

EL CAPITAN DAM

W
419

AREAS OF CROSS-SECTIONS

ITEM II

NORTH 3550 - 3720

EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and
SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

Distances from Center of Roadway for Cross-Sectioning
Roadway 16 feet wide. Side Slopes 1 on 1.
For Single Track Embankment.

419

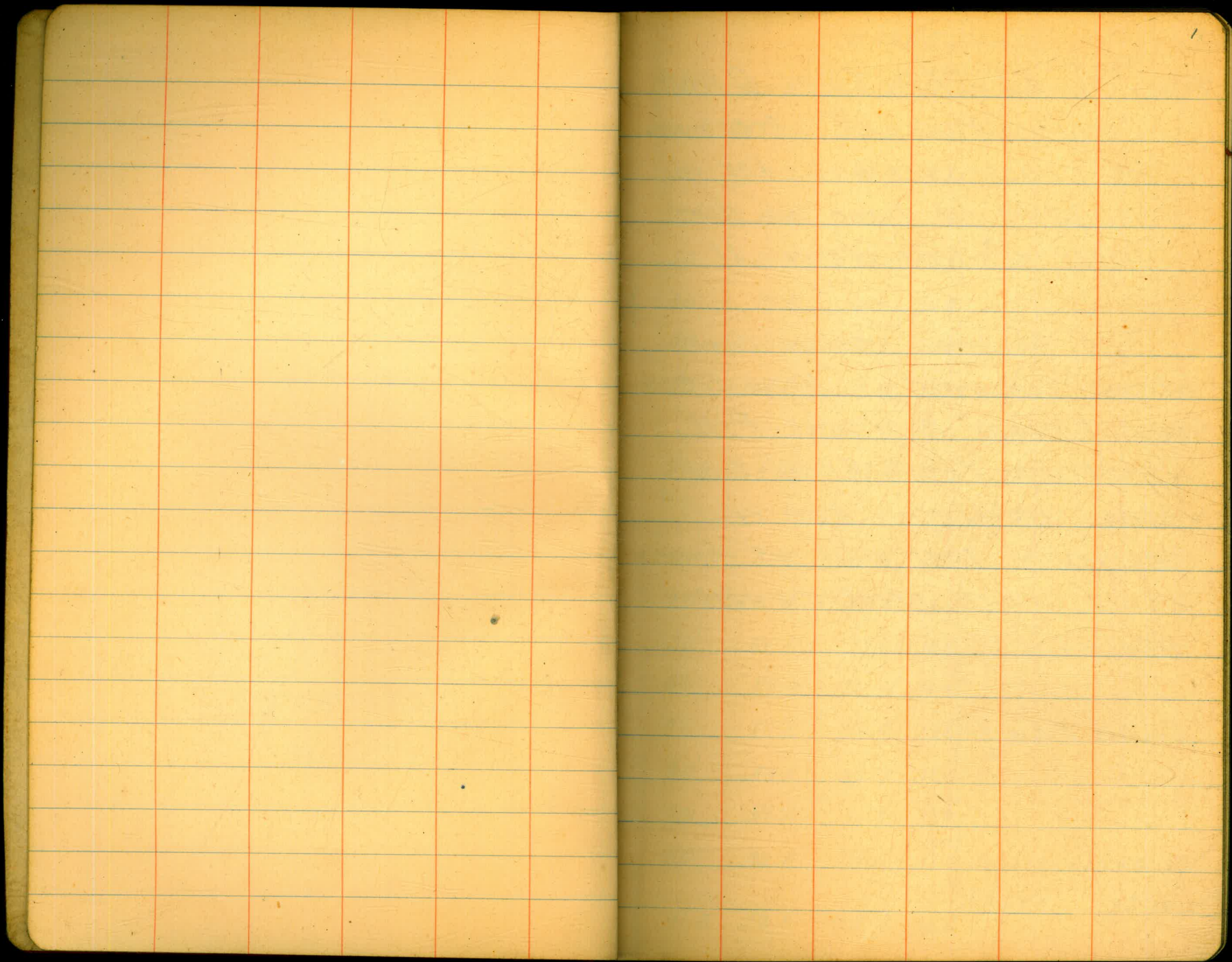
H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	0
1	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	1
2	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	2
3	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	3
4	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	4
5	13.0	13.1	13.2	13.3	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 $30.6 + (20 - 16) \div 2$ or 2 ft. added to $30.6 = 32.6$. For slopes of 1 on $1\frac{1}{2}$ see inside of back cover.

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Index.

Pages 2-76. EL CAPITAN DAM

Computation of Areas
of cross-sections for
stripping at base of dam
under schedule item 11

The headings "Below down
stream toe wall", "Downstream
rock Emb", "Hydraulic Fill",
Upstream rock Emb" and
"Above upstream toe wall"
designate that part of dam
under which stripping was
done.

See Note FB 418.
m.

East	Top El.	Bottom El.	Ht.	Mean Dist.	
4330	551.5	551.5	0.0		
40	51.5	480	3.5		
50	51.4	435	7.9		
60	51.5	420	9.5		
70	51.6	416	10.0		
80	51.6	413	10.3		
90	51.5	394	12.1	6.05 ✓	47.25 x 10 = 472.50 ✓
				1305 1.5 ✓	19.57 ✓
91.5	51.5	37.5	14.0		
				14.1 ✓	18.5 ✓
4410	51.7	37.5	14.2	7.1 ✓	260.85 ✓
20	51.8	37.5	14.3		
30	51.8	37.6	14.2		
40	52.0	37.6	14.4		
50	51.8	36.4	15.4		
60	51.8	35.7	16.1		
70	51.8	35.9	15.9		
80	52.0	35.5	16.5	8.25 ✓	105.65 x 10 = 1056.50 ✓
91.5	52.1	35.8	16.3	16.4 ✓	11.5 ✓
					188.60 ✓

N3550

Below Downstream toe wall

N3550

East	Top El.	Bottom	Ht.	Mean Dist.
4491.5	552.1	535.8	163 [✓]	

16.2 17.7[✓]286.7A

4509.2	52.2	36.1	16.1 [✓]	
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2284.76[✓]

Downstream Rock Embankment.

4509.2	52.2	36.1	16.1 [✓]	
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15.25 10.8[✓]164.70[✓]

20	52.3	37.9	14.4 [✓]	
----	------	------	-------------------	--

7.2[✓]

30	52.3	37.9	14.4 [✓]	
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40	52.4	38.2	14.2 [✓]	
----	------	------	-------------------	--

50	52.4	38.0	14.4 [✓]	
----	------	------	-------------------	--

60	52.5	38.0	14.5 [✓]	
----	------	------	-------------------	--

70	52.5	37.8	14.7 [✓]	
----	------	------	-------------------	--

80	52.5	37.9	14.6 [✓]	
----	------	------	-------------------	--

90	52.3	37.8	14.5 [✓]	
----	------	------	-------------------	--

4600	52.3	37.6	14.7 [✓]	
------	------	------	-------------------	--

10	52.7	37.3	15.4 [✓]	
----	------	------	-------------------	--

20	52.7	37.9	14.8 [✓]	
----	------	------	-------------------	--

30	52.6	37.8	14.8 [✓]	
----	------	------	-------------------	--

40	52.8	38.0	14.8 [✓]	
----	------	------	-------------------	--

50	52.8	39.0	13.8 [✓]	
----	------	------	-------------------	--

N3550

3

East	Top El.	Bottom	Ht.	Mean Dist.
4660	552.8	545.3	7.5 [✓]	

70	52.8	45.8	7.0 [✓]	
----	------	------	------------------	--

80	52.8	45.7	7.1 [✓]	
----	------	------	------------------	--

90	52.8	45.8	7.0 [✓]	
----	------	------	------------------	--

4700	53.0	46.3	6.7 [✓]	
------	------	------	------------------	--

10	53.0	47.3	5.7 [✓]	
----	------	------	------------------	--

20	53.0	48.2	4.8 [✓]	
----	------	------	------------------	--

30	53.1	46.6	6.5 [✓]	
----	------	------	------------------	--

40	53.0	48.8	4.2 [✓]	
----	------	------	------------------	--

251.20 x 10[✓]2512.002676.70[✓]

Hydraulic Fill

40	53.0	48.8	4.2 [✓]	
----	------	------	------------------	--

2.45[✓] 5[✓]12.25[✓]

45	53.0	52.3	0.7 [✓]	
----	------	------	------------------	--

1.05[✓] 1.4[✓] 15[✓]21.00[✓]

60	53.0	50.9	2.1 [✓]	
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70	53.8	51.8	2.0 [✓]	
----	------	------	------------------	--

80	54.0	52.3	1.7 [✓]	
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90	54.1	52.3	1.8 [✓]	
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4800	54.0	52.5	1.5 [✓]	
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N3550
Hydraulic Fill.

East	Top El.	Bottom	Ht	Mean Dist.
A810	554.0	553.1	0.9	
20	54.9	54.1	0.8	
30	55.8	55.5	0.3	
40	56.5	55.7	0.8	
50	57.6	55.8	1.8	
60	59.1	55.0	4.1	
70	59.1	55.2	3.9	
80	59.7	54.8	4.9	
90	59.8	54.7	5.1	
A900	59.0	54.0	5.0	
10	58.1	54.1	4.0	
20	57.9	48.3	9.6	
30	58.1	40.1	18.0	
40	57.9	36.4	21.5	
50	58.3	36.2	22.1	
60	60.6	36.0	24.6	
70	60.2	35.9	24.3	
80	60.9	35.7	25.2	172.35 x 10 = 1723.50
			25.05	175.35
87	60.4	35.5	24.9	

Hydraulic Fill.
N3550

East	Top El.	Bottom	Ht	Mean Dist.
4987	560.4	535.5	24.9	
			46.3	23.15 22.15 3.3
90.3	60.2	38.8	21.4	76.39 73.09
			43.9	21.95 9.7
5000	61.3	38.8	22.5	212.91
				22.55 9.3
09.3	61.4	38.8	22.6	209.71
				24.55 3.7
13	61.6	35.1	26.5	90.83
				26.7 9
				240.30
22	61.8	34.9	26.9	
				26.95 8
30	61.7	34.7	27.0	215.60
				13.5
40	61.7	35.0	26.7	
50	61.9	34.7	27.2	
60	61.9	34.8	27.1	
70	61.8	36.8	25.0	
80	62.0	36.9	25.1	
90	61.9	38.5	23.4	
5100	62.0	40.0	22.0	

N3550
Hydraulic Fill.

East	Top El.	Bottom	Ht	Mean Dist
5110	562.2	545.1	17.1	
20	62.1	49.4	12.7	
30	61.9	49.2	12.7	226.15 * 10 = 2261.50
				<u>5239.34</u> 5236.04

Upstream Rock Embankment

East	Top El.	Bottom	Ht	Mean Dist
30	61.9	49.2	12.7	
40	62.0	49.1	12.9	
50	62.1	48.7	13.4	
60	61.9	48.4	13.5	
70	62.1	48.2	13.9	
80	61.9	47.7	14.2	
90	62.1	48.1	14.0	
5200	61.9	48.1	13.8	
10	62.6	48.4	14.2	
20	62.2	48.6	13.6	
30	62.2	49.4	12.8	
40	62.2	49.5	12.7	
50	62.3	49.5	12.8	
60	62.3	49.9	12.4	
70	62.4	50.7	11.7	

N3550
Upstream Rock Emb.

East	Top El.	Bottom	Ht	Mean Dist
5280	562.4	550.8	11.6	
90	62.5	51.0	11.5	
5300	62.5	51.5	11.0	
10	62.5	51.8	10.7	
20	62.7	52.2	10.5	
30	62.8	51.9	10.9	
40	63.0	51.3	11.7	
50	63.9	51.0	12.9	
60	63.2	50.2	13.0	
70	63.1	49.5	13.6	
80	63.1	49.0	14.1	
90	63.2	48.8	14.4	
5400	63.0	48.8	14.2	
10	63.1	49.1	14.0	
20	63.2	49.3	13.9	
30	63.2	49.7	13.5	
40	63.3	50.1	13.2	
50	63.4	50.1	13.3	
60	63.3	50.4	12.9	
70	63.4	48.8	14.6	

N 3550
Upstream Rock Emb.

East	Top El.	Bottom	Ht.	Mean Dist.
5480	563.4	541.5	21.9	
90	63.5	37.8	25.7	
5500	63.7	39.1	24.6	$507.65 \times 10 = 5076.50$
			25.0	2.8
				70.00
02.8	63.7	38.3	25.4	5146.50

Above upstream toe wall.

02.8	63.7	38.3	25.4	
			25.45	7.2
				183.24
10	63.9	38.4	25.5	
20	63.5	38.5	25.0	
30	63.7	38.9	24.8	
40	63.9	41.5	22.4	
50	63.8	46.8	17.0	
60	63.6	54.8	8.8	
70	63.7	61.9	1.8	
80	63.8	63.8	0.0	$112.55 \times 10 = 1125.50$
				1308.74

N 3560
Below downstream toe wall

East	Top El.	Bottom	Ht.	Mean Dist.
4330	551.4	551.4	0.0	
40	51.5	48.0	3.5	
50	51.5	42.6	8.9	
60	51.6	42.2	9.4	
70	51.6	41.5	10.1	
80	51.6	41.4	10.2	
			5.1	
90	51.8	41.6	10.2	472.00
			10.75	4
				43.00
94	51.8	40.5	11.3	
			13.1	1.5
				19.65
95.5	51.7	36.8	14.9	
			14.9	24.5
			7.45	
4420	51.7	36.8	14.9	365.05
30	51.8	37.5	14.3	
40	51.7	37.2	14.5	
50	51.9	36.6	15.3	
60	52.1	35.9	16.2	
70	52.1	35.7	16.4	
80	52.1	35.5	16.6	

N 3560
Below downstream toe wall

East	Top El.	Bottom	Ht.	Mean Dist
4490	52.0	35.5	16.5 ^{2.25} ✓	1090.00
			16.3	3.5
				57.05
935	52.0	35.9	16.1✓	
			16.25	17.5✓
				284.37
4511	52.3	35.9	16.4✓	2332.12

Downstream Rock Emb

4511	52.3	35.9	16.4✓	
30	52.1	36.1	16.25 ^{8.05} ✓	146.25
20	52.2	36.1	16.1✓	
30	52.2	36.1	16.1✓	
40	52.3	37.0	15.3✓	
50	52.2	36.7	15.5✓	
60	52.2	36.9	15.3✓	
70	52.1	37.0	15.1✓	
80	52.4	36.9	15.5✓	
90	52.1	36.9	15.2✓	
4600	52.4	36.9	15.5✓	
10	52.0	36.9	15.1✓	
20	52.5	37.0	15.5✓	
30	52.5	37.1	15.4✓	

N 3560
Downstream Rock Emb.

East	Top El.	Bottom	Ht.	Mean Dist
4640	52.9	537.1	15.8✓	
50	52.8	37.1	15.6 ⁷ ✓	
60	52.7	37.1	15.6✓	
70	52.9	45.0	7.9✓	
80	53.0	45.5	7.5✓	
90	53.0	45.3	7.7✓	
4700	53.0	45.6	7.4✓	
10	52.9	45.5	7.4✓	
20	53.1	45.5	7.6✓	
30	53.2	45.6	7.6✓	
40	53.3	48.5	4.8 ^{2.4} ✓	

Hydraulic Fin

40	53.3	48.5	4.8✓	
			2.95	5
				14.75
45	53.3	52.2	1.1✓	
60	53.3	49.9	3.4✓	
			1.05	5
				5.25
50	53.2	52.2	1.0 ^{0.51} ✓	
60	53.3	49.9	3.4✓	
70	53.3	50.1	3.2✓	
80	53.4	52.1	1.3✓	

2801.50 ✓
2800.50
2947.75 ✓
2946.75

N 3560
Hydraulic Fill

East	Top El	Bottom	Ht.	Mean Dist.
4790	553.2	552.2	1.0	✓
4800	53.9	52.3	1.6	✓
10	54.1	52.6	1.5	✓
20	54.1	54.1	0.0	✓
30	54.3	54.3	0.0	✓
40	55.9	54.9	1.0	✓
50	56.4	54.7	1.7	✓
60	56.9	54.9	2.0	✓
70	57.3	54.8	2.5	✓
80	58.0	54.8	3.2	✓
90	57.6	54.3	3.3	✓
4900	57.6	53.9	3.7	✓
10	58.1	57.0	1.1	✓
20	59.0	50.1	8.9	✓
30	60.5	42.4	18.1	✓
40	61.1	36.6	24.5	✓
50	61.3	35.5	25.8	✓
60	61.6	34.3	27.3	✓
70	61.7	34.5	27.2	✓
80	61.9	34.6	27.3	✓

1764.50

N 3560
Hydraulic Fill.

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East	Top El	Bottom	Ht.	Mean Dist.
4980	61.9	34.6	27.3	✓
			27.2	7 ✓ 190.40
87	61.8	34.7	27.1	✓
			25.15	3 ✓ 75.45
90	61.7	38.5	23.2	✓
			23.2	10 ✓ 232.00
5000	61.7	38.5	23.2	✓
			23.3	10 ✓ 233.00
10	61.9	38.5	23.4	✓
			25.1	3 ✓ 75.30
13	61.9	35.1	26.8	✓
			26.7	7 ✓ 186.90
			19.3	
20	61.9	35.3	26.6	✓
30	62.0	35.5	26.5	✓
40	62.1	35.5	26.6	✓
50	62.2	35.2	27.0	✓
60	62.3	35.5	26.8	✓
70	62.2	37.5	24.7	✓
80	62.2	38.1	24.1	✓
90	62.2	38.6	23.6	✓

N 3560
Hydraulic Fill.

East	Top El.	Bottom	Ht	Mean Dist
5100	562.1	539.6	22.5	
10	62.0	47.3	14.7	
20	62.0	49.7	12.3	
30	62.3	49.6	12.7	

2484.50
5262.05

Upstream Rock Emb.

30	62.3	49.6	12.7
40	62.2	49.6	12.6
50	62.2	49.0	13.2
60	61.9	48.6	13.3
70	61.8	48.3	13.5
80	62.1	48.0	14.1
90	62.4	47.9	14.5
5200	62.2	48.2	14.0
10	62.1	48.3	13.8
20	62.2	48.6	13.6
30	62.1	49.1	13.0
40	62.1	49.2	12.9
50	62.6	49.5	13.1
60	62.4	50.0	12.4
70	62.4	50.2	12.2

N 3560
Upstream Rock Emb.

9

East	Top El.	Bottom	Ht	Mean Dist
5280	562.4	550.7	11.7	
90	62.6	51.0	11.6	
5300	62.9	51.2	11.7	
10	63.0	51.4	11.6	
20	62.7	51.7	11.0	
30	62.8	51.8	11.0	
40	62.9	51.1	11.8	
50	62.9	50.9	12.0	
60	62.9	49.9	13.0	
70	62.9	49.3	13.6	
80	63.3	48.9	14.4	
90	63.3	48.6	14.7	
5400	63.4	48.9	14.5	
10	63.2	49.2	14.0	
20	63.1	49.5	13.6	
30	63.3	49.6	13.7	
40	63.2	49.9	13.3	
50	63.3	50.5	12.8	
60	63.2	50.8	12.4	
70	63.3	45.1	18.2	

N 3560
upstream. Rock Emb.

East	Top El	Bottom	Ht	Mean Dist
5480	563.7	539.5	24.2 ^{12.7} ✓	
90	63.5	38.1	25.4 ^{12.7} ✓	4900.50 ✓
			25.65 ^{10.7} ✓	274.45 ✓
5500.7	63.7	37.8	25.9 ^{12.7} ✓	5174.95 ✓

Above upstream Toe Wall

5500.7	63.7	37.8	25.9 ^{12.8} ✓	25.75 ^{9.3} ✓	239.47 ✓	
10	63.5	37.9	25.6 ^{12.8} ✓			
20	63.8	38.1	25.7 ^{12.8} ✓			
30	63.8	38.2	25.6 ^{12.8} ✓		513.00 ✓	
40			24.9 ^{12.8} ✓	7 ⁴⁰ ✓	174.30 ✓	
37	63.7	39.5	24.2 ^{12.8} ✓			
			19.8 ^{12.8} ✓	13 ¹³ ✓	257.40 ✓	
50	63.6	48.2	15.4 ^{7.7} ✓			
60	63.7	54.9	8.8 ^{4.4} ✓		121.00 ✓	
70			4.4 ^{4.4} ✓	13 ¹³ ✓	57.20 ✓	
73	63.6	63.6	0.0		1362.37 ✓	

N 3570
Below downstream toe wall.

East	Top El	Bottom	Ht	Mean Dist	
A330	551.4	551.4	0.0		
40	51.5	46.8	4.7 ✓		
50	51.5	42.0	9.5 ✓		
60	51.5	41.8	9.7 ✓		
70	51.4	41.3	10.1 ✓		
80	51.7	41.1	10.6 ^{5.25} ✓		
90	51.8	41.3	10.5 ^{5.25} ✓	498.50 ✓	
			10.55 ⁵ ✓	52.75 ✓	
95	51.8	41.2	10.6 ✓		
			10.0 ^{15.3} ✓	5 ✓	76.50 ✓
4400	51.8	31.8	20.0 ✓		
10	52.0	32.0	20.0 ✓		
20	51.8	36.9	14.9 ✓		
30	52.0	37.2	14.8 ✓		
40	51.9	37.0	14.9 ✓		
50	52.0	36.4	15.6 ✓		
60	51.8	36.0	15.8 ✓		
70	52.1	35.8	16.3 ✓		
80	52.1	35.8	16.3 ^{9.35} ✓	1469.50 ✓	
90	52.2	35.5	16.7 ✓		

N 3570					
Below downstream toe wall.					
East	Top El	Bottom	Ht	Mena	Dist
4490	52.2	35.5	16.7	✓	
				16.5	5.1 ✓
					84.15 ✓
95.1	52.2	35.9	16.3	✓	
				16.25	17.5 ✓
					284.37 ✓
4512.6	52.2	36.0	16.2	✓	2465.77

Downstream Rock Emb

12.6	52.2	36.0	16.2	✓	
				15.85	7.4 ✓
					117.29 ✓
				7.75	
20	52.0	36.5	15.5	✓	
30	52.2	38.1	14.1	✓	
40	52.2	38.4	13.8	✓	
50	52.3	38.4	13.9	✓	
60	52.4	39.2	13.2	✓	
70	52.5	39.8	12.7	✓	
80	52.3	39.8	12.5	✓	
90	52.4	39.2	13.2	✓	
4600	52.4	40.2	12.2	✓	
10	52.7	39.2	13.5	✓	
20	52.7	39.5	13.2	✓	
30	52.6	39.0	13.6	✓	

N 3570					
Downstream rock Emb					
East	Top El	Bottom	Ht	Mena	Dist
4640	52.6	39.7	12.9	✓	
50	52.8	40.4	12.4	✓	
60	53.0	45.7	7.3	✓	
70	53.0	45.4	7.6	✓	
80	52.9	45.7	7.2	✓	
90	52.9	45.4	7.5	✓	
4700	53.1	45.8	7.3	✓	
10	53.2	45.7	7.5	✓	
20	53.2	46.0	7.2	✓	
30	53.2	45.3	7.9	✓	117.29 ✓
40	53.1	49.5	3.6	✓	2402.50 ✓

Hydraulic Fill

40	53.1	49.5	3.6	✓	
				2.25	5 ✓
					11.25 ✓
45	53.1	52.2	0.9	✓	
				0.45	5 ✓
					4.50 ✓
50	53.1	52.2	0.9	✓	
60	53.2	49.9	3.3	✓	
70	53.2	50.3	2.9	✓	
80	53.2	50.8	2.4	✓	

N 3570 Hydraulic Fill					
East	Top El	Bottom	Ht	Mean	Dist
4790	53.3	52.1	1.2	✓	
4800	53.2	52.7	0.5	✓	
10	53.0	53.0	0.0	✓	
20	53.5	53.5	0.0	✓	
30	53.9	53.9	0.0	✓	
40	54.0	54.0	0.0	✓	
50	54.4	53.8	0.6	✓	
60	56.0	53.3	2.7	✓	
70	55.5	54.1	1.4	✓	
80	56.9	55.1	1.8	✓	
90	57.5	55.1	2.4	✓	
4900	59.1	56.7	2.4	✓	
10	59.6	57.0	2.6	✓	
20	60.0	50.6	9.4	✓	
30	60.3	43.0	17.3	✓	
40	61.1	38.1	23.0	✓	
50	61.5	36.6	24.9	✓	
60	61.5	35.6	25.9	✓	
70	61.9	35.6	26.3	✓	1646.00 ✓
80	61.9	35.6	26.3	✓	

N 3570 Hydraulic Fill					
East	Top El	Bottom	Ht	Mean	Dist
4980	61.9	35.6	26.3	✓	
				26.3	184.10 ✓
87	61.9	35.6	26.3	✓	
				24.75	74.25 ✓
90	61.9	38.7	23.2	✓	
				23.3	233.00 ✓
5000	62.1	38.7	23.4	✓	
				23.55	235.50 ✓
10	62.4	38.7	23.7	✓	
				25.2	75.60 ✓
13	62.4	35.7	26.7	✓	
				26.65	266.50 ✓
23	62.3	35.7	26.6	✓	
				26.27	183.40 ✓
30	62.3	36.5	25.8	✓	
40	62.4	36.5	25.9	✓	
50	62.4	36.6	25.8	✓	
60	62.4	35.8	26.6	✓	
70	62.4	36.0	26.4	✓	
80	62.5	37.6	24.9	✓	

N 35 70
Hydraulic Fill.

East	Top El	Bottom	Ht.	Mean Dist
5090	62.5	39.1	23.4 ✓	
5100	62.4	39.2	23.2 ✓ 9.0 ✓	
10	62.6	44.6	18.0 ✓	1981.00 ✓
			15.25 ✓ 5 ✓	76.25 ✓
15	62.5	50.0	12.5 ✓	
			12.45 ✓ 5 ✓	62.25 ✓
20	62.4	50.0	12.4 ✓ 6.2 ✓	
30	62.2	49.6	12.6 ✓ 6.3 ✓	125.00 ✓

Upstream Rock Emb.
5158.60 ✓

30	62.2	49.6	12.6 ✓ 2.3 ✓
40	62.3	49.4	12.9 ✓
50	62.2	48.8	13.4 ✓
60	62.4	48.7	13.7 ✓
70	61.9	48.4	13.5 ✓
80	62.2	48.4	13.8 ✓
90	62.1	48.3	13.8 ✓
5200	62.5	48.2	14.3 ✓
10	62.3	48.3	14.0 ✓
20	62.2	48.9	13.3 ✓
30	62.2	49.1	13.1 ✓

N 35 70
Upstream Rock Emb.

13

East	Top El	Bottom	Ht.	Mean Dist
5240	62.2	49.4	12.8 ✓	
50	62.3	49.5	12.8 ✓	
60	62.3	49.7	12.6 ✓	
70	62.6	50.1	12.5 ✓	
80	62.7	50.3	12.4 ✓	
90	62.8	50.4	12.4 ✓	
5300	62.4	50.4	12.0 ✓	
10	62.4	50.6	11.8 ✓	
20	62.9	50.9	12.0 ✓	
30	62.7	50.9	11.8 ✓	
40	62.7	50.9	11.8 ✓	
50	63.0	51.2	11.8 ✓	
60	63.1	50.7	12.4 ✓	
70	63.1	49.2	13.9 ✓	
80	63.1	49.6	13.5 ✓	
90	63.1	49.5	13.6 ✓	
5400	63.4	49.1	14.3 ✓	
10	63.5	49.5	14.0 ✓	
20	63.2	49.6	13.6 ✓	
30	63.1	50.2	12.9 ✓	

N 3570				
Upstream Rock Emb.				
East	Top El.	Bottom	Ht	Mean Dist.
5440	63.0	50.3	12.7	✓
50	63.0	50.5	12.5	✓
60	62.9	48.3	14.6	✓
70	63.0	42.4	20.6	✓
80	63.0	38.0	25.0	✓
90	63.2	36.7	26.5	✓
			26.05	8.7
98.7	63.0	37.4	25.6	✓
				226.63
				5183.13
Above Upstream toe Wall				
98.7	63.0	37.4	25.6	✓
			25.25	17.0
				429.25
5515.7	63.2	38.3	24.9	✓
			24.8	4.3
				106.64
20	63.3	38.6	24.7	✓
			25.0	12
				300.00
32	63.5	38.2	25.3	✓
			22.7	8
				181.60
40	63.7	43.6	20.1	✓
			10.05	
50	63.7	50.4	13.3	✓
60	63.6	57.1	6.5	✓
70	63.9	63.9	0.0	✓
				298.50
				1315.99

N 3580				
Below downstream toe wall				
East	Top El.	Bottom	Ht	Mean Dist.
A330	551.5	551.5	0.0	✓
40	51.7	48.0	3.7	✓
50	51.8	43.6	8.2	✓
60	51.6	42.4	9.2	✓
70	51.6	42.0	9.6	✓
80	51.8	42.5	9.3	✓
90	51.9	42.1	9.8	✓
			4.9	
				10.0
				5
				50.00
95	51.9	41.7	10.2	✓
				15.15
				5
				75.75
4400	51.9	31.8	20.1	✓
				20.1
				15
				301.50
15	51.9	31.8	20.1	✓
				7.7
				17.75
				5
				88.75
20	51.9	36.5	15.4	✓
30	51.9	37.3	14.6	✓
40	51.8	37.3	14.5	✓
50	52.1	37.0	15.1	✓
60	52.0	36.0	16.0	✓
70	52.2	36.0	16.2	✓

N3580

Below downstream toe wall

East	Top El	Bottom	Ht	Mean	Dist
4480	52.0	36.0	16.0		
90	52.1	36.0	16.1		1081.50
			16.3	6.9	112.47
96.9	52.2	35.7	16.5		
			16.45	17.1	281.29
4514	52.3	35.9	16.4		2440.26
Downstream Rock Emb.					
4514	52.3	35.9	16.4		
			16.35	6	98.10
			8.15		
20	52.3	36.0	16.3		
30	52.3	39.7	12.6		
40	52.4	43.0	9.4		
50	52.3	42.8	9.5		
60	52.3	43.0	9.3		
70	52.3	42.9	9.4		
80	52.4	43.0	9.4		
90	52.3	43.2	9.1		
4600	52.8	43.0	9.8		
10	52.8	43.2	9.6		
20	52.6	43.6	9.0		
30	52.9	45.1	7.8		
40	53.0	44.5	8.5		

N3580

Downstream Rock Emb.

15

East	Top El	Bottom	Ht	Mean	Dist
4650	52.9	44.2	8.7		
60	52.9	44.8	8.1		
70	53.0	45.4	7.6		
80	53.0	45.4	7.6		
90	53.1	45.9	7.2		
4700	53.1	45.3	7.8		
10	53.2	45.6	7.6		
20	53.3	48.0	5.3		
30	53.3	46.3	7.0		
40	53.4	52.2	1.2		
			0.6		
			0.6		
			0.6		
40	53.4	52.2	1.2		
50	53.4	52.3	1.1		
60	53.4	52.1	1.3		
70	53.4	52.2	1.2		
80	53.3	52.3	1.0		
90	53.2	52.4	0.8		
4800	53.2	52.0	1.2		
10	53.2	52.6	0.6		
20	53.2	53.2	0.0		
30	53.3	53.3	0.0		

Hydraulic Fill.

1890.50

1988.60

N 35 80
Hydraulic Fill.

East	Top El	Bottom	Ht.	Mean Dist
4840	53.4	53.1	0.3 ✓	
50	53.9	52.9	1.0 ✓	
60	53.8	52.5	1.3 ✓	
70	53.8	53.3	0.5 ✓	
80	58.4	54.3	4.1 ✓	
90	55.4	54.4	1.0 ✓	
4900	56.0	55.1	0.9 ✓	
10	56.7	55.8	0.9 ✓	
20	58.6	51.0	7.6 ✓	
30	59.8	43.3	16.5 ✓	
40	59.7	38.4	21.3 ✓	
50	60.5	37.4	23.1 ✓	
60	60.6	37.0	23.6 ✓	
70	61.7	37.2	24.5 ✓ 12.3 ✓	
80	61.8	37.2	24.6 ✓	1467.00
			24.6 ✓ 7 ✓	172.20
87	61.8	37.2	24.6 ✓	
			23.85 ✓ 1 ✓	23.85
88	61.8	38.7	23.1 ✓	

N 35 80
Hydraulic Fill.

16

East	Top El	Bottom	Ht.	Mean Dist
4988	61.8	38.7	23.1 ✓	
				2325 ✓ 12 ✓
5000	62.1	38.7	23.4 ✓	279.00
				236 ✓ 11 ✓
11	62.5	38.7	23.8 ✓	239.60
				2445 ✓ 2 ✓
13	62.4	37.3	25.1 ✓	4890
				2505 ✓ 9 ✓
22	62.3	37.3	25.0 ✓	225.45
				24.8 ✓ 8 ✓
30	62.4	37.8	24.6 ✓	198.40
40	62.4	38.0	24.4 ✓	
50	62.3	37.5	24.8 ✓	
60	62.5	37.3	25.2 ✓	
70	62.4	36.8	25.6 ✓	
80	62.5	38.0	24.5 ✓	
90	62.5	39.1	23.4 ✓	
5100	62.5	40.2	22.3 ✓ 8.45 ✓	
10	62.6	45.7	16.9 ✓	1909.50

N 3580
Hydraulic Fill

East	Top El	Bottom	Ht	Mean Dist
5110	62.6	45.7	16.9 ✓	
				14.9 ✓ 7 ✓ 104.30
17	62.7	49.8	12.9 ✓	
				12.9 ✓ 3 ✓ 38.70
20	62.7	49.8	^{6.45 ✓} 12.9 ✓	
30	62.7	49.8	^{6.45 ✓} 12.9 ✓	129.00 ✓

Upstream Rock Emb. 4855.90

30	62.7	49.8	^{6.45 ✓} 12.9 ✓	
40	62.6	49.4	13.2 ✓	
50	62.6	49.0	13.6 ✓	
60	62.6	48.7	13.9 ✓	
70	62.2	48.6	13.6 ✓	
80	62.6	48.6	14.0 ✓	
90	62.5	48.5	14.0 ✓	
5200	62.5	48.5	14.0 ✓	
10	62.4	48.5	13.9 ✓	
20	62.6	48.9	13.7 ✓	
30	62.6	49.0	13.6 ✓	
40	62.3	49.2	13.1 ✓	
50	62.6	49.4	13.2 ✓	

N 3580
Upstream Rock Emb.

East	Top El	Bottom	Ht	Mean Dist
5260	62.7	49.7	13.0 ✓	
70	62.5	49.9	12.6 ✓	
80	62.5	49.8	12.7 ✓	
90	62.5	49.7	12.8 ✓	
5300	62.7	49.8	12.9 ✓	
10	62.8	50.0	12.8 ✓	
20	62.9	50.2	12.7 ✓	
30	62.7	50.2	12.5 ✓	
40	62.8	50.0	12.8 ✓	
50	62.8	49.6	13.2 ✓	
60	62.7	48.5	14.2 ✓	
70	62.8	49.9	12.9 ✓	
80	62.8	49.0	13.8 ✓	
90	63.2	48.8	14.4 ✓	
5400	62.9	48.8	14.1 ✓	
10	62.9	49.4	13.5 ✓	
20	62.9	49.7	13.2 ✓	
30	62.9	49.9	13.0 ✓	
40	63.3	49.7	13.6 ✓	
50	63.7	49.1	14.6 ✓	

N 3580					
Upstream Rock Emb.					
East	Top El.	Bottom	Ht.	Area	Dist.
5460	63.7	47.5	16.2		
70	63.7	42.5	21.2		
80	63.4	37.5	25.9		
90	63.3	37.4	25.9		
					5118.00 ✓
				25.9	7.1 ✓
					183.89 ✓
97.1	63.2	37.3	25.9		5301.89 ✓
Above Upstream toe wall					
97.1	63.2	37.3	25.9		
				25.5	16.9 ✓
					430.95 ✓
5514.0	63.4	38.3	25.1		
				25.25	6 ✓
					151.50 ✓
20	63.3	37.9	25.4		
30	63.2	38.1	25.1		
40	63.1	44.7	18.4		
50	63.2	51.4	11.8		
60	63.4	58.0	5.4		
68	63.4	63.4	0.0		
					734.00 ✓
					1316.45 ✓

N 3590						
Below downstream toe wall						
East	Top El.	Bottom	Ht.	Area	Dist.	
4340	551.6	551.6	0.0			
50	51.5	46.8	4.7			
60	51.6	43.2	8.4			
70	51.8	42.3	9.5			
80	51.8	42.9	8.9			
90	51.9	42.7	9.2			
					361.00 ✓	
					9.4	5 ✓
					47.20 ✓	
95	51.9	42.3	9.6			
					14.6	5 ✓
					73.30 ✓	
4400	51.8	32.2	19.6			
					19.75	20 ✓
					395.10 ✓	
20	51.8	31.9	19.9			
					17.4	5 ✓
					87.00 ✓	
					82.20 ✓	
25	51.9	37.0	14.9			
					14.75	15 ✓
					221.25 ✓	
40	52.1	37.5	14.6			
50	52.2	36.6	15.6			
60	52.1	36.7	15.4			
70	52.2	36.3	15.9			
80	52.2	37.5	14.7			

N 3590

Below downstream toe wall

East	Top El	Bottom	Ht.	Mean Dist.
4490	52.2	37.4	14.8 ✓	763.00
			307 15.35 ✓ 8 ✓	122.80
98	52.1	36.2	15.9 ✓	
			323 16.15 ✓ 12 ✓	193.80
4510	52.4	36.0	16.4 ✓	
			16.45 ✓ 5 ✓	82.25
15	52.4	35.9	16.5 ✓	2341.90
				2346.70
<u>Downstream Rock Emb.</u>				
15	52.4	35.9	16.5 ✓	81.25
			16.25 ✓ 5 ✓	
20	52.4	36.4	16.0 ✓	
30	52.4	39.9	12.5 ✓	
40	52.3	43.2	9.1 ✓	
50	52.2	43.1	9.1 ✓	
60	52.4	42.9	9.5 ✓	
70	52.6	42.7	9.9 ✓	
80	52.6	42.7	9.9 ✓	
90	52.7	42.9	9.8 ✓	
4600	52.7	42.6	10.1 ✓	
10	52.8	42.6	10.2 ✓	
20	52.8	43.1	9.7 ✓	
30	52.8	43.5	9.3 ✓	

N 3590

Downstream Rock Emb.

East	Top El	Bottom	Ht	Mean Dist.
4640	52.9	44.2	8.7 ✓	
50	52.9	44.6	8.3 ✓	
60	52.9	44.7	8.2 ✓	
70	53.0	45.5	7.5 ✓	
80	53.1	45.5	7.6 ✓	
90	53.1	45.6	7.5 ✓	
4700	53.2	45.5	7.7 ✓	
10	53.2	46.0	7.2 ✓	
20	53.2	45.4	7.8 ✓	
30	53.4	45.2	8.2 ✓	
40	53.4	52.0	1.4 ✓	
<u>Hydraulic Fill.</u>				
40	53.4	52.0	1.4 ✓	
50	53.3	52.0	1.3 ✓	
60	53.2	52.1	1.1 ✓	
70	53.4	52.4	1.0 ✓	
80	53.4	52.3	1.1 ✓	
90	53.4	52.4	1.0 ✓	
4800	53.5	52.1	1.4 ✓	
10	53.7	52.2	1.5 ✓	

81.25 ✓
 1965.00
 2046.25

N 3590
Hydraulic Fill

East	Top El	Bottom	Ht.	Mean	Dist
4820	53.4	52.9	0.5	✓	
30	53.4	52.9	0.5	✓	
40	53.2	52.6	0.6	✓	
50	53.3	52.4	0.9	✓	
60	53.6	52.2	1.4	✓	
70	54.0	53.1	0.9	✓	
80	53.8	53.8	0.0	✓	
90	53.9	52.6	1.3	✓	
4900	54.6	52.8	1.8	✓	
10	55.2	53.7	1.5	✓	
20	56.0	50.3	5.7	✓	
30	57.1	43.1	14.0	✓	
40	57.7	38.3	^{19.4} 18.4	✓	
50	58.2	37.8	20.4	✓	
60	59.8	37.6	22.2	✓	
			22.35	7	✓
67	60.0	37.5	22.5	✓	
			22.7	13	✓
80	60.7	37.8	22.9	✓	

891.00 ✓
881.00

156.45

295.10

N 3590
Hydraulic Fill.

20

East	Top El	Bottom	Ht.	Mean	Dist
4980	60.7	37.8	22.9	✓	
			22.95	7	✓
87	60.9	37.9	23.0	✓	160.65 ✓
			22.65	0.5	✓
87.5	60.9	38.6	22.3	✓	11.32 ✓
			22.6	12.5	✓
5000	61.5	38.6	22.9	✓	282.50 ✓
			23.15	✓	
			22.15	13	✓
					300.95 ✓
					287.95 ✓
13	62.0	38.6	23.4	✓	
13	62.0	38.4	23.6	✓	
			23.55	10	✓
23	62.1	38.6	23.5	✓	235.50 ✓
			23.95	7	✓
			12.2	✓	167.65 ✓
30	62.4	38.0	24.4	✓	
40	62.3	39.1	23.2	✓	
50	62.6	38.0	24.6	✓	
60	62.3	37.9	24.4	✓	
70	62.3	37.3	25.0	✓	
80	62.3	37.5	24.8	✓	
90	62.5	38.5	24.0	✓	

N 3590
Hydraulic Fall

East Top El Bottom Ht Mean Dist

5100	62.5	40.3	22.2 ^{8.15} ✓		
10	62.6	46.3	16.3✓	143	5
				71.50	
15	62.6	50.3	12.3✓	1245	5
				62.25	
20	62.6	50.3	12.6 ^{5.9} ✓		
30	62.8	51.0	11.8	122.00	

Upstream Rock Emb. 4619.37
4642.37

30	62.8	51.0	11.8✓		
40	63.0	49.5	13.5✓		
50	62.8	48.9	13.9✓		
60	62.9	48.8	14.1✓		
70	62.6	48.5	14.1✓		
80	63.0	48.6	14.4✓		
90	62.0	48.7	13.3✓		
5200	62.8	48.6	14.2✓		
10	62.8	48.6	14.2✓		
20	62.9	48.9	14.0✓		
30	63.0	49.1	13.9✓		
40	62.8	49.4	13.4✓		

N 3590
Upstream Rock Emb.

East Top El Bottom Ht Mean Dist

5250	62.8	49.4	13.4✓		
60	62.9	49.4	13.5✓		
70	62.8	49.5	13.3✓		
80	62.9	49.4	13.5✓		
90	62.9	49.1	13.8✓		
5300	63.0	49.6	13.4✓		
10	63.1	49.6	13.5✓		
20	63.0	49.6	13.4✓		
30	62.9	49.5	13.4✓		
40	62.8	49.3	13.5✓		
50	62.8	49.5	13.3✓		
60	62.7	48.1	14.6✓		
70	62.7	47.6	15.1✓		
80	62.7	47.9	14.8✓		
90	62.7	47.9	14.8✓		
5400	62.9	47.7	15.2✓		
10	62.8	48.5	14.3✓		
20	63.1	49.4	13.7✓		
30	62.9	51.9	11.0✓		
40	63.2	48.5	14.7✓		

N 3590					□'
East	Top El.	Bottom	Ht.	Area Dist.	
5A50	63.1	48.2	14.9 ✓		
60	63.2	47.5	15.7 ✓		
70	63.4	42.5	20.9 ✓		
80	63.7	37.5	26.2 ✓		
90	63.7	37.4	26.3 ✓		5259.50
			26.35 ✓	5.6 ✓	147.56 ✓
95.6	63.7	37.3	26.4 ✓		5407.06 ✓
Above Upstream toe wall					
95.6	63.7	37.3	26.4 ✓		
			25.9 ✓	16.9 ✓	437.71 ✓
5512.5	63.7	38.3	25.4 ✓		
			25.85 ✓	7.5 ✓	193.87 ✓
20	63.8	37.5	26.3 ✓		
			26.3 ✓	7 ✓	184.10 ✓
27	63.7	37.4	26.3 ✓		
			21.9 ✓	13 ✓	284.70 ✓
40	63.5	46.0	17.5 ✓		
50	63.2	52.6	11.6 ✓		
60	63.3	59.2	4.1 ✓		224.00 ✓
			2.05 ✓	6 ✓	12.30 ✓
66	63.3	63.3	0.0		1336.68 ✓

N 3600					□'
East	Top El.	Bottom	Ht.	Area Dist.	
4343	551.7	551.7	0.0 ✓		
			2.35 ✓	7 ✓	16.45 ✓
50	51.8	47.1	4.7 ✓		
60	51.8	43.5	8.3 ✓		
70	51.8	42.7	9.1 ✓		
80	51.9	43.2	8.7 ✓		
90	52.0	42.8	9.2 ✓		330.50 ✓
			9.1 ✓	8 ✓	72.80 ✓
98	51.9	42.9	9.0 ✓		
			13.8 ✓	3 ✓	41.40 ✓
					39.40 ✓
4401	51.9	33.3	18.6 ✓		
			19.45 ✓	4 ✓	77.80 ✓
05	52.0	31.7	20.3 ✓		
			20.3 ✓	5 ✓	101.50 ✓
10	52.1	31.8	20.3 ✓		
			20.2 ✓	10 ✓	202.00 ✓
20	52.0	31.9	20.1 ✓		
			19.4 ✓	4 ✓	77.60 ✓
24	52.0	33.3	18.7 ✓		

N3600
Below downstream toe wall

4424	52.0	33.3	18.7	✓	
			^{2.25} 16.75	4	✓ 67.00
28	52.1	37.3	14.8	✓	
			^{7.5} 14.9	12	✓ 178.80
40	52.1	37.1	15.0	✓	
50	52.1	36.5	15.6	✓	
60	52.2	36.5	15.7	✓	
70	52.2	36.4	15.8	✓	
80	52.2	36.9	15.3	✓	
90	52.3	37.3	^{7.5} 15.0	✓	774.00
			15.4	9	✓ 138.60
99	52.3	36.5	15.8	✓	
			15.95	16.9	✓ 269.55
4515.9	52.4	36.3	16.1	✓	2348.00

Downstream Rock Emb

4515.9	52.4	36.3	16.1	✓	
			^{7.9} 15.95	4.1	✓ 65.39
20	52.4	36.6	15.8	✓	
30	52.4	36.9	15.5	✓	
40	52.5	41.1	11.4	✓	

N3600
Downstream Rock Emb.

4550	52.5	42.3	10.2	✓	2
60	52.6	42.8	9.8	✓	
70	52.7	42.7	10.0	✓	
80	52.7	42.6	10.1	✓	
90	52.8	42.9	9.9	✓	9
4600	52.7	42.8	9.9	✓	
10	52.8	43.0	9.8	✓	
20	52.6	43.3	9.3	✓	
30	52.7	43.8	8.9	✓	
40	53.0	44.3	8.7	✓	
50	53.0	44.6	8.4	✓	
60	52.9	45.1	7.8	✓	
70	52.8	45.1	7.7	✓	
80	53.1	45.2	7.9	✓	
90	52.7	45.4	7.3	✓	
4700	53.2	45.5	7.7	✓	
10	53.3	45.8	7.5	✓	
20	53.2	46.0	7.2	✓	
30	53.4	45.6	7.8	✓	
40	53.3	51.8	^{0.75} 1.5	✓	

^{65.39}
2014.50 ✓

2079.89 ✓

N 3600
Hydraulic Fill

4740	53.3	51.8	1.5 ^{0.75} ✓
50	53.1	52.0	1.1 ✓
60	53.4	52.0	1.4 ✓
70	53.3	52.4	0.9 ✓
80	53.4	52.6	0.8 ✓
90	53.4	52.3	1.1 ✓
4800	53.3	52.2	1.1 ✓
10	53.3	52.2	1.1 ✓
20	53.6	52.6	1.0 ✓
30	53.5	52.9	0.6 ✓
40	53.6	52.3	1.3 ✓
50	53.6	52.1	1.5 ✓
60	53.7	51.8	1.9 ✓
70	53.7	52.3	1.4 ✓
80	53.6	53.1	0.5 ✓
90	54.1	52.3	1.8 ✓
4900	54.1	51.0	3.1 ✓
10	54.5	53.3	1.2 ✓
20	54.8	46.8	8.0 ✓
30	55.4	42.7	12.7 ✓

N 3600
Hydraulic Fill

24

4940	56.3	38.8	17.5 ✓
50	56.5	38.5	18.0 ✓
60	56.2	38.4	17.8 ✓
70	57.6	38.6	19.0 ✓
80	58.3	38.7	19.6 ✓
90	59.4	38.9	20.5 ✓
5000	60.0	39.1	20.9 ✓
10	60.7	39.3	21.4 ✓
20	61.1	39.4	21.7 ✓
30	61.3	39.5	21.8 ✓
40	61.5	39.3	22.2 ✓
50	61.9	38.9	23.0 ✓
60	62.1	39.8	22.3 ✓
70	62.3	38.3	24.0 ✓
80	62.3	38.3	24.0 ✓
90	62.0	38.6	23.4 ✓
5100	62.0	41.5	20.5 ✓
10	62.2	47.5	14.7 ✓
20	62.4	50.3	12.1 ✓
30	62.6	49.8	12.8 ✓

4340.50 ✓

N 3600
Upstream Rock Emb.

5130	62.6	49.8	128 ^{6.4} ✓
40	62.6	49.6	130✓
50	62.8	49.4	134✓
60	62.9	49.1	138✓
70	62.9	48.7	142✓
80	63.1	48.8	143✓
90	63.0	48.6	144✓
5200	63.3	48.7	146✓
10	63.2	48.8	144✓
20	63.0	48.8	142✓
30	62.9	49.1	138✓
40	62.9	49.2	137✓
50	63.0	49.4	136✓
60	63.0	49.4	136✓
70	63.0	49.1	139✓
80	63.0	48.6	144✓
90	62.8	48.6	142✓
5300	62.8	49.2	136✓
10	63.2	49.4	138✓
20	63.1	49.3	138✓

N 3600
Upstream Rock Emb.

25

5330	63.0	49.1	139✓
40	62.8	49.3	135✓
50	62.8	48.6	142✓
60	62.8	48.5	143✓
70	63.2	48.1	151✓
80	63.0	48.4	146✓
90	63.2	47.9	153✓
5400	63.2	48.2	150✓
10	63.1	48.1	150✓
20	63.5	48.5	150✓
30	63.5	50.1	134✓
40	63.0	51.7	113✓
50	63.0	46.7	163✓
60	63.4	45.9	175✓
70	63.3	41.2	22.1✓
80	63.3	36.7	26.6 ^{19.1} ✓
90	63.4	37.2	26.2✓
94.2	63.4	37.3	26.1✓

5373.00

109.83✓

5482.83✓

N3600
Above upstream toe wall.

				□'
549A.2	63.4	37.3	26.1 ✓	
5511.1			25.6 ✓	16.9 ✓
5511.1	63.4	38.3	25.1 ✓	432.64 ✓
			25.6 ✓	8.9 ✓
20	63.3	37.2	26.1 ✓	227.84 ✓
30	63.2	38.2	25.0 ✓	
40	63.4	47.2	16.2 ✓	
50	63.4	53.8	9.6 ✓	
60	63.6	63.6	0.0 ✓	
				638.50 ✓
				1298.98 ✓

N3610
Below downstream toe wall

East	Top El.	Bottom	H.	Mean Dist.
4343	551.7	551.7	0.0 ✓	
			1.75 ✓	7 ✓
			1.15 ✓	12.25 ✓
50	51.8	48.3	3.5 ✓	
60	51.8	43.8	8.0 ✓	
70	51.8	43.0	8.8 ✓	
80	51.8	43.2	8.6 ✓	
90	51.9	43.0	8.9 ✓	
			8.8 ✓	9 ✓
				316.00 ✓
				79.20 ✓
99	51.8	43.1	8.7 ✓	
			14.3 ✓	5 ✓
				71.50 ✓
4404	51.8	31.9	19.9 ✓	
			19.9 ✓	19 ✓
				378.10 ✓
23	52.0	32.1	19.9 ✓	
			17.5 ✓	5 ✓
				87.50 ✓
28	52.0	36.9	15.1 ✓	
			14.95 ✓	12 ✓
			7.4 ✓	
40	51.9	37.1	14.8 ✓	
				179.40 ✓
50	52.1	36.6	15.5 ✓	
60	52.1	37.2	14.9 ✓	
70	52.2	37.1	15.1 ✓	

N 3610
Below downstream toe wall.

4480	52.1	37.9	14.2 ^{6.85} ