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.

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Field Notes by

R. W. Carter, R. A. Thurston
Inspector H. L. Harper

F. W. CAPITAN DAM.

Jan 18 1933 to May 6, 1933.

Concrete + Some Ex Insp.

Grout Hole depths

" Placed.

175 - 22
200
300
200
100
977

Wednesday - Jan-18-

1-Carp. foreman } Core wall forms
4-Carpenters }
1-helper }

1-man { Core wall steel

2-men { Patching Core wall Rock Pockets

1-foreman { installing pump at
2-men { Core wall

1-foreman { backfilling exploration
5-men { tunnel #7 — 4-hrs.

→ 3-men - all day - foreman and
2-men 4-hrs

1-driller
3-truckers
1-#10-Dragline operator } excavating.
1-#10- " oiler } Core wall
1-truck + driver } South End-
N3340 to N3315

2-men { Two foreman stripping forms
East Plug in tunnel.

2-men working at pump at dike

Thursday Jan-19-

Placed concrete in Core Wall:

N3800 to N3808 - Elev-554.5 - 560.5

12 - 7/8 ϕ - 6'-0"
2 - 13/16 ϕ - 8'-0"
8-ft. Copper water-stop - horiz.

N3816 to N3824 - Elev-562.5 - 568.5

14-ft. copper water stop { 8-ft. Horiz. / 6-ft. Vert.

N3824 To N3834 - Rock to elev-572.5

16-ft. copper water-stop { 6-ft. Vert. / 10-ft. Horiz.

1 - 2" x 3'-0" pipe nipple added to grout pipe - N3837 E
1 - 2" x 6'-0" pipe added to grout pipe N3826 Ky

N3408 to N3416 Elev - 5ft. lift. - Elev-550.5

4 - 7/8 ϕ - 5'-0"
20 - 13/16 ϕ - 8'-0"
13-ft-copper { 8-ft. horiz / 5-ft. Vert.

N3408 to N3392 - to Elev - 5' lift - Ele 560.5

20 - 13/16 ϕ - 16'-0"
20 - 7/8 ϕ - 6'-0"
22-ft. Copper { 16-ft horiz / 6-ft. vert.

N3392 - N3384 - to Elev-559

20 - 13/16 ϕ - 8'-0"
10 - 7/8 ϕ - 5'-0"
13-ft. Copper { 8-ft. horiz / 5-ft Vert.

R. W. Carter 2
7:A:M. to 3:P.M

1st Batch - 8:30-A:M.

MIX: 7 - Sks. Cement
1240# Sand
1350# - 1½" Rock
1030# - 3/4" Rock
33 - Gals. H20
{ 53-batches / 1-batch Grout / to 3:P.M / 376-Sacks Cement

Note: 3/4" - Rock contained large percentage of sand - necessitating change in mix, from mix used the past month.

Equipment:
#10 - Dragline
Concrete mixing plant
2 - Transit mix trucks.

Labor: 4-men in mixing plant
4-men placing concrete
1 - Dragline operator
1 - " " oiler
2 Transit mix truck drivers
1 - Welder - 1-hr.

Miscellaneous Labor:

1 - Carp. foreman { Corewall forms
3 - Carpenters { & steel & cleanup.
2 - helpers
1 - steel man
2 - men { Patching core wall)
1 - Cement finisher
1 - Cement finisher - 4hrs. new man started at noon

1 - foreman { Back Filling test tunnel #7.
4 - men
1 - mun - 2-hrs

Jan. 19- - 3 P.M. to

N 3384 - N 3376 to elev - 565 ±
20 - 13/16" ϕ - - 8'-0"
10 - 7/8" ϕ 5'-0"
13 - ft. Copper

N 3376 N 3368 - to elev - 572 ±
20 - 13/16 ϕ 8'-0
10 - 7/8" ϕ 5'-0
13 - ft. Copper

⊗ N 3368 to N 3352 - to elev. 576 ±
20 - 7/8" ϕ - 4'-6"
20 - 13/16" ϕ - 16'-0"
21 - ft. Copper.

3 P.M. to 11 P.M.
Finished pouring section of Core Wall at 6 P.M.
Same laborers worked until 6 P.M.
30 batches 3 P.M. to 6 P.M.
210 SX. cement.
4 men - mixing crew,
1 Shftr. - 6 men moving forms,
3 men from mixing crew working in Tunnel after 6 P.M.

Tunnel - 11 PM - 7 AM - Jan. 19/20, 1933
1 Fm'n + 6 Men } Erect'g lining forms
2 Carpenters } at Entrance portal
Weather note:- Rain started at 10:30 PM

Stripping S.E. Qur. (S. end rock embk't)
1 Sh. # 7 + Crew } Shift 5 PM - 2 AM
1 Pitman } Note:- Work stopt
3 Trucks + 3 Drivers } at 11:00 PM. due to rain

DMA

N8 Concrete Jan. 20-21-22-23-24.
Labor reported by Mr. Williams & Newcomb

Wednesday Jan-25-

1-foreman } excavating cleanup
6-men } adjacent to Core Wall

1- Carp. foreman } Forms & steel
2- Carpenters } North end of Core
1- steel man } Wall
1- helper - 5-hrs

1- #10 dragline
1- " " operator } Making beach
1 " " oiler } fill - West
side of core Wall
To: 12:30 P.M.

1-foreman } Working on air
3-men } pipe line - South side
2-men 5-hrs } of Dam

2-men } Stripping forms & Cleanup
Back face of Entrance
Portal Headwall

3- cement finishers } Painting - Tie rod conc
1- helper } holes - Core Wall

3- carpenters } Core wall Forms
2- helpers } South end

1- 1/2 C loader - 2-hrs } Brazing copper water-stop
& Cutting reinf. steel.

1- 6-ft. pipe nipple - N3828
1- 3-ft. pipe " N3832
1- 3-ft. " " N3824

Placed concrete in Core Wall:

N3776 To N3784 - To elev. 562.0

12- 13/16" ϕ - 8'-0"

10- 7/8" ϕ - 2'-9" (steel 3" from top of concrete)

N3784 To N3792 - to Elev. 566.0

28- 13/16" ϕ - 8'-0"

10- 7/8" ϕ - 6'-9"

N-3792 To N3800 - to elev. 572.0

52- 13/16 ϕ - 8'-0"
10- 7/8" ϕ - 12'-9"
12'-9" - Copper water stop Vertical

N3808 To N3816 - to elev. 574.0

2- 13/16 ϕ - 8'-0"
10- 7/8 ϕ - 4'-0"
6- ft. Vertical water stop (copper)
8- ft. Horiz. " " (copper)

N3816 To N3824 to Elev. 578.0

2- 13/16" ϕ - 8'-0"
10- 7/8" ϕ - 4' 0"
8- ft. Horiz. copper water stop
12- ft. Vert. " " "

Concrete Crew.

Start- 1:P.M.

2- Transitmix trucks

2- " " truck drivers

4- men in mixing plant

Dragline #10
" " " operator } From
" " " oiler } 11:30 A.M.

3- men placing Conc. from 1:P.M.

Mix: 7- sks. cement
1300# 1½" Rock
1290# Sand
1030# ¾" Rock
26- gals.

1- set- of 3- Test cylinders # 215
from the above mix - at 2± P.M. 216
from Core Wall - N 3808 to N 3816 - 217
elev - 568 - 574±

Completed pouring sections at north end of Core Wall at 5 P.M.
29 batches of concrete
2 batches of grout.
213 sx. cement.
All labor as on preceeding page, until 5 P.M.
Weather, clouds & rain.
T. Thurston.

R. W. Carter
Inspector

Thursday - Jan. 26

Placed concrete in Core Wall:

N3416 to N3408 - to elev. 568

16-ft. vert. Copper
70 - 13/16" ϕ - 8'-0"
10 - 7/8" ϕ - 16'-4"

N3408 to N3392 - to elev. 572
70 - 13/16" ϕ - 16'-0"
70 - 13/16" ϕ - 2'-6" laps
20 - 7/8" ϕ 17'-0"

N3392 to N3384 - to elev. 574
68 - 13/16" ϕ - 8'-0"
10 - 7/8" ϕ - 18'-0"
12 - ft. vert. Copper

N3800 to N3808 - to elev. 568
32 - 13/16" ϕ - 8'-0"
10 - 7/8" ϕ - 8'-0"
8 - ft. horiz. Copper

N3808 to N3816 to elev. 568
2 - 13/16" ϕ - 8'-0"
10 - 7/8" ϕ - 4'-6"
8 - ft. Horiz. Copper.

Weather Clear
6

Started concrete at 8:45 A.M.

Mix: 7-sacks cement
1290# Sand
1300# 1½" Rock
1030# - 3/4" Rock
26-gals H2O

3/4" Rock contains large % sand -

All aggregate high moisture content

Equipment on concrete:
1-mixing plant
#11 - Dragline
2-Transit mix trucks

Labor on Concrete:
4-men in mixing plant
5 men placing concrete
2-Transit mix drivers
Dragline operator
Dragline oiler

Miscellaneous Labor:
1 - Carp. foreman
3 - Carp.
2 - helpers
1 - steel man
} Core Wall

3 men cleanup adjacent to Core Wall 4 hrs. laid off at noon
2- man all day

1 - foreman
3 - men
} Setting up Hacklay gun and equipment - 4 hrs. Tunnel #2

2 - men excavating south end of core wall - 4 hrs.

Jan. - 26 - Continued:

#10. dragline & Crew { stripping west beach area
2- Trucks & drivers

Delay- 9:45 A.M. To 11:A.M. - No water at mixing plant

Completed pouring sections at north end of Core Wall at 4:30 P.M.

41 batches concrete
1 batch grout
292 sx Cement
Plus 1 batch concrete for bulkhead in Exploration Tunnel #2
1 batch = 5 sx. cement.
Same labor as above until 4:30 P.M.

Thursday

Jan. 27 -

Placed concrete in exploration Tunnel #2 -

Start concrete at 10:50 A.M.

7:A.M. To 10:15 Starting compressors.
10:15 To 10:50 A.M. - Repairing valves on Gun.
1st Concrete ordered at 10:A.M. stood in Transit mix trucks 50-min. before used.

Equipment:
3- Portable compressors.
1- Hackley #2 - 3 yd. gun.
2- Transit mix trucks.
1- mixing plant.
1- #11 Dragline & bottom dump bucket

Labor:
1- Dragline operator
1- " oiler
1- gun operator
1- foreman
3- men
4- men in mixing plant
2- Transit mix truck drivers

MIX: 4-sacks cement (on Mr. Woods order)
1290# Sand
1300# 1½" Rock
1030# 3/4" Rock
{ 30 - batches to 3: P.M.

MISCELLANEOUS LABOR:

2-men excavating core trench
Sta. N3340 to N3310

1- Carpi. foreman } Core wall
4 Carpenters } forms + steel
2 helpers - 4 hrs } and stripping forms
1-Steel man }

1-dump truck + driver } cleanup on
2-men } lumber Core
Wall area

NOTES: JAN-27-

MR. Wood inspected the exploration tunnel #2 with Carter, and found loose earth on tunnel floor which had not been removed. Steves, sup't. was notified by MR. Wood and Carter in presence of MR Newcomb that a thorough cleanup must be made before placing Concrete. A man was sent behind the bulkhead to cleanup, MR. Newcomb inspected this work. Steves said that he would cleanup area between bulkheads while bulkhead of sacked concrete was being placed 30-Ft. south of 1st bulkhead and would continue this process as the tunnel is filled, cleaning up ahead of the concrete

Jan. 27- Notes continued:

10:50 A.M. Mr. Steves told me that concrete was to be paid for by batch count - 1 cu. yds per batch. I told him I did not know anything of the agreement for payment.

3-men- 1:00 P.M. to 1:20 P.M. cleanup on floor of EXPLOR. Tunnel No 2.

1-man 1:30 P.M. to 3:30 P.M

Jan. 27-1933

3 P.M. to 11 P.M.

Completed filling Tunnel #2 to bulkhead at 5 P.M.

Labor same as on preceeding page to 5 P.M. plus one carpenter (building bulkhead.

Note a discrepancy of one load of concrete (3 batches). Meter reading 39 batches & 156 sx. altho our tally shows 12 loads or 36 batches.

Total for Tunnel #2.

39 batches concrete.

156 sx. cement.

T Thurston

SAT. JAN. 28. 1933.

Placed concrete in Core

Wall: Start 7:30 A.M. Finish - 11:15 A.M.

N3384 to N3376. To elev. 578'

56 13/16" ϕ - 8'-0"

10 - 7/8" ϕ - 14'-0"

No copper water stop needed

N3376 to N3368 - To elev - 585'

62 - 13/16" ϕ - 8'-0"

10 - 7/8" ϕ - 16'-0"

No copper needed

Ⓧ N3368 to N3352 - To elev. 588'

62 - 13/16" ϕ - 16'-0"

20 - 7/8" ϕ - 16'-0"

12-ft. copper water stop vertical at N3352

2-men - 1-hr. excav. tunnel #2 floor

2-men stripping forms from drain wells

R. W. Carter, Inspector — 10
Weather Cloudy

MIX: 7-sks. Cement
1240 # Sand
1350 # 1½" Rock
1030 # ¾" Rock
} 25-batches Conc, 1-Grout - 180-sacks Cement

¾" Rock contains large % sand

Equipment:

1-Dragline
2-Transitmix trucks
1-mixing plant
} 4-hrs on Core wall

Labor:

4-hrs. on Core wall Concrete:
4-men in mixing plant
2-Transit mix drivers
1-Dragline operator
1- " " oiler
4-men placing concrete

EXPLORATION TUNNEL #2 -
12:NOON to 4:30 P.M.

Equipment:
1-dragline
2-Transit mix trucks
1-mixing plant
3-compressors
1-Hackley #2 concrete gun

Labor:
1-Gun operator
1-Foreman
3-men
1-Carp. on bulkhead
2-Transit mix truck drivers
4-men in mixing plant

Note: Thurston took over inspection on tunnel #2 at 3 P.M. Quantities reported by him.

Core Wall Miscellaneous.
1-carpenter foreman - forms
5-carpenters - 4 hrs. { 4 carp. laid off at noon, 1-Carp. on tunnel #2 P.M.
3-helpers all day
1-steel man all day
2-men excav. adjacent to core wall

Jan. 28-1933

Completed pouring concrete in Tunnel #2 at 4:30 P.M.

