

W  
382

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1.

For Single Track Embankment.

382

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) ÷ 2 or 2 ft. added to 30.6 = 32.6. For slopes of 1 on 1½ see inside of back cover.

Copyright, 1914, by Eugene Dietzgen Co.

Aug. 10 - to 22 - '32

P.O. Gottschling Topographer

acting as temporary constr. inspector

R. W. Carter Const. Insp.

Aug. 10 - 32

concrete pouring on downstream

for wall central bottom part

checking Batch meter #1 am 14955

pm. 15103

total 148

sac count 14 bundle @ 50

30 loose

= 730

Meter #2 am 12640

pm 12796

total 156

sac count 14 @ 50

40 loose

740

sachs 1470

meter 1520

P.O.G.

Aug. 11 - 32

pouring upstream center bottom

2+53 to 3+30

tile laid - north line

tile laid - south line

1 pm note: mix has been running 38 galh

5 men in pit

2 on shoot

5 " in mix plant

20 horiz. & 8 vert.

25 pieces

27 pieces

16 horiz. & 8 vert.

5 carp. frame - bulk.  
shifting pump

moved shut set-up 11 am. 2-30 pm 3-30 pm

#1

15115

15267

1) 15249 5) 795

#

755

1500

148

Total batchac 300

pm. 5.15 finished pouring

P.O.G. Poor job today much separation of agg.

Aug. 12 - 32

Sta 1+06 to 2+50 beg. am 8.48

Concr. pouring N. part of up. face wall

Note: the mix. pl. is causing slowing up of the job  
the p.m. men could handle more batches  
But mix. pl. is  
containing out of  
sand or rocks or  
water

#1 B.M. a.m. 15268

P.M. 15329

61

sac s 6050 300

100sc

5

305

#2 B.M. 12940

meter registered 12940

out of order

5050 295

100sc 45

sac total 600

finished pour pm 2.08.

8 men on pour.

6 " " Mix. Plant. and 2 carp. on  
mix house

4 carp. on bulkheads

8 " on forms 3 trucks

best pour today little separation  
of agg.

P.O.G.

Aug. 13 - 32

Sta. 3+30 - 3+72.5

begin. of pour 9 a.m. 7.35 finish. 9 a.m. 11.25  
good job

#1 B.M. 15329 90

15419

sac count 9050 455

100sc 5

#2 B.M. 12968 90

13058

9050

450

Sack count 905

9 am delay mix. out of sand

6 men on pour. 2 on shoot

4 carp. on bulkhead-forms on job

6 men in mix. pl. 2 carp. on pl. house <sup>finished</sup>

8 carp. on forms 3 trucks

Aug 13 - 32

1+20 - 1+70 1:05 pm to 3-03  
pouring in forms with cable bucket or Hiline  
found 34 1/2 gall. to wet cut to 32 1/2 - to wet  
O.K. at 30

finished this panel and parts following  
by 3.03

Pouring panel  
1+70 to 2+<sup>20</sup>~~5~~  
3.03 to 5:00 pm.

#1 mix meter 15419

15521

102

515.62

#2 mix meter 13058

13058 ✓

6 men & foreman to 6 pm.

4 men in pit 2 on shoot or leading Hiline scip

6 men in mix. pl.

8 carp. on forms belt the 9. cl

1 Hiline eng.

Aug. 15 - 32

beg in 8.15 am

3+725 to 4+16

using the first time Transit mix trucks

Placing thru long shoot

#1 B.M. 15521  
15669 148 740

#1 Saccount 735  
#2 " " 720

#2 Meter 13058  
13203 145 725

using 28 gall. getting good pouring.

Plant eng. reports mixing time cut 1 minute  
in plant in order to comply with Patent of Transit mix  
operation -

Transit mix trucks (2) cause of delay could  
use one more

5 men building hopper for filling operation  
3 carp. 2 lab.

10:30 mix. plant out of sand delay

10:32 1 man watering poured section.

8 men in mix. plant

5 men in pit

5 carp on forms

3 Trucks to mix plant

Aug. 15 - 32

Sta 1+40 to 2+85?  
pouring down street wall  
using Transit trucks

1.00 PM

291  
1455

740  
720  
1460. Lay

Sac count. 1455 total  
Meter reading total

#1 148 - 2 - 146

145 - 145

meter      sacks  
291      = 1455 = 1455  
5

August 16<sup>th</sup> 1932

Begin 8:10 A.M. Sta 2+20 to 3+72.5 using kiline and by 9 am

#1 meter 15670  
15785 115

#2 " 13203  
13260 57

Sac Count 845

foreman of mix. pl. states that  
batch meter "haywire" sac count OK  
7 men in mix. pl.  $\frac{172}{860}$

1 man on kiline hopper }  
1 " " " unloading truck } 4 men shoveling  
1 man on shoot } in forms

1 man watering

2 cap on kiline bin

8 on forms and bulkhead

1 kiline eng.

long shoot on S. side of panel finished on

S. side as far as shoot could be moved - 11.9 ms

kiline is pulled over form by cable anchored  
to rocks about 2+70 moved cable to 3+20  
1.45 pm to complete pouring

3:15 pm about longest travel of kiline time of charging.

sac. dump-return: 3.14 charge 3.16 dump charge 3.18  
4 min to move 1 yard of conc.

good concrete today

Aug 16 - 32

filled 3 test cylinders 9:20 a.m.

batch meter showed 319 gallon

of water to mix, at the time.

mix shows to wet in forms excess

water comes from wet sand direct from  
gravel washing plant

aggregate meter reading at  
time of test

2 1/2" 760

1 1/2" 3070

3/4" 3840

Sand 2100  
cement 500  
lime 9





Aug. 18-32

No pouring in the forenoon

Pit crew on drain excav. 8 men

Mix. Pl. crew on steel work for drain  
8 men

9 corp.

1. tile engineer building roof over hoist

1 man watering

1 steel worker and helper

12.49 begin. of pouring

1 p.m. first load of structural conc.

at west end of center drain

Meter #1                      15905  
   15930    25

Meter #2                      13372  
   13396    24

28 yards short 1 sac cement

using no celita

Aug. 18-32

2 bunches 4 lbs  
1 " 1 1/2

1.30 p.m. short of labor

4 men in pit not enough

pouring in forms with steel rebar

requires a lot of tamping and shoveling

held up mixer to spread loose

dumped conc. rapidly drying

2.30 pm added 2 men spreading in forms

4 25 sac. 6 men

30 buckets @ 6 sac.

19  
5  
95  
140  
275

Aug 7 15 Aug. 19-32

pouring in op stream wall in 2<sup>nd</sup> <sup>B</sup> <sup>D</sup> ~~20<sup>th</sup>~~ section  
using kiline and dragline

kiline is used to swing shoots end over  
form truck discharging on bank into shoot

1-kiline ang. 5 men in pit 1 man on shoot  
dragline P.M. 3 men only

1 ang. 1-skip loader 2-men in pit

10 carp. on forms bulkhead etc.

mix. appears soupy using 28 gall. water

content - using the first time 26 gall.

There is a diff. of opinion - the contra

likes to finish the keys separate

making effect a separate stratum

8" deep for key with pour bond to

lower layer thus:



Aug. 19-32

in south panel 5 ft are being poured  
in one layer having a tendency to have  
the app. separate

11.05 am pour in <sup>E</sup> 5th section  
finish 5 PM. 5 men foreman, Unit #6 of 5 PM  
5.48, 6 N.S., 5.53 top of section  
5.47, 5 s.s. = top of diff pourings  
2 trucks

12.45 pm after one trip with kiline  
something happened to cable wrecking  
newly erected shelter over winch.

bucket by chance being on hopper platform  
avoided serious mishap only slack haul.

back line falling among workmen

POG included

2:30 pm. repaired kiline

3.53 finish sec. B

8 men in q. x. p. l.

# 1 meter q.m.

15945  
16145 200.

# 2

7  
mix man Reg 399 patches.

13411

13610

199

399

? 1981 Sac Court

Aug 20 1932

Mix plant started 7 AM.

Upstream Toe N Sta <sup>Sec. C</sup> 540 to 545 El.

Downstream Toe N. Sta <sup>Sec. F</sup> to El.

Pouring with dragline only on upstream wall

Pouring directly with truck into pit on downstream wall  
first pour on bedrock

The method of pouring 80 long sections in a double layer is unsatisfactory by 2 pm.

on pouring second layer, lower concrete has set so that footmarks leave no imprint

2.23 truck leaves 2.28 1/2 arrives 2.31 1/2 truck leaves average time to place 2 yds 8 1/2 min. - should use at least 2 trucks

in order to have the right mix. in downstream wall the mixture has been too wet in upstream wall

8 men in mix pl.

Meter # 1

16144 230.

16374

#2

13610

13829

219

Count 443 baskets, 2215 bags

Mix.

1:2 1/2:5

from bag. of broken

Valve on #1 Mix in Water line leak

26 Gal. H<sub>2</sub>O. increased to 27 at 7:40 AM

3 men in pit 1 man cleaning 1 man watering

2 men in pit 1 man dumping 1 man cleaning

10 carp. on forms etc.

8/22/32

Mix Plant Start 6:53 AM 8 men

flooring #1 Drain floor - 5 " placing  
13 Corp.

Mix - 1:2:4 = 25 Gal Water

6 Sack Cement	1:2:5 Mix
1220# Sand	5 Sack Cement
1370# 1 1/2 Gravel	1340# Sand
1030# 3/4 "	760# 2 1/2" Stone
	970# 1 1/2" "
	770# 3/4" "

Mix 1:2 1/2:5

9:28 am. changed to mass conc.

to put 15 yds of this mix as ordered by contract

10:10<sup>am</sup> finished south drain <sup>floor</sup> and began at once

on north drain

1:45<sup>pm</sup> finished north drain floor with

1:2:4 - began 1:2 1/2:5 in toe wall in line with drain

and unfinished sec. F

3:40 p.m. finished #3 drain floor ~~and~~ toe wall

16374  
16507 133

13829  
13962 133

Count Sack 1465

810

135 Batches 6 Sack 1:2:4 = 810 Sack

131 " 5 " 1:2 1/2:5 = 655 "

(1655)

8-23-32

Mixing Plant started - 9:55 A.M.

To - Pour Section "D" upper toe wall  
Finished 4: P.M.

low 16.6 to 2 x 20.

Elev. 547' to Elev. 552'

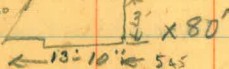
80 x 11'-3" x 12'-9" x 5'-0"



= 177.77 Cu. yds.

Section - B - 12'-10" x 5'-4"

low 3 x 20 x 20



= 119.0 Cu. yds.

Equipment:

Dragline handling buckets

High line and hoist

3 - Transit mix trucks { 1 - started at 11 P.M.  
2 - trucks off 4 P.M.

Labor:

Mixer man { Mixing plant - 3 men off 4:30 A.M.  
7 men

1 - runner { Dragline { OFF 4 P.M.  
1 - oiler

1 - Carpenter { Forms { 1 - started at 9:30 A.M.

1 - man { Sprinkling

1 - hoist man { High line

1 - signaller { operation

1 - Foreman { Placing concrete &

7 men { Cleaning concrete surfaces.

3 men 5 hours

4 men

Mix - 1: 2 1/2 : 5

5 sack cement

134-0# sand

760# - 2 1/2" stone

970# - 1 1/2" stone

770# - 3/4" stone

R. W. Carter  
Inspector

Power off - 9:15 - 9:50 Delay

Finish

Highline started in section "B" - 1 P.M.

1 batch wasted - 9:55 - Bucket dumped

Stopped - 7 P.M. - Hoist out of order

11 hours work

Batchometer

1305-SKS.

#1 - 16507 } 145  
16652 }

#2 - 13962 } 116  
14078 }

261

8-24-32 - Shift - 7 A.M. to 4 P.M.

Pouring Concrete upper toe wall.

Sec. C - Sta. 2+40 to 3+20 - Elev. 545' - 548'

119 cu. yds.

Sec. F - Sta. 0+20 to 0+80 - Elev. 549' - 553'

### Equipment

- #6 - Dragline equipped for crane
- 3 - Transit mix trucks
- mixing plant

### Labor:

- 1 - Foreman
- 8 - men - { mixing plant
- 7 - men - { placing concrete
- 1 - oiler
- 1 - operator { Dragline crane
- 2 - men { high line repair
- 1 - laborer { sprinkling concrete
- 2 - men { cutting ice wires
- 11 - Carpenters { FORMS
- 7 - laborers { Cleanup
- 3 - drivers { Transit mix trucks.

1 - Transit mix truck 3 - hours only.

R. W. Carter  
Concrete  
Inspector

Water  
Req. = 26 Gals

MIX: 1:2 1/2:5

- 5 - Sks. cement
- 1340 # Sand
- 760 # 2 1/2" Stone
- 970 # 1 1/2" Stone
- 770 # 3/4" Stone

Started Section "C" - 7:30 A.M. - Finish - 11:30 A.M.

Started Section "F" - 11 A.M. - Finish - 2:40 P.M.

Concrete Crew, mixing plant Crew,  
Crane Crew - quit for the day - at 2:50 P.M.

All others - 8 - hours.

### Batchometer Readings

#1 - 16652 - Start  
16748 - Finish

96 - Batches

#2 - 14079 - Start

14173 - Finish

94 - Batches

Total Batches - 190

Total Sacks Used 951 - one extra  
sack used to dry up an extra  
wet batch.

sect. "E" held over 1 day for proper  
cleaning.

No Delays.

8-25-32 - shift - 7:AM to 4:PM

Pouring concrete upper toe wall

Section "E" - Sta. 0+80 to 1+60  
Elev. 553<sup>0</sup> to 557<sup>67</sup>  
148 cu. yds.

Section "B" - Sta. 3+20 to 4+00  
Elev. 548<sup>0</sup> to 553<sup>0</sup>  
170 cu. yds.

Equipment

#6 Dragline  
3 - Transit mix Trucks  
Highline Cable  
Mixing plant

LABOR:

3 - truck drivers (transit mix trucks)  
8 - men {mixing plant  
1 - crane operator {Crane  
1 - oiler  
1 - hoist man  
1 - rigger {highline cable  
1 - man {sprinkling  
2 - men {highline hopper  
7 - laborers {stripping forms  
8 hrs.  
2 - laborers { " "  
3 1/2 hrs.  
4 - laborers. {Placing concrete  
2 - 9-hrs. - 2 - 4 1/2 hrs.  
11 - Carpenters  
2 " helpers {Forms

R. W. Carter  
Conc. Inspector

MIX - 1:2 1/2 : 5

5 sacks cement  
1340<sup>0</sup> SAND  
760# 2 1/2" stone  
970# 1 1/2" stone  
770# 3/4" stone  
3840.

Water averaged  
25 1/2 gals

Started section "E" - 7:AM - Finish 11:30 AM.  
2 - men placing. work stripping  
forms in P.M.

Started Section "B" - 7:45<sup>AM</sup> - Finish 5:PM.

Calculated quantity in both  
sections on this pour 318 cu. yds.  
with estimated overage on account  
of unfinished pour 2 days before.  
7 cu. yds. Total 325 cu. yds.

Batchometer

#1 - 16748 - start  
16947 - Finish } Total Batches  
305  
#2 - 14173 - start  
14279 - Finish }

Total Sacks 1525

Ave. yardage ~~per~~ per batch 1.06<sup>+</sup>  
Crane Crew repaired crane in P.M.



8-26-32

Shift - 7: A.M. to 4: P.M.

Pouring concrete upper toe Wall

Section C - Sta. 2+40 to Sta. 3+20

Elev. 548' to 553'

Started 7:30 A.M. - Finish 4: P.M.

Section D - Sta. 1+60 to Sta. 2+40

Elev. 553' to 557'

Started 7: A.M. - Finish 2:45 P.M.

Section F - Sta. 0+20 to Sta. 0+80

Elev. 548' to 553'

Start - 12:30 P.M. - Finish - 5: P.M.

Equipment:

Mixing Plant  
 2 Transit mix Trucks 9-hrs.  
 1 " " " 4 1/2 hrs.  
 1 Highline & hoist " 8-hrs.  
 1 #6 Dragline "Crane" 9-hrs.

Labor:

8 men { Mixing Plant 9-hrs.  
 1 Concrete foreman - 9 hrs.  
 1 General foreman 9-hrs.  
 4 men placing concrete 9-hrs.  
 2 men highline hopper 8-hrs.  
 1 hoist man 5 hrs.  
 1 rigger 5 hrs.  
 2 men placing concrete 3-hrs.  
 2 laborers - stripping forms 6-hrs.  
 2 Transit mix truck drivers 9-hrs.  
 1 " " " 4 1/2 hrs.  
 1 man Clean up 8  
 2 Carp. helpers 8  
 13- Carpenter's foreman 8

R. W. Carter  
Concrete Inspector

Mix 1:2 1/2:5

5-Sks. cement  
 1340# Sand  
 760# 2 1/2" Stone  
 970# 1 1/2" Stone  
 770# 3/4" Stone

Ave - 26 Gals  
Water

Calculated Quantities poured in the

three sections to-day 430-cu. yds.

Total Batches - 405 - Ave. yield 1.06 cu. yds.

Batchometer #1 - 16748 - start  
 203 16947 - finish  
 17150 } Total  
 403  
 #2 - 14173 - start  
 14279 }  
 14479 200 14479 - finish

Total Sacks Cement used - 2015

Concrete Foreman on job  
 to-day for 1<sup>st</sup> time; work  
 progressed more efficiently and  
 satisfactorily.

1- Transit mix <sup>truck</sup> went to shop for  
 repairs at 11:30 A.M.

M.R. Wood said to place concrete  
 in 18-inch layers.

8-27-32

Shift - 7:AM to 4:PM

Placing concrete in Downstream

Toe wall

Sta. 0+00 to 0+30 - Elev. 549<sup>50</sup> to Elev. 552<sup>50</sup>

Wing wall - 20' section " " "

Sta. 0+30 to 0+60 - Elev. 546<sup>50</sup> - Elev. 549<sup>50</sup>

Sta. 0+60 to 0+90 " 543<sup>50</sup> to elev. 546<sup>50</sup>

Sta. 0+90 to 1+22 Elev. 541<sup>50</sup> to 543<sup>50</sup>

Sta. 1+33 to 2+02 Elev. 540<sup>50</sup> to 543<sup>50</sup>

Equipment -

Mixing Plant

3 - Transit mix trucks

1 #6 - Dragline (crane)

Labor -

1 concrete foreman 9 1/2 hrs.

1 carpenter 9 1/2 hrs.

2 men placing Conc. 9 1/2 hrs

2 men placing Conc. 4 hrs

2 men cleaning up 5 1/2 hrs.

1 Crane operator 9 1/2 hrs

1 oiler 9 1/2 hrs

3 Transit mix truck Drivers 9 1/2 hrs

1 General foreman

1 man sprinkling conc. 8 hrs.

Mix - 1:2 1/2:5

5 sks. cement

1340 # sand

760 # 2 1/2" stone

970 # 1 1/2" stone

770 # 3/4" stone

R.W. Carter

Cms. Inspector

Average - 24 gals  
water

Calculated Quantities in this pour  
386 cu. yds

Batchmeter readings

#1 - 17150 - start

17329

179

Total

#2 - 14479 - start

14643

164

Total

NOTE  
Total 343 - batch counter  
not correct

354 - Correct  
Total

1770 - sks.  
Cement

NOTE  
Total 50 sks. reported  
to this date  
R.W.C.

Notes: 10 batches of concrete was

sent to Quarry on Friday Aug-26-  
not reported on 26<sup>th</sup> report. (50 sks)

Injuries: Concrete foreman caught right  
hand between shovel and  
dragline skip, causing abrasions  
and badly bruised hand. No  
broken bones.

8-29-32.

7:AM to 4:PM.  
Upstream Toe Wall.  
Sect. E - Elev. 557<sup>67</sup> to 562<sup>67</sup> - 123 cu. yds

7:AM to 10:40 AM.  
Sect. A - 4:00 to 4:36 -  
Elev. 553° to 556°  
7:45-AM to 8<sup>30</sup> AM - cu. yds

Sect. B - Elev. 548° to 553° - 148 cu. yds  
8:30 AM to 4:PM.

Sect. D - Elev. 557<sup>67</sup> to 552<sup>67</sup> - 123 cu. yds  
Start - 12:30 P.M. - Finish 4:40 P.M.

Equipment:

- Highline
- 3 Transit mix trucks
- 1 #6 Dragline (Crane)
- 1 Mixing plant

LABOR:

- 1 highline operator
- 1 man pulling highline with truck
- 2 men highline hopper
- 5 men placing concrete
- 1 concrete foreman
- 1 man sprinkling
- 2 men stripping forms
- 12 Carpenters { 7 - 8-hrs. 1-Carp foreman
- 1 Carp. helper { 5 - 4-hrs.
- 1 man patching concrete
- 2 men on dragline
- 3 truck drivers (transit mixers)
- 8 men at plant
- 1 Gen. Foreman
- 2 Carpenters 4 1/2-hrs. on mixing plant

R. W. Carter  
Concrete Inspector

Mix: 1:2 1/2:5

5 Sks. Cement	Average added
1340 lbs Sand	mixing water
760 # 2 1/2" stone	26-gals. per
970 # 1 1/2" stone	batch.
770 # 3/4" stone	

Calculated yardage placed  
to-day - 429 cu. yds.

Batchometer - #1 - Start - 17329 - 207  
Finish 17536  
" #2 - Start - 14643  
Finish 14848 - 205

Total 412

Two batches to Rock Quarry, leaving  
total of 410 batches in Dam concrete.

Total Sks. used - 2060  
Less ton to Quarry <sup>10</sup>  
2050 Sacks.

Delayed - 30 minutes, out of aggregate.

Considerable variation in water  
content of aggregate, causing difficulty in  
getting uniform consistency.

NOTE  
8/29/32

SACK COUNT REPORTED TO INCLUDE  
AUG - 27 - 1932 - ONLY.

8-30-32

7:AM to 4:PM.

Downstream Toe Wall

Sta. 1+08 to Sta 2+00 Elev. 543<sup>50</sup> to 548<sup>50</sup>

except 12 feet over Drain #3 (NORTH) to

elev. 550<sup>50</sup> (Start-7:AM- FINISH- 1:30 P.M.

Sta. 2+92 to Sta. 3+90 from bedrock

elev. 538<sup>0</sup> to Elev- 538<sup>5</sup> - to

Equipment:

- 1 Dragline (CRANE)
- 3- TRANSIT MIX TRUCKS
- 1 MIXING PLANT

Labor:

- 1- General Foreman
- 1- Concrete foreman
- 4 Men placing Concrete - 9-hrs.
- 1 " " " " 6-hrs.
- 8 men at mixing plant - 9 1/2 hrs.
- 1 Dragline operator - 9 1/2 hrs
- 1 " " oiler 9 1/2 hrs
- 1 Carpenter - 9 1/2 hrs
- 2- Carpenters 5- hrs.
- 3- Transit mix truck drivers
- 5 carpenters { 2 1/2 hrs.
- 1 Carpenter helper
- 1 man sprinkling Concrete

R.W. Carter  
Genl. Inspector

MIX- 1:2 1/2 : 5

5- SKS. Cement  
 1340 # Sand  
 760 # 2 1/2" Stone  
 970 # 1 1/2" Stone  
 770 # 3/4" Stone

Average mixing  
water- 25-GALS.

Calculated Yardage from  
measurements 360 CU. yds.

Batchmeter - #1 Start - 17536 = 175  
Finish 17711

#2 - Start 14848  
Finish 15013 = 165

1700

Total Batch (340)  
1700. Each.

Concrete mixture well graded.

Considerable variation in moisture

content of aggregate.

Aggregate running uniform for grading

Cost of 2 1/2 hrs. to vote in San Diego  
9:00 AM. to 11:30 AM.

8-31-32

7:AM to 4: P.M.

Upstream Toe Wall

Section A - 4+00 to 4+36

Elev. 549' to 553'

Start - 7:AM Finish 10:30AM - 60 cu yd

Section B - 3+20 to 4+00

Elev. 557' to 562'

FROM 7:AM to 11:PM - 123 cu yd

Section F - 0+20 to 0+80

Elev. 557' to 562'

From - 9:AM to 1:30 P.M. - 95 cu yd

Section C - Elev. 553' to 557'

Sta - 2+40 to 3+20

FROM - 11:30 to 6: P.M. - 148 cu yd

Section D - Sta. 1+60 to 2+40

Elev. 562' to 567'

FROM - 1:40 to 5:45 P.M. - 101 cu yd

Equipment: 1 - #6 - Dragline

3 - Transit mix trucks

1 - highline equipment

1 - Truck pulling Cable highline

Mixing Plant

LABOR:

1 - General Foreman

1 - Conc. Foreman

8 - men placing conc. } 10-hrs

2 - men Cleanup

8 - men plant 10-hrs

1 - man on truck pulling Cable. 10 hrs

1 - hoist man Highline 10-hrs

1 - Rigger

2 - men on highline hopper

3 - Transit mix truck drivers

R. W. Carter  
Conc. Inspector

Labor Continued:

1 - man patching Conc.

1 - man sprinkling Conc.

6 - Carpenters FORMS.

1 - Carpenter - FORMS - 10-hrs.

1 - Carpenter Helper

1 - man cleaning cement sack at Plant

1 - Crane operator

1 - " oiler

11 Comp + 1 Helper B.S.T. or forms

2 Stake men " "

Mix - 1:2 1/2 : 5

5 - Sks. Cement

1340 # Sand

AV Water varied

760 # 2 1/2" Stone

From 22 to 34

970 # 1 1/2" Stone

gallons.

770 # 3/4" Stone

#1 - Batchmeter 17712 - 248

17960 - 248

#2 - METER BROKEN

Total Batches - 494

Total Sacks Cement 2472

2 - extra sacks used in

last two batches

Doctored mix.

Injuries: One man fractured left arm at

wrist while dumping concrete.

No contusion of skin or flesh.

Plant ran out of 3/4" Stone at 5:45 P.M.

Last two batches used extra sand

+ Cement to complete pour.

in place of 3/4" Stone.

9-1-32-

7: A.M. to 4: P.M.

## Downstream Toe Wall

Section F- 0+30 to 0+11  
Elev- 552°-557°  
Start 8: A.M. - Finish 11:30 P.M.  
97 cu. yds

Section E- Sta. 0+60 to 0+90 - Elev 546° to 548°  
Sta. 0+90 to 1+10 - Elev. 543° to 548°  
From 8: A.M. to 11: A.M. 67 cu. yds

Section D- Sta. 1+10 to 2+00 -  
Elev. 548° to 553°  
From 11: A.M. to 5:20 P.M. 185 cu. yds

Section C- Sta. 2+40 to 2+66 -  
Elev- 542° to 544° - 18 cu. yds

## EQUIPMENT:

- 1- MIXING PLANT
- 3- TRANSIT MIX TRUCKS

## LABOR

- 1 #6 - Dragline
- 1- TRUCK HAULING FORMS & STEEL

## Downstream

- 1- General Foreman
- 1- Conc. Foreman
- 6- MEN Placing Conc.
- 8- MEN- MIXING PLANT
- 1- Man Cleaning Sacks.
- 1- Carpenter
- 3- TRANSIT MIX TRUCK DRIVERS
- 1- TRUCK DRIVER HAULING FORMS
- 1- man sprinkling concrete
- 1- man patching Conc. Upstream
- 1- Dragline operator
- 1- " Biler

## Upstream

- 8- laborers - Cleanup + Form stripping
- 3- steel men
- 15- Carpenters
- 1- Carp. Foreman
- 1- " Helper

MIX: 1:2½:5

5 Sacks Cement.  
1340 # sand.  
760 # 2½" Stone  
970 # 1½" Stone  
770 # ¾" Stone

R.W. Carter  
Inspector

Added  
MIXING water  
varied from  
20 to 26- GALS.

Total Batches taken from sack  
Count - Meters being repaired.

Total Batches - 346Total Sacks Cement - 1730

Computed yardage from measurement  
of forms - 367 cu. yds

Batch yield - 1.06<sup>+</sup> cu. yds.

Forms in one place found out of line  
and corrected before pouring.

1- Truck Broke down at 5:30 P.M.

A few delays for short periods for  
lack of aggregate for plant

An exceptionally large amount of  
small pieces of wood mixed in concrete  
GRAVEL will bear investigation.

9-2-32

7:45 AM to 4: PM

## Upstream Toe Wall

Section B- 3120 to 4100 } started 7 AM. Quit  
567.2 568.2 } at 8:45 AM only  
1 1/2 ft<sup>3</sup> concrete  
placed

Section E- 0780 to 1160 }  
567.2 to 568.2 } 105 cu. yds.

Labor Mixing Plant { 6 men - 3 1/2 hrs.  
3 men - 8 hrs. (last 4 1/2 hrs.  
cleaning sacks and repairing  
plant.

Concrete Crew { 5 men placing - 3 1/2 hrs  
1 foreman - 3 1/2 hrs  
3 1/2 hrs. { 1 Highline operator - 3 1/2  
2 men on highline hopper 3 1/2  
1 man on truck pulling cable.  
1 Dragline operator  
1 Oiler  
3 Transit mix truck drivers  
1 Carp. on Keyways.

2 truck drivers on hauling forms + scrap  
1 man patching concrete  
2 men stripping forms  
1 man sprinkling  
4 Carp. on forms - A.M.  
2 laborers - 2 1/2 hrs. excav. in sect. E.  
6 Carpenters Forms P.M.

## Equipment - Mixing Plant

#6 - Dragline  
Highline + equipment  
2 - 1-ton trucks on forms + scrap  
1 - Truck - pulling cable  
1 - #3 Ingersoll - Hand Compressor for  
cleaning concrete at plant under  
Floor around mixers

GRAVEL Plant out of commission  
at 8:45 - Concrete Crew allowed to  
go home.

R. W. Carter  
Conc. Inspector

Mix - 1:2 1/2 : 5

1340 # Sand  
760 # 2 1/2" Stone  
970 # 1 1/2" Stone  
770 # 3/4" Stone

24 cals. Water.

Total Batches - 99

Total Sacks - 495

Computed yardage - 105

## CENTER PUDDLE WALL

## LABOR -

1 Foreman  
11 laborers - All day (3 extra men - 5 1/2 hrs) 14 MEN  
1 Powder man  
3 pipemen  
1 Dragline operator - 1 day  
1 Jack hammer man  
2 TRUCK DRIVERS

## Equipment:

1 #11 - Dragline  
2 - TRUCKS

## Downstream Toe Wall -

1 Carp. foreman  
10 - Carp.  
2 steel men  
1 man sprinkling  
2 men stripping forms.

9-3-32

7: AM to 4: P.M.

No Concrete To-day-

No equipment used.

Labor-

2 Electricians - 1-hr. new switch boxes  
in mixing plant.

3 men at mixing plant cleaning

sacks & cleanup around mixers

1-Carpenter { Working on material

1-Carpenter helper { for addition to garage  
& Shop. (Carpenter Shop.

1-man patching concrete - 4 1/2 hrs.

2 men sprinkling concrete

2 men on cleanup, upper toe wall

2 steel men making "Bending" bench

Center Core Wall Excavation

1-Foreman

1-#11-dragline operator

1- " " oiler

1- Powder man

4- Jackhammer men

14 laborers

1- Truck driver

Equipment: 1-#11-dragline - 4-Jackhammer  
2-trucks - + air line

R. W. Carter  
Inspector

5: P.M to 2: A.M.

