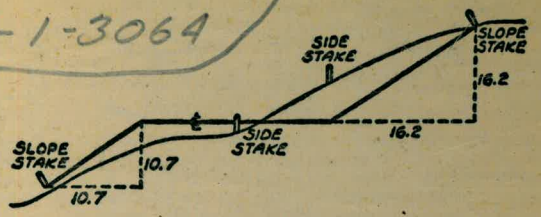
#763 -2

R.W. DARBY
T-1-3064



Distances from Side Stakes for Cross-Sectioning

Slope 1 to 1. Roadway of Any Width

	0	.1	.2	.3	.4	.5	.6	.7	.8	9	
0	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	0
1	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	1
2	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	2
3	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90	3
4	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	4
5	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	5
6	6.00	6.10	6.20	6.30	6.40	6.50	6.60	6.70	6.80	6.90	6
7	7.00	7.10	7.20	7.30	7.40	7.50	7.60	7.70	7.80	7.90	7
8	8.00	8.10	8.20	8.30	8.40	8.50	8.60	8.70	8.80	8.90	8
9	9.00	9.10	9.20	9.30	9.40	9.50	9.60	9.70	9.80	9.90	9
10	10.00	10.10	10.20	10.30	10.40	10.50	10.60	10.70	10.80	10.90	10
11	11.00	11.10	11.20	11.30	11.40	11.50	11.60	11.70	11.80	11.90	11
12	12.00	12.10	12.20	12.30	12.40	12.50	12.60	12.70	12.80	12.90	12
13	13.00	13.10	13.20	13.30	13.40	13.50	13.60	13.70	13.80	13.90	13
14	14.00	14.10	14.20	14.30	14.40	14.50	14.60	14.70	14.80	14.90	14
15	15.00	15.10	15.20	15.30	15.40	15.50	15.60	15.70	15.80	15.90	15
16	16.00	16.10	16.20	16.30	16.40	16.50	16.60	16.70	16.80	16.90	16
17	17.00	17.10	17.20	17.30	17.40	17.50	17.60	17.70	17.80	17.90	17
18	18.00	18.10	18.20	18.30	18.40	18.50	18.60	18.70	18.80	18.90	18
19	19.00	19.10	19.20	19.30	19.40	19.50	19.60	19.70	19.80	19.90	19
20	20.00	20.10	20.20	20.30	20.40	20.50	20.60	20.70	20.80	20.90	20
21	21.00	21.10	21.20	21.30	21.40	21.50	21.60	21.70	21.80	21.90	21
22	22.00	22.10	22.20	22.30	22.40	22.50	22.60	22.70	22.80	22.90	22
23	23.00	23.10	23.20	23.30	23.40	23.50	23.60	23.70	23.80	23.90	23
24	24.00	24.10	24.20	24.30	24.40	24.50	24.60	24.70	24.80	24.90	24
25	25.00	25.10	25.20	25.30	25.40	25.50	25.60	25.70	25.80	25.90	25
26	26.00	26.10	26.20	26.30	26.40	26.50	26.60	26.70	26.80	26.90	26
27	27.00	27.10	27.20	27.30	27.40	27.50	27.60	27.70	27.80	27.90	27
28	28.00	28.10	28.20	28.30	28.40	28.50	28.60	28.70	28.80	28.90	28
29	29.00	29.10	29.20	29.30	29.40	29.50	29.60	29.70	29.80	29.90	29
30	30.00	30.10	30.20	30.30	30.40	30.50	30.60	30.70	30.80	30.90	30
31	31.00	31.10	31.20	31.30	31.40	31.50	31.60	31.70	31.80	31.90	31
32	32.00	32.10	32.20	32.30	32.40	32.50	32.60	32.70	32.80	32.90	32
33	33.00	33.10	33.20	33.30	33.40	33.50	33.60	33.70	33.80	33.90	33
34	34.00	34.10	34.20	34.30	34.40	34.50	34.60	34.70	34.80	34.90	34
35	35.00	35.10	35.20	35.30	35.40	35.50	35.60	35.70	35.80	35.90	35
36	36.00	36.10	36.20	36.30	36.40	36.50	36.60	36.70	36.80	36.90	36
37	37.00	37.10	37.20	37.30	37.40	37.50	37.60	37.70	37.80	37.90	37
38	38.00	38.10	38.20	38.30	38.40	38.50	38.60	38.70	38.80	38.90	38
39	39.00	39.10	39.20	39.30	39.40	39.50	39.60	39.70	39.80	39.90	39
40	40.00	40.10	40.20	40.30	40.40	40.50	40.60	40.70	40.80	40.90	40
41	41.00	41.10	41.20	41.30	41.40	41.50	41.60	41.70	41.80	41.90	41
42	42.00	42.10	42.20	42.30	42.40	42.50	42.60	42.70	42.80	42.90	42
43	43.00	43.10	43.20	43.30	43.40	43.50	43.60	43.70	43.80	43.90	43
44	44.00	44.10	44.20	44.30	44.40	44.50	44.60	44.70	44.80	44.90	44
45	45.00	45.10	45.20	45.30	45.40	45.50	45.60	45.70	45.80	45.90	45
46	46.00	46.10	46.20	46.30	46.40	46.50	46.60	46.70	46.80	46.90	46
47	47.00	47.10	47.20	47.30	47.40	47.50	47.60	47.70	47.80	47.90	47
48	48.00	48.10	48.20	48.30	48.40	48.50	48.60	48.70	48.80	48.90	48
49	49.00	49.10	49.20	49.30	49.40	49.50	49.60	49.70	49.80	49.90	49
50	50.00	50.10	50.20	50.30	50.40	50.50	50.60	50.70	50.80	50.90	50

Distance of slope stake from side or shoulder stake for any width roadway, slope 1 to 1. If ground is nearly level, the cut or fill at side stake is located by the double entry method in left column and top row. The number in body of table in same row and column gives distance from side stake to slope stake. If ground is not level estimate the difference in elevation between the side stake and slope stake, lower target by this amount if cut, elevate if fill. Add this amount to cut or fill and find distance in table. Set up rod at this point, and line of sight should cut target. If it does not make the slight adjustment necessary.

134 AT 3:50
AT 4:20
30 min.

106
4
424
53
477

146
4
584
73
657

102
4
408
51
459
510

15
12/190
12
70
60
10

98
4
392
49
441

26
12/314
24
74
72

DIRECTIONS FOR USE OF TABLES

TABLE No. XIV

Distance of slope stake from side or shoulder stake for any width roadway, slope 1½ to 1. If ground is nearly level, the cut or fill at side stake is located by the double entry method in left column and top row. The number in body of table in same row and column gives distance from side stake to slope stake. If ground is not level estimate the difference in elevation between the side stake and slope stake, lower target by this amount if cut, elevate if fill. Add this amount to cut or fill and find distance in table. Set up rod at this point, and line of sight should cut target. If it does not make the slight adjustment necessary.

TABLE No. VIII

To find Tangent and External for curve of any other degree, divide by degree of curve and add correction found in column of corrections. Degree of curve with a given I may be found by dividing tangent, (or external), opposite I by given tangent, (or external).

The distance from a point on the tangent to the curve is very nearly the square of the tangent length divided by twice the radius.

763-2

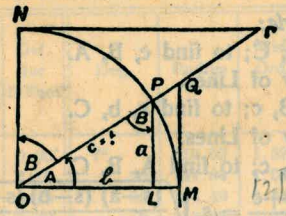


TABLE II

TRIGONOMETRIC FORMULÆ.

$\angle A = \angle MOP \qquad \angle B = \angle PON = \angle OPL$

$R = OB = c = 1$

$$\sin A = \frac{a}{c} = \frac{a}{1} = a = \text{sos } B = LP$$

$$\text{sos } A = \frac{b}{c} = \frac{b}{1} = b = \sin B = OL$$

$$\tan A = \frac{a}{b} = \frac{MQ}{OM} = \frac{MQ}{1} = MQ = \cot B = MQ$$

$$\cot A = \frac{NT}{ON} = \frac{NT}{1} = NT = \tan B = NT$$

$$\sec A = \frac{OQ}{OM} = \frac{OQ}{1} = OQ = \csc B = OQ$$

$$\csc A = \frac{OT}{ON} = \frac{OT}{1} = OT = \sec B = OT$$

$$\text{vers } A = \frac{LM}{OP} = LM = \text{covers } B$$

$$\text{covers } A = \frac{OP - LP}{OP} = OP - LP = \text{vers } B$$

$\text{exsec } A = PQ = \text{coexsec } B$

$\text{coexsec } A = PT = \text{exsec } B$

$$\sin \tfrac{1}{2} A = \sqrt{\frac{1 - \text{Cos } A}{2}} \qquad \cos \tfrac{1}{2} A = \sqrt{\frac{1 + \text{Cos } A}{2}}$$

$\sin 2A = 2 \sin A \cos A \qquad \cos 2A = \cos^2 A - \sin^2 A$

Law of Lines $\dfrac{\sin A}{a} = \dfrac{\sin B}{B} = \dfrac{\sin C^1}{C}$

Law of Cosines $c^2 = a^2 + b^2 - 2ab \cos C$

Law of Tangents $\dfrac{a+b}{a-b} = \dfrac{\tan \frac{1}{2}(A+B)}{\tan \frac{1}{2}(A-B)}$

TABLE XIII—CORRECTIONS FOR TANGENTS AND EXTERNALS

These corrections are to be added to the approximate values, found by dividing the tangent, or external, for a 1° curve (Table VIII) by the degree of curve, in order to obtain the true tangents, or externals. Intermediate values may be obtained by interpolation.

FOR TANGENTS ADD

Central Angle	Degree of Curve													
	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°
10°	03	.06	09	13	16	19	.22	.25	.28	.31	34	38	42	.46
15°	04	10	14	19	24	.29	.34	.39	45	.51	.53	58	.63	.68
20°	06	.13	19	.26	.32	.39	.45	.51	.58	.65	.72	79	.84	.90
25°	.08	16	24	.33	40	49	.58	67	.75	.83	90	.99	1.06	1 14
30°	10	19	.29	39	49	.59	.69	79	.89	.99	1.09	1.20	1.29	1.39
35°	11	22	.34	47	.58	.69	.70	.81	.92	1.04	1.29	1.42	1.54	1.66
40°	13	.26	.40	.53	.67	.80	.93	1.06	1.20	1.34	1.49	1.64	1.79	1.94
45°	15	.30	44	60	76	91	1.06	1.21	1.37	1.52	1.70	1.87	2.04	2.21
50°	17	.34	.51	.68	.85	1.02	1.19	1.36	1.54	1.72	1.91	2.10	2.29	2.48
55°	19	38	.57	76	.95	1.14	1.32	1.52	1.72	1.92	2.14	2.35	2.56	2.77
60°	.21	42	.63	.84	1.05	1.27	1.49	1.71	1.94	2.17	2.38	2.60	2.83	3.07
65°	23	46	.69	.93	1.16	1 40	1.64	1.88	2.13	2.38	2.63	2.88	3.13	3.39
70°	25	.51	76	1.02	1.28	1.54	1.80	2.06	2.33	2.60	2.88	3.16	3.44	3.72
75°	.27	.56	.83	1.12	1.40	1.69	1.98	2.27	2.57	2.87	3.16	3.47	3.78	4.09
80°	30	.61	.91	1.22	1.53	1.84	2.15	2.46	2 78	3.10	3.44	3.78	4.12	4.46
85°	33	66	1.00	1.33	1.68	2.02	2.36	2 70	3.05	3.40	3.77	4.14	4.55	4 89
90°	36	.72	1.09	1.45	1.83	2.20	2.57	2.94	3.32	3.70	4.10	4.50	4.91	5.32
95°	39	79	1.19	1.55	2.00	2.40	2.80	3.20	3.61	4.02	4.40	4.98	5.38	5.83
100°	43	.86	1.30	1.74	2.18	2.62	3.06	3.50	3.95	4.40	4.88	5.37	5.85	6.34
110°	51	1.03	1.56	2.08	2.61	3.14	3.67	4.21	4 76	5.31	5 86	6.43	7 01	7 60
120°	62	1.25	1 93	2.52	3.16	3.81	4 45	5.11	5.77	6 44	7 12	7.80	8.50	9 22

FOR EXTERNALS ADD

Central Angle	Degree of Curve													
	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°
10°	.001	.003	.004	.006	.007	.008	.009	.011	.012	.014	.015	.017	.018	.020
15°	.003	.007	.010	.014	.018	.023	.027	.029	.032	.035	.039	.043	.047	.051
20°	.006	.011	.017	.022	.028	.034	.038	.045	.051	.057	.063	.070	.076	.083
25°	.009	.018	.027	036	.046	.056	.065	.074	.083	.093	.106	120	127	135
30°	.013	.025	.038	.051	.065	.078	.090	.103	.116	.129	.149	.170	.179	.188
35°	.018	.035	.054	.072	.086	.109	.131	.153	.175	.197	.213	.230	.247	.264
40°	.023	.046	.070	.093	.117	.141	.172	.203	.234	.265	.277	.290	.315	.341
45°	.030	.060	.093	.119	.153	.184	.216	.254	.289	.325	.351	.378	.411	.445
50°	.037	.075	.116	.151	.189	.227	.266	.305	.345	.384	.425	.467	.508	.550
55°	.046	.093	.142	.188	.236	.283	.332	.381	.420	.479	.530	.582	.641	.700
60°	.056	.112	.168	.225	.283	.340	.398	.457	.516	.575	.636	.697	.774	.851
65°	.067	.135	.204	.273	.343	.412	.483	.554	.625	.697	.711	.845	.922	1.01
70°	.080	.159	.240	.321	.403	.485	.568	.652	.735	.819	.906	.994	1.08	1.17
75°	.095	.182	.286	.383	.480	.578	.678	.777	.877	.977	1.07	1.18	1.29	1.39
80°	.110	.220	.332	.445	.558	.671	.787	.903	1.02	1.13	1.25	1.38	1.50	1.62
85°	.128	.259	.391	.524	.657	.790	.926	1.06	1.20	1.34	1.47	1.62	1.76	1.91
90°	.149	.299	.450	.603	.756	.910	1.07	1.22	1.38	1.54	1.70	1.87	2.03	2.20
95°	.174	.350	.522	.706	.985	1.06	1.25	1.43	1.62	1.80	1.99	2.18	2.38	2.58
100°	.200	.401	.604	.809	1.01	1.22	1.43	1.64	1.85	2.06	2.28	2.50	2.73	2.96
110°	.268	.536	.806	1.08	1.35	1.63	1.91	2.20	2.48	2.76	3.05	3.35	3.66	3.96
120°	.360	.721	1.08	1.45	1.82	2.19	2.57	2.95	3.33	3.72	4.11	4.50	4.91	5.32

El Capitan Dam Spillway
Slide 1-271-9

F

10/18/48 Monday
1½ Yd shovel worked 8 hrs.

