

W
380

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 $30.6 + (20 - 16) \cdot 2$ 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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G. W. Converse

El Capitan Dam.

San Diego, Calif.

Sept. 8, 1930
E. 5480 About top of embankment

Top E 5480

544.3

92.1 out

0+00 - 7+00

11+72.77 - 9+61.5

3480 - 3708 Elev. 543

546 to 373

± Elev. 610. N 32 40

DIS
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E
to be
of roa
exam
30.6 =

Cooper - Standard Oil Sta.
El Cajon 1861
Ralph Ralph,

53
11+72.77 - 11+63 - Dec. 8
53 10+93
11+63 - 11+03 - Dec. 8
10+93 10+25.5
11+03 - 10+35.5 Dec. 18
10+25.5 - 9+57.5
10+35.5 - 9+57.5

Weights of steel bars.

1" \square = 3.440# per lin. ft.
3/4" \square = 1.940# " " "
13/16" \square = 1.763# " " "
7/8" ϕ = 2.070# " " "

24' steel column = 434.544

Set flags along N. 3480 from
E 5150 to E 5400 for limits of
rock embankment till further
stripping is completed as required
by State Engr.

Solid rock in toe trench between
stripping and south of N. 3560
Sta. 11+54.2 ^{Tunnel} is sta. of change in
side line grade for footing of
steel forms. will run level from
11+54.2 to 11+44.2 - then 4" below
grade as poured - cut concrete
to desired grade.

Cross sections of stripped area
bet rock embankments.

N. 3500 and N. 3660

End of 8" pipe for hydraulicing
on north upstream abutment

N. 3285 - E 5350

Downstream = N. 3320 E. 4740

Upstream E 5232. 1.3:1 slope

Downstream E 4677. 1:1 "

53	53
1.3	0.8
159	62.4
53	
68.9	
42.4	
26.5	

Corc Wall.

River bottom section

Elev. Original ground 553-561

Elev. Stripped area. ± 548

Elev. bottom 36' width stripping 538.0

Elev. start 6' neat line trench 528.0

Max. bottom 6' " " " 500.5

Conc. N. 3480 to 3650 to Elev. ± 510 Oct. 7, 1932

16 batch grout - 5 sks. to batch } 80 sks

262 " conc. - 7 " " " } 1834 "

Expansion
Joints
N. 3000

3080

3160

3240

3320

3400

3480 3480

3560 OKd. by State Engr. Oct. 6, 1932

3640 3660

3720 OKd. by State Engr. Oct. 1932
3762

3800

3880

3960

4040

4120

4200

Downstream Toe Wall.

Elev. stripped area before neat
line trench 536-537.

Elev. Bottom toe wall trench: 531.

Length arched wall = 292.14

Elev. original river channel - 555.

Length - straight wall 0+10 to 0-60

Total Concrete - 6970.7

" Excavation - 1835.5

14 men at shop. Water 614.8

1 welder

1 Carpenter

1 Electrician.

1 - man cleaning beach.

7 - men #6. 7 men #8 - 9-7-10

1 - man quarry

Concrete pour - footing 8/9/32

Sta. 1+00 to Sta. 2+92. Rv. Depth - 5.0

Puddle Core Samples. 4/21/33.

N. 3450

N. S.

614.6 Sample

N. 3450

E. 5000

590.6

Upstream Toe Wall

Elev. stripped area before next
line trench = 537.

Elev. bottom toe wall trench = 530

Length arched wall = 455.02

Elev. top original river channel. 563.

Total length wall = 485.0

Total Concrete - 6570.4 cu. yd.

Total Excavation - 2193.7 cu. yd.

Total Cement - 7170 Bbls.

Concrete pour - footing

Sta. 1+05 to Sta. 2+53. 8/8/32

2+53 to 3+30 8/11/32

0+50 to 1+05 8/12/32

3+30 to 3+73 8/13/32

3+73 to 4+16 8/15/32

} Av. Depth
7'

Av. Dp. 7'

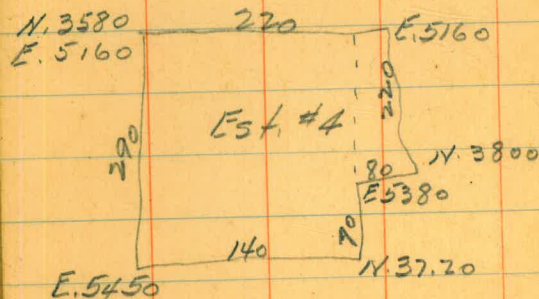
Av. Dp. 8'

Solid Rock Classification

Puddle Core Trench - Below stripped surface north of N. 3670 to end of trench. (H.W. + T.E.C. 8/8/32)

Upstream Toe Wall. Below 550 contour and south of N. 3540

Exit Portal Excavation
Rock Embankment in River



6470 Cu. Yd.

Book 361 - P. 38.

$\begin{array}{r} 290 \\ 140 \\ \hline 11600 \\ 290 \\ \hline 40600 \\ 17600 \\ \hline 58200 \end{array}$	$\begin{array}{r} 220 \\ 80 \\ \hline 17600 \end{array}$	$\begin{array}{r} 58200 \\ 3 \\ \hline 174600 \\ 162 \\ \hline 126 \\ 108 \\ \hline 180 \\ 162 \\ \hline 180 \end{array}$
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2155

54
27
15
135
150

Downstream Toe of dam.

100' x 50' x 5' Item #1.

Below axis above drains

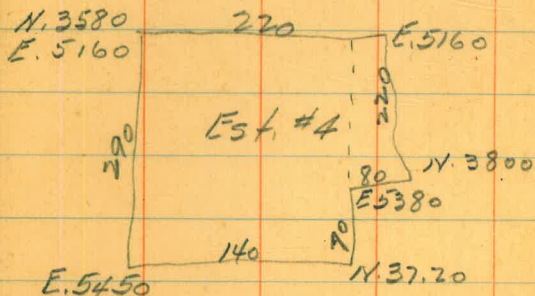
30 x 50 x 3.

Solid Rock Classification

Puddle Core Trench - Below stripped surface north of N. 3670 to end of trench (H.W. + T.E.C. 8/8/32)

Upstream Toe Wall. Below 550 contour and south of N. 3540

Exit Portal Excavation
Rock Embankment in River



6470 Co. Yd.

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$\begin{array}{r} 290 \\ 140 \\ \hline 11600 \\ 290 \\ \hline 40600 \\ 17000 \\ \hline 58200 \end{array}$	$\begin{array}{r} 220 \\ 80 \\ \hline 17600 \end{array}$	$\begin{array}{r} 58200 \\ 3 \\ \hline 174600 \\ 162 \\ \hline 126 \\ 108 \\ \hline 180 \\ 162 \\ \hline 130 \end{array}$
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27) 58200 (2155)

Downstream Toe of dam.

100' x 50' x 5' Item #1.

Below axis above drains

30 x 50 x 3.

Length 1172.77. Timber 0+00 to 6+99.7.
Timber

Tunnel.

Tunnel spoil from exit end Pioneer
moved to rock embankment above

axis. Length - 1172.77

Est. #4

7+60 - 7+70 13 x 18

17+30 to Portal } Enlargement to
0+13 - 0+33 } spring line

Tunnel Enlargement.

1+03 - 1+29

Length =

Entrance - Invert 563. Crown 588.

Exit " 542 " 567.

Flood waters - Oct. 10. 1932

Broke over levee (568.4) at 2:55 P.M. to
entrance portal. Started thru tunnel

Conc. floor. Nov. 27. to 5+45

Est. #5.

Enlargement to 1+33 and 10+00

Wall plate to 1+50 and 9+80

1.3 yd. per lin. ft. left for floor trim

Now about conc. wall at exit end removed
for approach cut.

Oct. Est.

Spoil from tunnel enlargement
Ent. end from Sta. 0+82, ^{Sept. 19.} used to fill
above upstream Teerwall - Item No. 9

Thurston.

What station in Exit end on Monday A.M.
where tunnel spoil moved around drains.
Tunnel spoil around N. drain Oct. 24, '32
Sta. 7+44 Bench enlarg. only.

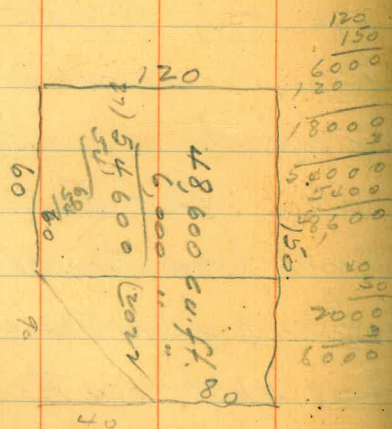
Tunnel enlargement for
Outlet tower connections.

0+56 to 0+72. and 1+03 to 1+29

Enlargement is 4' outside neatline
concrete including floor.

Estimates.

Est. #4. Upst. To Nail. 4" Tile 2+75 = 27'
 3+15 = 24'
 51



2000 cu. yds. of Exc. Rock not covered



Est. #6.

Oct. 3. 16 loads of tunnel spoil in rock
 embankment in P.M. at 3 yd. per load.

Tunnel.

- Ent. Wing 3+47.?
- Bench 3+26
- Exit Wing 6+18?
- Bench 7+00
- Timber 9+74 to 11+72.8
- " 0+00 to 3+26

Grout Holes - Core Wall.

Locate at 3618. on east side core

3647.5 - 3480"

" 3597 " " " "

3576 and slant east

3565

3538 1' East of #

3544.5.

3535 where sump was.

