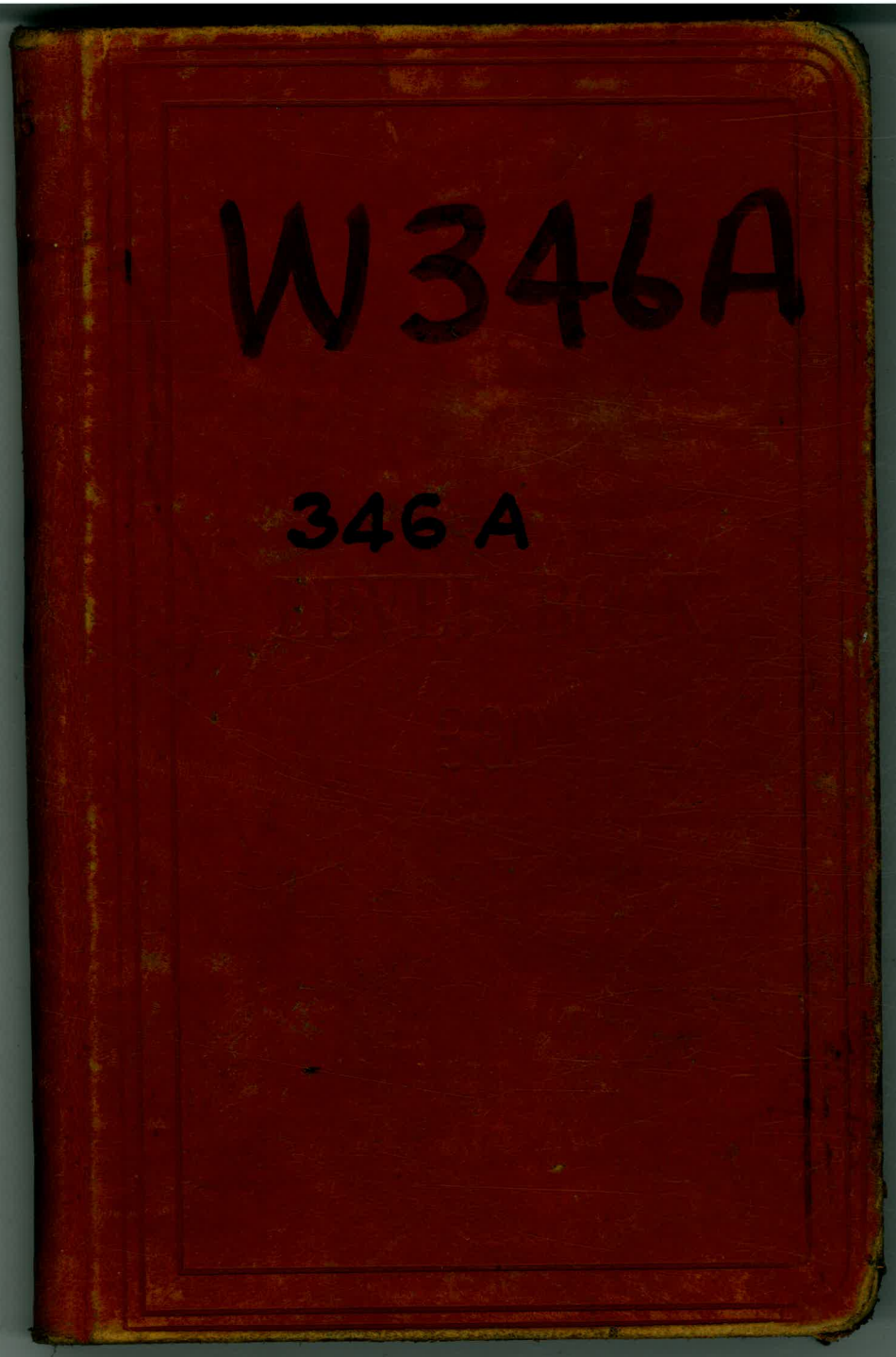
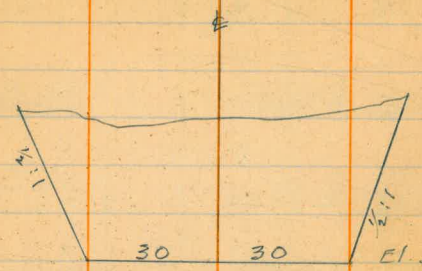

W346A
346 A

Nº 346

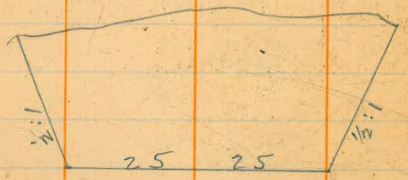
MICROFILMED

INDEX

	Page
Approach - div. tunnel	11
Outlet - div. tunnel	13
Estimate No. 4.	
4-A Item 10. C-1a. Ledge rock in place at entrance portal	17
4-C.-C-1d. Exit Portal + Approach. Excavation. Sections of Ledge Rock Removed	18-19
5-C: D-1b. Entrance Tunnel - Approach and Structure Excavation - Item 11	20-21
5-B: D-1c. Tunnel Exit Structure Exc.	22-23
3. Item No. 2. B-1 Class 1 Embankment between Axis and upst. toe wall	24
6 Item No. 12. - E-3 = Excavation for Cutoff Trench Under Dam	25
November 1932 Estimate	
X Sections between core wall and downstrm Rock Embankment pages 26 to 44	
X sections under upstr. rock emb. for Dec. 1932 Estimate, 45 to 46	
X sections of Dnstr. rock embankment for Jan 1933 Estimate - p 47-51	
X Sections of stripping Item 3 - So. abutm. Feb 1933 - Estimate #10 p. 52-54	
Profile of So. end of core wall for Estimate #10 p 55	
Profile of No. end of core wall for Est #10 p 55	
Cross Sections of Downstream Beach, Blanket & Hyd. Fill p 56-61	



Typical Section Approach to main tunnel.



Typical section Outlet main tunnel.

Yardage Computation for Approach of Main Tunnel

(0+00 = Upstream face of Face Wall or Portal)
(0+50 = Upstream face of Cut Wall.)

Lt — ℄ — Rt

0+50

(C-17.7 / 50) C-18.6 / 39.3 C-18.5 / 30 C-19.8 C-21.7 / 11 C-22.7 / 30 C-23.4 / 41.7

0+75

(C-15.6 / 40) C-17.0 / 38.5 C-17.5 / 30 C-19.6 C-21.5 / 30 C-22.1 / 40 C-21.2 / 40.6 (C-23.7 / 50)

1+00

(C-15.7 / 50) 16.4 / 38.2 16.5 / 30 16.8 / 19 18.5 / 8 19.1 19.7 / 10 17.9 / 20 18.4 / 27 19.1 / 30 21.9 / 41 (23.0 / 50)

1+06

(C-15.7 / 50) 16.4 / 38.2 16.6 / 30 17.4 / 7 19.1 19.2 / 10 17.2 / 16 20.6 / 30 22.2 / 41.1 (23.7 / 50)

1+08

(C-15.2 / 50) 16.4 / 38.2 16.7 / 30 19.1 18.1 / 10 17.1 / 16 20.9 / 30 22.4 / 41.2 (23.9 / 50)

1+25

(C-14.4 / cut 50) 16.0 / 38 16.7 / 30 17.2 / 18 17.1 17.9 / 18 20.4 / 22 21.6 / 30 23.2 / 41.6 (24.2 / 50)

1+28

(C-14 / cut 50) 15.6 / 37.8 16.5 / 30 17.1 / 18 15.3 / 9 14.0 17.4 / 6 17.8 / 20 20.6 / 24 21.6 / 30 23.2 / 41.6 (24.1 / 50)

1+45

(C-13.7 / cut 50) 14.4 / 37.2 15.0 / 30 16.2 / 15 12.2 / 12 14.0 17.6 / 6 18.1 / 12 17.9 / 27 18.7 / 30 21.7 / 34 22.2 / 41.1 (23.2 / 50)

1+58

(13.4 / 50) 14.0 / 37 14.7 / 30 15.0 / 16.5 12.2 / 14 12.6 15.5 / 3 16.4 / 20 17.5 / 30 17.8 / 35 19.4 / 39.7 (21.2 / 42.2)

1+61

(12.9 / 50) 13.6 / 36.8 14.5 / 30 13.7 / 20 11.9 / 15 12.2 / 4 15.0 15.7 / 10 18.5 / 21 17.6 / 30 17.7 / 36 20.4 / 40.2 (22.0 / 50)

1+75

(12.0 / 50) 13.0 / 36.5 13.4 / 30 13.4 / 24 10.5 / 23 10.7 / 14 14.4 15.6 / 20 18.0 / 30 18.0 / 39 (17.9 / 48)

1+95

(11.5 / 50) 11.0 / 36.5 12.1 / 30 8.9 / 22 9.2 / 16 12.3 / 15 13.2 12.6 / 17 14.1 / 30 16.4 / 37.7 (17.2 / 50)

calc. 5/24/32 RFL

Data from Book 331 - P56

Grade 563.

End Area	Average	Length	Cu. ft.	Cu. yd.
1443.4				
	1404.6	25.0	35115.0	1300.6
1365.9				
	1315.2	25.0	32880.0	1217.7
1264.5				
	1265.0	6.0	7590.0	281.1
1265.5				
	1259.2	2.0	2518.4	93.3
1252.9				
	1256.5	17.0	21384.5	796.1
1260.2				
	1231.7	3.0	3695.1	136.9
1203.2				
	1165.9	17.0	19820.3	734.1
1128.5				
	1084.1	13.0	14101.1	522.3
1040.8				
	1031.6	3.0	3094.8	114.6
1022.5				
	990.0	14.0	13860.0	513.3
957.5				
	889.5	20.0	17786	658.7
821.0				
	788.5	9.0	7096.5	262.8
				36.0
				6632.1

Lt | ℄ | Rt

(6.3 / 47) 7.0 / 33.5 | 7.4 / 30 | 8.1 / 26 | 12.7 / 8

(6.7 / 45) 8.2 / 34.1 | 10.5 / 30 | 11.8 / 24

(3.4 / 45) 5.6 / 32.8 | 6.9 / 30 | 7.8 / 18

(0.5 / 40) 0.0 / 30

2+04

0.0 | 11.7 / 11 | 12.8 / 17 | 13.4 / 30 | 13.8 / 36.9 (16.1 / 50)

2+12

12.1 | 12.1 / 10 | 11.0 / 14.5 | 12.7 / 30 | 13.0 / 36.5 (14.5 / 50)

2+22

11.7 | 12.1 / 25 | 12.3 / 30 | 12.8 / 36.4 (13.3 / 50)

2+58

2.2 | 3.7 / 10 | 6.5 / 25 | 9.1 / 30 | 9.7 / 34.8 (10.5 / 50)

2+75

0.0 | 2.0 / 20 | 4.0 / 30 | 4.0 / 32 (5.6 / 40)

2+95

0.0 / 30 | 0.6 / 40

Yardage computation for Approach to Main tunnel - El Capitan Dam

12

End Area	Average	Length	Cu. ft.	Cu. Yd.
756.4				
	763.4 (4.6)	8.0	6107.2 (16.8)	226.2 (5)
770.7 (3.2)				
	721.0 (2.2)	10.0	7210.0	267.0
671.3 (2)				
	437.0 (6.5)	36.0	15732.0 (14.0)	582.7 (0)
201.8				
202.6				
	128.3 (7.9)	17.0	2181.1 (14.3)	80.8 (5)
54.0				
	27.0	20.0	540.0	22.0
0.0				
			Total	7,814.0

Yardage comp. for outlet main tunnel

0+00 = Downstream face of portal wall

Lt.	&	Rt.
0+40		
(C 55.7 / 59.3) 50.6 / 50.3	40.2 / 25	33.0 31.5 / 8 28.5 / 15 28.9 / 25 28.8 / 39.4 (29.1 / 50)
0+50		
(C 51.9 / 57) 119.5 / 118.7 38.9 / 25	32.6 31.1 / 8 28.4 / 16 28.4 / 25 27.8 / 38.9 (26.4 / 50)	
0+73		
119.0 / 58.5 114.5 / 47.2 40.6 / 40 35.4 / 25	30.5 30.2 / 2 28.0 / 4 27.9 / 21 27.5 / 25 21.4 / 35.7 9.8 / 45	
0+81		
47.2 / 60 43.0 / 46.5 34.3 / 25 31.2 / 6	27.8 27.4 / 19 25.0 / 25 20.8 / 35.4 18.5 / 45	
1+02		
39.1 / 50 37.6 / 43.8 32.9 / 25 31.1 / 20 27.7 / 14	27.4 22.0 / 10 20.5 / 25 19.8 / 34.9 17.6 / 44	
1+16		
37.7 / 50 35.5 / 42.8 30.5 / 25 27.9 / 23.5 27.6 / 5	25.1 20.6 / 10 19.7 / 25 15.4 / 34.2 14.3 / 42	
1+35		
35.5 / 49 32.2 / 41.1 32.0 / 38.5 28.3 / 35.5 28.0 / 25 27.9 / 19 23.2 / 11 N	19.7 / 4 17.5 / 19 15.7 / 25 13.8 / 31.9 11.8 / 38	
1+47		
31.0 / 45 28.5 / 43 28.0 / 39 26.1 / 25 20.0 / 10	18.5 17.3 / 12 14.1 / 19 13.1 / 25 11.6 / 30.8 11.0 / 40	
1+62		
28.6 / 50 27.9 / 39 28.2 / 35 23.1 / 25 18.5 / 11	17.0 14.0 / 7 10.8 / 20 10.8 / 25 10.8 / 30.4 11.5 / 41	
1+81		
28.6 / 47.5 24.5 / 37.2 20.7 / 32 17.3 / 25 14.7 / 9	12.0 10.8 / 9 11.4 / 25 11.6 / 30.8 11.8 / 45	
2+10		
28.0 / 42 15.6 / 32.8 12.1 / 25 11.0 / 21	10.5 10.8 / 12 12.3 / 20 11.7 / 25 11.4 / 30.7 16.6 / 40	
2+55		
11.0 / 40 11.4 / 30.6 10.6 / 25 10.3 / 5	11.8 9.3 / 15 9.2 / 25 9.2 / 29.6 9.2 / 38	

El Capitan Res. Feat.

comp by R.E.L 5/20/32

Data from book 331 P52

13

End Area	Average	Length	Cu. ft.	Cu Yd.
2396.6				
	2343.3	10.0	23433.0	867.9
2300.0				
	2304.8	23.0	53104.0	1963.3
2309.7				
	2176.9 (47.1)	8.0	17415.2 (176.8)	645.0 (36.2)
1984.6 2044.0				
	1919.5 (1841.6)	21.0	40309.5 (38673.6)	1492.9 (32.3)
1698.6 1795.0				
	1702.8 (1639.6)	14.0	23831.2 (22954.4)	882.9 (50.2)
1580.7 1610.6				
	1484.6 (69.5)	19.0	28209.4 (27920.5)	1044.7 (34.1)
1358.7				
	1276.5 (3)	12.0	15318.0 (5.6)	567.3 (.2)
1194.2				
	1103.2	15.0	16548.0	612.9
1012.2				
	913.0	19.0	17347.0	642.5
813.9				
	723.5 (3)	29.0	20981.5 (35.7)	770.1 (6.9)
633.2 (3.7)				9383.5 9489.5
	600.1 (599.6)	45.0	27004.5 (26982.0)	1000.2 (999.3)
567.1 (6.6)				
	556.5 (3)	8.0	4452.0 (9.4)	164.9 (8)
				10,547.6

Lt.			&	Rt.			
			2+63				
11.0 / 40	10.6 / 30.3	10.5 / 25	10.3	10.3 / 7	9.1 / 10	9.1 / 25	9.0 / 29.5
			2+79				
11.1 / 40	10.6 / 30.3	10.9 / 25	9.3				

End area	Average	length.	Cu ft.	Cu. Yd
546.0				

Yardage computation for down stream toe wall cut. Data from Book 340 P23

0+00 = North end.

R	℄	L	
c-30 d / 182.6	0+00		
	35.5	42.9 / 38.5	½:1
c32.0 / 185	0+25		
	33.0	39.2 / 36.6	½:1
	0+50		
32.2 / 185.3	32.9	40.2 / 77.3	1½:1
	1+00		
32.2 / 185.3	30.6	30.3 / 62.4	
	1+50		
28.2 / 179.3	30.1	30.2 / 62.3	
	2+00		
21.7 / 169.5	24.6	29.0 / 60.5	
	2+50		
21.6 / 169.4	22.3	22.4 / 50.6	
	3+00		
21.2 / 168.8	22.9	25.0 / 54.5	
	3+25		
21.2 / 168.8	25.0	35.8 / 70.7	
	3+50		
21.2 / 168.8	32.3	42.0 / 38.0	½:1
	3+75		
22.1 / 170.1	39.8	45.6 / 39.8	½:1
	4+02 1a		
24.3 / 173.4	25		

1½:1 S/Bc

1½:1 S/Bc

Grade = 5.30

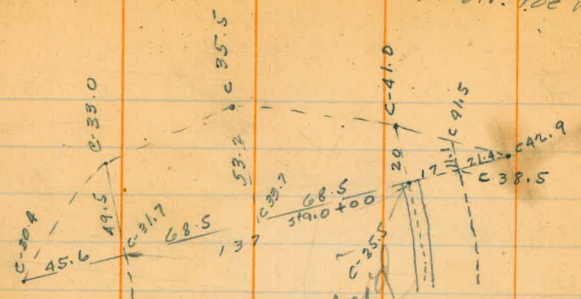
℄ Sta for R = 40.2
Sta for vol. R = 34.2

137 ℄ 17

15

End Area	Av	length	Cu ft.	Cu Yd.
6372.65				
	6277.12	21.27	133541.30	4945.0
6181.60				
	6524.38	21.27	138777.66	5139.8
6867.16				
	6559.73	42.54	279050.91	10335.2
6252.31				
	6038.39	42.54	256873.11	9513.8
5824.47				
	5192.99	42.54	220909.79	8181.8
4561.41				
	4342.20	42.54	184717.18	6841.4
4123.00				
	4147.71	42.54	176443.58	6534.9
4172.43				
	4461.34	21.27	94892.70	3514.5
4750.25				
	4949.63	21.27	105278.63	3899.2
5149.02				
	5613.46	21.27	119398.29	4422.1
6077.91				63,327.7
	4954.68	22.70	112471.23	4165.6
3831.45				67,493.3

slope cut at North end of down str. toe wall

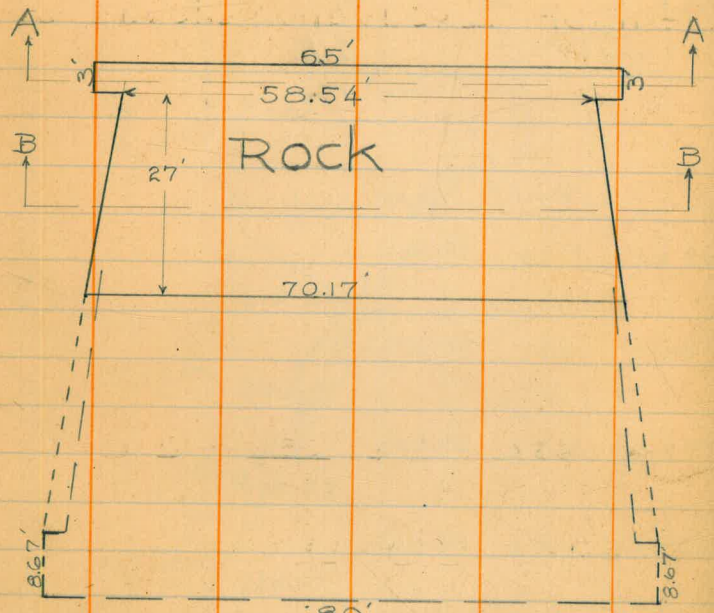


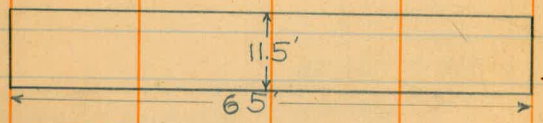
	End Areas	Mean	length	Cu. ft.
	0.0			
		196.83	21.4	2286.2
11.1 × 38.5 / 2 =	213.67			
		284.33	17.0	4833.6
35.5 × 20 / 2 =	355.0			
		625.46	68.5	42,844.0
33.7 × 58.7 / 2 =	895.92			
		840.24	68.5	57,556.4
31.7 × 49.5 / 2 =	784.57			
		392.28	45.6	17,888
	0.0			

4644.7 Cu Yd. = 125,408.2

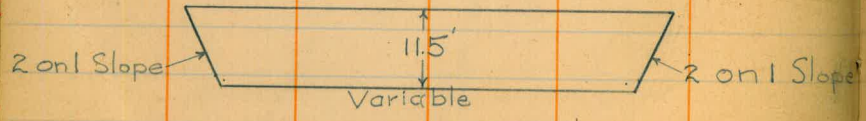
Sta 0+00 to 4+02 67,493.3

72,138.0 Cu Yd.





Section A-A



Section B-B

Item 10.- Excavation Class 1 Solid Rock originating in structure excavation and wasted.

C-1a. Ledge rock in place at entrance portal.

$$\text{Volume} = \frac{65 \times 3 \times 11.5}{27} + \left(\frac{58.54 + 70.17}{2}\right) \times 11.5 . =$$

823.2 Cubic yards.

4-C

C-1d. Exit Portal and Approach
Excavation Sections of Ledge Rock removed.

Computations for Areas.

Area — A-A = $\frac{48.6 \times 38.3}{2}$ = 930.67 □′

B-B = $\frac{68.8 \times 32}{2}$ = 1100.8

B′-B′ = $\frac{78.9 \times 32}{2}$ = 1262.4

C-C = $\frac{81.7 \times 32}{2}$ = 1307.2

C′-C′ = $\frac{68.4 \times 32}{2}$ = 1094.4

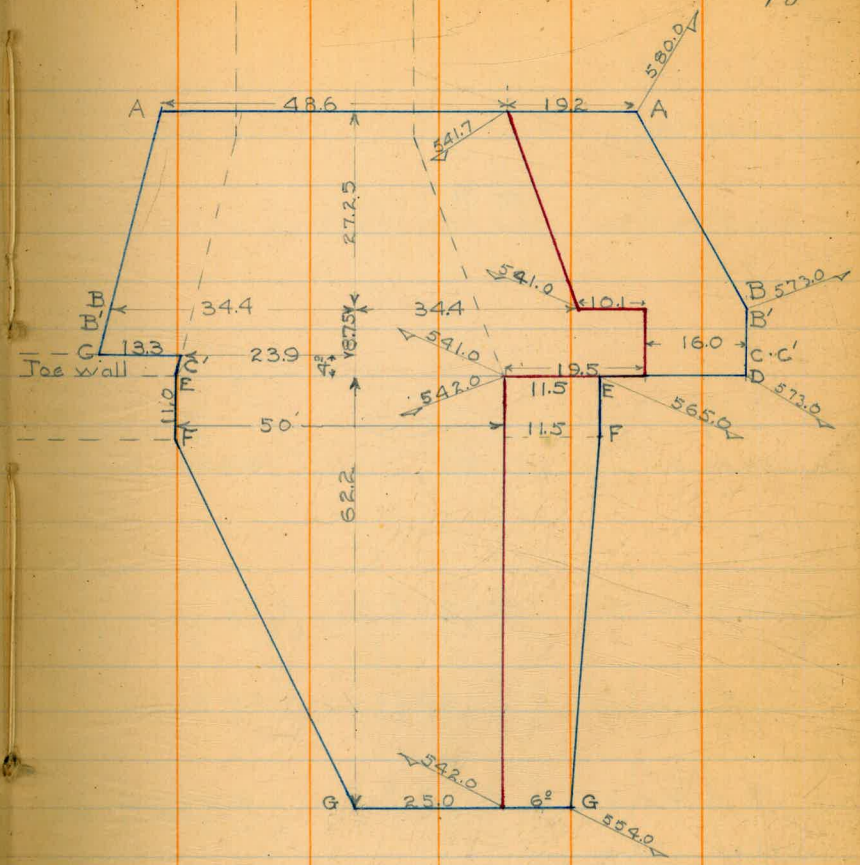
D-D = $\frac{69.5 \times 32}{2}$ = 1112.0

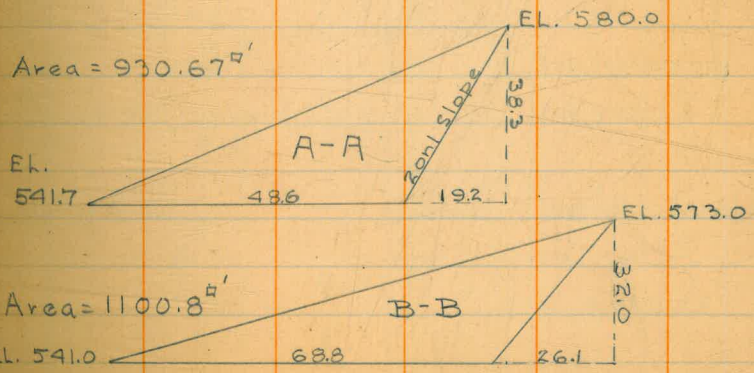
E-E = $\frac{50 \times 23}{2}$ = 575.0

F-F = $\frac{50 \times 23}{2}$ = 575.0

G-G = $\frac{25 \times 12}{2}$ = 150.0

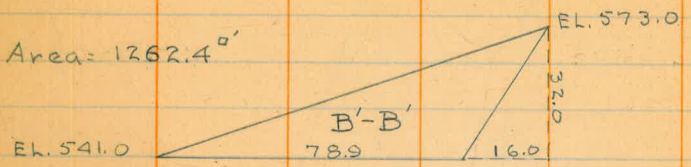
Cont. on page 19



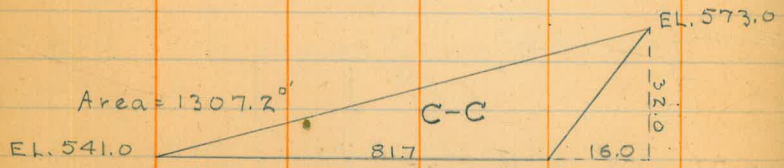


(over)

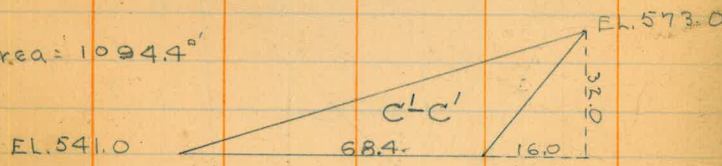
Area = 1262.4 □′



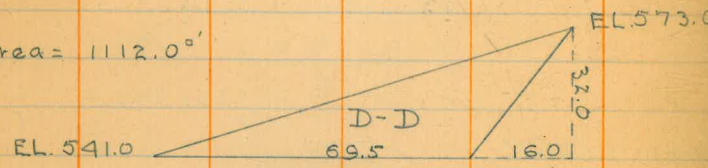
Area = 1307.2 □′



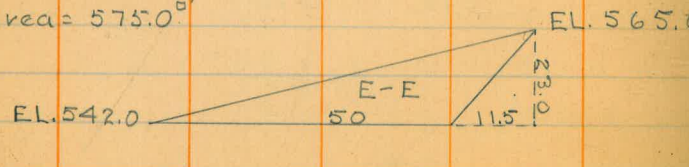
Area = 1094.4 □′



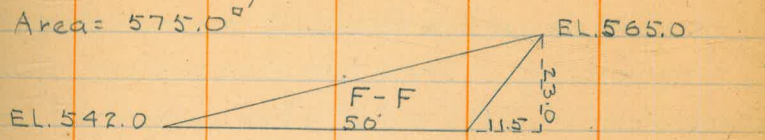
Area = 1112.0 □′



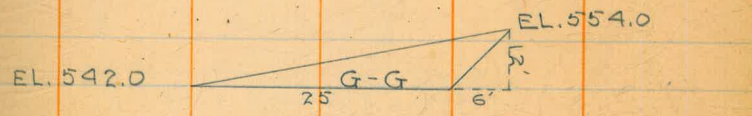
Area = 575.0 □′



Area = 575.0 □′



Area = 150.0 □′



$\frac{(930.67 + 1100.8)\ 27.25}{54}$ = 1025.14 - cb.yds.

$\frac{(1262.4 + 1307.2)\ 8.75}{54}$ = 416.3 " "

$\frac{(1094.4 + 1112.0)\ 4}{54}$ = 163.4 " "

$\frac{(575 + 575)\ 11}{54}$ = 234.2 " "

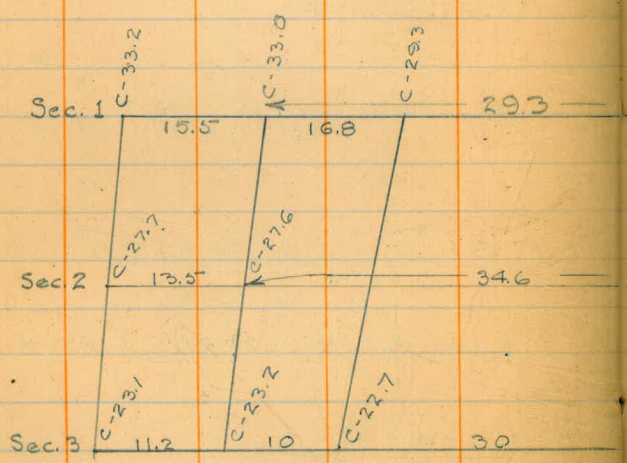
$\frac{(575 + 150)\ 51.2}{54}$ = 835.1 " "

Total 2674.1 - cubic yds

5-C

Not for final quantities
G.W.C.

Item No 11. Excavation, Class 2. Earth Overburden, Sand, Gravel and other Excavation Originating in Structure Excavation and Wasted.



Area Sect. 1 = 2294.44 □'

$$\left[(33 \times 15.5) + \frac{(33 + 29.3)}{2} 16.8 + (29.3 + 33.8) 12.5 + \right.$$
$$\left. + \frac{(33.8 + 29.3)}{2} 12.5 + \frac{(29.3 + 31.0)}{2} 16.8 + (31.0 \times 14.2)\right]$$

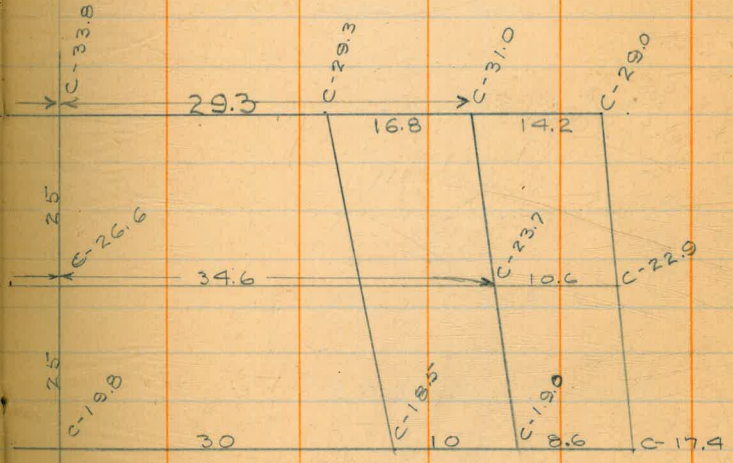
Area Sect. 2 = 2119.76 □'

$$\left[(27.6 \times 13.5) + \frac{(27.6 + 26.6)}{2} 34.6 + \frac{(26.6 + 23.7)}{2} 34.6 + (23.7 \times 10.6)\right]$$

20

D-1b. Entrance Tunnel - Approach and Structure Excavation.

Total Excavation to El. 563 = 3877 Cubic yards.



Area Sect. 3. = 1840.62 □'

$$\left[\frac{(23.2 \times 11.2) + (23.2 + 22.7)}{2} 10 + (22.7 + 19.8) 30 + \right.$$
$$\left. + \frac{(19.8 + 18.5)}{2} 30 + \frac{(18.5 + 19.0)}{2} 10 + (19.0 \times 8.6)\right]$$

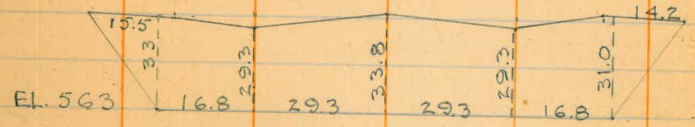
Volume = 3877 cubic yards

$$\frac{(2294.44 + 2119.76 + 2119.76 + 1840.62)\ 25}{54}$$

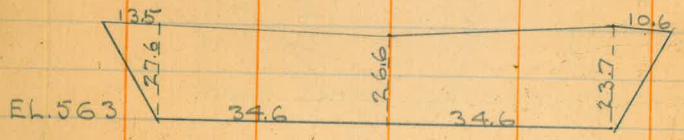
(over)

End View of Sections. 1-2-3

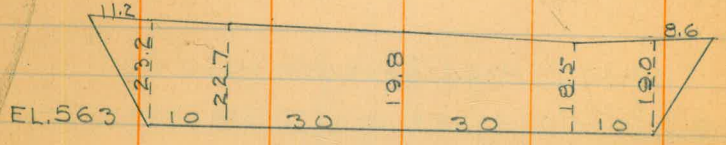
Sect. 1 Area = 2294.44 $^{0'}$



Sect. 2. Area = 2119.76 $^{0'}$



Sect. 3. 1840.62 $^{0'}$

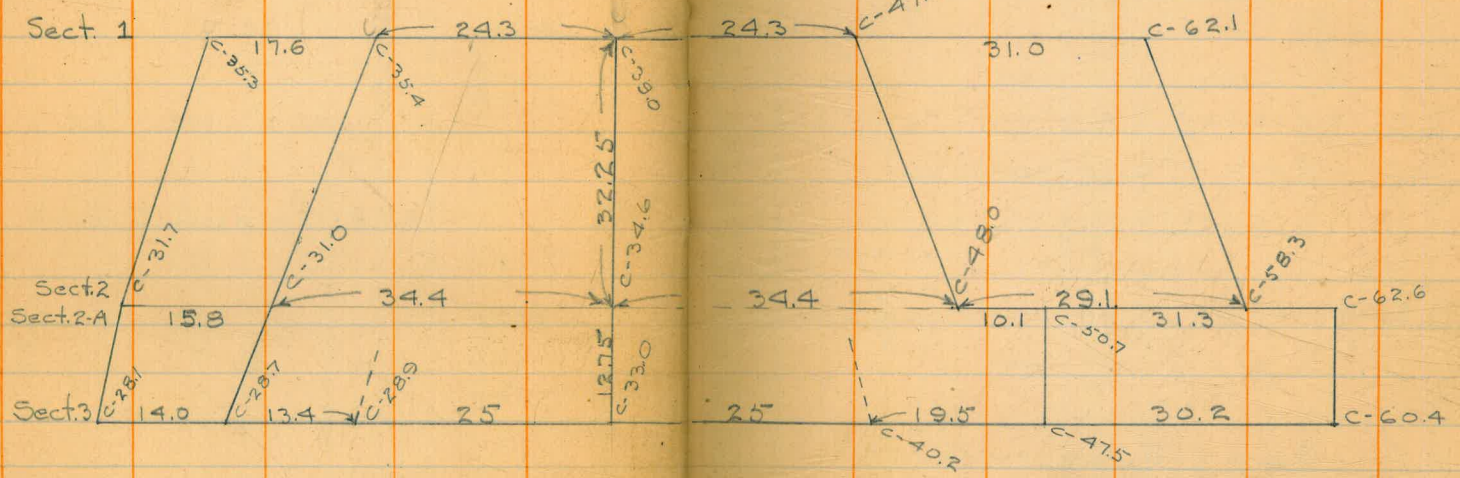


5-B

Not for final quantities
G.H.G.

Item No. 11. Excavation Class 2. Earth
Overburden, Sand, Gravel and other Excavation
Originating in Structure Excavation and Wasted

D-1c.
Tunnel Exit – Structure Excavation
Total Excavation to El. 542 = 5848.5 cbyds.



Area Sect 1. = $\frac{35.4 \times 17.6 + (35.4+39.0)24.3 + (39.0+47.9)}{2}$, $24.3 + 47.9 \times 31.0$ = 3013.76 sq. ft.

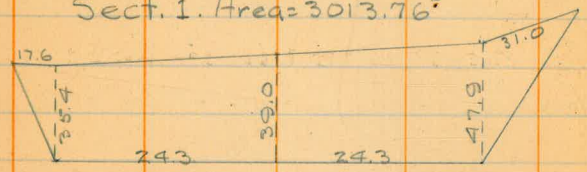
Sect. 2. = $\frac{31.0 \times 15.8 + (31.0+34.6)34.4 + (34.6+48.0)}{2}$ $34.4 + 48.0 \times 29.1$ = 3442.34 " "

Sect. 2-A = $\frac{31.0 \times 15.8 + (31.0+34.6)34.4 + (34.6+48.0)}{2}$ $34.4 + (48.0+50.7)10.1 + 50.7 \times 31.3$ = 4085.83 "

Sect. 3. = $\frac{28.7 \times 14.0 + (28.7+28.9)13.4 + (28.9+33.0)25 + (33.0}{2}$ $+40.2)25 + (40.2+47.5)19.5 + 47.5 \times 30.2$ = 3847.90 "

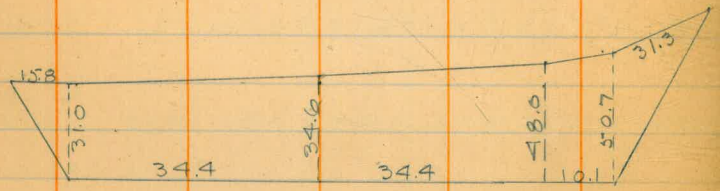
End View of Sections. 1-2-2A-3

Sect. 1. Area = 3013.76 □'

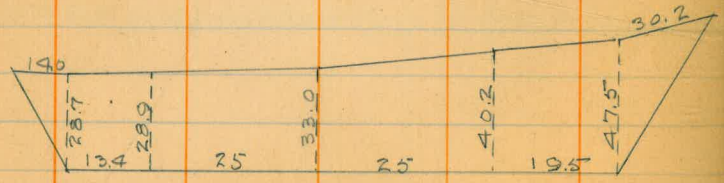


Sect. 2. Area = 3442.34 □'

Sect. 2-A. Area = 4085.83 □'



Sect. 3. Area = 3847.90 □'



Volume Sect. 1-2 = 3975.3 cubic yards

$$\frac{(3013.76 + 3442.34)\,32.25}{54}$$

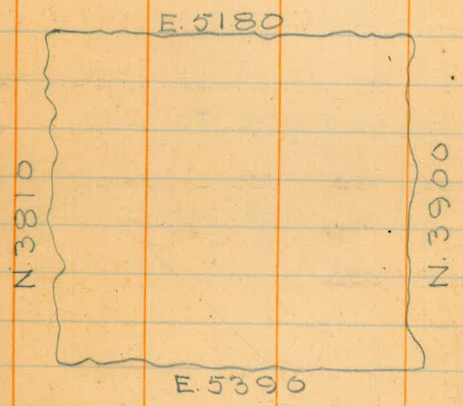
Volume Sect. 2-A to 3 = 1873.2 cubic yards

$$\frac{(4085.83 + 3847.90)\,12.75}{54}$$

Total Excavation to El. 542 = 5848.5 cub. yds

For Estimate.

Item No. 2. Embankment Class 1 Solid Rock Originating in Borrow Pit Only, Including Placing and Sorting in Dam, Measured in Embankment.



Plan

B-1. Embankment between Axis and Upstream Toe Wall.

$210 \times 1041 = \frac{218,610}{27} = 8096.7$ cub. yards.

Tolal to, and including Aug. 27, 1932 = 8097

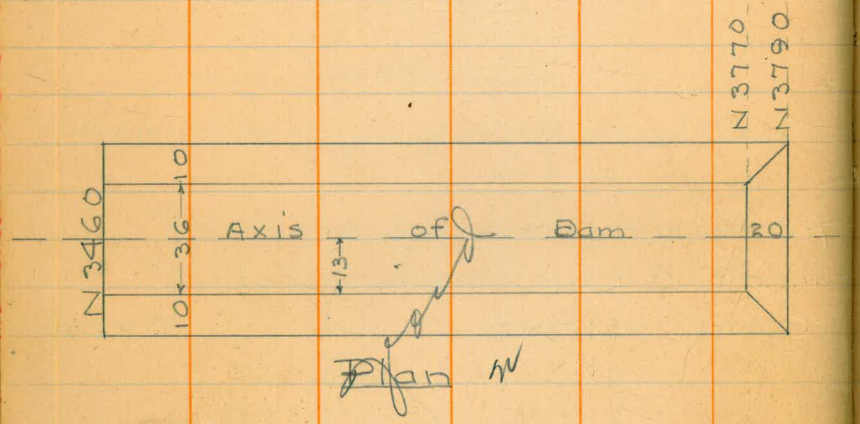
Additional rock from Aug. 29 to Aug 31, incl. - 638 truck loads, estimated at 6 yards per truck 3828

Total to and including Aug 31, 1932 = 11,925 Cubic yards

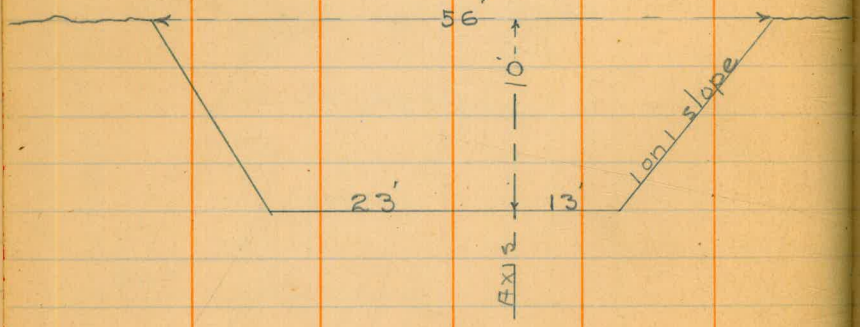
6

Item No. 12. E-3

Excavation For Cutoff Trench under Dam



Plan



Total = 5298.5 cubic yards

$$\text{Volume} = \frac{(46 \times 10 \times 310) + (46 \times 10)}{27} = 5298.5$$

Dec 3 – 1932
Elliott
Simpson
Soper
Remmen

X Sections of Stripping Between Downstream Rock Emb. and Core Wall. For Nov. 1932 Estimate.

		N3840			
T. P.	3.84	582.34		578.50	
E 4997				~~580.0~~ ~~578.0~~	?
				O.G.	
4980					
		N3820			
4940				O.G.	
4950			+1.0	83.3	✓
960			2.9	79.4	✓
980			4.1	78.2	✓
997			5.4	76.9	✓
		N3800			
4997			25.1	57.2	✓
970			8.0	74.3	✓ ↑
960			5.3	77.0	✓ Rock
940			5.7	76.6	✓
925			5.5	76.8	✓
900				O.G.	

↑ Orig. Ground Here to Here

N3800

578.64

			0.G
4690			
4670		6.2	72.4 ✓
4640		6.7	71.9 ✓
4620		6.7	71.9 ✓

N3780

582.34

4997		40.2	42.1 ✓
4970		30.4	51.9 ✓ ↑
4960		19.5	62.8 ✓ Rock
4920		7.5	74.8 ✓
4900		7.7	74.6 ✓
			0.G
4890			
0.G			
Here to Here			
↓			
			0.G
4750	578.64		
4730		6.8	71.8 ✓
4700		7.5	71.1 ✓
680		7.5	71.1 ✓
660		7.4	71.2 ✓
640		7.8	70.8 ✓
620		7.0	71.6 ✓

		N 3760			
T.P.		582.34	8.57	573.77	
	4.87	578.64			
4660			11.2	67.4	✓
80			11.1	67.5	✓
4700			7.3	71.3	✓
720			6.8	71.8	✓
740			6.9	71.7	✓
760			6.8	71.8	✓
780			6.5	72.1	✓
800			6.6	72.0	✓
820			6.4	72.2	✓
840			6.1	72.5	✓
860			5.5	73.1	✓
880			4.4	74.2	✓
900			3.3	75.3	✓
T.P.	3.61	569.45	12.80	565.84	
940			12.8	56.6	✓
965			15.1	54.3	✓ Rock
970			24.2	45.2	✓ ↓
4997				538.3	

N3740

569.45

12.03
0.53

4997		537.5	
4975		538.0	
965	17.7	551.7 ✓	Rock
940	16.3	553.1 ✓	
920	12.0	557.4 ✓	
900	7.2	562.2 ✓	
880	3.5	565.9 ✓	
860	2.2	567.2 ✓	
840	42.0	71.4 ✓	
820	1.8	567.6 ✓	
800	2.8	566.6 ✓	
780	3.3	566.1 ✓	
760	4.3	565.1 ✓	
740	7.2	562.2 ✓	
720	8.4	561.0 ✓	
4700	7.0	562.4 ✓	

N3720

569.45

4720	9.0	604	
740	9.5	599	
760	9.4	600	
780	9.7	597	
800	9.7	597	
820	10.5	589	
840	11.5	579	
860	9.4	600	
880	12.0	574	
900	14.9	545	
920	14.3	551	
940	16.3	531	
960	18.7	507	
965	18.8	506	Rock
975		535.9	
997		535.8	

N3700

997		534.5	Rock. Below this Elev.
975		535.0	
965	21.3	481 ✓	
940	18.2	512 ✓	
920	16.3	531 ✓	
900	15.8	536 ✓	

N3700

569.45

4880		14.8	554.6	✓
860		14.3	555.1	✓
840		13.9	555.5	✓
820		10.8	558.6	✓
800		10.9	558.5	✓
780		10.6	558.8	✓
760		10.6	558.8	✓

N3680

4780		12.6	556.8	✓
800		13.9	555.5	✓
820		14.8	546	✓
840		16.4	530	✓
860		14.6	548	✓
T. P.	0.54 557.96	12.03	557.42	
880		4.1	539	✓
900		4.6	534	✓
920		4.5	535	✓
930		5.7	523	✓
940		11.6	464	✓
965		13.3	447	✓ Rock below this
975			532.8	
997			532.3	

Typical Section

N3660

557.96

4997		530.5	
4976		530.0	
4967	15.6	42.4	✓
4948	16.7	41.3	✓
4927	5.7	52.3	✓
4900	5.3	52.7	✓
4880	4.5	53.5	✓
860	4.6	53.4	✓
840	4.6	53.4	✓
820	3.9	54.1	✓
800	3.6	54.4	✓
780	3.8	54.2	✓
760	3.4	54.6	✓
	N3640		
760	6.2	51.8	✓
780	6.0	52.0	✓
800	5.1	52.9	✓
820	4.6	53.4	✓
840	5.1	52.9	✓
860	6.5	51.5	✓
880	8.8	49.2	✓
900	11.6	46.4	✓
	545.79		
920	2.3	43.5	✓

45.42

N3640

545.79

4940	5.3	405 ✓
965	5.4	404 ✓
975		530.0
4997		529.7

N3620

4997		529.5
975		530.0
967	6.1	39.7 ✓
960	6.7	39.1 ✓
935	6.0	39.8 ✓

558.0 H.I

925	11.2	46.8 ✓
900	8.9	49.1 ✓
880	7.2	50.8 ✓
860	6.1	51.9 ✓
840	5.4	52.6 ✓
820	5.5	52.5 ✓
800	5.5	52.5 ✓
780	6.0	52.0 ✓
760	6.1	51.9 ✓

N3600

558.0

4760	6.1	51.9	✓
780	5.4	52.6	✓
800	5.8	52.2	✓
820	5.5	52.5	✓
840	5.7	52.3	✓
860	6.1	51.9	✓
880	4.9	53.1	✓
900	7.1	50.9	✓
910	4.2	53.8	✓

H.I. 545.8

935	6.2	39.6	✓
960	7.2	38.6	✓
965	7.2	38.6	✓
975		530.2	✓
997		529.2	✓

N3580

997		528.9	
977		530.4	
968	8.6	37.2	✓
935	7.3	38.5	✓

H.I. 558.0

915	2.2	55.8	✓
900	2.9	55.1	✓

N3580

HI 558.0

4880	3.5	54.5	✓
860	5.6	52.4	✓
840	5.0	53.0	✓
820	4.6	53.4	✓
800	6.0	52.0	✓
780	5.6	52.4	✓
760	5.8	52.2	✓

End Dec. 3, 1932

N3560

540.5

4997	11.2	29.3	✓
975	9.6	30.9	✓
960	5.8	34.7	✓
940	3.8	36.7	✓

Start Dec 5 - 1932

562.2

910	5.1	57.1	✓
4900	8.5	53.7	✓
4880	7.5	54.7	✓
860	7.2	55.0	✓
840	7.4	54.8	✓
820	8.2	54.0	✓
800	9.7	52.5	✓
4780	10.0	52.2	✓
4760	9.8	52.4	✓

N3540

562.2

4760		9.8	52.4 ✓
780		9.7	52.5 ✓
800		9.8	52.4 ✓
820		9.1	53.1 ✓
830		5.7	56.5 ✓
840		5.6	56.6 ✓
860		6.8	55.4 ✓
880		7.4	54.8 ✓
900		7.4	54.8 ✓
910		6.6	55.6 ✓

540.5

935		3.3	37.2 ✓
940		4.2	36.3 ✓
960		5.4	35.1 ✓
975		9.7	30.8 ✓
4997		11.2	29.3 ✓

N3520

4997		12.1	28.4 ✓
980		11.7	28.8 ✓
967		4.4	36.1 ✓
940		2.7	37.8 ✓
935		2.6	37.9 ✓

N3520

562.2

4905	4.4	57.8 ✓
900	6.5	55.7 ✓
880	7.2	55.0 ✓
860	6.6	55.6 ✓
855	2.9	59.3 ✓
840	3.6	58.6 ✓
830	1.7	60.5 ✓
820	2.5	59.7 ✓
800	9.6	52.6 ✓
780	10.4	51.8 ✓
760	8.9	53.3 ✓

N3500

760	7.3	54.9 ✓
780	7.3	54.9 ✓
800	3.0	59.2 ✓
820	1.3	60.9 ✓
840	1.7	60.5 ✓
860	2.4	59.8 ✓
880	6.7	55.5 ✓
900	2.2	60.0 ✓

540.5

935	2.7	37.8 ✓
940	4.4	36.1 ✓
960	5.2	35.3 ✓
970	7.3	33.2 ✓
977	11.6	28.9 ✓
4997	13.0	27.5 ✓

Typical Section
N3480

	540.5		
4997		12.3	28.2 ✓
977		11.3	~~28.2~~ 29.2 ✓
971		8.8	31.7 ✓
967		3.9	36.6 ✓
760		4.2	36.3 ✓
950		4.6	35.9 ✓
940		4.0	36.5 ✓
933		2.9	37.6 ✓
917		+8.6	49.1 ✓
	562.2		
897		0.9	61.3 ✓
890		0.4	61.8 ✓
880		1.1	61.1 ✓
870		2.2	60.0 ✓
850		1.9	60.3 ✓
840		1.2	61.0 ✓
830		1.5	60.7 ✓
820		1.8	60.4 ✓
810		2.8	59.4 ✓
800		4.7	57.5 ✓
790		7.5	54.7 ✓
780		8.2	54.0 ✓
770		7.6	54.6 ✓
760		8.1	54.1 ✓

N3460

572.4

4730	13.5	58.9	✓
740	13.0	59.4	✓
760	10.8	61.6	✓
780	17.5	54.9	✓
800	14.8	57.6	✓
820	12.8	59.6	✓
840	13.0	59.4	✓
860	12.2	60.2	✓
880	12.4	60.0	✓
895	13.1	59.3	✓
920	25.0	47.4	✓

540.5

940	0.1	40.4	✓
960	+0.2	40.7	✓
965	+0.5	41.0	✓
980	7.0	33.5	✓
997	10.2	30.3	✓

	N3440			
	552.0			
4997		6.2	45.8	✓
980		6.7	45.3	✓
960		5.3	46.7	✓
940		4.2	47.8	✓
920		0.3	51.7	✓
900		+5.3	57.3	✓
	572.4			
880		13.4	59.0	✓
860		12.9	59.5	✓
840		12.3	60.1	✓
820		12.6	59.8	✓
800		11.6	60.8	✓
780		6.8	65.6	✓
770		7.8	64.6	✓
750			0.6	
	N3420		0.6	
770				
780		3.8	68.6	✓
790		2.9	69.5	✓
800		11.4	61.0	✓
820		11.8	60.6	✓
840		11.5	60.9	✓
860		13.6	58.8	✓
880		14.2	58.2	✓

N3420

572.4

4900		15.4	570 ✓
	552.0		
920		+2.8	548 ✓
940		0.1	519 ✓
960		1.7	503 ✓
980		2.4	496 ✓
997		2.9	491 ✓
	N3400		
	561.8		
4997		8.4	534 ✓
980		7.9	539 ✓
960		6.1	557 ✓
940		3.1	587
	572.4		
920		14.8	576 ✓
900		13.1	593 ✓
880		11.9	605 ✓
860		10.4	620 ✓
840		9.7	627 ✓
820		10.1	623 ✓
800		+0.0	724 ✓
780		−1.0	714 ✓
770			O.G

N3380

572.4

0.6

4790		
4800	+2.4	74.8 ✓
820	+3.9	76.3 ✓
830	+4.2	76.6 ✓
840	7.1	65.3 ✓
860	7.1	65.3 ✓
880	6.3	66.1 ✓
890	5.2	67.2 ✓
900	3.5	68.9 ✓
920	2.1	70.3 ✓
940	1.1	71.3 ✓
960	2.0	70.4 ✓
980	2.3	70.1 ✓
4997	12.0	60.4 ✓

N3360

572.4

4997	0.8	71.6 ✓
980	0.7	71.7 ✓

584.1

960	11.7	72.4 ✓
950	1.7	82.4 ✓
940	1.1	83.0 ✓
915	1.1	83.0 ✓
880	10.9	73.2 ✓
860	3.6	80.5 ✓
840	4.7	79.4 ✓
820	5.2	78.9 ✓
810		O.G

N3340

591.1

O.G

850		
860	8.0	583.1 ✓
880	7.1	84.0 ✓
900	6.4	84.7 ✓
920	5.3	85.8 ✓
940	5.3	858 ✓
960	4.9	86.2 ✓
980	5.1	86.0 ✓
997	8.3	82.8 ✓

N3330

591.1

4997	4.3	86.8
980	4.7	86.4
960		0.6

Original ground West from here

N3320

Original Ground

End Dec 5 - 1932

Continued
from Book 395 P. 22

X Sections of Stripping for Dec '32 Est

N/3360
613.52

5360			or. Gr.
5357	2.3	11.2	
40	0.7	12.8	
20	5.0	13.0	
5300	2.7	10.8	
80	2.7	10.8	
60	8.3	05.2	
50	10.3	603.2	
40	18.0	595.5	
20	18.4	95.1	
5200	19.0	94.5	
5180			O. G.

Rattle 8

Jan 5 - 1932
Elliott
Osborn
Soper
Remmen

		3340		
		613.52		0.G
5200				
10			17.5	596.0
20			14.7	598.8
30			4.5	609.0
T.P.	11.35	623.88	0.99	612.53
40			12.8	11.1
60			10.1	13.8
80			7.4	16.5
5300			9.0	17.9
20			7.8	16.1
40			7.6	16.3
50				0.G
		N 3320		0.G
5330				
25			+0.2	24.1
5300			3.5	20.4
52.90			1.4	22.5
280				0.G

Plotted

Plotted

N3300 is On Ground

X Sections of Downstream Rock Embankment For Jan. 1933 - Estimate #9

Feb 2[illegible] - 1933

Elliott
Simpson
Soper
Remmen

		N3860 X		
B.M.	0.16 . 607.19		607.03	
4640		5.3	01.9	
20		4.9	02.3	
4600		5.4	01.8	
4590		5.5	01.7	
4570		19.7	587.5	Toe
		N3840 X		
4565		28.0	579.2	Toe
4590		5.8	601.4	
4600		5.4	01.8	
20		5.6	01.6	
40		5.3	01.9	
60		4.8	02.4	
75		5.1	02.1	
4685		12.5	594.7	Toe
		N3820 X		
4690		21.4	85.8	Toe
70		4.7	602.5	
60		5.1	02.1	
40		5.6	01.6	
20		5.5	01.7	
4600		5.4	01.8	
4555		35.3	~~01.9~~ 71.9	Toe

3800 =

4680 = 26.6

N3800 X

		607.19		
4680			26.6	580.6 Toc
4640			12.2	91.0
4620			11.4	95.8
4600			13.8	93.4
4560			37.8	69.4 Toc
T.P.	0.83	595.21	12.81	594.38
	0.36	582.50	13.07	582.14

N3780 X

4675			13.1	69.4 Toc
4635			1.8	80.7
B.M.	6.83	581.88		575.05
4600			4.1	77.8
4590			9.1	72.8
4560			7.8	74.1
4540			7.8	74.1
4520			7.9	74.0
4500			7.6	74.3

From here west same as Est. #8

581.88 N3760 ×

From here West same as Est. # 8

4540	8.1	73.8	
4580	8.4	73.5	
4620	9.5	72.4	
4665	20.6	61.3	Toc

N3740 ×

From here west same as Est. # 8

4540	8.2	73.7	
4550	8.2	73.7	
55	4.2	77.7	
70	4.4	77.5	
90	4.5	77.4	
95	8.7	73.2	
4635	9.2	72.7	
4660	20.9	61.0	Toc

581.88 N3720 X

From here west same as Est. #8

4540	8.3	73.6
50	8.3	73.6
55	4.6	77.3
95	5.5	76.4
4600	9.1	72.8
4650	8.9	73.0
4660	7.8	74.1
4700	27.7	54.2 Toe

N3700 X

4700	27.3	54.6 Toe
4670	7.3	74.6
4660	9.5	72.4

From here west same as Est. #8

N3680 X

4715	29.4	52.5 Toe
4685	10.6	71.3

From here west same as Est. #8

N3660 X

4725	32.6	49.3
4695	9.6	72.3

From here west same as Est. #8

581.88 N3640 X

4725 32.4 549.5 Toe

4700 9.6 72.3

From here west same as Est. #8

South of N.3640 is same as Est #8.

X sections of Stripping
Extimate #10 Feb 28 - 1933
Item 3

(N3180 is O.G.) N3190 (for this section)

B.M.	12.07	640.91		628.84
	8.79	649.69	0.01	640.90
5050				O.G
40			0.6	49.1 ✓
30			1.5	48.2 ✓
20			+1.2	50.9 ✓
10			+1.4	51.1 ✓
5000			+1.3	51.0 ✓
4990			+3.8	53.5 ✓
4980			+6.8	56.5 ✓
4980 also				O.G

Plotted

(N3190 is O.G.) N3200 (for this section except E 5050 to E 4980)

4970			O.G
75		+1.1	50.8 ✓
5000		4.7	45.0 ✓
20		4.5	45.2 ✓
40		4.7	45.0 ✓
60		1.6	48.1 ✓

649.69 N3200

5080		0.9	48.8 ✓
5100		3.6	46.1 ✓
20		6.8	42.9 ✓
40		5.4	44.3 ✓
60		2.4	47.3 ✓
80		0.3	49.4 O.G

N3220

5240		11.8	37.9 ✓ O.G
20		15.4	34.3 ✓
5200		13.6	36.1 ✓
5180		11.0	38.7 ✓
60		8.9	40.8 ✓
40		8.7	41.0 ✓
20		12.0	37.7 ✓
5100		5.7	44.0 ✓
5080		4.0	45.7 ✓
60		4.3	45.4 ✓
30		5.5	44.2 ✓
5000		4.6	45.1 ✓
4980		5.1	44.6 ✓
4970		4.9	44.8 ✓
60			O.G

Plotted

N3240

B.M.	6.37	635.21		628.84	
5270			+10.7	45.9	O.G
50			5.1	30.1	
30			3.3	31.9	
20			6.4	28.8	
5200			6.2	29.0	
5180			6.3	28.9	
60			7.1	28.1	
40			8.4	26.8	
20			10.4	24.8	
10			9.1	26.1	
5100					O.G
T.P	4.34	626.73	12.82	622.39	
5050					O.G
50 also			+2.3	29.0	
40			0.8	25.9	
30			3.9	22.8	
5010			5.6	21.1	
		624.5			
4985			+3.9	28.4	
4980			+7.3	31.8	
4975					O.G

Abandoned

Transit

N3260

624.5

4965				O.G
4970			+1.0	25.5
80			6.4	18.1
4987			8.1	16.4
		626.73		
5015			11.7	15.0
30			12.7	14.0
40			11.7	15.0
60			4.5	22.2
		635.21		
80			13.7	21.5
5100			12.1	23.1
20			16.5	18.7
40			13.9	21.3
60			12.2	23.0
80			11.2	24.0
5200			10.9	24.3
T.P.	0.56	622.88	12.89	620.32

Abandoned

	622.88	N3280		
5180		6.3	16.6	
60		8.7	14.2	
40		9.4	13.5	
20		9.0	13.9	
5100		6.1	16.8	
5080		8.4	14.5	
60		8.4	14.5	
40		10.0	12.9	
5020		10.5	12.4	
	611.8			
4985		4.8	07.0	
70		3.4	08.4	
63		0.6	11.2	
50				O.G
		N3300		
	611.82			
4940				O.G
50		5.0	06.8	
60		6.6	05.2	
80		10.1	01.7	
4985		14.8	597.0	

		622.88	N3300		
T.P.	0.18	610.31	12.75	610.13	
5020			6.8	03.5	
40			5.2	05.1	
60			6.3	04.0	
80			5.9	04.4	
5100			7.4	02.9	
5120			6.7	03.6	
			N3320		
T.P.	0.69	599.41	11.59	596.72	
5120			1.6	97.8	
5100			7.6	91.8	
5080			8.1	91.3	
5060			8.1	91.3	
40			9.1	90.3	
20			9.0	90.4	
10			9.1	90.3	
4995			12.9	86.5	
80			9.9	89.5	
70			6.5	92.9	
55					O.G 590± on corewall
Check			9.36	590.05	
	12.72	611.82	0.31	599.10	
	12.81	624.51	0.12	611.70	

Profile of Core Wall Est. #10
Feb 28 - 1933

T.P.	0.42	612.12		611.70
3269			17.5	594.6 ✓
3260			16.5	95.6 ✓
3256			11.7	600.4 ✓
3248			6.8	05.3 ✓
3240			4.0	08.1 ✓
3233			1.5	10.6
3220				645.1

Profile of Core Wall For Est. #10 Mar 2 - 1933

B.M.	9.73	590.25		580.52
3838			13.5	76.8
3841			11.0	79.3
3848			12.8	77.5
3864			10.5	79.8
3868			4.7	85.6
3887			2.8	87.5
3900			+0.5	90.8

X Sections of downstream beach, blanket and hydraulic fill.
Mar 2-1933

B.M.	1.26	606.97		605.71
			12.47	594.50
	10.42	Transit 604.92		
			13.06	591.86
	0.05	Level 591.91		
			12.27	579.64
	4.70	Co. Transit 584.34		

N3840

604.9

4677	3.6	01.3
90	4.1	00.8
4700	5.0	99.9

N3820

4677	2.6	02.3
90	5.1	99.8
4700	8.7	96.2
20	11.4	93.5

N3800

4740	15.7	89.2
20	14.3	90.6
15	13.5	91.4
4692	2.5	02.4
4677	3.2	01.7

Elliott - Notes
Simpson - X
Soper - Remmpen - Ch.
Clovert (Contractor) Rod.
Eddie (Contractor) Notes

604.9

N3780

4677	3.2	01.7
90	3.3	01.6
4700	3.4	01.5
15	3.8	01.1

591.9

4740	7.4	84.5
60	10.7	81.2
73	11.9	80.0

N3760

584.3

4906	10.5	73.8
4900	9.2	75.1
4880	10.2	74.1
60	10.4	73.9
40	9.4	74.9
20	8.2	76.1
4800	6.8	77.5
4780	5.3	79.0
60	3.6	80.7

591.9

40	8.3	83.6
30	5.5	86.4

604.9

20	14.7	90.2

	604.9	N3760	
4705		10.2	94.7
4703		3.7	01.2
4677		3.3	01.6
		N3740	
4677		3.2	01.7
94		3.5	01.4
99		7.7	97.2
4720		15.2	89.7
	591.9		
40		7.8	84.1
60		11.6	80.3
	584.3		
80		5.4	78.9
4800		7.4	76.9
20		8.9	75.4
40		9.9	74.4
47		10.5	73.8 w.s.
		N3720	
4840		10.6	73.7 w.s
20		9.3	75.0
4800		7.9	76.4
4780		6.7	77.6
60		5.0	79.3
40		1.1	83.2

	591.9	N3720	
4720		2.4	89.5
	604.9		
4700		9.4	95.5
4695		7.9	97.0
89		3.1	601.8
77		2.8	02.1
		N3700	
77		2.6	02.3
87		2.5	02.4
88		4.9	00.0
90		6.0	598.9
4700		9.1	95.8
	591.9		
20		2.1	89.8
40		9.1	82.8
60		12.4	79.5
	584.3		
80		6.6	77.7
4800		8.1	76.2
20		9.5	74.8
38		10.6	73.7
		N3680	
34		10.6	73.7
20		9.6	74.7
4800		8.3	76.0

	584.3	N3680		
4780		6.9	77.4	
60		5.7	78.6	
	591.9			
55		12.9	79.0	
40		7.8	84.1	
20		1.5	90.4	
	604.9			
4700		7.9	97.0	
4694		6.6	98.3	
87		2.3	02.6	
77		2.5	02.4	
		N3660		
77		2.4	02.5	
85		2.4	02.5	
90		6.3	98.6	
4700		8.6	96.3	
	591.9			
20		0.9	91.0	
40		6.4	85.5	
55		12.3	79.6	
	584.3			
80		6.8	77.5	
4800		8.5	75.8	
20		9.7	74.6	
34		10.6	73.7	w.s

	584.3	N3640		
4831		10.6	73.7	w.s
20		9.8	74.5	
4800		8.6	75.7	
4780		6.6	77.7	
60		4.7	79.6	
	591.9			
52		11.6	80.3	
40		7.0	84.9	
20		2.0	89.9	
	604.9			
4700		9.9	95.0	
4692		8.0	96.9	
84		2.4	02.5	
4677		2.3	02.6	
		N3620		
4677		2.0	02.9	
84		1.8	03.1	
85		4.7	00.2	
90		7.1	97.8	
4700		9.8	95.1	
	591.9			
20		4.1	87.8	
40		9.7	82.2	
	584.3			
50		4.5	79.8	

	584.3	N3620		
4760		5.0	79.3	✓
80		6.0	78.3	✓
4800		8.3	76.0	✓
20		9.6	74.7	✓
33		10.6	73.7	✓ w.s.
		N3600		
40		10.6	73.7	✓ w.s
20		9.4	74.9	✓
4800		8.0	76.3	✓
4780		6.8	77.5	✓
60		5.2	79.1	✓
	591.9			
44		11.4	80.5	✓
20		3.6	88.3	✓
	604.9			
4700		7.6	97.3	✓
91		6.9	98.0	✓
88		1.9	03.0	✓
4677		1.9	03.0	✓
		N3580		
4677		1.6	03.3	✓
88		2.1	02.8	✓
93		5.7	99.2	✓
4700		8.4	96.5	✓

	591.9	N3580		
4720		1.9	90.0	✓
40		8.6	83.3	✓
	584.3			
52		4.0	80.3	✓
80		6.2	78.1	✓
93		8.2	76.1	✓
4820		9.7	74.6	✓
34		10.6	73.7	✓ w.s
		N3560		
30		10.6	73.7	✓
20		10.0	74.3	✓
4800		8.8	75.5	✓
87		7.8	76.5	✓
60		4.5	79.8	✓
	591.9			
40		10.8	81.1	✓
20		4.0	87.9	✓
	604.9			
4700		9.3	95.6	✓
84		5.1	99.8	✓
79		1.2	03.7	✓
4677		1.2	03.7	✓

	604.9	N3540	
4675		1.0	03.9
85		6.4	98.5
4700		10.8	94.1
	591.9		
20		6.3	85.6
40		11.9	80.0
	584.3		
60		6.1	78.2
80		8.0	76.3
4800		9.0	75.3
20		10.0	74.3
29		10.6	73.7 w.s
		N3520	
27		10.6	73.7
20		10.2	74.1
4800		9.2	75.1
4780		7.8	76.5
60		6.2	78.1
	591.9		
40		11.5	80.4
20		11.2	80.7
	604.9		
4700		12.4	92.5
4677		7.0	97.9
70		1.7	03.2

	604.9	N3500	
4670		1.7	03.2
71		3.9	01.0
77		6.6	98.3
87		12.1	92.8
	591.9		
4700		2.3	89.6
15		7.8	84.1
40		11.3	80.6
60		13.4	78.5
	584.3		
80		7.6	76.7
4800		9.2	75.1
22		10.6	73.7 w.s
		N3480	
20		10.6	73.7 w.s.
4800		9.1	75.2
4780		7.6	76.7
60		6.1	78.2
40		4.4	79.9
	591.9		
20		6.8	85.1
4700		2.2	89.7
	604.9		
4692		14.1	90.8
77		8.2	96.7
72		4.8	00.1
71		2.1	02.8

	604.9	N3460		
4670		2.6	02.3	✓
77		6.3	98.6	✓
87		11.2	93.7	✓
4700		13.7	91.2	✓
	591.9			
20		7.0	84.9	✓
40		10.4	81.5	✓
60		13.3	78.6	✓
	584.3			
80		7.8	76.5	✓
4800		9.4	74.9	✓
15		10.6	73.7	✓ W.S
		N3440		
11		10.6	73.7	✓
4800		9.7	74.6	✓
4780		8.7	75.6	✓
60		6.2	78.1	✓
	591.9			
40		11.0	80.9	✓
20		5.3	86.6	✓
	604.9			
4700		12.9	92.0	✓
4677		5.5	99.4	✓
77 also		2.2	02.7	✓

	604.9	N3420		✓
4677		1.8	03.1	✓
85		1.8	03.1	✓
87		5.0	99.9	✓
4695		10.1	94.8	✓
	591.9			
4710		2.2	89.7	✓
20		6.6	85.3	✓
		N3400		
B.M.	8.30	608.3	600.00	
4677		4.7	03.6	✓
85		4.5	03.8	✓
91		11.0	97.3	✓
4701		14.7	93.6	✓

N3380 l.s. orig. ground.

Belom. D.T.W

E 5100

N 3600

E 5800

		582.50			
	0.51	570.41	12.60	569.90	
N 3760 E 4665			9.1	61.3	Toe
N 3740 E 4660			9.4	61.0	"
	2.52	560.87	12.06	558.35	
N3720 E4700			6.7	54.2	"
N3700 E4700			6.3	54.6	"
N 3680 E 4715			8.4	52.5	
N 3660 E4725			11.7	49.2	
N3640 E4725			11.4	49.5	

IMPROVED TABLES AND INFORMATION

607.2
581.9
25.3
12.0