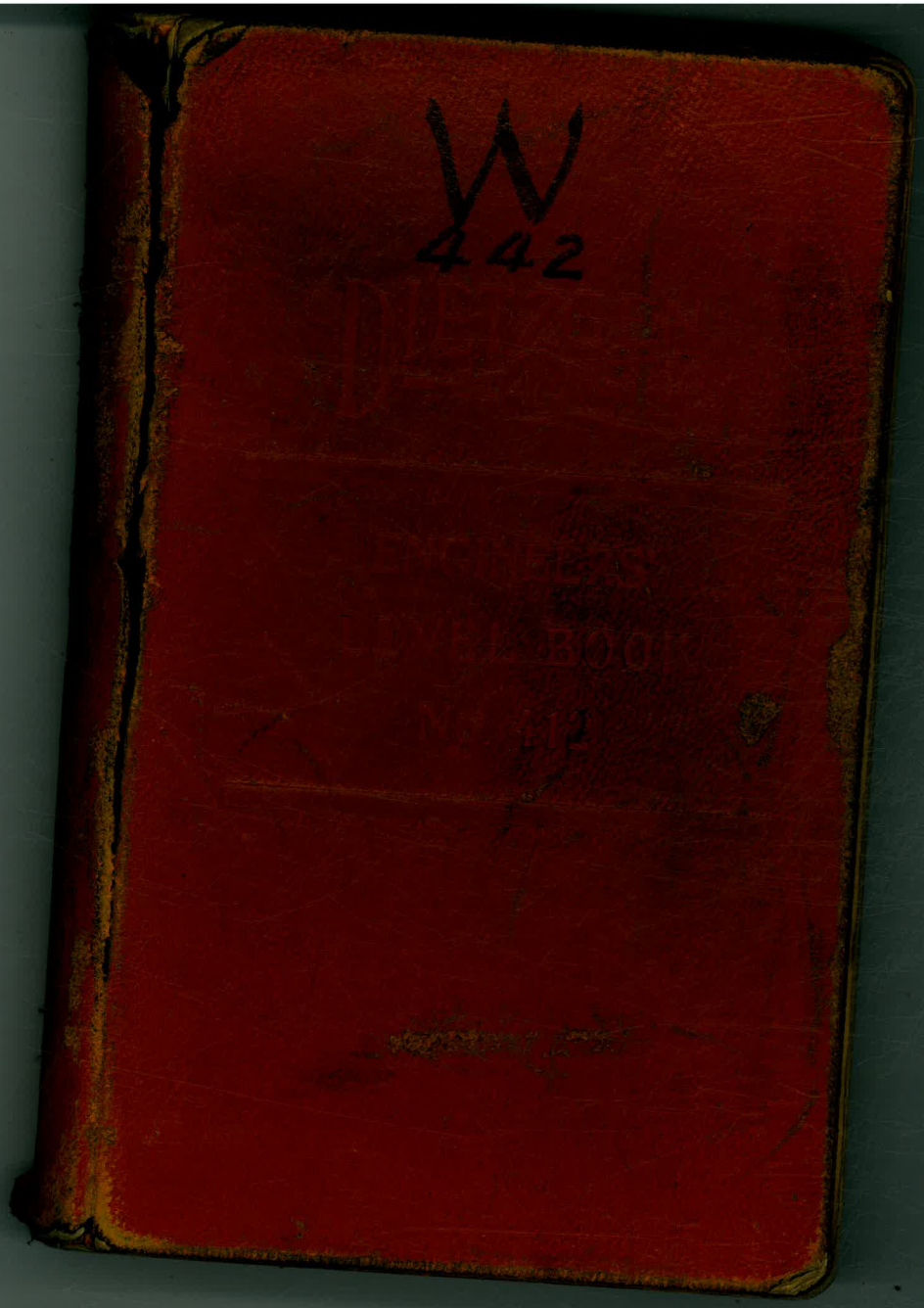

W
442

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1.

For Single Track Embankment.

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

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 30.6. For same slopes but other widths of roadbed, correct above figures by one-half difference in width of roadbed; thus in example above, for 20 ft. roadbed distance will be 30.6+(20—16)÷2 or 2 ft. added to 30.6 =32.6. For slopes of 1 on 1½ see inside of back cover.

442

Field Book for:
R. W. Carter
Concrete Inspector

Concrete Insp. Grouting Etc
Aug to Oct 1933 1-81

1048
83
48
1179

Monday - Aug. 7 - 1933 -

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

1 - Compressor
1 - waterliner & drill
1 - foreman
3 - men
} Drilling grout holes in Core trench South Abutment

1 - Cap. foreman
2 - Carpenters
1 - helper
} Building core wall forms - south abutment.

Outlet Tower: 7: A: M. to 3:30 P.M.

1 - man - wetting concrete.

Johnson's crew not at work today.

1 - foreman
8 - men
1 - #33 - Truck
5: A: M. to 2: P. M
} Excavating outlet adit & area between tower footing & tunnel lining.

Outlet Tunnel

1 - Jumbo on truck - 5 - 5Ks. cement
1 - Cement finisher
1 - " " helper
} Patching Tunnel lining.

Tuesday - Aug - 8 - 1933 -

Core Wall:

1 - Compressor

1 - blow pipe

1 - foreman } Cleaning grout holes &
1 - man } setting grout pipe - 4 hrs

Sta.	Depth of hole	Length of pipe
N3114 W	25'-0"	21'-4"
N3106 E	23'-0"	21'-4
N3098 W	24'-6"	21'-0
N3090 E	26'-0"	21'-4"
N3082 W	25'-0"	21'-4"
N3074 E	24'-0"	21'-0
N3067 W	24'-4"	21'-9"
N3061 E	25'-0"	21'-0"
	196'-10"	170'-1"

1 - Truck } Removing drills & Jackhammers
2 - men } 3 - hrs. Cleaning core trench
5 - hrs.

Outlet Tunnel Work. - 5:A.M. to 2:P.M.

1 - Cement finisher } Patching tunnel
1 - " " helper } lining - 8 hrs - 5 sks Conc.
1 - foreman } extending 4" air line
4 - men } and 2" water line for use in filling holes in Tunnel crown. - 4 hrs

Outlet Tower Work: 5:A.M. to 2:P.M.

1 - Carp. foreman } 4½ hrs building
2 - Carpenters } bulkhead & rigging
2 - helpers } chutes for concrete between tower footing and tunnel lining to elev. 573

Aug-8-1933-

Placing concrete in outlet tower works in area between tower footing concrete and tunnel lining to elev-578.

Start-10:30 A.M finish-12:30 P.M

Mix: 1:2½:5

5-sacks cement
760#-2½" rock
970# 1½" "
770# ¾" "
37-gals.
1348# Sand
} 51 batches. 255-sacks. Cement.

1-mixing plant
1-Barber Greene aggregate loader.
2-Transit mix trucks
1# Truck

1-mixerman
3-men
} mixing plant crews 2-hrs

1-# truck driver
2-Transit mix drivers
} 2-hrs.

1-foreman
4-men
} Placing concrete 2-hrs
Clean chutes and general Clean up around tower base-1½-hrs

Aug-8-1933

Outlet Tower continued:

1-foreman
4-men
1-#33 Truck
} 4-hrs. excavating floor of outlet adit to solid foundation.

Spillway Forms-

2-Carpenters
} 3½-hrs building spillway panel forms.

Wednesday – Aug-9-1933

Measurement of water leaks through the outlet tunnel lining:

Watch & 5-gallon can used. (Can – 12" high

Sta. 5+00

2" of water in can in 10-minutes

Q = 1/6 x 5 ÷ 10 = 0.08 gals p.m.

Sta-5+15

4" of water in can in 10-minutes

Q = 1/3 x 5 ÷ 10 = 0.16-gals P.M.

Sta. 6+30

#1- leak-

5-gal. can full in five minutes

= 1-gal. per minutes

#2- leak –

1/2" in can in 10-min.

1/24 x 5 ÷ 10 = 0.021-gals P.M.

#3_leak- 1/4" in can in 10-min.

= 1/48 x 5 ÷ 10 = .01 gal. per min

#4 leak – 1/4" in can in 10-minutes

= 0.01 gal. per min.

Other leaks at this station, water running down lining could not be collected for measurement

Sta. 7+56

5-gals- in 35-seconds.

= 8.55-gals. per minute

Sta. 9+04

5-gals. in 46 seconds.

= 6.5-gals. per min.

Outlet Tunnel Work- Aug-9-

5:A.M.- To 2:P.M.

1- Jumbo on truck

1- Cement Finisher
1- " " helper } 7 hrs. patching tunnel lining

Wed. Aug-9-1933-

Outlet Tower Works:

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

1-Truck #23 } Excav. outlet
1-Compressor } adit. 7-hrs.
1-air pump } 1-hr. unloading
1-foreman } outlet pipe at
5-men } tunnel entrance.

1-#15-Crane -4-hrs. including moving time
2-Trucks-1-hr. } Hauling outlet pipe.
2-Truck drivers. }
1-Crane operator } Loading & unloading
1-Crane oiler } cast iron outlet
pipe. 4-hrs.

1-Cement finisher } 2-sks. cement
1-" " helper } Brush coating
outside of tower

Johnson's Crew: 8:A.M. to 4:30 P.M.

1-Sup't. } forms & steel
1-Carpenter }
1-Rigger } Placing concrete
4-laborers }
1-mixerman } mixing plant crew
3-men }
2-Transit mix drivers

Placed concrete in outlet tower-

Elev. 601.67 to 606.03 and bracket

to elev. 606.03 - Start 2:00 P.M. finish 4:P.M.

6-ladder rungs-
4-ladder guards
54-ft. Copper

MIX: 6-sks. cement } 27-batches
1390# sand
1200#-1½" rock
1030#-¾" rock
9 gals-H_2O } 2-" grout

172-sks-cement

1-mixerman-3-men-2-Transit mix drivers
1-foreman-3-men placing.

Outlet adit to elev. 561.0 start 1:45 finish 2:0 P.M.

1:2½:5 mix
5-sks. cement } 7-cu. yds- 35-sks.
1340# sand
760#-2½" rock
970#-1½" "
770#-¾" rock

Core wall work-5:A.M. to 2:P.M.

1-Carp. foreman } Building bulkheads
1-Carpenter } for steps in
3-helpers } concrete to steel
grade.-7-hrs

Thursday - Aug - 10 - 1933

Placed concrete in Core Wall:

Sta. N3121.5 to N3112 - Rock to elev. 678.0

Sta. N3112 To N3104 - Rock to elev. 682.0

St. N3104 to N3088 - " to elev. 688.0

St. N3088 to N3060 " " elev. 694.0

78-ft. Copper

Mix: 7.5 sks. cement
1340 # Sand
1250 # - 1½" rock
1030 # - ¾" rock

75 - Batches concrete
525 - sks. cement.
40 - sacks cement recovered from cleaning sks

Start 7:15 A.M. finish 1:15 P.M.

Equipment:

1 - mixing plant
2 - Transitmix trucks
1 - barber green aggregate loader
1 - Truck # 44 - " hauling

Labor:
1 - foreman, 4 - men — Placing chutes & cleanout - 3 hrs; Placing Conc. 5 hrs.
1 - mixerman, 3 - men — mixing plant crew 5 hrs.
2 - Transit mix drivers - 5 hrs.
1 - Truck # 44 - driver - 8 hrs.
2 - Carpenters - 8 hrs.

Outlet Tunnel Work - 5:A.M. 10-T. 2:P.M.

1 - Jumbo on truck
2 - Jackhammers

1 - foreman, 3 - men — 8 hrs — Chipping concrete holes in arch.
2 - Steel men — 4 hrs — Chipping concrete holes in arch.
1 - Cement finisher, 1 - " " helper — 8 hrs. patching tunnel lining.

Aug-10-1933-

Outlet Tower Work:- 5:A.M. to 2:P.M.

1-Tractor } Placing 42" pipe
1-foreman } in outlet adit.
4-men
2-steel men } 4-hrs. placing reinforcing steel around 42" pipe.

Johnson's Crew:

1-Supt
1-Carpenter
1-Rigger } 8-hrs. Setting forms and 30" Saucer Valve.
4-laborers

1-#10. Crane

1-#10 " operator } 2-hrs. setting 30" saucer valve at elev. 610'.
1-#10 " oiler

FRIDAY- AUG-11-1933-

Outlet Tunnel Work: 5:A.M. To 2:P.M.

1-foreman } Chipping concrete lining in arch section at thin places.
3-men

2-men. } Extending 4" pipe line for air supply for chipping gun and for concreting operations.

1-Jumbo on truck
1-Jackhammer

1-Cement finisher } 4½-hrs. patching tunnel lining - 6-sks. Cement.
1- " " Helper

CORE WALL - 5:A.M. To 2 P.M.
SOUTH Abutment

1-Foreman } Chipping laitance and
4-laborers } Placing steel Columns
1-steel man } & reinforcing steel in Core Wall 8-hrs.

3-Carpenters } Building bulkheads for 6-ft. steps to bottom of batter section. 5-hrs.

FRIDAY - AUG 11-1933

Spillway forms:

3 - Carpenters { 8 hrs. Building panel forms for spillway Concrete

Outlet Tower Work:

7:A:M - to 3:30 P.M.

1 - foreman, 4 - men { 2 - hrs. set 42" x 4' outlet Pipe.

1 - Calker, 1 - helper { Calking 42" outlet pipe with yarn: 10:30 A:M - to 2:P.M.

Johnson Crew:

1 - Sup't., 1 - Carpenter, 1 - Rigger, 4 - laborers { Building forms For Tower Wall 8 - hrs.

SAT. Aug-12-1933

Core Wall Work:

Placed concrete in Core Wall:

N.3128 to N3120 - elev. 678° to 684°

N 3120 to N3112 - " 678 to 684°

N3112 " N3104 - " 682° to 688°

N3104 " N3088 " 688° to 694°

N3088 - to N3060 " 694° to 706°

93-Ft. copper

5 - Steel columns

62 - 7/8" ϕ - 6'-0"

48 - 13/16" ϕ - 16'-0"

Mix: 7 - sacks cement, 1340# Sand, 1250# - 1½" rock, 1030# - ¾" rock, 37 - gals H2O { 80 - batches concrete, 1 - batch Grout; 565 - sacks Cement

Start Concreting - 5:30 A.M - Finish 9:A:M.

1 - foreman, 4 - men { 4 - hrs. placing concrete & Copper; Cleanup & remove chutes 4 - hrs

Aug 12-

Core Wall continued:

3-Carpenters { Forms + bulkheads - 3-hrs
3-laborers { Removing chutes + cleanup lumber - 4-hrs

1-mixer man { mixing plant crew
3-men { 3½-hrs.

3-Transitmix drivers - 3½-hrs.

1-Truck #42 driver - 8 hrs

Equipment:

1-Barbegreen loader
1-Truck #42
1-mixing plant
3-Transitmix trucks.

Outlet TOWER. Aug. 12-1933.

Placed concrete in tower walls;
606.03 to 610.0

Start concrete - 10:45 A.M. - Finish - 2:P.M.

1 mixing plant

1-Transitmix trucks - 1-hr.
1- " " " hrs.