Inspector not on job. Contractor didnt contemplate working because of rain

10/19/48 Tuesday
1½ Yd shovel 8 hrs
1 Truck 8 hrs
1 Truck 3 hrs
2 Truckdrivers, 1 shovel operator, 1 oiler, 1 Powderman
Picked crackmonuments #4 - 48½"
#5 - 48½" #6 - 60¼" #7 - 75 3/4"

10/20/48 Wednesday
1½ Yd shovel 8 hrs
2 Trucks 8 hrs each
Same crew as 10/19/48
Brought up Thi Struck Truck

broke down at bottom of fill
way grade (mag trouble). Towed
it to job after 4:30. Checked crack
monuments - no change

10/21/48 Thursday

1 - 1½ yd shovel 7¼ hrs
2 - Trucks 7¼ hrs ea.
Put 3rd truck in operation
Hoist broke first trip held up
job ¾ hrs dumping load.
Mr. Hill here.
1 shovel operator
3 Truck drivers
1 oiler
1 powder man who quit
at end of day. Mr. Watson
had him cutting brush.
3 Truck drive worked on broken
Truck

10/22/48 Friday

1 - 1½ yd shovel 8 hrs
2 - Trucks 8 hrs ea
Crew - same
Mr Watson left 3 PM.

10/25/48 Monday

1 - shovel 8 hrs
2 - trucks 8 hrs
same crew + one new
truck driver. 1 extra
driver.
Mr. Broadhurst - Forest Ranger here
checking proposed disposal of
brush on tops of bank

10/26/48 Tuesday

1 - 1½ Yd shovel 7¼ hrs

2 - Trucks 7¼ hrs

Started drilling rocks - drilled 24 holes - 20" deep. Depth not complete Mr. Hill here, advised To be more critical of break downs, due to the poor grade of equipment being used by contractor

10/27 Wednesday

1 - 1½ Yd shovel 8

2 - Trucks 8 EA

144 sticks in 50 lb box of dynamite

3rd Truck started operating 2 P.M. not working good enough to use yet.

Dept of holes started yesterday & ready to charge

No	IN DEEP	No	INS. DEEP
1 -	10	16 -	18
2 -	36	17	44
3 -	20	18	36
4	20	19	42
5 -	20	20	29
6 -	20	21	36
7 -	42	22	18
8 -	36	23	27
9 -	43	24	20
10 -	43		710"
11 -	43		
12 -	29		
13 -	18		
14 -	40		
15 -	20		

THESE HOLES IN 16 BOULDERS

Pay for 700 ins. did not use #1 hole.

Loaded the 24 holes with 30 sticks of dynamite

10/27 Continued

Used 24 exploders

Mr Spielman the State Dam Inspector here. He thought some of material using on spillway floor for a cushion was a little large

Watson says we will take most of large ones out when we Bulldoze it

10/28/30 Thursday

1 - 1½ Yd shovel 8

2 - Trucks 8 ea

1 - " 5 hr

#3 truck started operating at 11 A.M.

One jackhammer man added to crew.

Recd Bal. of 2000# Dynamite

Watson got 150# previously

1500# 20%

500# 40%

No	Depth	Sticks Used	No.	Depth	Sticks Used
1	22	1	13	10	1
			14	25	1
2	37	1½	15	22	1
			16	26	1
3	44	1	17	27	1
			18	24	1
4	43	1½	19	29	1½
			20	24	1½
5	44	1½	21	23	1
			22	[27'] -	1
6	32	1½	23	25	1½
			24	24	1½
7	23	1	25	24	1½
			26	37	1
8	39	1	27	47	1½
			28	23	1
9	36	1	29	22	1
			30	22	1
10	39	1½	31	34'	1
			32	30'	1
11	42	1½	TOTAL	922'	38
12	23	1		77 FT.	

#27 hole no charge as it was drilled at some previous time
#3 Truck stopped at 4 P.M.

10/29/34 Friday

1 shovel	6 hrs
3 Trucks	17 hrs
25 HOLES	68 F

3rd truck started at 9 AM
Cable broke on shovel shortened & used while Watson went to town. Broke
Jet loose twice before he got back.
Down once to put new ¾ cable on. All equipment down 2 hrs
10:50 - 12 M. 2 PM - 2:20 3 PM - 3:30 PM

HOLE No	DEPTH.	STICKS DYN. USED	
1	20	1½	Watson got back
2	40	1½	from town too
3	44	1½	late to load + shoot
4	22	1	holes will do it Sat.
5	43	1½	as will hold up work
6	44	1½	
7	44	1½	if left until Mon
8	36	1	
9	44	1	
10	35	1	
11	33	1	
12	28	1	
13	33	1	
14	22	1	
15	30	1	
16	30	1	
17	42	1	
18	22	1	
19	28	1	
20	31	1	
21	34	1	
22	27	1	
~~23~~	~~28~~		
~~24~~	~~31~~		
23	27	1 / 26 sticks	
Total.	759	÷ 12 = 63'3"	

10/30/48 Sat.

Loaded & shot 23 holes total
depth 6'3" with 26 sticks
of dynamite

11/1/48 Monday

1 - shovel	7½
3 Trucks	19½ hrs

Work held up ½ hr while dipper on shovel was reassembled after Sat repairs

3 Truck quit at 1 PM. Transmission stuck in reverse started again at 1:45 PM

Checked crack monuments. No change

Mr. Hill here and requested I keep track of no of loads hauled. Also informed Watson that election day was a time and half day regardless of what the union holidays are

11/3/48

1 shovel	7½
3 trucks	21 3/4

Contractor worked on shovel yesterday and had bucket off this morning

Mr Burmann, Mr Hill & Mr. Rankin here. Desired fill on floor to be more carefully graded and kept as fine grained as possible

HOLES DRILLED + EXPLODED 46% DYNAMITE

No.	DEPTH	
1	22	one stick a piece
2	21	
3	22	
4	22	
5	20	
6	22	
7	21	
8	34	
9	35	
10	35	
11	30	
12	20	
13	22	
14	22	
15	21	
16	29	
17	26	
18	42	
19	45	
20	31	
21	36	
22	36	
23	37	
24	36	
25	44	
26	21	
27	21	
28	26	
29	18	
	827 : 69 ft.	

1 elect exploder for each hole 29

Moved a total of 122 loads of debris or approx 610 yds today In 4 hrs time there was a loss of approx 2 hrs time for 1 truck by having 3 trucks operating One Leak

11/4/48 Thursday

Moved 111 loads or 500 yds

1 Shovel 8 hrs

3 Trucks 22½ hrs should be 22½ hrs

Mr Hill here

Union Walking Delegate replaced Fritz.

11/5/48

Shovel 7 1/4

Trucks 11 3/4

Moved 74 truck loads of debris

Very poor day due to break downs. One truck had a bad magnito and never did start. One had poor compression and couldnt be started after it had stalled for 1½ hrs.

One truck had transmission trouble.

The shovel was down 3/4 hrs because of track trouble.

Watson wasn't satisfied with truck times called for a break down of time

74 x 5 Yds = 370

	HOLES	DR.	STKS DYNM
1	29		1
2	22		1
3	22		1
4	34		1
5	38		1
6	43		1
7	29		1
8	33		1
9	33		1
10	35		1
11	35		1
12	35		1
13	34	426	1
14	29		1
15	29		1
16	35		1
17	29		1
18	32		1½
19	35		1½
20	35	295	1½
21	35	721	1
22	36		1
23	36		1½
24	22		1
25	35		1
26	24		1
27	22	164	1
28	22	881	1
	881		30

11/8 Monday

Shovel 8 hrs

Trucks 16 hrs.

Moved 115 loads.

Work held up 10 minutes twice because of broken lever in shovel Dave Watson break down of truck time seemed satisfied

Ask driller (friend of Romeco's) if contractor was having holes drilled in rock closer than necessary. He said no.

The reason for 52 loads in AM AND 63 IN PM WAS Difference in material handled

549 Yds handled

11/9/48 Tuesday

1 Shovel	8
3 Trucks	16

Very cold this morning ~~& equipment~~ men slow to get operating.

Material refused to slack & for safety reasons spent time to build a ramp up to a bench at E 4980

Moved 82 loads 4 3/4 yds. each 383 yds

11/9/48

No	DEPTH	No	DEPTH
1	24	30	36
2	23	31	32
3	24	32	33
4	10	33	18
5	18	34	39
6	31	35	33
7	33	36	22
8	23	37	22
9	21	38	22
10	24	39	18
11	18	40	27
12	23	41	30
13	23	42	35
14	24	43	24
15	22	44	30
16	22	45	36
17	23	46	28
18	18		485
19	23		
20	17		
21	23		
22	16		
23	21		
24	22		
25	24		
26	22		
27	22		
28	28		
29	22		
	647		

485
647
1129
108
1021

94 hole

49
48

11/10/48 Wednesday

1. Shovel 7 hrs
2. Trucks 14 hrs

90 - 4 3/4 Yds loads or 427 Yds moved

Shovel broke at 3:30 PM.

11/12

One man worked at digging ditch. The rest of crew worked on shovel replacing center pin. Inspector stayed half day.

11/15

Watson, one truck driver and Air tool operator on job. AIRMAN digging ditch. others working on Shovel

11/16

WATSON - 2 Drivers - Airtool man. Took center pin & nut to town at noon. Air tool man digging ditch. Mr Buncasel here from OF Nelson Co. Didn't think oiling practical. Oil couldn't be delivered to point of Application to do any good - requires temp of 200° F.

Watson agreed that any future dumping should be farther west

11/17

WATSON - 2 TRUCK drivers

1 AIR tool operator - digging ditch

Visitors - Mr. Hill - Mr. RANKIN - Mr Spielman - colleague stated Mr Shelton - Irrigation dist Mr. Spielman better satisfied with materials being dumped on spillway floor. Mr Hill requests to divert ing last W. 25' of ditch to avoid rocks

11/18 1409

WATSON - 2 TRUCK drivers - 1 AIR tool operator

Told Mr Watson that Mr. Beermann did not WANT pyramid rock located at E 5010 at top of NORTH cement wall shot.

Mr Hill here - suggested widning ditch where rocks protruded, picking up loose debris, seeing fire warden for approval of stacks of BRUSH, cutting out brush between rocks.

11/19 Super - Operator - Oiler
2-Truck drivers - Airtool operator
Worked on Shovel - Finished
Laying pipline to top of hill.
Drilled 12 holes in rocks &
ES300

11/22 Super - Shovel Operator
2 Drivers - Airtool operator
Oiler didn't show up.
Moved 91 loads of debris &
Exploded 34 FT. of hole - 15 holes
in 8 boulders
91 x 4 3/4 = 432 Yds

ONE STICK EACH

1	23
2	36
3	36
4	22
5	16
6	36
7	44
8	37
9	21
10	23
11	16
12	21
13	20
14	35
15	23

11/23 Tuesday
Super., Operator, Oiler, 2 Truck
drivers, Airtool operator
started 11:20 AM. Band trouble
Stopped 3:30 PM Gear came off.
Moved 52 - 4½ Yd. loads of
debris 234 Yds.

11/24 Super, - Operator, Oiler 2 Truck
drivers, Airtool Operator
Stopped 10:25 started 11:05 pin
came out of knuckel.

11/24 Wednesday

Moved 118 - 4½ Yd. Loads 531 Yds.
Drilled 23 holes. On Daily report
mentioned I thought Contractor
drilling & shooting more rocks
than necessary

11/26 showers Super, Operator, Oiler, 3 Truck
Drivers, Airtool Operator.
#3 truck off 8:30 - 9:05 AM.
Talked to Shovel man concerning
size of rock. He said was not loading
larger ones due to poor condition of
bands. Bands working a little better
to day and loading some fair size rock
Shovel down 3:00 PM. Carburator trouble
Shovel operating 4:07 PM
142 - 4½ Yd Loads - 439 Yds

11/26

HOLES Drilled & Exploded

	STICKS		STKS
1. 41	2	21	24
2 40	2	22	39 - 2
3 44	2	23	23
4 44	2	24	24
5 21		25	23
6 36	2	26	31
7 40	2	27	32
8 44	2	28	35 - 2
9 24		29	23
10 44	2	30	34
11 41	2	31	24
12 31		32	34
13 43	2	33	32
14 23		34	24
15 24		35	33
16 23		36	20
17 24		37	33
18 24		38	30
19 23		39	24
20 24		40	23
658			565
			658
			1223 = 102 FT.

11/29/48 Monday

Watson - Shovel operator - Oiler
3 truck drivers - Air tool operator
7½ hrs Shovel
19½ Trucks
Moved 165 - 4¾ Yd Loads total
783 Yds.
Mr Hill here spoke of excessive drilling particulary of one soft rock with 2 holes in. I spoke to Mr Watson & he agreed not to charge for the rock in question but held fast to his opinion that it was just if rable to shoot any rock that wouldn't go through dipper
Drilled 23 Ft in 8 rocks.
Mr Watson & I measured ditch 335 Ft

Holes Drilled

1	48	5	24
2	44	6	29
3	39	7	30
4	44	8	24
	172		107
			172
			279 ins 23' 3"

11-30-48

Watson - Shovel Oper. - Oiler
3 Truck Drivers - Airtool Oper.
Shovel - 7 Hours.
Trucks - 21 Hours.
Moved 141 - 4½ Yd Loads -
or 634½ Yds.
Mr Speilman & Mr Marlowe of the State were here on an Inspection of the Slide area.
Mr Speilman showed me where he thought it would be well to

set a couple of Hubs in order to check against the Movement of the embankment.

DATE	SHOVEL	TRUCKS	STKS DYNAMITE	FT HOLES	EXPLODERS	HOLES SHOT	DAYS CHARGES	67.50 125.00 CUMULATIVE
10/18	8	—					94 00	286 50
10/19	8	11					139 65	426.15
10/20	8	16					160 40	586.55
10/21	7¼	14½					145 37	731 92
10/22	8	16					160 40	892 32
10/25	8	16					160 40	1052.72
10/26	7¼	14½					145 37	1198.09
10/27	8	16	30	59	24	24	316 81	1514.89
10/28	8	21	38	77	32	32	386 43	1901.32
10/29	6	17		63			251 30	2152.62
10/30			26		23	23	50 50	2203.12
	76½	142	94	199	79	79		
11/1	7½	6 3 19½					169 04	2372.18
11/3	7½	21¾	3 29	2 69	3 29	29	362 14	2734.32
11/4	8	22½					187 38	2921.70
11/5	7¼	11¾	30	73	28	28	322 86	3244.56
11/8	8	16					160 40	3404.96
11/9	8	16	46	94	46	46	424 13	3828.02 89
11/10	7 DITCH	14					140 35	3968.37
11/12	— 100	—					90 —	4058.37
11/15	— 103	—					92 70	4151.07
11/16	82						73 80	4224.87
11/17	25						22 50	4247.37
11/18	25						22 50	4269.87
11/19								
11/22	8	16	15	34	15	15	255 06	4524.93
11/23	3½	7					70 18	4595.11
11/24	7½	15					148 38	4743.49
11/26	7	20½	52	102'	40	40	434 77	5178.26
11/29	7½	19½		23'			209 30	5387.56
11/30 *	~~8~~ 7 -93¾	~~14~~ 21 -220½	~~8~~ -172 0		~~8~~ -158 0	~~8~~ -158 0	210 98	5598.54
Total mo.	94¾ 335	223½	180	395	166	166		
Grand Tot	171¼ 335	365½	274	594	245	245		5599.60
	171¼	362½	266		237	237		

Total Debris Moved
up to 11-30-48
= 14,100 Yds. (Sr.