39 batches concrete plus 1 batch of 7 sx.

163 sx. cement.

Labor as on preceeding page, plus 2 carpenters until 4:30 P.M.

Thurston

Recovered cement record in back of this book.

100 empty cement sacks used in test tunnel #2 for sacked concrete bulkheads.

Mix: 4 sacks Cement
1290 # Sand
1300 # 1½" Rock
1030 # ¾" Rock

¾" rock very sandy.

I estimated that one cu. yd. of concrete was wasted by spilling while filling gun.

R.W.C.

NOTE: Total of 79 batches of concrete in Tunnel #2 minus the 1 cu. yd. estimated as wasted.

SUNDAY. JAN. 29-1933.

Placed concrete in Core Wall.

Start- 8:A.M. Finish 11:40 A.M.

N 3800 to N 3808 to elev. 580±
56 - 13/16" Ø - 8'-0"
10 - 7/8" Ø - 12'-0"

N 3808 to N 3816 - to elev. 588±
88 - 13/16" Ø - 8'-0"
10 - 7/8" Ø - 22'-0"

N 3816 to N 3824 - to elev. 594±
88 - 13/16" Ø - 8'-0"
10 - 7/8" Ø - 22'-0"

N 3824 to N 3832 - to elev. 598±
80 - 13/16" Ø - 8'-0"
10 - 7/8" Ø - 20'-0"

20 ft. copper water stop vert. at sta. N 3832

Equipment:
1 - dragline
2 - Transitmix trucks
1 - mixing plant

Labor:
1 - foreman
1 - Dragline operator
1 - " " oiler
4 - men in mixing plant
4 - men placing concrete

4 hrs

Sunday - Jan - 29 -

MISCELLANEOUS LABOR:

1 - foreman } MOVING Hackley Gun & Compressors to
5 - men } test funnel NO. 1
1 - truck & driver } and working on air pipe line.

2 - men { drilling holes for excavation adjacent to core wall

3 - men stripping Core Wall forms

1 - dump man
1 - foreman
#10 - Dragline & Crew
2 - Trucks & drivers
stripping and cleanup
West side of Core Wall.

3 - men stripping forms and hauling scrap lumber from Drain Wells

Mix on Core Wall:
7 - sks. Cement
1290 # Sand
1300 # 1½" Rock
1030 # ¾" Rock

38 - batches Conc - 266 - sks. Cement
1 - batch Grout 5 " "
Total 271 - sks. "

MONDAY - JAN - 30 - Showers.

Equipment:

1 - #10 dragline
1 - Truck

Labor: 1 - dragline operator } Cleanup excav. adjacent to east side of Core Wall
1 - " " oiler
1 - Truck driver

1 - foreman } Excavating loose material From Tunnel #1 - floor
3 - men

1 - Carp. foreman } Stripping Core Wall forms & tie rod cones
3 - helpers
5 - laborers - 4 hrs } cleaning scrap lumber from Core Wall site

1 - Cement Finisher } Pointing Tie rod Cone holes.
1 - helper.

2 - men { excavating adjacent to Core Wall - Drilling & shooting.

3 - men { Drilling grout holes Core Wall - Sta N3352 - N3317

Weather Clear.

R. W. Carter
Inspector

Jan-31-1933-

1-#10 dragline } excavating cleanup
1-truck } adjacent to core wall 4 hrs

1-#10-dragline operator } excavating
1-" " oiler } adjacent to
1-truck driver (all day) } Core wall 4-hrs

#10. dragline } 4-hrs. on core wall
& Crew } concrete

1-Carpenter foreman } Core wall
1-Carpenter } forms.
2-helpers }

1-carpenter { Working on boat east side of Core wall

1-Carpenter } Bldg. Stage for
1-helper } drillers-north end of Core wall

1-foreman. } excavating &
1-powderman } cleanup-Core
8-men } Wall area.
1-steel man { Core wall steel

1-foreman { General work
2-men { on pipe lines-moving transformers and spotting Hackley Gun at Tunnel #1

Cement
2 finishers } 4-hrs. Core Wall
1 helper } 4-hrs, exit Portal structure

3-men { setting up compressor & stage. For drilling grout hole Sta. N 3325. Core Wall

Jan-31- Continued

Placed Concrete in Core Wall

Sta. N 3344 to N 3340 - Elev. 575' to 580'

Sta. N 3340 to N 3317 - Bedrock to elev. 580'

5-ft. copper (vertical at sta. N 3344
5 ft copper (" " " N 3317 Elev. 575 To 580'
27-ft. Horiz. copper.

4-2" x 21'-0" grout pipes { sta. N 3318, " N 3321, " N 3326, " N 3331
1-2" x 4'4" pipe nipple
Grout pipe sta. N 3331

Start Concrete 2:30 P.M. Finish

Mix: 7-sks. Cement
1240 # Sand
1350 # 1½" Rock
1030 # ¾" Rock
{ 12 batches before change in mix recorded next page

Jan. 31-1933

At 3:30 P.M. changed mix.

1400# - 1½"

1030# - ¾"

1190# sand

30½ gals. water.

Labor

4 men - mixing crew.

1 foreman - 3 men on concrete.

2 truck drivers

1 drag line operator & oiler.

2 men - trenching along core-wall.

Note: There is an appreciable draft coming from the face of Tunnel #1. This indicates a continuous opening above the concrete lining in the large tunnel.

92 batches concrete

1 batch grout.

649 sx. cement.

Completed pouring at 12 M. Used all of the cement except ½ sack. Needed about 4 yds. more of concrete to pour to given elevation. So had to lower water stop to conform to the concrete available.

Thurston

32 bags Spoiled Cement in Warehouse on A.M. 2/1/33 per R.M.C.

Feb. 1-1933

Started pouring concrete in Core wall at 6:15 P.M.

Labor. 4 men - mixing crew.
1 foreman - 1 carpenter.
5 men - concrete gang
2 truck drivers
1 drag Line operator & oiler.

Cleaned 950 sx.
46½ batches concrete
1 batch grout.
327 sx. cement.
Lost about 1¾ hrs. on account of forms breaking & spreading. Also lost 2 yds. concrete.
Finished at 1 A.M. Thursday

Feb-1-1933-

1-Tractor, 1-foreman, 3-men { Pulling transformers to position top of Dam South end for installation.

3-men drilling grout hole- Sta. N3825 Coulee Wall

1. Carp. foreman, 3. Carp., 2-helpers { Core wall forms

1-steel man, 1-helper { Core wall steel

4-laborers { Cleanup Core wall area.

Core Wall: Concrete placed on night shift

N3416 to N3424 - elev. 548° to 568°
N3424 to N3440 - elev. 548° to 566°
N-3440 to N3448 - elev. 548° to 562°

No copper water stop
Steel:
64- 13/16"ϕ - 32'-0"
16- 13/16"ϕ - 24'-0"
12- 13/16"ϕ - 16'-0
42- 7/8" ϕ - 19'-0"

R. W. Carter
Inspector
Weather - clear.

Feb. 2-1933

No concrete to-day.

1-Carpenter foreman
4-helpers
{ Stripping Core Wall forms
2-men 1-hr. Filling pipe with 1:2 cement & Sand. (Pipe through Core Wall - Sta. N3847

1-steel man
1-helper
{ Stripping Core Wall forms and removing tie rod cones.

3-men
{ 6-hrs. Cleanup adjacent to core wall
2-hrs. Cleanup in tunnel
1 NO. 1 - with Compressor for air

1-truck & driver
1-Dragline #10
& Crew
{ Cleanup lumber & scrap from Core Wall forms 4-hrs
Stripping puddle Core area - west side Core Wall - 4-hrs.

1-Carpenter
1-Pumpman
1-mechanic
1-welder - 3-hrs
{ Working on MONITOR Floats

1-compressor
3-men
{ drilling grout hole at Sta. N3825

1-foreman
3-men
{ excavating cleanup in tunnel #1 - 4-hrs.
Working air pipe lines to Hackley Gun - 4-hrs

2-men
{ excavating adjacent to Core wall West side at South end.

7:AM To 3:P.M.

R. W. CARTER
Inspector.
Weather - Clear

16

Feb-3-1933-

1-Electrician (Foreman)
4-helpers
{ Installing pipe line from Pump at West side of D.S. toe Wall to West Puddle Core area

1-Cement finisher
{ Pointing tie wire holes. inside drain wells

1-Cement finisher
1-helper
{ Pointing holes. Tierod & tie wire 4-hrs. drain wells
4-hrs. Core Wall

2-men
{ MAKING SAND BAG Bulkhead in overbreak of main tunnel - 15' ft. west of Test Tunnel #1 -
also blowing tunnel floor #1 - with air for cleaning and wetting tunnel walls & Floor

1-Carpenter
{ Bldg. discharge pipe supports in tunnel #1

1-Carp. helper
{ Wetting Core Wall concrete and helping Carp. in tunnel #1 -

1-foreman
3-men
{ rigging Hackley gun and air line equipment & placing compressors ready for operation.

1-pumpman

1-#10-dragline + operator
1- " " " oiler
{ stripping Puddle Core area SW¼ - 4-hrs
4-hrs. idle

2-trucks + drivers
{ 4-hrs. puddle Core stripping

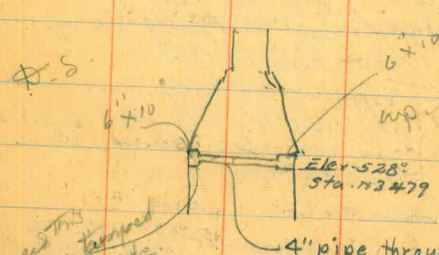
3-laborers
{ 2-hrs. dismantelling driller's scaffold.
6-hrs. - Cleanup east Portal area.

1-driller } drilling & shooting rocks
1-helper } in puddle Core area east side of Core Wall

✓ 1-Corp. Labor foreman
✓ 1-Gen. Foreman

16,500-empty cement sacks sent to Lakeside.

Note: 2-sks of cement used Feb. 2 to fill pipe through core wall at Sta. N3479-Not previously reported



4" pipe through wall, with 6"x 10" pipe welded to form shoulder of concrete for plug.

1-part cement to 2-parts sand mixed barely damp and tamped thoroughly into place. Pipe was swabbed out before filling with mortar. The dry material will absorb moisture & setup without shrinkage.

Weather-clear.

Feb-4-1933-

Placed concrete in Test Tunnel #1 started at 7:30-A.M.

Equipment:
1-mixing plant
2-Transit mix trucks
1-#11-Dragline
1-Hackley #2-pressure gun
3-Portable compressors.
1-Stationary compressor plant.

Labor: 1-Concrete foreman
3-men
1-Hackley gun operator
1-Compressor plant tender
2-Transit mix truck drivers
1-dragline operator
1-" " oiler
4-men in mixing plant

Mix: 6-sacks cement
1240# Sand
1350# 1½" Rock
1030# ¾" Rock
36 gals.
} 16-batches in overbreak of main tunnel through test tunnel #1
96 sacks Cement

4-sacks Cement
1240# Sand
1330# 1½" Rock
1030# ¾" Rock
32 gals
} Used in Test tunnel #1-after main tunnel had taken all the concrete it would before the opening from test tunnel # 1 became plugged.

16-batches-6-sack concrete } to
56- " 4 " " } 3:P.M.

320-sacks of Cement

10,500-empty cement sacks shipped

Cleaned 550 cement sacks.
salvaged-11-sacks of cement

Miscellaneous Labor:
1-Gen. foreman
#10-dragline & Crew { Stripping SE¼
2-Trucks and drivers }
2-men { Cleaning Puddle Core area east side by Hand shovel.
1-foreman { Cleaning up lumber
1-Steel man { & trash from area
2-laborers { east of U.S. Tool wall and around mixing plant.
2-men { Excavating adjacent to Core wall
1-pumpman { Laying pipe line to
4-men { Puddle Core Area
1-Carpenter { Bldg. Trestle supports
1-helper { for pipeline
2-Cement finishers { Patching inside of drain
1-helper { wells.
1-SK. Cement

Feb. 4-1933

Same crew working.

4 men-mixing plant.

1 foreman-2 men-1 drag line operator.

1 oiler, 1 gun operator-2 truck drivers.

18 batches since 3 P.M.

~~108~~ 72 SK. cement.

A total of 90 batches for the tunnel.

Finished at 5:30 P.M.

J. Thurston.

R. W. Carter
Inspector

Sunday. Feb. 5. 1933

1 - Gen. foreman
5 - men
#11 - dragline & Crew
} Clean up puddle / Core Area

#10 - dragline
" " operator
" " oiler
2 - Trucks & drivers
} Stripping SE¼

1 - Carp. foreman
1 - Truck and driver
} Cleanup puddle / Core area.

1 - man wetting concrete.

Pressure Grouting reported in book #381

R. W. Carter
Inspector

Monday. Feb. 6. 1933.

NO Concrete to-day.

Pressure grouting reported in book #381

#11 - dragline
1 - dump truck
dragline operator
" " oiler
1 - truck driver
1 - Gen. foreman
5 - laborers
} Cleanup puddle / Core area

1 - man wetting concrete

1 - foreman
2 - men
} Cleaning trash from tunnel & working on Jumbo preparatory to lining tunnel with concrete

1 - Electrician
1 - pumpman
1 - carpenter
6 - men
} laying pipe line from pump east of entrance Portal to Puddle Core Area

#10 - dragline & Crew
2 - Trucks & drivers
} Stripping SE¼

1 - driller
1 - helper
1 - Compressor
} Drilling rock for stripping NW¼

1 - mixerman
3 - men
} Pressure grouting Core wall South end 4-hrs.

1 - mixerman
2 - men
} excavating adjacent to Core Wall South end west side - 4-hrs.

1 - man
} Cleaning Pressweld pressure gun - 4-hrs

Feb-6- continued

1- man working making holes under stumps SW 1/4, for shooting.

#11- dragline & Crew
1- truck & driver
5- men
} Cleanup adjacent to Core Wall, West side- North end.

NOTE: MR. Wood, MR. McKinley and Mr. Ryle MR. Connelly inspected the work to-day.

