel #8 on "750" Bench,  
 Shovel #12 on "750-800" Incline.  
 Trucks: - #7-8-78-26-24-25  
 15-20-23-25-2-31-40-142  
 1 Cat. and 2 compressors  
 1 foreman and 5 men drilling.  
 3 jackhammers.

20	6	3:01	15	6	3:40
26	7	3:03	24	6	3:45
15	5	3:11	20	7	3:46
24	6	3:19	15	5	3:47
20	5	3:23	23	5	3:49
15	5	3:27	26	6	3:51
26	6	3:30	23	6	4:01
20	5	3:33	24	7	4:02
23	6	3:36	15	6	4:04
	51			54	



26	5	4:07	23	6	6:26
23	5	4:13	25	6	6:45
15	6	4:19	25	5	8:15
25	6	4:25	15	6	8:23
23	6	4:33	25	6	8:26
25	6	4:44	15	6	8:35
20	6	4:56	23	6	8:38
23	6	5:03	23	6	8:45
25	5	5:06	25	6	8:57
15	5	5:10	24	5	8:57
20	5	5:13	25	6	9:07
23	5	5:21	25	5	9:15
15	4	5:32	20	7	9:20
25	5	5:39	23	6	9:30
23	5	5:45	25	6	9:35
15	6	5:48	26	5	9:40
25	6	6:06	24	5	9:45
15	<del>5</del>	6:20	15	6	9:56

97

104

20	6	10:16
26	5	10:18
15	6	10:28
15	5	10:45
26	6	10:51
15	6	11:05
23	6	11:21
15	5	11:26
25	6	11:30
24	5	11:46

56

56  
104  
97  
51  
54  
362

July 1-1933 Shift #2

Spillway.

Shovel #9 on "800" Bench

Shovel #8 on "750" Bench

Shovel #12 on 750-800 incline

1-"30" Cat. & 1 compressor

3 jackhammers.

1 foreman and 5 men drilling

trucks. #78-7-8-26-24

15-40-31-142-20-23

15	4	5:14	20	6	9:48
24	5	5:17	15	6	9:55
20	6	5:22	20	7	10:10
20	6	5:30	23	7	10:12
20	5	5:55	20	6	10:18
15	6	6:16	20	7	10:35
20	6	6:18	15	6	10:50
24	5	6:20		6	
26	6	6:23		6	
23	6	8:05			
23	6	3:19	15	5	4:15
25	6	3:24	23	6	4:18
15	4	3:27	26	6	4:25
23	6	3:30	15	4	4:30
25	5	3:33	20	5	4:31
23	6	3:38	23	5	4:33
15	5	3:43	15	7	4:45
23	6	3:55	15	6	5:08

44

50

15	4	5:14	20	6	9:48
24	5	5:17	15	6	9:55
20	6	5:22	20	7	10:10
20	6	5:30	23	7	10:12
20	5	5:55	20	6	10:18
15	6	6:16	20	7	10:35
20	6	6:18	15	6	10:50
24	5	6:20		6	
26	6	6:23		6	
23	6	8:05			
26	5	8:20			
23	5	8:40			
26	6	8:53			
20	6	8:54			
20	6	9:04			
26	5	9:22			
20	6	9:28			
15	6	9:40			

57

157  
94  
251

100

July 3-1933 Shift											
Spillway	26	6	6:00	26	6	8:41					
Shovel #8 on "750" bench	23	6	6:06	24	6	8:42					
Shovels #9 & #12 on "750-800" incl.	20	7	6:10	25	7	8:58					
1-30" Cat. and compressor	25	7	6:12	20	8	9:20					
trucks #15-7-25-8-23	15	6	6:18	15	6	9:23					
104-142-24-26-25	20	7	6:18	15	7	9:35					
1 foreman and 5 men trim	25	6	6:22	23	6	9:53					
ming east wall.	24	6	6:50	24	5	10:06					
	15	7	8:13	24	8	10:18					
20	6	3:04	15	6	4:41	25	5	8:17	20	7	10:20
23	5	3:09	20	5	4:41	20	6	8:21	23	6	10:25
15	6	3:15	15	5	5:00	24	7	8:23	24	6	10:29
26	5	3:20	26	6	5:00	23	7	8:25	20	7	10:36
20	5	3:23	23	6	5:18	15	6	8:28	23	7	10:41
20	5	3:43	15	5	5:22	20	7	8:32	26	7	10:43
23	6	3:58	25	6	5:34	26	7	8:34	23	6	10:50
23	6	4:18	20	6	5:40	23	7	8:35	20	7	10:55
25	5	4:35	26	5	5:43	15	7	8:38	25	6	11:00
	<u>49</u>			<u>50</u>			<u>117</u>			<u>118</u>	