3654 on east

3661 on "

3664 " "

3667 " west

3669 " east

3675

3697 east

3739 west

3750 east

3760 - 3647.5

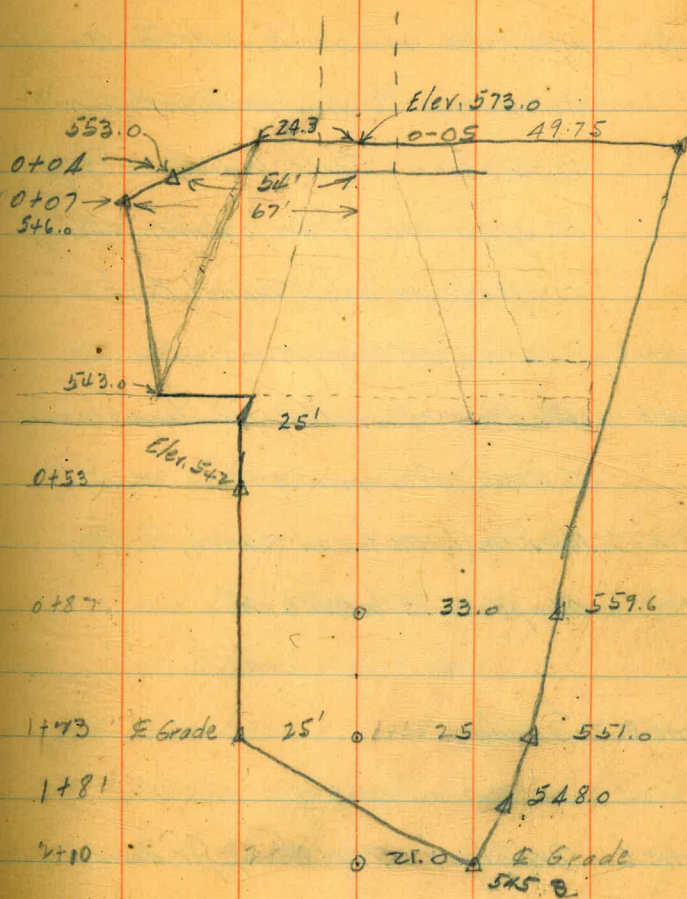
} all holes
on east

Ledge Rock Exit Portal.

0-05 H.I. 548.8 V.A + 37°15' - 62.5

Rock line as defined by

Mr. Pyle and Mr. Wood - Nov. 2, 1932



June 3. Dragline excavating trench for 24" pipe line across dam area. In P.M. moved over to downstream toe wall excavations. Start laying 24" pipe at upper end. Crew of men setting compressors below Tunnel Exit.

June 4. Dragline excavating for downstream Toe Wall. Crew moving Mucking Machine to exit end tunnel, setting compressors below exit.

June 5. Sunday.

June 6. Dragline excavating for downstream Toe Wall. Building Compressor House below Tunnel Exit. Start drilling on face of Tunnel Exit - round of holes shot in P.M. on start of Pioneer Tunnel.

June 7. Dragline excavating for downstream toe wall. Tunnel crew drilling and shooting for Pioneer Tunnel - Exit and Entrance.

June 8 Same

" 9 Same

" 10 "

" 11 Draglines excavating for both Upstream and Downstream Toe Walls. Tunnel crews at Entrance and Exit ends.

13 Draglines excavating for both Upstream and Downstream Toe Walls. Tunnel crews at Entrance + Exit ends.

14 Draglines excavating for both Toe Walls. Dragline stripping in river above axis. Both tunnel crews working.

15 Draglines excavating for both toe walls. Dragline stripping in river above axis. Tunnel crew working at Exit only. Mucker started at Exit this A.M.

June 16. Dragline converted into shovel at
Upstream toe wall. Dragline excavating
for downstream toe wall. Dragline
stripping in river bottom above axis.
Tunnel crew at exit portal only.

17. Shovel excavating for upstream toe wall.
Dragline " " downstream "
" stripping above axis.
Tunnel crew at exit end only.

18. Same as yesterday

20. Same as Saturday.

21

June 22. Dragline excavating for downstream
toe wall excavation.

Dragline stripping above axis.

Shovel excavating for core wall excavation.

Tunnel Crew at Exit end only. 3rd Shift
starting at 11 P.M. tonight.

Core Wall Concrete.

Date	Coordinate		Elevation		Width	Steel	Vert. Bars	Hor. Bars	Remarks
	N.	To N.	From	To					
Oct. 7	3480	3647.5	± 502 Footing	± 510	6.0				
14	3647.5	3762	Footing		6.0				
15	3560	3640	± 510	522	6.0				
16	3480	3560	± 510	522	6.0				
17	3560	3640	522	528	6.0	522.0	525.0	528.5	2-Hor. Tie bars at 525.25 2-Vert. Bars @ 8' C.C. to 522.0
Oct. 18	3480	3560	522	528	6.0	522.0	525.0	528.25	Same as above.

Est. # 11.

Core wall, N. 3875 Elev. 592.

Steel Columns - N. 3252 to N. 3892.

Outlet tower excar. from surface to Elev. 565 for Feb. estimate. Used for backfill of ent. portal.

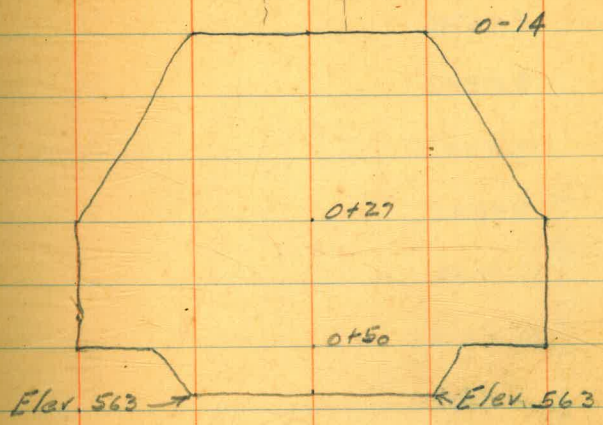
Core wall Concrete - N. 3234 to N. 3256 - Elev. 616.
N. 3256 to N. 3880 Complete.
N. 3880 to N. 3900 - Elev. 630.

Core wall.
3352-3320 to 586.0
39 batches - 39' copper 278 SKs. Cement

- 2- 1 1/2" O x 24
- 42- " x 8
- 8 7/8" x 11
- 32 7/8" x 5
- 3 columns
- 162' 2" pipe

Rein. Steel also in enlarged section tunnel

Entrance Portal Ledge Rock.
Rock line as defined by
Mr. Pyle and Mr Wood Nov. 2, 1932



03
11/60

Rock above surface along
road north side elev. 640

- | | |
|-----|----------|
| #1. | 10x8x7 |
| 2 | 8x5x6 |
| 3 | 3x3x3 |
| 4 | 3x3x3 |
| 5 | 3x4x3 |
| 6 | 12x4x6 |
| 7 | 4x6x6 |
| 8 | 5x5x3 |
| 9 | 10x3x3 |
| 10 | ↓ 15x5x6 |
| 11 | 6x5x4 |
| 12 | 6x3x3 |

West of Axis

Aug. 20. 1936.

575.4

Observation Wells.

# 1	N. 3620	E. 4760
2	N. 3620	E. 4840
3	N. 3620	E. 4920
4	N. 3620	E. 5080
5	N. 3620	E. 5140
6	N. 3450	E. 4840
7	N. 3740	E. 4840

Puddle Core Wells.

1	N. 3160	E. 5008
2	N. 3700	E. 5000
3	N. 3500	E. 5017
4	N. 3500	E. 5025
5	N. 3500	E. 5035

Quarry, A.M. Shovel #6 - Runner + oiler

1 Bulldozer
 3 Compressors
 4 Jack hammers Powderman
 2 Ripper + 1 Foreman
 Truck #5 + driver
 Blacksmith + helper
 4 Rock trucks.

Dam A.M.

Truck #5 and driver. Moving old
 4 laborers. lumber from
 Dist. spoil bank

R. Fill.

2 Dumpmen.
 1 Bulldozer
 3 Laborers.

Bottom Pit

1 shovel runner + helper
 repairing #9
 1 Shovel runner + helper
 moving #8 to spoil bank

Rock Emb. Dist.

1 Foreman } Hand placing.
 9 Laborers }
 1st. Crane #10
 1 Bulldozer - 1/2 day

Lakeside

Dragline #11 and operator
 22 Trucks.

$$\begin{array}{r}
 250 \\
 \underline{60} \\
 15000 \\
 \underline{24} \\
 60000 \\
 30000 \\
 \hline
 20) 360,000.0 \quad (18,000 \\
 \underline{70} \\
 160
 \end{array}$$

$$\begin{array}{r}
 8000 \\
 \underline{200} \\
 16000
 \end{array}$$

Spillway Extension Sept. 1, 1934,
Item 3 remaining.

18 y wide x 70 y. long x 1.5 y. deep.

$$\begin{array}{r}
 1.5 \\
 \underline{70} \\
 105.0 \\
 \underline{18} \\
 8400 \\
 \underline{1650} \\
 1890.0
 \end{array}$$

2000 yd.³

Item 1 complete except upper south
corner

Item 2 complete except 500 y³

Item 4 = 75% complete

7/9/24 728.5
 Monthly Estimate - August 1924

Normal section on N. 3600 for rock
 embankment, rolled embankment
 and puddle core.

T.P.	8.06	733.89 ✓	725.83
4874 E4882		17.7	716.2 ✓
4898		17.1	716.8 ✓
4920		4.9	729.0 ✓
4949		4.1	729.8 ✓
4985		3.5	730.4 ✓
4988		5.6	728.3 ✓
4992		6.7	727.2 ✓
5000		9.7	724.2 ✓
5010		7.4	726.5 ✓
16		5.6	728.3 ✓
18		3.5	730.4 ✓
70		3.8	730.1 ✓
80		11.1	722.8 ✓
8105		14.2	721.7 ✓
8115			finish grade.