R. W. CARTER
INSPECTOR
Weather:
Partly cloudy.

20

Tuesday- Feb-7- 1933-

NO CONCRETE TO-DAY:

#10-dragline & Crew
#7- shovel & Crew
4-Trucks & drivers
#11- Dragline
} Stripping - SE 1/4 & NE 1/4

1-foreman
3-men
1-tractor
} Installing Transformers at top of Dam South END. 2 hrs. Fixing jumbo and equipment for tunnel-lining 6 hrs

1- Carp. foreman
1- Carp.
1- helper
} Bldg. trestle supports for pipe line.

1- driller
1- powderman
2- men
} drilling holes for removing rock & stumps from SW 1/4 for stripping

1- Gen. foreman
7- men
} Cleanup adjacent to core wall

1- driller
1- compressor
} drilling for excavation adjacent to Corewall

1- Electrician
1- pumpman
6- men
} Pipe line 4-hrs. Power line to core wall 4-hrs.

R. W. Carter off duty 9:30 AM to 4 PM

No report of labor.

Weather: Fair

21

Corrected 2-10-33 BWC

.0+46

Tunnel Lining — 0+19 to 0+39

Wed. night, Feb. 8/9, 1933 - 11 PM - 7 AM

Started placing concrete - 10 PM, Feb. 8.

Mixer Crew - 4 men

1 Foreman - 8 PM - 7 AM
3 Laborers - 8 PM - 4 AM
3 Laborers - 4 AM - 7 AM

2 Transit Mix Trucks + 2 Drivers
5:30 PM - 7 AM
1 Truck + Driver hauling aggregate
6 PM - 7 AM

Tunnel Crew -

1 Foreman
1 Gunman
6 Laborers
} 5 PM - 2 AM

1 Foreman
1 Gunman
7 Laborers
} 2 AM - ?
Foreman complains of being shorthanded.

Counter reading at 11 PM = 27

" " " 7 AM = 78

Batches concrete this shift = 51

W. D. Humphris

Feb. 8-1933

Tunnel 3PM to 11PM

Started pouring Tunnel Lining at 10 P.M.

1 Foreman - 6 men & 1 compressor-man & 1 gun operator started at 5 P.M.

4 men in mixing plant started at 8 P.M.

2 truck drivers.

Mix 6 sx. cement
1400# sand
1190# - 1 1/2" rock
1030# - 3/4" "
42 gals. water.

0+19 to 0+39 =
27 batches at 11 P.M.
162 sx. cement.

Thurston

Weather: Fair

Stripping - South Abutment - between Core Wall & Upstream Rock Embk't.

Wed. night, Feb. 8/9, 1933 - 5 PM - 2 AM

1 Gas Shovel #7 & Crew
2 Trucks & 2 Drivers
1 Jackhammer & Driller
1 Portabe Compressor
1 Dump man

Material removed in stripping was placed on west face of up-stream rock embk't near S. end.

W. H. Thurston

Thursday. Feb 9-

Continued placing concrete in tunnel lining sta. 0+19 to ~~0+39~~ 0+46 (Corrected 2-10-37 Mwt.)

Meter reading - 7:AiM - 78
" " 10:AiM. 87

Total-Batches 87 — 9 batches
" Sacks 522 — 745 Shi.ft
54-Sks Cement

Finished at 10:AiM.
450 - Sacks cleaned -

Equipment:
1-Pressweld gun-mounted on truck
1-Jumbo " " "
2-Transit mix trucks.
1-mixing plant.
1-Compressor plant.
1-Tractor

Labor:
1-Compressor man
1-foreman - to 10:AiM-from 2:AM.
3-men " " " " "
1-Gun operator
2-transit mix truck drivers } off at 10:AM.
1-mixer man

3-men { mixing plant - to 10:A.M. / Clean lumber after 10-A.M. To NOON

1-Carp. foreman { Bulkhead for tunnel lining 3-hrs - Cleanup lumber - 5-hrs + Pressweld gun.
1-Steel man
1-helper

1-Carpenter at shop making wedges.

2-men { Cleanup puddle Core area and Bldg. wooden bulkhead Core wall to bank north about.

1-Gen. foreman / 6-men { Clearing SW¼ of vegetation.

1-Cement finisher { 1-hr. plugging pipe through Core Wall Elev. 549: Sta. 1+34.42 / ¼-Sk. Cement - ½ Sk. Sand. 1:2 mix - dampo. 4" Hole - 18" Deep. 2 iron Cap welded on West end, plugged from east end with cement & sand. 7-hrs. grubbing brush.

1-driller
1-poriderman
1-Portable compressor { Drilling & shooting rock South embankment.

1-Electrician
7-men { Power line to Puddle Core area to monitors

1-foreman
#7-shovel & Crew
2-trucks & drivers
1-dump man { stripping SE¼ abutment

#11-dragline & Crew
1-truck & driver { stripping abutment of rock - NW¼

#10-dragline & Crew
2-trucks & drivers { stripping NW¼ abutment

Friday - Feb. 10 - 1933

No concrete work To-day

1 - steel foreman } Placing steel
5 - " men } for tunnel lining.

1 - Carp. foreman } Work on
1 - Carpenter } tunnel lining
2 - helpers

1 - foreman } Work on steel
1 - Gunman } forms for tunnel lining
3 - men } 5 hours.
3 hrs. with tractor taking rock out of Puddle Core Area bottom

1 - driller } Drilling & shooting
1 - powderman } rock from South abutment
1 - Compressor

1 - foreman
1 - #7 shovel & crew } Stripping South
2 - Trucks & drivers } abutment - SE ¼
1 - dump man

1 - foreman } clearing brush & stumps
7 - men } from South Embankment.
1 - Elect
5 - men } Working monitors preparing for operations & on power lines & pipe lines

10# Dragline & Crew } Stripping North
2 - Trucks & drivers } abutment - NW ¼

60 HP. Tractor tipped over in the deep water adjacent to Core wall west side, while pulling monitor float to a position to be floated.

SAT. Feb-11-1933 DAY SHIFT

1-foreman, 7-men — Clearing vegetation from south embankment 5 hrs 1/4 (2-of these men-4-hrs. on hydraulic Fill.

1-foreman, 1-#7 shovel & Crew, 3-Trucks & drivers, 1-dump man — Stripping South abutment-SE 1/4

#10-dragline, 2-Trucks — Stripping North abutment-NW 1/4

1-Powderman, 1-driller, 1-Portable compressor — drilling & shooting rocks-North & South abutments

1-Electrician, 5-men — Work on pumps, power line & pipe lines for hydraulic fill. Move water storage tank from Mt. South end of dam.

1-foreman, 1-man — Recovering tractor from water-West of Core Wall 4-hrs. Pipe lines-4-hrs.

1-foreman, 1-Carpenter, 5-men, 1-Portable Compressor, 1-tractor, 1-Jumbo on truck — Moving steel forms for tunnel lining

#11-drag line & Crew, 1-truck & driver, 2-men — Removing rock from surface North embankment NW 1/4

NOTE: MR. Hawley, MR. McKinly and asst. on inspection trip with MR. Wood & MR. Albert. MR. SAVAGE ON INSPECTION TRIP. P.M.

Sunday - Feb-12 { No Concrete Work

Weather showers

MONDAY - Feb-13-

1- Carpenter foreman
1- Carpenter
2- helpers
{ Tunnel forms & bulkhe

1- foreman
3- men
{ Tunnel forms

1- mixerman 4 hrs
2- men
{ Tunnel forms

1- Gen. foreman
1- ~~x~~ shovel + crew
2- trucks & drivers
1- dump man
{ stripping SE 1/4 South Embankment

1- Gen. Foreman
10- men
1- truck + driver
{ Cleanup from stripping operations North Embankment

2- monitors on barge float
4- men
{ Hydraulic operations

1- driller
1- powderman
{ Drilling + shooting rock from South embankment in stripping operations

FEB-14th to 18th Inclusive
Reported in book # 406

R. W. Carter
Inspector

Sunday-Feb-19-

Core ~~trail~~ Trench excavation.

Equipment:

1- #10-dragline
2- Portable compressors
1- Truck
2- Jackhammers

Labor:

1- Dragline operator
1- " " oiler
1- truck driver
1- Powderman
2- Jackhammermen
2- muckers
} South abutment

1- driller
2- muckers
} North abutment
1- truck & driver 4 hrs

Rock from Core Trench dumped into rock fill- upstream face.

1- 2-yd Load loose rock (small sizes)
1- 3-yd " " " " "
1- 3-yd " " " " "
1- 2-yd " " " " "
1- 2-yd " " " " "
Recorded 2-17-33

16- loads @ 2½ cu. yds. fine material from Core trench excav. dumped in Rock Embankm

R. W. Carter 27
Inspector

Weather Clear

Sunday-Feb-19-

Tunnel work.

Equipment:

1- Portable Compressor
3- Jackhammers.

LABOR:

2- Carpenter helpers
2- Cement finishers
1- laborer
} Chipping concrete from tunnel lining for Plug Keyway sta. 0+61 to 0+67

Miscellaneous Labor- 2-19-33

1- foreman
2- men
1- tractor
} Installing Pump at dike east of tunnel Portal (entrance)

2 men
} Moving lumber and steel to new position on waste dump west of Dam site.

1- Carp. foreman
1- Carpenter
} Work on truck body repair

1- mixerman
3- man
} Work on air line from Pipe. Main compressor plant to Spillway area,

1- electrician
1- helper
} Power line to Puddle Core

R.W. CARTER
INSPECTOR

SPILLWAY - SUNDAY - FEB-19.

1- #11- shovel
1- Truck
3- TRUCKS 6-hrs.
1- Shovel operator
1- " oiler
1- Dumpman
1- truck driver
3 " " 6-hrs.

} Cleanup on widening road in spillway area.

1- Compressor
3- Jackhammers
3- Jackhammermen
1- Powderman

} Drilling & shooting surface rock in Spillway Area- West Slope

3- men

} Clearing vegetation from West slope of spillway area.

Sunday - Feb - 19 - Day shift

Hydraulic Fill

1- foreman
4- men
1- Carpenter

} Repairing monitors & barges. Extending suction end of intake pipe so as to receive the water at greater distance from beach line than heretofore

No washing on day shift

Monday- Feb-20-

Core Trench excavation -

Equipment:

2- Portable compressors
1- Truck
1- #10- dragline.

Labor:
- 1- foreman
- 1- Powderman
- 2- Jackhammer men
- 1- #10- dragline operator
- 1 " " oiler
- 1- truck driver
- 2- muckers

} SOUTH Embankment

- 4- muckers
- 1- Truck & driver

} North embankment

Rock dumped into Rock Fill from Core trench

1- Rock- 2x3x2
1- " 3x3x3

Included in Rock 13,447 Cu. Yd.

Tunnel work:

- 2- cement finishers with Jackhammers
- 2- Carp. helpers with Jackhammers
- 1- laborer
- 1- Portable compressor

} Chipping concrete from tunnel lining for plug key sta. 0+61 to 0+67

Miscellaneous Labor:

1- foreman
7- men

} Installing 12" pipe line to hydraulic fill area from Pump west of D.S. Toe Wall

1- foreman
3- men

} Installing air pipe line to spillway area

1- foreman
2- men

} General work on pipe lines & pumps.

1- Carp. foreman
1- Carp.

} Bldg. Trestle supports for 12" pipe line to puddle core area

Feb. 21 - Work Reported by Mr. Newcomb.

No concrete to-day.

R. W. Carter Inspector

Wednesday - Feb. 22 - DAY shift

2 - cement finishers, 1 - helper { Trimming + finishing concrete in transition section of tunnel entrance portal.

1 - foreman
1 - monitor operator
9 - men { Rigging discharge pipe line and moving West side monitor to position on South end of Ruddle Core + installing pump.

1 - foreman
2 - men
1 - tractor { Removing rubbish from hydraulic fill area (skimmings from Summit basin - 4 hrs. 4 hrs. installing pump. Ruddle Core

1 - #10 - dragline
1 - Portable Compressor
2 - Jackhammers
1 - Truck - all day
1 - truck - 4 hrs { Core trench excavation.

Weather - Clear

1 - foreman
1 - #10 - dragline operator
1 - " " " oiler
2 - jackhammer men
4 - muckers
1 - truck driver { Core trench excav. South Abutment

3 - muckers
1 - truck driver - 4 hrs { Core trench excavation North Abutment

9 { 7 - loads rock @ 2 cu. yds. = 14 cu. yds. rock from Core trench excavation dumped into rock embankment upstream slope. Recorded Nov 3-27-59

3 - men
1 - compressor { sloping east face of dam, drilling + shooting rock for placement

1 - sack cement used by Finisher for tunnel patching

Sup't. Steves said at 1 P.M. that he has called for State Inspection of Core trench excav. for Friday Feb. 24.

R. W. Carter
Inspector

Thursday Feb 23

NO CONCRETE TO-DAY

1 #10 Dragline
1 - Truck
1 - Portable Compressor
1 - dragline operator
1 - " " oiler
1 - foreman
1 - Powderman
1 - driller
1 - mucker
Note: Powderman & driller also mucking
} Core trench excavation South Embankment

3 - muckers
Powderman & drillers worked on both embankments
1 - truck & driver - 4 hrs.
} Core trench excavation South embankment

Removed to 347/59

1 - 1½ cu. yds
1 - 2.0 cu. yds.
1 - 1½ cu. yds.
1 - 2.0 cu. yds

1 - foreman
2 - men
1 - small tractor
} Removing rubbish from summit basin - 4 hrs. Core Wall steel - 4 hrs.

1 - Electrician
5 - men
} Repairing pumps and installing power line to stationary pump for hydraulic fill

1 - Carp. foreman
2 - helpers
4 hrs.
} Bldg. trestle supports for discharge line from stationary pump on north embankment for hydraulic fill

5 - laborers
} Installing pump and pipe line on North embankment for Hydraulic Fill.

1 - foreman
1 - hydraulic engineer
2 - monitor operators
2 - " swampers
} Repairing monitor equipment - 7 A.M. To 9 A.M. when hydraulic operations started on east side

1 - Compressor
3 - Jackhammer men
} drilling & shooting rock for east slope of dam

1 - Carp. foreman
2 - helpers
} Core wall cleanup & forms 4 hrs.

R. W. CARTER
Weather – Clear.

Friday – Feb – 24 – DAY. shift.

No concrete to-day.