20	6	11:02
24	6	11:06
23	7	11:10
24	6	11:28
20	6	11:45
<hr/>		
31		

31	
118	
117	
99	
<hr/>	
365	total

July 5-1933 Shift #2  
Spillway

Shovel #8 on "800" bench.

Shovel #9812 on "750-800" incline.

1 compressor - 3 jackhammers

7-8-142-15-20-26-13-17

Trucks - 24-25-78-105-104 (23-

1 foreman and 6 men drilling and  
trimming walls.

26	6	3:33	15	6	4:11
15	6	3:41	25	6	4:13
25	6	3:52	24	6	4:15
24	6	3:53	25	6	4:27
26	6	3:54	20	7	4:28
25	7	3:58	24	6	4:31
24	6	4:03	25	6	4:38
20	6	4:05	24	5	4:41
13	6	4:06	15	6	4:46
<hr/>					
55				54	

25	5	4:50	17	6	8:29	26	6	10:11
24	6	4:54	25	5	8:35	17	5	10:16
25	5	5:07	17	7	8:39	23	5	10:18
26	6	5:17	25	7	8:50	15	6	10:19
25	5	5:28	26	7	8:52	17	6	10:39
26	6	5:33	17	6	8:55	23	6	10:40
23	7	5:36	25	6	8:06	25	7	10:41
15	6	5:38	24	6	9:10	26	6	10:45
24	5	5:43	17	8	9:15	24	6	10:47
24	7	6:09	13	6	9:18	23	6	10:50
15	6	6:19	24	5	9:25	17	7	11:02
26	5	8:00	15	7	9:28	15	8	11:02
15	6	8:02	15	5	9:36	25	6	11:10
26	7	8:06	15	5	9:49	26	5	11:13
15	6	8:13	17	7	9:55	15	5	11:14
26	7	8:17	15	6	10:01	25	6	11:24
23	7	8:20	25	6	10:02	23	8	11:25
15	6	8:22	15	6	10:08	23	7	11:45
<u>108</u>				<u>111</u>				<u>111</u>

111  
 111  
 108  
 55  
 54  
 439 total  
 60  
263.40

reported as  
 263.4 yds.net.

July 6-1933 Shift #2  
Spillway

Shovel #8 on "800" Bench

Shovels #9 & 12 on "750-800" incline

1 cat. & 1 compressor.

TRUCKS 24-25-78

15-26-7-8-142-23-17

1 foreman and 6 men drilling  
and trimming.

15	5	3:05	13	6	3:25
24	5	3:06	26	5	3:30
25	6	3:08	24	6	3:33
13	5	3:11	<sup>17</sup> <del>23</del>	5	3:34
15	8	3:15	25	7	3:37
24	7	3:17	26	6	3:40
26	6	3:20	15	6	3:46
25	6	3:21	24	6	3:44
<del>23</del> 17	7	3:28	26	6	3:53
<hr/>			<hr/>		
55			53		

24	6	3:57	24	6	5:07
13	6	4:01	25	6	5:11
25	6	4:05	15	6	5:16
26	6	4:07	24	6	5:20
17	5	4:11	23	7	5:22
24	6	4:15	17	6	5:27
17	6	4:18	17	6	5:34
<del>15</del>	<del>6</del>	<del>4:18</del>	26	5	5:43
26	6	4:18	26	5	5:51
17	6	4:24	25	5	5:53
25	6	4:30	23	6	5:56
15	6	4:33	25	6	6:02
24	6	4:36	17	6	6:12
25	6	4:43	25	5	6:25
15	6	4:47	23	6	6:27
26	5	4:52	24	2	6:33
24	6	4:53	25	5	6:36
15	6	5:03	17	5	6:43
<hr/>			<hr/>		
100			99		