Date	11.75 1-Shovel	4.15 3-Trucks	.174 #Sticks 40% Dynamite	.25 Lbs. of 20% Dynamite	1.75 Foot Holes	.50 #Caps	1.50 #Holes Shot	Days Charges	Charges to Date
Dec 1, 1948	3½	10½	6		27½	4	4	141.86	5741.46
Dec 2, 1948	7	21	–		–	–	–	169.40	5910.86
Dec 3, 1948	8	24	9		–	8	8	211.17	6122.03
Dec 6, 1948	7½	20	–		21½	–	–	208.75	6330.78
Dec 7, 1948	7½	22½	17		–	17	17	218.46	6549.24
Dec 8, 1948	6½	19½	–		–	–	–	157.30	6706.54
Dec 9, 1948	8	17	57	50	97½	36	36	428.09	7134.63
Dec 10, 1948	8	16	74	50	–	2	2	199.78	7334.41
Dec 13, 1948	7½	14	66	–	131½	42	42	471.83	7806.24
Dec 14, 1948	8	23½	104	–	63	22	22	363.87	8170.11
Dec 15, 1948	8	16	18	–	20½	6	6	211.41	8381.52
Dec 16, 1948	8	15	–	–	–	–	–	156.25	8537.77
Dec 17, 1948	8	24	14	–	28½	11	11	267.91	8805.68
Dec 20, 1948	7	18	–	–	–	–	–	156.95	8962.63
Dec 21, 1948	6½	15½	–	–	–	–	–	140.70	9103.33
Dec 22, 1948	2½	7½	152	–	139	30	30	390.20	9493.53
Dec 27, 1948	7	14	40	–	59½	22	22	295.44	9788.97
Dec 28, 1948	8	15½	–	–	–	–	–	158.32	9947.29
Dec 29, 1948	7½	14	17	–	39	13	13	243.43	10190.72

DATE	11.75 SHOVEL 134	4.15 3 TRUCKS 327½	1.75 LIN. FT OF HOLES 627½	2.50 OVER 15'	1.50 HOLES SHOT 213	.50 CAPS USED 213	.174 STICKS 40% 374	.25 POUNDS 20% 100	DAYS CHARGES	TOTAL CHARGES
12-30-48	8	14	108½	—	31	31	88	—	419.29	10,610.01
12-31-48	8	16	67	—	28	28	31	—	339.04	10,949.05
DECEMBER	150	357½	803	—	272	272	693	100	5340.96	
1-3-49	7½	13½	—	—	—	—	—	—	144.15	11,093.20
1-4-49	6	11½	—	—	—	—	—	—	118.23	11,211.43
1-5-49	4½	8½	—	—	—	—	—	—	88.15	11,299.58
1-6-49	8	16	—	—	—	—	—	—	160.40	11,459.98
1-7-49	8	16	—	—	—	—	—	—	160.40	11,620.38
1-10-49	1	1	—	—	—	—	—	—	15.90	11,636.28
1-12-49	6½	11½	—	—	—	—	—	—	124.10	11,760.38
1-17-49	8	15½	25	—	11	11	11	—	225.99	11,986.37
1-18-49	8	14	—	—	—	—	—	—	152.10	12,138.47
1-19-49	8	7½	—	—	—	—	—	—	125.13	12,263.60
1-20-49	4	—	—	—	—	—	—	—	47.00	12,310.60
1-24-49	6	2½	—	—	—	—	—	—	80.87	12,391.47
1-25-49	5½	2½	—	—	—	—	—	—	75.00	12,466.47
JANUARY	81	120	25		11	11	11	—	1517.41	
By Hill			530'	150'						

O* - OMITTED, LIN. FT.
L** - LOST, LIN. FT.

DATE	11.75 SHOVEL	4.15 TRUCKS	1.75 HOLES, LESS 15'	2.50 HOLES, OVER 15'	1.50 SHOT	.50 CAPS	.347 lbs .50 lbs. 40%	.25 lbs 20%	DAYS CHARGES	TOTAL CHARGES
FEB 3, 1949	–	–	–	–	4	4	10	–	13.00	12,479.47
FEB 9, 1949	–	–	155'	15'	19	19	60	300	451.75	12,931.22
FEB 10, 1949	–	–	84'	25'	12	12	35	265	317.25	13,248.47
FEB 11, 1949	–	–	120'	26'	16	16	40	588	474.00	13,722.47
FEB 15, 1949	–	–	139½	40'	20	20	56	475	530.88	14,253.35
FEB 16, 1949	–	–	40	–	14	14	7	–	101.50	14,354.85
FEB. 17, 1949	–	–	O* - 174.5 L** - 105.0	37 35	–	–	–	–	669.13	15,023.98
FEB. 18, 1949	–	–	104	–	36	36	19	–	263.50	15,287.48
FEB. 21, 1949	8	14.5	–	–	–	–	–	–	154.17	15,441.65
FEB. 23, 1949	8	15.5	–	–	–	–	–	–	158.33	15,599.98
FEB. 24, 1949	8	14	–	–	–	–	–	–	152.10	15,752.08
FEB 25, 1949	8	14½	120	–	35	35	30	–	449.18	16,201.26
FEB 28, 1949	7½	13½	63½	–	–	–	–	–	255.27	16,456.53
	39½	72	1105½	178	156	156	257	1628		
Error Last Month →		+8	-530	-150	← Added by Hill Last Month.					
		80	575½	28						

Date	11.75 Shovel	4.15 Trucks	1.75" Holes 15' or less	2.50 Portion over 15'	1.50 Shot	.50 Caps	.50 lbs. 40%	.25 lbs 20%	Days Charges	Total Charges.
March 1, 1949	6½	13	106½	–	58	58	42	–	453. 70	16,910.23
March 2, 1949	7	13	–	–	–	–	–	–	136. 20	17,046.43
March 3, 1949	7½	14	148	–	44	44	21	–	499. 73	17,546.16
March 4, 1949	7	13½	75½	–	30	30	10	–	335. 15	17,881.31
March 7, 1949	8	14	–	–	–	–	–	–	152. 10	18,033.41
March 8, 1949	8	13½	45½	–	14	14	8	–	261. 65	18,295.06
March 9, 1949	8	15½	99	–	31	31	16	–	401. 57	18,696.63
March 10, 1949	3½	3	–	–	–	–	–	–	43. 58	18,740.21
March 11, 1949	2½	2	58½	–	–	–	–	–	37. 67	18,777.88

12-1-48 - Wednesday

Watson - Shovel Oper - Oiler -

3 Truck Drivers - Airtool Oper.

Shovel - 3½ Hours

Trucks - 10½ Hours

Holes Drilled

1 - 24" - 1 stk
2 - 38" - 2 stk
3 - 31" - 1 stk
4 - 44" - 2 stk
5 - 24" -
6 - 24" -
7 - 36" - "
8 - 36" - "
9 - 24" - "
10 - 24" -
11 - 24" -
~~12 - 30"~~ ~~(Lost)~~ OUT

~~359"~~
329

24
38
31
44
138

11½

30
2½
27½
21
62

27' - 5" ~~30'~~

12) 329
24
089
84
115

27½'

49'
11½
37½
36'10"

Shot 4 holes using 6 Stks.

Mechanical Trouble with the Shovel.

Moved 68 - 4½ Yard Loads for a total of 306 Yards. from area E 5040 & E-5080

12-2-48 - Thursday

Watson - Shovel Oper - 3 Truck Drivers 1 - Airtool Oper -

Repairing of Shovel held up operations until 9:00 AM.

Shovel - 7 hours

Trucks - 21 hours.

L. Hill here for an hour towards the end of the day - Talked with Mr Watson.

Moved 160 - 4½ Yd Loads for a total of 720 Yds. E-5040 & E 5080

Set Hubs for Checking Crack. Max #8 25'

12-3-48 Friday

Watson - Shovel Oper - Oiler

3 Truck Drivers - Airtool Oper.

1-Shovel - 8 hrs.

3-Trucks - 24 hrs.

Loaded Holes drilled on 11-29-48 and Shot Same.

1	2 Stks	5	1 Stks
2	1 "	6	1 "
3	1 "	7	1 "
4	1 "	8	1 "

Total Stks used = 9 - 1 1/8"x8" - 40%

Moved 177 - 4½ Yd Loads for a total of 796 Yds. E5080 & 5120

Removed from Job S.T. 1-5 Yd Truck. Repaires to be made in town.

12-6-48 Monday

Watson - Shovel Oper - Oiler

3 Truck Drivers - Airtool Oper.

~~Shovel~~ - Visit by Le Hill.

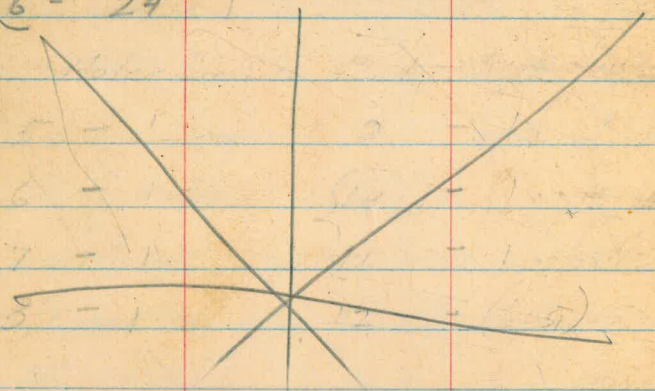
After walking up to the Driller who was setting up his equipment in preparation for drilling a rock to be shot, the Contractor Mr. E P Watson came up to me and informed me that if I had anything to say to come to him. He seemed quite angry - I informed him that I was not telling his man anything but asking him if he was going to drill the rock. Mr Watson then said to me "We will drill these holes as we see fit and You can measure the God damm holes after we are through." The Contractor put in 4 holes and I could see

CONTINUED
12-6-18 - MONDAY

where only 3 were needed. The Depth of the Holes was OK(2/5).

Holes Drilled:

1 - 30"	7 - 36"
2 - 24"	8 - 18"
3 - 24"	9 - 24"
4 - 30"	10 - 24"
5 - 24"	12)258"(21'-6"
6 - 24"	



1 - SHOVEL 7½ hrs
3 - TRUCKS 20 hrs

Moved 156 - 4½ Yd Loads for a total of 702 - Yds E 3200 & E 5210

12-7-18 - TUESDAY

WATSON - SHOVEL OPER - AIRTOOL OPER
3 TRUCK DRIVERS.

SHOT HOLES DRILLED ON 12-1-18 & ON 12-6-18.

12-1-18	12-6-18
5 - 1 STK	1 - 1 STK
6 - 1 STK	2 - 1 STK
7 - 1 STK	3 - 1 STK
8 - 1 STK	4 - 1 STK
9 - 1 STK	5 - 1 STK
10 - 1 STK	6 - 1 STK
11 - 1 STK	7 - 1 STK
~~12 - 1 STK~~ OUT	8 - 1 STK
17 HOLES	9 - 1 STK
17 CAPS	10 - 1 STK
17 STKS	

SHOVEL - 7½ HOURS
3 TRUCKS - 22½ HOURS

12-7-48 TUESDAY

MOVED 172 - 4½ Yd Loads for a total of 774 Yds - of these 60 Loads were placed as Cusion on the Spilling apron.

12-8-48 - WEDNESDAY

SHOVEL —	6½ hrs	TOTAL 210¼ hrs.
3 TRUCKS —	19½ hrs.	TOTAL 480 hrs.
Feet of Drill Holes	✓	TOTAL 6437.
No. Holes ~~SHOT~~ Loaded -	✓	TOTAL 266 Holes
No Caps Used -	✓	TOTAL 266 Caps
No Sticks Dynamite -	✓	TOTAL 298 Sticks.
DEBRIS MOVED -	635 Yds	TOTAL 18,033 Yds.

Shovel - Mechanical trouble 1 hr.

Rock from Slide dented Guard - 30 min.

Placed 90 Yds on Spillway discharge.

Due to the way the material stands it is becoming very dangerous.

12-9-48 - THURSDAY

SHOVEL -	8 hrs	TOTAL 218¼ Hrs.
3 TRUCKS -	17 hrs	TOTAL 497 Hrs
Feet of Holes -	97½	TOTAL 740½ LIN. FT.
No. Holes SHOT -	36	TOTAL 302 HOLES
No. Caps USED -	36	TOTAL 302 CAPS
No. Sticks DYNAMITE -	57	TOTAL - 355 STICKS 40%
lbs of 20% DYNAMITE =	50	TOTAL - 50 lbs.
DEBRIS MOVED -	563	TOTAL - 18,596 Yds

Shovel operator informed me the first thing this morning that unless some of the loose rock comes down in the area of E 5080 he will not remove any material from the area.

This Area to me is very hazardous as when the material does slide there is a large quantity of it within the slide.

Checked Mom. all OK

CONTINUED.

12-9-48 - THURSDAY

Holes Drilled 12-8 & 12-9 - Shot This Date:

Hole # - Depth - Stks		
1 - 34 - 1	13 - 24 - 1	25 - 28 - 1
2 - 24 - 1	14 - 25 - 1	26 - 33 - 1
3 - 34 - 1	15 - 38 - 2	27 - 33 - 2
4 - 22 - 1	16 - 60 - 4	28 - 34 - 2
5 - 19 - 1	17 - 43 - 2	29 - 36 - 2
6 - 23 - 1	18 - 41 - 1	30 - 25 - 1
7 - 23 - 1	19 - 39 - 1	31 - 26 - 1
8 - 37 - 1	20 - 62 - 3	32 - 23 - 1
9 - 23 - 1	21 - 61 - 4	33 - 20 - 1
10 - 22 - 1	22 - 49 - 5	34 - 25 - 1
11 - 34 - 1	23 - 43 - 3	35 - 25 - 1
12 - 24 - 1	24 - 60 - 3	35 - 1172" = 97'8"

Set 50 lbs of 20% Strength Dynamite behind rock to bring Slide down - Used 1 cap and 1 Stick of 40% Strength Dynamite to set off charge.

1 - Truck down from 9:15 AM to 2:15 PM - Bearing

1 - Truck down from 1:45 PM to 4:30 PM - Transmission -

12-10-48 - FRIDAY

Shovel - 8 Hours	Total 226 1/4 Hours
3 Trucks - 16 Hours	Total 513 Hours
Ft. of Holes - ✓	Total 740 1/2 Lin. Ft.
No. Holes Shot - 2	Total 304 Holes
No. Caps Used - 2	Total 304 Caps
No. Sticks 40% - 74	Total 429 Sticks 40%
Lbs. 20% - 50 lb.	Total 100 Pounds 20%
Debris Moved - 621 Yds.	Total 19,217 Yds

1 - 25 lb charge of 40% was set off behind and at the base of a Large rock Left way up the slide - Set off by 1-Cap & 1-Stick 40%

1 - 50 lb Charge of 20% was set off Later at a point just below the crest of the slide - This was buried about 3' in the loose material - 1-cap & 1 stk 40% used to set charge off.

These two charges had very little effect in bring down the loose material.

1 TRUCK OUT DUE TRANSMISSION - 8 AM TO 3:30 PM

1 TRUCK OUT DUE HYDROLIC LIFT - 3:15 PM TO 4:00 PM

12-13-48 - MONDAY

SHOVEL - 7½ HOURS - TOTAL = 233¾ HOURS

2 TRUCKS - 14 HOURS - TOTAL = 527 HOURS

FT OF HOLES - 131½ LIN. FT. - TOTAL = 872 LIN. FT.