Center Core Wall Excavation

LABOR=

1-Foreman

2-Jackhammer men

1-Powderman

1- Dragline Operator

1- " " oiler

1- Truck driver

8-laborers.

Equipment:

1-#11-dragline

2 - Trucks.

2 - Jackhammers + air line.



Sept. 6 - 1932

7 AM - to 4 PM, Shift

Upper Toe Wall

Section E - Elev. 563° to 567° 50 cu. yds.

7 AM - to 8<sup>45</sup> AM

Section B - Elev. 563° to 567° 50 cu. yds.

7 AM - to 9<sup>45</sup> AM

Section A - Sta. 4+00 to 4+50

Elev. 553° - 557°

FROM - 8:45 AM - to 11<sup>25</sup> AM 76 cu. yds.

Section D - 567° to 572° 86 cu. yds.

10:05 AM - to 1<sup>50</sup> PM

Elev. 557° to 562°

Section C - 2<sup>05</sup> PM - to 5<sup>15</sup> PM 123 cu. yds.

Section F - Sta. 0+20 to 0+80

Elev. 562° to 567° 75 cu. yds.

Total Computed Ydg. 460 cu. yds.

Equipment:

Concrete Mixing plant

Highline, hoist & Equipment

#6 - Dragline

3 - TRANSIT MIX TRUCKS

1 - Dump truck pulling cable

LABOR -

- 1 - General foreman
- 1 - Concrete foreman
- 6 - Men placing concrete
- 2 - men on highline hopper
- 1 - man highline hoist
- 3 - Transit mix drivers
- 1 - man pulling cable
- 1 - Dragline operator
- 1 - " " oiler
- 8 - men in plant
- 1 - man cleaning sacks
- 1 - Carpenter on keys
- 2 - men on ~~put~~ <sup>put</sup> ~~pull~~ <sup>pull</sup> ~~line~~ <sup>line</sup>
- 1 - man cleaning up
- 1 - man cleaning up
- 1 - man sprinkling <sup>25 T.W.</sup> <sup>05 T.W.</sup>
- 2 - Carpenters
- 1 - Carpenter helper } Shop -
- 4 - Carpenters - Forms - 3 1/2 hrs.

9 hrs.

7: AM.

to

5: PM -

1 - TRANSIT MIX TRUCK out of Commission after 2:45 - P.M.

Mix: 1:2 1/2 : 5 -

- 1340# Sand
- 760# 2 1/2" Rock
- 970# 1 1/2" Rock
- 770# 3/4" Rock
- 5 - sks Cement.

Water - Average 27 - Gals.

463 - Batches

2315 - Sacks Cement.

Two batches to Garage -

Total in Dam Concrete - 461 - Batches

2305 - Sacks Cement.

Wasted - 3 - yds. bucket tripped accidentally.

14,850 Empty cleaned sks returned to <sup>works</sup> mill

1 set of 3 - Test Cylinders Made.

Sept. 7-1932. - 7: AM. to 4: PM.

Lower Toe Wall

Section B.

Sta. 2+92 to 3+90  
Elev. 531<sup>5</sup> to 536<sup>0</sup> 182 cu. yds  
7:15 AM - to 1:15 PM

sect. E - Sta. 0+30 to 0+60 -  
Elev. 549<sup>0</sup> to 553<sup>0</sup>  
Sta. 0+60 to 1+10  
Elev. 548<sup>0</sup> to 553<sup>0</sup> 134 cu yds  
553 - 558

Total = 316 yds

Equipment:

Mixing plant  
3- TRANS MIX TRUCKS  
1 #6 - DRAGLINE

LABOR:

1- Gen. Foreman  
1- Conc. Foreman - 8 1/2 hrs  
4- men spreading conc. 8 1/2 hrs  
2- " " " 6- hrs.  
1- " " " 1- hr.  
8- men at mixing plant - 8 1/2 hrs  
1- man cleaning sacks.  
1- drag line operator  
1- " " oiler  
3- TRANS MIX TRUCK DRIVERS  
1- Carpenter

MIX:

1: 2 1/2 : 5  
5- sacks cement  
1340 # Sand  
760 # 2 1/2" stone  
970 # 1 1/2" stone  
770 # 3/4" stone

R. W. Carter  
Inspector

Water ave -  
27- GALS.

310 - Batches Concrete  
1550 - Sacks Cement

3- batches to garage } not counted  
15- Sacks Cement } in above  
Total

Interview with MR. ELLISON,  
GENERAL foreman, settled the  
question of pouring concrete in  
all places - in 18 inch lifts and  
instructions were given by Ellison to  
concrete foreman to act on the  
orders and suggestions of the inspector

INJURIES:

1- Mexican placing concrete, crushed  
thumb on left hand - nail was  
removed.

Sept. 8 - 1932

7: AM to 4: P.M.

Upstream Toe Wall

Section E - Elev. 567° - 572°

7: AM to 10:30 AM

86 cu. yds

Section C - Elev. 562° - 567°

7:40 AM to 1: P.M.

101 cu. yds

Section A - Sta. 4+00 to 4+60

From Elev. 557° - 562°

10:30 AM - 2: P.M.

85 cu. yds

Section F - Sta. 0+17 to 0+80

567° - 572°

2:15 P.M. to 4:15 P.M.

68 cu. yds

Total

340 cu. yds

Equipment:

Concrete Mixing Plant  
Highline + Equipment - 5-hrs.

3 - Transit Mix trucks

1 # - Dragline

1 - Truck Pulling Cable - 5-hrs.

LABOR:

1 - Gen. Foreman

1 - Conc. Foreman

5 - Men placing Conc.

1 - Dragline operator

1 " oiler

8 - men in plant

1 - man cleaning sacks

2 - man highline hopper - 5-hrs.

1 - man on truck pulling cable - 5-hrs.

R. H. Carter  
Inspector

1 - Carpenter on keys

1 - man sprinkling

1 - man cleaning up.

2 - Carpenters - 8-hrs.

1 - Carpenter helper - 2-hrs

1 - Carpenter " - 2 1/2 hrs.

5 - Carpenters 5-hours.

2 - Carpenters { Shop - near plant.

1 - " helper {

DAYS

Mix: 1: 2 1/2 : 5

TOTAL

5 - sacks Cement

1340 # Sand

760 # 2 1/2" Stone

970 # 1 1/2" Stone

770 # 3/4" Stone

{ 331 Batches  
1655 Sacks Cement

Water Ave. 24 GALS.

(1) During AM until 10: AM water control

for proper consistency out of control because alternate loads of sand from screening plant + stock pile were being hauled to mixing plant - water varied from 26 gals. to 16 - gals. Instructions were given to haul exclusively from one source or the other, this was done and control was easily kept.

(2) Plant short of 3/4" stone several times during day.

(3) Much carelessness on part of Carpenters was in evidence on forms for today's pour. I called Carpenters back on job, through MR. ELLISON, to make forms water tight. This extra work delayed Section B for an other day's pour.

Sept. 9 - 1932 -

DOWNSTREAM TOE WALL

Section D - 1+10 to 2+00?

Elev. ~~553~~<sup>558</sup> to ~~553~~<sup>563</sup>?

7: AM to 1:00 P.M. 169 - cu. yds.

Section C - 2+40 to 2+66

537° to 540° 36 - cu. yds.

2+75 to 2+90

535° to 539° 41 - cu. yds.

1:30 P.M. to 4:30 P.M.

Equipment

- Concrete Mixing Plant
- 1#6 - Dragline
- 3 - TRANSIT MIX TRUCKS

LABOR -

- 1 - Gen. Foreman
- 1 - Conc. Foreman
- 2 - men placing Conc.
- 3 - men Cleanup.
- 1 - Dragline Operator
- 1 - " oiler
- 1 - Carp. Keys.
- 1 - Carp. repair forms
- 1 - man springling
- 7 - men. plant

R. W. Carter  
Conc. Inspector

MIX - 1:2 1/2 5

5 - Sks. Cement

1340# Sand

760# 2 1/2" Stone

970# 1 1/2" Stone

770# 3/4" Stone

Aver. 24 - gals. Water

Delayed from 1:20 to 2:15 P.M.

for lack of 3/4" Stone.

Several short delays during day - short of aggregate.

1 - Carpenter all day patching holes in forms making them watertight; this job was done after the carpenter crew had left the forms as ready for concrete.

233 - Batches

1165 - Sacks Cement

Sept-10-1932-

7:AM to 4:PM-

Upstream toe wall.

Section E. Including Weir

Elev. 572' to 575' FINISH

7:40 AM to 9:45 AM

Section D. Including Weir.

Elev. 572' - 575' FINISH

Start - 1<sup>st</sup> P.M. FINISH - 3-P.M

Section A - 4+00 to 4+76

Elev. 562-567.

10:20<sup>AM</sup> - 2: P.M.

Section B. 567' - 572'

7:AM to 11:15 AM.

Equipment:

Mixing plant

3-TRANSIT MIX TRUCKS

1 # 6- Dragline

Highline & Equipment

1-TRUCK PULLING Cable.

Labor:

1-General foreman

1 Conc. Foreman 7-hrs.

3 MEN placing Conc - 7-hrs.

1-Concrete Finisher - 8-hrs.

1- Dragline operator - 7-hrs

1- oiler - 7-hrs

R. V. Carter  
Inspector,

1- Highline operator - 7-hrs.

1-man on high line trapper - 7-hrs

8- carpenters on forms - 6-hrs.

2- steel men " forms - 5-hrs.

2- Carp. helpers - 1- 8 hrs - 1- 6-hrs.

1- Carp. on keys - 7-hrs.

1- Carp. helper { Shop - 8-hrs.

7-men. Conc. plant - 7-hrs.

1-man sprinkling - 8-hrs.

Mix. 1:2 1/2:5-

5-sacks Cement

1340# sand

760# 2 1/2" stone

970# 1 1/2" stone

770# 3/4" stone.

4 cc - 24-gals  
mixing water.

243 Batches Concrete

1215-Sacks Cement-

Top finish on sections D + E was  
wood floated to specif. finish.

Concrete Today was more  
uniform for consistency than on  
any previous day.

Sept-12-1932.

Downstream Toe Wall

Section E- 0+30 to 1+10

Elev. 553 to 558

11:AM to 4:PM.

160-cu.yds

7:AM to 11:AM

- 2+75 to 2+90
- 539E to 543°
- 2+00 to 2+06
- 540° to 543°
- 2+13 to 2+66
- 540° to 543°

Equipment:

- 1# 6- Dragline
- 1- Concrete Mixing plant
- 3- TRANSIT MIX TRUCKS.
- 1- Highline and equipment
- 1- Truck Pulling Cable
- 1- Truck Hauling forms

Labor:

- 1- Dragline - operator
- 1- " outler
- 4- men placing Conc.
- 1- Carp. on Keys.
- 2- man sprinkling
- 7- men at mixing plant
- 1- Conc. Foreman
- 8- Carpenters forms
- 2- Carp. Helpers
- 2- Steel men stripping forms

R.W. Carter  
Conc. Inspector

Upstream Toe Wall

Section C. 567° 572° Elev.

Start- 7:40. Finish 2:30 P.M.

Highline out of Commission from

10:30 AM to 2: P.M.

Delayed. 40 minutes in AM. Motor out of Commission.

Labor Continued: (upstream & Downstream Toe Walls.

- 1- Carpenter Carpenter
- 1- " helper } shop.
- 1- man patching Conc.
- 1- highline operator
- 1- " hepper man
- 2- men excavating Sec. E. upper Toe Wall
- 3- Transit mix truck drivers
- 1- man on truck pulling cable
- 1- man " " hauling forms.

349- Batches  
1745- Sacks Cement - 25- Gals Water

Have Meters fixed on Mix Plant.

Sept. 13-1932-

Downstream Toe Wall

Section - A - 3+60 to 3+90  
Elev. 536° to 543°

Section B - 2+90 to 3+60  
Elev. 536° to 543°

Start 8:AM. Finish - 4:35 P.M.

Upstream Toe Wall

Section B - 572° to 575° Finish 42 cu. yds.

9:AM to 11:30. AM. Total 302 cu. yds.

Equipment:

Mixing plant  
Highline equipment  
1-#6 Dragline  
3-Transit Mix Trucks  
1-Truck-pulling cable  
1-Truck Hauling Forms.

Labor - 1- Gen. Foreman.  
1- Conc. Foreman  
4- men placing conc.  
1- Highline operator  
1- Highline hopper man  
1- man pulling cable with truck.  
1- Carpenter on Keys.

Labor Continued:

7 men mixing plant.  
2- men sprinkling  
1 man cleanup  
2- men excavating Sect. F&A. upper T.M.  
8- Carpenters  
1- Carpenter foreman  
4- Carp. Helpers -  
1- Dragline Operator  
1- Dragline oiler

MIX: 1:2½:5

5 sacks Cement  
1340# Sand Average 24 gals.  
768# 2½" stone added mixing water  
970# 1½" stone  
770# ¾" stone

295 Batches Concrete  
1475 - sacks Cement.

3- Test cylinders taken at 4: P.M.  
from Section A - Downstream Toe Wall  
Elev. 542° between Sta. 3+80 + 3+90  
Average added mixing water - 24 gals.  
1:2½:5 MIX.

Had to hold up concreting operations  
on Sec. B. Downstream until proper  
bracing of forms with spreaders was  
accomplished. One Carpenter 2-hrs.  
making forms water tight.

R. W. Carter  
Inspector

Sept. 14-1932.

Upstream Toe Wall

Section A - 4+00 to 4+85 74-yds  
Elev. 567° to 572°  
7: AM to 9:30 AM

Section B - 572° to 575° Finish 42-yds  
7: AM to 9:30 AM

Section F - 0+00 to 0+80 42-yds  
Elev. 572° to 575° Finish  
10: AM to 11:45 AM

Downstream toe Wall

Sta. 2+00 to 2+90 180-yds  
Elev. 543° to 546°  
12:50 P.M. to 5: P.M.

Equipment:

- 1-concrete mixing plant
- 3-Transit mix trucks
- 1-#6- Dragline
- 1-highline & equipment - 2 1/2 hrs
- 1-truck pulling cable - 2 1/2 hrs

LABOR:

- 1-gen. foreman
- 1-Cox. Foreman 9 hrs
- 2-men placing concrete 9 hrs
- 2-men placing concrete 5-hrs
- 2-men clearing up - 3-hrs
- 1-Dragline operator - 9-hrs
- 1- " oiler
- 3- Transit mix Truck Drivers 9-hrs
- 7-men in mixing plant

Total 338 hrs

RM. sand 1140°  
735 2 1/2" 760°  
5-SKS - 1 1/2" 970°  
Cement. 3/4" 970°

Regular mix modified by Mr. Wood because of so much sand in 3/4" stone. Now screens installed at screening plant do not take all sand out of 3/4" stone

Mix as used until change was made by Mr. Wood

112 1/2:5  
5-SKS Cement  
1340° sand  
960° 2 1/2" stone  
970° 1 1/2" stone  
970° 3/4" stone

103 Batches

Water 25 Gal.

222-Batches modified mix  
103 " regular mix

USED IN DAM  
324 Batches  
1620-SKS Cement

1625- Total sacks Cement -  
Less one batch to Quarry. { 5-SKS Cement

Labor continued:

- 1-Carpenter foreman
  - 6-Carpenters on forms
  - 3-helpers
  - 2-men sprinkling concrete
  - 1-cleanout man
  - 1-Carpenter on keys 9-hrs.
  - 1-highline operator
  - 1-highline hepper man { FINISHED with highline 9:30 AM.
  - 1-man driving truck pulling cable
  - 1-man finishing conc.
  - 1-man oiling forms.
- Had carpenters fix forms in all places poured to-day



Sept. 15-1932

Downstream Toe Wall

Sta- 2+00 to 2+90 - Section C. 55-yds  
Elev- 546<sup>±</sup> to 548<sup>±</sup>  
7:AM to 8:20 AM

Section E- 0+30 to 1+10  
Elev. 558<sup>±</sup> to 563<sup>±</sup> 130-yds  
8:20 AM to 1:15 P.M.

Section B- 2+90 to 3+60  
543 to 545<sup>±</sup> 55-yds  
1:15 P.M. to 4:15 P.M.

Equipment:

- 1- mixing plant
- 2- TRANSIT MIX Trucks 8-hrs.
- 1- " " " 3 1/2 hrs
- 1# 6- Dragline.
- 1- Gen. foreman
- 1- Conc. foreman
- 3- Truck drivers - Transit mixers
- 7 men in plant
- 2 men placing Conc.
- 1- Dragline operator
- 1- " oiler
- 1- man sprinkling
- 1- Carp. on Keys
- 1- man cleanup
- 1- Carp. foreman
- 2- " helpers
- 3- Carpenters
- 2- steelmen
- 3 men excavating Sec. E.
- 1- man oiling forms.

Sept 15 1932 10:45 AM. Batch 105  
1:20:5 Mix

2 1/2" = 760<sup>#</sup>

Sand 1240

Water 23 Gal.

1 1/2" = 970

3/4" = 870.

284<sup>±</sup> dirt

120-Batches →

5-sacks Cement  
1140# Sand  
760# 2 1/2" Stone.  
970# 1 1/2" stone  
970# 3/4" stone

105 Batches

5-sacks Cement  
1240# Sand  
760# 2 1/2" stone  
970# - 1 1/2" stone  
870# 3/4" stone

Adjustment in mix made by Mr. Newcomb on authority of Mr. Wood because the mix was harsh in coarse fines.

less trouble in getting form work watertight and less trouble on cleanout to-day than on any previous day.

September. 16-1932.

Downstream Toe Wall.

Section B- 2+90 to 3+60

Elev. 545° to 548

7:45 AM to 9:15 AM.

90-cu. yds

Section D- 1+10 to 2+00

Elev. 558° to 563°

9:15 to 2: P.M.

144-yds

Section C- 2+00 to 2+90

Elev. 548° to 550°

2: P.M. to 4:00 P.M.

75-yds

Equipment

- 1- concrete mixing plant
- 1 #6- Dragline
- 3- Transit mix trucks
- 1- Truck- 4-hrs. hauling forms.

Labor:

- 5- Carpenters
- 1- Carp. Foreman
- 2- Carp. Helpers
- 1- man oiling forms
- 2- steel men wiring forms
- 1- Concrete foreman
- 2- man placing concrete
- 1- dragline operator
- 1- " oiler
- 3- Transit mix truck drivers
- 1- truck driver 4 hrs Hauling forms

Forms D.S.

Toe Wall

sacts as carp.  
on keys also.

- 7- men in Concrete mixing plant
- 1- man sprinkling concrete
- 3- men excavating Sect. F.
- 3- men " Sect. A.

Upstream.

- 1- Foreman stripping forms.
- 4- helpers
- 1- man patching concrete
- 1- man sprinkling concrete

Mix- 1:2½:5- modified

5- sacks Cement

1240# sand

760# 2½" stone

970# 1½" stone

870# ¾" stone.

¾" stone had an excess of sand throughout the day, and the mix as modified was very satisfactory.

Former Concrete foreman was removed and the carpenter on keys was placed in charge, much more cooperation was obtained.

288 Batches Concrete

1440- Sacks of Cement

Average of 25-gals of water Used.

Sept. 17-1932

Downstream Toe Wall.

Section C - 2+00 to 2+90 123-yds  
Elev. 550° to 553°  
7: AM to 9:45 AM

Section E - 0+30 to 1+10 101-yds  
Elev. 563° to 568°  
9:45 AM to 1:15 P.M.

Upstream Toe Wall

Section A - 4+00 to 4+85 46-yds  
Elev. 572° to 575°  
2:05 P.M. to 3:30 P.M.

Equipment:

1 - Concrete Mixing Plant 7 1/2 hrs  
2 - Transit Mix Trucks - 7 1/2 hrs  
1 - " " " 5 1/2 hrs.  
1 - Truck Hauling forms - 4 hrs  
1 - #6 - Dragline - 7 1/2 hrs.

Labor-

1 - General foreman  
1 - Concrete foreman  
2 - men placing Conc.  
1 - Dragline operator  
1 - " oiler  
7 - Men in Conc. plant  
3 - Transit Mix Truck drivers  
1 - Truck driver hauling forms 4 hrs  
2 - steel men wiring forms.

Sept 17th 9:10 AM. Changed Max.

at 105<sup>th</sup> Batch to Regular 1:2 1/2:5

55 Sack Cement  
1340\* Sand  
760\* 2 1/2" Stone  
910\* 1 1/2" "  
770\* 3/4" "

on Report from  
Gravel plant by  
Mr Hill + Mr Wood

that Separation of  
Sand + Gravel was Satisfactory

1 man clean Concrete at night

Labor Continued:

1 - Carpenter foreman Forms - Downstream  
6 - Carpenters } Toe Wall.  
2 - Carp. Helpers }  
3 - Men excavating sect E Downstream  
3 - Men excavating (air time only) } Toe Wall.  
1 - man oiling forms.  
1 - Carpenter at Carp. shop.  
3 - men { stripping forms.  
1 - foreman { Upstream Toe wall  
1 - Cement finisher - upstream Toe wall  
2 - men sprinkling concrete

set of 3 - Test Cylinders  
Taken from Section A - Sta. 4+70  
Elev. 574° Upstream toe wall -  
added Mixing Water - 23 gallons.  
3:00 P.M.

259 Batches Concrete  
1295 - Sacks Cement

Dragline moved from Downstream  
Toe Wall to upstream Toe wall  
1:15 P.M. to 9:55 P.M.

Upstream Toe Wall Concrete  
work completed - 3:30 P.M.

Sept-19-1932-

Downstream Toe Wall

Sect-B- 2+90 to 3+60

Elev. 548° to 553°

7:AM to 10:50 AM.

149 cu yds

Section D- 1+10 to 2+00

Elev. 563° to 568°

11:AM to 2:55 AM.

125 cu yds

Section F- 0-11 to 0-16

Elev. 549.5 to 560°

0-16 to 0+30

Elev. 557° 560°

2:55 P.M. to 5: P.M.

60 cu yds.

Equipment:

- 1- Concrete Mixing plant.
- 3- Transit Mix Trucks.
- 1- #6- Dragline

LABOR:

- 1- General foreman
- 1- Concrete foreman
- 2- men placing concrete
- 1- Dragline operator
- 1- " " biter
- 3- Transit mix truck drivers
- 7- men in plant
- 1- Carpenter foreman
- 8- Carpenters
- 4- Carpenter helpers
- 1- man oiling forms
- 1- man sprinkling concrete
- 1- Steel Man Tielna wires.

R.V. Carter.  
Conc. Inspector.

labor upstream:

- 3- men stripping forms
- 1- man patching concrete
- 1- Carpenter at Carp. Shop.
- 1- man sprinkling

MIX: 1:2½:5

5- Sacks Cement

1340# Sand

760# 2½" Stone

970# 1½" Stone

770# ¾" Stone

Average added  
mixing water  
25 gallons.

Total  
Batches

325- Batches

1625- Sacks Cement

Section "D" was left by Carpenters  
as finish ready to pour. Forms were  
carelessly built, having large cracks  
at intersections of Panels, joining  
not flush, making offsets; wires were  
not tight. I told Mr. Ellison and he  
had 2- carpenters 3-hrs preparing  
forms to comply with Inspector's  
requirements.

Sept-20-1932

Downstream Toe Wall

Section F. 0+17 to 0+30  
Elev. 560° to 563°  
10:10 AM to 11:30 AM

60 cu. yds.

Section C. 2+00 + 2+90  
Elev. 553° 558°  
12:30 P.M. to 5: P.M.

160 cu. yds.

Equipment:

- Mixing plant (one mixer)
- 3- Transit mix trucks
- 1- #4- Dragline
- 1- 1-ton truck- 4-hrs- hauling tile for drains

Labor:

- 1- General foreman
  - 1- Concrete foreman
  - 2- men placing concrete
  - 1- Dragline operator
  - 1- " " oiler
- This crew worked on excavation in Section A until 11 AM

7 men concrete plant

- 1- Carpenter foreman
  - 6- Carpenters
  - 6- Carpenter helpers
- Cleaning + stripping forms from concrete & Helping Carpenters

- 1- man oiling forms
  - 1- man sprinkling concrete
  - 1- man patching concrete
  - 1- steel man stripping forms
  - 1- steel man on tie wires
  - 1- driller 3-hrs
  - 1- powder man - 3-hrs
  - 2- muckers
  - 1- man sprinkling conc. upstream
- excavating in Sect. A.

1- Truck driver 4-hrs.  
hauling clay drain tile  
1- Carpenter at Carpenter shop.

R. W. Carter  
Concrete Inspector

Mix: 1: 2 1/2 : 5

- 5. sacks Cement
  - 1340 # SAND
  - 760 # 2 1/2" stone
  - 970 # 1 1/2" stone
  - 770 # 3/4" stone
- Average added mixing water 25 gallons.

194- Batches

970 Sacks of Cement used.

Transit mixers and concrete plant did not start until 10:05 AM. plant was short of cement.

Test Cylinders:

Taken at 11: AM  
Section F- sta. 0+20  
Elev- 562°

Added mixing water 25 gals.

Concrete after stripping of forms on downstream toe wall shows workmanship of better quality than on some of upstream wall due to rigid inspection of forms before pouring, also inspector insisting on tight tie wires and rigid bracing of forms as well as water tight, clean oiled forms.

Sept. 21. 1932 -

Downstream Toe Wall

Section E. 0+30 to 1+10

Elev. 565' - 572'

7:AM to 9:40 AM.

80 - cu. yds.

Section B - 2+90 to 3+60

Elev. 553' - 558'

10:10 AM to 2:00 P.M.

130 - cu. yds.

Total 210 - cu. yds.

Equipment:

Concrete mixing plant - (1 - mixer)

3 - Transit mix trucks

1 - #6 - dragline

LABOR:

1 - General foreman

1 - Concrete foreman

2 - men placing concrete

1 - Dragline operator

1 - " oiler

3 - Transit mix TRUCK Drivers

7 - men in mixing plant

2 - men sprinkling concrete { upstream  
to downstream  
Toe Wall

1 - man patching concrete

1 - Carp. foreman { D.S. Toe Wall

4 - Carpenters { forms for

2 - Carpenters { center drain

5 - Carp. helpers

1 - steel man on tee wires

1 - man oiling forms.

3 - men excavating sect. F.

1 - mucker

1 - driller

1 - powderman - 4 hrs.

} Excavating  
sect. A.

1 - Steel man

1 - man

} stripping forms upstream  
for 3-hrs - Downstream  
Carrying steel reinforcing  
bars for Sect. A -

1 - Rigger

4 - men

} Dismantelling highline

Delayed - 9:40 to 10:10 fixing road on  
fill for dragline

Finished pouring at - 2:15 -

Concrete placing crew went home -  
dragline crew finished the  
day on excav. sect. A -

Mix: 1 1/2' 5

5 - sks. Cement

1340 - lbs. Sand

760 # 2 1/2" Rock

970 # 1 1/2" Rock

770 # 3/4" Rock

{ 24 - gallons  
added mixing  
water

200 - Batches Concrete

1000 - Sacks Cement used.

Sept. 22-1932-

Downstream Toe Wall.

Sect. D- 1+10 to 2+00

Elev. 568° to 572.5°

7:AM to 10:10-AM

89-cu.yds.

Section C- 2+00 to 2+90

Elev. 558° to 563°

10:20-AM to 3:30-P.M.

154-cu.yds.

Section A- 3+87.5 to 4+03

Elev. 532° to 540°

4:10 P.M. to 6: P.M.

86-cu.yds.

EQUIPMENT:

- 1- concrete mixing plant
- 3- Transit Mix Trucks
- 1- #6-Dragline

LABOR:

- 1- General foreman
- 1- Concrete foreman
- 2- men placing concrete } 10-hrs.
- 1- Dragline operator
- 1- " " oiler
- 3- Transit mix Truck drivers } 10 hrs
- 7- men concrete plant
- 1- Carpenter foreman } Forms on
- 4- Carpenters } Downstream
- 2- carpenters } Forms for center } Toe wall
- 6- Carpenter helpers
- 2- steel men } one on tie wires
- } one on stripping form
- 1- man oiling forms
- 1- man wetting concrete
- 1- man patching concrete

Batches 302  
Sacks of Cement 1510.

3- men excavating in section F.

1- man excavating in sect. A. 8 hrs.  
helping with concrete - 2-hrs.

Total 10-hrs

Note: one steel man worked an hour  
with two carpenter helpers placing  
steel dowels in sect. A, then  
worked 2-hrs. placing concrete  
in sect. A - 10-hrs. total

Carpenters last two days were  
using 1"x6" lumber to brace forms  
instead of short lengths of pipe.  
Inspector did not find them to  
hold forms satisfactorily, asked  
Mr. Ellison to continue to use pipes  
for bracing, this request was  
complied with.

Mix: 1 1/2 : 5

5 sacks cement

1340# sand

260# 2 1/2" stone

970# 1 1/2" stone

770# 3/4" stone

} Added mixing  
water ~ 6 gallons

Beginning at 1: P.M. concrete began  
coming too dry, inspector added  
water three times with a total of  
2-gallons more than was used prior  
to 1: P.M. - consistency remained constant  
all afternoon.

Mr. Converse check Section B. for  
reinforcing steel, line & grade for  
forms.

MR. Newcomb inspected Section  
"A" before and while pouring.

Sept. 23-1932  
Downstream Toe Wall.  
Sect. B. Sta. 2+90 to 3+60

Elev. 558' to 563'  
7:AM to 10:30:AM 108 cu. yds.

Section F. 0+30 to -17

Elev. 563' to 567'  
0-17 to 0-26  
Elev. 561' to 567'  
10:40 AM to 1:30 P.M. 100 cu. yds.

Equipment:

- 1-concrete mixing plant (1-mixer)
- 3-Transit mix trucks
- 1- #6- Dragline

Labor:

- 1-General foreman
- 1-Concrete foreman
- 2-men placing concrete
- 1-Dragline operator
- 1/2 "men" oiler
- 1/2 men mixing plant
- 1-Carp. foreman
- 5-Carpenters
- 2-Carpenters
- 1-Carp. helper
- 5-Carpenter helpers
- 1-Steel man
- 1-Steel man on tie wires
- 3-men - 2 1/2-hrs. excavating Sect. F.  
these men came from Core Wall @ excavation.

8 AM  
2 hrs

R.W. Carter  
Cmc. Inspector

- 1-man patching concrete
- 1-man oiling forms
- 1-man wetting concrete

Upstream.

- 1-man wetting concrete
- 1-Carpenter at shop.

MIX: 1:2 1/2:5  
5-sacks Cement  
1340-lbs. sand  
760# - 2 1/2" stone  
970# - 1 1/2" stone  
770# - 3/4" stone

193-Batches

965-Sacks cement

Mr. Ellison planned to pour in Section A - Inspection showed forms to be constructed not to proper lines, and Ellison called his entire carpenter crew back to change forms to line, work continued until 4:AM. pouring to be done Saturday on this section due to carelessness of carpenters on form work.

3-Carpenter helpers worked on concrete pouring 2-hrs. Sect. F when pouring was being done by chute and drag line (2-separate places in pour.)

Sacks

10900

2 months ago

9/17/32

2-18

bundle box @ 50 = 10900



Sept. 24-1932

Down stream Toe Wall

Sta- 3+87<sup>5</sup> to 4+03

Elev. 540<sup>0</sup> to 548<sup>0</sup>

Sta- 3+60 to 3+87<sup>5</sup>

Elev. 543 to 548

7: AM to 10:30 AM.

Equipment:

- 1- Concrete mixing plant
  - 1- #6- Dragline
  - 3- Transit Mix Trucks
- } 3 1/2 hrs.

Labor:

- 1- Gen. foreman
- 1- Conc. foreman
- 3- men placing Conc. } 3 1/2 hrs.
- 3- Transit mix truck drivers
- 7- men in mixing plant
- 1- Dragline oper. { worked on concrete
- 1- Dragline oiler { 3 1/2 hrs. + 1/2-hrs
- repairing dragline
- 1- steel man { placing steel in
- 2- Carp. helpers { sect. A and stripping
- forms 8-hrs.
- 1- Carp. foreman { forms lower
- 4- Carp. helpers { toe wall
- 3- Carpenters
- 2- carpenters { forms for
- 1- Carpenter helper { center drain
- 1- steel man - on the wires
- 1- man patching Conc.
- 1- man wetting conc.

Upstream -

A. W. Carter  
Conc. Inspector

1 Carp. Helper at Stop (oil man)

1- man wetting concrete -

Mix- 1: 2 1/2 : 5

5- sacks Cement

1340 # Sand

760 # 2 1/2" stone

970 # 1 1/2" stone

770 # 3/4" stone

Average added  
mixing water  
25- GALs

132- Batches Concrete

660- Sacks Cement

Concrete Crew was laid off

at 10:30 AM until Monday morning,  
no sections ready to pour until  
Monday -

Cleaned 1000 Sacks of Sacks Cement

1 Man Cleaning Conc. at night

Sept 26-1932

Downstream Toe Wall

Sect. C- 2+00 to 2+90

Elev. 563' to 568'

7:AM- to 11:AM

120-cu yds

Sect. E- 0+30 to 1+10

Elev. 572' to 575' FINISH

47-cu yds

Section A- 3+60 to 4+03

Elev. 548' to 553'

3: P.M. to 5:00 P.M.

116-cu yds

Equipment:

- 1- Concrete mixing plant
- 1- #6- Dragline
- 3- Transit MIX TRUCKS

LABOR:

- 1- General Foreman
  - 1- Concrete Foreman
  - 2- men placing concrete
  - 3- Transit mix Truck drivers
  - 1- Dragline operator
  - 1- " " oiler
  - 7- men in mixing plant
  - 1- man oiling forms
  - 1- man patching concrete 5-hrs.
  - Finishing Sect. E. 3 1/2 hrs.
  - 1- man sprinkling concrete
  - 1- Steel man on reinforcing steel
  - Sect. A + Center Drain
  - 1- helper
- } 9-hrs

R. W. Carter  
Conc. Inspector

1- Steel man on form tie wires

2- Carpenters { FORMS & SETTING

1- Carp. helper { TIE for Center Drain

1- Carpenter foreman { FORMS ON

7- Carpenters { LOWER TOE

4- helpers { WALL

1- Carpenter sawyer { Carpenter

1- helper { shop.

MIX: 1:2 1/2:5

5- Sacks of Cement

1340# Sand

760# 2 1/2" stone

970# 1 1/2" stone

770# 3/4" stone

{ Added mixing  
water varied  
from 28 to  
35- Gallons.

Mix in afternoon was slightly oversanded. A visit to the plant aggregate bins showed 3/4" size stone was composed of a large amount of sand. Hauling from stock pile to-day furnished 3/4" stone from the run of last week when the screens have been changed.

241- Batches

1205- Sacks of Cement

1- yard wasted, bucket accidentally dumped 1- yd. not incl above.

Sept. 27-1932.

No concrete To-day.

Labor:-

4-men excavating sect. F.

1-mixer man repairing mixers

4-Carpenters } Forms and tile

1-helper } on center drain

1-Steel man } stripping forms

2-helpers } downstream toe wall

1-Carpenter foreman } Downstream

6-Carpenters } toe wall forms.

2-helpers

1-Steel man Tie wires

1-man oiling forms

1-man patching concrete

1-man wetting concrete

1-Carpenter-sawyer at shop

1-dragline operator } Repairing

1- " " oiler } dragline

Carpenters were called back to  
section B. to fix holes in forms.

Weather. Clear.

Sept. 28-1932-

Pouring Concrete on Down stream

Toe Wall.

Section B- Sta. 2+90 to Sta. 3+60

Elev. 563' to 567'

7: A.M. to 10:15 A.M.

100 cu. yds.

Section "A" - Sta. 3+60 to Sta. 4+03

Elev. 553' to 558'

10:15 A.M. to 11:5 P.M.

108 cu. yds.

Section "D" 1+10 to 2+00

Elev. 5725' to 575'

1:30 P.M. to 4:20 P.M.

62 cu. yds.

Equipment:

- 1- mixing plant
- 3- Transit mix trucks
- 1- #6- Dragline

labor-

- 1- General foreman
- 1- Carpenter foreman
- 9- Carpenters
- 6- Carpenter's helpers
- 1- steelman on tie wires
- 1- steel man on reinforcing steel
- 1- man stripping concrete forms
- 1- man patching & finishing conc. {10 1/2 hrs
- 1- concrete foreman
- 2- men placing concrete
- 2- men at mixing plant
- 1- Dragline operator
- 1- " " oiler
- 3- Transit mix truck drivers
- 1- Carpenter at shop
- 1- man oiling forms

1-man wetting concrete.

Mix: 1 1/2 15

5- sacks of cement

1340 # sand

760 # 2 1/2" stone

970 # 1 1/2" stone

770 # 3/4" stone -

Water varied from

28 to 33 gallons.

A temporary change (for 8-batches) in mix was necessary at 7:20 A.M. to offset excessive sand due to load of sand dumped into 1 1/2" stone bin by mistake.

All Carpenters worked on Center Drain after 10 A.M.

226 Batches of concrete

1130 Sacks of Cement

16,850- empty cement sacks

were sent to Mill Sept. 26. Via Lakeside.

Sept. 29 - 1932

Downstream Toe Wall

Section C - Sta. 2400 to 2490

Elev. 568' to 572'

7: AM to 10:30 AM. 1:2 1/2:5

Drain No 2 - from top of floor slab to

const. joint as shown on plans, full length

of drain a bottom section of well to same elev.

1:2:4 Concrete -

12:30 PM - to 3:10 PM.

Equipment: 1-mixer at mixing plant

3-Transit mix trucks

1-#6-dragline

Labor-

1-Gen. foreman

1-Conc. Foreman

2-men placing Conc. 6-hrs. { 2-hrs. Cleanup

4 men " " 3 1/2-hrs.

1-dragline operator

1 " " oiler

2-Transit mix truck drivers 6-hrs

1 " " " " 4 1/2-hrs.

7-men in mixing plant

5-hrs { 1-man patching Conc. } also stripping

3-hr. { 1-helper } forms

3-hr. at Quarry on Co. works

1-man dumping Conc. - 3-hrs.

Forms for Toe Wall & Drain

1-Carpenter foreman

9-Carpenters

2-Carp. helpers - 4 1/2-hrs.

4-Carp. helpers 8-hrs

the other 3 1/2 hrs. placing concrete.

1-man sprinkling Conc.

2-steel men { placing steel in Drain No. 2

1:2 1/2:5-concrete

5-sacks Cement

1340# Sand

760# 2 1/2" Rock

970# 1 1/2" Rock

770# 3/4" Rock

28-gallons added mixing H<sub>2</sub>O

Set of three cylinders

made from this mix

at 8:10 AM - Sect. C.

Sta. 2+50 - Elev. 570'

# 143, 144, 145.

1:2:4-Concrete

6-sacks of Cement

1220# Sand

1370# 1 1/2" Rock.

1030# 3/4" Rock

27-gallons of H<sub>2</sub>O

set of three cylinders

made from this mix

at 1:15 PM. from

Drain No 2 - this Pour.

# 146, 147, 148.

Two rows of drain holes on each

side of drain and east end.

Top row each side 100 drain holes (2-4"x12" drain tile per hole)

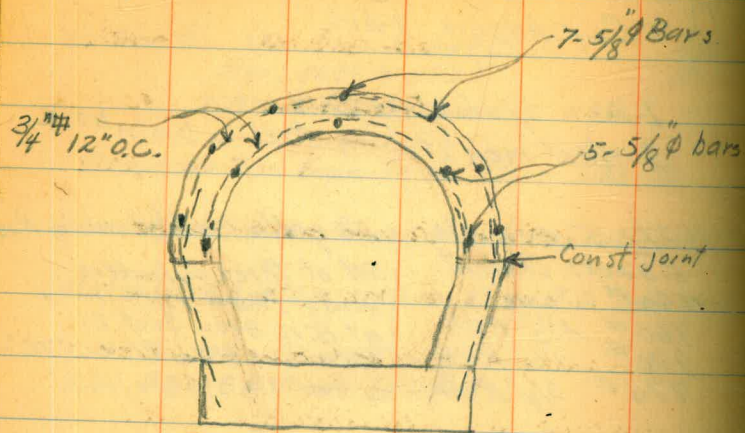
Bottom row each side 100 drain holes (2-4"x12" clay tile per hole)

East end of drain 9-drain holes (2-4"x12" clay tile per hole)

Continued next page

Sept. 29 - continued.

Total 4" x 12" Clay drain tile  
in place - 822.



Section of Drain No. 2 showing  
steel in place when concrete was  
placed.

Drain tile not shown.

### Summary of Concrete used.

1:2 1/2:5 -	93 Batches	465 sacks
1:2:4 -	51 1/2 Batches	309 sacks
	Total Sacks	774

In addition to the above the  
following concrete was sent to Quarry  
for garage floor (company use.)

1:2 1/2:5 -	10 Batches	50 sacks
1:2:4 -	2 1/2 batches	15 sacks

1-yd. of 1:2 1/2:5 - wasted  
3/4-yd. of 1:2:4 - wasted

} included in  
out of  
concrete  
used in  
structure

4400 sacks cleaned.

25 sacks of cement recovered.

Sept. 30-1932

Weather-Clear

Poured Concrete as follows:

Downstream toe wall:

Sect. "F": 0+30 to 0-26  
 Elev 567° to 571°  
 1:2½:5 } 120-cu yds  
 Concrete - }  
 29-gal. #20 }  
 0-26 to 0-60  
 Elev. 566° to 575°  
 7:AM to 10:30 AM  
 11:30 AM to 12:30 P.M.

Drain No. 2 - From Const joint to  
 finish of arch section including wall  
 to elev- 551°

12:30 P.M. to 4:20 P.M. 70-cu yds  
 1:2:4 Concrete -

Equipment:

2-Transit mix trucks - 8-hrs.  
 1- " " " 3½-hrs  
 1 concrete mixing plant  
 1- #6 Dragline

labor:

1-Gen. foreman  
 1-Conc. foreman  
 4-men placing concrete  
 1-dragline operator  
 1- " " boiler  
 2- Transit mix truck drivers - 8-hrs  
 1- " " " 3½ hrs  
 7-men in mixing plant

R. K. Carter  
 Conc. Inspector

1-Carpenter foreman  
 8-Carpenters  
 1-Carp. at Shop  
 4-carpenter helpers  
 2-men stripping forms  
 1-man finishing concrete  
 1-man wetting concrete

1:2½:5-Concrete  
 5-sks Cement  
 1346# Sand } 29-gallons water, average.  
 760# 2½" Stone  
 976# 1½" Stone  
 770# ¾" Stone

1:2:4-Concrete  
 6-sacks Cement } 30-gallons of water  
 1220# Sand  
 1370# 1½" Rock  
 1030# ¾" Rock

MIX-	Batches	Sacks Cement
1:2½:5	114	570
1:2:4	66	396
	<u>Total</u>	<u>966 Sks. cement</u>

2300-Sacks Cleaned  
 34-sacks of Cement Recovered.  
 Sack Cleaner was not cleaned completely  
 after the 4400 sacks of yesterday, this  
 accounts for variation in sacks cleaned in  
 ratio to amount of Cement Recovered.

MR. Wood said O.K. to strip Drain No. 2.  
 Forms tomorrow

Saturday Oct. 1, 1932

No concrete to-day

No equipment used-

Labor: 2-Steelmen { Bending steel for  
3-helpers { Entrance Portal Structure

1-Carp. Foreman { Forms Downstream  
8-Carpenters { toe Wall  
5-helpers

1-Carpenter { Stripping forms inside  
1-laborer { Drain No. 2

1-man wetting concrete  
1-man finishing concrete (Patching)

Concrete inside Drain No. 2 was honeycombed in many places due to possibly two things (1) Concrete was placed with  $3/4$  cu. yd. bottom dump bucket which deposited the concrete in layers too deep to properly tamp the already almost inaccessible places to tamp, (2) Grout should have

R. W. Carter  
Conc. Inspector.

been used to start the pour on both lifts.

Mr. Wood gave Inspector permission to use grout when pouring drains No. 1 & 3.

Inspector took Mr. Wood to sect. A. E/cv. 558' to 563' to inspect forms which were left by carpenters as ready to receive concrete but which in the opinion of the inspector were not acceptable. After Mr. Wood saw the work he ordered some of the forms removed to be replaced with acceptable material.

Mr. Wood told Mr. Ellison to use rods instead of wires, as per specifications on all future form ties.

Mr. Ellison said he expected the tie rods to be in camp Sunday ready for use.

Mr. Wood told Mr. Ellison that he was going to insist on concrete work on all exposed surfaces being free from honeycomb & rock pockets.

The inspector will take necessary steps to secure such workmanship.



Weather Clear

Oct-3-1932

Poured concrete as follows: Downstream

Toe Wall.

Section A - Sta- 3+60 to 4+03

Elev. 558' to 563'

7:30 A.M. to 9:10 A.M.

70-cu yds

Section B - 2+90 to 3+60

Elev. 567' to 571'

9:10 A.M. to 12:30 P.M.

70-cu yds

Section F. 0+30 to 0-26 FINISH

Elev. 571' to 575'

1:35 P.M. to 3:30 P.M.

38-cu yds

EQUIPMENT:

- 1- mixing plant
- 1- #6- Dragline
- 3- Transit MIX TRUCKS

labor: 1- Gen. foreman 7 men at mix plant

- 1- Conc. foreman
- 2- men placing Conc.
- 1- Dragline Operator
- 1- " " oiler
- 3- Transit mix truck drivers
- 1 man wetting concrete
- 1- cement finisher
- 1- Carp. foreman { Forms- Drain #3
- 7- Carpenters { + Toe Wall FORMS
- 4- " Helpers { Forms, stripping
- 1- man oiling forms { forms, helping on concrete
- 2- steel men Bending steel for Entrance
- 3- helpers { Portal structure.

R. W. Carter  
Conc. Inspector

1:2 1/2 : 5 - MIX

5-sacks of cement

1340- # Sand

760 # 2 1/2" Stone

970 # 1 1/2" Stone

770 # 3/4" Stone

} 28-gallons #20

Outside of Drain #2- badly honeycombed,

Mr. Newcomb & Concrete Inspector discussed

with MR. Ellison (9:15 P.M.) methods of

pouring Drains No-1 & 3 to get

satisfactory workmanship to which

Mr. Ellison agreed.

177- Batches concrete

885- Sacks of Cement used-

3850- sacks cleaned

26- sacks of cement recovered-

Cement finisher used 5- sacks of

cement for patching concrete from

9-26-32 to 10-3-32

Batchmeters not yet fixed

Oct 4<sup>th</sup> -

Weather Clear.

No concrete to-day

- 1- steel foreman } Bending steel for entrance
- 1- steel man } portal structure
- 4- helpers.
- 1- cement finisher } Finishing outside of
- 1- helper } Drain NO-2

- 1- Carpenter foreman } forms for drain NO-3
- 6- carpenters } and sect. A on toe wall
- 3- helpers
- 3- carpenters } forms on D.S. Toe wall
- sect-C

4- men stripping forms - Drain #2 + Toe wall

1- man oiling forms.

1- carpenter-sawyer at shop

1- man wetting concrete

2- laborers- cleanup scrap lumber.

1- Dragline oiler } excavation for toe of

1- Dragline operator } Rake fill slope - Downstream

I recommended to Mr. Newcomb that that we have equipment on the job to make aggregate analyses to work in cooperation with City Testing Engineer

5 Sacks of cement used by cement finisher on drain No. 2 - patching

R. W. Carter  
Comm. Inspector

Mr. Newcomb and concrete inspector

obtained two samples of sand for analysis at the laboratory. It is the opinion of the inspector that the 1:2:4 mix in its present design for proportions must be modified to increase the sand content to produce sufficient mortar of proper quality to insure a workable concrete that will produce a surface free from blemish.

Suggested proportions for grout:

∴ 470 # Cement  
1034 # Sand  
3 1/2 gals. mixing water  
assuming 5% moisture  
in sand

Mr. Wood was advised that paragraph 87 of specifications were not being complied with, he said he would see Mr. Wells about it.

14,700 empty cement sacks sent to lakeside  
57,700 empty cement sacks shipped  
from lakeside to mill this date.

Wednesday, Oct. 5-1932

No concrete to-day

1-Carpenter foreman

8-Carpenters 8-hrs

1-Carpenter - 4½ hrs (fired at noon)

4- " helpers

1- " " 4½-hrs (Put on pickup truck <sup>95</sup>  
other driver fired)7 men { Stripping forms, cleanup, covering  
drain No-2 with burlap and  
helping Carpenters

1-Carpenter sawyer at shop

1 man wetting concrete

1-Cement Finisher { Patching drain

1- Helper { No-2

1- steel fireman { steel for drain

1- steel man { No-3

4- helpers

1- dragline operator { excavating

1- " " oiler { overburden

2- truck drivers { North side of  
D.S. Toe wallEQUIPMENT: 1 #6 dragline  
2- Trucks (dump)

MR. Newcomb spoke to MR.

Wells about getting drain <sup>#2</sup> concrete,  
covered with burlap and wetted to  
properly cure the concrete.At 10:AM Celite sacks  
were used to cover drain No-2.

Unless the present 1:2:4  
mix proportions is modified to  
give more mortar I am positive  
the concrete will be honeycombed  
regardless of the amount of  
tamping because that mix  
in its present proportions will  
not produce mortar of  
sufficient quality or amount to  
produce dense concrete. R.W. Carter

5-Sacks of Cement used by  
cement finisher on sides of  
Drain No-2

Thursday - Oct 6

Weather Clear

Concrete as follows:

Downstream Toe Wall:

Sect. C<sup>2</sup> 2+00 to 2+90

Elev. 572' to 575'

7:20 A.M. to 10:50 P.M.

1:2 1/2 - Regular mix

Sect. A<sup>3</sup> 3+60 to 4+03

Elev. 563' to 567'

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

1:2 1/2 - Modified to

5-sks. Cement
1410# Sand
760# 2 1/2" rock
900# 1 1/2" stone
770# 3/4" stone

50-cu yd

60-cu yd

Drain NO-3 - Top of footing to outside

spring of the arch (haunch)

3:20 P.M. to 9: P.M.

1:2:4 - Mix modified to:

6-sks. cement
1370# Sand
1220# 1 1/2" stone
1030# 3/4" Stone
4# Celite

GRout - 5-sks. Cement

1040# Sand

28-gals. H<sub>2</sub>O

Equipment:

1 concrete mixing plant -	13-hrs.
2 Transit-mix trucks -	13-hrs.
1 Transit mix truck -	4-hrs.
1 #6- Dragline -	13-hrs.

Labor:

1-concrete fireman -	13-hrs.
3-men placing Conc. -	10 1/2 hrs.
10-men placing Conc. -	3 1/2-hrs.
6-men in mixing plant -	13-hrs.
1-Dragline operator -	13-hrs.
1 " oiler -	13-hrs.
1-Cement finisher -	9-hrs
Finishing Sect. C + Drain NO. 2	
1-man wetting Conc.	

1-Carp. foreman
8-carpenters
3 " helpers

1-Steel foreman
1-steel man
2-helpers

1-Carp. sawyer at plant

Concrete Summary

1:2 1/2:5 -	Batches	5ks.
	105	525
1:2:4	64	384
	11	55
GRout		
Cement finisher Dr. #2		2
		<hr/> 966

DAILY RECORD CONTINUED →

1- Set of three test cylinders

taken at 1<sup>10</sup> P.M. - from:

Sect. A - D.S. Toe Wall  
Sta. 3+60 to 4+03  
Elev. 565'

1:2 1/2 : 5 - modified to:

5 - Sks. cement

1410 # Sand

760 # 2 1/2" stone

900 # 1 1/2" stone

770 # 3/4" stone

} 31 gals

H<sub>2</sub>O

1- Set of three Test Cylinders

taken at 8:45 P.M. - from:

SIDEWALLS of drain NO. 3 from  
top of floor slab to spring of  
arch section.

1:2:4 - mix modified to:

6 - Sks. Cement

1370 # Sand

1220 # 1 1/2" stone

1030 # 3/4" stone

31 - gals. water

Remarks:

10 - men were sent from  
puddle core excavation to

relieve the regular concrete  
crew at 5:30 and stayed to  
finish of the pour - 9 P.M.

MR. Wood said at 9:AM - for  
Mr. Newcomb and Conc. Inspector  
to make necessary adjustments  
in concrete mix as required to  
get workability.

AFTER 5:45 - A.M. a flood light  
and string of other lights were  
used to illuminate the work  
sight, but light was not  
good enough to get good  
visibility and men had to do  
tamping more or less blindly.

3200 - Cement Sacks Cleaned  
16 - Sks. Cement Recovered.  
Bin not cleaned.

Weather Clear:

FRIDAY-OCT-7-1932

Poured concrete as follows:

Corewall - Sta. 3480 to Sta. 3645  
Elev. 501' to Elev. 511'  
Start - 12:30 P.M. to 2:15 A.M.

Equipment:

1 concrete mixing plant  
3 - Transit mix trucks  
Steel chutes

LABOR:

1 - Gen. Foreman  
1 - Conc. Foreman  
5 - men placing concrete  
1 - man dumping trucks  
3 - Transit mix drivers  
7 - men in mixing plant  
2 - men cleaning floor of  
Core wall trench  
1 - Carp. Foreman  
7 - carpenters  
4 - Carp. helpers  
1 - man wetting concrete  
1 - cement finisher  
1 - man oiling forms  
2 - steel men

MIX:

7 sacks cement  
1370 # sand  
1220 # 1 1/2" stone  
1030 # 3/4" stone } 36-gallons  
4 # Celite } 720

GROUT - 5-sks. Cement - 1040 # Sand

2.62 - Batches Concrete, 1834-sks.

16 - " GROUT 80-sks

total 1914-sks

Remarks -

Mr. Ward + Mr. Newcomb inspected  
until the finish - 2:15 A.M. Carter  
inspected at plant until 7:30 P.M.  
Concrete crew came on  
duty at 12:30 P.M. and all  
were relieved at 9:30 P.M. except  
conc. foreman + 2-men in mixing plant  
Copper water stop was installed  
according to plans.

MR. Newcomb + Mr. Converse  
made inspection before pouring to locate  
and chart places for GROUT holes.

Weather Clear

SAT. OCT. 8-1932

Poured concrete in Arch section of  
Drain NO-3. including well to top of  
drain arch section -

8:15 AM - to 12:30 P.M. (NO TIME OUT FOR  
Lunch.)

Equipment: 1- #11- dragline  
1- mixing plant (A-MIXER)  
2 Transit mix trucks

LABOR:

- 1- General foreman
- 1- Dragline operator
- 1- " " boiler
- 2- TRANSIT MIX TRUCK DRIVERS
- 1- Concrete foreman
- 8- Concrete Tamperers
- 2- Steel men { steel for entrance portal
- 3- helpers }
- 7 men mix plant
- 1- Carp. foreman { Downstream Toe Wall
- 8- Carpenters { & Drain NO-3
- 3- helpers }
- 1- Cement Finisher
- 1- Carp. Sawyer at shop.

TILE IN PLACE - DRAIN NO-3

4" x 12" clay drain tile - 860 pieces

R. W. Carter  
Cnc. Inspector

Forms broke loose near east  
end at bottom of ARCH section. I called  
the carpenters back at 9:AM. to  
strengthen ties and add shoring to  
secure bottom of forms, full length of  
drain. At 10:15 when top lift or  
3<sup>rd</sup> lift was being poured, top of forms  
started to spread, I called carpenters  
back again to put double walers  
on top of forms, this was done  
and forms stayed in place from  
point where spreading occurred to  
end of drain.

1:2:4 - MIX MODIFIED		
6 sacks Cement	GROUT	
1370 # Sand	5-5ks. Cement	
1220 # 1 1/2" gravel	1040 # Sand	
1030 # 3/4" gravel	with 26 gals Water	
4 # Collie		
32 - gals. Water	49 est. sand	294
1:2:4 - Concrete	62 Batches	392 80 Cnt.
GROUT -	11 "	55 - 5ks Cnt.
	Total	727 - SKS.

All Concrete Crew laid off - 12:30 P.M.  
Carpenters " " 11:3 A.M.





Weather Clear

Tuesday Oct-11-1932

I reported for work at 7:AM - and  
stayed on the job until 8:AM when  
Mr. Wood said for me to take the  
day off to make up for some of the  
overtime I had worked.

R. W. Carter

No concrete to-day - All hands  
busy preparing to unwater  
flooded working areas.

Weather - Clear.

Wednesday Oct. 12 - 1922

No Concrete to-day.

I spent the day walking  
over all parts of job watching  
various crews, installing pumps  
and pipelines. MR. Thurston,  
tunnel inspector, was instructed  
by Mr. Wood to record in  
his report all men working  
on pumps and pipe lines,  
therefore I did not make a  
record of men at work except:

1 man setting concrete { Drains  
+ 4' wall  
Too Wall

3 men on pump until 10 AM  
downstream toe wall.

Weather. Clear.

Thursday. Oct. 13. 1932 DAY-SHIFT

NO. Concrete to-day.

NO. special equipment

1 Cement finisher (dressing drain NO. 3)

1 man wetting concrete

1 Steel man (Getting out steel for

1 helper Outlet Portal

1 Gen. foreman

1 Carp. foreman (Building bulkhead and

2 - Carpenters Chute - Puddle Core.

5 men cleaning grout pipe holes  
puddle Core.

Remarks:

Inspection for depth of grout holes

Sta. 3560 to 3640 made 1:15 P.M. to

3:15 P.M. by Carter & Converse. Many of

the holes were not down the required  
depth.

At 1:15 P.M. MR. Wood told me that the  
state Inspector would be here at 2:30

P.M. to inspect the puddle core excav.

I saw the puddle core foreman and

B. W. Carter  
Inspector

had him make necessary  
clean-up - sta. 3650 to 3778, ready  
for inspection.

At 2:10 P.M. MR. SAYAGE, MR. WOOD  
and state inspector arrived and  
spent until 3:10 P.M. on inspection.

Sta. 3650 to 3778 was accepted  
as deep enough and preparations  
were started by Contractor to  
pour concrete in this area, tomorrow.

Night Shift:

Puddle Core  
Excav. South  
BAND

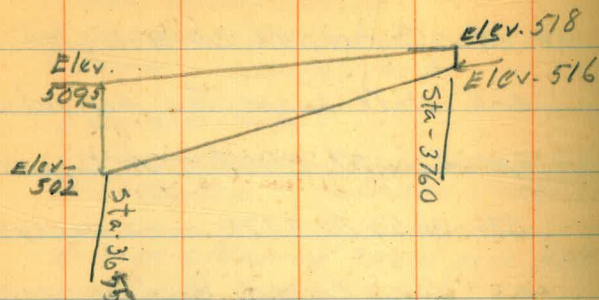
- 1- foreman
- 1- #11-dragline operator
- 1- " " oiler
- 3- drillers
- 1- Powder man
- 1- truck driver - 2-Trucks

4 men on dyke upstream from  
puddle core, discharge pipe  
line or pump downstream from  
lower toe wall - and excav.  
in Outlet Portal area.

Weather Clear.

Friday Oct. 14.

Poured concrete in puddle  
Core - Sta. 3645 to 3760



Equipment:

- 1- Concrete mixing plant
- 3- Transit mix trucks.
- Concrete chutes

Labor:

- 1- Concrete foreman
- 4- men placing concrete
- 2- men dumping concrete
- 1- man on chutes
- 3- Transit mix truck drivers
- 7- men in mixing plant
- 3- Carpenters { night shift on chutes  
2:30 AM. to 11:30 AM.
- 2- laborers { 4 1/2 hrs. outlet
- 1- Steel man { portal steel
- 1- helper { 3 1/2 hrs. on  
concrete at  
puddle core

- 1- Cement finisher { Assembling
- 1- helper { GROUT pipes  
for puddle core

- 1- Carp. Foreman { Chutes + bulkheads
- 2- Carpenters { Core wall
- 2- helpers

- 1- Rigger { 1 1/2 hrs. rigging pipe for
- 1- helper { pump sump - Core wall

Concrete -

	7- Sks. Cement	Batches	Sacks Chit.
(1)	1370 # Sand	}	30
	1220 # 1 1/2" gravel		
	1030 # 3/4" gravel		
	4 # Celite		
	36- Gallons water		

(2)	7- Sacks. Cement	}	110
	1220 # Sand		
	1300 # 1 1/2" gravel		
	1100 # 3/4" gravel		
	4 # Celite		
	34- gallons H <sub>2</sub> O		770

Grout -

	5- Sks. Cement	}	6
	1040 # Sand		
	28- qals. H <sub>2</sub> O		

Total Batches Concrete 140  
Total Sacks including grout 1010

NO- Sacks Cleaned.

Oct. 14 - Continued

1 - set of 3 - test cylinders  
made at 5:10 P.M. from puddle  
Core - Sta. 3685 to 3760 - Elev. 502' to  
509'

7 - sacks Cement  
1220 # Sand  
1300 # 1 1/2" gravel  
1100 # 3/4" gravel  
4 # Celite  
34 - gallons water

### Remarks:

Mr. Wood told me it would  
not be necessary to roughen  
the vertical construction joints on  
work in puddle core.

Mr. Newcomb from 10:30 A.M.  
until 11 A.M. seeing that rock  
floor in this pour was thoroughly  
cleaned.

At 1:15 I noticed the concrete

was coming considerably over-  
sanded. I went to the mixing  
plant and examined the aggregate  
and found that the 3/4" gravel  
was coming with a high percentage  
of sand from stock pile. I  
adjusted the mix until visual  
inspection showed it to be in  
proper grading of materials. This  
adjusted mix was used for 110  
patches and to the finish of the  
pour with success and with  
2 - gallons less water than the  
oversanded mix.

At 5:20 P.M. as the concrete  
pouring was finished, Mr. Newcomb  
and I walked over to part of  
core wall where the men were

Oct. 14-Continued:

setting grout pipes. We observed the method being used, which was not according to Mr. Woods' instructions.

Several grout holes were blown out with air and left open before inserting pipes, to accumulate more water and mud. Mr.

Newcomb spoke to the foreman of the crew telling him that the work was not satisfactory, when Mr. Ellison, Gen. foreman came up and instructed the foreman on Mr. Woods' instructions. Mr. Ellison said the work would be done right if he had to do it himself. The foreman told Mr. Ellison and Mr.

Newcomb that he was doing the work as per instructions from Mr. Wells, Supt. and pointed to Mr. Wells who was standing a short distance away and suggested that he be consulted. Mr. Newcomb went to Mr. Wells, both returning just as the workmen were preparing to set a grout pipe after having cleaned the hole without preventing mud & water from reentering the hole. Mr. Newcomb said, looking at Mr. Wells, "That hole is not satisfactory"; Mr. Wells answered: "What's wrong with it"; Newcomb "The hole is not clean" Wells, "you get off the job and stay off and

weather - Clear.

Sat. Oct. 15. 1932

Concrete in Core Wall

Sta. 3640 to 3560

Elev. 5095 to 5220

2:30 P.M. to 11:30 P.M.

EQUIPMENT:

- 1-Mixing plant
- 3-TRANSIT MIX TRUCKS.
- Chutes

LABOR:

- 1-Gen. Foreman
- 1-man - 1 1/2-hrs. brazing copper
- 1-Carpenter foreman (Retimbering core wall)
- 6-Carpenters {Trench-building
- 5-helpers {bulkheads + chutes
- 1-Cement finisher {stripping forms and finishing drain No-3
- 1-Man wetting concrete
- 1-Rigger {installing 30" pipe in pump sump.
- 1-mechanic {pump sump.
- 3-men {from drill crew on 30" pipe pump sump.
- 1-Steel man {getting steel out for outlet tunnel portal structure - 5-hrs 3-hrs on concrete.
- 1-helper
- 1-Concrete foreman
- 4-men placing concrete
- 7-men in concrete plant
- 3-Transit mix truck drivers

R. W. Carter  
Conc. Inspector

relieved other men at 4:30 P.M.

2 men {pumping concrete from trucks

2-men from tunnel to mixing plant - 4: P.M. to 11:30 P.M.

Copper stops were placed under inspection by Mr. Newcomb.

MIX -

- 7.5 kcs. Cement
- 1320 # Sand
- 1220 # 1 1/2" gravel
- 1030 # 3/4" gravel
- 36-gals. H<sub>2</sub>O

198-Batches  
1388-SKS. Cement.

GROUT - 6-Batches  
30-SKS. Cement.

Total Cement - 1416-SKS.

Night Crew on Core Wall Excavation

LABOR

- 1- Foreman
- 1- Drag line Oper.
- 1- " - oiler
- 9-muckers
- 3-Jackhammer men
- 1-powderman
- 1-Truck driver

Equipment

- 3-Jackhammers
- 1- #11-dragline
- 2-Trucks

→ This crew spent about 1/2 shift cleaning out core wall trench for pouring concrete.

3 of the muckers, jackhammer men and powderman part time on tunnel portal

Weather Clear

Sunday, Oct-16-

Core Wall Concreting:

Sta. 3647<sup>5</sup> to 3655

Bedrock to Elev. 511<sup>4</sup>

1:30 to 1:45 P.M.

Sta. 3480 to 3560

Elev. 5095 to 522<sup>0</sup>

1:45 P.M. to 10: P.M.

Equipment:

- 1. mixing plant
- 3. Transit mix trucks  
chutes.

Labor:

- 1. Gen. Foreman
- 5. men setting grout pipes
- 1. Carpenter { Core Wall timbering
- 3. helpers { chutes + bulkheads.
- 2. Carpenters
- 1. steel man helping Carp.
- 3. Carpenters { Night shift.
- 1. helper { 2:30 A.M. to 11:30 A.M.
- { Core Wall timbering.

- 1. concrete foreman
- 4. men placing concrete
- 1. man dumping concrete from  
trucks to chutes with one of  
helpers mentioned above
- 7. men in mixing plant
- 1. man wetting concrete down  
to the well - also general helping
- 4. men stripping timber in core  
wall excav. (right view from <sup>level</sup>)

R. H. Carter  
Conc. Insp.

MIX:

- 7.5Ks. Cement
- 1370# Sand
- 1220# 1 1/2" gravel
- 1030# 3/4" gravel
- 36-gals. H<sub>2</sub>O

GROUT. 5.5Ks. Cement  
1040# Sand

	5Ks Cement
219 Batches Concrete	— 1533
5 Batches GROUT.	— 25
Total 5Ks Cement 1558	

AT 2:45 P.M. concrete started coming  
oversanded. Investigation at mixing  
plant showed load of 1 1/2" gravel had  
been dumped in sand bin. The mixer  
man adjusted the mix to offset the  
gravel in sand. When the gravel was  
used up, mixer man forgot to change  
back to the original mix. I made the  
change and concrete came satisfactorily  
for balance of pour.

MR. Wood told MR. Newcomb and I at  
6:30 P.M. to go home that he would  
act as inspector, because we both  
had worked a double shift on  
Saturday & all day on Sunday.



R. W. Carter

Oct. 17 to 19<sup>th</sup> Inclusive in Book #

Thursday Oct. 20-1932

Core Wall Stations and elev. as shown on opposite page -

Start - 3:45 P.M. Finish 6<sup>00</sup> P.M.

Equipment:

- 1 mixing plant
- 3- Transit mix trucks

Labor:

- 1- Gen. foreman
- 1- Conc. foreman
- 2- men dumping Conc.
- 4- men spreading concrete
- 3- Transit mix truck drivers
- 7- men in mixing plant

4 hrs.

(2- men left Concrete Crew at 7:15 P.M. to work on Core Wall excav.

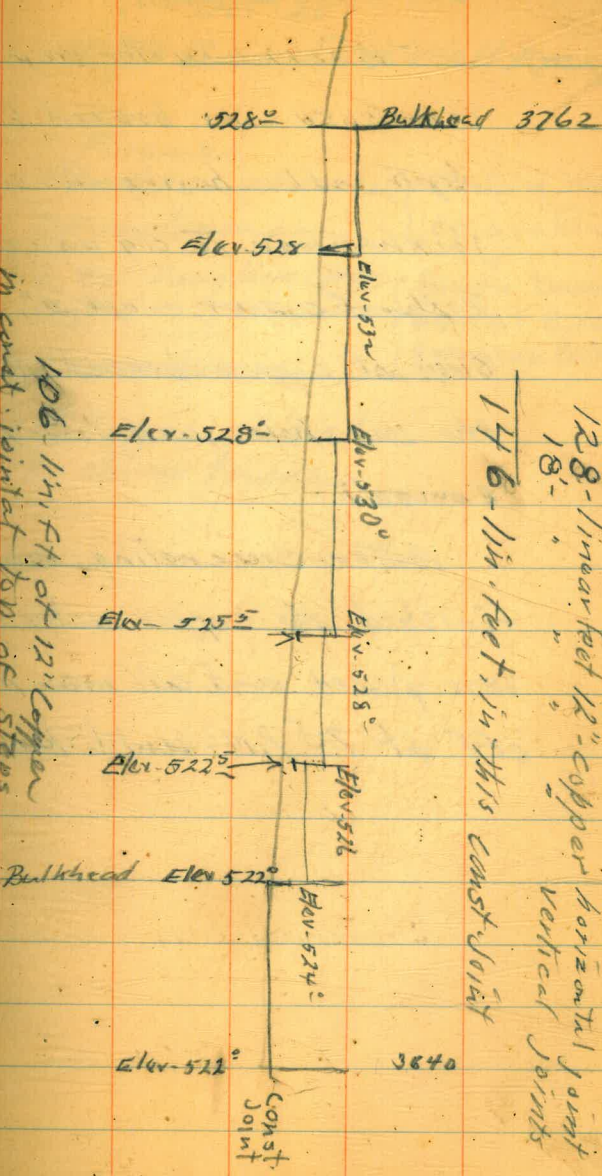
All Concrete Crew laid off - 7:15 P.M.

39- Batches Concrete - 273- SKS.  
 3- Batches GROUT 15- SKS.

Total Cement 288 SKS

1- Welder - 1 1/2- hrs.

106 1/4 ft. of 12" Copper in cast joint top of steps making total of 252 1/4 ft. of copper in these two cast joints.



12.8' linear feet 12" Copper horizontal joint  
 18' linear feet 12" Copper vertical joint  
 176 1/4 feet 1/2" this const. joint

Oct. 20 - continued:

The copper water stop at sta-3656 was brazed full depth after having to use a jackhammer to dig concrete to bottom of copper, except 2". Both sides of copper brazed from the one hole made in the concrete.

After concreting was finished the copper water stops were placed and all men laid off at 7<sup>15</sup> P.M. - until tomorrow

R. xl. Carter

Oct. 20

Night Crew: Core Wall Excav

- 1 - Foreman
  - 3 - Jackhammer men
  - 1 - powderman
  - 1 - #11 - Dragline Oper.
  - 1 - #11 - " Oiler
  - 1 - Toteman
  - 12 - Muckers
  - 1 #7 - gas shovel
  - 3 - dump trucks
- ON Core Wall Excavations
- All on tunnel Portal Excav Entrance Portal

Oct. 21st

Night Shift -

- 1- Tractor with scraper
- 1 #7-shovel
- 3- Trucks

- 1- tractor operator
  - 1- helper
- { on road  
above Core  
Wall-South  
Side -

- 1- foreman
  - 3 Jackhammer men
  - 1 powderman
- { Core Wall  
EXCAV.

- 1- #7 shovel runner
- 1- #7 " oiler
- 1 #11-dragline op. on pump

11- muckers

12- Tunnel men (eating lunch)

Superintendent  
George Simpson

R. K. Carter  
Inspector

Oct. 22-1932

Night Excavation Crew -

- 1- foreman
  - 1- #11-dragline operator
  - 1- " " oiler
  - 1- truck driver
  - 2- Jackhammer men
  - 1- powderman
  - 9- muckers
- } excav.  
North  
Footing  
outlet  
tunnel  
portal

- #1- #11-dragline
- 2- Dump Trucks
- 2- Jackhammers

Note: The day steel crew  
and 3-carpenters and 2 helpers  
worked 3-hrs. overtime on  
steel for South footing of  
outlet portal

Oct. 23 to 26<sup>th</sup> inclusive  
reports in book 170-388

Oct. 27

- 1- Carp. foreman  
9- Carpenters  
4- helpers
- Forms for South  
Retaining wall.  
OUTLET STRUCTURE  
AT 8:AM - 4- carp. &  
foreman went to work  
on Core wall

Placing concrete in sidewalls  
of drain NO-1- from top of footing  
slab to springline of outside of  
the arch section. 1:PM to 6:15PM

- 1- mixing plant  
2- Transit mix trucks

1- #11- dragline

- 1- General foreman  
1- Concrete foreman  
7- men in mixing plant  
2- Transit mix truck drivers  
1- Dragline operator  
1- " " oiler  
9- men placing concrete  
1- Cement finisher { 4-hrs. on grout hole pipe  
L- helper { Core Wall  
4-hrs. Cleanout - Drain  
#1

1- Dragline Oper. { New crew relief at  
1- " " oiler { 5:PM. to 6:15 P.M.

changed to this after 27<sup>th</sup> Batch in order to  
get more mortar

From  
27<sup>th</sup>  
Batch

1440<sup>#</sup> 5 and  
1150<sup>#</sup> 1 1/2  
1030<sup>#</sup> 7/4

The area to be placed was  
flooded with water and delay from  
7:AM to was necessary to  
pump the water out and clean  
debris and mud from the  
surface of the const. joint.

Two steel men worked 1-hr.  
getting steel in position so that  
proper clearance from forms could  
be assured during the placing of concrete.

At 9:15 - scarp. & 2- helpers quit work  
on the retaining wall to work on Toe Wall end  
top section.

64 batches Concrete - 384 sacks Cement  
7- Batches grout 35- sks. Cement  
{ 2600- sks. Cleaned  
{ 18- sacks of Cement



Weather  
Clear

Friday Oct-28

Placing concrete in  
South<sup>and</sup>North footings of <sup>tunnel</sup> entrance  
wing walls.

10:AM to 8:30 P.M.

1-mixing plant  
3-transit mix trucks { 1-only 6 hrs.

1-Gen. foreman  
1-Conc. foreman  
8-men placing concrete  
1-man dumping trucks  
2 men in mixing plant  
3- Transit mix truck drivers  
2-carpenters - 10 hrs  
1-Carp. foreman

7-men placing steel { 4 hrs.  
1-man " steel - { 10 hrs  
3-extra men from day shift Core

Placing  
Concrete

Wall crew - 2:30 P.M. to 4: P.M.

Placing  
Conc.

4-men from night core wall  
crew - 4: P.M. to - 8:30 P.M.  
3-men from Core wall in mixing plant  
4: P.M. to 8:30 P.M.

R. H. Carter  
Conc. Inspector

Several short delays were  
ordered by inspector to  
work concrete through the  
steel.

Rigging pumps in the cutoff  
walls caused some trouble in  
delays.

1-set of three test cylinders  
from South wing wall of  
entrance Portal Structure -

5: P.M.  
6-sacks of cement  
1440 # Sand  
1150 # - 1 1/2" gravel  
1030 # 3/4" gravel  
36 gals. water

207 Batches Concrete  
1242 Sacks of cement

Wednesday NOV-2-1932

Placing Concrete in Drain #1 & #2

Wells - 10-ft. in 2-5 ft. lifts each.

12:30 to 5: P.M.

6-sack batch

1440# Sand  
1150# 1 1/2" gravel  
1020# 3/4" gravel

GROUT

1040# Sand  
5-Sks. Cement

Core Wall - sta. 3430 to 3480

Bedrock to Elev. 522'

2:45 P.M. to 8:45 P.M.

7-sack Batches of concrete.

MATERIALS: Drain #1 & #2 -

17 Batches Concrete — 102-Sks. Cement  
1 Batch Grout — 5-Sks. Cement

Core Wall - 89 Batches concrete — 623 " "  
1 large batch grout — 7 " "  

---

737-Sks.

55 ft. Copper in Core Wall

this pour.

2100 Sacks Cleaned.

14 Sacks Cement Recovered.

Equipment:

1 Mixing plant - 8-hrs  
2 Transit mix trucks - 8-hrs  
1 " " " 1-hrs  
1 #11 Dragline - 4-hrs.

LABOR:

1- Gen. Foreman

1- Carp. Foreman } Forms for drain wells

5- Carpenters }

3- helpers

1- steel man } Reinforcing steel  
2- helpers } for drain wells.

1- cement Finisher } Fixing concrete in  
Drain NO. 1

4- Carpenters } forms for retaining  
walls & Counterforts  
Outlet Portal

1- Carpenter } Bulkhead - Core Wall

1- Carpenter - sawyer }

1- man making cement blocks  
for reinforcing steel chairs

1- man wetting concrete  
and on Cleanup.

1- Concrete 8-hrs.

3- men spreading concrete 6-hrs.

2- men " " 8-hrs.

2- Transit mix truck drivers 1-hr.

1- " " " 4-hrs.

1- Dragline operator 4-hrs.

1- " " oiler 4-hrs.

6- men in mixing plant 8-hrs.

1- Transit mix truck brake drive  
shaft after working 1-hr.

Four 4" pipes were set in deep  
end of Core wall Trench to be used to  
drill through for grout holes.  
Rock to elev. 522'

NOV. 2- Notes

MR. Anderson, mixer man said at 8:20 A.M. that MR. ROHL complained to him that the City had "Dove" him out of about 8000 sacks of cement already.

ANDERSON Told him that he always checks with City Inspectors daily.

8:45 A.M. - I called steel man's attention to reinforcing steel bars touching forms in drain Well. Steps were taken immediately to correct the work.

9:00 A.M. Mr. Converse + MR. Newcomb came to Core Well and told MR. Ellison that 8-ft. of concrete only could be poured before drilling grout holes. Later 2: P.M. MR. Wells said Mr. Wood had given him permission to use 4" pipe to

be placed in deep section for use as guides for long drills thus permitting placing concrete to elev. 522' instead of only placing 8-ft. as 1st authorized

I told MR. Fassell at 9 P.M. that the steel in well NO. 3 was not satisfactory, that he must get the steel away from touching forms. I did not take a record of number of ladder rungs in drain wells, but will turn in total number when finished

NIGHT CREW - 11-2-32

1- Jackhammer man	} excavation North End of Core Wall Trench.
1- powderman	
1- hoist man	
3- muckers	



Weather: Clear.

Thursday NOV-3-1932

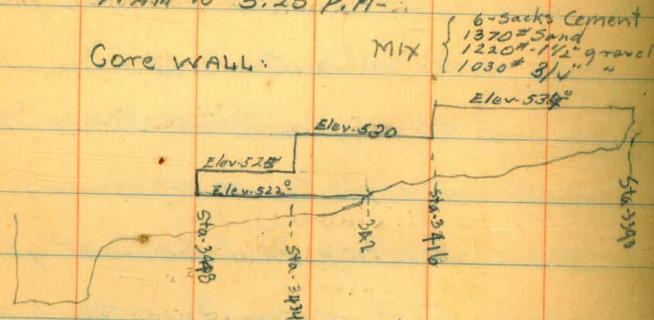
Placed Concrete as follows:

Drain Wells #1-#2-#3-

TO Elev. 568<sup>o</sup> From Elev. 558<sup>o</sup>

7: AM to 5:25 P.M.

Core WALL:



2:30 P.M. to 6:25 P.M.

Mix

{ 7 Sacks Cement  
 1370 # Sand  
 1220 # 1 1/2" gravel  
 1030 # 3/4" gravel

Equipment:

- 1 #11 - dragline { on concrete
- 1 #10 - dragline { MOVING - 24" pipe line
- 1 TRACTOR { and unused pipe
- 2 - Dump trucks { lines from job site
- 1 - concrete mixing plant
- 3 - Transit mix truck drivers

LABOR:

- 1 - Carpenter foreman
- 5 - Carpenters { DRAIN WELL
- 2 - helpers { FORMS + LADDER
- 2 - Carpenters { Rungs
- 2 - Carpenters { OUTLET PORTAL
- 5 - Carpenters { Retaining wall forms
- 1 - man. { + Bulkheads in
- 1 - Cement finisher { CORE WALL
- 1 - helper { Entrance Portal
- 1 - helper { wing wall forms.
- 1 - helper { wetting concrete
- 1 - helper { + general helper
- 1 - helper { Cleanup in Core
- 1 - helper { wall Etc. +
- 1 - helper { helping on Core
- 1 - helper { wall concrete.

- 1 - General foreman
- 1 - Concrete foreman
- 4 - men placing concrete
- 6 - men in concrete mixing plant
- 3 - Transit mix truck drivers
- 1 - 8-hrs. 2 - 6-hrs.
- 1 - Dragline operator { on concrete
- 1 - " " oiler { Drain wells.
- 1 - Steel man { Placing steel
- 2 - helpers { in drain wells.

- 1 - Tractor operator
- 2 - Dump truck drivers { moving
- 1 - #10 - Dragline operator { pipe lines.
- 1 - #10 - " " oiler { from job
- 4 - laborers { site.

MADE - 1 set of three test cylinders from Core Wall Concrete:

7 Sacks Cement  
 1370 # Sand  
 1220 # - 1 1/2" gravel  
 1030 # 3/4" gravel  
 30 - gals. added  
 mixing water

Time - 4: P.M.  
 Location: Core Wall:  
 N 3434 N 3416  
 Elev. Bedrock to  
 Elev. 530<sup>o</sup>

NOV. 3 - Continued -

MATERIALS USED.

Location of Concrete.	Batches	Sacks of Cement
Drain wells	30-Batches	180
	4-GROUT <small>1-5 sack batch</small>	23
Core wall	72-Batches	504
	Total	707 Sacks

3-Batches wasted in core wall

concrete not included in the above:  
21-sacks of Cement. Concrete broke  
loose under bulkhead and a 1 1/2 hr.  
delay was necessary, which made the  
concrete questionable which was mixed  
and waiting in the transit mixer, therefore  
the concrete was dumped as waste.

78-Ft. of Copper was used.

MR. HARPER INSPECTED ON

Concrete in Core wall from 11 P.M. to  
8 P.M.

1800-sacks cleaned-

17-Sacks of Cement Recovered

NOV-4-1932

No Concrete placed

labor: 5-Carpenters { Entrance Portal forms  
1-Carpenter { Shop  
1-Carpenter foreman { Core wall forms - batter section  
3-Carpenters  
2-helpers  
5-men { cleaning up and stripping bulkheads Core wall  
1-man wetting Concrete,  
1-Concrete foreman { stripping  
1-cement finisher { Drain well forms  
1-laborer { + cleanup.

NOV-5-1932

No Concrete placed.

LABOR: 5-men placing steel in core wall

1-Carp foreman { Forms for  
3-Carpenters { Core wall  
2-helpers  
5-Carpenters { Forms for  
1-helper { Entrance Portal  
3-steel men { Steel for  
entrance Portal  
1-man wetting { Core wall +  
concrete { Drain wells

~~1-hoist man { excavating  
1-driller { south  
1-Powderman  
1-hump man  
2-muckers~~

NOV-5-1932  
NIGHT CREW - 5: P.M. to 2: A.M.

LABOR:  
3 muckers  
1 hoist man  
1 Jackhammer + Powderman  
1 Dump man.  
1 Pumpman (general)

Equipment: 1- portable electric hoist  
1- dump car + track.  
1- Jackhammer

Sunday Nov. 6-1932

1#11 dragline { stripping west  
2- Dump trucks { of D.S. Toe wall  
1-#10- Dragline

1- Dragline operator { stripping  
1- " " { west of D.S.  
2- Truck drivers { Toe wall  
1- foreman { excavating  
2- Jackhammer men { between retaining  
5- laborers { walls - Outlet  
Portal

1- Carpenter { forms for retaining  
wall outlet Portal

1- Driller { MAKING ROADWAY  
1- powder man { South end of Rock fill  
East of Core wall

1- steelman { Placing tie rods in forms  
for Core wall

1- Carpenter foreman { Forms for  
4- Carpenters { Core wall  
4- helpers  
1- welder - 2-hrs.

1 hoistman { excavating  
1- Driller { North end of  
1- Powderman { Core wall  
1- dumpman  
2- muckers

Continued next page



R. W. Carter  
Conc. Inspector

Nov. 7-

MONDAY - NOV-7-1932

Placing concrete as follows.

Core Wall: 7:30 AM. To 3:20 PM

each  
32' section  
19.3 cu.  
yds. Conc.

Sta. N3512 to N3544

Elev. 528° to 533°

N3576° to N3608

Elev. 528° to 533°

N3640-3656

Elev. 528° to 533°

N3656 to 3672

Elev. 530° to 533°

NOT PLACED  
TO DAY

20-3/4"  $\Phi$  bars - 32 ft. long each section

20-3/4" " laps - 33" each section

Total of 640 ft. each section

" " 55 ft. laps

695 lin. ft. 3/4"  $\Phi$

each section.

or 2085 lin. ft. this day.

43 lin. ft. copper each section -  
3 sections

129 lin. ft. total

2'6" extra bulkhead  
at step

131.6"

Total lin. ft. of Copper



Equipment:

- 1 mixing plant
- 2 Transit mix trucks.
- 1 #11 dragline
- 2 Transit mix trucks

LABOR:

- 1 Gen. foreman
- 1 Conc. foreman
- 6 men in mixing plant
- 4 men placing Conc.
- 1 Dragline operator
- 1 " oiler
- 1 steel man { Tie rods for  
Core Wall forms
- 2 Transit mix drivers

- 1 Carp. foreman { Core Wall
- 2 Carpenters { Forms
- 2 helpers

- 1 Cement finisher
- 1 man wetting Concrete

- 1 Carp. Sawyer { Entrance
- 6 Carpenters { Portal
- 5 steel men

Reinforcing Steel  
21-Vertical  
Bars - each section

MONDAY - NOV 7 - NOTES.

30 min. delay in starting concrete  
due to cleanout being necessary  
Delay from 10:20 to 10:50 A.M.  
cleaning out section of core wall.  
Forms ready to receive concrete.

10:41 A.M. - Told Mr. Ellison that  
grout hole at Sta. had not yet  
been grouted and that it would  
be necessary to put a nipple of  
pipe on the grout pipe to bring  
it above this pour so it could  
be grouted later.

Mr. Wood told me at 10:20 A.M. to  
tell Mr. Ellison that the city would  
pay for grout pipes around pump  
sump, only to the length or elev.  
of all other grout pipes. I told

Mr. Ellison and he said he planned  
to cut off excess pipe.

Delay - 2:30 to 3:20 Fishing canvas tremi  
out of pump sump after losing it. Out  
for the day at 3:20 - Tremi to  
be fished out.

MONDAY - NOV. 7 - Continued

2 men drilling grout holes in  
Core Wall Backbottom - from  
12:30 P.M.

4 men building bridge over  
Core Wall Excav.

Concrete:

34 - Batches = 238  
2 - grout = 10

248 - Sacks of  
Cement used

Rohlf +  
Connelly  
USE

{ 4 - Batches 28 SKS  
2 Batches 12 SKS } 40 - Sacks  
to Garage  
Company  
Use

465 - Bundles 23,250 sacks  
Empties sent to  
Lake side

8/4/37 #

Sand Net	103	Caft.	
" Dry	97 $\frac{1}{2}$	"	out of Pile
2 $\frac{1}{2}$ "	97 $\frac{1}{2}$	"	
1 $\frac{1}{2}$ "	96	"	
3/4	95 $\frac{1}{2}$	"	

Sep. 17	10900	tax sent to mill via Lakeside
9/6	14850	tax sent to mill via Lakeside
Sept 26	16850	tax sent back to mill via Lakeside N.H.
Oct 4	14700	" " " " " " " " " "
Oct 4	(57700)	tax to date loaded out 1154 blocks per Anderson
	(57300)	
Nov. 7	23250	tax sent back to mill
	80950	
12/29/37	11250	
12/30/37	12350	
	104550	tax returned to 1/1/38.

Record of Sacks of Cement

Used in patching Concrete U.S.T.W.

To Date			
Sept. 2-	7	SACKS	All Paper
" 26	5	"	" "
To 9/26	DST.W	9	All Cotton
9-26	"	"	"
10-3	"	5	"
10-4	Drain	5	"
	No 2-Top-	5	"
10-5	" sides	5	"

(since in Report)

10-7	#	DRAINS - #1	20
11-2	#	#3-4 Top Wall South End	
10-6	#	6 Sacks Cement used in	

making 1600 spacing blocks for Reinforcing Steel.

Note: 11-7-32 - The mixer man told me to-day that finisher had used - 64 sacks of cement to date.  
Cement blocks - 50 - sacks cement to date - reworked



# Jack Cleaning Record.

Date	Sacks Cleaned	Sax Cement
8/26/32	Cleaned 2100 Sax + Grt.	11
8/30/32	" 3550 " + "	26
8/31/32	" 3200 " " "	21
9/1/32	" 1900 " " "	18
9/2/32	" 2300 " " "	17
9/3/32	" 3100 " " "	25
9/6/32	" 2500 " " "	22
9/7/32	" 3000 " " "	20
9/8/32	" 2900 " " "	25
9/9/32	" 1350 " " "	9
9-14/32	" 750 " " "	9
9-20-32	3450 " 3450 " " "	27
9/21/32	" 1500 " " "	16
9/22/32	" 2300 " " "	23
9/23/32	38250 14150 52400 " 2350 " " "	23
9/24/32	1000	
9/28/32	3600	
9/29/32	4400	25
9/30/32	2300	34

Date	Sacks Cleaned	(Cement) Sacks Recovered
10-3-32	3850	26
10-6-32	3200	16
10-18-32	2250	12
10-23-32	3800	26
10-24-32	4800	37
10-19-32	700	15
10-26-32	2600	18
10-20-32	400	11
10-27-32	2300	
11-2-32	2100	14
11-3-32	1800	17
11-9-32	1800	16
11-22-32	2650	15
11-28-32	5500	42
Nov. Total	13850	104

Bin's not cleaned  
BIN NOT cleaned.

Sub Total 292

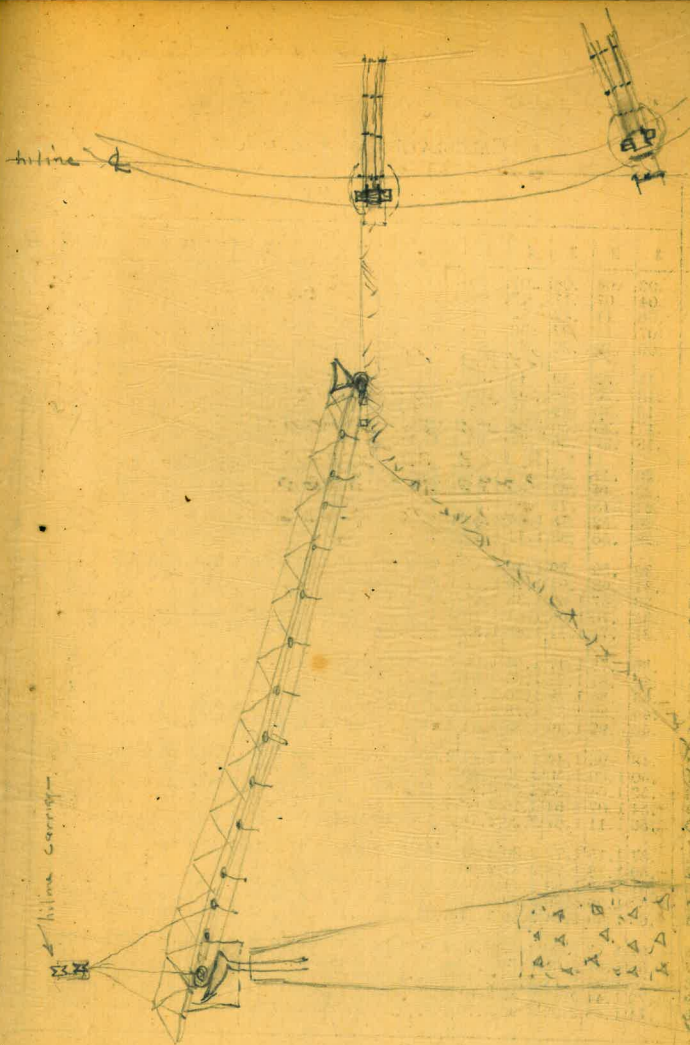
Designation of 80 ft section

4+02 to 3+50 = A    3+50 to 2+70 = B  
 2+70 to 1+90 = C    1+90 to 1+10 = D    1+10 to 0+30 = E  
 0+30 to 0 = F

Downstream Toe wall  
 Designation of 90 ft section

F - 0+30 to P  
 E - 0+30 to 1+10  
 D - 1+10 to 2+00  
 C - 2+00 to 2+90  
 B - 2+90 to 3+60  
 A - 3+60 to 4+02

760	2100	3070	3840
1340	760	2100	3070
970	1370	970	770
770			
500			
4340			



CALCULATION OF EARTHWORK.

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

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

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.  
Roadway 16 feet wide. Side Slopes 1 on 1 1/2.  
For Single Track Embankment.

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

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 41.9. For same slopes but other widths of roadbed correct above figures by one-half difference in width of roadbed; thus in example above for 20 ft. roadbed distance will be  $41.9+(20-16) \div 2$  or 2 ft. added to 41.9 = 43.9. For slopes of 1 on 1 see inside of front cover.

Made in Germany.