24	6	6:46	23	7	8:43	25	7	10:08
<del>23</del>	6	6:49	26	6	8:49	15	6	10:09
25	6	8:00	15	5	8:50	26	6	10:20
26	6	8:05	24	6	8:51	23	6	10:30
17	7	8:07	23	6	8:54	15	6	10:43
24	7	8:11	17	7	8:58	23	6	10:47
26	6	8:15	15	6	9:01	15	8	10:55
25	8	8:18	25	6	9:06	23	6	10:56
17	6	8:19	23	6	9:18	26	6	11:05
23	6	8:21	25	7	9:30	26	6	11:15
15	7	8:22	15	7	9:30	15	6	11:18
24	7	8:23	15	6	9:51	26	6	11:24
17	6	8:26	25	6	9:55	25	6	11:26
23	6	8:30	17	6	9:55	15	6	11:30
25	6	8:32	23	6	9:56			
17	6	8:37	26	6	10:04			
26	6	8:38	17	6	10:06			
15	7	8:42	23	5	10:07			

115

110

25	7	10:08
15	6	10:09
26	6	10:20
23	6	10:30
15	6	10:43
23	6	10:47
15	8	10:55
23	6	10:56
26	6	11:05
26	6	11:15
15	6	11:18
26	6	11:24
25	6	11:26
15	6	11:30
		87

87  
 110  
 115  
 199  
 53  
 55  


---

 619 loose  
 60  


---

 371.40

July 7-1933 Shift #2

Spillway

Shovel #8 on "800" bench

Shovels #9 & 12 on "750-800" incline

Trucks # 24-25-14-78-12

7-105-23-8-26-15-3 (102-5)

1 "30" Cat & 1 compressor

1 jackhammer

4 men trimming

26	6	3:21	25	6	4:36
24	5	3:22	15	7	4:38
23	6	3:31	24	6	4:41
25	6	3:45	25	6	4:52
26	6	3:47	3	5	5:00
23	6	3:51	24	6	5:09
23	8	3:59	3	7	5:23
25	6	4:01	23	6	5:30
23	6	4:25	3	5	5:35
		<u>55</u>			<u>54</u>

South Abutment } 1 Compressor  
                          } 1 jackhammer  
                          } 2 men drilling  
Shovel #7 - stripping at  
                          about elev. 710'

2 trucks: - #40 & 42

Rock	40	5	8:22		
	40	5	8:34		
	40	5	8:48		
40	4	4:26			
40	5	5:52			
40	5	8:08			
<hr/>					
23	5	5:43	23	5	8:24
23	5	6:20	26	6	8:25
23	5	6:50	25	7	8:26
15	7	6:51	23	5	8:30
25	7	8:06	24	6	8:35
15	6	8:09	26	6	8:36
23	7	8:11	25	6	8:39
26	7	8:16	23	6	8:42
24	6	8:21	23	6	8:49
3	6	8:23	24	6	8:51
		<u>61</u>			<u>59</u>

29.00  
17.40



25	6	8:56	26	5	10:07
3	5	8:58	24	6	10:10
5	6	9:06	23	6	10:12
24	5	9:15	26	5	10:16
5	6	9:21	23	6	10:21
3	6	9:28	26	5	10:25
25	5	9:37	25	5	10:25
23	6	9:38	3	6	10:26
24	5	9:41	5	6	10:30
3	6	9:42	26	6	10:36
25	5	9:50	2	6	10:38
26	6	9:50	24	6	10:38
24	6	9:54	5	6	10:45
23	5	9:55	26	6	10:48
3	7	9:56	3	7	10:56
5	6	9:58	25	6	10:58
23	6	10:02	23	6	11:01
25	5	10:03	26	6	11:07