Mon. No.	Location	Coordinates		Orig. Elev.	Total movement	
		N.	E.		Horiz.	Vertical
1	Top downstream wall	3620	4514			
2	£ downstream 600 berm	3620	4600			
6	Top upstream wall	3660	5493			
7	£ " 600 berm	3660	5412			
8	£ " 650 "	3618	5276	651.33		
9	£ downstream 650 "	3589	4731	651.06		
10	£ upstream 700 "	3648	5146	701.37		
11	£ " 700 "	3309	5146	697.86		
12	£ " 700 "	3897	5146	703.88		
13	£ downstream 700 "	3305	4842	701.79		
14	£ " 700 "	3560	4842	707.37		
15	£ " 700 "	3767	4842	701.64		
16	£ " 650 "	3500	4731			
17	£ " 650 "	3750	4731			
18	£ upstream 650 "	3500	5276	651.25		
19	£ " 650 "	3860	5276	650.51		

Upstream

N. 4100 - 730-740 no rock

4000 " " " "

3900 " " " "

3800 " " 50 y³3700 " " 50 y³

3600 " " no rock

{	3600	722 - 740	} 25% complete
{	3500	722 - 740	

{	3400	722 - 740	} 20%
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{	3300	722 - 740	} 10%
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{	So. Abut.	722 - 740	} 10%
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Downstream

So. Abut.	716 - 740	} 5%
N. 3400	716 - 740	

N. 3400	716 - 740	} 20%
N. 3650	716 - 740	

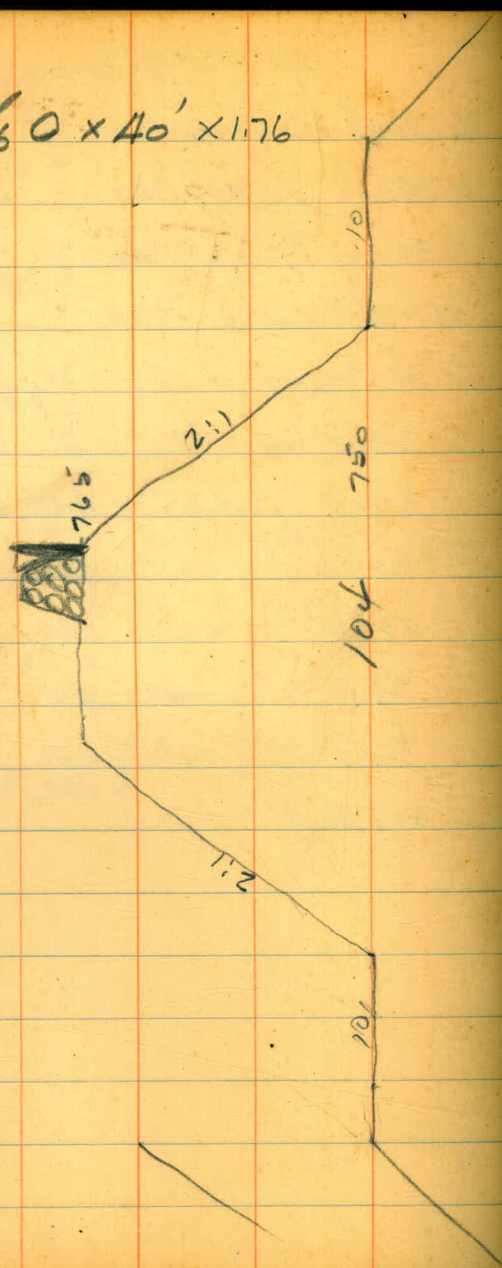
3650	" "	} 25%
3700	" "	

3700		} 50%
3800		

3800		} 75%
3900		

3900		} 100%
No Abut		

57 bars $\frac{13}{16}$ O x 40' x 1.76



650 600
550

220

150
125
100
146
521
440
810

Loads of Lakeside material
dumped along road between
Lakeside and Dam, + wasted.

Mile 00 = Intersection of quarry
and camp roads. Sept. 27, 1934.

Hill - Converse,

Mile	0.0 - 3		2.7	1
	0.1 - 4		2.9	1
	0.25	1	3.0	2
	0.6	1 - River	3.3	2
	0.7	2	4.2	1
	1.1	1	4.3	4
	1.2	1	4.6	1
	1.3	2	4.9	4
	1.4	2	6.1	1
	2.1	1	6.6	1
	2.2	1	7.0	1
	2.2	4	7.2	1
	2.3	1	7.3	1
	2.4	3	7.4	1
	2.5	1	7.8	1
		27	7.5 1/2	1
				57

@ 8 1/2 per truck

} Cape Horn

$$2509.6 = 096.2$$

Bench and puddle progress
Elevations.

Date	Dnst.	Upst.	Puddle
Sept. 29	750.0	749.0	749.0
Oct. 1.	750.5	749.5	749.5
3	752.0	750.5	751.5
5	753.5	753.5	
8	756.5	755.5	
10	757.5	757.0	
11	758.5	758.0	
12	759.0	758.5	
13	759.5	759.0	
15	760.0	759.5	
19	762.5	762.5	
27	763.5		
30	764.0		
31	765.5		

Grouting. Oct. 17, 1934.

Spillway Cutoff

- 0-03 - 1.7 N. of wier face 3 cu. ft.
- 0-06.6-2.3 N. " " " 3 cu. ft.
- 0-09.4-4.0 N. " " " 3 " "
- 0-09.4-1.3 N. " " " 4 " "

Corewall

- N. 2997 3 cu. ft.
- N. 3003 3 cu. ft.

- 1 concrete truck 3 hrs.
- 3 men 3 hrs.
- 20 sacks cement mixed.
- 9 cu. ft. wasted

Dn. st. N. 3790 - 750 ±
 Upst. N. 3630 - 759 ±

1° = 1.7

$$\begin{array}{r} 0.17 \\ \underline{3.4} \\ 1.7 \\ \underline{20.4} \\ 1.0 \end{array}$$



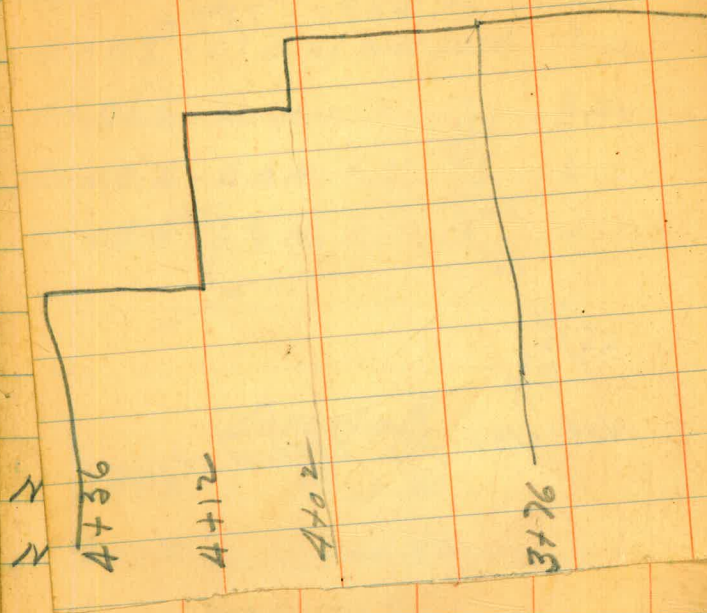
$$\begin{array}{r} 3.4 \\ 35 \overline{) 12.5} \\ \underline{10.5} \\ 2.0 \end{array}$$

Not over $\frac{1}{2}$ " spread at joint

$$\begin{array}{r} 0.65 \\ \underline{716.19} \\ 12.79 \\ 722.98 \\ \underline{9.74} \\ 722.70 \\ \underline{12.93} \\ 735.67 \\ \underline{0.40} \\ 735.27 \\ \underline{13.08} \\ 748.31 \\ \underline{0.54} \\ 747.77 \end{array}$$

$$\begin{array}{r} 764.45 \\ \underline{4.91} \\ 769.36 \\ \underline{10.16} \\ 9.20 \\ \underline{709.67} \\ 778.58 \\ \underline{10.16} \\ 64.92 \end{array}$$

Rock down stream to
N. 4050



1 concrete truck 3 hrs.
3 men 3 hrs,
20 sacks cement mixed.
9 cu. ft. wasted

Guard rail top Exit Portal = 41.2

649.37	747.77
12.95	13.05
662.32	760.82
0.69	0.84
661.63	759.98
12.98	12.60
674.11	772.58
0.53	15.10
675.58	772.68
12.86	5.30
686.44	5.30
1.21	0.66
685.23	777.98
12.96	
698.19	
0.16	
698.03	
12.81	
710.84	769.45
0.65	4.91
710.19	769.36
12.79	10.16
722.98	9.20
0.24	
722.74	
12.93	
735.67	
0.40	
735.27	769.67
13.08	4.91
748.31	774.58
0.54	10.16
747.77	64.92

X Sections of Finished Surface
of Dam. Elev. 650 to 650.

Dec. 11-1934.

N 3300

B.M.	13.01	662.38	649.37	✓
E4726 [?]		12.3	50.1	✓
36 [?]		11.3	51.1	✓
40		9.6	52.8	✓
50		5.2	57.2	✓
60		0.7	61.7	✓
T.P.		0.74	661.64	✓
	12.55	674.19		✓
70		7.3	66.9	✓
80		2.3	71.9	✓
T.P.		0.60	673.59	✓
	11.79	685.38		✓
90		8.2	77.2	✓
4800		2.6	82.8	✓
T.P.		0.13	685.25	✓
	12.82	698.07		✓

Simpson
Saper
Isbell
Rammer
Salgado,

N 3300

698.07

4810		10.0	688.1	✓
20		4.9	93.2	✓
T.P.		0.01	698.06	✓
	12.68	710.74		✓
30		12.6	698.1	✓
36 [?]		9.8	700.9	✓
46 [?]		9.3	01.9	✓
50		8.1	02.6	✓
60		3.6	07.1	✓
T.P.		0.52	710.22	✓
	12.96	723.18		✓
70		10.9	12.3	✓
80		5.8	17.4	✓
4890		0.5	22.7	✓
T.P.		0.40	722.78	✓
	12.69	735.47		✓

Checked & Plotted by F.O. Dec. 26, 1934

N3300

735.47 ✓

4900

7.6

727.9 ✓

10

2.3

33.2 ✓

T.P.

0.20

735.27 ✓

13.07

748.34 ✓

20

10.2

38.1 ✓

30

6.0

42.3 ✓

40

1.2

47.1 ✓

T.P.

0.53

747.81 ✓

12.82

760.63 ✓

46⁹

9.7

50.9 ✓

52⁵

9.3

51.3 ✓

60

5.4

55.2 ✓

T.P.

0.61

760.02 ✓

12.96

772.98 ✓

70

11.1

61.9 ✓

80

5.1

67.9 ✓

87

0.7

72.3 ✓

N3300

772.98

T.P.

0.30

772.68 ✓

2.97

775.65 ✓

check on B.M.

11.15

764.50 ✓

Rec. Elev.

764.45

B.M.

11.11

775.56 ✓

764.45

4990

3.2

72.4 ✓

5000

2.6

73.0 ✓

10

3.2

72.4 ✓

13

3.6

72.0 ✓

20

7.3

68.3 ✓

30

12.6

63.0 ✓

T.P.

12.65

762.91 ✓

Dec. 12-1934

0.11

763.02 ✓

40

5.8

57.2 ✓

5050

11.5

51.5 ✓

T.P.