1-gas hoist

2-2 wheel conc. buggies

1-Supt. { Placing concrete 3 hrs.
1-Carp. { Forms + runway - 5 hrs.
1-rigger + hoistman
4-laborers

1-mixer man { mixing plant crew
3-men { 3½-hrs

1-Transitmix driver - 1-hr.
1-transitmix driver - 3½ hrs.

Mix: 6-sacks cement
1340 # sand
1250 # 1½" rock
1030 # - ¾" rock
{ 16-Batches concrete
{ 2-batches grout
106 sks. cement
1750 - sks. cleaned
14-sks. cement

5-ladder rungs.
4- " guards
54 ft. copper

Outlet Tower work - Aug-12-1935

1-calker } Calking 42" pipe (3-joints
1-helper } 8-hrs.
1-ladle - 1-melting pot
1-compressor + air hammer.
#300 - lead.
15# yarn - 4½-hrs to yarn 3-joints.

1-Calker - 3 hrs. calking open joints inside of pipe with lead wool.
1-Steel man } - 3 hrs - placing steel around 42" pipe.

3-Carpenters } Placing chutes &
1-helper } Building bulkheads -
1-foreman } outlet adit

Outlet Tunnel

1-Jumbo on truck

1-foreman } Building forms over
5-men } holes in outlet tunnel roof.

1-Cement finisher } 3-hrs. chipping concrete
1-Compressor } lining at tunnel
1-Pneumatic chipping hammer } entrance.

Sunday - Aug-13th

Outlet Tower:

1-man chipping laitance & wetting concrete - 8-hrs.

Core Wall:

1-man wetting core wall 8-hrs.

Monday - Aug-14-1933

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

1 - foreman - 8-hrs
5 - men - 8-hrs
2 - men - 6-hrs
} Cleaning up muck from West 300 ft. of tunnel

1 - #33 - Truck.

Core Wall: 1st shift.

1 - foreman
2 - steel men
2 - Carpenters
3 - laborers
} Building forms + placing steel in Core wall, South abutment.

Outlet Tower - 1st shift.

1 - Compressor
1 - air hammer
1 - Calker
1 - helper
} 5-hrs. calking 3 joints 42" pipe - (finished (3-hrs. going over hand calking)

2 - Steel men - 2-hrs. placing steel around pipe

Aug-14 - Tower work continued -

Johnson Crew:

1 - Supt.
1 - Carpenter
1 - rigger
4 - laborers
} Placing concrete + copper + Keyway - 6" x 4" x 3'-0" 3½-hrs - Runways + forms - 4½ hrs.

1 - mixerman also Transitmix driver
3 - men
} mixing plant crew. 3½ hrs.

1 - mixing plant
1 - Transit mix truck
1 - gas driven hoist
2 - 2 wheel concrete buggies
} 3½-hrs.

Placed concrete in outlet Tower wall - elev - 610' to 612.5

Start 7:A.M. - finish - 10:30 A.M.

Mix: 6-sks. Cement
1340# Sand
1250# - 1½" rock
1030 # - ¾" rock
40-gals H2O
} 13 - batches Concrete
2 - batches grout
88 - sks. cement River side

3 - ladder rungs
2 - " guards - 53 - ft. copper

500 sks. Cleaned
8 sks. cement recovered
1 - set - 3 - Test cylinders - 9:A.M.

Tuesday Aug 15 1933.

Outlet Tower Work. 2 P.M. shift. 5 P.M. to

Placed concrete in outlet adit to elev. 567 ±, covering 42" pipe between two vert. const. joints.

Start - 5:45 P.M. finish 6:45 P.M.

Equipment:

1 - mixing plant

2 - Transitmix trucks

Steel & wooden chutes

Labor:

2 - Carpenters - 1 hr. on bulkhead.

1 - foreman } Placing concrete - 1 hrs.
4 - men }

Cleanout - 3/4 - hrs.

1 - mixerman } mixing plant Crew
3 - men } 1 - hrs.

2 - Transitmix drivers - 1 hr.

Mix: 6 - sks cement
1340# sand
1250# - 1½" rock
1030# - ¾" rock
~~38~~ - gals H2O

} 24 Batches Concrete
} 144 - sks - Riverside cement.

1 - Calker - 2+ hrs. } Calking 36" pipe with lead wool - inside open joints.

Johnson Crew: 7 A.M. To 3:30 P.M.

1 - Sup't.
1 - Carpenter
1 - Rigger
4 - laborers
} Moving forms for next lift of Concrete

I told Mr. Johnson the city expected to have him carborundum the wall of Tower inside & outside and he said he would patch rock pockets if any, but not finish the surface, that would be up to Connolly. (+point cone holes)

Tuesday Aug-15-1933

Placed Concrete in Core Wall:

Start - 6:45 A.M. - Finish - 11:45 A.M.

N3128 to N3112 - Elev - 684° to 691°

N3112 to N3104 " 688 to 694

N3104 to N3096 " 694° to 700°

N3088 to N3064 " 700° to 706°

91-Ft. Copper

1-steel column

24 - 13/16" ϕ - 28'-0" inc laps.

24 - 13/16" ϕ - 16'-0"

64 - 7/8" ϕ - 6'-0"

Mix: 7-sks. Cement
1340# sand
1250# 1½" rock
1030# ¾" rock
40-gals H2O

42 Batches Conc.
3- Batches Grout
309 sacks Riverside Cement

Equipment:
1-mixing plant
2- Transit mix trucks
1- Barber Green aggregate loader
1- Truck # "

Labor:

1-foreman, 4-men { Placing concrete 4-hrs. 2-hrs. Cleaning lumber from Core Wall site.

2-Carpenters, 1-helper { Building forms 7-hrs.

2-Transitmix drivers - 4-hrs

1-mixerman, 3-men { MIXING PLANT CREW 4-hrs

1-Truck # driver hauling aggregate 4-hrs.

129-sacks cement on hand 8-15-33 - 12:NOON Aug-15-TH

Outlet Tunnel work:

1-foreman, 6-men, 1-#33 Truck { Cleaning up muck west 300 ft. of tunnel

1-Cement finisher - 8 hrs. { Chipping concrete
1-helper - 6-hrs { & Patching tunnel
1-Compressor { lining -
1-Jackhammer { 3-sks. Cement

Wednesday - Aug - 16 -

Outlet Tunnel work:

1 - Truck #33 } Cleaning up muck
1 - foreman } west 300 ft. of
7 - men } tunnel

1 - Cement Finisher } Patching Tunnel
1 - " " helper } lining - 5 - hrs.
3 - 5 lks. Cement.

Outlet tower Work.

1 - Supt } Building forms for
1 - Carpenter } lift - elev. 612.5 - 618.17.
1 - Rigger }
4 - laborers }

MR. Johnson said he would not Carborundum the Tower Wall. Supt. Steves said he would not do it. Mr. Wood said he would write a letter on it to contractor.

Outlet Adit.

1 - Rigger foreman } 3 - Hrs. rigging to set
3 - men } 36" pipe.
1 - Truck } 3 - hrs. excav. outlet adit

1 - Cement finisher } Finishing inside of
1 - " " helper } Tower - 3 - hrs.
3 - 5 lks. Cement.

8 - 16 - 33

SPILLWAY FORMS

1 - Carp. foreman
2 - Carpenters
1 - helper - 4 - hrs.

Core Wall: South Abutment

4 - laborers - } 2 - hrs. stripping forms - laid off at 7 : A.M.

1 - laborer } Wetting Core Wall Concrete - 4 - hrs.

Aug-17-1933-

✓ Outlet Tunnel - 1st shift (DAY)

1-Truck #33 } Cleanup muck
1-foreman } West 300 ft of
7-men } tunnel
1-Tractor with McMILLAIN

1-Cement finisher } Patching
1- " " helper } tunnel lining
5-hrs
3-sks. Cement

✓ Outlet Tower work:

1-foreman (rigger) } Placing - 3-joints
1-Truck } of 36"-pipe -
3-men } 1-36"x12'
1-Tractor } 1-36"x11'
1-36"x4'
Outlet Adit.

1-Calker } 3-hrs. Calking
1-helper } 36" joint (2) with yarn

Delivered to Mr. Steves at 8:45 A.M.

letter regarding that spec. para. 76 be complied with Mr. Johnson tower contractor, present

Aug-17-1933-

ins { 6-R / 3-G
out { 6-rungs.

✓ Johnson's Crew- 7:A.M. to 3:30 P.M

1-Sup't } 4½-hrs. on concrete
1-Carpenter } 3½ hrs. forms
1-rigger }
1-hoistman }
3-laborers }

Equipment:

1-electric hoist
1-Concrete bucket
1-mixing plant
1-Transitmix truck

1-Transitmix driver - 4½-hrs.

1-mixerman } 4-hrs.
3-men }

Placed concrete in outlet tower wall-
9:30 A.M. to 2:30 P.M. ½ hr. for lunch-

Elev- 612.5 to 618.12

550-sks. cleaned

Mix: 6-sks. cement
1240# Sand
1250# 1½" rock
1030# ¾" rock
39-gals H2O

30 - Batches concrete
2 Batches Grout
190-sks. cement
54 ft. Copper
4-¾"x9" brass Elev.
9-1"ø hooks. Elev.

4-ladder rungs outside
6- " " inside
3- " Guards "

Aug-17-1933-

SPILLWAY FORMS

1-Carp. foreman
2-Carpenters
} 8-hrs

Core Wall:

1-laborer { Wetting concrete + Stripping forms South Adit. 8-hrs.

FRIDAY- Aug-18-1933-

Outlet Tower work:

1-Supt.
1-Carp.
1-Rigger
1-hoistman
3-laborers
} Johnson Crew- 8-hrs Stripping + raising forms for Tower wall.

1-Calker
1-Calkerhelper
1-ladle
1-meltingpot
1-air hammer
} Calking 3-joints 36" pipe with lead. outlet adit. 255 # lead 12 # yarn.

1-Gas pressure blow torch

2-laborers { 2-hrs extending 4" air line to outlet adit for Calking "pipe 255# lead. 12#. yarn. 33-man hrs. } 3-joints - 36" pipe.

Outlet Tunnel:

1-foreman -8-hrs
6-men - 8-hrs
1-Truck #33
2-men- 6-hrs
} Excav. Tunnel muck from wrest 300 ft. of tunnel.

Aug. 18-1933-

Spillway forms:

1-Carp. foreman

2-Carpenters

Core wall:
1-Carp. helper } Wetting Core Wall + stripping forms
1-helper } South abutment - 8 hrs.

Aug. 19-1933

Outlet Tower Wks.

Outlet Adit: Covered-36"-pipe; completing the outlet adit. to elev-573'.

Start: 8:30 A.M. Finish 10:A.M.

1-foreman } Placing concrete - 1½-hrs.
4-men } 3-hrs. Cleanout & forms

1-mixerman } 1½-hrs. concrete
3-men }

2-Transit mix drivers - 1½-hrs.

2-steel men - 2-hrs { Steel around pipe
2-Carpenters - 3-hrs { Building forms

Mix: 6-sks. cement
1340# Sand
1250# - 1½" rock
1030# - ¾" rock
39-gals. H_2O
} 28-batches Concrete
1-batch Grout
173-sks. Cement

Aug. 19- 1933

Johnson Crew:

Johnson's crew came to work at 7:A.M. I told Mr. Johnson that the finishing was not satisfactory, he said he would not do it better, I told him he could not go ahead with another pour until the work he has done is finished. Mr. Johnson did not put the men to work pending a settlement with Rohlf Connolly as to whom will do the finishing according to Para. 76 of the specifications

Aug- 19-1933-

Outlet Tunnel

1- foreman } Extending 4" air
4- men } line in tunnel
1- light truck

1- Cement finisher } Patching tunnel
1- " " helper } lining

1- Foreman- 8-hrs } chipping holes
4- men 4-hrs } in roof- 4-hrs
} cleanup invert muck
4- men- 8 hrs- } cleanup invert
} muck
1- Jumbo on truck. 4 hrs.
1- Tractor driver - 3-hrs } cleaning
1- Tractor McMillan } muck from
} tunnel exit.
Holes in roof chipped out ready for concrete.

℄ of hole		
1+47-	2'x2'	hole leading to larger area un filled
2+09-	" "	" " " " " " "
2+22	2' x 5'	" " " " " " "
3+02	3' x 10'	" " " " " " "
3+52	3' x 8'	" " " " " " "
4+30	3'x3'	" " " " " " "

Aug-19-1933

Spillway forms:

1- Asst. foreman 3-hrs

2- Carpenters - 5-hrs

Core Wall: South abut,

2-lab. 3-hrs. wetting Core Wall + strip forms.

Sunday-Aug.20-1933

Core Wall + Tower:

1-man divided his Time of 8-hrs. wetting core wall and tower concrete

MONDAY- Aug. 21-1933.

Outlet tunnel- 5:A.M. to 2:P.M.

1- foreman

3-men 8 hrs { Building pipe Template to Clamp waterlines for drilling

2-men 4 hrs { grout holes in tunnel lining + Clean up chipped concrete

3-men + Jumbo on truck { Chipping concrete from thin places in lining

℄ of hole- Sta. 11+51- 4x10-ft. from ℄ of Crown To South side

Aug. 21-1933-

Spillway forms.

1-foreman

2-Carpenters

1-helper

Outlet Tower:

1-man wetting concrete-4 hrs.

Core Wall:

1-man-4-hrs. wetting concrete

MONDAY- Aug. 21st

Measurement of water leaks through Tunnel lining.

Watch-a 5-gal. can. (can-12" high)

Sta. 5+00 — 1½" water in 10 min.

1/8 × 5 ÷ 10 = 0.06-gal per min.

Sta. 5+15 — 5" in-10-minutes + 2- small leaks not enough to measure

5/12 × 5 ÷ 10 = 0.208-gals.

Sta. 6+30 -

#1- Can full in two minute = 2½ gals. per min

#2- 1" in can in 10-min = 0.04-gals. per min.

#3 & #4 - not leaking enough to get the water in the 5-gal. can

Sta. 7+56 - 5gals - in 30-sec.

= 10-gals. per min.

Sta. 9+04 = 5-gals. in 42-sec.

= 7.15 gals. per min.

Tuesday - Aug. 22 - 1933

Outlet Tunnel Work. 5:A.M. to 2:P.M.

1 - foreman } Assembling equipment
8 - men } for concreting holes in tunnel lining.

Core Wall: South Abut.
1 man - 4 hrs. wetting concrete

Outlet Tower Work:

1 - Carp. foreman } Building forms for
2 - Carpenters } Gate well - 7 hrs
2 - helpers } Concrete - 1 hr.

1 - man - 4 hrs } wetting Concrete.

1 - mixerman also Transit mix driver } mixing plant
1 - man } Crew

½ mixing plant
1 - Transit mix truck

Placed concrete in Gate well

elev - 576.0 to elev. 583.3

Mix: 6 - sacks cement
1390 # Sand
1200 # 1½" rock
1030 # ¾" rock
40 - gals. H_2O
} 4 Batches concrete

1 - 5 - sk. Batch grout
Sacks Cement Riverside
29 - sks. Cement

Start - 1:10 P.M. finish 2:20 P.M.

7 - ladder rungs.

Recommendation for building invert up to grade at junction of wall + invert

Sta. 4+63 to Sta. 4+72 South side

Sta. 9+48 to Sta. 11+47 - Both sides

Invert at these locations was chipped out to provide clearance for form alignment, leaving the concrete from 3" to 6" deep instead of the required - 12".

Batches to 5 A.M.
22.

Aug-23-1933 4 45 A.M-to

Outlet Tunnel-filling holes continued:

3+52 - Start 4:45 A.M. finish 5:21 A.M.

cu.yds. 3+3+2 = 8-cu.yds.

Moving from-3+52 to 3+02

5:21-A.M-to 5:45 A.M. = 24 min.

After the setup was made to fill hole at sta. 3+02, the power for belt conveyor went off and at 6:20 A.M-the crew quit work-
1-cu.yds, (7-sacks cement left in mixer was wasted
mixing plant out of sand and spillway using the air that was available for gun.

1-Jumbo on truck
1-Belt conveyor elevator
1-Press weld-gun
1-Transitmixer
1-60 H.P. Tractor-Bulldozer
1-mixerman also Transitmix driver } mixing plant Crew
2-men
1-Tractor driver
1-foreman
1-gun man } Placing conc.
7-men } 6½-hrs

All this crew & equipment 6½ hrs

22

12: MIDNIGHT to 6 20 A.M-

MIX: 7-sacks cement
1440# sand
1050# 1½" rock
1030# ¾" rock
46-gals. H_2O

25-batches
175-sacks
1-batch wasted
included in above.

Aggregate wet from screening plant.

Outlet TOWER WORK:

1-Carp. foreman
2-Carpenters
2-helpers

hrs. building forms & placing steel and ladder rungs in gate well-elev. 683° to 694°
hrs. placing concrete

1-Mixing plant
1-Transitmix truck
1-Barber green
1-Truck #42

1-mixerman also Transitmix driver
2-men
} Mixing plant Crew

11-ladder rungs.

MIX: 6-sacks cement
1340# sand
1250# - 1½" rock
1030# - ¾" rock
39-gals.
start - 1:P.M- 2:20

7-Batches Concrete
1-batch Grout @ 5-sks.
47-sks. cement

Johnson crew not on the job.- MOVED his equipment from Job - Rohl & Connolly will build the tower.

Aug-24-1933-

Outlet Tower work:

1-foreman, 3-Carpenters, 2-helpers { Building forms & placing ladder rungs & steel in gate well - elev 594.0 to 605 - 7-hrs. Placing concrete - 1-hrs

1-rigger foreman, 2-men { stripping gate well forms 4-hrs.

1-mixerman also transit mix driver, 1-man { mixing plant crew - 1-hr.

1-mixing plant, 1-Transitmix truck { 1-hr.

1-man { 8-hrs. time divided between wetting core wall & tower concrete.

11 - ladder rungs inside of gate well.

MIX: 6-sacks cement, 1340# sand, 1250# 1½" rock, 1030# ¾" rock, 38-gals H2O { 6 - 6-sack batches, 1 - 3-sack batch, 1 - 5-sk. batch grout, 44-sks. cement-

12:45 P.M. to 1:45 P.M.

Outlet Tunnel - Aug-24-1933

Thurstin worked midnight to 4:A.M. on concrete, filling holes in tunnel lining.

1-foreman, 8-men { 4-hrs. concrete, 4-hrs. 4:A.M. to 8:A.M. stripping forms & building template for tunnel grouting

1-Jumbo on truck -

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

FRIDAY. AUG. 25-1933

Outlet Tunnel Crew:

1- Jambo on truck } 8-hrs. rigging Jumbo & Template + waterlines for drilling grout holes in tunnel lining
1- foreman
6- men

Outlet Tower Work:

1- rigger foreman } cleaning base lumber from Tower base excav. preparatory to backfilling - 5-hrs
3- men

1- foreman } 6-hrs. building
3- Carpenters } gate well forms
2- helpers } & placing steel

1- foreman } Placing concrete
2- helpers } gate well to elev. 613.0

1- mixerman } mixing plant Crew
1- man } 1-hrs

1- Dragline operator } Placing Conc.
1- " " oiler } 1-hrs.

1- Transit mix truck driver } 1-hr.

1- #10 Dragline.
1- mixing plant
1- Transit mix truck

Placed concrete in Gate well

elev- 605.0 to 613.0

Start- 1:15 P.M. finish 2:P.M.

Mix: 6-sks. cement
1340 # Sand
1230 # - 1½" rock } 1-batch grout - 5-sks.
1030 # - 3/4" rock } 5- batches Concrete - 35- sks.
38- gals. H_2O

7- ladder rungs on outside of gate well
8 " " " inside " "
1- safety grab on top of wall.

SAT. Aug. 26-1933

Outlet Tower Work:

1-#10-Crane
1-Ford Truck
1-Foreman
3-men
1-man-only-4-hrs
1-Crane operator
1-" Oiler
} Stripping timber cribbing & shoring from Tower excav. 8-hrs.

1-man: {Stripping gate well forms and finishing gate concrete surface. - 8-hrs

TUNNEL WORK:
Thurstin Inspector from to-day.

Corewall: South Abutment

1-foreman
3-Carpenters
2-helpers
} Building core Wall forms 8-hrs.

1-mixerman
2-men
1-Compressor
2-Jackhammers
} Cleanup around and inside of mixers 8-hrs.

Sunday - Aug - 27-1933.

1-man - 8-hrs. { Time divided in wetting tower & Core Wall Concrete

MONDAY - Aug - 28 - 1933

Corewall: South abutment

1-foreman
3-Carpenters
3-laborers
} Core wall forms & steel.

1-mixerman
3-men
1-Compressor
2-Jackhammers
} Cleaning up around mixers - 3-hrs.

Aug- 28-1933-

Outlet TOWER WORK: 6 A.M. to 3:PM

1- #10- dragline

1- Ford truck

1- Rigger foreman
4- men
} Stripping timbering from tower excav. hole.

1- dragline operator

1- dragline oiler

Aug- 29-1933- 1:A.M. to 6:A.M

Placed concrete in Core Wall.

~~N3896~~ 3944 to ~~N3907~~ N3952 - elev. 666° 669°

~~N3907~~ 52 to ~~N3928~~ N3976 elev. 664° - 669°

37 ft. Copper

40 - 7/8"ϕ - 9'-0"

8 - 13/16"ϕ - 24'

16 - 13/16"ϕ - 32'

3- 2' stub columns welded

1- mixing plant

transit mix trucks.

1- mixerman
3- men
} ~~4~~ 3½ hrs. cleaning roadway dirt from Core Wall area.
1½ hrs. mixing concrete

3- Carpenters
} ~~7~~ - hrs. on forms + building bridge over Core Wall & road.

1- foreman
3- men
} ~~4~~ 3½ hrs. Cleanout + steel
1-hr. Placing Core.

OVER →

Aug. 29-1933 -

Core wall work continued:

1- rigger foreman 8 hrs
2- men - 4½" } 8 hrs. hauling Timbers to help build Bridge
1- man - 8-hrs over core wall - elev. 670
3 - transit mix drivers - 1 hr.

Mix: 7-sks. cement
1340 # Sand
1250 # 1½" rock
1030 # ¾" rock
39 gals. H2O

14 batches conc.
+ 2 batches wasted - mixer truck broke down
2 - batches Grout

108 - Sacks Cement
+ 14 sacks wasted

Start Concrete - 5:40 A.M. Finish - 6:40 A.M.

N 3136. to N 3128 - elev. 692° to 698°

N 3128 to N 3112 - elev. 691° to 698°

N 3112 to N 3104 - elev. 694° to 700°

N 3104 to N 3096 - elev. 700° to 706°

N 3096 to N 3088 - elev 694° to 700°

N 3088 - to N 3064 - elev. 706° to 712°

1 - steel column

Aug - 29 - 1933 - Core Wall Continued

76 - ft. Copper.

24 - 13/16" Ø - 24' - incl. laps

48 - 13/16" Ø - 9' " "

24 - 13/16" Ø - 22' " "

90 - 7/8" Ø - 6' " "

Mix - same as on previous page.

35 - batches concrete @ 7-sks.

1 - batches grout @ 5-sks.

250 - Total sacks cement.

550 - sks Cleaned

Start - 6:45 A.M. - Finish 10:45 A.M.

1 - #10 - Crane
2 - Transit mix trucks
1 - mixing plant

1 - Foreman
5 - laborers
3 - laborers - } Placing concrete 2¼ - hrs.
hrs. from spillway crew for relief at 9:A.M.

1 - Crane operator
1 - Crane oiler } Placing concrete hrs
moving time 1½ - hrs

1 - mixer man
3 - men } mixing plant Crew - 2¼ hrs
crew change except mixerman
at 9:00 A.M. - 3 men from spillway

2 - Transit mix drivers

Outlet Tower Work - Aug 29 1933

1 - #10 - Dragline - 2½ hrs

1 - Dragline Operator { 2½ hrs backfilling tower excav.

1 - " " oiler { tower excav.

1 - laborer - 3½ hrs. wetting tower concrete & pointing core holes ahead of backfill.

3 - Carpenters - { 1 hr. building frame out of 2"x12" around saucer valve at elev 6/0 to protect valve against being broken with dragline bucket.

Aug 30 1933 6 A.M. to 3 P.M.

Outlet Tower:

1 - Dragline #10 { Backfilling

1 - Dragline operator {

1 - " " oiler {

1 - Carp. helper - { Finishing inside of gate well with cement wash.

Core Wall:

1 - foreman { Core wall forms

3 - Carpenters { South Abutment

3 - laborers

1 - helper - 4 hrs

Aug-30-1933

Outlet Tunnel-Grouting-60#

1-Rix pressure tank (7 cu. ft)
1-mixing plant
1-Transit mix truck- start-12: Noon

Mix: 1-part cement, 3-parts sand.
5-Sks. cement-1515# sand. (loose)

1-foreman { Placing grout pipe & assembling
6-men { equipment hrs
grouting- hrs

1-mixerman (also truck driver) } mixing
2-men } plant.

		℄	#1		D.S. ↑
6+60	17'-6	3' 3½-Wasted NO Grout	6' 7-7-7-7 7-3½ Total-38½	17'-6	
6+42	17'-6"	6' 7-7- 14-cu.ft.	6'	17'-6"	
6+20	17'-6"	6'	6'	17'-6"	
5+98	17'-6"	3'	6'	17'-6"	
5+80	17'-6"	6'	3'	17'-6"	

52½ cu. ft. grout placed-

.477
5
2385

Yield computation

5-sacks Cement
1515-# Sand
45-gals. H_2O

Sand- $\frac{1515}{2.78 \times 62.5} = \frac{1515}{173.75} = 8.71^+$ cu. ft

Cement = $\frac{470\#}{3.51 \times 62.5}$ = 2.39

$\frac{45 \text{ gals}}{7.5}$ = 6.00 cu. ft

17.10 cu. ft. per batch

Delay- 12:40 P.M.-to-1:40 P.M.- Gun plug.
" 2:P.M.-to 3:00 P.M.- Gun plug.

Foreman is going to rig up a different set of fittings on gun before it can be successfully operated with regular run of sand.

3-5-sack batches mixed-
13-sks. Cement

Thursday - Aug - 31 - 1933.

Pressure grout tunnel - 60 ft.

1 - foreman } Screening sand & loading
6 - men } transitmix truck

1 - Transitmix driver

All grout mixed in transitmixer

1 - foreman } Pressure grouting
6 - men }

1 - Rix pressure tank
1 - Transitmix truck
1 - Jumbo on truck
Air + grout hose.

10
20
10
10
10
10

MIX : 1 : 3 -
5 - sks. cement
1515 # sand.
45 - gals. H2O

6 A.M. - to 8:30 A.M. - fixing gun.

℄ ↑ Down stream

Sta.	Distances from ℄			
6+60	17'-6"	3'-0"	6' 38½ cu. ft 8-30-33	17'-6"
6+42	17'-6"	#4 6' 14 ft 8-30-33	6'	17'-6"

7+7+7+7+7
7+7+7+7+7
7+7+7+7+7
7+7+7+7+7
7+7+7+7+7
7+7+7+7+7
7+7+7+7+7
+7+7+7+7+7
+7+7+7+7+7
+7+7

288 - cu. ft. To-day
14 - " " 8-30-33

302 - cu. ft. total in this hole to-date not finished at end of shift.

12 - batches @ 5 - sks. = 60 - sks.

Aug-31-1933

Core Wall: South Abutment

1- Carp. Foreman	3-hrs	Core Wall Form & Steel
2- Carpenters	8-hrs.	
1- Carpenter	3-hrs.	
1- Laborer	8-hrs.	
2- Carp. helpers	3-hrs	

1-#10-Dragline Crew- repairs.

Outlet Tower:

1- Cement Finisher - 8-hrs -
Finishing Gate Wall concrete - inside of well. - 2-Sks. cement.

Note: 25-sacks cement used 3:A:M-to 6:A.M. to build small concrete wall under bridge west of Core wall at elev. 670± for Contractor's convenience.

Sept. 1st 1933.

Placed concrete in Core Wall:

N 3064 to N 3088 - elev. 712° - 720°

N 3088 to N 3104 - to elev. - 714°

N 3104 to N 3112 - to elev - 708°

N 3112 to N 3120 - to elev. 704°

Start: 1 A.M. finish - 4:30 A.M.

1 - #10 - Crane

2 - Transitmix trucks

1 - mixing plant

1 - Crane operator
1 - " oiler
1 - foreman
3 - men
} Placing Concrete 4½ - hrs
4½ - hrs on concrete - 3½ hrs. stripping forms.

1 - mixerman
3 - men
} mixing plant Crew

2 - Transitmix truck drivers

Mix: 7 - 5 ks. Cement
1340# Sand
1250# 1½" rock
1030# ¾" rock
39 gals H2O
} 25 batches concrete
2 - batches grout
185 - 5 ks.

24 - ft. Copper

Steel as per plans -

3 - Carpenters - 4 - hrs. Core wall

" " 3 - hrs - Spillway forms.

Core Wall Concrete.

2 : P.M. to 3 : P.M. -

Sta. N 3064 to N 3072 to elev. 732°
N 3072 to N 3080 to elev. 726° -

12 - ft. Copper

3 - Carpenters
1 - foreman
1 - Crane oper
1 - Crane oiler
1 - Transitmix driver
1 - Mixing plant
1 - #10 crane
1 - Transitmix truck
} Placing concrete. 1 - hr.

8 - Batches Conc. = 56 - 5 ks
0 - Batches Grout 0

56 -

Sept. 1 1933 -

Pressure Grouting tunnel lining

60 #□" required — 120 #□" obtained.

Equipment:

2 - Transit mix trucks

1 - Rix pressure tank - 7 - cu. ft. Cap.

air from Central compresser plant

air hose

Labor:

2 - Transit mix drivers
1 - foreman } screening sand & loading transit mixers
5 - men }

1 - foreman } grouting.
4 men }

Hole at Sta. 6+42 - 6 ft. South of ℄ was drilled to open it up to continued grouting as this hole was unfinished yesterday 8-31-33 Could not open it up to receive more grout.