$$\frac{5}{102}$$

$$\frac{6}{105}$$

24	5	11:11
3	6	11:12
26	6	11:17
3	6	11:20
25	6	11:21
23	8	11:25
26	7	11:27
5	8	11:30
24	6	11:31
3	7	11:32
26	6	11:36
5	7	11:42
25	5	11:43
3	6	11:46
24	5	11:50
23	8	11:52
26	7	11:56

$$\frac{7}{109}$$

109
105
102
59
61
54
55
<hr/>
54800
<hr/>
32700

July 8-1933 Shift #2  
 Shovels #7&8 on "800" bench  
 Shovels 9&12 on "750-800" incline  
 1 Cat & 1 compressor,  
 trucks-101-15-78-25-12-24-14-10  
 108-102-13-0-105-8-26-142-40-7  
 1 foreman and 5 men drilling.

26	6	3:07	13	5	3:36
15	6	3:12	25	7	3:37
20	6	3:19	13	6	3:48
26	7	3:24	0	5	3:51
15	6	3:26	26	6	3:52
13	6	3:29	15	6	3:55
20	6	3:30	0	6	4:00
26	6	3:31	26	6	4:09
15	5	3:33	15	6	4:10
		<u>54</u>			<u>53</u>

20	6	4:14	15	7	9:10
13	7	4:18		6	
15	6	4:24		6	
26	8	4:27		<u>19</u>	
13	8	4:31			
20	7	4:34			
15	7	4:37			
20	7	4:44			
20	6	4:57			
26	5	5:07			
24	6	5:22			
15	6	5:52			
20	8	6:00			
15	5	8:10			
26	8	8:14			
15	8	8:22			
13	7	8:26			
26	7	8:30			
		<u>122</u>			

19  
 122  
 53  
 54  
 24 8  
148.80

July 10-1933 Shift #2  
Spillway

Shovel #7 in lower  
(west) end of spillway  
rock to upst. emb.

Shovel #8 on "670"  
road <sup>(west)</sup> end casting.

Shovel #10 on "710" level  
of south abutments <sup>trucks</sup> #31-40

Shovel #12 - on east end  
of "670" road. & 3 trucks, <sup>#8-78</sup> 7  
trucks with #7 - Nos. 15-20

" " #8 - Nos. 42-25

1-"30" Cat. 1 compressor-2 jackhammers.

1-foreman and 6 men-trimming.

after 5:00 P.M. Shovel #11 on east

end of road "670" & truck

At 6:00 P.M. shovel #7 to shop  
& shovel #8 to "720" elev. of  
spillway, west side.

56  
Shovel #8 - w. end of Road <sup>at turnaround.</sup> 670

7 5 4:50

25 5 5:15

7 4 5:20

25 3 5:44

---

17  
600  
102

July 11-1933 Shift #2  
Spillway  
No work.

Road work  
Shovel #12 on  
east end of road  
"670"

1 compressor - 1 man  
1 jackhammer on  
incline to high line  
near Dam Site #1.

57  
July 12-1933 Shift #2  
Spillway  
No work.  
No equipment.

Road Work.  
Shovel #12 - casting at  
east end of road "670"  
plus truck #3 - 4 hours.  
hauling rock.

Tunnel  
2 men - caulking joints  
of pipe in outlet adit,  
4 hours.  
2 men - cleaning up  
in rock section.

July 13-1933 Shift #2  
Tunnel

1 compressor-1 <sup>air hammer</sup> spade

2 men-caulking pipe  
joints. - 4 hours.

Spillway

No work.

Road "650"

Shovel #12-trucks #14-101  
stripping east end of  
road, after 5:30 P.M.

Road Work.

Shovel #12 - 2 1/2 hours. on  
east end of road "670"

July 14-1933 Shift #2  
Spillway

Shovel #12 on "800" bend  
and truck #78 with  
#102-106 & 108 altogether  
working 1/2 shift.

Loading out d.g. only  
to downstream emb.

Tunnel

No work.