No. Holes shot - 42 HOLES - TOTAL = 346 HOLES

No. Caps used - 42 CAPS - TOTAL = 346 CAPS

No. Sticks 40% - 66 STICKS - TOTAL = 495 STICKS

No. Lbs. 20% - 0 - TOTAL = 100 POUNDS

DEBRIS MOVED - 387 Yds - TOTAL = 19,604 Yds.

Holes drilled 12-10 & 12-11-48 - SHOT THIS DATE

1 - 32 - 1	11 - 43 - 1	21 - 40 - 1
2 - 38 - 1	12 - 43 - 1	22 - 47 - 2
3 - 39 - 1	13 - 48 - 2	23 - 22 - 1
4 - 25 - 1	14 - 47 - 3	24 - 25 - 1
5 - 26 - 1	15 - 70 - 4	25 - 47 - 2
6 - 33 - 1	16 - 48 - 1	26 - 17 - 2
7 - 39 - 1	17 - 36 - 1	27 - 30 - 1
8 - 48 - 2	18 - 62 - 4	28 - 25 - 1
9 - 32 - 1	19 - 62 - 3	29 - 19 - 1
10 - 42 - 1	20 - 83 - 4	

30 - 28 - 1

31 - 33 - 1

32 - 32 - 1

33 - 26 - 1

34 - 26 - 1

35 - 10 - 1

36 - 36 - 1

37 42 - 1

38 42 - 2

39 42 - 1

40 33 - 1

41 - No Hole - 4

42 - No Hole - 3

1578"

Holes Shot - Ft - No. Sticks

42 - 131½' - 66

Holes # 41 & # 42 were chargers set in the Crack of rocks hanging on slide.

EQUIPMENT DOWN

SHOVEL

1080 to 1050 - 20 MIN - PIN

12:45 to 1:15 - WAITING FOR SHOT RED'S TRUCK

10:30 to 11:10 - 40 MIN COMPRESSOR GEORGE'S TRUCK

11:20 to 11:30 - 10 MIN - GAS OUT

2:20 to 3:05 - 45 MIN - HOIST

3:30 to 3:45 - 15 MIN - HOIST

12-14-48 - TUESDAY

SHOVEL -	8 hrs.	TOTAL =	241 3/4 hrs.
3 TRUCKS -	23 1/2 hrs	TOTAL =	550 1/2 hrs
LIN FT OF HOLES -	63'	TOTAL =	935 Lin ft.
NO. HOLES SHOT	22 holes	TOTAL =	368 holes
NO. CAPS USED -	22 caps	TOTAL =	368 Caps
NO. STKS 40% -	104 stks	TOTAL =	599 Stks
NO. POUNDS 20% -	—	TOTAL =	100 lbs.
DEBRIS MOVED -	736 Yds	TOTAL =	20,400 Yds

1 - Charge of 25 lbs of 40% Strength dynamite was set off with 1 exploder and 1 stick of 40% Dynamite behind a large rock hanging up at the crest of the slide debris being removed. Very little effect.

Holes drilled & Shot:

No.	Depth	Sticks
1	25	1
2	36	1
3	24	1
4	46	2
5	46	2
6	46	2
7	49	2
8	45	1
9	48	2
10	47	2
11	47	4
12	46	2
13	38	1
14	30	1
15	45	1
16	26	1
17	26	1
18	18	1
19	26	1
20	26	1
21	25	1
21	760"	31

12-15-48 - WEDNESDAY

SHOVEL -	8 HOURS	TOTAL	249 3/4 HOURS
2 TRUCKS -	16 HOURS	TOTAL	566 1/2 HOURS
LIN FT OF HOLES -	20 1/2	TOTAL	955 1/2 LIN. FT.
NO. HOLES SHOT -	6	TOTAL	374 HOLES SHOT
NO. CAPS USED -	6	TOTAL	374 CAPS USED
NO. STKS. 40% -	18	TOTAL	617 STKS. 40%
NO. POUNDS 20% -	—	TOTAL	100 POUNDS 20%
DEBRIS MOVED -	608	TOTAL	21,008 Yds

One of the truck drivers did not show up; therefore only two trucks operated.

Holes Loaded & Shot:

No.	Depth	Stks 40%
1	42	4
2	42	4
3	41	4
4	40	4
5	47	1
6	36	1
6	248"	18
6	20 1/2'	18 stks

12-16-48 - THURSDAY

1- SHOVEL -	8 hrs.	TOTAL	257 3/4 hrs.
2- 2 TRUCKS -	15 hrs.	TOTAL	581 1/2 hrs.
3- LIN. FT. OF HOLES -	—	TOTAL	955 1/2 Lin ft.
4- NO. HOLES SHOT -	—	TOTAL	374 holes
5- NO. CAPS. USED -	—	TOTAL	374 caps
6- NO. STICKS 40% -	—	TOTAL	617 stks
7- NO. POUNDS 20% -	—	TOTAL	100 pounds
8- DEBRIS MOVED -	620 Yds	TOTAL	21,628 Yds

NOTE: The driver of the third truck did not show up again this morning - assumed to be ill.

It was 8:10 AM Before the two trucks were in operation. (Just Cold)

Watson not here today - Aman here from his office to replace him. W. JONES

12-17-48 - FRIDAY

1- SHOVEL -	8 HRS.	TOTAL	265 3/4 HRS.
2- 3 TRUCKS -	24 HRS.	TOTAL	605 1/2 HRS.
3- LIN. FT. OF HOLES -	28 1/2	TOTAL	984 LIN FT
4- NO. OF HOLES SHOT -	11	TOTAL	385 HOLES SHOT
5- NO. OF CAPS USED -	11	TOTAL	385 CAPS USED
6- NO. OF STKS 40% -	14	TOTAL	631 STKS 40%
7- NO. POUNDS 20% -	—	TOTAL	100 Pounds 20%
8- DEBRIS MOVED -	805 Yds	TOTAL	22,433 Yds

HOLES LOADED & SHOT THIS DATE

1 - 34 - 1	7 - 34 - 1
2 - 24 - 1	8 - 38 - 3
3 - 25 - 1	9 - 37 - 2
4 - 25 - 1	10 - 24 - 1
5 - 33 - 1	11 - 26 - 1
6 - 39 - 1	339" - 14 STKS

Visit by L. Hill - From HILL, If Watson is shy of the Group of Fairly round Rocks setting at about E 5070 on the 875' contour tell him that I said to shoot them down.

Driver of third truck back to work this AM

12-20-48 - Monday

1 - Shovel - 7 hrs. Total - 272 3/4

2 - 3 Trucks - 18 hrs. Total - 623 1/2

3 - Lin Ft of Holes - — Total - 984 Lin. Ft.

4 - No. Holes Shot - — Total - 385 Holes Shot

5 - No. Caps Used - — Total - 385 Caps Used

6 - No. Sticks 40% - — Total - 631 Stks 40%

7 - No. Pounds 20% - — Total - 100 Lbs. 20%

8 - Debris Moved - 616 Yds. Total - 23,049 Yds.

The driller was not here today.

Shovel - 15 min Vacuum Tube - 45 Min Track
Red - Carburator 1 hr
George - Start 1 Hr - 1 Hr Trans.

Placed 75 Yds on discharge Channel

12-21-48 - Tuesday

1 - Shovel - 6 1/2 Hrs Total - 279 1/4 hrs

2 - 3 Trucks - 15 1/2 Hrs Total - 639 hrs

3 - Lin. Ft. Holes - — Total - 984 Lin. ft

4 - No. Holes Shot - — Total - 385 Holes

5 - No. Caps Used - — Total - 385 Caps

6 - No. Sticks 40% - — Total - 631 Stks

7 - No. Pounds 20% - — Total - 100 lbs.

8 - Debris Moved - 519 Yds Total - 23,598 Yds

Equipment down
Cable
Shovel - 3:00 to 4:30
Points - Carburator
Red - 11:05 to 1:10
Chain
George - 8:55 to 9:35 — 11:15 to 11:25 — 12:30 to 1:10 Water Hose — 1:15 to 1:35 Water Hose
1:40 to 2:40 - Water Hose —
Jack - 1:15 to 1:20 —

Placed 36 Yds on Discharge Channel.

Drilling Holes today — will list them when shot. —

Due to rain job shut down at 10:15 AM

12-22-48 WEDNESDAY

1.-SHOVEL - 2 1/2 HRS TOTAL 281 3/4 hrs

2-3 TRUCKS - 7 1/2 Hrs. TOTAL 646 1/2 hrs

3- Lin Ft. Holes - 139 Lin ft TOTAL 1123 Lin ft

4- No. Holes Shot - 30 Holes TOTAL 415 holes

5-No. Caps used - 30 Caps TOTAL 415 Caps

6-No. Stks 40% - 152 stks TOTAL 783 stks

7-No. lbs 20% - — TOTAL 100 lbs

8-Debris Moved - 203 1/2 lbs TOTAL 23,801

HOLES LOADED & SHOT

1-19-1	12-88-9	23-31-3
2-18-1	13-85-8	24-31-3
3-32-1	14-88-8	25-42-3
4-39-2	15-85-8	26-31-2
5-44-2	16-86-8	27-33-1
6-20-1	17-88-8	28-32-2
7-44-2	18-87-8	29-44-3
8-66-7	19-88-8	30-0-10
9-66-7	20-89-9	
10-64-7	21-87-7	30-1666-152
11-72-8	22-67-5	139'

12-23-48 THURSDAY

1.-SHOVEL - Total

2-3 TRUCKS - Total

3-LIN FT HOLES - Total

4-NO. HOLES SHOT - Total

5-NO. CAPS USED - Total

6-NO. STKS 40% - Total

7-NO. LBS 20% - Total

8-DEBRIS MOVED - Total

NO WORK + RAIN!

At 9:15 AM the men gave up trying to get the shovel started. It was raining hard so they decided to secure for the day.

From Watson — No work Friday — Will work Monday

12-27-48 - Monday

1- Shovel -	7 Hours	Total	288 3/4 Hrs.
2- 2 Trucks -	14 Hours	Total	660 1/2 Hrs
3- Lin. Ft. Holes -	59 1/2	Total	1182 1/2 Lin Ft.
4- No. Holes Shot -	22	Total	437 Holes
5- No. Caps Used -	22	Total	437 Caps
6- No. Sticks 40% -	40	Total	823 Sticks
7- No. Pounds 20% -	—	Total	100 lbs.
8- Debris Moved -	342	Total	24,143

One of the Truck driver in town on business - Off job hrs 8:00 AM to 4:30 PM.

Checked Mon. & found them OK.

1 - 36 - 1	8 - 30 - 1	15 - 44 - 3
2 - 36 - 1	9 - 25 - 1	16 - 44 - 4
3 - 26 - 1	10 - 37 - 2	17 - 45 - 3
4 - 15 - 1	11 - 37 - 2	18 - 25 - 1
5 - 15 - 1	12 - 25 - 1	19 - 44 - 5
6 - 25 - 1	13 - 44 - 3	20 - 21 - 1
7 - 24 - 1	14 - 67 - 4	21 - 25 - 1
		22 - 25 - 1
		715 "
		22 - 59 1/2 - 40

12-28-48 Tuesday

1- Shovel -	8 Hours	Total	296 3/4 Hours
2- 3 Trucks -	15 1/2 hrs.	Total	676 Hours
3- Lin Ft Holes -	—	Total	1182 1/2 Lin. Ft.
4- No. Holes Shot -	—	Total	437 Holes Shot
5- No. Caps Used -	—	Total	437 Caps used
6- No. Sticks 40% -	—	Total	823 sticks 40%
7- No. lbs. 20% -	—	Total	100 Pounds 20%
8- Debris Moved -	450 yds.	Total	24,593 yds.

Mr Rankin - Mr Beaman.

Reds truck out all day - Transmission.

Drilling rock - will list in low slot.

Moved up on shelf - first time since 12-9-48.

Informed Mr. Watson that the large rock resting at about the Crest of the Slide debris is not in its original restingplace as I have seen it move.

12-29-48- WEDNESDAY

1- SHOVEL -	7½ HRS.	TOTAL	304¼ HRS
2-3 TRUCKS -	14 HRS	TOTAL	690 HRS
3- LIN FT HOLES -	39'	TOTAL	1221½ Lin Ft
4- No. Holes Shot -	13	TOTAL	450 HOLES
5- No. Caps Used -	13	TOTAL	450 CAPS
6- No. Stks 40% -	17	TOTAL	840 STKS
7- No. Lbs 20% -	—	TOTAL	100 POUNDS.
	(SPILLWAY - 184 Yds.)		
8- Debris Moved -	536 Yds	TOTAL	25,129 Yds

Hill took Pictures today.

Informed Watson of Mr Beauvais request for an estimate time & equipment needed to remove trees in discharge channel stream bed.

1-44-2	6-26-1	12-32-1
2-37-1	7-30-1	13-46-2
3-45-2	8-25-1	468"
4-45-2	9-26-1	13-39-17
5-38-1	10-37-1	
	11-37-1	

12-30-48- THURSDAY

1- SHOVEL -	8 hrs.	TOTAL	312¼ HOURS
2-3- TRUCKS -	14 hrs.	TOTAL	704 HOURS
3- LIN FT HOLES -	108½	TOTAL	1330 LIN FT OF HOLES
4- No. HOLES SHOT -	31	TOTAL	481 HOLES SHOT
5- No. CAPS USED -	31	TOTAL	481 CAPS USED
6- No. STKS 40% -	88	TOTAL	928 STICKS 40%
7- No. POUNDS 20% -	—	TOTAL	100 POUNDS 20%
	(284 Yds. ON SPILL WAY)		
8- DEBRIS MOVED -	428½ Yds	TOTAL	25,557 Yds

HOLES LOADED & SHOT

No - DEPTH - STKS	No - DEPTH - STKS
1-60-5	21-25-1
2-32-2	22-25-1
3-49-4	23-42-2
4-88-4	24-45-4
5-87-7	25-45-5
6-81-5	26-44-4
7-87-7	27-36-3
8-88-5	28-46-3
9-53-5	29-45-3
10-44-4	30-41-3
11-25-1	31-26-1
12-19-1	1303"
13-15-1	31-108½-88
14-25-1	
15-21-1	
16-26-1	
17-25-1	
18-18-1	
19-24-1	
20-21-1	

WATSON - 6½ HRS
OILER - 6½ HRS

JACK'S TRUCK
STARTED AT 8:45 AM
DOWN - 10:47 AM TO 10:55 AM
" - 11:50 AM TO 11:56 AM
" - 2:40 PM TO 2:45 PM
LOST 1 HOUR

GEORGE'S TRUCK
STARTED AT 8:25 AM
DOWN - 9:40 TO 10:00 VALVE
" - 1:05 TO 1:10
" - 1:45 TO (OUT AROUND)
LOST 3½ HOURS

RED'S TRUCK
STARTED AT 1:35 PM
DOWN - 1:40 TO 1:50
" 3:15 TO 4:10
LOST 5½ HOURS

SHOVEL
OUT OF GAS - FUELING
DOWN 10:30 TO 10:50
REFUELING 11:10 TO 11:15
NO TIME LOST

12-31-48 - FRIDAY

1- SHOVEL -	8 HOURS TOTAL	320¼ HOURS	
2- ~~2~~ 3 TRUCKS -	16 HOURS TOTAL	720 HOURS	
3- LIN. FT. HOLES -	67' TOTAL	1397 Lin ft	
4- NO. HOLES SHOT -	28 TOTAL	509 Holes	
5- NO. CAPS USED -	28 TOTAL	509 caps	
6- NO. STKS 40% -	31 TOTAL	959 STKS 40%	
7- NO POUNDS 20% -	— TOTAL	100 lbs. 20%	
8- DEBRIS MOVED -	PLACED ON SPILL WAY - 351 Yds; 689 Yds TOTAL	26,246 Yds	

Holes Loaded and Shot at Noon	Holes Loaded and Shot at 4:30 PM.
1 - 25 - 1	1 - 39 - 3
2 - 26 - 1	2 - 28 - 1
3 - 25 - 1	3 - 37 - 1
4 - 31 - 1	4 - 35 - 2
5 - 45 - 1	5 - 41 - 1
6 - 40 - 1	6 - 28 - 1
7 - 37 - 1	7 - 27 - 1
8 - 25 - 1	8 - 13 - 1
9 - 25 - 1	9 - 21 - 1
10 - 25 - 1	10 - 14 - 1
11 - 25 - 1	11 - 22 - 1
12 - 38 - 1	12 - 22 - 1
13 - 38 - 1	13 - 24 - 1
14 - 18 - 1	14 - 28 - 1
14 - 423" - 14	14 - 379 - 17
	14 - 423 - 14
	~~28~~ 802" - 31
	67'

ESTIMATE FOR DECEMBER.