13.05

749.97 ✓

0.00

749.97 ✓

N3300

749.97

5060		3.7	746.3	✓
70		8.6	41.4	✓
T.P.		13.10	736.87	✓
	0.50		737.37	✓
80		1.0	36.4	✓
90		6.5	30.9	✓
5100		11.9	25.5	✓
T.P.		12.47	724.90	✓
	0.46		725.36	✓
10		5.8	19.6	✓
20		11.3	14.1	✓
T.P.		12.97	712.39	✓
	0.97		713.36	✓
30		4.3	09.1	✓
40		9.7	03.7	✓
T.P.		12.31	701.05	✓
	0.03		701.08	✓

N3300

701.08

5150		1.4	699.7	✓
60		4.5	96.6	✓
70		8.5	92.6	✓
80		13.3	87.8	✓
T.P.		13.08	688.00	✓
	0.79		688.79	✓
90		5.3	83.5	✓
5200		9.7	79.1	✓
T.P.		12.95	675.84	✓
	0.61		676.45	✓
10		1.7	74.7	✓
20		6.2	70.2	✓
30		10.2	66.2	✓
T.P.		13.00	663.45	✓
	0.55		664.00	✓
40		1.7	62.3	✓
5250		5.4	58.6	✓

Dec. 17-1934

N3300

664.00 ✓

5260

9.2 654.8 ✓

70

13.2 50.8 ✓

T.P.

12.93 651.07 ✓

6.04 657.11 ✓

80

7.3 649.8 ✓

B.M.

11.26 655.85 = check on B.M. Rec. Elev. 655.79

X Sections of Finished Surface of
Dam - Elev. 650 to 650.

Dec. 11 - 1934.

N 3560

Simpson
Saper
Isbell
Remman
Solgado.

N 3560

698.07

B.M.	13.01	662.38 ✓	649.37	4810	10.1	688.0 ✓
4726 ⁹²		11.5	50.9 ✓	20	5.2	92.9 ✓
36 ⁹²		11.2	51.2 ✓	30	0.2	97.9 ✓
40		9.1	53.3 ✓	T.P.	0.01	698.06 ✓
50		4.5	57.9 ✓	12.68	710.74 ✓	4.0
T.P.		0.74	661.64 ✓	36 ⁹	9.2	701.5 ✓
	12.55	674.19 ✓		46 ⁹	8.6	02.1 ✓
60		11.7	62.5 ✓	50	7.6	03.1 ✓
70		6.6	67.6 ✓	60	2.9	07.8 ✓
80		1.4	72.8 ✓	T.P.	0.52	710.22 ✓
T.P.		0.60	673.59 ✓	12.96	723.18 ✓	
	11.79	685.38 ✓		70	9.8	13.4 ✓
90		7.9	77.5 ✓	80	5.0	18.2 ✓
4800		2.2	83.2 ✓	4890	0.2	23.0 ✓
T.P.		0.13	685.25 ✓	T.P.	0.40	722.78 ✓
	12.82	698.07 ✓		12.69	735.47 ✓	

Plotted 12/27/34

N 3560

735.47 ✓

4900

7.1 728.4 ✓

10

2.6 32.9 ✓

T.P.

0.20 735.27

13.07 748.34 ✓

20

10.9 37.4 ✓

30

6.2 42.1 ✓

40

0.5 47.8 ✓

T.P.

0.53 747.81

12.82 760.63 ✓

46¹

8.8 51.8 ✓

52⁵

8.4 52.2 ✓

60

4.0 56.6 ✓

T.P.

0.61 760.02

12.96 772.98 ✓

70

9.8 63.2 ✓

80

3.9 69.1 ✓

4987

0.0 73.0 ✓

N 3560

772.98

T.P.

0.30 772.68

2.97

775.65 ✓

B.M. check,

11.15 764.50

Rec. elev.

764.45

11.11

775.56 ✓

4990

2.4 73.2 ✓

5000

1.5 74.1 ✓

10

2.3 73.3 ✓

13

2.8 72.8 ✓

20

6.6 69.0 ✓

30

12.5 63.1 ✓

T.P.

12.65 762.91

0.71

763.02 ✓

40

5.3 57.7 ✓

50

10.1 52.9 ✓

T.P.

13.05 749.97

0.00

749.97 ✓

5060

2.1 47.9 ✓

Dec. 13-1934

N3560

749.97

5070		7.1	742.9 ✓
80		12.3	37.7 ✓
T.P.		13.10	736.87
	0.50	737.37 ✓	
90		5.6	31.8 ✓
5100		11.1	26.3 ✓
T.P.		12.47	724.90
	0.46	725.36 ✓	
10		5.5	19.9 ✓
20		10.4	15.0 ✓
T.P.		12.97	712.37
	0.97	713.36 ✓	
30		4.4	09.0 ✓
40		9.6	03.8 ✓
T.P.		12.31	701.05
	0.03	701.08 ✓	
5150		1.6	699.5 ✓

N3560

701.08

5160		4.7	696.4 ✓
70		8.7	92.4 ✓
80		12.4	88.7 ✓
T.P.		13.08	688.00
	0.79	688.79 ✓	
90		4.5	684.3 ✓
5200		8.7	80.1 ✓
10		13.1	75.7 ✓
T.P.		12.95	675.84
	0.61	676.45 ✓	
20		5.1	71.3 ✓
30		9.0	67.4 ✓
40		13.1	63.3 ✓
T.P.		13.00	663.45
	0.55	664.00 ✓	
50		4.5	59.5 ✓
5260		8.4	55.6 ✓

Dec. 17, 1934.

N 3560

664.00 ✓

5270

12.7 651.3 ✓

T.P.

12.93 651.07

6.04 657.11 ✓

5280

6.4 50.7 ✓

B.M.

1.26 655.85 : check

on B.M. Rec. Elev. 655.79.

X Sections of Finished Surface of
Dam - Elev. 650 to 650.

Dec. 11 - 1934.

N3700

B.M.	13.01	662.38	649.37
4726?		11.7	50.7
36?		11.5	50.9
40		9.5	52.9
50		4.7	57.7
T.P.		0.74	661.64
	12.55	674.19	
60		11.3	62.9
70		6.5	67.7
80		1.1	73.1
T.P.		0.60	673.59
	11.79	685.38	
90		7.4	78.0
4800		2.0	83.4
T.P.		0.13	685.25
	12.82	698.07	

Simpson
Saper
Isbell
Rammen
Salgado

N3700

698.07

4810		9.4	688.7
20		4.7	93.4
30		0.3	97.8
T.P.		0.01	698.06
	12.68	710.74	
36?		9.3	701.4
46?		8.9	01.8
50		7.2	03.5
60		2.6	08.1
T.P.		0.52	710.22
	12.96	723.18	
70		9.9	13.3
80		4.8	18.4
T.P.		0.40	722.78
	12.69	735.47	
4890		10.7	24.8
4900		6.1	29.4

Plotted 12/27/34 - 70.

N3700

735.47

E 4910

0.8 734.7 ✓

T.P.

0.20 735.27

13.07 748.34 ✓

20

9.2 39.1 ✓

30

4.9 43.4 ✓

40

0.1 48.2 ✓

T.P.

0.53 747.81

12.82 760.63 ✓

46⁹

8.6 52.0 ✓

52⁵

8.5 52.1 ✓

60

3.0 57.6 ✓

T.P.

0.61 760.02

12.96 772.98 ✓

70

10.1 62.9 ✓

80

4.4 68.6 ✓

87

0.1 72.9 ✓

T.P.

0.30 772.68

N3700

T.P.

772.68

2.97 775.65 ✓

check on B.M.

11.15 764.50

Rec. Elev

764.45

11.11 775.56 ✓

4990

2.3 73.3 ✓

5000

1.5 74.1 ✓

10

2.3 73.3 ✓

13

2.5 73.1 ✓

20

6.4 69.2 ✓

30

12.0 63.6 ✓

T.P.

12.65 762.91

0.11 763.02 ✓

Dec. 13-1934.

40

4.5 58.5 ✓

50

9.5 53.5 ✓

T.P.

13.05 749.97

0.00 749.97 ✓

60

2.0 48.0 ✓

5070

7.5 42.5 ✓

N3700

749.97 ✓

5080		12.7	737.3 ✓
T.P.		13.10	736.87 ✓
	0.50		737.37 ✓
90		5.2	32.2 ✓
5100		11.3	26.1 ✓
T.P.		12.47	724.90 ✓
	0.46		725.36 ✓
10		5.4	20.0 ✓
20		10.6	14.8 ✓
T.P.		12.97	712.39 ✓
	0.97		713.36 ✓
30		4.4	09.0 ✓
40		9.6	03.8 ✓
T.P.		12.31	701.05 ✓
	0.03		701.08 ✓
5150		1.7	699.4 ✓

N3700

701.08 ✓

5160		4.7	696.4 ✓
70		8.3	92.8 ✓
80		12.4	88.7 ✓
T.P.		13.08	688.00 ✓
	0.79		688.79 ✓
90		4.0	84.8 ✓
5200		8.4	80.4 ✓
10		12.9	75.9 ✓
T.P.		12.95	675.84 ✓
	0.61		676.45 ✓
20		7.7	71.7 ✓
30		9.3	67.1 ✓
T.P.		13.00	663.45 ✓
	0.55		664.00 ✓
40		1.4	62.6 ✓
50		5.0	59.0 ✓
60		9.4	54.6 ✓

Dec. 17-1934

N 3700

664.00 ✓

5270

12.8 651.2 ✓

T.P.

12.93 651.07

6.04 657.11

5280

6.5 650.6 ✓

B.M.

1.26 655.85 = check on

B.M. Rec. Elev. 655.79

Core wall.

Oct. Est. #6.

" N. 3480 to N. 3650
314 pcs. $1\frac{3}{16}$ " x 40' round bars. Horizontal

340 " $1\frac{1}{8}$ " x 26' ϕ bars. Vertical

34 structural steel columns. 24'

Concrete.

Unformed portion complete to N. 3720.

Unformed portion 6' below completed

line from N. 3720 to N. 3762

Estimate #8.

57

Steel Columns. N. 3796 to N. 3348

Concrete. 3340-3352. Elev. Bottom column.

Vert 3340

" 3352-3440 Unformed complete

F 3440-3448 - Batter complete

F 3448-3768 to elev. 543

3768-3776 Unformed complete

3776-3808 Elev bottom columns.