July 15-1933 - Shift #2  
Spillway

Shovel #12 on "800" Bench  
2 trucks #31-25-18 loading  
d.g. only to down-  
stream embankment

Tunnel

No work.

$$\begin{array}{r} 5.5 \\ 90 \\ \hline 495.0 \\ 60 \\ \hline 297.00 \end{array}$$
$$\begin{array}{r} 555 \\ 555 \\ \hline 610.50 \\ 366.300 \end{array}$$

59  
July 16-1933 - Shift #1  
Spillway

Shovel #12 on "800" Bench  
4 trucks - #15-~~17~~-25-26-18-20  
1 "30" cat-compressor -  
3 jackhammers.  
1 foreman - 10 men drilling.

Shovel #8 and 2 trucks - #31-40  
on east end of Road "670".

Spillway Rock

111 loads @  $5\frac{1}{2}$  yds. each  
610 yds. loose or  
366.3 yds net. All sent  
to upstream emb.

July 16 1933 - Shift #2  
Spillway  
Shovel #12 on "750-800"  
incline.  
4 trucks #15-18-25-26  
1 man trimming  
walls.

Rock 90 loads  
@  $5\frac{1}{2}$  yds. each - less  
40% = 297 yds. Net.  
to Upst. Emb.

Road Work

Shovel #8 on incline  
to high line road - near  
dam site #1.

2 trucks #23-40.  
to Upst. Emb.

60  
July 17-1933 Shift #2  
Spillway  
Shovel #8 on "800" bench.  
3 trucks - #7-78-106.  
Loading out d.g. only  
to upst. emb.

July 18-1933 - Shift #2  
Spillway  
Shovel #8 on "750-800" incline  
trucks - 7-8-42-7  
Loading d.g. only to upst.  
emb.

Stripping Puddle Core Area.  
1 foreman - and 2 men  
Shovel #10 & truck #31

Tunnel  
1 foreman and 5 men  
moving steel forms.

$$\begin{array}{r} 3.3 \\ 7 \\ \hline 23.1 \end{array}$$
$$\begin{array}{r} 14 \\ 3.3 \\ \hline 42 \end{array}$$
$$\begin{array}{r} 24 \\ 33 \\ \hline 72 \\ 72 \\ \hline 79.2 \end{array}$$

61

July 19-1933: Shift #2  
Spillway  
Shovel #12 on 750-800 incline  
3 trucks - 7-8-25  
Loading d.g. only.

South abutment  
Truck #31 and 1 man  
hand stripping.  
Tunnel 3 p.m. to midnight  
1 foreman and 3 men (mixing)  
1 foreman and 7 men in  
tunnel.

Cleaned 950 sq.

Batches poured at  
midnight -  
Wasted 4 batches when  
gasket on gun blew out



July 20-1933 - Shift #2  
Spillway

Shovel #12 on 750-800 incline

5 trucks #18-23-7-8-25

Rock 24 loads @ 3.3 each  
to Upst.  
Emb. or 79.2 yds. net.

Tunnel 3 P.M. to 12

Sta. 8480 to 9430

Batches at 5 P.M. 31

1 foreman - 7 men in  
tunnel (changed at 7 P.M.)

1 foreman - 3 men - mix  
ing crew (changed at 8:30)

2 trucks.

Batches at 12 M. 85

510 sx.

July 21-1933 Shift #2  
Spillway

Shovel #7 and trucks #23-25

on "770" Bench

Rock to Dist. Emb.

46.2 yds. Net.

Shovel #12 on "750-800" incline  
trucks #18-25-102-142-106-107

Loading d.g. 7 loads Rock.

Shovel #8 on 750 bench  
trucks #15

Rock to Upst. Emb. 23.1 yds.

Tunnel

Truck #33

1 foreman and 7 men  
Cleaning invert and  
moving forms.

July 22-1933 Shift #2  
Shovel #12 on 750-800 incline

TRUCKS #7-8-18-107-142-42

Shovels #7 & 8 on "800" Bench

TRUCKS - 23-25-40-~~107~~-25-108

78-15

23-13

15-12

25-14

18 10

49

3.3

147

161

Rock.

161.7 yds. net  
to Upst. Emb.

Tunnel

1 foreman and 7 men  
moving concrete forms.

23.5  
5.5  
11.5  
11.5

July 23-1933 Shift #1  
Spillway

Shovel #7 on "700" Road, N.E.Q.

Shovel #8 on 800 Bench

TRUCKS - 18-25-17-20-42-34

1 Compressor - 4 jackhammers

1 foreman and 12 men - trimming.

#18-6

#20-6

#25-6

#17-5

23 loads @ 5 1/2 ea. = 126

17 6 7:48 18 6 8:50

20 6 7:52 17 6 9:10

18 5 8:00 25 6 9:18

25 6 8:11 20 6 9:28

17 6 8:18 18 5 9:31

18 6 8:25 25 6 10:42

25 6 8:32 20 6 10:44

17 6 8:43 18 5 10:48

20 6 8:48 25 5 10:54

179

51

17 5 10:59  
20 5 11:05  
18 6 11:11  
25 3 11:16

19  
179  
51  
249  
60  
149.4

149.4 yds. Rock Net  
to Upst. Emb.

July 24-1933 Shift #2  
Tunnel

Pouring section 8+80 to  
8+30

Mixing crew - 1 foreman and  
3 men - shift changed at 3:30 PM

Concrete crew. 1 truck &  
gun. 1 foreman and 7  
men. Shift changed @ 5 P.M.

Meter 97 batches @ 3:00 PM

111 " @ 5:00 PM

149 " 11 P.M.

Poured 52

July 25-1933 Shift #2  
Tunnel

1 foreman - 7 men  
placing concrete  
1 foreman - 3 men  
mixing crew. 1½ hrs.  
finished pour at  
5:04 P.M. Meter  
reading 234 batches  
1404 sx. cement. Total.  
Tunnel crew changed  
at 5:00 P.M.  
Crew clearing up.

65  
July 26-1933  
Tunnel Shift #2

3 carpenters - build  
ing form at angle  
point.  
1 foreman and 6  
men setting forms  
from 8+30 to about  
7+90.

Core Wall - south  
abutment.  
Shovel #10 and  
crew - excavating.

July 27-1933 - Shift #2

68x cement

54 Batches at 11 PM	1490# sand.	}	Mix approved by Mr. Wood.
	1200# - 1/2 rock		
	930# 3/4 "		
	52 gals. water		

Tunnel

1 foreman and 3 men in Mixing crew.

1 foreman and 6 men in Concrete Crew.

Started pouring lining at 6 P.M.

2 Transit mix trucks. Made 2 cylinders - A from south side of form - B from north side - at about 8:00.

Core Wall - So. Abutment.

Shovel #10 & crew

1 Compressor & 2 jackhammers. 5 men excavating.

July 28-1933 Shift #2

Tunnel

Truck #33

1 foreman and 6 men cleaning up tunnel and equipment.

Core Wall excavation.

South Embankment.

Shovel #10

5 men excavating.

July 29-1933 Shift #2  
Tunnel  
1 foreman and 7 men  
placing forms.

Core Wall-South A-  
butment  
Shovel #10 and crew  
6 men excavating  
1 Compressor and  
2 jack hammers.

67  
July 30-1933 Shift #2  
Tower  
Finished pour on  
tower at 4:35 P.M.  
33 batches and 2 batches  
of grout.  
208 sq. cement - total.

Tunnel  
Started pour in tunnel at  
4:45 P.M.  
1 foreman and 7 men plac-  
ing concrete - 1 foreman  
and 3 men - mixing crew  
2 transit mix trucks.

Delivery pipe broke - delay  
1/2 hrs. Dumped 2 batches.

Core Wall - So. Abut.  
Shovel #10 & Crew & 6 men.  
(over.)

July 30-1933  
Tunnel (continued)  
Mixing crew changed  
at 8:00 P.M.  
Meter reading  
at 11:00 P.M. 49.

68  
July 31-1933 Shift #2  
Tunnel  
1 foreman and 7 men  
cleaning up tunnel

Core Wall  
Shovel #10 & crew  
1 compressor and  
2 jackhammers.  
6 men excavating.