1- SHOVEL - 150 HOURS
2- 3 TRUCKS - 357½ HOURS
3- LIN FT HOLES - 803 Lin ft of Holes
4- NO. HOLES SHOT - 272 Holes Loaded & Shot
5- NO. CAPS USED - 272 exploders used.
6- POUNDS 40% - 240 pounds of 40% used.
7- POUNDS 20% - 100 Pounds of 20% used.
8- DEBRIS MOVED - 12,146 Cu. Yd. (Estimated)

ITEMS TOTALED TO DATE

1- Shovel transported to site.
2- 3 Trucks transported to site.
3- Hours of operation for 1½ Yd Shovel = 320¼
4- Hours of operation for 3-5 Yd Dump trucks = 720
5- Drill Holes less than 15' deep = 1397 Lin ft.
6- No. of holes loaded & shot = 509
7- No. of exploders used = 509
8- Pounds of 40% Powder used = 333 lbs.
9- Pounds of 20% Powder used = 100
10- Intercepting ditch (COMPLETED) = 335'
11- DEBRIS MOVED - 26,246 Cu. Yd. (Estimated)

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Hoist / Water Hose (1) / Hoist / ?
George - 9:10 to 9:30 — 10:30 to 11:30 — 12:30 to 12:40

Carburator / Hoist (1/2) / Hoist
Red - 10:30 to 10:48 — 11:45 to 12:35 — 1:45 to 1:47

Dragline / Dragline / Bucket Latch
Shovel - 10:30 to 10:48 — 1:15 to 1:20 — 1:27 to 1:38

Hoist / Hoist / Hoist
George - 1:15 to 1:25 — 2:00 to 2:10 — 4:00 to 4:10

Fuel Pump (1/2)
Shovel - 2:25 to 2:53 -

Monday - Jan. 3, 1949.

1 - Shovel -	7 1/2 hrs	Total = 327 3/4 hrs
2 - 2 Trucks -	13 1/2 hrs	Total = 733 1/2 hrs
3 - Lin Ft Holes -	—	Total = 1397 Lin. Ft.
4 - No Holes Shot -	—	Total = 509 Holes
5 - No. Cars Used -	—	Total = 509 Cars
6 - No. Stks 10% -	—	Total = 959 Stks
7 - Pounds 20% -	—	Total = 100 Pounds
Powder on Spillway - 306#		
8 - Debris Moved - 536 Yds.		Total = 26,782 Yds.

No drilling or shooting.

1

~~[illegible]~~

SHOVEL - STARTED AT 8:45 - 11:13 - 1:20 (1½) - BUCKET LATCH (1½) -

JACK - (1) MOTOR 8:55 TO 9:05 - HOIST & FUELING 10:10 TO 10:30 - (1½) HOIST 2:15 TO 2:20

GEORGE - (½) HOIST 10:50 TO 10:55 - (1½) CARBORATOR 2:40 TO 2:45 - 3:50 TO 3:55 - 3:10 TO 3:15

TUESDAY - JAN. 4, 1949.

1-SHOVEL- 6 HOURS	TOTAL- 333¾ HRS
2-2 TRUCKS- 11½	TOTAL- 745 HRS
3-LIN. FT. HOLES- —	TOTAL- 1397 LIN FT
4-NO HOLES SHOT- —	TOTAL- 509 HOLES
5-NO CAPS USED- —	TOTAL- 509 CAPS
6-NO STKS 40%- —	TOTAL- 959 STKS
7-POUNDS 20%- —	TOTAL- 100 POUNDS
PLACED ON SPILLWAY 454 yds	
8-DEBRIS MOVED- 544 yds	TOTAL- 27,326

Checked Mons & found them "OK."

Watson left at 2PM.

½ day drilling - will list when shot.

111

~~[illegible]~~

~~[illegible]~~

WATER PUMP (1/2) — FUELING

JACK - 8:55 TO 9:35 - 9:35 TO 9:50

CARBORATOR

GEORGE - 10:35 TO 10:40 -

CABLE (3 1/2)

SHOVEL - 10:55 TO 2:55

Trucks idle from 3:15 to 3:45 while Shovel building a new ramp.

WEDNESDAY - JAN 5, 1949.

SHOVEL -	4 1/2 HRS	TOTAL - 338 1/4 hrs.
2 TRUCKS -	8 1/2 HRS	TOTAL - 753 1/2 hrs
LIN FT HOLES -	—	TOTAL - 1397 lin. ft
No. HOLES SHOT -	—	TOTAL - 509 Holes
No. CAPS USED -	—	TOTAL - 509 Caps
No. STKS 40% -	—	TOTAL - 959 Stks
POUNDS 20% -	—	TOTAL - 100 pounds.
PLACED ON SPILLWAY -	239 yds.	
DEPRIS MOVED -	297 yds	TOTAL 27,623 yds.

No drilling or Shooting this date.

Hill by

Watson here 2 PM to 3:30 PM

No Equipment breakdowns this date.

THURSDAY - JAN. 6, 1948.

SHOVEL - 8 HRS TOTAL - 346 1/4 HRS

2 TRUCKS - 16 HRS TOTAL - 769 1/2 HRS

LIN FT HOLES - — TOTAL - 1397 LIN FT

NO. HOLES SHOT - — TOTAL - 509 HOLES

NO. CAPS USED - — TOTAL - 509 CAPS

NO. STKS 40% - — TOTAL - 959 STKS

POUNDS 20% - — TOTAL - 100 POUNDS

DEBRIS MOVED - 698 TOTAL - 28,321 Yds

3 PM TO 4:30 PM

Workers here from 8:30 AM to 4 PM

Jones by -

JAN 7, 1949 - FRIDAY.

SHOVEL - 8 HRS.		TOTAL - 354¼ HRS
2 TRUCKS - 16 HRS.		TOTAL - 78 5½ HRS
LIN. FT. HOLES -	—	TOTAL - 1397 LIN FT
NO. HOLES SHOT -	—	TOTAL - 509 HOLES
NO. CAPS USED -	—	TOTAL - 509 CAPS
NO. STKS. 40% -	—	TOTAL - 959 STKS
POUNDS 20% -	—	TOTAL - 100 POUNDS
DEBRIS MOVED - 549½ yds		TOTAL - 28,870½ yds

Watson here 11AM to 4:30 PM

Hill here 3PM to 3:30 PM

Wanted to see Watson. (Will be back Monday)

Checked Mon.'s and found "OK"

① RED - STARTED AT 8:50 - 9:00 TO 9:10 —

GEORGE - 8:40 TO 8:55 —

SHOVEL - 9:05 TO — SECURED AT 10:10

Snowing hem 8:00 AM to 8:30 AM.
Snowing again hem 9:10 TO 10:30
when I left. (Snow melted as soon as it hit the grounds.
Watson secured job at 10:10 AM
due to bad weather.

MONDAY - JAN. 10, 1949

SHOVEL -	1 HR.	TOTAL = 355 1/4 HRS.
2 TRUCKS -	1 HR.	TOTAL = 786 1/2 HRS.
LIN. FT. HOLES -	—	TOTAL = 1397 Lin. Ft.
NO. HOLES SHOT -	—	TOTAL = 509 HOLES
NO. CAPS USED -	—	TOTAL = 509 CAPS
NO. STKS 40% -	—	TOTAL = 959 STKS
POUNDS 20% -	—	TOTAL = 100 Lbs.
DEBRIS MOVED -	32 Yds.	TOTAL = 28,902 Yds.

RED - Started at (1/2) 8:30 - 8:35 HOIST TO 8:45 -

GEORGE - Started at (1/2) 8:35 - 8:50 HOIST TO 8:55 - 1:00 (1/2) TO 1:30

Secured at 3:00 PM due to Wind & Rain.

Watson informed me that the driller and Laborer were carrying cases of dynamite up behind the slide ~~debris~~ area - carried 2 cases up last Monday.

Started Raining at 2:15 PM

WEDNESDAY - JAN. 12, 1949

SHOVEL -	6 1/2 hrs.	TOTAL - 361 3/4 hrs.
TRUCKS -	11 1/2 hrs.	TOTAL - 798 hrs
LIN. FT. HOLES -	—	TOTAL - 1397
NO. HOLES SHOT -	—	TOTAL - 509
NO. CAPS USED -	—	TOTAL - 509
NO. STKS. 40% -	—	TOTAL - 959
POUNDS 20% -	—	TOTAL - 100
DEBRIS MOVED -	378 Yds.	TOTAL 29,280 Yds.

Hill by - Instructions from Mr Beaman - Inspectors should call in to office when jobs shut down, due to weather. ~~to [illegible]~~

This PM there was some material (Loose surface) that fell from about 25' below the crest of the Slide ~~[illegible]~~ Area.

Watson checked out at 2:30 PM Reason - A Cold.

Carborator Hoist Hoist
Ice – 9:53 to 10:00 – 11:30 to 11:35 – 12:40 to 12:45
Chain Wheel Chain (1/2)
George – 10:10 to 10:15 – 2:40 to 2:55 – 3:30 to 3:50
Hoist Hoist ? 4:10 to
Ice – 1:10 to 1:20 – 1:55 to 2:00 – 2:45 to 2:55

1-28-1	5-28-1	9-29-1
2-27-1	6-34-1	10-15-1
3-26-1	7-34-1	11-27-1
4-25-1	8-27-1	300"
		11-25'-11 Stks

Monday – Jan. 17, 1948.

Shovel –	8	Total	369 3/4 Hrs
Trucks –	15 1/2 Hrs	Total	813 1/2 Hrs
Lin. Ft. Holes –	25'	Total	1422 Lin. Ft.
No. Holes Shot –	11	Total	520 Holes
No. Caps Used –	11	Total	520 Exploders
No. Stks 40% –	11	Total	970 Stks 40%
Pounds 20% –	—	Total	100 Pounds
Debris Moved –	482 Yds	Total	22,762 Yds

Drilling Rock – Shot this date.
New Truck Driver this date.
Hill by –

LATCH
Shovel – 9:25 To 9:30 –

HOIST OUT OF EMS
Ice – 9:35 To 9:40 – 10:45 To 11:05 –

? ?
George – 11:15 To 11:20 – 12:30 To 12:40 –

Both trucks idle while Shovel Working alone:

11:25 to 11:40 – 3:25 to 4:30 (1 HR)

Cloudy. Cold.

TUESDAY – JAN. 18, 1949.

Shovel – 8 HRS TOTAL – 377 3/4 HRS

Trucks – 14 HRS TOTAL – 827 1/2 HRS

Lin Ft Holes – — TOTAL – 1422 Lin ft

No. Holes Shot – — TOTAL – 520 holes

No. Caps Used – — TOTAL – 520 caps

No. Sticks 40% – — TOTAL – 970 sticks

Pounds 20% – — TOTAL – 100 Pounds.

S – 300 Yds.
Debris Moved – T – 420 Yds. TOTAL – 30,182 Yds.

Watson 9 AM TO 4:30

Shovel Worked alone 1/2 Last hour of the day.

George - Started at 8:30 — 2:25 TO 2:30 CHAIN.
3:45 TO 3:55 CHAIN —

WEDNESDAY - JAN 19, 1949. Cloudy Cold.
Shovel - 8 Hours — 385-3/4 HRS
Truck - 7½ Hours — 835½ HRS

Debris moved. 900 Yds — 31,382 Yds.
Checked Hours "OK"
Jones by —
one Truck Driver —
Only needed one Truck —
Started drilling on top of
Slide Area.

Shovel worked alone from 8:00 AM to 11:45 AM

4 HOURS

Trucks did not work due to rain.

Light Showers Cool

THURSDAY - JAN 29 1949.

SHOVEL - 4 TOTAL - 389 3/4 HRS

TRUCKS - - TOTAL - 835 HRS

LIN FT HOLES - - TOTAL - 1422 Lin ft

NO. HOLES SHOT - - TOTAL - 520 holes

NO. CAPS USED - - TOTAL - 520 caps

NO. STKS 40% - - TOTAL - 970 STKS

POUNDS 20% - - TOTAL - 100 lbs

DEBRIS MOVED - 0 TOTAL - 31382 Yds

JONES - 8:30 TO

This date
Informed by Jones that Watson went to L.A. this date.

Jones said that it was too wet for trucks to work - Shovel leveled out Cushion material and then secured.

Cloudy
~~Cool~~

MONDAY – JAN. 24, 1948 COLD

SHOVEL – 6 HRS TOTAL – 395¾ HRS

TRUCK – 2½ HRS TOTAL – 837½ HRS

LIN FT HOLES – TOTAL – 1422

NO. HOLES SHOT – TOTAL – 520

NO. CAPS USED – TOTAL – 520

NO. STKS. 40% – TOTAL – 970

POUNDS 20% – TOTAL – 100

DEBRIS MOVED – 200 YDS TOTAL – 31582 YDS.

Watson 8 AM TO 1:30 PM.

No drilling this date.

GEORGE – STARTED AT 8:30 – 10:10 (1½) TO 10:20 HOIST

MISC. OPERATIONS 10:35 TO 1:30 (2½) – 1:35 TO 2:25 CHAIN (1) – 2:45 TO 4:30 CHAIN (1½)

SHOVEL – MISC. OPER. 10:35 TO 1:15 (2)

Cloudy - Cold.
Started Raining at 1:30

JAN 25, 1949 — TUESDAY

SHOVEL — 5½ HRS TOTAL = 401¼ HRS

TRUCKS — 2½ HRS - TOTAL = 840 HRS

LIN FT HOLES — — 1422

NO. HOLES SHOT — — 520

NO. CAPS USED — — 520

NO. STKS 40% — — 970

POUNDS 20% — — 100

DEBRIS MOVED — 118 Yds TOTAL = 31,700 Cu. Yds.

Shovel leveling off Cushion material from 8AM to 9:20 - 12:30 TO 2:00

Cushion completed (OK Bo Hill)

Hill by —

Hauling of Slide debris will be continued after the material in Slide area has been trimmed.

GEORGE - STARTED (1½) AT 9:20 — Did not work PM.

Shovel secured at 2:05 PM

clear
cool

WEDNESDAY - JAN 26, 1948.