3808 - wall. Elev. bottom column at

N. 3812

Coordinate	Elevation		Length Hole	Grout Pipe	Grout Cu. Ft.	Coordinate	Top	Bottom	Depth	Pipe	Grout
	Top	Bottom									
						3555 E	510.5	479.5	31.0	21.0	3.5
3488 E	510.0	478.0	32.0	21.0	6.0	60 W	510.5	77.5	33.0	21.0	4.5
3493 W	10.0	81.5	28.5	21.0	2.0	65 E	10.5	86.5	24.0	23.0	3.0
97 E	10.0	77.0	33.0	21.0	2.0	70.5 W	10.5	81.5	29.0	22.0	2.0
98 E	10.0	503.0	7.0			76 E	10.5	77.5	33.0	23.0	8.0
3503 W	10.0	477.0	33.0	21.0	5.0	81.5 W	10.5	96.0	14.5	22.0	8.0 ↑
08 E	10.0	77.0	33.0	21.0	6.0	82.5 W	10.5	81.0	29.5	21.5	1.0
13 W	10.0	82.5	27.5	21.0	13.0	86.5 E	10.0	481.5	29.0	23.0	3.5
18 E	510.0	81.0	29.0	21.0	1.0	91 W	10.0	502.5	7.5	21.5	6.0
23 W	10.1	78.1	32.0	21.0	4.0	92 W	10.0	477.0	33.0	22.0	5.5
28 E	10.7	80.7	30.0	21.0	32.0	3597 E	10.0	78.0	32.0	23.0	30.0
32 W	10.7	82.7	28.0	21.0	14.0	3602.5 W	10.0	77.0	33.0	22.0	5.0
36 E	10.3	503.3	7.0	No Pipe	—	07.5 E	10.0	80.0	30.0	21.0	4.5
36.5 E	10.3	496.3	14.0	21.0	11.0	12.5 W	10.0	83.0	27.0	22.0	2.0
37 E	10.3	496.3	14.0	21.0	12.0	18 E	10.0	78.5	31.5	21.0	5.0
40 W	10.3	77.3	33.0	21.0	1.0	23 W	10.0	77.0	33.0	22.0	10.0
44.5 E	10.4	82.9	27.5	21.0	1.0	28 E	10.0	85.0	25.0	23.0	3.5 ↓
3550 W	510.4	78.4	37.0 44.5	21.0	19.0	3634 W	10.0	82.0	28.0 503.0	22.0	6.0

Oct. 31.

Coordinate	Top	Bottom	Depth	Pipe	Grout	Coord	Top	Bottom	Depth	Pipe	Grout
3640 E	510.0	477.0	33.0	23.0	2.0	3680.5 W	512.4		35.4	22.0	2.0
3644.5 W	510.0	475.0	35.0	22.0	4.0	86.0 E	12.6		29.0	22.0	1.0
	522.0		(41.0)								
3649 E	510.4	481.0	19.4	18.0	13.0	91.5 W	12.7		31.5	22.0	1.0
	522.0		(11.0)								
3649.5 E	510.4	510.9		18.0	1.0	97.0 E	13.1		30.5	23.0	6.0
52.0 E		502.1		18.0	0.5	370.1 W	13.5		31.5	22.0	2.0
			Sump								
52.0 W		502.5		18.0	3.0	65.5 E	13.9		31.5	23.0	5.0
	522.0		(20.0)								
54.0 E	510.9	502.0	8.9	18.0	12.0	10.0 W	14.5		31.5	22.0	2.0
54.5 E		502.5		18.0	0.5	10.5 W	14.5		15.5	23.0	3.5
			Sump								
54.5 W		502.8		18.0	1.0	15.0 E	15.1		35.5	23.0	1.5
58.0 W	511.2		34.5	22.0	8.0	20.0 W	15.9		34.5	22.0	1.0
	524.0		(17.0)								
61.0 E	511.4	507.0	4.4	18.0	5.0	25.0 E	16.3		34.3	22.0	4.0
	524.0		(36.0)								
61.5	511.4	488.0	23.4	18.0	1.0	29.5 W	16.7		34.5	22.0	1.0
64.0 E	511.6		32.5	22.0	5.0	Drill not removed					
						30.5 W	16.7		6.5	22.0	1.0
	524.0		(29.2)			34.5 E	17.4		35.0	23.0	14.0
69.0 E	12.0	494.8	17.2	18.0	105.0	39.0 W	18.1		35.3	22.0	4.0
70.5 W	12.1		35.0	22.0	2.0	44.0 E	18.8		36.0	22.0	2.0
75.0 E	12.4		33.0	22.0	4.0	47.0 W	18.9		31.5	22.0	2.0
			27.6.3			375.0 E	519.1		35.8	22.0	4.0
									55.3		

Coordinate Top Bottom Depth Pipe Grout

3755 W 519.2 33.5 22.0 2.0
60. E 519.2 31.5 23.0 4.0

Following measured by H.W. 11/13/32

3483 W 503.2 483.4 19.8 ^{Drilled thru pipe} 34.0 2.0
80 E 503.2 80.5 22.7 34.0 2.0
75 E 503.3 89.8 13.5 34.0 2.0
70.7 W 503.4 94.9 8.5 31.0 3.0
65 E 22.4 87.4 35.0 18 6.0
60 W 22.5 90.5 32.0 18 23.0
55 E 22.7 94.0 28.7 18 4.0
-50 W 13.0 90.6 32.4 18 8.0
45 E 25.3 97.3 28.0 18 4.0
40 W 25.5 95.1 30.4 18 2.0
35 E 25.8 92.8 33.0 18 20.0
30 W 30.0 500.5 29.5 18 6.0
25 E 30.0 17.0 ~~12.0~~ No Pipe Covered with Concrete
20 W 530.1 496.1 34.0 18 2.0

417.5

Top Bottom Depth Pipe Grout

3415 E 533.2 501.2 32.0 18 3.0
10 N 33.3 01.3 32.0 18 3.0
05 E 33.4 01.9 31.5 18 9.0
3400 W 33.5 05.0 28.5 18 2.0
3395 E 33.6 01.6 32.0 18 2.0
90 W 33.8 05.4 28.4 18 5.0
85 E 533.9 05.0 28.9 18 17.0
80 W 540.8 13.8 27.0 18 4.0
75 E 548.7 22.7 26.0 18 3.0
70 W 549.7 22.7 27.0 18 5.0
65 E 552.5 25.0 27.5 18 20.0
60 W 553.3 26.3 27.0 18 1.0
55 E 554.7 29.7 25.0 18 1.0
50 W 555.7 29.7 26.0 18 1.0
45 E 557.5 32.0 25.5 18
40 W 559.8 32.8 27.0 18
3335 E 563.0 38.0 25.0 18 4.0

In Rock altogether - No concrete

474.3

Top		Depth					See Book #381. Feb. 176				
3765 W	517.3	493.3	24.0	18	3.0	3824.5 E	551.2	25.0	18	4.0	
70	17.7	93.2	24.5	18	3.5	25 W	(?)	23	5	4.0	
75	17.7	92.7	25.0	18	7.0	788 W	560.7	25.3	15	3.0	
80	17.7	92.7	25.0	18	3.5	32 E	564.0	25.0	18	60.0	
85	17.9	97.9	20.0	18	5.0 Stuck drill	76 W	567.9	25.5	19	5.0	
90	18.0	93.0	25.0	23	14.0	Cubic feet grout wasted					
95	18.7	93.7	25.0	24	2.0	333 W	560.8	535.3	25.5	21	1.0
3800	19.4		25.0	19	6.0 Batter	26 E	562.2	536.4	26.0	21	4.0
00	19.4	95.4	24.0	18	1.0 Down	21 W	563.3	537.8	25.5	21	2.0
04.5	27.5		24.0	21	5.0 Batter	18 E	566.0	540.5	25.5	21	7.0
06	28.0		21.0	24	5.0 "	15 E	✓		25.0	29	4.0
09	29.2		26.0	24	1.0	10 H	✓		25.0	32	4.0
13.5	33.8		25.0	18	2.0 "	05 E	✓		25.5	31	4.0
18	36.8		25.0	18	2.0	3300 W	✓		25.5	29	2.0
22 W	541.0		25.5	18	1.0	3295 E	✓		25.0	27	3.5
22.5 E	541.2		25	18	6.0 45°	90 W	✓		25.0	27	3.5
23 W	546.6		16	18	1.0 45° Stuck drill	85 E	✓		24.5	26	5.0

	D.	P.	
3280 W ✓	19.0	25.0	4.0
77 E ✓	25.0	25.0	3.0
3840 E	25.0	21	4.0
45 W	25.0	21	15.0
50 E	25.0	21	11.0
55 W	25.0	21	7.0
60 E	25.0	26	3.0
65 W	25.0	24	5.0
70 E	25.0	31	3.0
75 W	25.0	27	Hole covered not granted
80 E	25.0	29 24	4.0
85 W	26.0	33 28	2.0
90 E	25.0	35 28	3.0
95 W	25.0	34 27	5.0
3900 E	23.0	28 23	7.0

3271 W	25.5	³⁵ 29.	3.5
65 E	25	³⁸ 28	4.0
60 W	25	²⁵ 18	7.5
55 E	25	²⁷ 21	2.0
50 W	25	21	2.0
45 E	22	²³ 18	2.0
40 W	26	21	2.0
35 E	26	21	3.0

Profile of Core Wall Trench
 For Est. #11 - Mar 31 - 1933

South End

B.M.	0.27	629.27	629.00	Top corner
N 3232		13.3	616.0	Bottom of Trench
3221		5.4	623.9	
3212		1.7	627.6	
3200		+0.7	630.0	
3188		+3.4	632.7	
3182		+20.5	649.8	

} Slopes to O.G.

North End

B.M.	0.69	638.11	637.42	End of Conc.
N. 3900		14.2	23.9	Bottom of Trench
3902		13.2	24.9	
3915		14.1	24.0	
3922		11.7	26.4	
3931		10.0	28.1	
3931 also		+3.0	641.1	

Boulders below

Spillway Ogee from below

Surface

Albert - Converse Nov. 13, 1934.