1-foreman
1-man
1-#10-Dragline & Crew
4-hrs-on tunnel
4-hrs. on Core trench excavation
} Removing Jumbo from tunnel 4-hrs. – Miscellaneous work-removing equipment from tunnel & pipe line West of DAM – 4-hrs

1 – Carpenter foreman
1-Steelman
3-helpers.
} Core wall forms & steel – South Abutment

1-Compressor
1-foreman
2-Drillers
3-muckers
1-truck & driver
1-Powderman
} Core trench excavation

1-Compressor
3-drillers
} Drilling & shooting rock for sloping East face of dam

Rock dumped into rock embankment from Core trench excav
1½ cu.yds.
2-cu.yds
per row 447/59

SAT. Feb 25 –

NO CONCRETE WORK To-day

1-foreman
1-driller
1-powder man
3-muckers
1-truck driver
1-truck
1-Portable Compressor
} Excavating Core trench North Abutment

1-man
} Clearing vegetation from South Embankment – SW¼

1-Carpenter foreman
1-Carpenter
1-helper
1-steelman
} Forms and steel for Core wall South abutment

3-men
1-Portable compressor
} drilling grout holes in Core trench – South Embankment

1-electrician
7-men
} erecting power line to North embankment for Hydraulic Fill Dam

State Inspector McKinley gave his approval of core trench excavation To N-3277-

#10-dragline & Crew
2-Trucks & drivers
} stripping south embankment SE¼ – 4-hrs

MONDAY - Feb - 27.

No Concrete work to-day.

1 - Carpenter foreman
2 - Carpenters
2 - helpers
} Forms for Core Wall. South Abutment

1 - welder - 2 - hrs
} Brazing copper water-stop-in Core Wall

1 - foreman
2 - men
1 - Compressor
} Drilling grout holes for Core Wall - South Abutment.

1 - foreman
2 - men
1 - small truck - Ford
} General rigging work over the job.

1 - foreman
2 - muckers
1 - driller - 4 - hrs
1 - Powderman
1 - truck + driver
1 - Compressor
} Core trench excavation - North Abutment

2 - drillers
2 - laborers
1 - Compressor
} Drilling for outlet tower excavation This is 1st day of work on tower Const.

2 - men
} Work on pipe line for water to Puddle Core Area.

1 - man clearing vegetation from SW 1/4 - of South embankment 4 - hrs.

2 - men - 4 - hrs
} Cleaning loose earth from puddle core area SE 1/4 on bench at Elev. 570'

1 - electrician
2 - helpers
} Working on transformer Switch - Board - North embankment

1 - electrician
1 - helper
} Work on pump at west toe of D.S. slope of Dam

R. W. Carter
Inspector

Tuesday Feb. 28-1933

Placed concrete in Core Wall

Sta N3352 to N3320 to Elev-584

Start- 7:45 A.M- Finish 9:30 A.M

Equipment:

1- mixing plant
2- Transit mix trucks
5 steel chutes

Labor:

3-hrs on Concrete in Core Wall

- 1- foreman, 5- men — placing Concrete
- 2- Transit mix truck drivers
- 1- mixer man, 3- men — mixing plant crew

3 Steel Columns
2 - 13/16" ϕ - 24'
42 - 13/16" ϕ - 8'-0"
8 - 7/8" ϕ - 11'-0"
32 - 7/8" ϕ - 5'-0"
32 ft. Horiz. copper
7 ft. Vertical Copper.

Mix:

7-5ks. Cement
1240# sand
1350# 1½-Rock
1030# ¾" Rock
34-Gals H_2O

Part of ¾" rock was imported from Commercial source Clean well graded material.

1 Batches Grout @ 5-5ks = 5
39 Batches Concrete @ 7-5ks = 273
Total 5ks. Cement 278-

1-batch wasted: too much mixed. included in the above count.

1-Foreman
2-men
1-Compressor
— Drilling grout holes in core trench - N3320 to N3277

1-foreman
4-men
1-truck driver
1-Compressor
— Excavating Core trench North embankment

Tuesday - Feb. 28 -

1 - #9 - shovel
1 - Compressor

1 - shovel runner
1 - " oiler
2 - Drillers
} Excavating for outlet tower base - Backfilling entrance portal structure with the dirt excavated

1 - foreman
2 - men
1 - light truck
} General work, hauling pipe for puddle core work and rigging in general in dam area.

1 - man
} Clearing vegetation from embankment - SW 1/4

1 - Carpenter
1 - helper
} Bldg. house over pump at dyke east of tunnel entrance.

1 - Carp. foreman
2 - men
5 - hrs
} Forms for Core Wall

Tuesday - Feb - 28 -

Blowing & measuring depth of Grout holes.

1 - mixer man
1 - helper
} 5 - hrs.

Sta.	Depth of hole -	Length of grout pipe set.
N3315 E	25.0 ft.	+3.75 21.0 ft.
N3310 W	25.0 ft.	+7+4 21.0 "
N3305 E	25.5 ft	+6+4 21.0 "
N3300 W	25.5 - Ft	+5+3 21.0 "
N.3295 E	25.0 ft. This hole 27½ ft. deep with drill broken 4 ft. from bottom	+6 21.0 "
N3290 W	25 - Ft. allowed.	21.0 "
N3285 E	24.5 ft	+5 21.0 "
N3280 W	19.0	+4 21.0 "
N3277 E	25.0	+4 21.0 "

All pipe were calked in grout hole with rope & wedges.

R. W. CARTER
INSPECTOR

Wednesday MARCH-1-1933

1-Carpenter foreman (5 hrs.)
2-Carpenters
1-helper
1-steelman - 5-hrs.
{ Core wall forms & steel - North embankment.

1-mixerman
3-men
5-hrs.
{ Cleaning Core trench to receive concrete, N3322 to N3290

#10-dragline
1-operator
1-oiler
2-mucker
1-foreman
{ Excavating with clamshell for outlet towel-base.

1-Compressor
1-foreman
10-men
{ Hand placing rock face of upstream side of dam.

1-bulldozer
1-foreman (-also bulldozer operator)
4-men
{ Excavating Core trench - North embankment

Note: State inspectors on job. I explained to McKinley the difficulty in getting a uniform mix due to 3/4" Rock coming from Two sources and not being graded the same.

Start concreting at 1 P.M.

3-1-33

1-mixing plant
2-Transit mix trucks { 4½ hrs.
3-men
1-mixer man { Mixing plant crew 4½ hrs.
2-Transit mix truck drivers { 4½ hrs
1-foreman (carpenter)
3-men
1-steelman { 3-hrs. placing concrete + 1½ hrs. overtime

Placed concrete in Core wall - N3320 to N3290 - to Elev. 580'-
Sta - N3352 To N3320 - To elev. 591'- Batter set

22-13/16"Ø - 32'-0"
38-7/8"Ø - 5'-0"
38-ft. Copper -
{ N3352 - to N3320 Elev - 586' - to 591'-

30-ft. copper { N3320 to N3290

1-set of 3 Test Cylinders from This mix at 3 P.M.

Mix:

12 batches only
7-5ks Cement
1240 # Sand
1350 # 1½ Rock
1030 # 3/4" Rock
34-gals H2O

changed to

7-5ks. Cement
1340 # Sand
1250 # 1½" Rock
1030 # 3/4" Rock
35-gals H2O

68-Batches @ 7-5ks = 476/5
1-Batch Grout - @ 5 sks
481 SKS.

Thursday - MARCH - 2-1933

5-hrs { 1- Carp. foreman, 2- Carpenters, 1- steel man, 1- helper } Core & wall forms South embankment

3- laborers - 5-hrs. { Clean Core trench + strip Core & wall forms. Clean batterice

4-hrs { 1-mixerman } Core trench cleaning

1-foreman, 2-men, 1-Dragline operator, 1 " oiler, 1- #10 Dragline, 1- Compressor { Excavating for outlet tower base.

1- Carpenter, 1- helper { Bldg. house over transformers - North embankment 1-hrs. 2-hrs. work on shoring timbers for outlet tower Exc.

1-foreman, 4-men, 1-compressor, wheelbarrows { Excavating Core trench - North embankment.

1- 7-ft. pipe nipple on grout pipe #3310

Grout pipe - Sta. 3277 - 19'-10"

10:30 AM MR. Steves Supt. said he would accept 19-ft. as depth of grout hole Sta. N3277 E rather than move compressor in to blow + clean 6'ft. dirt in bottom of hole. This is O.K. with MR. Wood -

Placed concrete in Core Wall Sta. N3320 to N3277 - to elev - 586.0

LABOR { 1- Carpenter - concrete foreman, 1- steel man, 3- laborers { Placing concrete; 1- mixer man, 3- men { mixing plant crew

Equipment { 2- Transit mix drivers, 1- mixing plant, 2- Transit mix trucks, Steel + Wood chutes

MIX: 7-SKS. Cement, 1290# Sand, 1300# 1½" Rock, 1030# 3/4" Rock, 33. Gals H2O

40 Batches @ 7-SKS = 280 SKS
2 Batches Grout @ 5 SKS = 10
25 Batches @ 4-SKS = 100
Total 390 SKS.

43-lin. feet copper water stop

OVER

R. W. Carter
Inspector

Thursday - MARCH - 2 -

At 2:45 P.M. Mixing plant broke down. Electrician said the power to motors was not enough due to monitors drawing from same power line. 1- proportioned a 4-sack mix and and mixers handled the load o.k.

Mix: 4-sacks cement
740 #-1½" Rock
730 # Sand
590 #-¾" Rock
19- gals H2O
} 2.5- Batches each batch = 4/4 of a cu.yd. Reported on previous page

Chutes were baffled to prevent segregation. No excess water on concrete to-day

FRIDAY - MARCH - 3 - 1933

1- 410 - Dragline (Clamshell) } excavating
✓ 1- Compressor } & Timbering for
1- dragline operator } outlet tower
1- " " oiler } base.
1- foreman
2- men

✓ 1- Compressor } excavating Core
1- Foreman } trench - North
4- men } embankment and
Cleanup - North Embankment

5-hrs- 1- Carp. foreman } Core wall forms &
1- Carpenter } steel and removing
✓ 1- helper } laitance
5-hrs. 1- Steel men }
5-hrs 3- men }

1- small truck } Delivering steel
✓ 1- foreman } & form lumber for
2- men } Core wall Const.

✓ 1- electrician } Bldg. power line
4- men } to mixing plant

FRIDAY - MARCH-3-1933 — R. W. Carter Inspector

Placed concrete in Core wall

Sta. N3832 to N3856 to elev 578

Start - 1:30 P.M. 3:15 P.M.

MIX: 4 sks. Cement
730# Sand
740# 1½ Rock
590# 3/4" Rock

39 - Batches - 156 sks.
1 - Batch Grout 5"

Total 161 sks. Cement

each 4-sack batch = 4/7 cu. yd.

Note: Not enough power to mix a 1-cu. yd. batch.

Note. M.R. Savage's memorandum to M.R. Wood March-3-1933. gave state inspectors approval of Core trench excavation to Sta. N3900 to elev-~~590~~ 592.0 Mark.

1 - mixing plant
2 - Transit mix trucks
1 - Foreman
1 - Steel man
3 - men
} Placing concrete 3 - hrs.

20 - ft. copper water stop

R. W. Carter Inspector — 39

Sat. MARCH-4-1933-

Placed concrete in Core wall.

Sta. N3320 to N3276 to elev - 592.0

Start - 7:1 A.M. finish 10:30 A.M.

MIX:
4-SKS Cement
730# Sand
740# - 1½" Rock
590# - 3/4" Rock
19 - gals. H2O

95 - 4-SK. Batches = SKS. 380
2 - 5-SK. Grout = 10
390 SKS. Cement

Equipment: 1 - mixing plant
2 - Transit mix trucks
Steel & wood chutes
} 4 - hrs.

Labor: 1 - Foreman
1 - Carpenter helper
3 - men
} Placing concrete 4 hrs. Bldg forms - 4 hrs.

1 - mixerman
3 - men
} Mixing plant crew 4 - hrs Afternoon off duty

2 - Transit mix truck drivers - 4 hrs

Materials: 45 lin. ft. copper
2 - 13/16"Φ = 27 - ft.
32 - 7/8"Φ = 6 - 0"
3 - Steel Columns.

NOTE: 209 SKS. Cement left in mixing plant at 10:30 A.M.

MARCH-4-

Miscellaneous force + equipment.

1-#10-dragline
1-dragline operator
1-" " oiler
} excavating for outlet tower with clamshell bucket

1-foreman
3-men
} Hand mucking + shooting tower excav and timbering

3-men
} Drilling grout holes in Core trench North embankment.

1-foreman
2-men
1-small truck
} Clean up scrap lumber from job + sawing for fire wood.

Sunday- MARCH-5-1933-

No concrete to-day.

1-Carpenter foreman
2-Carpenters
1-mixerman
1-steel man
2-helpers
} Building Core wall forms and placing Core wall steel

4-men
1-compressor
} Drilling grout holes in Core trench - North embankment

1-foreman
2-men
} Changing location of pump #3. in Puddle Core area.

1-welder-2-hrs.
} Brazing copper water stop in core wall. South embankment

1-foreman
1-powderman
4-men
1-dragline operator
1-" " oiler
1-Dragline #10
} Excavating for outlet Tower foundation.

R. W. Carter
Inspector

MONDAY - MARCH - 6 - 1933

2 hrs / 6 hrs. in mixing plant — 1-mixer man, 1-helper { Blowing grout holes & setting grout pipe

Station	Depth of hole	Length of Pipe
N3840 E	25'-0"	21'-0"
N3845 W	25'-0"	21'-0"
N3850 E	25'-0" (Was 20'-0) Drilled 5-more feet.	21'-0"
N3855 W	25'-0"	21'-0" +5
N3860 E	25'-0"	21'-0" +6
N3865 W	25'-0"	18'-0"

(Connected: N3845 W – N3855 W)

4-men, 1-Compressor { Drilling grout holes. Core trench North Embankment

1-Compressor
1-#10-drag line
1-foreman
1-powderman
3-men
1-dragline operator
1- " " oiler
{ Excavating for outlet tower base

NOTE: Power would not operate mixers @ full load. Mixerman requested a 5 sk batch so that four batches would make a truck load.

3-6-33 Cont. 41

Placed concrete in Core Wall

Sta. N3320 to N3276 to elev. 598°

24 - 13/16"Φ - 24'-0" { In - baller section sta. N3320 to N3296
2 - 13/16"Φ - 16'-0"
48 - 7/8"Φ - 6'-0"
2 - steel Columns.
44 - ft. copper (horizontal)
14 - ft. " (vertical)

Start - 9:55 A.M. Finish 2:25 - P.M.