℄ West

Mix: 1:3 - 5 sk. cement 1515 # Sand -

Batches grout @ 5 sks

2+2+2+2+2+2
+2+2+2+2+2
+2+2+2+2+2
+2+2+2+2+2

40 - batches at 5 - sks. = 200 - sks. cement used

Distances out from ℄ of tunnel/crown.

		#3			
6+42	17'6"	6'	6'		17'6"
		14-ft - 8-30-33			
		288-ft - 8-31-33			

Not grouted

		#2			
Sta. 6+60	17'-6"	3'-0"	6'-0"	17'-6"	

Not Grouted

not grouted

3½+7+7+7
+7+7+7+7
+7+7+7+3½
+7+7+7+7+7
+7+7+7+7
+7+7+3½
+7+7+7+7+7
+7+7+3½+7
+7+7+7
+7+7+7+7
+7+7+3½
+7+7+7+7+7
+7+7+7+7
+7+7+7+7
+7+7+7+7+7
+7+7+7+7+7
+7+7+7+7+7
+7+7+7+7+7
+7+7+7+7+3½
+7+7+7+7+7
+7+7+7+7+7
+7-7
+7+7+7+7
+7-1

729 ÷ 40 = 18.2 cu. ft. per batch as against the computed yield of 17.1 cu. ft

This hole took 729 - cu. ft. grout by 3 P.M. when the shift ended and was still open & taking grout. Not finished this shift

Outlet Tower Work Sept-1-1933

1 - Cement finisher (8 hrs.) — Finishing inside of tower - using cement as previously reported.

Outlet Tower - Sept. 2-1933

1 - Carp. foreman
3 - Carpenters
1 - helper
— Building Tower forms & staging.

1 - Cement finisher — Finishing inside of gate well & tower.

Core Wall:

3 - laborers — Stripping forms south abutment.

Sept. 2-1933 -

120# "A" actual

Outlet tunnel Grouting - MIN. 60# "A" Press.

Equipment
1 - Jumbo on truck
2 Transitmixers
1 - Rix 7 cu. ft. pressure tank
air hose -
3 - Sand screens.

LABOR:
1 - foreman, 4 men — grouting
2 - Transitmix drivers
1 - foreman, 7 men — Screening Sand & loading transit mix trucks.

Sta. 6+60 - hole 3-ft. south ℄ of Crown
Continued from sept. 1st

Loads - 2 batches each -

1+1+1+1+1+1+1+1+1+1+1
1+1+1+1+1+1+1+1+1+1+1 = 22 loads @ 2 batches = 220 sks cement

Note: Grout was forced through to sta. 7+00 to a 5" pipe left in lining from concreting operations. This pipe was plugged and grouting proceeded.

Note 125# PM, Grout forced thru about spring line Northwest about sta. 7+45 R

7+7+7+7+7
7+7+7+7+7+1

113
791
51
842 cu. ft. Grout

Pressure tank loads cu. ft.

7+7+7+7+7+7+3½
7+7+7+7+7+7+3½
+7+7+7+7+7+7+7+3½
+7+7+7+7+7+7
+7+7+7+7+7+7+3½
+7+7+7+7+7+7+5
+7+7+7+7+7+7
+7+7+7+7+7+7+3
+7+7+7+7+7+7+4
+7+7+7+7+7+7
+7+7+7+7+7+7+7+2
+7+7+7+7+7+7+7+2
+7+7+7+7+7+7
+7+7+7+7+7+7+3½
+7+7+7+7+7+7+3½
+7+7+7+7+7+7+3½
+7+7+7+7+7+7+3½
+7+7+7+7+7+7+5
+7+7+7+7+7

Sept. 3rd to 11th reported by Thurstin + Gier + Reed

Sept. 11 - 1933 - 6: A.M. To 3: P.M.

Grouting outlet Tunnel:

1-mixerman } mixing plant crew
1-helper }

2 - Transitmix drivers

1-foreman } Grouting crew.
4-men }

1-mixing plant.
2-Transitmix trucks.
1- Rix 7 cu. ft. grout tank
1-Jumbo on truck.
Air from central compressor plant.

I relieved Thurstin at 7:30 A.M.

28 - cu. ft. out of 3rd load of grout used when I relieved Thurstin

Loads -
5 - cu. ft. out of 3rd load - left from Thurstin's time
+1+1+1+1+1+1+1+1+1+1
+1+1+1+1+1+1+1+1+1+1

36 - batches @ 5 - sks - = 180 - sks. Cement.

℄ - Downstream. ↑

Sta.				
4+78	17'-6" 0 2'-6"-pipe	6'-0" Reported by Thurstin No Pipe left in.	3'-0" Reported by Thurstin	17'-6" 2 - cu. ft. 2'-6' pipe
4+60				
	17'-6"	6'-0" 3'-0" pipe	3'-0" Redrilled 3'-0" pipe	17'-6"

3+7+7+7+7+7+7+2
7+7+7+7+7+7+1
7+7+7+7+7+3
+7+7+7+7+7+1
+7+7+7+7+7+4
+7+7+7+7+7+5
+7+7+7+7+7+7
+7+7+7+7+7+5
+7+7+7+7+7+5
+7+7+7+7+7+3
+7+7+7+7+7+3
+7+7+7+7+7+3½
+7+7+7+7+7+5
+7+7+7+7+7+7
+7+7+7+7+7+5
+7+7+7+7+7+5
+7+7+7+7+7+3 61½
94 +7+7+7+7+7+5

658
61½
719½

719½ cu. ft.
To - 3: P.M. - not finished

3:00 ~~A.M.~~ P.M. - To - 11: P.M. (Hole 3'N at 4+60)

39
42 7+7+7+7+7+4 + 7+7+7+7+7+7
38
40 7+7+7+7+7+3 + 7+7+7+7+7+5
159

98
94
10

159 Hole 3' N at 4+60 Cont.

38
38 7+7+7+7+7+3 + 7+7+7+7+7+3
40
40 7+7+7+7+7+5 + 7+7+7+7+7+5
42
42 7+7+7+7+7+7 + 7+7+7+7+7+7
44
39 7+7+3+7+7+7+6 + 7+7+7+7+7+4
38
38 7+7+7+7+7+3 + 7+7+7+7+7+3
42
38 7+7+7+7+7+7 + 7+7+7+7+7+3
42
42 7+7+7+7+7+7 + 7+7+7+7+7+7
42
39 7+7+7+7+7+7 + 7+7+7+7+7+4
42
40 7+7+7+7+7+7+7 + 7+7+7+7+7+5
38
41 7+7+7+7+7+7+3 + 7+7+7+7+7+6
42
42 7+7+7+7+7+7+7 + 7+7+7+7+7+7
42
41 7+7+7+7+7+7+7 + 7+7+7+7+7+6
48
7+7+7+7+7+7+6

1179

58 batches
290 sx Cement.
INSPECTED BY Thurstin

Sept. 12-1933- -6:A.M- TO 3:P.M

Same labor & equipment as on Sept. 11th except after 11:45 A.M- Pressweld 24 cu.ft. tank used. AM -7:A.M- to 11:45 out of sand Crew worked rigging up Pressweld gun, which was used after 11:45 A.M.

Loads = 1+1+1 - A.M-
P.M- " = 1+1+1+1+1+1+1+1+1+1+1+1+1+1

14-loads @ 2-batches of 5-sks. each = 140 sks. Cement
1:3-mix

Sta- 4+60-

Pressweld gun- 24-cu.ft. Full.
Carter, Converse, Albert + Steves measured Tank by water measure. using 5-gal. & 2½ gal. can.

Hole- 3'-0" North ℄ - Continued -

1:3 Mix

7+7+7+7+7+7+1 = 36 cu.ft.
7+7+7+7+7+7+3 = 38 " "
7+7+7+7+7+7+1 = 43 " "
14½+15+14 = 43½ " "
23+16 = 39 " "
24+16 = 40 " "
24+15½ = 39½ " "
24+18 = 42 " "
24+19 = 43 " "
24+17 = 41 " "
24+16 = 40 " "
24+17 = 41 " "
24+16 = 40 " "
24+20 = 44 " "

570 cu.ft.

Air & water forced through grout hole - 3+60-3-ft.N. From hole being grouted at 4+60-3-ft.N.

Sept. 13-1933.

Outlet Tunnel Grout

2-Transit mix trucks

1-mixing plant.

1-Pressweld gun

1-Jumbo on truck

2-Transit mix truck-drivers

1-Pressweld gun operator

1-foreman

3-men

1-mixerman, 1-laborer { mixing plant Crew (mixed conc. for tower, at same time as mixing grout.

6:A.M. to 7:30 A.M. out of sand.
11:30 " " to 12:30 P.M. Trucks hauling to Tower
1:30 P.M. to 3:P.M. moving ahead & redrilling holes.

2-batch loads 1:3 Mix
1+1+1

3-batch loads
1+

1-batch load

(2-batches of this load wasted - 10-sks. cement.

Sta. 4+60 - 3'-0" N. of ℄ continued.

14-14 +10 (wasted) = 10-cu.ft.
+13+24 = 37 " "
+21+21 = 42 " "
18+ = 18 " "

107-cu.ft. at 9145 A.M. hole finished

Sta. 4+60 - 6'-0" South ℄
+11-10 = 1-cu.ft.

Sta. 4+60 - 17'-6 - South ℄
10-10 = 0-cu.ft.

Sta. 4+60 - 17'-6 - North ℄
6+7-7 = 6-cu.ft. Pressure from this hole blew hole in lining - Sta. 4+25

114 cu.ft. grout

10-batches at 5 sks = 50-sks cement

Hole 3 ft-South at 4+40 redrilled 5-ft. through concrete grout, timber & grout again.

Sept. 14-1933 - 6:A.M- to 3:P.M.

Outlet Tunnel Grout.

1- mixing plant

2- Transitmix trucks

1- Pressweld - 24-cu.ft. tank

1- Jumbo on truck

1- 60 H.P. Tractor

Air from central compressor plant

1- foreman 8-hrs. } grouting crew
1- man 5 hrs }
4- men - 8-hrs }

1- mixer man } mixing plant crew.
1- laborer } 6-hrs. on grout-
2-hrs. repairs

2- Transitmix drivers - 6-hrs.

8:45 A.M- to 9:20 delay- broken connection on pressweld gun- changed to Rix gun at 9:20

1:3- MIX:

2-batch loads 1/2 - 1st load wasted

1+1+1+

3-batch loads

1+1+1+1+1+1+1+1
+1+1+1+1+1+1+1+1+1+1+1

51- batches at 5-sks

= 255-sks. cement

Sta. 3+60 - 17'-6 - South of ℄

Would not take grout.

6'-0" South of ℄,

Would not tak grout.

17'-6" - North of ℄.

Would not take grout

6'-0" - North of ℄.

Would not take grout.

Note: Lining cracked under pressure at Sta. 4+10 about 7-ft. above invert on North side - area about 3x3' loosened.

962 1019

3+40

3-ft. North of ℄ - start 8:A.M.

13+16-4 = 25 cu.ft.
24+16 = 40 " "
24+24-4+5 = 53 " "
7+7+7+7+7+7+7+7+7+1 = 64 " "
+7+7+7+7+7+7 = 42 " "
+6+7+6+7+7+7+7+7+1 = 55 " "
+7+7+7+7+7+7+7+ +3 = 52 " "
+7+7+7+7+7+7+7+7+2 = 58 " "
+7+7+7+7+7+7+7+7+5 = 61 " "
+7+7+7+7+7+7+7+7+7 = 63 " "
+7+7+7+7+7+7+7+7+5 = 61 " "
+7+7+7+7+7+7+7+7 = 56 " "
+7+7+7+7+7+7+7+7 = 56 " "
+7+7+7+7+7+7+7+7 = 56 " "
+7+7+7+7+7+7+7+7+3 = 59 " "
+7+7+7+7+7+7+7 = 49 " "
+7+7+7+7+7+7+7+7 = 56 " "
+7+7+7+7+7+7+7+7 = 56 " "
+7+7+7+7+7+7+7+7+1 = 57 " "

1019 cu.ft. grout

Sept. 14-

3:P.M- to 11:P.M- 5 hr. Sh.

3+40-

3-ft. North of ℄ Continued -

3-batch loads @ 5-sks. per batch -

·1+

?+7-7+7

This work taken over at 3:40 & reported by Thurston.

Sept. 15-1933- 6:A.M-To 3:P.M.

Grouting outlet Tunnel

1- mixing plant
2- Transitmix trucks
1- Rix pressure tank
1- Jumbo on track
1- foreman } grouting crew
4- men }

1- mixerman }
1- laborer } mixing plant

2- Transitmix drivers

3-batch loads @ 5-sks. per batch
1+1+1+1+1+1+1+1+1+1+1+1+1+1+1
1+1+1+1+1+1+1+1+1+1+1+1+1+1+1

·75-batches @ 5-sks = 375-sks Cement

1304
1367
63
1430

Sta. 2+80- 6-ft. South of ℄ Continued

7+7+7+7+7+7+7+7+7+7	= 56	cu. ft.
7+7+7+7+7+7+7+7+7+7	= 56	" "
+7+7+7+7+7+7+7+7+7+7	= 56	" "
+7+7+7+7+7+7+7+7+7+7	= 56	" "
+7+7+7+7+7+7+7+7+7+3	= 59	" "
+7+7+7+7+7+7+7+7+7+7	= 56	" "
+7+7+7+7+7+7+7+7+7+3	= 59	" "
+7+7+7+7+7+7+7+7+7+2	= 52	" "
+7+7+7+7+7+7+7+7+7+3	= 59	" "
+7+7+7+7+7+7+7+7+7+3	= 52	" "
+7+7+7+7+7+7+7+7+7+3	= 59	" "
+7+7+7+7+7+7+7+7+7+1	= 57	" "
+7+7+7+7+7+7+7+7+7+7	= 56	" "
+7+7+7+7+7+7+7+7+7+2	= 58	" "
+7+7+7+7+7+7+7+7+7+4	= 60	" "
+7+7+7+7+7+7+7+7+7+7	= 56	" "
+7+7+7+7+7+7+7+7+7+7	= 63	" "
+7+7+7+7+7+7+7+7+7+1	= 57	" "
+7+7+7+7+7+7+7+7+7+1	= 50	" "
+7+7+7+7+7+7+7+7+7+7	= 57	" "
+7+7+7+7+7+7+7+7+7+4	= 53	" "
+7+7+7+7+7+7+7+7+7+2	= 58	" "
+7+7+7+7+7+7+7+7+7+3	= 59	" "
+7+7+7+7+7+7+7+7+7+7	= 63	" "
+7+7+7+7+7+7+7+7+7+7	= 63	" "

1430- cu. ft.

Grout was forced through from this hole to grout holes at Sta. 1+80

Sept. 16 1933

Outlet Tunnel Grouting.

Min. Pressure - 60#□" allowed
Actual - 120#□"

1 - mixing plant
1 - Transitmix truck - 2-hrs.
1 - Transitmix trucks 8-hrs.

1 - Jumbo on truck
1 - Rix 7-cu. ft. pressure tank.

Air from central compressor plant

1 - mixerman } mixing plant crew
1 - helper }

2 - Transitmix drivers
1 - foreman } grouting crew
4 - men }

Mix: 1:3 - 5 sks. cement; 1515# sand - 45 gals

2 - batch loads
1+1
4 - batches

3 - batch loads
1+1+1+1+1+1+1
21 - batches

25 - batches Total
125 - sks Cement

Sta. 2+58 -

6-0" North of ℄ — No Grout
8'-0" - South of ℄ - " "
17'-6" - North of ℄
3-1 = 2-cu. ft. Total

17'-6" South of ℄
3-1 = 2-cu. ft.

Sta. 2+40

9'-0" South of ℄
3-1 = 2-cu. ft.
3'-0" - North of ℄ - No Grout
17'-6" South of ℄ - No Grout
17'-6" North of ℄ - 2-cu. ft.

Sta. 2+22

3'-0 - South ℄ — no grout
13'-0" " " — 2-cu. ft.
17' South of ℄ — NO grout
6'-0 North of ℄ — NO Grout
17'-6" North of ℄ — NO grout

Sept 16 - Tunnel grouting continued

Sta. 2+00

6'-0" North of ℄

cu. ft.
3 - 1 = 2 cu. ft.

6'-0" South of ℄ =

cu. ft.
5 - 3 = 2 cu. ft.

17'-6" South of ℄ - No Grout

17'-6" North of ℄ - No Grout

Sta. 1+80

6'-0" South of ℄

+7+7+7+7 = 28
+7+7+7+7+7+7+7+7+3 = 52
+7+7+7+7+7+7+7+7+5 = 61
+7+7+7+7+7+7+7+7+2 = 58
+7+7+7+7+7+7+7+7+2 = 58
+7+7+7+7+7+7+7+7+7 = 63
+7+7+7+7+7+7+7+7+2 = 58
+7+7+7+7+7+7+7+7 = 56

434 cu. ft.

Total cu. Ft. to-day 448

Sunday - Sept. 17-1933 -

Spillway Work:

1 - Coup. foreman, 2 - laborers { Shoring South bank of Cutoff Trench - OG.

1 - driller
2 - helpers
1 - Compressor
1 - Waterliner drills { Drilling grout holes in OG. Cutoff trench.

Grout holes in Cutoff trench under OG.

Sta	1+00	N	26'-2"	20'-8" - length of pipe
Sta.	1+05	S	26'-0"	21'-4"
"	1+10	N	21'-6"	21'-0"
	1+15	S	Drill in hole - 29 ft. Deep.	21'-4"
	1+20	N	26'-4	21'-4"
	1+25	S	26'-0"	21'-4"
	1+30	N	24'-0"	20'-9"
	1+35	S	22'-0"	21'-4"
	1+40	N	26'-0"	21'-0"
	1+45	S	26'-4"	21'-0"
	1+50	N	17'-0" Redrilled to 25'	21'-8"
	1+55	S	23'-0"	21'-4
	1+60	N	19'-0" Redrilled to 25-ft.	21'-0
	1+65	S	25'-0	21'-8
	1+70	N	26'-0"	21'-8"
	1+75	S	25'-6"	21'-4

1 - mixerman, 2 - laborers { Cleaning + repairing Conc. Mixer

MONDAY Sept. 18. 1933

Spillway work chargeable to Concrete.

1- Carpenter foreman
4- Carpenters
3- helpers
} Building Spillway bulkhead forms. Sta 0+96 to 1+68 O.G. & OG Cutoff trall.

1- Compressor drills
1- driller
2- helpers
} Drilling grout holes in OG Cutoff trench

1- mixerman
1- Shovel operator
1- " oiler
1- Truck driver
1# 7- shovel
1- #3 truck
} Deepening runway to mixing plant hopper to accommodate

727.4 6s 728.3

Tuesday - Sept. 19-1933-

Spillway Concrete Work.

1- foreman - 8+ 14 Hrs.
8- laborers - 8-hrs: } Spillway forms.
7- Carpenters - 8-hrs.

1- mixerman } mixing plant crew
6- men } 8-hrs.
1- #44- Truck driver - 8-hrs.
5 Transit mix drivers -

1- mixing plant
5 Transit mix trucks { 3- Transit mix, 2- Blaw-Knox Truckmix.

Mix: Grout: 5 sacks cement - 1040# Sand

Concrete:

5- sacks cement
1840# sand
760# - 2½" rock
970 # 1½" rock
770 #- ¾" rock
35- gals. H20
} Batches Concrete = 314
" Grout = 9
1615- sks- cement

Placed concrete in Cut-off trench of OG and OG from rock to elev.
729.4 727.4
Sta. 0+96 to 1+68 Start - 10:30 A.M.
Finish 1:45 A.M.

98- ft. copper water-stop

1- barber green aggregate loader
1- Truck #44 - hauling aggregate.

1- Compressor
1- waterliner + drills
1- driller
2- helpers
} drilling grout holes in cut-off trench under OG.

1- Rigger foreman
7- men
} Rigging mixing plant discharge hopper to accommodate the loading of the two kinds of transit mixers. 4-hrs.

6- men on placing crew relief
4:P.M- to

5- men on relief crew in mixing plant
4:P.M- to 1:45 A.M.

1- Truck driver on aggregate haul relief
4:P.M- to - 1:45 A.M-

Wednesday- Sept. 20-1933-

Spillway Concrete Work:

1- Foreman
10- Carpenters
5- helpers
} Building O.G. forms O+96 to #68

4- laborers
} Roughening conc. surface + wetting conc. Stn. O+96 to #68

1- Compressor
1- waterliner + drills
1- driller
2- helpers
} drilling grout holes in OG cut-off trench.

1#0- Dragline
1- Compressor
2- Jackhammers
1- Truck
1- Powderman
2- drillers
+ Crane operator
+ Crane oiler
} Deepening runway to mixing plant

Sept. 21-1933-

1-compressor — Spillway

1-driller
2-helpers

Grout holes: OG cut-off trench.

Sta.	Depth of hole	length of pipe.
1+80-N	25'-6"	21'-5"
1+85 S	25'-6"	21'-6"
1+90 N	25'-4"	21'-0"
1+95 S	24'-0"	21'-1"
2+00 N	26'-6"	21'-0"
2+05 S	25'-10"	21'-4
2+10 N	26'-10"	21'-8"
2+15 S	26'-0"	21'-6"
2+20 N		21'-0"
2+25 S		20'-9"
2+30 N		20'-9"
2+35 S		

Spillway Concrete Work:

1-foreman

5-Carpenters 8 hrs
4-Carp.- 4 hrs
3-Carp. helpers 8 hrs
2-" " - 4 hrs
5-laborers
} Spillway forms. 8-hrs.

1-Carp. helper
4-laborers
} dumping trucks spreading concrete 10:30 A.M. to 10:P.M.

2-laborers -
} 4:P.M. to 10:P.M.

1-mixerman
8-men
1-bulldozer
} 4½-hrs. on plant alterations

1-mixerman
6-men
} mixing plant crew 10:30 A.M. to 10:P.M.

1-Carp.
1-helper
} 9:P.M. to 11:P.M. on chutes & skip headers.

4-transitmix drivers
10:30 A.M. to 9:30 P.M

1-mixing plant
3-Truckmixers - Blaw-Knox.
1-Transitmix truck

127.0

1:2½:5-mix:

5-sks. cement
1240 # sand
760 # 2½" rock
970 # 1½" rock
770 # ¾" rock
35-gal to #20
} Batches conc. = 25
} batches grout = 8
} sks. cement = 1310

10-ft. copper

OVER

Sept. 21st continued-

Placed concrete in Spillway

OG section- To average elev. 733'

Sta. 1+44 to 1+68

Sta. 0+96 to 1+20 to average

elev. 734.75

1-barber green aggregate loader

1-truck #44

1-truck #40

2-Truck drivers on aggregate from

stock pile

Core Wall Work

4-Carpenters } Core Wall forms
2-helpers } north abutment 4-hrs

Sept. 22-1933.

Spillway -

1-foreman } Spillway forms
4-Carpenters }
4-helpers } Building + rigging chutes
6-laborers } chipping & cleaning concrete - 4-hrs.

1-compressor
1-waterliner & drills } Drilling grout holes
1-driller } in OG cutoff trench.
2-helpers

Corewall Work

Placed concrete in Core Wall.

N 3944 to N 3952 to elev. 676' from 672'

N 3952 To N 3976 - to elev. 684' from 672'

MIX: 7-sks. cement
1390# sand
1200# 1½" rock
1040# - 3/4" rock
40-gals. H_2O
No copper

14 Batches conc.
2 Batches grout
108-Sacks of cement
600. sacks cleaned

Core Wall Continued: 9-22-33

1-mixing plant - 2 P.M. to 4 P.M.
1-#10-Crane
2-Transitmix trucks

1-Carp. foreman
3-Carpenters
1-helper
1-#10 Crane operator
1-" " oiler
2-Truckmix drivers
3-laborers - tamping conc.
1-mixerman
3-men
2-hrs. mixing Conc.

Spillway ~~9-23~~/33 By Gottschling 3:A.M. to 4:45 A.M.

Grout holes in OG. Trench

Sta.	Depth of hole	Length of 2" NEW pipe
2+20 N	27'-4"	21'-0"
2+25 S	27'-0"	20'-9"
2+30 N	25'-6"	20.9"
2+35 S	27'-0"	21'-5"
2+40 N	27'-1"	21'-5"
2+45 S	27'-1"	21'-0"
2+50 N	27'-0"	21'-5"
2+55 S	27'-1"	20'-10"
2+60 N	26'-2"	21'-4"
2+65 S	25.8"	21.6"

1-Compressor
1-waterliner & drills
1-driller
2-helpers.
Drill grout holes, clean holes & set grout pipe - 1:A.M. to 10:A.M.

Sept. 23-1933

Spillway Concrete work.

1-Carp. foreman
5-Carpenters
1-helper
4:A.M. to 1:P.M. Spillway forms.

1-Carp. helper 8-hrs. making wire anchors to insert in concrete for form anchors.

Placing labor 1st shift
3-men placing concrete
1-man dumping concrete from trucks
1-man - from 11:30 A.M.
2-men from 12:30 P.M.

Placing labor 2nd shift
3-men - 1:0 P.M. changing chutes
1-man dumping trucks
6-men placing - 3:P.M. to 6:P.M.

Mixing plant labor - 1st shift
1-mixerman
7-men

Mixing plant labor - 2nd shift
1-mixerman
7-men
3:P.M. to 5:P.M.

Sept. 23rd continued.

Aggregate supply 1st Shift
- 1- Barber green operator
- 1- Truck driver
- 1 #10- Crane- 1: P.M. to 3: P.M.

2nd shift,
- 3 to 5- same crews

Concrete delivery truck- labor- 1st shift
- 3- truck drivers From 7: A.M.
- 1- driver from 10:30 A.M.
- 1- Driver- from 1: P.M to 3: P.M.

2nd shift
- 5 drivers- 3 to 5

Form labor 2nd shift
- 2- Carpenters- 8

Placed concrete in OG cut-off trench and OG Footing:

Sta. 1+68- rock to elev. 727 ft

to Sta 2+64- rock to elev. 724 ft

Start- 7: A.M. Finish 5: P.M.

MIX = Grout:
5- sacks cement
1040 # Sand
batches
5 Sks. Cement

Concrete- 1-2½:5
5- sacks cement
1340 # Sand
760 # - 2½" rock
970 # - 1½" rock
770 # - 3/4" rock
35- gals. H_2O

389- Batches
11 Batches Grout
2000 Sks Concrete

Sept. 23rd Spillway continued-

Equipment-

1- Transit mix trucks- 10:30 A.M- to 5: P.M
1- " " " 1: P.M- to- 5: P.M-
Truckmix Blaw-Knox 7: A.M to 5: P.M-
1- mixing plant
1- barber green
truck # 43
truck # 44
1- #10- Dragline

Note: Vertical contraction joint at 1+68 was sprayed with cronite

1:30 A: Pointed out to Supt. Steves & Foreman Bryant places on south bank of cut-off trench excav. between Sta. 1+68 & 2+64 where danger of caving is a hazard to the life of workman & is inadequately shored.

Sept. 23. 1933 -

Core Wall:

1- Carp. foreman } stripping core wall forms - North Abut.
2- laborers } 4-hrs.

Sunday - Sept. 24 - 1933

1- foreman } stripping keyway forms
5- laborers } and cleaning conc. surface. 1+68 to 2+64 also wetting concrete.

MONDAY - Sept. 25 - 1933.

Spillway -

5-laborers } Roughening concrete surface & removing laitance - 1+68 to 2+64 - 4- hrs

1- foreman } Building forms
5- carpenters
5- helpers
5- laborers 4 hrs

Tuesday - Sept. 26 - 1933 -

Placed concrete in spillway

OG section - Sta. 2+40 to 2+64 to Aver. elev. 732.4

Sta. 1+92 to 2+16 to elev. (average) 733.2

Mixing plant Crew } 1- mixerman
7- men
6:45 A.M. to - 2 15/60 P.M.

Placing Crew } 1- foreman - 6:45 A.M. - 3: P.M.
7- men

Concrete delivery } 4- Transit mix drivers
6:45 A.M. to - 2: P.M.

Sept. 25 - continued

Aggregate Supply { 2 - truck drivers 8-hrs. 1 - loader operator - 8-hrs.

Equipment:

1 - mixing plant

3 - Blaw-Knox truck mixers

1 - Transitmix trucks

1 - Barber green loader

1 - #44 Truck

1 - #43 - Truck

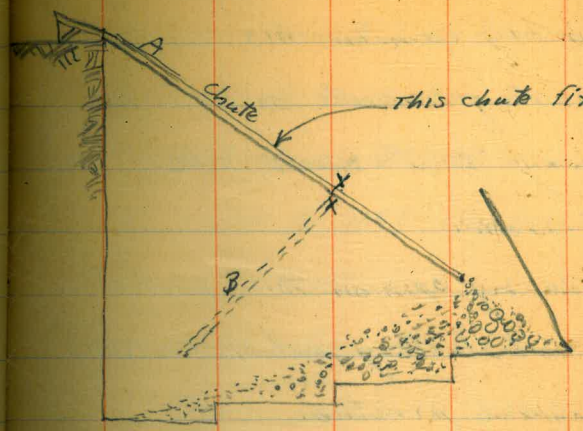
Form labor { 6 - carpenters 4 - helpers } 8-hrs.

Curing Conc. { 1 man wetting concrete.

Mix: 5-sacks cement
1340 # sand
760 # - 2½" rock
970 # - 1½" rock
770 # - ¾" rock
35-gals. H_2O

{ 304 - Batches concrete.
8 - Batches Grout @ 5-sks
1030 - Sacks Cleaned.
14 - sacks cement recovered

Placement of chutes as used to-day



Chute fixed to stay in one position only; A splice in chute 'A' at X to change chute to position "B" when concrete is built up to about a 2 ft. to 3 ft. lift.