Aug. 1-1933 Shift #2  
Core Wall Excavation  
Shovel #10 and crew  
4 men excavating.

Outlet Tower  
Completed pour at  
4:30 P.M. Wasted 2  
batches.

Tunnel  
1 foreman and 7 men  
placing forms from  
Sta. 7+00 to 7+46.

69  
Aug 2-1933 Shift #2  
1 foreman and 3 men  
in Mixing Plant.  
1 foreman and 11 men  
placing concrete.  
Started pouring tunnel  
section. 7+00 to 7+46 (about)  
at 2:30 P.M.

Batches at 5:00 P.M. 36

Batches at 11:00 P.M. 117

Tunnel crew changed at 5:00 P.M.  
Mixing crew changed at 10:00 P.M.

Core Wall  
Shovel #10  
1 Compressor - 2 jackhammers.  
3 men excavating.



Aug. 3-1933 Shift #2  
Outlet Tower

Started pour at 4:10 P.M.

Completed pour at 6:05 P.M.

33 batches concrete

2 " " grout

208 sq. cement

Tunnel.

1 foreman and 7 men.

truck #33 - cleaning up.

Core Wall

Shovel #10

1 compressor 2 jackhammers

4 men.

70  
Aug. 4-1933 Shift #2  
Outlet Adit.

1 Compressor - 1 jackhammer.

2 men enlarging adit,

between Tower and

Tunnel.

Aug. 5-1933 Shift #2  
1 compressor  
1 jackhammer  
Outlet Adit.  
2 men  
enlarging adit  
between Tower  
and Tunnel.

71  
Aug. 7-1933 Shift #2  
Core Wall - South End  
1 Compressor  
1 Leyner  
3 men - drilling grout  
holes.

Aug. 8-1933 - Shift #2  
Tunnel  
No Work

Core Wall  
No Work.

72  
Aug. 9-1933 Shift #2  
Tower

Finished pour at 5:00 P.M.  
27 batches concrete  
2 batches grout  
172 sq. cement.

Tunnel  
Shovel #10 - 2 hrs.  
1-30" Cat.  
1 foreman and 3 men  
moving 36" and 42"  
pipe to outlet adit.

Aug 10-1933 - Shift #1  
Tunnel  
No Work

Core Wall  
No Work.

73  
Aug. 11-1933. Shift #2  
Tunnel  
No Work

Core Wall  
No Work.

Aug. 12-1933 Shift #2

Tunnel

No Work.

Core Wall

No Work.

74

Aug. 14-1933 Shift #2

Tunnel

No Work

Core Wall

No Work.

Aug 15-1933 Shift #2  
Tunnel  
No Work

Core Wall  
No Work.

75  
Aug. 16-1933 Shift #2  
Spillway - East Side. <sup>"450"</sup> Bench.  
Shovel #12 & crew  
4 trucks - #6-7-8-14  
1 compressor - 2 jackhammers  
4 men drilling  
1 dumpman.  
Hauling d.g. to upstream  
dump.

Aug. 17-1933 Shift #2  
 Spillway - East Side  
 Shovels #8 & #12 on  
 "750" Bench  
 5 trucks - #25-4-7-12-25  
 1 Compressor - 1 jackhammer  
 2 men drilling  
 1 dumpman.  
 Shovel #12 down 1 hrs.

25	5	3:44	25	4	10:10
25	6	4:00	25	6	10:27
25	5	4:44	25	6	10:45
25	5	5:06	25	5	11:00
25	5	5:42	25	5	11:14
25	6	6:02	25	5	11:27
25	6	6:15	25	6	11:38
25	6	6:40			37
25	5	7:00			49
	49				86
					<u>51.60 net</u>

Aug. 18-1933 Shift #2  
 Spillway - East Side  
 Shovel #12 - on "750" Bench  
 5 trucks - 25-6-8-12-25  
 1 compressor - 2 jackhammers.  
 2 men drilling.  
 1 dumpman.  
 Rock to Upst. Embankment.

25	6	3:10
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Aug. 22-1933 - Shift #3

12:00 M. to 5:00 A.M.

1 foreman - 8 men - concrete gang.

1 foreman - 2 men - mixing crew.

1 - transit mix truck - 170 driver. 1 - "60" Bulldozer.

Patch at 11+51

Start - 12:20 A.M.

Finish - 12:40 A.M.

Cu. yds. about  $1\frac{1}{2}$

Moved to 4+30 - Time 2 hrs - 10 min.

Start 2:45 A.M.

Finish 4:15 A.M.

Yds.  $2\frac{1}{2} + 3 + 3 + 3 + 3$  ( $14\frac{1}{2}$ )

Moved to 3+52

Time 30 min.

3+52

Start 4:45 A.M.

Finish uncompleted at 5:15

Yds. 3+3

Batches at 5:00 - 22



Aug. 23-1933 Shift #3

3+02'

Start 12:20 A.M.

Finish 12:50 A.M.

Yds. - 3+1/2 (4 1/2)

Moving 20 min.

1 foreman & 2 men (mixing)

1 foreman & 8 men (concrete)

1 transit mix truck - no driver.

2+22

Start 1:10 A.M.

Finish 1:15 A.M.

Yds 1 1/2

Moving 15 min.

2+09

Start 1:30 A.M.

Finish 1:45 A.M.

Yds. 2

Wasted 1 yd.

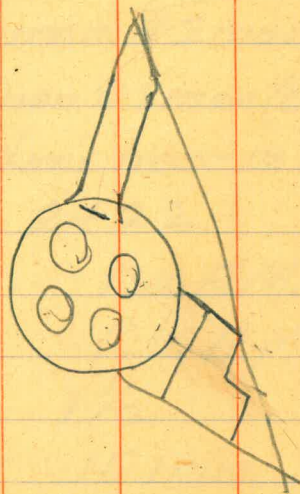
1+48

Moving to and building  
format 1+48 - 1 hr. 25 min

Start 3:10 A.M.

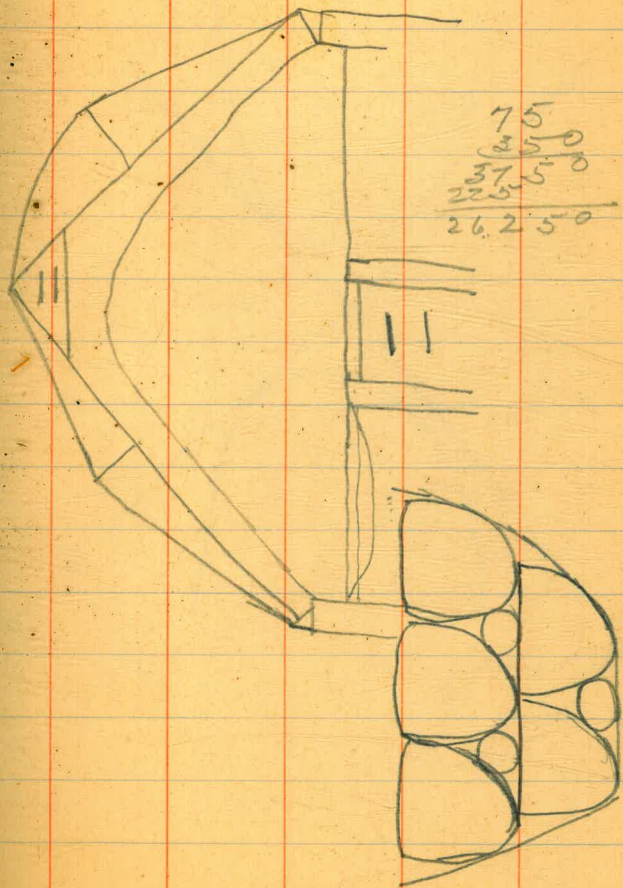
Finish 3:55 A.M.

Yds. 5



Mr. Snyder.  
Mgr. 12<sup>th</sup> Civil Service Dist.  
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79



75  
350  
3750  
225  
26,250