Mix: 7-sks. Cement, 1300# - 1½" Rock, 1030# ¾" Rock, 1290# Sand, 34-gals. H_2O

	Sks.
5-batches @ 7-sks. =	35
16-batches @ 4-sks. =	64
33 batches @ 5 sks.	165
2-batches grout @ 5 =	10
	274 Sks.

Equipment: 1-mixing plant
2-Transit mix trucks
Steel & Wood chutes.

Labor: 1-foreman, 1-steel man, 3-men { Placing concrete
1-mixerman, 3-men { Mixing plant crew
2-Transit mix truck drivers
2-Carpenters { Core wall forms.

MARCH-6-1933-

Placed concrete in Core Wall N3832 to N3866 to elev-584-

Start-7:30-P.M.- finish 10:45 P.M.

Note; Same concrete labor crew continued working after finishing on the south end at 2:25 P.M., and worked cleaning out area on North end to receive concrete, also rigged chutes until 7⁴⁵ P.M. when concreting started and continued on concrete to finish at 10:45 P.M.-

2050-SKS. Cleaned- 11-SKS. Cement recovered

20-7/8"Ø- 6'-0"
2-13/16"Ø- 16'-0"
34-Feet copper
2-steel Columns

Rocks from blasting broke water line delaying the work from 4:30 P.M. to 7:30 P.M. Work of cleaning ready to place concrete 4:30 to 6:00 P.M.

Mix:

5-sks cement
920# Sand
930#-1½" Rock
736#-¾" Rock
24-gals. H2O

52 Batches Conc. @ 5-SKS. = 260
2 Batches Grout @ 5-sks = 10

MARCH-7- forces & equipment reported by MR. Newcomb

Wednesday - MARCH-8-1933

1-foreman, 1-Steel man, 3-laborers { Corewall forms, steel and cleanout - 5 hrs. Placing concrete 3-hrs.
2-Carpenters { Core wall forms 8-hrs.
1 mixer man { 5-hrs. Core wall forms and cleanout. 3-hrs. concrete
3-men { mixing plant 4-hrs.

1:00 P.M

Placed concrete in Core Wall:- 4:00-P.M.
Sta. N3832 to N3848 to elev. 590⁰
Sta. N3848 to N3868- to elev- 594⁰-

20-13/16Ø - 16'-0"
2-13/16"Ø - 8'-0"
~~7/8Ø - 5'-0"~~
28-7/8"Ø - 6'-0"
48-lin.ft. Copper

Cleaned-500-SKS

Mix: 5-SKS Cement
920# Sand
930# 1½" Rock
736# ¾" Rock
24-gals. H2O

56 Batches Conc @ 5-SKS. = 280 SKS.
3 batches Grout @ 5-SKS. = 15
295-SKS

NOTE: last 25-batches mix was changed-adding 50# sand & taking out 50# 1½" Rock

MARCH 8-

Miscellaneous Labor.

1- #10 dragline
1- compressor
2- wood skips
} excavating for outlet tower Base

1- foreman
1- dragline operator
1- " " oiler
4- muckers & drillers

1- Compressor
4- men
} Drilling grout holes in Core trench - N. embankment

1- electrician
2- helpers
} Work on power line to hydraulic fill area

1- foreman
2- men
1- truck
} General work all over the job - repairing monitors, hauling form lumber & steel for Core Wall.

Thursday- March-9-

Blowing grout holes and setting grout pipes-

1- mixerman
1- helper

Note: These holes moved out with water - machine drilling grout holes.

Station	Depth of hole	Length of pipe
N 3870 E	25'-0"	+10 21'-0"
N 3875 W	25'-0"	+6 +6 21'-0"
N 3880 E	25'-0"	+6 +6 18'-0"
N 3885 W	26'-0"	+7 +5 21'-0"
N 3890 E	25'-0"	+7 +7 21'-0"
N 3895 W	25'-0" Top 6'-0" of this hole was cased with 4" pipe (Due to loose ground.)	+6 +7 + 21'-0"
N 3900 E	Drill broke in hole below 23-ft 23'-0"	+5 +5 18'-0"

Holes were blown with air and water until all clean before setting & calking grout pipe in place.

Pipe calked with burlap & wood wedges

R. W. Carter 44
Inspector

MARCH-9-1933.

1-#10-dragline
1-compressor
1-foreman
4-men
1-dragline operator
1- " " oiler
} Excavating for outlet tower base

2-men
} Work on new powder magazine near entrance portal of tunnel - 200-ft South

1-Carpenter foreman
3-Carpenters
1-steel man
1-Carpenter helper
3-men
} Core wall forms & steel

1-foreman
2-men
1-truck
} Hauling form lumber & steel for core wall & helping on Core wall steel erection.

4-men
1-Compressor
} drilling grout holes in Core trench North embankment

2-men
} Clean up puddle Core area South embankment

FRIDAY. MARCH-10-

Placed concrete in Core Wall.

sta. N3856 to N3868 - elev. 594± to 600±

sta. N3868 to N3900 - Rock to elev. 600±

Note: Concrete was placed 2'-0" above elev. 598± sta. N3864 to N3872, which is elev. of step for steel. A box 2'x2'x2'-6" placed at column position, that column can later be placed at right elev. on the step. O.K. by MR. Converse. 3-9-33. RWC

mix: 5-sacks Cement
970# Sand
880# 1½" Rock
736# - ¾" Rock
24-gals. H20
} 135 Batches Conc. @ 5-sks.
2 " Grout @ 5-sks.
→ 675
10
685-sks Cement

Start-7:15 A.M. Finish 1:30 P.M.

Labor:
1-Concrete foreman
1-steel man
3-men
} Placing concrete 5½-hrs. 2½ hrs. on forms.

1-mixerman
3-men
} mixing plant crew - 5½ hrs. removing & burning trash from summit pool - 2½ hrs.

2-Transit mix drivers
} 5½-hrs.

Equipment:
2-Transit mix trucks
1-mixing plant
Steel & wood chutes

Core wall - concrete notes continued:

Materials other than concrete used in this section of Core wall.

51- ft. Copper water stop
6- 3/8" ∅ - 8'-0"
10- 13/16" ∅ - 6'-0"
1- steel column

4- Carpenters } Core wall forms
1- helper }
1- welder { 2-hrs. brazing copper water stop in Core wall.

1- #10 - dragline
1- compressor
1- dragline operator } Excavating for outlet tower base.
1- " " oiler
1- foreman
7- men

Cleaned - 800-sks.

R. W. Cattler
Inspector

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SAT MARCH-11-1933

Placed concrete in Core Wall - N3832 to N3848 to elev. 603±
N3848 to N3864 to elev. 605±

Start - 1:45 P. M. to 5: P. M.

21- ft. copper
54- 13/16" ∅ - 24'-0"
20- 13/16" ∅ - 32'-0"
30- 7/8" ∅ - 11'-6"
20- 7/8" ∅ - 5'-0"

{ 1- cu. yd. wasted: too much mixed - included in amount listed below.

Mix: 5-Sks. Cement

		SKS
920# Sand, 930# - 1½" Rock, 736# 3/4" Rock	13 - batches @ 5-Sks - =	65
970# Sand, 880# - 1½" Rock, 736# - 3/4" Rock, 24 - gals, #20	23 - batches @ 5-Sks =	115
	3 - grout @ 5-Sks - =	15
		195

195 SKS. Cement

1- foreman
1- steel man
3- men
{ Core wall forms - 6- hrs.
placing concrete in Core Wall
3 hrs.
1- hr. overtime

3 carpenters
1- helper
{ Core wall forms

3-11-33

1-Carpenter { 4-hrs. Core wall forms. 4-hrs. repairing mixing plant roof holes caused by blasting on road above the plant.

2-Transit mix drivers — 3-hrs.

1-Mixerman, 3-men { Mixing plant 3-hrs. 6-hrs. Cleanup in Core Wall area.

1-#10-dragline, 1-compressor, 1-dragline oper, 1-" " oiler, 1-foreman, 5-men { excavating for outlet tower.

4-men { Cleanup puddle Core area- South embankment.

Sunday. March-12- No Concrete. Carp Foreman Wet down Concrete

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R. W. Carter INSPECTOR

MONDAY. MARCH-13-1933.

Placed Concrete in Core Wall:

Sta. N3344 to N3352 to elev. 596.0

Sta. N3344 to N3320 to elev. 606.0

start: 10:30 A.M. Finish 7:45 P.M.

16- 13/16"ϕ- 32'0"

8- 7/8"ϕ- 6'0"

42- 13/16"ϕ- 24'0"

26- 7/8"ϕ- 15'0"

6-ft. copper at N3320

MIX: 5-5ks. Cement, 970# Sand, 880# 1½" Rock, 736# ¾" Rock, 25-gals. H_2O { 31- Batches @5-5ks 155; 2-Batches Grout- 10; 165-5ks

3-5-5k. Batches wasted 2-much mixed. Included in the above Count

Cleaned-200 sacks- recovered- 9-5ks. Cement

Equipment: 1-#10-dragline, 2-Transit mix trucks, 1-mixing plant

LABOR:

1-foreman, 1-steelman, 3-men, 1-mixerman, 3-men { off 2 hrs. 2-hrs. on concrete 6-hrs. forms for Core wall

1-dragline operator, 1-" " oiler { 2-hrs. concrete 6-hrs. Core trench excav.

1-Set of 3-Test Cylinders made at 11 A.M.

3-U-33

4- carpenters } Core wall forms.
1- helper }

1- foreman
men
1- dragline operator } Core Trench excav. South embankment 4-hrs.
1- " " oiler } 4-hrs. Puddle Core area cleanup
1- compressor

2- men } Stripping vegetation from South embankment SVW 4

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R.W. CARTER
INSPECTOR

Tuesday- MARCH-14-1933.

Placed concrete in Core wall:

Sta. N3320 to N3296 to elev. 612±

N 3296 to N 3288 to elev. 618±

60- 13/16"ø- 32'-0"
24- 13/16"ø- 8'-0"
30- 7/8"ø - 18'-6"
10- 7/8"ø- 6'-6"
18- Ft. copper.

MIX: 5-SKS. Cement.
970# Sand
880# 1½" Rock
736# ¾" Rock
25 Gals. H_2O

40- Batches @ 5-sks. = 200
2 Batches Grout = 10
Total sacks Cement 210

Start- 9.15 A.M. Finish- 1:P.M

Equipment: 1- mixing plant
2- Transit mix trucks
1- #10. dragline

Labor: 1- foreman } placing concrete - 3-hrs
1- steel man } 5-hrs. stripping Core wall
3- men } forms.
1- dragline operator } Concrete - 3-hrs.
1- " " oiler }
2- Transit mix drivers
1- mixer man } MIXING Plant crew.
3- men } 5-hrs. cleanup in mixer house & repairs
3-hrs- Concrete.

R. W. Carter
Inspector
48

Wednesday - MARCH - 15 -

Placed Concrete in Core wall:

Sta. N3864 to N3880 to elev. 604.0

Sta N3880 to N3900 to elev. 610.0

43-ft. copper

10 - 7/8" ϕ - 5'-0"
2 - 13/16" ϕ - 8'-0"
1 - steel Column

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

Mix: 5-sks. cement
970# sand
880# - 1½" Rock
786# - ¾" Rock
25 - Gals. H_2O
} 80 - Batches @ 5-sks. = 400
2 Batches Grout = 10
410 sks. Cement

Equipment: 1 - mixing plant
2 - Transit mix trucks
Steel & Wood chutes
} 3-hrs.

Labor: 1 - foreman
1 - steelman
3 - men
} Placing concrete - 3-hrs.
Work on forms - 5-hrs.
Core wall

1 - mixerman
3 - men
} Mixing Plant crew
3-hrs. on Concrete

2 - transit mix drivers - 3-hrs.

2 - Carpenters - { Core wall Forms.
Bldg. & stripping

1 - Cement finisher
1 - helper
} Filling cone holes and patching Core wall

NOTE: The mixing plant started at 8:30 A.M. but with the 1st 5-sack batch the power was not sufficient to turn the mixer. The mixture was shovelled out of the mixer by hand and operations were delayed until 9:15 A.M making adjustments to obtain more power.

3-sacks of cement used by Cement finisher patching core wall

1 - dump truck
1 - dragline
1 - air compressor
1 - foreman
1 - dragline operator (3-hrs)
1 - " " oiler
1 - dump truck driver (5½ hrs)
6 - men
} Excavating Core trench - South abutment.
5½ hrs. excav.
2½ hrs. cleaning puddle Core area

3 - men { clearing vegetation from South west ¼ abutment.

1 - man { Patching Core wall honeycombed concrete - 4-hrs.

1 Carpenters
1 - helper
2 - Carpenters
} Core Wall forms both building and stripping
3-hrs. Core wall forms
5-hrs. sharpening saws.

Delay from 1:5 P.M. to 4: P.M. 113 sacks cement left in cement shed. Not enough to complete next section of Core wall.

3-15-33

2- Carpenters { Repairing roof, walls, & floor of mixing plant - one of this Carpenters on Core Wall-4 hrs

1- dragline
1- truck
1- foreman
1- Dragline operator
1- " " oiler
6- men
{ Excavating Core trench - South embankment.

1- foreman
1- light truck
2- men
{ Hauling steel for Core Wall - and general work on pipe lines.

Note: I saw MR. WOOD regarding Paragraph 75 - last sentence, regarding limit of height of each pour in any one day." The Contractor shall not be permitted to place concrete more than 6-ft. deep in any one day, unless authorized by the engineer." MR Wood said to work according to specification and to justify Steves.

Engineer directed by

R. W. Carter 49
INSPECTOR

Thursday - MARCH 16 - 1933 -

Placed concrete in Core Wall:

Sta. N3864 to N3880 to elev. 610 ±

N 3880 to N 3900 to elev - 616 ±

54 Ft. copper. { 36 - Ft. Horiz.
18 - Ft. Vertical.

24 - 13/16" ϕ - 12'-0"
2 - 13/16" ϕ - 16'-0"
30 - 7/8" ϕ - 6'-0"

12:30 P.M. -
T - 3:00 P.M.

2 - Steel columns.

Mix: 5 - SKS Cement
970 # Sand
880 # - 1½" Rock
736 # - ¾" Rock
25 - GAL H2O
{ 55 - Batches @ 5 SKS = 275
2 Batches grout = 10
Total SKS = 285

Equipment: 1. mixing plant
2 - Transit mix trucks
Steel & wood chutes
{ 2½ - hrs.

Labor: 1 - foreman
1 - steel man
3 - men
{ Placing Concrete - 2½ hrs
forms - 5½ hrs.

1 - mixer man
3 - men
{ Mixing Plant Crew - 2½ hrs
5½ - hrs. setting up Pressure grout equipment

2 - Transit mix drivers { 2½ - hrs

1-foreman, 6-men { excavating Core trench - SOUTH EMBANKMENT - 4-hrs. drilling grout holes = 4-hrs.

1-dragline + Crew
1-Compressor.

1-foreman, 2-men, 1-light truck { Setting up pressure grout equipment, hauling lumber and steel for Core Wall

2-Carpenters - 8-hrs, 1-Carp - 4-hrs. { Core Wall forms.

1-cement finisher, 1-helper { Patching Core Wall - 8-hrs

2-5 hrs. Cement used.

Note: Notified Supt. Steves 11:AM. that Paragraph #75- last sentence of specifications must be adhered to hereafter on orders from MR. Wood.

Friday - MARCH - 17 - 1933 -

1-#10. dragline (clamshell bucket)
1-foreman
1-dragline operator, 1- " " oiler, 2-men { Excavating outlet tower

1-foreman, 3-Carpenters, 1-steel man, 2-men { Core wall forms and steel

1-Compressor, 1-drill, 3-men { Drilling grout holes in Core trench - South abutment

1-Cement finisher, 1-helper { Patching core wall & Filling cone holes. 4-SKS. Cement

1-foreman, 1-truck, 1-Power saw, 2-men { Sawing & hauling Scrap lumber to rubbish piles in puddle Core area. for burning.

Note - Rock pocket at Sta - N33+4 to N33+8 elev. 592± to 594± 8" deep, chipped out and plastered.

R. W. Carter
INSPECTOR

MARCH-18-

Placed concrete in Core Wall — lifts

N3880 to N3900 to elev. 622.2 — 6-ft

N 3880 to N 3872 to elev. 616 — 6 ft

N 3872 to N 3864 to elev. 616 — 6 ft.

8:A.M. to 11:A.M.

26 - 13/16"Ø - 32'-0"

30 - 7/8"Ø - 6'-0"

54-ft. copper

Equipment: 1-mixing plant
2-Transit mix trucks } 3-hrs.
Steel & wood chutes }

Labor: One foreman, 1-steel man, 3-men } Placing concrete & Bldg. chutes 4-hrs. Core Wall forms 4 hrs.

1-mixer man, 3-men } Mixing plant crew 4-hrs. Setting grout pipe 4-hrs.

2-Transit mix drivers } 3-hrs.

3-Carpenters } Core Wall forms. 8-hrs.

Mix: 5-SKS-Cement
970# Sand
880# 1½" Rock
736# - ¾" Rock
25-gals H20

39-Batches @ 5 SKS = 195
2-Batches grout = 10

205 SKS. Cement

Note: Truck driver dumped ½ load of ¾" rock in sand bin which was compensated for in the mix for 6-batches.

1-foreman
1-Compressor, 2-drills, 4-men } Drilling grout holes in Core trench-South Embank.

1-Cement finisher, 1-helper } Pointing cone holes & patching conc. in Core Wall

1-dragline & Crew, 1-mucker } excavating for outlet tower.

650-SKS. Cleaned-

MR. WOOD told me at 11:20 A.M. that he had received, this morning by telephone, approval of Core trench excavation to N3234 from N3276 - R.W.C.

Cleaned & measured grout holes and set grout pipe in Core Wall

STATION	Depth of hole	Length of 2" pipe
Sta. N3271 W	25'-6"	21'-0" +8 +5
" N3265 E	25'-0"	21'-0" +7 +5
N3260 W	25'-0"	18'-0" +7
N3255 E	25'-0"	21'-0" +6
N3250 W	25'-0"	21'-0"
N3245 E	22'-0" Drill broke off at 22'-0"	18'-0" +5
N3240 W	26'-0"	21'-0"
N3235 E	26'-0"	21'-0"

R. W. Carter
Inspector

Sunday - MARCH 19, 1933.

1 - foreman
1 - #11 shovel
2 - Trucks & drivers
1 - shovel operator
1 - " oiler
3 - men
} Excavating on road to spillway entrance - Excavated material dumped overside of road.

#9 - Shovel & Crew
3 - Trucks & drivers
} 6 - hrs

Rock delivered to Rock embankment east side of dam from N. Slope Spillway

Time -	Estimated NET Yardage -	Truck #
7:22	2	26
7:32	3	20
7:34	4	13
7:40	3	26
7:45	3	20
7:56	3	20
8:08	2	13
8:13	3	26
8:34	2½	26
8:43	3½	20
8:47	2	13
8:56	3	13
9:03	4	13
9:09	3	13
9:13	4	20
9:19	4	26
9:22	3	20
9:30	3	20
9:50	2	26
1:45	2	44-5

Dirt only hauled after 9:50 A.M.

Not incl. FROM Road to spillway entrance.

1 - foreman
3 - men
} stripping core wall forms and cleanout core trench on South Abutment

1 - foreman
4 - men
1 - Compressor
1 - drill
} drilling grout holes in Core trench - South abutment. 4-hrs. 4-hrs. Tower excav. drilling only.

1 - foreman
3 - men
} Work on air line from MAIN Compressor Plant to Spillway

MONDAY - MARCH 20 -

Placed concrete in Core Wall:

Sta. N3288 to N3234 to elev - 604.0
7 A.M. to 1 P.M.

54 Ft. Copper
18 - 7/8" ø - 6'-0"
20 - 13/16" ø - 8'-0"
2 - 13/16" ø - 16'-0"
1 - Steel column.

MIX: 7 - sacks cement
Sand
#1½" Rock
#¾" Rock

Equipment: 1 - mixing plant
2 - Transit mix trucks
Chutes

Labor: 1 - Foreman } Placing concrete
1 - Steel man }
3 - men }
2 - Transit mix truck drivers
1 - mixerman } MIXING PLANT CREW
3 - men }

1 - cement finisher } Pointing cone holes
1 - helper - also wetting conc. } in Core Wall Concrete
4 - Carpenters } Core Wall forms.

1 - Set of Three test cylinders taken at 9 A.M. - from concrete - Sta. N 3234 to N3276 - Rock to elev - 604.0
7 - sacks Cement
1300 # Sand
1290 # 1½ Rock
1030 # ¾" Rock
34 - gals H_2O

Sta. N3288 to N3234 -
93 Batches @ 7 - SKS = 651
1 - " GROUT = 5
Sta. N3864 to N3856 -
" N3856 to N3848
8 Batches Conc. @ 7 SKS = 56
2 - Grout @ 5 - SKS - = 10

722 SKS.

1:10 P.M. to 2:30 P.M.
Sta. N3848 to N3856 to elev. 610.0
" N3856 to N3864 to elev. 620.0

4 Ft. Copper
24 - 13/16" ø - 16'-0"
40 - 13/16" ø - 8'-0"
10 - 7/8" ø - 15'-0"
10 - 7/8" ø - 5'-0"

Cleaned 1000 - SKS.

Note: Considerable overbreak from sta. N 3276 to N3234 was filled with concrete to provide concrete contact with at least 6 - ft of the sidewalls of Core trench as required by Res. Engineer.

MARCH - 20

2 - men { Cleaning South abutment
Puddle Core area.

1 - foreman
3 - men
1 - Compressor { Drilling holes for shooting in tower excavation

NOTE: Cement warehouse empty of cement at 4:P.M.

Tuesday - MARCH 21 - 1933

Placed concrete in Core Wall.
12:30 P.M. to 4:10 P.M.

Stn. N3234 to N3288 to elev - 610 ±

34 - 7/8" Ø - 6'-0"
28 - 1 3/16" Ø - 16'-0"
60 - Ft. Copper - NOTE { Copper water stop bored in against rock to elev. 604 ±

2 - Steel Columns.

Mix:
7 sks. Cement
1300# Sand
1290# - 1½" Rock
1030# - 3/4" Rock
} 58 Batches Conc. @ 7 sks = 406
3 " Grout @ 5 sks. = 15
421 - sks

15 - sks. Recovered from cleaning

Equipment: 1 - mixing plant
2 - Transit mix trucks
wooden chutes -

Labor: 1 - foreman { 4½ - hrs. on forms and steel
1 - steel man { 3½ - hrs. concrete
3 - men

Mixing Plant Crew:
1 - mixerman { Stripping forms - Core Wall 4½ hrs.
2 - men { Concrete 3½ - hrs
1 - man { cleaning - south embankment
Puddle Core area - 4½ - hrs
Concrete - 3½ hrs

2 - Transit mix truck drivers

4 - men { Cleaning puddle Core area South embankment

1 - foreman { Setting steel in Core Wall - 2 hrs
2 men { Pipe lines - 6 - hrs
1 - truck

3-22-33

1-cement finisher { Pointing core holes & Patchi
Core Wall
3-5 Ks. cement To-day

4 Carpenters { Core wall forms.

1- helper { Core wall forms and
Wetting Concrete.

.7 Sacks Cement
1300 Sand
1290 1½ gravel
1030 ¾ "
38 gal -

Force & equipment taken by M.R. Newcomb
for MARCH-22-1933- No Concrete Work

55

Thursday MARCH-23-1933.

1- Carp. foreman
1- steelman
2- Carpenters
5 men
{ Bldg. Core Wall forms and stripping forms.

2- men { Stripping vegetation - South embankment - Puddle core Area.

March 14th 1933. Core Wall Core.

7:30 A.M. to 4:30 P.M. N3256 to N 3288 El. 610-618
(3280-3288 to Top Grade)
17 Batches Conc 7 sacks 119
2 " Grout 5 Sacks 10
129 Sax
Mx Plan - 2 Trans Mx Trucks, Chutes
M.R. Newcomb Inspector
Carp Foreman, Steel Man 3 Laborers Place
2 Trans Mx Tr Drivers
3 Men Mix Plant.

8 A.M. to 11:30 N 3864 to N 3900 to elev. 624°
No Inspector
14-batches concrete @ 7 Sks. = 98
1-batch Grout - @ 5 Sks. = 5
103 - Sks. Cement

1:30 P.M. to 4:P.M. N 3256 to N 3234 - to elev - 616°
Carter Inspector
39 Batches concrete @ 7 Sks. = 273
2 " Grout @ 5 Sks = 10
283 - Sks

Materials (Steel & Copper) - MARCH-23-

N3288 to N3256
32 - 7/8"ϕ - 8' ✓
34 - 13/16"ϕ - 32'
40 - ft. copper

N 3256 - to N3234
10 - 7/8"ϕ - 6'
2 - 13/16"ϕ - 8" ✓
1 - steel column
30 - ft. copper

N 3864 to N3900
4 - 13/16"ϕ - 36'-0"
24 - 13/16"ϕ - 8'-0" ✓
10 - 7/8" ϕ - 8'-0"
32 - 7/8" ϕ - 2'-0"
30 - ft. copper

Cleaned 500 cement sacks

Mix used to-day:
7 - Sks. Cement
1300 - # Sand
1290 # 1½" Rock
1030 # - 3/4" Rock
36 - Gals. H_2O
to 38 - " "

✓ 2 - Carpenters } Core Wall forms
2 - helpers }

✓ 1 - dragline & crew } excavating for outlet
1 - foreman } tower
3 - men }

3-28-33

NOTE: The cement used in the concrete to-day had not been tested for acceptance. MR. SAVAGE gave contractor permission to use the cement at his (contractor's) risk and responsibility.

Sat. March-25- Force & equipment reported by MR. Newcomb - No Concrete

R. W. Carter
Inspector

Sunday - March 26 -

6 hrs { 1 - #10 dragline + Crew — excavating Core trench & stripping adjacent to core trench -
1 - truck

23 - yds. rock net from stripping operations deposited in Rock embankment measured on ground before hauling.

1 - foreman
2 - men
1 - small truck — General work on pipe lines and hauling grout equipment

1 road bridge
timber & launching
New barge

1 - foreman
1 - Steel man
1 - Carpenter
5 - men — Bldg. bridge over Core trench - for roadway - N3900 to N3925

3 - Carpenters
4 - hrs. — Making bulkhead to hold dirt from puddle Core area from Core trench excav. North Abutment

Grouting reported in book #381

MONDAY - MARCH - 27 - 1933

Placed concrete in Core Wall:

N3896 to N3872 - to elev. 630±
9:A.M. to 10:A.M.

24 - 13/16" ∅ - 24' 0"
30 - 7/8" ∅ - 6'
22 - ft. Copper

10 - Batches Concrete
2 - Grout
80 - Sk. Cement

1 - batch came too dry - sent it back to mixing plant and added - 1 - batch Grout

N3256 to N3280 - elev 618 - 624±
10:05 A.M. to 11:A.M.

24 - 13/16" ∅ - 24' - 0"
30 - 7/8" ∅ - 6' 0"
22 - ft. Copper

8 - Batches Concrete
1 - Batch Grout
61 - Sks. Cement

1 - batch wasted included in above - Bucket dumped losing concrete

Mix: 7 - Sks. Cement
1300# Sand
1290# 1½" Rock
1030# ¾" Rock
37 Gals. H2O

1 - mixing plant
2 - Transit mix trucks + drivers - 2 - hrs.
1 - dragline as crane - 1 - hr. on concrete

1 - foreman
3 - men
1 - Steel man — Placing concrete - 2 - hrs. Core trench excav. 6 - hrs.

1 - mixer man
2 - men — Mixing plant - 2 - hrs. Core Wall - Cleanup and stripping forms - 2 hrs.

MARCH-27-

1-#10 dragline
1-Truck
1-dragline operator } Core trench excavation
1-" " oiler } South embankment-7-hrs.
1-Truck driver- 7-hrs. } Concrete - 1-hr.

1-Compressor } excavating Core trench
1-man with Jackhammer } North embankment

1-Cement Finisher { excavating core trench North abutment

1-Carp. helper { 4-hrs. wetting concrete and stripping core wall forms 4-hrs.

1-man from mixing plant { Cleanup loose earth adjacent to Core Wall North Abutment - 4-hrs

1-foreman } 8-hrs { Air pipe line from
2-men } 8-hrs { Main compressor plant
1-man from mixing plant } 4½ hrs { to spillway area - New
1-Carp. helper } 4½ hrs { line - 4"

✓

MARCH-28-

No concrete to-day.

1-Dragline & Crew } excavating core
1-Truck & driver } trench - south
4-men } embankment
1-Compressor
1-driller

7⁵⁵ AM - 2½ cu. yds. net dumped in rock embankment
8¹⁰ " " 2 " "
8⁴⁰ " " 1½ " "

Recorded tot 359 Jr 8

1-compressor } Core trench excav. North
1-driller } abutment
1-mucker

1-Carp. foreman } Stripping Core Wall
1-steel man } forms
1-helper

1-Carpenter { Bldg. cabinet for contractor's office

1-cement finisher { Pointing cone holes in Core wall

1-foreman } Laying 4" air pipe line
2-men } to spillway area

✓

R. W. Carter
Inspector

Wednesday- MARCH-29-1933-
140-concrete to-day

1-dragline & Crew
1-truck & driver
4 muckers
2- drillers
2-compressors
} Core trench excavation both abutments

7:42— 1½ cu. yds. net- Core trench to Rock Embankment.
Recorded as 359 ✓ XTM

1-Cement finisher { Pointing Core holes in Core wall.

1-foreman
1-Steel man
2-Carp. helpers
} stripping core wall forms, 4 hrs
Timbering Core trench & excav. Core trench- 4 hrs.

1-foreman
2-men
} Haying 4"- air pipe line from Compressor plant to spillway area.

2-electrician helpers 4-hrs { Excavating to build shed over transformers on road near Core wall.

Thursday- MARCH-30-1933.

140 CONCRETE TO-DAY.

✓ 1-#10-dragline & Crew { Bldg dike across river bed east of Tunnel entrance Portal

1-foreman
2-drillers
3-men
} excavating Core trench

1-man { Cleaning South abutment Puddle Core area.

✓ 1-Steel Man
7-men
} MOVING Reinforcing steel from spoil dump west of damside

1-foreman
2-men
1-truck
} Hauling lumber and general work over job.

✓ 1-Carpenter { Sawing wedges and sharpening band saw.

Spillway rock to Rock embankment
12-35 #39 — 2½ cu. yds. net Recorded as 359 XTM

R. W. Carter
Inspector

FRIDAY MARCH 31 1933

1-#10-dragline & Crew — Core trench excavation.
5½-hrs. 2½-hrs idle

6 muckers
2-drillers
2-Compressors

All material excavated was deposited near puddle core area above water level, to be removed by dragline later. No truck available

1-Tractor & McMILLAN with driver — Finishing roadway over dike east of entrance Portal 4-hrs.

1-Carp. foreman
1-" helper
1-steel man
— shoring walls of core trench - North Abutment

Sat. April-1st Reported by Mr. Newcomb
Sun. " 2nd " " ?

MONDAY APRIL 3-1933

NO concrete to-day.

3-drillers
1-compressor
— Drilling grout holes in Core trench - South embankment

1-dragline & Crew
1-truck & driver
— Core trench excavation — 3-hrs

5-men — Core Trench Excav.

1-Carpenter foreman
1-Carpenter
1-helper
— Core wall forms.

Tuesday - April-4-1933

1 - compressor
1 - water liner
drills
3 men
} Drilling grout holes in Core trench

1 - mixerman
2 - laborers
} Blowing & cleaning grout holes & setting grout pipe - 2 hrs.
Cleanup - 3 hrs. ~~Conc.~~

Sta.	Depth of hole -	Length of pipe
N3230W	27'-0"	21'-0"
N3225E	26'-0"	20'-0"
N3220W	26'-0"	21'-0"
N3215W	25'-0"	20'-0"

1 - dragline & Crew
1 - truck & driver
} 4 hrs. stripping embankment in puddle Core area - SE¼
4 hrs. raising dike east of entrance portal
2 - cu. yds. solid rock dumped into rock embankment

Placed concrete

Sta. N3234 to N3256 - elev. 616° to 622°

Sta. N3234 to N3218 Rock to elev. 622°

2 - 13/16" ϕ - 16'-0"
22 - 13/16" ϕ - 8'-0"
14 - 7/8" ϕ - 6'-0"
1 - Steel Column. 38-ft - 12" Copper
12-ft-6" wide copper brazed to horiz. copper ruined by excav.

1 - Foreman
2 Carpenter
2 - Carpenter helpers
} Core wall forms - Concrete - 4½ hrs

1 - steel man
1 helper
} Core wall steel + Bldg. chutes - 4 hrs. Concrete.

2 - laborers
} cleaning & washing core trench to receive concrete

2 - Transitmix drivers -
1 - mixing plant
2 - Transit mix trucks
Steel & wood chutes
} 1 - mixerman, 3 - men, mixing plant - 3 hrs

Mix: 12:30 P.M. to 3:30 P.M.

7 - Sks. Cement
1300# Sand
1290# - 1½" Rock
1030# - ¾" Rock
} 43 - Batches @ 7 - Sks - = 301
2 - grout - @ 5 - Sks 10
311 - Sks. Cement

3 - batches @ 6 - Sks - 18 - Sks.
to contractor's machine shop
1 - batch @ 4 - Sks -
Total 22 - Sks.
for contractor's use:

Wednesday- April -5-1933-

1-mixerman, 1-laborer, 1-compressor { cleaning grout holes and setting 2" grout pipe. -2-hrs Core trench cleanup -3-hrs

Sta.	Depth of hole -	Length of pipe
N3210 W	26'-0"	21'-0"
N3205 E	25'-6"	20'-0"
N3200 W	27'-0"	20'-0"
N3194 E	26'-6"	20'-0"
N3188 W	25'-0"	18'-0"

1. Carp. foreman, 3 Carpenters, 2- helpers { Core wall Forms

1- Steel man, 2 - laborers { Core wall steel - 5 hrs & Placing conc. chutes

One of these men Joe Galvin, was hit on head & face by falling 2"x4"- rendering him unconscious for 15-minutes broken nose resulted- 7:50 A.M. - time of accident

3-drillers, 1-Compressor, 1-water line & drills { Drilling grout holes in Core trench - North abutment

1- laborer { Core trench cleanup

1- laborer { Clean up loose dirt from Puddle Core area - 5-hrs

N3256 to N3205 - to elev. 628'-

2- steel columns.
26- 1 3/16" ø 16'-0"
38- 7/8" ø - 6'-0"
55 - ft. copper

start 1:P.M. - 3:45 P.M.

1 steel man, 3 men { Placing concrete

1-mixerman, 3-men { mixing plant

2- Transit mix drivers

1-mixing plant
2- Transit mix trucks.

mix = 7-sks. cement
1400# sand
1190 # 1 1/2" Rock
1030# 3/4" Rock
36-gals H2O
{ Imported - 3/4" rock very clean. 12-Batches = 84-sks.

7-sks. cement
1300# sand
1290# 1 1/2" Rock
1030# 3/4" Rock
{ 31 - Batches = 217
2- Batches grout = 10

311-sks.

750-sks. Cleaned.

Thursday- April 6- 1933

1- mixer man
2- men
1- Compressor
{ Blowing & Cleaning grout holes and setting grout pipe. 3- hrs.

Sta.	Depth of hole	Length of pipe
N3905 W	26'-0"	21'-0" + 21'-0"
N3910 E	27'-0"	21'-0" + 21'-0"
N3915 W	26'-0"	21'-0"
N3920 E	26'-0"	21'-0"
N3925 W	25'-0"	21'-0"
N3930 E	23'-6"	20'-0"

1- foreman { 4½- hrs. core wall forms
hrs. concrete
3 carpenters
2- helpers
{ Core wall forms.

1- steel man
3- men
{ Clean core trench and set up chutes for concrete 4½ hrs.

1- man stripping core wall forms.

Placed concrete in Core trench

Sta. N3900 to N3931 - rock to elev. 624.0

Start- 10:30- finish - 3: P.M.

Mix: 2- sks. Cement
1300 # Sand
1290 # 1½" Rock
1030 # 3½" Rock
37- gals. #20
{ 82- Batches = 574 SKS.
1- Batch Grout 5
579 SKS
32- ft. Copper

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

1- foreman
1- steel man
3- laborers
{ Placing concrete

2- Transit mix drivers - 3½- hrs

1- mixing plant
2- Transit mix trucks
{ 3½- hrs.

1- set of 3- Test Cylinders - 1: P.M.

80- sacks cement left in warehouse 3: P.M.

31- ft- Copper water stop

6'- ft- 6" copper used to repair water- stop at St. N3900 - Elev. 6 ## x 620 - ruined by blasting in excav.

1300- SKS. Cleaned
18- SKS. Cement recovered.

FRIDAY - April - 7 - 1933

N3224 to N 3186 to elev. 634°
9:A:M. to 11:A:M.

1 - steel column
44 - ft. copper
10 - 7/8" ϕ - 6'-0"
4 - 13/16" ϕ - 8'-0"

37 - batches @ 7 sks = 259
1 Grout @ 5 sks = 5
264 sks

Mix: 7 sks. Cement
1300# Sand
1290# 1½" Rock
1030# ¾" Rock

N3896 - to 3931 - elev. 624° to 630°
11:A:M to 2:P.M.
Box form left in concrete for column at sta. N3900 elev. 628
35 - ft. Copper

47 - Batches @ 7 sks = 329
2 Grout @ 10 sks = 10
339 sks

1 - mixing plant
2 - Transit mix trucks

Total sks Today - 603

1 - foreman { Placing concrete - 4 hrs.
4 - men { cleaning laitance off concrete + Strip forms - 4 hrs.

1 - mixerman { MIXING Plant crew
3 men { 5 - hrs - Strip forms - 3 - hrs

3 - Carpenters { Core wall forms
2 - Carp. helper { Core wall forms
1 - Steelman { + steel

750 cement sacks cleaned

SAT April - 8 - 1933 -

Placed concrete in Core Wall:

N3272 to N3256 - to elev. 630°
20 - 9/16" ϕ - 16'-0
20 - 7/8" ϕ - 4'-6"

N3256 to N3224 to elev. 636°
32 - 13/16" ϕ - 32'-0"
30 - 7/8" ϕ - 7'-0"
24 - ft. copper

N3208 to N.3185 - to elev - 640
N3224 - N3208 to elev 638°
3 - steel columns
24 - 13/16" ϕ - 8'-0" 57
40 - 7/8" ϕ - 6'-0" 3 -
45 ft. copper

Mix: 7 sks. Cement
1300# Sand
1290# - 1½" Rock
1030# - ¾" Rock
39 gals. H2O

{ 57 - Batches @ 7 sks = 399
{ 3 - grout @ 5 sks. 15
414 sks

500 - sks. Cleaned

Equipment:

1 - mixing plant
2 - Transit mix trucks.
#10 - drag line

4-8-33

Labor:

1-foreman, 4-men { 4½-hrs. strip forms & clean out for concrete
5-hrs. concrete.

2-Transit mix drivers - 5-hrs.

3-Carpenters, 2-helpers { 8-hrs. core wall forms.

1-steel man { Core wall steel 8-hrs.

1-mixer man, 3-men { 4½-hrs. stripping forms
5-hrs. concrete.

1-dragline operator { 5-hrs. on
1 " " oiler { Concrete.

Sunday - April - 9 - 1933

Pressure grouting - Core trench.

Equipment:
1 - Portable - mixer
1 - Portable - compressor
1 - Rix - 7 cu. ft. pressure grout tank
hose.

Labor: 1 - mixer man
1 - pressure tank man
2 - hose men

Batches	Time.	Sks. Cmt.	Cu. Ft. grout
1	9:38	5	7
1	9:52	5	7
1	10:20	5	7
		15 - Sacks cement	21 - cu. ft. grout

Blowing holes - 9:00 A.M. 9:37

10:40 - 10:48
N3930 E
3-cu.ft.

10:30 - 10:38
N3925 W
3-cu.ft.

10:17 - 10:26
N3920 E
2-cu.ft.

10:03 - 10:18
N3915 W
5-cu.ft

9:50 - 9:59
N3910 E
3-cu.ft

9:40 A.M. - 9:48
N3905 W
5-cu.ft.

SUNDAY - April-9-

Pressure grouting continued

/

Batches	Time	Sks. Cement	Cu. ft. Grout
1-	1:40 P.M.	5	7
1	1:54	5	7
1	2:21	5	7
1	3:10	5	8
		20-5ks Cement	29-cu.ft.

N

P.M.
1:44 - 1:50
N3230W ⊗
5-cu.ft

⊗ N3225E 1:52 - 2:P.M
4-cu.ft

P.M.
2:10 - 2:15
N3220W ⊗
3-cu.ft.

⊗ N3215E 2:18 - 2:28
4-cu.ft.

2:30 - 2:36
N3210W ⊗
3-cu.ft.

⊗ N3205E 2:37 - 2:42
2-cu.ft.

3:32 - 3:40
N3200W ⊗
2-cu.ft.

⊗ N3194E P.M. 3:25 - 3:30
2-cu.ft.

N3188W ⊗ - 3:12 P.M. - 3:18
4-cu.ft.

Blowing holes - P.M. 12:55 - to 1:40 P.M. - 115#
2:45 - to 3:10 P.M.

Sunday April-9-1933

No concrete to-day.

2-5-hrs
2-8-hrs. → 1-foreman, 4-carpenters, 2-helpers { Core wall forms

1-steel man { Core wall steel

3-laborers { stripping core wall forms.

General labor + equipment

1-#10 dragline & Crew, 1-truck & driver { Bldg dike, east of tunnel entrance portal

3-laborers { stripping loose dirt from SE¼ NW¼ of puddle core also

1-foreman, 1-truck, 2-men { Hauling pipe & moving equipment

MONDAY- April-10-1933

N3896 to N3904- to elev-634.0

N3904 to N3931- elev-630.0 to to 636.0

11:A.M. to 1:P.M.- No Time out for lunch-

1-steel column

38-ft. Copper

10- 7/8"ø - 4'-0"

2- 13/16"ø - 8'-0"

16- 1 3/16ø - 3'-0"

Mix: 7-sks. Cement
1300# Sand
1290#- 1½" Rock
1030#- ¾" Rock.
37-guls H_2O

37-batches @ 7-sks. = 259
2- grout @ 5-sks. = 10
269-sks.

1-mixing plant
2-Transit mix trucks. & drivers { 1½ hrs.

1-foreman, 1-steelman, 3-men { 2-hrs. concrete, 4 hrs. clean out + forms

1-mixerman, 3-men { 1½ hrs. concrete, 4-hrs. stripping vegetation south embankment SE¼

4-carpenters, 2-helpers { Core wall forms 4½ hrs.

April-11- No concrete work

April-12- " " "

April-13- " " "

R. W. Carter
Off duty- 12: NOON
April 13-1933

April-14th to 23rd Inclusive
Off duty- No Dam work.
RWC.

April-24-1933-

1-shovel #7
2-Trucks
1-compressor
1-shovel operator
1- " oiler
2-Truck drivers
1-driller
3-men
} Stripping- SE¼ South abutment

1-Compressor
1-Shovel #11
2-Trucks
1-shovel operator
1- " oiler
1-dump man
2-Trucks drivers
1-driller
} Bldg road- North abutment- NE¼

1-Shovel #8
1-compressor
1-shovel operator
1- " oiler
1-driller
} Bldg Road- North abutment- NW¼

1-Carp-foreman
1-truck+driver
} Moving concrete chutes, and mixer and loose form lumber from South abutment near core wall

Tuesday - April - 25 -

Same Crew as yesterday except:

1 - compressor
1 - compressorman
1 - powderman
4 - drillers
1 - foreman

} Drilling & Shooting holes in rocks numbered outside Spillway Excav - North Bank.

Start 12:30 P.M.

Wednesday - April - 26 - 1933

1 - Carp. foreman -
1 - Carpenter
1 - light truck & driver
3 - men

} Installing pump & pipe line at east toe of Dam for sluicing top surface of dam.

1 - welder

2 - electricians { Work on power line across dam.

McCarter
Inspector
Shovers

Thursday April-27-1933.

1- foreman
1- Carpenter
1- steel man
2- Carp. helpers
} Bldg. Core Wall forms. South embankment.

1- compressor
1- driller
} drilling rock for core trench excavation.

Friday - April-28-1933

1- Carpenter foreman
1- Carpenter
1- steel man
} Core Wall forms.

1- #7 shovel & Crew
1- compressor
1- driller
} Core trench excav. South abutment

4- men
} Core trench excavation North abutment

All this Crew laid of at 8:A:M- on account of rain.

~~April~~ MAY - 1st

1" □ - 33'	1" □ - 36	3/4" □ - 40
39 - B	39 - B	165
106 - S	42 - S	137
26 - S	110 - B	127
39 -	6 - B	4
30	197 ✓	433
50		
54		
49		
393 ✓		

13/16" ∅ - 40'

323

105
39
315
315

33
12
66
396

Steel count of stock - on hand.

1" ∅ - 34 ✓	1" □ - 22	1" □ - 16	5/8" ∅ - 22'
47 ✓	6	8 ✓	977 ✓
	6		
	54		
	24		
	90 ✓		

13/16" ∅ - 16 -	13/16 ∅ - 8 -	13/16" ∅ - 12
40	17	15
	21	
	38	

ESTIMATED: 1500 - short ends - scrap.
Assorted sizes

April 29-30th Mid inwork rain

12 - 1" □ - 33' = 396 - ft x 3.44# wt

70 - 1" □ 36' = 2520 - ft. x 3.44# wt

105 - 1" □ - 33' = 3465 - ft x 3.44# wt.

2 - 7/8" ∅ = 12 - ft = 24 - ft x 2.07

104 - Tons -

Tuesday MAY-2-1933.

Placed concrete in Core Wall

~~St. N3224 to N3248 to elev. 642.0~~

~~St. N3224 to N3192 to elev. 649.0~~

22 - 13/16" ϕ 24' } N 3224 to N 3248
30 - 7/8" ϕ 6'-0"
~~16~~ 22 ft. copper

~~20 - 13/16" ϕ 32'-0"~~ } ~~N 3224 to N 3192~~
~~14 - 13/16" ϕ 16'-0"~~
~~40 - 7/8" ϕ 7'-0"~~
~~40 - ft. Copper~~

MIX: 7-sks Cement } 8-batches concrete
1300# Sand
1290# - 1½" Rock } 1-batch grout @ 5-sks.
1030# - ¾" Rock
36-gals. H_2O 61-sks. cement

Equipment - 1-mixing plant
1-#10-dragline
2-Transitmix trucks

Labor: 1- Carpenter foreman } 4½-hrs. Core wall forms.
1- helper
1- foreman.
1- steelman } Placing Conc. 12:30 P.M. to 2-hrs - Forms 1½-hrs.
2-men
1- Dragline operator
1- " oiler
2- Transitmix drivers - 1½-hrs.
1- mixerman } Mixing plant - 2-hrs
3- men.
1- compressor } Drilling rock for Core trench
2- drillers } excav. South abutment.
1- powderman

R. W. Carter
Inspector

Wednesday MAY-3-1933.

Placed concrete in Core wall.

Sta. N3224 To N3192 - to elev. 647.0

40-ft. Copper — 7:A.M. to 7:30 A.M. — 12:30-P.M. to 1:P.M.

22-13/16" ℄ - 24'-0"
30-7/8" ℄ - 6'-0"
22-7/8" ℄ - 7'-0"

N3224 to N3240 - to elev. 648.0

20-7/8" ℄ - 5'-0"
20-13/16" ℄ - 16'-0"

No copper.

450-sks. cleaned

MIX: 7-sacks Cement
1390#-Sand
1200#-1½" Rock
1030#-¾" Rock
36-gals. H_2O

29-batches concrete
2- " Grout @ 3-sks.
213-sks. Cement

1-cu.yd. wasted included in the above.

~~1~~ cu.yd. wasted bucket dumped itself - 2:20 P.M.
one other batch (small)

Equipment: 1-mixing plant

2-Transitmix trucks

1-#10-dragline.

Labor: 1-mixerman, 3-men — mixing plant crew 3-hrs.

1-foreman, 3-men, 1-dragline operator, 1- " " oiler — Placing concrete - 3-hrs. Stripping forms 5-hrs. Concrete - 3-hrs.

2-transitmixdrivers — 3-hrs.

2-carpenters, 1-steelman, 1-carp.helper — Core wall forms 8-hrs.

1-mixerman — Corewall forms - 5-hrs.

2-drillers, 1-powderman, 1-compressor — drilling & shooting rock in Core trench excav.

~~2-cu.yds Concrete from Core trench excav.~~

~~North embankment to rock embankment.~~

Thursday MAY 4-1933

Placed concrete in Core Wall:

Sta. N3192 to N3224 to elev. 654.9

20-13/16"ϕ- 32:0" 7:AM- to 9:AM.
20-13/16"ϕ 7:0"
40-7/8"ϕ- 5:6"
30-ft. copper

Equipment: 1-mixing plant
2-Transitmix trucks
1-#10-Dragline

Labor: 1-dragline operator
1-" " oiler
2-Transit mix drivers } 2-hrs.

1-mixerman } mixing plant crew
3-men } -2-hrs.

1-foreman } Placing conc. 2-hrs
1-steelman } stripping forms-6-hrs
3-men }

3-carpenters } Core wall forms
1-helper } 8-hrs.

Mix: 7-sacks cement
1390#-Sand
1200#-1½" Rock
1030#-¾" Rock
36-gals H2O } 11-7-Sk. batches
1-4-sk. batch
1-batch grout

86-Sks. Cement

1-compressor
2-Jackhammers
2-drillers
1-powderman } Drilling & shooting rock in core trench excav.

Friday - May - 5 - 1933

#10 - dragline { Core trench excav.
2 - trucks - 1-4 hrs { 6 - hrs.

1-4 hrs → 2 - truck drivers { Core trench excav
1 - dragline operator { 6 - hrs.
1 - dragline oiler {
2 - drillers { 8 - hrs
3 men
1 - powderman { 6 - hrs.
2 - men

#31 - 7:10 5 - yds. rock to rock embankm't
#31 - 7:20 5 - yds. " " "
#42 - 7:25 5
~~#13 - 4~~
#42 - 2:30 P.M. - 5 - yds.
#42 - 2:45 " 4 "
#42 - 3:30 " 4
#42 - 3:55 " 3

31 - cu. yds. Rock

N 3880 to N 3896 to elev. 636 ±
11:A:M-To
10 - Ft copper
20 - 13/16" ϕ 16'-0"
20 - 7/8" - 5'-0"

N 3192 to N 3208 - to elev. 662 ±
N 3208 to N 3216 to elev. 658 ±
14 - 13/16" ϕ - 24'-0"
20 - 7/8" ϕ - 9'-0"
10 - 7/8" ϕ - 3'-6"
10 - Ft. copper

1 - mixing plant { 2 hrs
1 - transit mix trucks {
#10 - dragline.

MIX:
7 - Sks. cement
1890 # Sand
1200 # 1½ Rock
1030 # - 3/4" Rock
39 - gals. H_2O
13 - batches Conc.
2 - Grout
10 - Sks. Cement
½ - batch wasted
Too much mixed.

1 - dragline operator { 2 - hrs.
1 - " " oiler {

1 - mixerman { mixing plant { 2 - hrs.
2 - men

1 - foreman { Concrete - 2 - hrs.
1 - steelman { Strip forms - 6 - hrs
3 - laborers {
1 - Transit mix driver

2 - Carpenters - 2 - hrs.
1 - Carp. 4½ - hrs.
1 - mixerman - 6 - hrs. Core wall forms + Wetting Conc.

R. W. Carter
Inspector

SAT. MAY-6-1933.

1-#10-dragline
1-#42-truck
4½-hrs— 1-dragline operator
1- " " oiler
2 drillers
1-powderman
3 muckers
} Core trench excav. 8-hrs.

3-muckers } Core trench excav. North Abutment 4-hrs.

6-hrs. Bridge - 2-hrs strip Core wall forms.
1-Carp. foreman
1-Carpenter
1-steel man
1-mixerman
3-laborers
} Bldg. bridge for road over cove trench excav. North Abutment.
} 4-hrs on bridge

#42	7:9 A.M.	3-yds
"		4-
"		1
"	9:50 A.M.	2
"	1:15 P.M.	4
"	2:00 P.M.	2
"	3:00 P.M.	4

Sunday - March - 19 -

7:22 -	2 - yds.	# 26
7:32	3 - yds.	#20
7:34	4 - yds -	#13
7:40	3 - yds -	# 26
7:45	3 - yds -	#20
7:56	3 - yds -	#20
8:08	2 - yds -	#13
8:13	3 - yds -	#26
8:34	2½ yds.	#26
8:43	3 -	20
8:47	2	13
8:56	3	13
9:03	4	13
9:09	3	26
9:13	4	13
	4	20
9:19		
9:22	3	26
9:30	3	20
9:50	2	26
1:45	2	44 - From Road to Spillway entrance -

Recorded vol 359 pg ...

05
10
15
20
25
30

3 - 28 - 33

8:17	#5	4 cu. yds.	✓
~~8:31~~	~~# 39~~	~~3½ cu. yds.~~	✓ gross
8:45	# 5	3 " "	✓
9:37	# 5	2½ " "	✓
9:45	# 39	3 - " "	✓
12:48 P.M.	# 39	3 cu. yds	✓
12:53 -	# 23	3 - yds - West end Spillway	

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Recorded

1300
4
7)5200
740# 1½ 730# Sand

740#
730
1470
590
2060

38
4
152
20

5
3.25

2.25
8
12.48 4
8
99.60

2.25
3
6.75

218
9
27)432(16
27
16"

98
16
33)04

N3840-E
45W
50E
55W
60E
65W

N3320 to N3288 elev 594° to 599
4-cu. yds.

N3304 to N3308 - elev - 588 - to 591°
1-cu. yd.

Notes

2-9-33- Hole in Crown of tunnel arch - Sta. 1+47

Tunnel Mix.

6 SX cement

1440 ± Sand

1150 - 1½ rock

1030 - ¾" rock

36 gals water.

60
1440
840
240
27) 2520 12
27
93

MARCH-V 30 - Ft. Copper.

14 6 10
840 2

N3230 W
N3225 E
20 W
15 E
10 W
05 E
3200 W
3187 E
3188 W
~~85 E~~
~~80 W~~

Reclaimed Cement Record.

Date	Sacks Cleaned	Cement Recovered
Jan-26	750	No cement weighed
Jan-28	750	14
Feb-1	950	No cement sacked.
Feb-4	550	11
Feb-9	450	0
MARCH 6	2050	11
" 8	500	—
" 10	800	—
" 12	200	9
" 18	650	—
" 20	1000	—
" 21	——	15
" 24	500	—
April-5	750	—
" -6	1300	18
" -7	750	
Feb-3-	11,500 empty cement sacks shipped	
Feb-4-	10,500 " " " "	
MAY-3	450	—

Cement used by Finisher

~~Jan 15~~	~~4~~	~~sacks~~	~~Core Wall~~
" 19	5	"	" "
" 24	8	"	" "
~~" 29~~	~~8~~	"	" "
" 30	5	"	" "
" 31	5	"	Outlet Portal
Feb- 4	1	"	Drain Wells
Feb- 10	1	"	Core Wall
Feb- 22	1	"	Tunnel
MARCH 14	3-	"	Core Wall
MARCH 16	2	"	" "
" 17	4	"	" "
" 21	3	"	" "

3-
N3320
3260
60

57
66
37
43

Grout holes.

N3315 E ✓
N3310 W ✓
N3305 E ✓
N3300 W ✓
N3295 E ✓
N 3290 W ✓
N 3285 W ✓
N 3280 E ✓
N3277 E ← LAST
N 3275 W
N 3270 E
N 3265 W
N 3260 E

9 holes
25'0"

3-yds
5½-yds
43
51-yds

3502 - mould.

64 - 13/16 ϕ 32'
16 - 13/16 ϕ 24
12 - 13/16 ϕ 16'

144
96
96
27) 336) 12½
27
66

12
6
96
6

42 - 7/8

N3271 W
N3265 E
N3260 W
N3255 E
N3250 W
N3245 E
N3240 W
N3235 E

3.5
15
175
35
525

~~2-yd~~

60
84
192
192
192
20
27) 740) 27
54
200
216

16
12
32
16

16
24

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.

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