The discharge end of the chute should, for proper placement of concrete, be flexible at "X" allowing shifting of chute from place to place to keep concrete evenly distributed and to eliminate segregation of the materials in the concrete. over →

I told Supt. Steves at 8:30 A.M. that in my opinion his method of pouring concrete so far in the spillway is the worst I have ever witnessed.

In my opinion this method is not satisfactory and is contrary to good practice.

When the chute was disconnected at "X", the concrete was allowed to drop 10 ft. - which is also contrary to para. — of the spec. where it states that the concrete should be deposited with the discharge as close to the place of deposit as possible.

Wednesday - Sept. 27. 1933 -

Placed concrete in Spillway

Sta. 0796 to 1+20 - from Aver. elev. 734.75 - to Average elev. - 744.0

Sta. 1744 to 1768 - from Aver. elev. 733.4 - to Aver. elev 744.0

Form labor
- 1 - Gen. foreman
- 7 - laborers - 3 hrs.
- 7 - carpenters
- 5 - helpers -
- 2 - Carp. - 4 hrs.

Mixing plant labor
- 1 - mixerman
- 7 - men

Concrete delivery
- 2 - Truck drivers
- 1 - aggregate loader operator

Chute changing
- 2 - men (carp. helpers) 9:45 A.M. to 3:30 P.M.

Aggregate Supply
- 2 - Truck drivers
- 1. loader operator

Placing labor
- 7 - men - 9:45 A.M. to
- 2 men - 1:00 P.M. to 3:30 P.M

Chipping Concrete for bond { 6 - laborers - 2 - hrs.
1 - man wetting concrete

Grout holes { 1 - driller, 2 - helpers } 4 - hrs

Equipment:

1 - mixing plant - 9:45 A.M. to

3 - Blaw-Knox truck mixers { 9:45 A.M. to

1 - Transitmix truck

1 - Truck #44 - 6:A.M to

1 - Truck #43 - " "

1 - Barber green loader

1 - Compressor

1 - Waterliner drills

Mix: 5 sacks cement
1340# - Sand -
760# - 2½" - rock
970# - 1½" "
770# - 3/4" "
35 gals. H_2O

{ 232 - Batches concrete
8 - Batches grout
1200 sks. cement

16 - ft. copper

12:20 P.M. I told Supt Steves that the grout pipe added to the 1st length of pipe was for the contractors convenience, if he did not choose to grout before the concrete reached the top of the 1st pipe length, and payment for additions would not be allowed, to which he agreed.

Sept. 28-1933

Grout holes – Spillway OG cut-off Trench

Sta.	Depth of hole	Length of Pipe
0+95-S	26'-5"	20'-5"
0+90 N	25'-7"	18'-7"
0+85 S	25'-6"	20'-0"
0+80 N	25'-8"	20'-4"
0+75-S	25'-10"	20'-8"
0+70 N	23'-0"	19'-9"
0+65 S	26'-0"	19'-10"
0+60 N	25'-6"	19'-2"
0+55-S	25'-0"	21'-1"
0+50-N	25'-6"	20-9"

1-Compressor
1-waterliner & drills.
1-driller
2-helpers { Drilling grout holes, cleaning hole & setting grout pipe 1:A:M-to 9:30 A.M.

Spillway Concrete Work – 9-28-33

1-Gen. foreman –

Forms { 10-Carpenters
5-Carp. helpers.

7-Concrete men { cleaning surface of foundation 2-hrs. 6:A:M-to 8:A:M-to laid off 9:A:M 10:A:M

8-laborers { cleaning surface of foundation. rock for concrete – 0+48 to 0+96 – 6:A:M. 10:A:M

Placing Labor 10:A:M-to 3:P.M { 1-man dumping trucks 4-men placing concrete

Mixing Plant Labor 10:A:M-to { 1-mixerman 7-men

Concrete Delivery. 10:A:M-to 3:P.M. { 3-Truck drivers- 4 1/2 hrs 2- " " 4-hrs

Aggregate Supply. 6:A:M-to 3:P.M. { 1-Barber green operator 2-aggregate truck drivers

Sept. 28- continued:

Placed Concrete in Spillway & Cut-off trench & Foundation Sta. 0+48 - rock to elev. 730 ± to Sta. 0+96 - rock to elev. 729 ±.

Start - 10:A.M. finish 3:P.M.

Mix: 5 sacks cement
1370 # sand
760 # - 2½" rock
970 # - 1½" rock
770 # - ¾" rock
35 gals. H2O

199 Batches concrete
9 Batches grout
1040 Sks. Cement
1200 Sks. Cleaned
6 - Sks. Rec.
48 Ft. Copper

995
43
1040

1 - Set of three test Cylinders at 1:P.M.

1 35 - 2:P.M. Delay out of aggregate.

Equipment:

1 - mixing plant - 10:A.M. - to
3 - Blaw-Knox Truck mixers - 10:A.M. - to
2 Transit mix trucks -
1 - Barber Green agg. loader
1 - Truck #44
1 - Truck #43

Sept. 29-1933

Spillway

Chipping Concrete 0+48 to 0+96 — 6 - laborers - 6:A.M. to 8:A.M.

Form labor — 1 - foreman; 6 - Carpenters; 3 - helpers (1:A.M. to 9:30 A.M.); 5 - Carpenters; 4 - helpers -

Placing labor — 1 - Crane oper.; 1 - Crane oiler (1 hr.); 1 - man changing chutes - 5½ hrs; 6 - men placing concrete; 1 - man dumping trucks (5½ hrs)

Clean Concr. Surface with air & water — Concrete crew - 6:A.M. to 8:A.M. ~~2:30~~ P.M.

Mixing plant labor — 1 - mixerman - 8 A.M. to 2:P.M.; 7 - men

Aggregate Supply — 1 - loader operator; 2 - Truck drivers; 8 - hrs.

Concrete Delivery — 3 - Truck drivers 8:A.M. to 2:P.M.; 2 - " " 9:A.M. to 2:P.M.

Sept. 29. Continued:

Equipment:

1 mixing plant

3 Blaw-Knox truck mixers – 8 A.M. to 2 P.M.
Transit mixers – 9 A.M. to – 2 P.M.

1 Barber-green aggregate loader
1 Truck #44
1 " #43

1 #10 Crane – 1 hr. placing Conc.

Start. 8 A.M. finish 2 P.M.

Placed concrete in Spillway. 06 section 2+40 to 2+64 – from Aver. elev. 732½ to elev. 739°

Sta. 1+92 to 2+16 from Average elev. 733° to elev. 741°

Mix: 1:2½:5 –

5 – sacks cement
760# – 2½" rock
970# – 1½" rock
770 – ¾" rock
1340# Sand
35 gals H20

256 – Batches Concrete
8 Batches of grout.
1320 – sacks of cement

16-ft. copper to-day
+ 12-ft. not reported yesterday

Sept. 29. Continued;

Grout holes:

1 compressor
1 Waterliner drills
1 driller
2 helpers } Drilling grout holes 2+70 – to 3+00

1 man wetting concrete – 8 hrs.

Note: South bank of dirt in section 1+92 to 2+16 – Caved in at 8:20 A.M.

Delay pouring until 8:50 AM in this section until forms were fixed and dirt removed.

Note: Mr. Klaad took 20-ft copper water stop to Riverview Pumping plant.

10:15 A.M. H.N. Savage, Councilmen – Anderson & Klaad visited the job.

Concrete Sta. 1+44 to 1+68 { Not wet with water until 10:15 A.M.
" 0+48 to 0+96

Sept. 30-1933-

Spillway:

Placed concrete in Spillway

OG Section Sta. 0+48 to 0+72

to elev. Average 738±

Start 7:45 A.M. Finish. 10:45 A.M.

MIX: 1:2½:5- MIX

5-sacks cement
1340# sand
760# - 2½"-rock
970# - 1½" rock
770# - 3/4" rock
35-gals H2O

154- Batches Conc.
4- Batches Grt.
5 Sks. Cement
1250-Sks. Cleaned
16-Sks. Recovered

1-General foreman

Mixing plant Labor
- 1-mixerman
- 6-laborers

Placing Crew
- 1-man dumping trucks
- 4-men placing concrete
- 1-man changing chutes

Concrete Delivery Labor
- 5-Truck drivers
- 3-hrs.

Aggregate Supply Labor
- 1-Barber greene operator
- 2-Truck drivers 8-hrs

Form Labor
- 11- carpenters 8-hrs
- 6-helpers- 8-"
- 1-helper- 4-hrs
- 5-laborers - 4-hrs.

Miscell. Labor
- 6-laborers. 1-hrs. chipping concrete

Letting Conc.
- 1-laborer - 8-hrs.

Equipment:
- 1-mixing plant - 3-hrs.
- 5 Concrete Trucks - 3-hrs.
- 1- Aggregate loader - 8-"
- 1 #34-Truck 8-"
- 1-#33 Truck 8-"

Sept. 30. 1933.

Grout holes in OG cut-off

Trench at Spillway

1- Compressor
1- Waterlivert drills

1- driller
2- helpers.

Sta	Depth of hole	Length of Pipe
2+70 N	27'-0"	20'-9"
2+75-S	26'-11"	21'-0"
2+80-N	23'-6"	21'-5"
2+85-S	25'-8"	20'-3"
2+90-N	23'-6"	20'-8"
2+95-S	25'-8"	21'-2"
3+00 N	25'-11"	20'-3"
3+05-S	26'-7"	20'-5"
3+10-N	25'-6"	19'-7"
3+15-S	23'-4"	20'-4"

Sunday- Oct. 1-1933

1- foreman Spillway

2- laborers chipping concrete to roughen the surface

1 man Kletting concrete

Monday - Oct. 2 - 1933.
7:A.M. to 4:P.M. Shift
Placed concrete in Spillway

OG cut-off trench and OG footing.

Sta. 2+64 - rock to elev. 724 to

Sta. 3+12 - rock to elev. 723

start - 7:A.M. finish - 3:30 P.M.

Mix: 1 : 2½ : 5

After 36 Batches
1250 → 1340 # Sand
850 → 760 # - 2½" rock
970 → 970 # - 1½" rock
770 → 770 # - ¾" rock
35 - gals. H_2O

5 - sacks cement

329 - Batches Conc.
4 Batches Grout.

1665 - Sacks Cement

58 - Ft. Copper.

700 - 5 Sks. cleaned.
19 - 5 Sks Cut. recov.

Change mix at meter reading - 36

Equipment:

1 - mixing plant
3 - Blaw-Knox truck mixers
2 - Transit mix trucks - 7:A.M. to 1:00 P.M.
1 - Barber Greene Aggregate loader
1 - Truck # 43
1 - " # 44
1 - compressor
1 - water liner & drills

Mixing plant labor
- 1 - mixerman
- 6 - men

Placing labor
- 1 - man dumping trucks
- 4 - men placing conc.
- 1 - man changing chutes
- 4 - men - 2:P.M. to 3:30

Concrete Delivery
- 3 - truck drivers - 7:A.M. to 7:AM - to 1:P.M.
- 2 - " "

Aggregate Supply
- 1 - loader operator
- 2 - Truck drivers

Form labor
- 1 - Cem. Foreman - 12:M. - To 8:30 17:M.
- 5 - Carpenters
- 4 - helpers
- 6 - Carpenters - 7:A.M. to 4:P.M
- 4 - helpers

Curing labor
- 1 - laborer - Wetting concrete

Grout holes
- 1 - driller
- 2 - helpers

Oct-2-1933-Continued:

Cleaning surface of Conc. for Bond } 3-laborers-6-hrs.

9:15 A.M. to 9:35 — Power off — Delay

12:50 P.M. to 1:35 P.M. — Delay-out of aggregate

Tuesday. Oct. 3-1933

Placed concrete in Spillway OG section — Sta. 0+48 to 0+72 — elev. 738± to elev. 744±

0+96 to 1+20 — elev. 744± to elev. 750± to finish grade.

2+40 to 2+64 — elev. 739 to elev. 744±

Mix: 1:2½:5

5-sacks Cement
1250# Sand
850# - 2½"
970# - 1½"
770# - ¾"
35-gals. H2O

263 Batches conc.
9 Batches grout

14-Sks. Cement Rec.
3200-Sks. Cleaned

36-Ft. Copper

Oct. 3 continued:

Equipment: Start 7:A.M. Finish 5:P.M

1-mixing plant

3-Blaw-Knox truckmixers

1-Barber Greene Aggregate Loader

1-Truck #43

1-Truck #44

1-Compressor
1-Waterliner & drills - {Grout holes.
1-#10-Crane-9:30 A.M. to - 5:P.M

LABOR: 1-Gen. foreman

Mixing Plant Labor { 1-mixerman - 4:20 P.M. finish
6-men

Placing Labor 6-men 3:30 - 5:30 { 4-men placing
1-man dumping trucks
1-Carp. helper changing chutes
1-Crane operator {9:30 A.M. to 4:P.M
1- " oiler

Concrete Delivery { 3-Truck drivers - 9-hrs

Aggregate Supply { 1-loader operator
2-Truck drivers

FORM LABOR { 1-gen. foreman {12-midnight to 8:30 A.M.
5-carpenters
4-helpers
6-Carpenters {7:A.M. To 4:P.M
7-helpers

Concrete Chipping & cleanup crew { 6-laborers 4-hrs.

Grout holes { 1-driller
2-helpers

Concrete finish { 1-cement finisher 4-hrs
1-helper-
1-sack cement used.

Oct-4-1933-

Spillway - Concrete:

Placed concrete in Spillway 06:

Sta - 1+44 to 1+68 - elev. 744° to elev. 750°

Sta. 1+92 to 2+16 - elev. 741° to elev - 750°

Sta. 2+88 to 3+12 - 723.5 to 731.5

Mix: 5-sacks cement

1250# sand
850# - 2½" rock
970# - 1½" rock
770# - ¾" rock
35 - gals. H_2O

1955 - sacks cement
381 - Batches Conc.
10 - batches grout
25000 - Riverside sacks shipped

1 - set - 3 - Test Cylinders - 9:45 A.M.

Sta. 1+92 to 2+16 - elev. 741° to 750°

52 cu ft. Copper
2 - sks. Cement by finisher

Equipment:

1 - mixing plant
2 - Transit mix trucks - 7:A.M - 5:P.M.
1 - Blaw-Knox - truck mixers - 10:A.M.
2 - Blaw-Knox - " " 7:A.M to 5:P.M.
1 - Barber Greene aggregate loader
1 - Truck #43
1 - Truck #44
1 - #10 - Crane { 6-hrs - 2-hrs. repairs.
1 - Compressor
1 - waterliner & drills

Labor:

Mixing plant { 1 - mixerman, 6 men - 9-hrs. 7:A.M to 5:P.M

Placing labor {
1 - man dumping trucks
1 - man changing chutes
7 - men placing
2 - men - 10:A.M - to 4:P.M.
1 - #10 - crane operator - 6-hrs
1 - #10 - " oiler - 6-hrs
6 - men - 3:30 to 5:30

Oct. 4. continued:

Concrete Delivery { 4 - truck drivers - 7:A.M. 3
1 - Truck driver - 10:A.M. to 5

Aggregate Supply { 1 - loader operator
2 - Truck drivers

Chipping Conc. & Cleanup. { 4 - laborers - 4 - hrs.

Finishing Concrete { 1 - cement finisher - 5 hrs
1 - helper - 8 - hrs
1 - finisher - 8 - hrs
2 to 10 P.M.

Curing Conc. { 1 laborer

Form labor { 5 carpenters { 12:M. To
4 - helpers { 8:30 A:M.
6 - Carp. { 7:A.M. To
4 - helpers { 4:P.M

Grout holes { 1 - driller
2 - helpers

Core Wall

1 - rigger { 3 - hrs. straightening
3. men { steel bent by blasting
Core Wall North About.

8:30 A.M. I spoke to Johnnie Connelly about providing a man about 4:A:M. each day to see that the water tank is full and to start watering concrete, so that at 7:A:M. the day shift man will have a water supply and a start on the watering. The day shift man can handle it with this help.

Oct-5-1933-

OG-Cut-off trench pressure grout:

1-Rix-7-cu-ft-grout tank

1-Portable mixer

1-Portable compressor & hose

1-Grout Tank man } 2:A:M-To 7:A.M.

1-mixerman

2-hose men

Sta.	Grout Cu.ft.	Sta.	Grout Cu.ft.
2+45	6	2+90	2½
+50	4½	2+95	4
+55	2	3+00	3
+60	3	3+05	4
+65	2½		
+70	5½		
+75	6		
+80	6		
+85	5		

54-cu. ft. grout
35-sacks Cement

Taken by Gottschling

Oct-5-1933-

Placed concrete in OG-section of Spillway - Sta. 0+48 to 0+72 - elev. 744± to 750±

Sta. 2+40 to 2+64 - elev. 744± to elev. 750±

Mix:-1:2½:5- - 7:A:M- to 11:30-A:M-

5-sacks cement
1250# Sand
850# - 2½" rock
970# - 1½" rock
770# - ¾" rock
35-gals H2O

91 Batches Concrete
6- Batches grout

Copper- 11+11=22-ft.

Equipment:
1-mixing plant
3-Blaw-Knox truck mixers
1-#10-Crane
1-Barber Greene aggregate loader
1-Truck #44
1-Truck #43
1-Compressor
1-Waterliner & drills

Oct-5-1933- continued:

Labor:

Mixing plant { 1-mixerman - 7:A.M.-To 11:30 P.M.
6-men

Placing
1-foreman
1-#10-Crane operator
1- " " oiler
1-man dumping buckets
3-men placing
4½ hrs.
1-man dumping trucks.

Concrete delivery { 3-Truck drivers
4½-hrs.

Aggregate Supply { 1-loader operator
2-Truck drivers
5-hrs.

Forms
1-Foreman
5-Carpenters { 12:M.-To 8:30 A.M.
4-helpers
6-Carpenters
4-helpers { Day shift.

stripping forms { 4-laborers -8-hrs
4-laborers- 3½-hrs.

Finishing Conc. { 2-finishers
1-helper 8 hrs.
1-helper- 6-hrs.
3-SKS. cement used

Chipping Conc. for Bond. { 4-laborers- 1-hrs.

Curing Conc. { 1-laborer -8-hrs.

Pressure Grouting - 12:30 P.M.-To-

Same Crew & equipment as on A.M. shift

Setting up grouting equipment only:

Grout holes: 1-driller
2-helpers

Sta.	D. of hole	Pipe Length	Sta.	D. of hole	Pipe Length.
3+20 N.	-25'-6"	21'-3"	3+45-S	-25'-6"	-20'-11"
3+25 S	26'-0"	20'-9"			
3+30 N	25'-6"	21'-5"	3+50-N	26'-0"	21'-3"
3+35 S	25'-6"	20'-7"	3+55-S	-25'-0"	20'-11"
3+40 N	24'-6"	21'-1"	3+60-N	25'-6"	21'-2"

Friday Oct. 6 - 1933.

Pressure grouting in Spillway OG

Cut-off trench:

1 - 7 cu. ft. Rix Grout tank

1 - Portable Compressor

1 - Portable mixer (concrete)

Air + grout hose.

1 - mixerman
1 - Grout tank man
2 - hose men
} 2:A.M. to 8:A.M.

Sta.	cu. ft. Grout	Sta.	cu. ft. Grout
0+75	12	1+25	35
0+80	4½	1+30	0
0+85	5½	1+35	6
0+90	4½	1+40	13
0+95	3½		

Total Cu. ft. grout = 84

12-batches @ 5-sks. = 60 sacks of cement

Note: Hole at 1+25 ground blew out thru open valve on pipe at 1+30 - 35 cu. ft. required to fill the cavity.

Oct. 6. 1933.

Placed concrete in Spillway

OG section Sta. 2+88 to 3+12.

elev. 731.5 to elev. ~~738~~ 741.0

Sta - 1+20 to 1+44 - elev. 728.0 to elev. 738.0

Start ~~8 P.M.~~ - Finish 3:P.M

MIX:

5-sacks cement
1250# - Sand
850# - 2½" rock
970# - 1½" rock
770# - ¾" rock
gals. H20
} 322 - Batches concrete

7 - Batches grout
1645 - Sacks cement

12 - ft. copper

{15 - sks. cement recovered}

Equipment:

1 - mixing plant
3 - Blaw-Knox truck mixers (1 - only 6 - hrs)
2 - Transit mix trucks

1 - Barber Greene aggregate loader
1 - Truck #
1 - Truck #43
1 - Truck #44
1 - Compressor
1 - Waterliner + drills
1 - #10 - Dragline

Oct 6th continued:

Labor:

Forms.
- 1-Gen. foreman
- 5-carpenters
- 4-helpers

{ 12-midnight to 8:30 AM

- 4-Carpenters
- 4-helpers

{ Day shift

Placing Concrete 8:AM-to
- 1-man dumping trucks.
- 6-men placing conc.
- 1-man changing chutes
- 1-#10-Crane operator
- 1-#10- " oiler

{ 2-hrs.

Concrete Delivery 8:AM-to
- 3-Blaw-Knox drivers (1-only 6-hrs)
- 2-Transit mix drivers

Mixing Plant 8:AM-to
- 1-mixerman
- 6-men

Aggregate Supply
- 1-loader operator
- 3-Truck drivers
- 1-#10-Dragline operator
- 1- " " oiler

{ 6-hrs

Cleaning Conc. Surface
- 3-laborers - 2-hrs.
- 7-laborers - 1-hrs

Finishing Conc.
- 1-Cement finisher
- 2-helpers

2-hrs. cement

Core Wall Forms. North Abutment:

1-foreman
1-Carpenter
1-helper
1-rigger
3-men

{ placing steel - 2-hrs.

N3984 to N3992 - elev. 696° to elev. 703°
N4000 to N4008 elev. 703° to elev. 706°
N4008 to N4024 - elev. 703° to elev. 710°

Oct. 7-1933-

Core Wall Concrete:

Placed concrete in Core Wall:

Sta. N3984 to N3992, elev. 696 to elev. 702°

Sta N4000 to N4008 - elev. 703° to 706°

Sta. N4008 to N4024 elev. 703° to 710°

Start 9:A.M. Finish 10:30 A.M.

Equipment:

1-mixing plant - 1½-hrs. simultaneous with spillway conc.
2-Transitmix trucks - 1½ hrs.
1-#10-Crane - 2½-hrs. including moving time.

Labor:

1-mixer man } mixing plant - 1½-hrs. at
6-men } same time as spillway conc.

Forms - { 1. Foreman
1. Carp.
3-men
2-hrs.

Placing:
1-Foreman
~~1-Carp~~
3-helpers } 2½ hrs.
1-Crane oper.
1-Crane oiler

mix: 7-sks. cement
1340# sand
1250#-1½" rock
1030#-¾" rock
39-gals H2O

{ 10-Batches Conc.
1-Batches grout
75-SKS.

7-ft. Copper

2320
464
464
5104

Oct. 7-1933-

Placed Conc. in Spillway

OG cut-off trench and OG footing

Sta. 3+12-rock to elev. 723.5 to

Sta. 3+60-rock to elev. 722.1

Spillway OG section - Sta. 0+72

to Sta. 0+96 - elev. 729.1 to elev. 738°

Start. 7 A.M. finish. 6 P.M.

Mix: 5-sacks cement
1250# sand
850#-2½" rock
970#-1½" rock
770#-¾" rock
35-gals. H_2O

464-Batches
6-Grout batches @ 5-SK.
2350-sks Cement.

72 ft. copper

+ 1-7-sack batch to spillway left over from core wall concrete

Delay: 10:30 A.M. to 11:A.M. out of aggregate at Plant.

1:50 P.M. - Out of cement - 4-sacks only left in mixing plant. Cement arrived at 2:10 P.M.

3:25 to 3:40 - out of cement

Oct. 7- Spillway conc. continued.

Equipment:

1 mixing plant
3-Blaw-Knox truck mixers
2-Transit mix trucks.
1-Barber Greene agg. loader
1-Truck #43
1- " #44
1-#10-dragline - 5½-hrs

LABOR:

Mixing plant 10-hrs. — 1-mixerman, 6-men

Placing Conc. — 1-foreman - 10-hrs.; 1-man dumping conc. - 8-hrs.; 1- " " " 2-hrs.; 1- " changing chutes - 10-hrs; 4-men placing - 6-hrs.; 2-men - 10 A.M. to 5-hrs.; 6 men - 4 P.M. to (3-only 1-hrs)

Conc. Delivery — 3-Blaw-Knox drivers - 1-only 1½-hrs; 2-Transit mix drivers

Aggregate Supply — 1-loader operator - 4½-hrs; 2-Truck drivers - 10-hrs; 1-#10- Dragline-oper. 5½-hrs; 1-"10- " oiler- 5½-hrs

Curing Conc. — 1-Laborer - Using water and hunt process

Finishing Conc. — 1-cement finisher, 2-helpers

Cleanout crew & chipping Conc. — 4-men - 4-hrs

Forms — 1-gen. foreman; 5-carp. / 4-helpers { 12: midnight to 8:30 A.M.; 1-Carp - 6-hrs.; 5 carpenters - 8-hrs; 2-helpers; 1-foreman carpenter / 3-laborers { stripping forms - 3½-hrs

I told Mr. Savage 3:30 P.M. That the Stock piles as piled will not permit uniform mix.

Sept 21st report change to elev 727 ft

MONDAY - OCT. 9 - 1933.

Placed concrete in Spillway OG.

Sta. 0+72 to 0+96 - elev. 738 - to 744

" 0+20 to 1+44 - elev. 738 - to 744

" 1+68 to 1+92 - elev. 727 ft to 738

Start - 8 A.M. - Finish - 3 P.M

MIX: 5 sacks cement
1250 # Sand
850 # - 2½" rock
970 # - 1½" rock
770 # - 3/4" rock

345 - Batches Concrete
6 - Batches Grout.
+ 5 - batches @ 6 sks
left over from forms

Equipment:

1 - mixing plant
3 - Blaw-Knox truck mixers
2 - Transitmix trucks
1 - Barber Greene
1 - Truck #43
1 - Truck #44
1 - Compressor { Cleanout & 1 Hunt Process
1 Compressor
1 - Waterliner + drills { grout holes.

Labor:

Mixing Plant 8 A.M. to 3 P.M. 3 to 4 Cleaning sacks. { 1 - mixerman, 6 - men

Placing Concrete 8 A.M. to 4 P.M. { 1 - foreman, 1 - man dumping concrete, 1 man on chutes, 6 - men placing — 7 hrs

Oct. 9. 1933.

Concrete Delivery 8 A.M. to
- 3 - Blaw-Knox truck mixer drivers (1. 1½ hr. out on tower concrete)
- 2 - Transitmix drivers

Aggregate Supply
- ~~1 aggregate loader operator~~
- 2 - truck Drivers

Concrete Cleanup + strip forms
- 6 - laborers. - 2 hrs
- 8 - " - 1 hr.

Curing Conc.
- 1 - laborer

Finishing Conc.
- 1 - finisher
- 2 - helpers

Oct. 9-1933 - Form labor
- 1 - Foreman
- 4 - Carpenters
- 5 - helpers

} 12 MIDNIGHT to 8:30 A.M.

~~6~~ ~~8~~ Carpenters

~~4~~ - helpers.

Grout holes
- 1 - driller.
- 2 - helpers.

Corewall - North Abutment

2 Carp.
2 helpers

} stripping forms and Bldg. Bulkhead.

Tuesday - Oct - 10 - 1933 -

Placed concrete in Spillway OG

Sta. 2+16 to 2+40 - elev. 726 - to

elev. 733° - 7:45 A.M. to 10:20 A.M. 172.6 3.60

Sta. 3+36 to Sta. 3+60, elev 722° to 732°

Start: 7:45 A.M. Finish 6:00 P.M.

MIX: 5-sacks cement
1250# Sand
850# - 2½" rock
970# - 1½" rock
770# - 3/4" rock
Gals. H_2O

410 Batches concrete
7 Batches grout
2085 - sks. Cement

32-ft. Copper

1550 Sacks Cleaned

none Sacks cement recovered.

10:20 A.M. - Concrete work shut down until cement arrives on job. Enough cement on hand to make 50-batches concrete: I asked Supt Steves not to start next section until cement arrives because of danger of cold joints during delay,
Start-again - 2 P.M.

2050
30

3+60
28
36 410 410
4510
28
453.5

Equipment:

1 - mixing plant
3 - Blaw-knox truckmixers.
2 - Transitmix trucks.

1 - Barber Greene Aggregate loader

1 - Truck # 43
1 - Truck # 44

1 - Compressor
1 - water liner drills } groutholes.

Labor:

Forms
1 - Gen. foreman
4 - Carpenters } 12 - midnight to 8:30 A.M. -
5 - helpers.
6 - Carpenters
5 - helpers

Mixing Plant
1 - mixerman
6 - men

Placing Labor
1 - foreman
1 - man dumping trucks
1 - man changing chutes
4 men placing

Oct-10- continued.

Chipping Conc. — 3- laborers -- 2-hrs.

Curing Conc. — 1-laborer

Finishing Conc. — 1- Finisher
2- helpers

Grout holes — 1-driller
1-helper

Concrete Delivery — 3- Blaw-Knox truck drivers
2- Transit mix drivers

Oct-11-1933—

Placed concrete in Spillway O.G.:

Sta. 0+72 to 0+96 - elev. 744° to 750°

Sta. 1+68 to Sta. 1+92 elev. 733.5 to 744°

Sta. 2+88 to 3+12 - elev. 741° to 750°

Start 8:AM finish - 4: P.M.

Mix: 5-sacks cement
1250# Sand
850# 2½" rock
970# 1½" rock
770# ¾" "
gals. H_2O

306 Batches Concrete @ 5-sks.
9— Batches Grout @ 5-sks
1500 sacks cleaned.
10— sacks Cement Recovered

4-batches @ 6-sacks
2- " Grout @ 5 "
From tower concrete

18-ft. copper ~~15~~

Oct-11 Continued:

Equipment:

1 mixing plant - 8:A.M. to 4:P.M. 1-½-hrs. out for Tower Crane

2 Blaw-Knox truckmixers - 8:A.M to 4:P.M.
1 " " " " 8:A.M. to 2:P.M.

1 Transit mix trucks - 9:A.M. to 2:P.M
1 " " " 9:A.M. to 4:P.M.

1 - Barber Greene loader

1 - Truck #43

1 - Truck #44

1 - # crane - 8:30 A.M. to 4:00 P.M.

1 - compressor
1 - Klater liner + drills { grout holes

LABOR:

FORMS
- 1 - gen. foreman
- 4 - Carpenters
- 5 - helpers

{ 12 - midnight to 8:30 A.M.

~~5~~ Carp. 4½ hrs.
~~1~~ Carpenters
6 - helpers

{ DAY shift

Mixing plant
- 1 - mixerman
- 6 - men

Placing Concrete 8:A.M. to 4:P.M.
- 1 - Gen. foreman
- 1 - man dumping trucks
- 1 - man changing chutes
- 6 - men placing
- 1 - #10 - Crane operator - 8:30 A.M. 4:P.M.
- 1 - " oiler. " " " "

Concrete Delivery
- 1 - Truck driver
- 3 - truck drivers - 8:A.M. to
- 1 - Truck driver
- 2 - " " 9:A.M. to 2:P.M.

Aggregate Supply
- 2 - Truck drivers

Concrete Cleanup
- 4 - laborers - 2 - hrs.

Curing Conc
- 1 - laborer

Finishing Concrete
- 1 - finisher
- 2 - helpers

Grout holes -
- 1 - driller
- 2 - helpers.

Core Wall Work - Oct-11-1933.

1-compressor
1-Jackhammer & drills

1-driller { drilling & shooting / core trench excavation

THURSDAY OCT-12-1933

Placed concrete in spillway OG:

Sta. 2+16 to 2+40 - elev. 733.0 to 743.0

Sta. 3+60 - rock to elev. 722± to

Sta. 4+08 - rock to elev. 720.6

58-ft. Copper

386
386
424.6
3.6
428.2

Mix:

5-sacks cement
1250# sand
850# 2½" rock
970# 1½" rock
770# ¾" rock
gals. H_2O

386 - Batches concrete
9 Batches grout
Sacks cement
800 sacks cleaned
16 - sacks Cement Recov.

Equipment: - start 7 A.M. Finish 7:30 P.M.

1- mixing plant.
1- Blaw Knox Truckmixer - 8-hrs.
2 Blaw-Knox truckmixers - 9-hrs.
2- Transitmix trucks - 9-hrs.

1-#10- Dragline
1-#43- Truck } aggregate supply.
1-#44- Truck

1-Compressor
1-Klater liner & drills { grout holes - 12 M. to 8:30 A.M.

Forms {
1-Gen. foreman
5-Carpenters
7-helpers } 12-midnight to 8:30 A.M.
6-Carpenters
5-helpers.

Oct-12-continued

LABOR:

Placing Concrete
- 1-foreman
- 1-man dumping trucks-11-hrs.
- 6-men placing Conc. 9-hrs
- 6-men-4-hrs (night crew.

Concrete Delivery
- 2-Blaw-Knox truckmixer drivers-9-
- 1 " " " " driver-8½ hrs
- 2-Transit mix drivers. 9-hrs

Mixing Plant
- 1-mixerman-10-hrs.
- 6-men

Finishing Concrete
- 1-finisher — 2-5ks. cement-10-11½
- 2-helpers. — 3-5ks. " 10-12½

Aggregate Supply
- 1-#10-dragline operator (1st shift-8-hrs
- 1-#10- " " oiler (2nd shift. 3-hrs.
- 2-Truck drivers

Curing Conc.
- 1-laborer

Oct-12. continued-

Chipping Conc. & clean out
- 2-laborers-8-hrs.

Notes:

Concrete mixing plant out of cement at 9¼5 A.M. to 9:45-A.M.

The mixerman told me he had 1200 sacks on hand at 7:30 A.M. and the concrete foreman told me that 1500 sacks were in lakeside ready for delivery.

Shut-down-11:30 AM-to 1130 P.M. out of cement.

Shut-down-2:05 P.M-to 4:30 P.M-out of cement

NOTE: When forms were stripped, grout pipe at Sta. 2+10 was exposed and was full of grout; it had been filled by grouting the adjacent hole.

Oct-13-1933-

Placed Concrete in Spillway OG:

Sta. 2+64 to 2+88 - elev. 723.5 to 733.5

Sta - 3+36 to 3+60 - elev. 732.0 to 741

Start - 7:30 A.M. Finish 3:40 P.M.

MIX:- 5-sacks cement
1250 #- ~~Stone~~
850 # 2½" rock
970 #- 1½" rock
770 #- ¾" rock
gals. H2O

365 - Batches concrete
6 - Batches grout
1100 - Sacks cleaned
10 - Sacks Cement recovered.

20-ft Copper
2-Sks. cement used by Finisher

Equipment:

1-mixing plant
3-Blaw-Knox truck mixers
2-Transit mix trucks.
1-#10-Dragline
1-#43-Truck
1-#44-Truck.
1-Compressor
1-Waterliner + drills
1-#10-Crane-2-hrs.

LABOR:

Forms
- 1-Foreman (Carpenter) } 12 M. to 8:30 A.M.
- 4-Carpenters } 12 M. to 8:30 A.M.
- 6-helpers } 12 M. to 8:30 A.M.
- 7-Carpenters
- 6-helpers

Mixing Plant
- 1-mixerman
- 6-men
- 1-man - 10:AM to 4:P.M.

Placing Concrete
- 1-Gen. Foreman
- 1-man dumping trucks
- 6-men placing
- 1-#10 crane operator - 2-hrs
- 1-#10-Crane-oiler - 2-hrs.

Concrete Delivery
- 3-Blaw-Knox drivers
- 2-Transitmix drivers

Aggregate Supply
- 1-#10-dragline operator
- 1-" " " oiler
- 2-Truck drivers

Finishing Concrete
- 1-finisher
- 2-helpers

Chipping Concrete
- 4-laborers
- 4-hrs

Oct-13th continued:

Curing concrete { 1-laborer

Grout holes - { 1-driller
2-helpers

Changed mix at 10:30 A.M-

batch #216.. 3000

5-sacks cement 3840
1350#-Sand
850#-2½" rock 3650
870#-1½" 2200
770#-3/4 1450

3540
Batch-272 changed to 2850
790

5-sks. cement
1350# sand
850#-2½
850#-1½" rock
790#-3/4" rock

Oct. 13-1933-

Core Trench excavation

North Abutment -
1-foreman
4-laborers.

1-#8-shovel runner { 8:A.M-to 3:P.M.
1-" " oiler { 7-hrs.

1-Truckdriver #33-Truck { 8:A.M-
1- " " #5-Truck

1-Compressor { 2½-hrs.
1-driller

11-loads - 33-yds rock (solid) { checked by Reed.

Sta. of Bays.
0+48 to 0+72 H
0+72 to 0+96 L
0+96 to 1+20 H
1+20 to 1+44 L
1+44 to 1+68 H
1+68 to 1+92 L
1+92 to 2+16 H
2+16 to 2+40 L
2+40 to 2+64
2+64 to 2+88
2+88 to 3+12

50
55
60
65
70
75
80
85
90
95
100

11
20
20
11
62

0+50

Oct-8th
155½ ft.
109-5x5.

To be grouted - 10-5-33

0+75 ✓
0+80 ✓
0+85 ✓
0+90 ✓
0+95 ✓

1+25 ✓
1+30 ✓
1+35 ✓
1+40 ✓

1+70 @ - 35

1+75 @ 4½
1+80 @ 4
1+85 @ 5½
12
1+90 2+10 - oct 5 2½
2+15 - 6
2+20 - 3
2+25 - 3½
+30 - 7
+35 - 3½
+40 - 5½
3+10 - 2
+15 2½
+20 4

3+25 7
3+30 5
35 9½
40 6
45 12
50 5½
35 - 12½
60

Const Joints

0+96

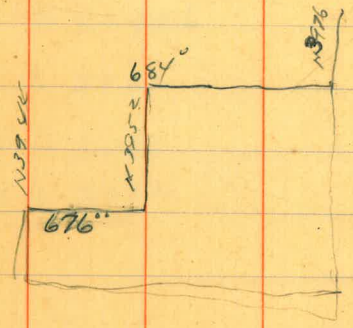
1+20

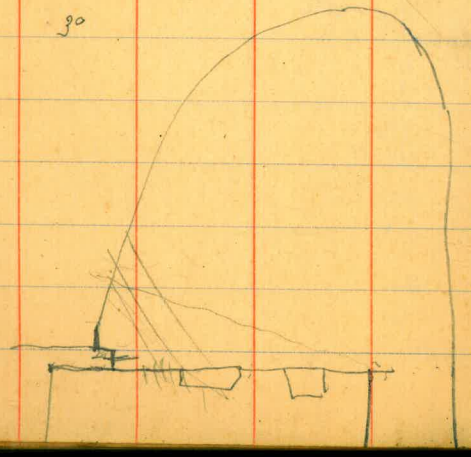
1+44

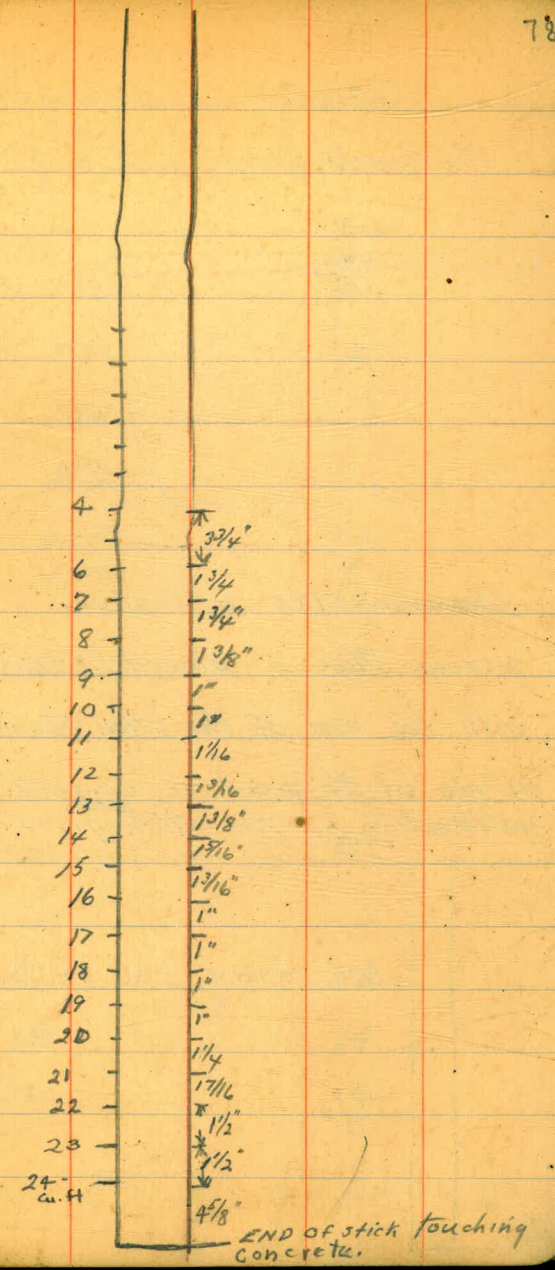
1+68

1+92

2+16

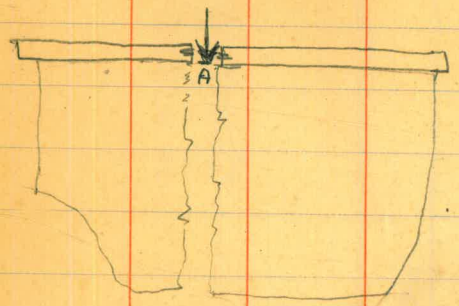






Calibration of Volume of

Pressweld gun.



Measuring stick calibration.

When stick is placed in the tank with the end of the stick touching the surface of the grout or concrete the calibration on the stick "A" gives the volume

See reverse side of this page

Sack cleaning record - From Aug-4

DATE	Sacks Cleaned	Cement Sacks Cement.
Aug. 10		40
" 12	1750	14
" 14	500	8
" 17	550	
" 28	550	
Sept 1	650	12
" 9	1850	16
Sept. 12		12
Sept. 14	1550	15
Sept. 16	300	
Sept. 22	600	
" 26	1000	14
" 28	1200	6
" 30	1250	16
Oct. 2	700	19
" 3	3200	14
" 6		15

345 bundles = 19,750 empty sks. shipped 9-5-33

1933 Inspector's Overtime & Sunday Work

DATE	Overtime	Sunday	Holiday	Time off
'33 Aug-6-	113-hrs			
" 9	2 "			
" " 12	1 "			
Sept. 1st	6 "			
Sept. 17		8-hrs.		
Sept. 19.	19-hrs. Spillway 11 Spillway			
Sept. 21	4			
Sept. 22-	1			
Sept. 23-	3			
Oct. 3-	2			
Oct. 4	2			
Oct. 7	3			
Oct. 10-	2			
Oct. 12.	3			8
	153	8		8

Accumulation to Aug-6- See Diary and Book # 440 Record

Outlet Tower concrete

" " "

12-MIDNIGHT to 3:P.M. Core Wall Conc. & Tunnel grout

19-hrs. on Spillway Conc. Sta. 0+96 to 1+68

4-hrs on Spillway Conc

1-hr. on Core Wall concrete

3-hrs on spillway conc.

3 " " "

2 " " "

3 " " " 7:A.M. to 7:P.M

2 " " " 7:A.M. to 6:30 P.M.

11 " " 7:A.M. to 7:30 P.M.

Holes in roof chipped out
8-10

1+40		
2+10	" "	✓
2+25	" "	
3+02	" "	✓
3+52	" "	✓
4+30	" "	
Not chipped 4+60	" "	

24
9
216
2

27)432(16
27
162
162

Sta. 6+64 or 6+65 - Expl. tunnel #1

Explor. 9+01.2 #7

Axis of Dam - 6+16.4

Paragraph #119 - Grout -
100% pass - #60 - Sieve
50% " - #120 "

List of holes as furnished to Cont.

2+07 - 2+17
3+48 - 3+51
2+98 - 3+04
4+60 - 4+70 ✓
4+96 - 5+04
6+30 - 7+00
11+47 - 11+57

Aug. 31
148,300 Cleaned
1134 - Rec.

July 27.

1 - foreman { 5 A.M. to 2.20 P.M. - Setting steel/forms & Equip.
6 - men { 2:20 P.M. to 5 P.M. standing by after Stop order is issued
1 - Gun man { Repairing pressweld gun
1 - Carp. foreman { Building forms at angle point
3 - Carpenters
4 - Laborers
1 - Cement finisher
1 - " helper

Tunnel Patch mix

7 - sks. Cement
1440# Sand
1150# 1½" rock
1030# ¾" rock

or

7 - sks. cement
1600# Sand
2020# ¾"

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 ½ 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 1½.

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)÷2 or 2 ft. added to 41.9 =43.9. For slopes of 1 on 1 see inside of front cover.

Made in Germany.