SHOVEL — T —

TRUCK — T —

LIN FT HOLES —

HOLES SHOT —

CAPS USED —

STKS 40% —

LBS 20% —

Drilling holes in the
slide area for trimming
Will list when shot.

Thursday – JAN 27, 1949

1 driller & one laborer.
drilling holes for training
slide area.

Left Site at 12:30 PM.

FRIDAY – JAN 28 1949

Drilling holes in Slide
area for training cable.

Not on the
Site this date.

Not on site this date—
worked at Alvarado—

MONDAY - JAN. 31, 1919

Drilling holes for trimming the
slide area.

15
30
450
80
530

30
5
150.

720
120
840

ESTIMATE FOR JANUARY

1-SHOVEL - 81 HRS. TOTAL = 401¼ HRS.

2-TRUCKS - 120 HRS (LESS THAN 15') TOTAL = 840 HRS.

3-LIN FT HOLES - 25' TOTAL = 1422 LIN. FT.

4-NO. HOLES SHOT - 11 TOTAL = 520 HOLES

5-NO. CARS USED - 11 TOTAL = 520 CARS

6-POUNDS 40% - 4 TOTAL = 337 lbs 40%

7-POUNDS 20% - NONE TOTAL = 100 lbs. 20%

8-DEBRIS MOVED - 5,454 Cu. Yd. TOTAL = 31,700 Cu. Yds.

10 DAY PERIOD

1-SHOVEL - 11½ HRS

2-TRUCK - 2½ HRS

3-DEBRIS MOVED - 318 Cu. Yds.

4-DRILLING HOLES FOR TRIMMING SLIDE AREA.

HILL TURNED IN 30 Holes 20' deep -
and 80 Lin Ft of Holes less than 15'

Tuesday — Feb 1 —
Drilling holes for trimming
the slide area.

On site in AM
Alvarado in PM.

Wednesday - Feb. 2,
Drilling holes for trimming
the slide area.

On site in PM
Alvarado in AM.

THURSDAY - FEB. 3, 1949.

Drilling holes for trimming the Slide area.

Springing 3 holes at Easterly end of slide area.

1 - 20' - 5
- 20' - 9
2 - 20 - 8
3 - 16'-6" - 8

Holes Caps
4 - 4 10#

Hill visited the site.
From Hill by phone in A.M. - Locate, with reference to the face of the slide area, the holes drilled near the face. (Gave the Info to Hill this date)
From Hill to Watson - Office getting out Letter on drilling - OK to shoot the first 3 holes at the East end.

Light Showers,

FRIDAY - FEB 4, 1949.

Only the Laborer showed up and he left at 9 AM.
Checked Mows - OK
Left at 10 AM.

No Work

Showers. Cool.

MONDAY - FEB. 7, 1949.

Started rig at 9:30 AM - Had not rained prior to this.

Drilling holes in slide area.

Watson secured job at 10 AM because of rain.

TUESDAY - FEB. 8, 1949

Checked Mon's - OK -

Informed Watson that as far as I can tell he has 4 holes out side of the area to be trimmed.

Drilling holes in trim ridge of Grey Granite & D.C. that lies on the face of the slide area. - Watson is afraid that this ridge will hold some of the material during the trimming of the slide area.

WEDNESDAY - FEB. 9, 1949.

Hill by - Informed him of the 4 holes out of the area. He said ~~that~~ not to shoot them.

At noon shot the Grey Granite & D.G. Ridge down. 2-10' holes sprung - Total 13 caps - 11 holes (9-10' & 2-5') Am Estimated 250 yds came down.

At 4:30 Shot Westerly 4 holes - Sprung 2-20' holes - Loaded 1-10' & 3-20' holes (6 caps) with 200# 20% & 25# 40% Effect - Est. 350 yds Moved.

Total to date = 600 yds.

Lift Less than 15' =	1422 155'	T = 155'	GT = 157.7'
Over 15' =	15'	T = 15'	
Holes Sprung =	4	T = 8 sprung.	
Holes Shot =	15	T = 15	GT = 535
Caps Used =	19	T = 23	GT = 543
lbs 40% =	60	T = 70	GT = 407
lbs 20% =	300	T = 300	GT = 400
Est. Material Moved =	600 yds.	T = 600 yds.	
Holes Lost =	1 - 20'	T = 1	
Holes omitted =	1 - 10'	T = 1	

THURSDAY – FEB. 10, 1949.

Hill by – Effects of Yesterday's shot look Good. Will try to be back today – if not will be by again tomorrow.

1-36-1

2-36-2

3-36-2

Sprung 4 – 20' holes

265# 20% 35# 40 used this date

Shot 5 – 20' holes

½ Cone – h = 45' & r = 45'

Clear & Warm.

Less than 15' =	84 (3' Rock)	T =	239' GT = 1661
More than 15' =	25' (15)	T =	40'
Holes sprung =	4 (3-Rock)	T =	12
Holes shot =	8	T =	23 GT = 543
Caps used =	12	T =	35 GT = 555
#40% =	35#	T =	105# GT = 442#
#20% =	265	T =	565 GT = 665
Est. Material Moved =	1,150	T =	1750
Holes Lost =	3-20'	T =	4
Holes omitted =	0	T =	1

Mr. Speilman of the State was here sometime after 1PM – (Informed by Mr Watson on Feb 11)

Friday – Feb. 11, 1949.

Checked & found all Monuments OK – No Movement.

Powder on hand – 7½ Cases 20 – ½ case 10

Drilled 1 – 16' hole.

8 holes Spring

1 – 15	75#	5
2 – 16	50#	5
3 – 20	100#	5
4 – 20	88½#	5
5 – 15	50#	5
6 – 20	75#	5
7 – 20	88½#	5
8 – 20	62½#	5

TAG (L = 55' – R = 60')

15
15 – 1
15 – 5
15 – 5
15
15 – 5
15 – 5
15 – 5
120 – 26

~~387.5~~ – 40

588

Less than 15' =	120' (160 – 40)	T = 359	CT = ~~1981~~ 1781
Over 15' =	26'	T = 66	
Holes Spring =	8	T = 20	
Holes shot =	8	T = 31	CT = 551
Caps used =	16	T = 51	CT = 571
#40% used =	40 lbs	T = 145 lbs	CT = 482 lbs
#20% used =	588 lbs.	T = 1153 lbs	CT = 1253 lbs
Est. Material moved =	2100T	= 3850	
Holes lost =	3 – 20' holes	T = 7 holes	
Holes omitted =	0	T = 1	

FEB 10 TEN DAY PROGRESS

Operations concentrated on trimming the slide area.

239' = Lin. ft. of holes Less than 15'.

40' = Lin. ft of holes – Portion over 15'.

35 = No. of holes shot (12 of these shots were for spring)

35 = No. of explosions used.

105 = Pounds of 40% Powder used.

565 = Pounds of 20% Powder used.

1750 = Cu Yds of Est. Material brought down.

Monday-Feb. 14, 1919.

Checked & Found no Change in Men's.

Hill by —

Operations - Drilled 5 -20' holes.

No shooting this date.

Less than 15' =	T = 359	GT = ~~1984~~ 1781
Over 15' =	T = 66	
Holes sprung =	T = 20	
Holes shot =	T = 31	GT = 551
Caps used =	T = 51	GT = 571
40% Powder =	T = 145	GT = 482
20% Powder =	T = 1153	GT = 1253
Est. Material Moved =	T = 3850	
Holes lost =	T =	
Holes omitted =	T =	

Material received -

200 lbs 20% & 200 lbs 40%

Monday-Feb. 14, 1919.

Checked & Found no Change in Men's.

Hill 24 —

Operations - Drilled 5 -20' holes.

No shooting this date.

Less than 15' =	T = 350	GT = ~~1984~~ 1781
Over 15' =	T = 66	
Holes sprung =	T = 20	
Holes shot =	T = 31	GT = 551
Caps used =	T = 51	GT = 571
40% Powder =	T = 145	GT = 482
20% Powder =	T = 1153	GT = 1253
Est. Material Moved =	T = 3850	
Holes lost =	T =	
Holes omitted =	T =	

Material received -

200 lbs 20% & 200 lbs 40%

TUESDAY – FEB. 15, 1949.

Sprung 8 holes (5 drilled on Feb 14)

Shot 8 – 20' holes using 475 lbs 20%

40 lbs 20%

Trimmed of one large rock

after the 8 holes were shot

1 – 5' hole – 10 lbs 40% (Behind rock)

in rock

#1 – 46" – #2 – 66" – #3 – 64" (16 lbs 40%)

(1/2 cone – h = 60' & r = 65')

14.5'
5
120
139.5

40'

15
8
120

64
66
46
12 176
5
14½

56
48
8

10
~~6~~
40
56

Less than 15' = 139.5' T = 498.5' GT = ~~2120.5~~ 1920.5

66

More than 15' = 40' T = 106

Holes sprung = 8 T = 28

Holes shot = 12 T = 43 GT = 563

caps used = 20 T = 71 GT = 591

(550)

lbs 40% = 56 lbs T = 201 GT = 538

(1700)

lbs 20% = 475 lbs T = 1628 GT = 1728

Est. Material Moved = 1066 Yds. T = 4916 Cu Yds.

Holes lost = T =

Holes Omitted = T =

WEDNESDAY - FEB. 16, 1949.

1	45	2	
2	46	2	
3	36	2	
4	45	2	
5	46	2	
6	24	1	
7	24	1	
			266

8	24	1	
9	30	1	
10	30	1	
11	31	1	
12	26	1	
13	37	1	
14	37	1	
			215
			266
			12) 481
			40'

Less than 15' = 40' . T = 538.5' CT = ~~2160.5~~ 1960.5

over 15' = 0 T = 106

Holes spring = 0 T = 28

Holes shot = 14 T = 57 CT = 577

caps used = 14 T = 85 CT = 605

40% used = 7 lbs T = 208 lbs CT = 545 lbs

20% used = 0 T = 1628 lbs CT = 1728 lbs

Broke up rock on crest - Scaling.

Scaling the slope at 26 Slide area.

Watson 10 AM to 3:15 PM (5)

Hill by - Mr. Beeman & Mr Rankin will be by this afternoon.

Mr Beeman & Mr Rankin by Looked over the area.

(145) (6)

THURSDAY - FEB 17, 1949

1 -	12.5'	- 12.5	- 0
2 -	19.0	- 15	- 4
(OUT) 3 -	20.0	- 15	- 5
(OUT) 4 -	19.5	- 15	- 4.5
(OUT) 5 -	19.5	- 15	- 4.5
6 -	20.0	- 15	- 5
(OUT) 7 -	20.0	- 15	- 5
8 -	19.5	- 15	- 4.5
9 -	19.5	- 15	- 4.5
10 -	12.0	- 12	- 0
11 -	10.0	- 10	- 0
12 -	10.0	- 10	- 0
12 -	201.5'	164.5	- 37.0
		+ 10.0	
OMITTED -		174.5	- 37.0
LOST -		105.0	- 35.0
TOTAL		279.5	- 72.0'
T.T.		818'	- 178'
G.T.		~~2440'~~ 2240	- 178'

Holes drilled but not used - 164.5 Lin ft 15' or less and 37.0 Lin ft over 15'.

~~Total 15' or less - 703' - 61 - 2325~~

~~Total over 15' - 143~~

Lost 7 - 20' holes - Omitted 8 - 20'± holes and 5 - 10'± holes.

~~Getting the equipment set up to drill the rock now resting on the spillway dishage Channel.~~

Started drilling the rock that lies on the spillway discharge channel.

15	5
7	7
105	35

703 143

808 178

2325

2430

105 - 35
164.5 37
269.5 - 72

FRIDAY - FEB. 18, 1949.

Speilman & Rankin by —

Mr. Speilman pointed out a rock on the slope face of the Slide area that he thought should come down — He seemed concerned about the loose material resting at the crest of the slope in as much as ~~the~~ it seems to have settled — but he said that there was not enough material there to worry about.

Less than 15' - 104 (2240.)	T=	2344.	
Holes shot - 36	T=	641	
Caps used - 36	T=	641	
40% used - 1916s	T=	564 lbs.	

Breaking up rock in Spillway.

Hole No. - Depth - Stks 40%			
1 - 32 - 1	12 - 25 - 1	24 - 26 - 1	36 - 45 - 3
2 - 36 - 1	13 - 26 - 1	25 - 30 - 1	359 - 11
3 - 34 - 1	14 - 25 - 1	26 - 26 - 1	285 - 12
4 - 26 - 1	15 - 18 - 1	27 - 19 - 1	558 - 28
5 - 45 - 1	16 - 22 - 1	28 - 46 - 3	45 - 3
6 - 46 - 1	17 - 19 - 1	29 - 58 - 3	1247" - 54
7 - 46 - 1	18 - 18 - 1	30 - 58 - 3	104' - 1916s
8 - 26 - 1	19 - 18 - 1	31 - 60 - 3	
9 - 25 - 1	20 - 18 - 1	32 - 59 - 3	
10 - 25 - 1	21 - 18 - 1	33 - 59 - 3	
11 - 18 - 1	22 - 39 - 1	34 - 57 - 3	
359" - 11	23 - 39 - 1	35 - 60 - 3	
	285" - 12	558" - 28	

MONDAY - FEB. 21, 1949.

Hill 64: Nothing new.

1 TRUCK down 1½ Hrs - HOIST

95 Loads -
1
380
48
1289 Yds

Shovel - 8 T = 409½
2 Trucks - 14½ T = 854½
No/es
15 or less - —— T = ~~2544~~ 2344
No. Slot - —— T = 641
No Caps - —— T = 641
lbs 40% - —— T = 564
Original
Debris Moved - - 1289 Yds T = 32,128 Co Yd.
(Estimated 5,000 Yds Trimed AD

Hole No.	Depth Inches	Stks 40%
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		

NO SHOOTING

WEDNESDAY - FEB. 23, 1919.

GEORGE down - 1:05 TO 1:25 (Hoist 1/2) - 1:55 TO 2:05 (Hoist)

142 Loads
1
568
71
639 Yds.

Cloudy - Warm.

Original
Debris moved - 639 Yds T= 32,767 Yds.
SHOVEL - 8 Hrs. T= 417 1/4 Hrs.
2 TRUCKS - 15 1/2 Hrs. T= 870 Hrs.
Airtool operator did not show up for work this date - No drilling or shooting.

Hill by - nothing new.
In regards to my asking him last Friday over the telephone whether or not Mr. Boerman planned to oil the crest of the slide area and to remove the trees from the discharge channel Hill said that Mr. Boerman had said nothing to him and that he did not plan asking him about it.

THURSDAY - FEB. 24, 1949.

EQUIPMENT DOWN -

GEORGE - 5:50 TO 12:00 - TIRE 2 HRS

SHOVEL - 3:05 TO 3:10 -

TRUCK - 4:15 TO 4:30 - CHAIN

Started Raining at 2 P.M.

ORIGINAL (complete) 2 HRS

DEBRIS MOVED - 1622 Yds. T = 32,929 Cu Yds.

TRIMMED DEBRIS MOVED - 3964 Yds TT = 3964 Yds GT = 33,325

SHOVEL - 8 HRS. TT = 6 GT = 425¼

2 - TRUCKS - 14 HRS. TT = 10 GT = 884

AIRTOOL OPER. ILL. No Drilling or Shooting.

Driller still Ill.

657 Yds Debris Moved — TT=1053 — 33,982

Cloudy - Cool

FRIDAY - FEB. 25, 1949.

SHOVEL -	8	TT = 14	GT = 433 1/4
2-TRUCKS -	14 1/2 (884)	TT = 24 1/2	GT = ~~908 1/2~~ 898 1/2
LIN FT -	120' (2344)	TT =	GT = ~~2664~~ 2464
EXPLODERS & NO HOLES SHOT	35	TT =	GT = 676
POUNDS 40%	30 lbs	TT =	GT = 594#

1 - 42 - 2	12 - 43 - 2	23 - 45 - 3
2 - 40 - 2	13 - 43 - 2	24 - 46 - 2
3 - 41 - 2	14 - 45 - 2	25 - 34 - 1
4 - 42 - 2	15 - 35 - 2	26 - 29 - 2
5 - 43 - 3	16 - 45 - 3	27 - 21 - 2
6 - 43 - 3	17 - 45 - 3	28 - 43 - 3
7 - 43 - 3	18 - 44 - 2	29 - 43 - 3
8 - 43 - 3	19 - 46 - 3	30 - 43 - 3
9 - 43 - 2	20 - 45 - 3	31 - 39 - 3
10 - 40 - 3	21 - 44 - 2	32 - 42 - 3
11 - 39 - 2	22 - 46 - 2	33 - 43 - 3
459 - 27	481 - 26	34 - 35 - 2
	459 - 27	
	498 - 32	35 - 35 - 2
	1438" - 85	
		498 - 32

TIRE (1 1/2)

GEORGE - 8:00 TO 9:35 -

Shovel started - 8:40
1st Truck " - 9:05
2nd Truck " - 9:15

George 11:25 TO 11:35
2:10 TO 2:35 (1/2)

Cloudy - Cool.

FEB. 28, 1949.

SHOVEL -	7 1/2 hrs.	T = 440 3/4 hrs.
2-TRUCKS -	13 1/2 hrs.	T = ~~922~~ 912 hrs.
DEBRIS MOVED -	459 Yd.	T = 34,441 Cu. Yd.
LIN FT HOLES -	63 1/2'	T = 2527 1/2 ~~2727 1/2~~ lin ft.

Hill by - Said that he thought 3 trucks should be running.

Holes drilled this date:

1 - 38	9 - 44
2 - 45	10 - 39
3 - 33	11 - 43
4 - 34	12 - 43
5 - 37	13 - 43
6 - 40	14 - 36
7 - 45	15 - 44
8 - 30	16 - 44
302"	17 - 43
459	
12) 761"	18 - 44
= 63 1/2'	19 - 36
	459"

EST. FOR. FEBRUARY

SHOVEL - 39 1/2	T = 440 3/4
TRUCKS - 80	T = 912
15' LIN FT - 575 1/2	T = 2527 1/2
OVER 15' LIN FT - 28	T = 178'
No. Shot - 156	T = 676
CAPS - 156	T = 676
BOUGHT 700 lbs - ON HAND 60 lbs. lbs 40% - 257	T = 594
BOUGHT 1700 lbs - ON HAND NONE lbs 20% - 1628	T = 1728
ORIGINAL DEBRIS - 1229 Cu. Yd.	
TRIMMING DEBRIS - 1572 Cu. Yd.	
Total DEBRIS - 34,441 Yd.	

Shovel - Bucket of Latch - (1½) 8:45 to 10:25 -

March 1, 1949 Clear - Warm.

Holes 1 through 19 Drilled Feb. 28.

1 -	18 - Listed Feb. 28.	35 - 32 -	
2 -	19 -	36 - 34 -	
3 -	20 - 22 -	37 - 27 -	
4 -	21 - 22	38 - 45 -	
5 -	22 - 32 -	39 - 58 -	
6 -	23 - 32 -	40 - 45 -	
7 -	24 - 31 -	41 - 45 -	
8 -	25 - 31 -	42 - 22 -	
9 -	26 - 31 -	43 - 22 -	
10 -	27 - 31 -	44 - 39 -	
11 -	28 - 22 -	45 - 40 -	
12 -	29 - (39" 20' Face) -	46 - 40 -	
13 -	30 - 38 -	47 - 36 -	
14 -	31 - 37 -	48 - 35 -	
15 -	32 - 45 -	49 - 21 -	
16 -	33 - 45 -	50 - 28 -	
17 -	34 - 46 -	51 - 32 -	
	465	601	

Shovel - 6½ hr. T = 447 ¼ hr.

Trucks - 13 hr. T = 925 hr.

Lift Holes - 106½' (2527½) T = 2634 Lift.

Holes Shot - 58 (676) T = 734 Holes.

Caps Used - 58 (676) T = 734 caps. ~~Holes.~~

lbs 40% - 42 (594) T = 636 lbs. ~~Holes.~~

Debris Moved - 477 yd. T = 34,918 Cu. Yd.

52 - 34 -

53 - 22 -

54 - 22 -

55 - 36 -

56 - 34 -

57 - 35 -

58 - 30 -

213 (222) STKS

601

465

12) 1279"

58 - 106½ - 42 lbs.

1 - Truck undergoing overhaul - Motor Froze.

Shot at 6:00 PM due to break in line.

Shovel - Bucket latch 8:25 to 8:50 (1/2)
Trucks started at 8:50.
George CHAIN 9:15 to 10:00 (1/2)
TRUCK - HOIST (HAULED 1 LOAD) 9:35 to 10:15 (1/2)

Shovel Idle 9:35 to 10:00 (1/2)
Shovel Bucket latch 1:40 to 1:50
TRUCK - 3:20 to 4:30 (1)

Shovel started at 8:00 - In position at 8:07 - Waiting Trucks
Truck #1 - Started at 8:20
Truck #2 - Started at 8:25
Shovel - 9:40 to 9:45 - Bucket latch
Shovel - 1:45 to 2:00 ?
TRUCK #2 - 2:20 to 2:30 HOIST
Shovel - 3:25 to 3:50 Bucket latch

MARCH 2, 1949 - WEDNESDAY

Shovel - 7 HRS - T = 454 1/4 HR.
Trucks - 13 HRS - T = 938 HR.
Debris Moved - 369 yd. T = 35,287 yd.

THURSDAY - MARCH 3, 1949

Shovel - 7 1/2 HRS. T = 461 3/4 HRS.
Trucks - 14 HRS. T = 952 HRS.
15' or less Lin ft - 148' T = 2782 Lin ft
Holes shot - 44 T = 778 holes
Caps used - 44 T = 778 caps
lbs 10% - 21 lbs. T = 657 lbs.
Debris Moved - 441 TT = 2799 GT = 35,728

Hill 64 -

469 - 14
460 - 15
385 - 13
460 - 18
12) 1774 - 60 x .347
148' - 21 lbs

1-39 - 1	12-43 - 1	23-43 - 1	34-33 - 1
2-44 - 1	13-42 - 1	24-43 - 1	35-26 - 1
3-44 - 1	14-43 - 2	25-61 - 3	36-36 - 1
4-44 - 1	15-44 - 2	26-43 - 1	37-36 - 1
5-43 - 2	16-43 - 1	27-33 - 1	38-27 - 1
6-43 - 2	17-28 - 1	28-30 - 1	39-27 - 1
7-43 - 2	18-37 - 1	29-34 - 1	40-56 - 3
8-42 - 1	19-43 - 1	30-26 - 1	41-45 - 1
9-42 - 1	20-43 - 1	31-21 - 1	42-48 - 1
10-43 - 1	21-61 - 3	32-25 - 1	43-68 - 4
11-42 - 1	22-33 - 1	33-26 - 1	44-58 - 3
469 - 14	460 - 15	385 - 13	460 - 18

HAZY WARM.

MARCH - 4 - 1949.

SHOVEL - 7 HRS (461 3/4) T = 468 3/4 HRS

2 TRUCKS - 13 1/2 HRS (952) T = 965 1/2 HRS

15' or less LINFT HOLES - 75 1/2 (2782) T = 2857 1/2 Lin ft.

No. HOLES SHOT - 30 (778) T = 808 HOLES

No. CAPS USED - 30 T = 808 CAPS

POUNDS 40% - 10 T = 667 lbs

DEBRIS MOVED - 405 yd. (2799) TT = 3204 (35728) GT = 36,048 yd.

8:00 AM to 8:30
Shovel clearing up rock scattered from shot.

Truck #1 - started at 8:15 -

Truck #2 - started at 9:45 - (1/2)

(1)

Shovel - 8:30 to 9:30 -

Hill by -

WATSON - 9 AM TO
TRUCK #1 Started 8:15
TRUCK #2 Started 10:00

Cloudy
Cool.

MARCH 7, 1949 - MONDAY

SHOVEL - 8 HRS T = 476 3/4 HRS.

2 TRUCKS - 14 HRS T = 979 1/2 HRS

Debris Moved - 342 TT 3546 GT 36,390

No drilling - no shooting.

Jones By -

Hill by - Be back tomorrow.

1 - 31 - 1	11 - 31 - 1	21 - 36 - 1	283 - 10
2 - 30 - 1	12 - 31 - 1	22 - 44 - 1	337 - 10
3 - 28 - 1	13 - 44 - 1	23 - 44 - 1	~~284 - 10~~
4 - 32 - 1	14 - 45 - 1	24 - 29 - 1	~~882 - 30~~
5 - 27 - 1	15 - 44 - 1	25 - 22 - 1	904 - 30
6 - 22 - 1	16 - 23 - 1	26 - 22 - 1	~~75 1/2' - 10 lbs~~
7 - 29 - 1	17 - 25 - 1	27 - 22 - 1	75 1/2' - 10 lbs
8 - 30 - 1	18 - 23 - 1	28 - 21 - 1	
9 - 22 - 1	19 - 37 - 1	29 - 22 - 1	
10 - 32 - 1	20 - 34 - 1	30 - 22 - 1	
283 - 10	337 - 10	~~262~~ - 10 284	

Shot March 4, 1949

Truck #1 started 8:25 (½)
Truck #2 started 8:30 (½)
First truck loaded - 8:30
#1 - 11:35 to 11:40 CHAIN
#1 - 11:40 to 12:00 NOON (½)

#2 - 3:35 to . HOIST (1)

TUESDAY - MARCH 8, 1949

SHOVEL -	8 HRS	T =	481 3/4 HRS
2 TRUCKS -	13 1/2 HRS	T =	993 HRS
15' OR LESS LIN FT HOLES -	45 1/2	T =	2903 LIN. FT.
NO. HOLES SHOT -	14	T =	822
NO. CARS USED -	14	T =	822
POUNDS 40% -	8	T =	675 lbs.
DEBRIS MOVED -	504 (270 SPILLWAY)	TT = 3771	GT = 36,894

1 - 39 - 1	12 - 35 - 1	Hill by
2 - 31 - 2	13 - 33 - 1	SPELLMAN BY.
3 - 32 - 1	14 - 21 - 1	
4 - 19 - 1	~~8 - 36 -~~	
5 - 56 - 1	~~11 - 21 -~~	
6 - 67 - 3	14 - 5 4/6 - 23	
7 - 64 - 3	45 1/2 - 8 lbs.	
8 - 67 - 3		
9 - 42 - 3		
10 - 20 - 1		
11 - 20 - 1		

Trucks Loaded - 8:15
#1 2:10 to 2:40 CHAIN (½)
#2 3:25 to 3:40 ?

WATSON - 11 AM TO 4:30 PM.

WEDNESDAY - MARCH 9, 1949. HAZY. WARM

SHOVEL -	8 HRS	T =	492 3/4 HRS
2 TRUCKS -	15 1/2 HRS	T =	1008 1/2 HRS
15' or less LIN FT. HOLES -	99	T =	3002 Lin Ft.
NO. HOLES SHOT -	31	T =	853 Holes
NO. CAPS USED -	31	T =	853 caps
POUNDS 40% -	16	T =	691 lbs.
DEBRIS MOVED -	450	TT = 4230	GT = 37,353

1 - 22 - 1	13 - 43 - 2	25 - 52 - 2
2 - 28 - 1	14 - 30 - 1	26 - 68 - 3
3 - 21 - 1	15 - 28 - 1	27 - 64 - 2
4 - 21 - 1	16 - 30 - 2	28 - 52 - 2
5 - 21 - 1	17 - 36 - 2	29 - 68 - 3
6 - 25 - 1	18 - 34 - 2	30 - 50 - 2
7 - 37 - 1	19 - 28 - 1	31 - 42 - 2
8 - 40 - 1	20 - 30 - 1	396" - 16
9 - 44 - 1	21 - 32 - 1	418" - 16
10 - 42 - 1	22 - 41 - 1	373" - 14
11 - 30 - 2	23 - 44 - 1	13/1187" - 46
12 - 42 - 2	24 - 42 - 1	99' - 16 lbs.
373 - 14	418 - 16	

Shovel started at 1:20 PM.
First truck loaded at 1:45 PM.
~~Second truck started at~~
Shovel 3:25 to 3:35
4:15 to 4:20

Truck driver laid off at Noon.

THURSDAY - MARCH 10, 1949.

SHOVEL - 3½ HRS T = 496¼ HRS

1-TRUCKS - 3 HRS T = 1011½ HRS

Debris moved - 72 Yd. TT - 4302 GT = 37,425

4230 37353

Hill by — Informed Watson that Mr. Beermann wants the Crest of the slide Area Oiled —

No Shooting.

1-	13-	10 day report.
2-	14-	Shovel - 55 HRS.
3-	15-	TRUCKS - 99½ HRS.
4-	16-	LIN FT HOLES - 474½ lin ft
5-	17-	No. SHOT - 177 HOLES
6-	18-	CAPS USED - 177 caps
7-	19-	lbs 40% - 97 lbs.
8-	20-	TRIMMING DEBRIS - 2790
9-	21-	PLACED SPILLWAY - 279 Yd.
10-	22-	TOTAL - 3069 Yd.
11-	23-	
12-	24-	

Shovel started 8 AM
Truck started 8:15 AM
Loaded at 8:20
Truck 8:45 to 9:20 (½)
Loaded at 9:25
WATSON - 8:45 AM TO

Shovel - 10:25 to 4:30

Mr. Beermann said to turn over Job to Mr. SIMPSON. (DONE)

FRIDAY - MARCH 11, 1949.

SHOVEL = 2½ HRS T = 498¾ HRS.

TRUCK = 2 HRS T = 1013½ HRS.

15' or less - LIN. FT HOLES = 58½ T = 3060½ LIN. FT.

No. HOLES SHOT = — T = 853 HOLES

No. CAPS USED = — T = 853 EXPLODERS

TOTAL AMOUNT OF 40% PURCHASED = 800 lbs.

POUNDS 40% = — T = 691 POUNDS USED

DEBRIS MOVED = 45 Yd. TT = 4347 Yd. GT = 37,470 Yd.

1-30-1	12-43 1*	Mr. Beermann &
2-18-½	13-44 1*	Mr. Westey by -
3-27-1*	14-43 1*	looked over Job
4-26-½*	15-44 1*	site - Mr Beerman
5-24-1*	16-44 1	said Mr Westey
6-25-½	17-27 1	would clear trees.
7-35-1	18-35-1*	Mr. Beermann informed
8-26-1	19-31-1	Mr. Watson of this
9-36-1	20-28-1	and too, that oiling
10-28 1	21-25-1	now would be a
11-23-½	22-39-1	waste of time so
298	403	lets forget it.
	298	
	701"	

No Work on Spillway Contract Mar. 12-20, inclusive @ Power shovel out of Commission for repairs.

Shovel started 9:00 a.m. 9:00-12:00 — 12:30-4:30

Watson on Job 8:00 A.M. to 4:45 P.M.

Monday - Mar. 21, 1949

clear - Warm

Shovel — 7 Hrs. — T. = 505 3/4 Hrs.

1 Truck — 7 Hrs. — T. = 1020 1/2 "

15' or Less
Lin. Ft. Holes 16' — T = 3076 1/2 '

No Holes Shot = 30 — T = 883

No. Exploders = 30 — T = 883

lbs. 40% used = 131 lbs. — T = ~~866~~ 704 lbs.

By Truck
Debris Moved = 220 yds. G.T. = 37,690 yds.

Truck { 70 yds. Rock to Spoil Bank
150 " placed on Spwy. floor for cushion.

Shovel casting cushion material part Time.

Shovel Operator - 8 hrs.

12:00 Noon.

Shot 22 Holes shown Drilled 3-11-49

22 Caps - 18 Sticks Powder.

8 Shots Failed to explode - *Noted 3-11-49

L.H. Hill inspection of Job 1:00 P.M.

1-22" - 1 stick 8 extra exploders
2-22" - 1 "
3-22" - 1 "
4-22" - 1 "
5-22" - 1 "
6-44" - 1 "
7-18" - 1 "
8-18" - 1 "
190" = 15'10"

and 8 Sticks Powder for Holes not exploded at Noon. (Not included in days summary)

Shot 4:30 P.M.

1 Shot Blew out top of Hole.

WHS.

cloudy - cool

Shovel - 8:00 - 12:00
12:00 - 4:30

Watson on Job 9:00 A.M. To 4:40 P.M.

Tuesday Mar. 22, 1949

Shovel — 8 Hrs. T = 513 3/4 Hrs.

2 Trucks — 12 Hrs. T = 1032 1/2 "

15' or Less
Lin. Ft. Holes = 47' ~~oil~~ T = 3123 1/2 '

No. Holes shot = 21 T = 904

No. Exploders = 21 T = 904 Exploders.

lbs. 40% used = 7 lbs. T = ~~873~~ 711 lbs.

Debris Moved By Truck = 460 yds. G.T. = 38,150 yds.

Truck { 300 yds Rock to Spoil Bank
160 yds. placed on Spwy. Floor for cushion }

Shovel casting cushion Material part time.

1 - 22" - 1 Stick	12 - 31" - 1 Stick		
2 - 27" - 1 "	13 - 28" - 1 "		
3 - 29" - 1 "	14 - 22" - 1 "		
4 - 36" - 1 "	15 - 32" - 1 "	1 Shovel Operator - 8 hrs.	
5 - 36" - 1 "	16 - 22" - 1 "	1 Oiler - 8 hrs.	
6 - 35" - 1 "	17 - 22" - 1 "	1 Driller - 8 hrs.	
7 - 21" - 1 "	18 - 22" - 1 "	1 Truck Driver - 8 hrs.	
8 - 22" - 1 "	19 - 22" - 1 "	1 " " " 4 hrs.	
9 - 33" - 1 "	20 - 22" - 1 "		
10 - 22" - 1 "	21 - 29" - 1 "		
11 - 31" -	252" = 21'		
314" = 26'2"	26		
	Total = 47'		

Shot at 4:30 P.M.

WHS.

11

Shovel - 8:30 - 11:30.

Weather - cloudy - cool
Rain 8:00 - 8:30 A.M.
Showers.

Wednesday Mar. 23, 1949

Shovel =	3 hrs.	T = 516 3/4 Hrs.
2 Trucks =	5 hrs.	T = 1037 1/2 "
Lin. Ft. Holes (15' or Less) =	None	T = 3123 1/2'
No. Holes Shot =	None	T = 904
No. Caps used =	None	T = 904
lbs. 40% used =	None	T = ~~873~~ 711 lbs.
Debris Moved =	150 yds.	GT = 38,300 yds.

Run 25 { 141 yds. to Spoil Bank
9 yds. placed on Spwy. Floor for cushion

Shovel casting cushion Material Part Time.

Watson on Job - 9:30 to 12:00.

L. H. Hill out about 1:00 PM.

Mr. Watson decided to stop operations for the day at 11:30 a.m. @ Rain.

WHS.

1 Shovel Operator
1 Oiler
2 Truck Drivers
} 3 hrs.

Shovel - 8:00 - 12:00
12:30 - 2:00

Weather - cloudy
Showers.
Rain 1:00 P.M.
to 6:00 P.M.

Thursday Mar. 24, 1949

Shovel - 5 1/2 Hrs.	T = 522 1/4 hrs.
2 Trucks - 9 1/2 Hrs.	T = 1047 hrs.
Lin. Ft. Holes (15' or less) - None	T = 3123 1/2
No. Holes Shot - None	T = 904
No. Caps used - None	T = 904
lbs. 40% used - None	T = ~~873~~ 711 lbs.
Debris Moved - 100 yds.	GT = 38400

Shovel casting cushion material Part time.

Watson 9:00 A.M. - 2:00

L. H. Hill - 12:30 P.M.

Mr. Watson stopped operations for the day at 2:00 P.M. @ Rain.

1 Shovel Operator 5 1/2 hrs.
1 Oiler 5 1/2 hrs.
1 Truck Driver 5 1/2 hrs.
1 " " 4 hrs.

Weather – Part cldy, cool.

Shovel – 8:30 A.M. – 4:30 P.M.

Friday Mar. 25, 1949

Shovel – 7½ Hrs. T = 529¾ Hrs.

Truck – 7½ Hrs T = 1054½ Hrs.

15' or less.

Lin. Ft. Holes – 49 Ft. T = 3172½ Ft.

No. Holes Shot – 36 T = 940

No. Caps used – 36 T = 940

lbs. 40% used – 18 lbs. T = ~~891~~ 729 lbs.

Debris Moved – 70 yds. GT. = 38,470 yds

Shovel casting cushion material part time.

8 Ft. Drilling.
Shot 2 Boulders on face of Splwy.
Cut about 12:30 P.M.
Designated by Mr. Spielman 2-18-49

L.H.H.11 inspection 1:30 P.M.
Watson – 9:00 A.M. to 1:00 P.M.
W.H. Holmes, Spielman, Beerman } 3:30 P.M.

1 – 21"
2 – 26"
3 – 22"
4 – 21"
5 – 22"
6 – 42"
7 – 22"
8 – 42"
9 – 23"
241 = 20'1"

Shot 10:00 A.M.

Loose Rock Larger than 18" on cushion material

1 – 18"
2 – 18"
3 – 18"
4 – 11"
5 – 12"
6 – 11"
7 – 15"
8 – 12"
9 – 10"
10 – 8"
133"
11'1"

Shot 4:30 P.M.

11 – 10"
12 – 6"
13 – 6"
14 – 5"
15 – 5"
16 – 8"
17 – 9"
18 – 12"
19 – 7"
20 – 8"
21 – 8"
22 – 10"
23 – 6"
100

~~25 – 4"~~
26 – 7"
27 – 8"
15"
133"
100"
248" =
20⅔'

E.P. Watson Contract on El Capitan Spillway Completed Mar. 25, 1949 4:30 P.M.

Moveing equipment away from E.C.D. Mar. 28, 1949.

WHS.

99
12 | 1187
108
107

12 holes 20 Caps

14.5
15 5
15 5
15 5
15 5
15 5
15 5
15 5
15 5
5
139.5 / 40

.347
46
2082
1388
15962

56 # 475

58.5
12 | 701
60
101
96
5

12
99
12
198
99
1188

585
12
1170
585
702.0

Spring 8

8 - 20'

102
4
408
51
459

475 # 20%

4916
3850
1066

40 # 40%

1150
3850
5000

5' = 10 # 10

#1 - 46"
2 - 66"
3 - 64"
176

18 = 1#

20
h = 36.0
145
v = 65

65
65
325
390
4225

12
56
48
8

3.1416
4225
157080
62832
62832
125664
132732.60
20
265465.20
132732.60

4916.
27 | 132732.6
108
247
243
43
27
162
162

DYNAMITE

1 STICK - 1⅛" X 8" of 40% STRENGTH

WEIGHTS 0.347 POUNDS

144 STICKS to 50 lb. CARTON

970 · .347 = 6790 + 3880 + 2910 = 336.590

90 × 4 = 360 + 45 = 405

36 × 4 = 144 + 18 = 162

62 × 4 = 248 + 31 = 279

337 lbs

13.5 × 4.15 = 775 + 155 = 620

12 pcs.

64.335 ÷ 12 = 5.361

904 ÷ 12 = 75 R 4

64 · 60 · 4

.347 × 19 = 3123 + 347 = 6.593

11.75 × 8 = 9400 + 6473 = 158.33

38 × .347 = 266 + 152 + 114 = 13.186

45.5 × 12 = 910 + 455 = 5460

.347 × 122 = 691 + 694 + 342 = 42384

112 × 4 = 448 + 56 = 504

88 × 4 = 352 + 44 = 396

.347 × 2 = 694

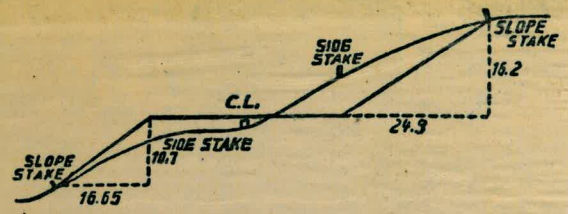
347 × 2 = 694 + 347 = 7.287

82 × 4 = 328 + 41 = 369

0.347 × 12 = 694 + 347 = 4.164

.347 × 20 = 6.940

.347 × 38 = 2776 + 1041 = 13.186



DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING.

SLOPE 1½ TO 1. ROADWAY OF ANY WIDTH.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0.00	0.15	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	0
1	1.50	1.65	1.80	1.95	2.10	2.25	2.40	2.55	2.70	2.85	1
2	3.00	3.15	3.30	3.45	3.60	3.75	3.90	4.05	4.20	4.35	2
3	4.50	4.65	4.80	4.95	5.10	5.25	5.40	5.55	5.70	5.85	3
4	6.00	6.15	6.30	6.45	6.60	6.75	6.90	7.05	7.20	7.35	4
5	7.50	7.65	7.80	7.95	8.10	8.25	8.40	8.55	8.70	8.85	5
6	9.00	9.15	9.30	9.45	9.60	9.75	9.90	10.05	10.20	10.35	6
7	10.50	10.65	10.80	10.95	11.10	11.25	11.40	11.55	11.70	11.85	7
8	12.00	12.15	12.30	12.45	12.60	12.75	12.90	13.05	13.20	13.35	8
9	13.50	13.65	13.80	13.95	14.10	14.25	14.40	14.55	14.70	14.85	9
10	15.00	15.15	15.30	15.45	15.60	15.75	15.90	16.05	16.20	16.35	10
11	16.50	16.65	16.80	16.95	17.10	17.25	17.40	17.55	17.70	17.85	11
12	18.00	18.15	18.30	18.45	18.60	18.75	18.90	19.05	19.20	19.35	12
13	19.50	19.65	19.80	19.95	20.10	20.25	20.40	20.55	20.70	20.85	13
14	21.00	21.15	21.30	21.45	21.60	21.75	21.90	22.05	22.20	22.35	14
15	22.50	22.65	22.80	22.95	23.10	23.25	23.40	23.55	23.70	23.85	15
16	24.00	24.15	24.30	24.45	24.60	24.75	24.90	25.05	25.20	25.35	16
17	25.50	25.65	25.80	25.95	26.10	26.25	26.40	26.55	26.70	26.85	17
18	27.00	27.15	27.30	27.45	27.60	27.75	27.90	28.05	28.20	28.35	18
19	28.50	28.65	28.80	28.95	29.10	29.25	29.40	29.55	29.70	29.85	19
20	30.00	30.15	30.30	30.45	30.60	30.75	30.90	31.05	31.20	31.35	20
21	31.50	31.65	31.80	31.95	32.10	32.25	32.40	32.55	32.70	32.85	21
22	33.00	33.15	33.30	33.45	33.60	33.75	33.90	34.05	34.20	34.35	22
23	34.50	34.65	34.80	34.95	35.10	35.25	35.40	35.55	35.70	35.85	23
24	36.00	36.15	36.30	36.45	36.60	36.75	36.90	37.05	37.20	37.35	24
25	37.50	37.65	37.80	37.95	38.10	38.25	38.40	38.55	38.70	38.85	25
26	39.00	39.15	39.30	39.45	39.60	39.75	39.90	40.05	40.20	40.35	26
27	40.50	40.65	40.80	40.95	41.10	41.25	41.40	41.55	41.70	41.85	27
28	42.00	42.15	42.30	42.45	42.60	42.75	42.90	43.05	43.20	43.35	28
29	43.50	43.65	43.80	43.95	44.10	44.25	44.40	44.55	44.70	44.85	29
30	45.00	45.15	45.30	45.45	45.60	45.75	45.90	46.05	46.20	46.35	30
31	46.50	46.65	46.80	46.95	47.10	47.25	47.40	47.55	47.70	47.85	31
32	48.00	48.15	48.30	48.45	48.60	48.75	48.90	49.05	49.20	49.35	32
33	49.50	49.65	49.80	49.95	50.10	50.25	50.40	50.55	50.70	50.85	33
34	51.00	51.15	51.30	51.45	51.60	51.75	51.90	52.05	52.20	52.35	34
35	52.50	52.65	52.80	52.95	53.10	53.25	53.40	53.55	53.70	53.85	35
36	54.00	54.15	54.30	54.45	54.60	54.75	54.90	55.05	55.20	55.35	36
37	55.50	55.65	55.80	55.95	56.10	56.25	56.40	56.55	56.70	56.85	37
38	57.00	57.15	57.30	57.45	57.60	57.75	57.90	58.05	58.20	58.35	38
39	58.50	58.65	58.80	58.95	59.10	59.25	59.40	59.55	59.70	59.85	39
40	60.00	60.15	60.30	60.45	60.60	60.75	60.90	61.05	61.20	61.35	40
41	61.50	61.65	61.80	61.95	62.10	62.25	62.40	62.55	62.70	62.85	41
42	63.00	63.15	63.30	63.45	63.60	63.75	63.90	64.05	64.20	64.35	42
43	64.50	64.65	64.80	64.95	65.10	65.25	65.40	65.55	65.70	65.85	43
44	66.00	66.15	66.30	66.45	66.60	66.75	66.90	67.05	67.20	67.35	44
45	67.50	67.65	67.80	67.95	68.10	68.25	68.40	68.55	68.70	68.85	45
46	69.00	69.15	69.30	69.45	69.60	69.75	69.90	70.05	70.20	70.35	46
47	70.50	70.65	70.80	70.95	71.10	71.20	71.40	71.55	71.70	71.85	47
48	72.00	72.15	72.30	72.45	72.60	72.75	72.90	73.05	73.20	73.35	48
49	73.50	73.65	73.80	73.95	74.10	74.25	74.40	74.55	74.70	74.85	49
50	75.00	75.15	75.30	75.45	75.60	75.75	75.90	76.05	76.20	76.35	50

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