1	4x4x6 =	96 cu.ft.
2	3x3x6 2x2x3	54
3	3x3x5	45
4	2x3x3	18
5	2x3x3	18
6	3x3x3	27
7	2x3x5	30
8	3x3x3	27
9	3x2x2.5	15
10	3x3x4	36
11	3x3x3	27
12	2x4x5	40
13	4x4x6	96
14	4x5x5	100
15	3x4x4	48
16	3x3x3	27
17	3x3x3	27
		731

18	3x6x6	731 108
19	3x4x4	48
20	3x3x7	63
21	3x4x5	60
22	2x3x4	24
23	3x3x4	36

Observation Wells, Feb. 20-35

	Feb. 20-35			March 11, 1935		March 11, 1935	
	Water	Bottom	Elev. Casing	Water	Bottom	Water	Bottom
Res. Gauge =	604.07			548.8			
Center Drain. =	546.7 28.8	36.3	577.5	28.7		28.1	549.4
Well # 1.	N. 3620 E. 4760	588.4 90.0	573.4 663.4	587.6 75.8	573.4 90.0	587.4 76.0	573.4 90.0
" # 6	N. 3450 E. 4840	618.0 84.0	586.0 702.0	617.6 84.4	586.0 115.8	617.2 84.8	586.0 115.8
" # 3	N. 3620 E. 4920	623.5 119.4	599.6 743.1	623.5 119.6	599.6 143.5	623.3 119.8	599.6 143.5
" # 5	N. 3620 E. 5140	607.8 101.2	592.0 709.0	609.5 99.5	594.5 114.5	612.5 96.5	594.5 114.5
Res. Gauge	604.07			605.05		612.9	

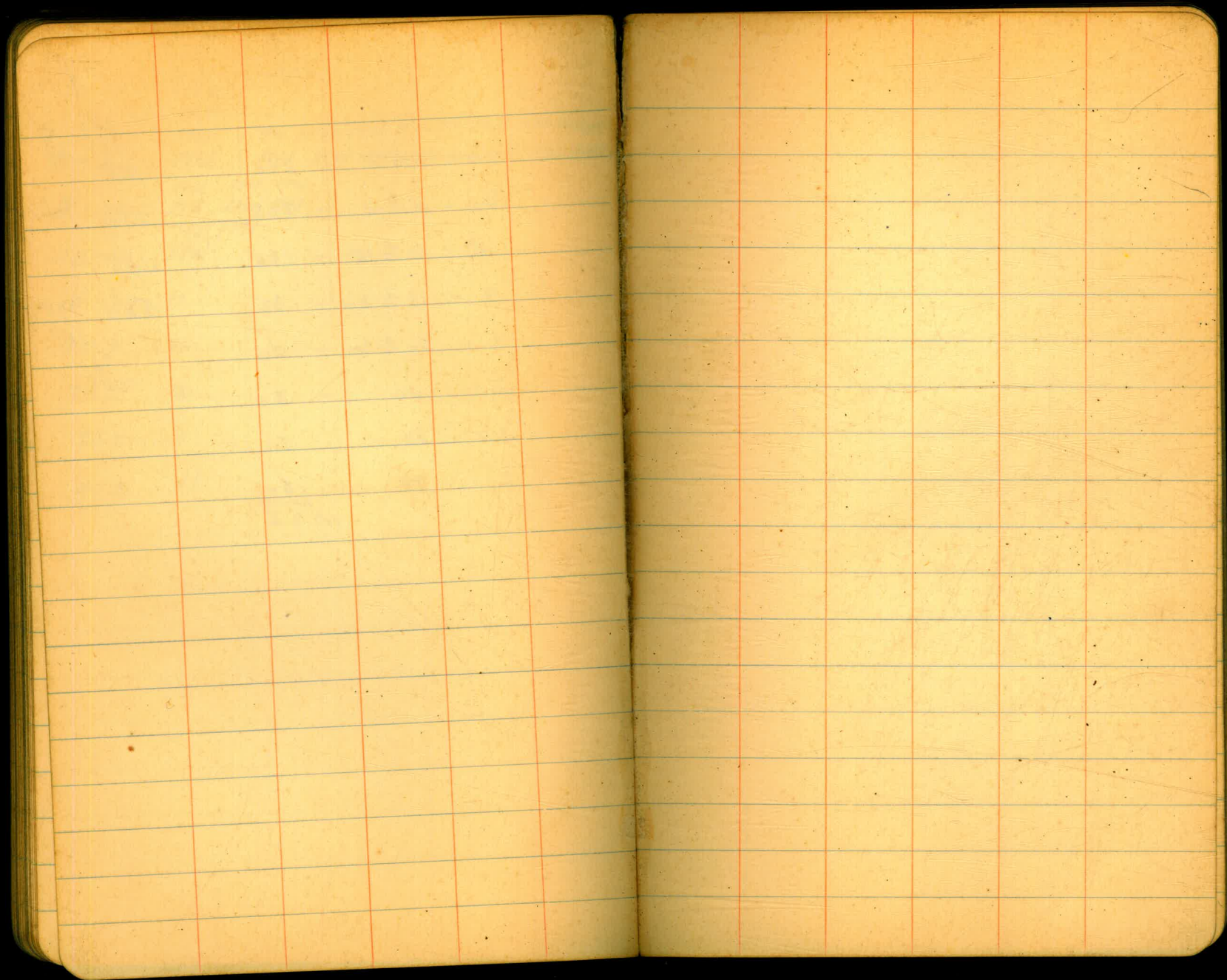
1-5	III	III III III III III III III III III III	III
5-10	III	III III III	
10-15	III	III III	
15-20	11		
20+	11		
75±	2		
50±	1		
40±	11		

100	-	1 to 5	-	250
30	-	5 to 10	-	225
15	-	10 to 15	-	185
2	-	15 to 20	-	35
2	-	20 to 30	-	50
2	-	40	-	80
1	-	50	-	50
2	-	75	-	150
				<u>1025</u>

<u>13</u>	240
1080	0
	<u>1040</u>
	1500

9x77	22
<u>13</u>	3
51	
<u>17</u>	
221	
<u>1989</u>	135
135	

270	20
	<u>540</u>
	125
	<u>62</u>
	187
	75
	<u>90</u>
	2250



X-X

4-4

Nov 14 30.67

4-4 = 35.81

15 30.76 .09

35.93 .12

16 30.90 .73

36.20 .39

650' Upstream

Mon. No	M _{00c}	
1	.03	E
2	.03	E.
3	.21	E.
4	.64	E.
5	.04	E

650 Upstream

B.M.	0.34	656.13	655.79
	5.41	656.72	04-
	4.93	651.20	05-
	5.25	650.88	45-
	5.66	650.47	05-
	5.66	650.47	02-

Movement of Monuments

Oct. 18, 1934

Osborne
Remmen
Hidans

700' Upstream

Mon. No Move

1 .05 E

2 .095 E

3 .065 E

4 .095 E

5 .06 E

6 .125 E

7 .165 E

8 .11 E

675' Upstream

1 .09 E

2 .08 E

3 .075 E

4 .115 E

5 .065 E

6 .005 E

7 .025 E

673.27

B.M. 098 709.51 708.53

12.79 696.72 03-

11.81 697.70 16-

10.66 698.85 08-

10.08 699.83 08-

T.P. 623 706.93 8.81 700.70 64-

4.36 702.57 10-

3.30 703.63 25-

1.35 705.58 01-

B.M. 619 679.46 673.27

4.14 675.32 02-

4.49 674.97 04-

3.53 675.93 03-

3.03 676.43 03-

3.54 675.90 04-

4.14 675.32 05-

3.69 675.77 04-

△

○

○

○

△

	Hor.	Vert.
#8	0.03E	0.0
10	0.01E	0.04
11	0.00	0.02
12	0.05E	0.03
13	0.00	0.03
14	0.03E	0.05
15	0.02E	0.02
✓	0.01W	0.00
9	0.01W	0.01

23
26
62

Rocks overhanging Spillway

No.	Size	Cu. Ft	Out. from Top of Cut			
1.	4x3x6	72	10'	18	4x8x4	128
2	3x4x8	96	2'	19	14x9x10	1460
3	5x5x7	175	15'	20A	20x2½x5	250
4	4x4x9	144	10'	20	3½x12x8	336
5	18x17x16	4896	6'	21	8x4½x5	180
6	8x10x10	800	00	22	9x6x8	432
7	20x12x8	1920	7 inside	23	5x5x5	125
8	26x15x9	3510	15'	24	5x5x4	100
9	11x11x5	605	00	25	4x5x3	60
10	7x6x3	126	17'	26	5x5x5	125
11	7x6x6	252	24	27	8x7x9	514
12	5x5x4	100	35	28	14x10x8	1120
13	5x7x4	140	40	29	6x6x4½	162
14	3x3x8	72	40	30	13x10x9	1170
15	3½x4x8	112	60	31	9x4½x8	324
16	14x16x5	1120	36	32	5x6x6	180
17	10x11x3	330	40	33	13x10x6	780
						8

		cu. ft.	
34	9x5x5	225	10
35	7x7x3	147	13
36	6x6x2	72	13
37	2½x5x4	<u>50</u>	19

22,210 = 822 cu. yd.

Draw E. of Sta. 0+00	20	"	"	60'
" at Sta. 0+00	100	"	"	50'
" " " 1+15	<u>50</u>	"	"	50'
	992			

Steel Columns N 3196 to N 3900
 Conc 3190 to 3924 ±

UPSTREAM Side.

Movement of Mon.
650. Elev. 700. Elev.

North Shot #1	North Mon. Shot #1	North Mon. Shot #2
	.040 E	.050 W
#2.	.030 E	.040 W
	.020 E	.040 E
	0.00	.030 E
	.170 E	0.00
	.180 E	0.00
	.030 E	.030 W
	.010 E	.050 W
	.030 E	.080 W
	.010 E	.070 W
	675. Elev.	.070 E
Shot #1	South Mon. .040 E	.050 E
		.040 E
#2.	.050 E	.030 E
	.040 E	0.00
	.040 E	.010 W
	.020 E	
	.050 E	
	.030 E	
	.020 E	
	.010 W	
	.030 W	
	0.00	
	.010 E	

Oct. 6'34

Meyer
Salgado
W. Horton

DOWN STREAM Side. Oct. 6'84

Movement of Monuments
700. Elev. 650. Elev.

Shot #1	South Mon. Shot #1	South Mon. Shot #2
	.030 W	.010 W
#2.	.040 W	.010 W
	0.00	.030 W
	.030 W	.040 W
	.010 E	.010 W
	0.00	.010 W
	.020 E	.180 W
	0.00	.170 W
	.040 W	.020 E
	.030 W	.020 E
	.040 W	0.00
	675. Elev.	.020 W
#1.	North Mon. 0.00	.020 W
#2.	0.00	
	0.00	
	.020 W	
	0.00	
	.020 W	
	.020 W	
	.020 W	
	.030 W	
	.030 W	
	0.00	
	.010 W	
	.040 W	
	.020 W	

UPSTREAM SIDE

OCT 5 '37

	600. Elev.		675. Elev.
	Sou. Mag.		Nor. Mag.
Shot #1.	0.00	Shot #1.	0.00
" #2.	0.00	#2.	.010 W
	.260 E		.080 W
	.270 E		.050 W
O.M.	0.00		0.00
	0.00		.030 W
	<u>615. Elev.</u>		.050 E
	Nor. Mag.		.030 E
Shot #1.	0.00		.010 E
#2.	0.00		.030 E
	0.00		.020 E
	.020 E		.050 E
	.010 E		.040 E
	.010 E		<u>700. Elev.</u>
	0.00		Sou. Mag.
	<u>650. Elev.</u>	Shot #1.	.020 W
	Sou. Mag.	#2.	.040 W
Shot #1.	0.00		0.00
#2.	0.00	O.M.	.020 W
	0.00		0.00
O.M.	.010 E		.020 E
	.017 E		.040 E
O.M.	.017 E		.020 E
	0.00		.040 W
	0.00	O.M.	.040 W
	0.00		0.00
O.M.	.020 E		0.00
			.010 W
			.010 W

DOWNSTREAM SIDE

OCT. 5 '37

	725. Elev.		650. Elev.
	Nor. Mag.		Nor. Mag.
Shot #1.	0.00	Shot #1.	0.00
#2.	0.00	#2.	0.00
	0.00		.020 E
	0.00		.020 E
	.040 E		.040 E
	.040 E		.040 E
	0.00		.150 W
	0.00	O.M.	.150 W
	.030 E		0.00
	.030 E	O.M.	0.00
	.020 E		.010 W
	.020 E		.030 W
	.020 E		.010 W
	.020 E		.015 W
	<u>700. Elev.</u>		<u>600 Elev.</u>
	Sou. Mag.		Nor. Mag.
Shot #1.	.040 W	Shot #1.	0.00
O.M.	#2. .040 W	#2.	0.00
	0.00		.110 W
	.010 W	O.M.	.120 W
	.010 E		0.00
O.M.	0.00		.010 W
	.010 E		.020 E
	.010 W		
	.050 W		
O.M.	.050 W		
	.030 W		
	.030 W		

$$\begin{array}{r} 727 \\ \underline{1.5} \\ 728.5 \\ \underline{8} \\ 720.5 \end{array}$$
 720.8
 723.5

$$\begin{array}{r} 510 \\ \underline{.01} \\ 510 \end{array}$$
 .0197

$$\begin{array}{r} 510 \overline{) 1000} \\ \underline{510} \\ 4900 \\ \underline{4590} \\ 3100 \\ \underline{3060} \\ 400 \end{array}$$

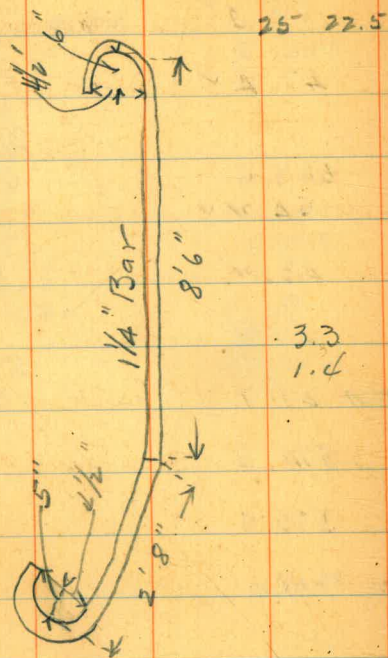
Well Observation Well
readings. Friday A.M.

Aug 20 1934. Aug 31

# 5	709.6 ✓ 56.0 ✓ 726.6 ✓	709.0 57.0 732.4
4	59.4 ✓ 726.5 ✓	71.0 734.1
3	47.4 ✓	43.5 690.6
2		Plugged at 29'
1	663.4 54.2 ✓	663.4 53.0
6	702.0 43.2 ✓	702.0 44.1
7	Lost 577.5	Lost 577.5
Center Drain	27.7	27.6
Upst.	574.5	574.2
Lance	575.5	575.8
Pool	719.0	727.0

5082.3

22
23
27



25 22.5

3.3 4.2
1.4 1.6

Albert Aug. 11, 1934.
Converse

Water Elev. in pits in beach between
observation wells and Summit pool.

718.0 - Summit pool elev.

Water edge upst. beach = E. 5042

Beach = 718.3

Pit E. 5047 W.S. = 717.2

Beach = 719.4

Pit E. 5060 W.S. = 716.5

Sluicing on upst. beach at N. 4000.

Water edge dnst. beach E. 4947 27' from #3.

Beach = 718.2

Pit E. 4943 W.S. = 716.61

23' " #3

Beach = 719.0

E. 4937 W.S. = 714.7

12' " #3

Sluicing on dnst. beach N. 3300

Drain Tile

Upstream Toe Wall.

2+75 27 lin. ft.

3+15 24 " "

Concrete

N. 3560 South Drain E. 4660

± length to toewall = 149.0

± length thru toewall

Footing elev. = 537 ±

Invert elev. = 538 - 2"

Footing concrete on Aug. 22.

Sta. thru toewall - ± 2+80.41

Concrete above tile - Oct. 7, 1932

Concrete complete - Oct. 8, 1932

842 4" Tile = 421 holes.

103 holes each side bottom + top

18 tile - 9 holes on end.

4660
4511.01
749

Concrete

11.3620

Center Drain

£ length to toewall = 143.18

£ length thru toewall =

Footing elev. = 539 ±

Invert elev. = 540 - 2"

Footing concrete on Aug. 17.

Sta. thru £ toewall - £ 2109.90

Concrete to top 4" tile - Sept 29

" completed - Sept. 30

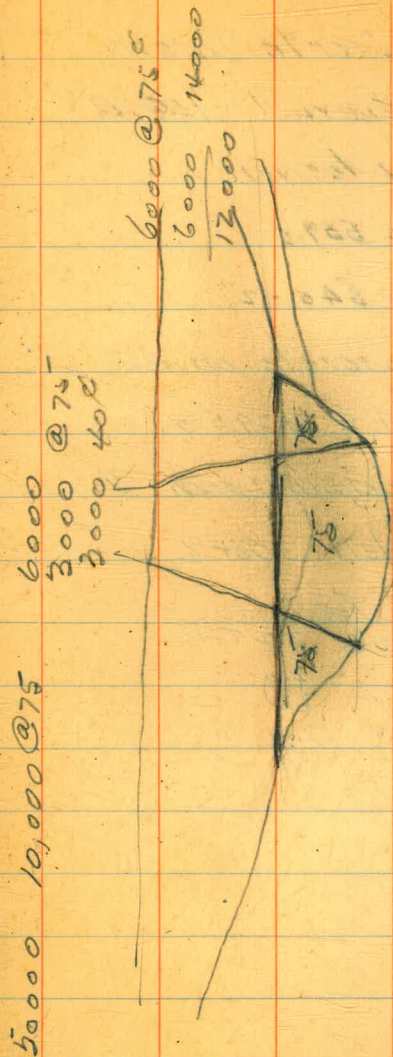
822' - 4" Tile = 411 holes.

4" Tile = 5 3/8" outside Dia.

202 Tile top row each side

200 " bottom " each "

18 " End.



Concrete

N. 3700 North Drain

£ length to toewall = 149.4

£ length thru toewall.

Footing elev. = 541 ±

Invert elev. = 542 - 2"

Footing concrete on Aug. 22.

Sta. thru toewall £ 1+29.53

Concrete to outside arch Oct. 6

Concrete complete Oct. 8.

A' Tile - 860' Total

Top row - south side	212	Tile
Bottom " " "	210	"
Top row - North	210	"
Bottom " " "	210	"
End	18	"

4660
4516.82

143.18

Concrete

Downstream Toe Wall

Date	Sta. to Sta.	Section	Elev. to Elev.
Aug. 9	1+04 - 2+92		Bottom Footing
15	1+40 - 1+90	D	Footing 540
15	1+90 - 2+40	C	" 540
20	0+30 0+50	E	Bottom Footing ± 545 ± 548
20	0-12 0+30	F	" Footing
22	0+50 1+04	F	" "
27	1+40 2+00	D	On batter 540 543
27	N. Drain 1+40	D	Neat Line 540 543
27	N. Drain 1+10	D	Neat Line Footing 543
3' step 0+90	27 0+90 1+10	E	Neat Line Footing 543
3' step 0+60	27 0+60 0+90	E	Neat Line Footing 546
3' step 0+30	27 0+30 0+60	E	Neat Line Footing 549
27	0-11 0+30	F	Neat Line " 552
30	1+10 2+00	D	543 548
30	2+92 3+90		Part Footing Batter
Sept. 1	0+90 1+10	E	543 548

A	B	C	D	E	F
4+02.14	3+60	2+90	2+00	1+10	0+30
3+60	2+90	2+00	1+10	0+30	0-

Sept. 1	0+60	0+90	E	546	548
1	0+30	0-11	F	552	557
1	1+10	2+00	D	548	553
7	2+92	3+87	B+C	536	
7	0+60	1+10	E	548	553
7	0+30	0+60	E	549	553
9	1+10	2+00	D	553	558
12	2+00	Drain	C	540	543
9-12	Drain	2+40	C	540	543
9-12	2+40	Drain	C	537	543
9-12	Drain	2+90	C	535	543
12	0+30	1+10	E	553	558
13	2+90	3+50	B	543	543
13	3+50	3+60	B	542	542
13	3+60	3+87	A	542	542
14-15	2+00	2+90	C	543	548

Concrete

Downstream Toerwall (Contd.)

Sept. 15	0+30	1+10	E	558	563
15	2+90	3+60	B	543	545
16	2+90	3+60	B	545	548
16	1+10	2+00	D	558	563
16	2+00	2+90	C	548	550
17	2+00	2+90	C	550	553
17	0+30	1+10	E	563	568
19	2+90	3+60	B	548	553
19	1+10	2+00	D	563	568
19	0-20	0-10	F	549 Footing	557 Heat Line
19-20	0-10	0+30	F	557	562
20	0-20	0-10	F	557	562
20	2+00	2+90	C	553	558
20-21	0+30	1+10	E	568	572
21	2+90	3+60	B	553	558
21	1+10	2+00	D	568	572
22	2+00	2+90	C	558	563

Sept 22	3+87.5	4+03	A	532	540	Footing
23	0-20	0+30	F	562	567	
23	0-20	0-30	F	560	567	
23	2+90	3+60	B	558	563	
24	3+87.5	4+03	A	540	548	Batter
24	3+60	3+87.5	A	542	548	Batter
26	2+00	2+90	C	558	563	
26	3+60	4+03	A	548	553	
26	0+30	1+10	E	572	575	✓
28	3+60	4+03	A	553	558	?
28	2+90	3+60	B	563	567	
28	1+10	2+00	D	572	575	✓
29	2+00	2+90	C	563	567	
30	0+30	0-60	F	567	572	
30	0-30	0-60	F	572	575	✓
Oct. 2	3+60	4+03	A	558	563	
3	2+90	3+60	B	567	572	
3	0+30	0-30	F	567	572	✓
6	2+00	2+90	C	572	575	✓
6	3+60	4+03	A	563	567	
Nov. 22	3+60	4+03	A	572	575	

Completed Nov. 22.

Concrete
Upstream Toe Wall.

Date	Sta. to Sta.	Section	Elev. to Elev.
Aug. 8.	1+05 - 2+53	Bottom-Footing	
11	2+53 - 3+30	Bottom-	"
12	0+50 - 1+05	Bottom-	"
13	3+30 - 3+73	Bottom-	"
15	3+73 - 4+16	Bottom-	"
16	2+20 - 3+73	Footing	540
✓ 17	1+60 2+40	D	543 545
✓ 19	3+20 4+00	B	540 545
✓ 19	1+60 2+40	D	545 548 547.5
✓ 19	0+80 1+60	E	548.6 553
20	2+40 3+20	C	540 545
23	1+60 2+40	D	548 553
23	3+20 4+00	B	545 548
24	2+40 3+20	C	545 548
24	0+30 0+80	F	Neat Line Footing 553
25	3+20 4+00	B	548 553
25	0+80 1+60	E	553 558

277.43 c.y.

	A	B	C	D	E	F
	4+85	4+00	3+20	2+40	1+60	0+80
	4+00	3+20	2+40	1+60	0+80	0+00
Aug. 26	2+40	3+20	C	548	553	
26	1+60	2+40	D	553	558	
26	0+25	0+50	F	553	558	
26	0+50	0+80	F	553	558	
29	4+00	4+20	A	Neat line Footing 548	548?	
29	3+20	4+00	B	553	558	
29	1+60	2+40	D	558	563	
29	0+80	1+60	E	558	563	
31	4+00	4+20	A	Butter 548	553?	
31	4+20	4+40	A	Neat line Footing 553		
31	3+20	4+00	B	558	563	
31	0+30	0+80	F	Butter 558	563	
31	0+20	0+30	F	Neat Line 558	563	
31	1+60	2+40	D	562	567	
31	2+40	3+20	C	553	558	
Sept 6	4+00	4+16	A	Butter 553	558	
6	3+20	4+00	B	563	567	

Concrete
Upstream Toe Wall (Contd.)

Sept. 6	0+80	1+60	E	563	567
6	1+60	2+40	D	567	572
6	0+20	0+80	F	563	567
				Batter	
6	2+40	3+20	C	558	563
6	4+16	4+50	A	553	558
				Neat Line	
8	4+00	4+30	A	558	563
				Batter	
8	4+30	4+67	A	558	563
				Neat Line	
8	2+40	3+20	C	563	567
8	0+80	1+60	E	567	572
8	0+20	0+80	F	567	572
10	4+00	4+50	A	563	567
				Neat Line	
10	4+50	4+70	A	563	567
10	3+20	4+00	B	567	572
10	1+60	2+40	D	572	575
10	0+80	1+60	E	572	575
17	2+40	3+20	C	567	572

Sept. 13	3+20	4+00	B	572	575
14	4+00	4+65	A	567	572
14	4+65	4+85	A	567	572
				Neat Line	
14	2+40	3+20	C	572	575
14	0+15	0+80	F	572	575
				Batter	
14	0+00	0+15	F	567	575
				4' Trench Neat Line	
17	4+00	4+85	A	572	575

Weirs - 4 x 4 x 2' deep

£ 0+92

1+89

2+86

3+82

563.2

Up. 9.0 = 554.2

Dn. 15 = 548.0

	Bottom Width	Elev.	Top Elev. Dn.	Elev. Up.	Elev. Start Batter
2+75	16.67	529.8	537.2	538.4	540.0
3+00	16.67	529.7	537.3	538.2	540.0
3+25	16.67	529.6	537.4	538.3	540.
1+00	13.22	539.2	548.4	547.5	549.0
0+75	12.45	541.7	548.8	548.4	549.0
0+50	12.33	544.7	550.1	551.9	549.0
0+40	Reck 372.				

Tunnel Grade - Invert.

Grade = 0.0166

0-50	563.0	End Portal Structure.
0+00	562.16	Entrance Portal
1+00	560.49	
2+00	558.83	
3+00	557.17	
4+00	555.51	
+20.59	555.17	$\Delta = R. 23^{\circ}04'05''$
5+00	553.85	
6+00	552.19	
6+16.38	551.92	Axis N. 32 1/2 W.
7+00	550.53	
8+00	548.87	
+17.15	548.59	$\Delta = R. 21^{\circ}57'21''$
9+00	547.21	
10+00	545.55	
11+00	543.89	
+72.77	542.67	Exit Portal
12+12.77	542.0	End Portal Structure

Timbered Section

~~Untimbered~~

Timbered

9+61.5

11+46
7+29
3 40

Tunnel enlargement 0+56 to 0+72
" " 1+03 to 1+29

Exploration Tunnel #1. Elev. 583.19 R. & Sta. 6+69

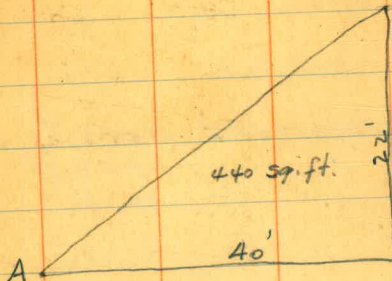
Cone Drill Hole #20. 2' L. & Sta. 7+20. Bottom Elev. 542.

Exploration Tunnel #7. Elev. 563.4 - 18' R. & 9+01.

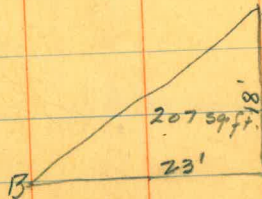
$$\begin{array}{r} 22 \\ 20 \\ \hline 440 \end{array}$$

Sections

$$\begin{array}{r} 23 \\ 9 \\ \hline 207 \end{array}$$



$$\begin{array}{r} 440 \\ 207 \\ \hline 2647 \\ 324 \\ \hline 50 \\ 27) 16200 \quad 600 \\ 162 \\ \hline \end{array}$$



$$\begin{array}{r} 2207 \\ 104 \\ \hline 6 \\ 27) 624 \quad 23 \\ 54 \\ \hline 84 \end{array}$$

Adjustable legs tripod Lietz
13' Level rod.

Hand axe
Stake bag.

$$\begin{array}{r} 22 \\ 40 \\ \hline 880 \\ 440 \end{array}$$

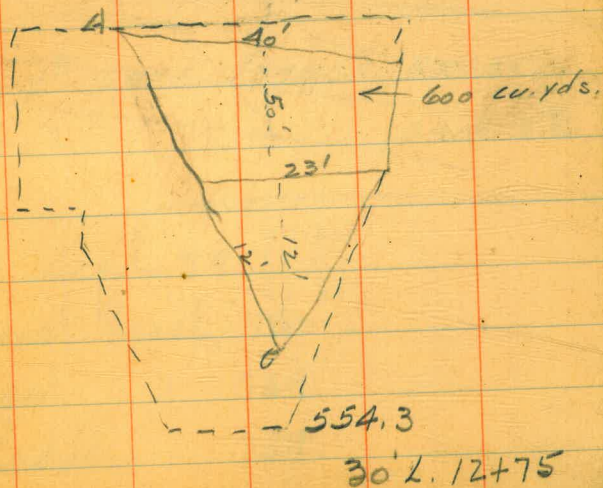
$$\begin{array}{r} 23 \\ 18 \\ \hline 184 \\ 23 \\ \hline 414 \\ 207 \end{array}$$

$$\begin{array}{r} 440 \\ 207 \\ \hline 2647 \\ 324 \\ \hline 50 \\ 16200 \\ 1248 \end{array}$$

$$\begin{array}{r} 2) 207 \\ 104 \\ \hline 12 \\ 208 \\ 104 \\ \hline 1248 \end{array}$$

$$\begin{array}{r} 27) 17448 \\ 162 \\ \hline 124 \\ 108 \\ \hline 168 \end{array} \quad 646 \text{ cu. yds.}$$

Plan.



Holidays Worked

Sat. P.M.	Aug. 6	.5
" "	13	.5
" "	20	.5
" "	27	.5
Election Day	30	1.0
Sat. P.M.	Sept. 3	.5
Admission Day	Sept. 9	1.0
Sat. P.M.	10	0.5 ^{6 hrs off}



602.00
 6.83
 608.83
 + 1.17
 610.00

Proposed location Tower. 6/15/32

N. 3347
 E. 5540

25' from E Tunnel.

E Tunnel Opposite Tower

N. 3314
 E. 5552

Drain from Contractors kitchen = E 3740 ^{N. 3820}

Entrance Portal Timber Set 0-02.6

Exit Portal Timber Set 11+65.6

30 pc. 13/16 x 18 0

1/7/33 10,731 # 7/80

700 y³ core trench excar.

100 y³ " " concrete

Sept. 29.

Dush. beach 750
 Upsh. " 749
 Puddle 749

Mr. Snyder. Mgr. 12th Civil Service Dist
Post office Bldg, San Francisco

N. End wall. = N. 3821.62
E. 4462.67 } 88.75
R.P. = N. 3876.98
E. 4535.04

Upstream
2+50 to 3+30

0+11 559
565
570

3796 56
3348
8) 418
40
48

66,055[#] steel delivered

Cement
1965 - 26th
1770 - 27

N. 4600 ✓
E. 5000

50523 yd. in Rock Emb.
Stores.

7+27
3+02
4+25

0+14 - 0+49

2-Lettuce
1 Best Solid
1-Bread
Eggs.
Asperme

85

15
25
116
23
75

72.77
01.66

436.62
436.62
72.77

17079.82

25
70 542.67

17.50 1.21

543.88

545.55
1.66
543.89

372 - P.28

0-10

0-20

3+50
Core trench
3650 - 502.2
3660 - 502.6

5280
35

26400
15840

1848.00

4592
58
4650

27
50
27

Σ = 37.3

N. = 36.7

S. = 37.9

16.

0

1

2

3

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11

12

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43.9.

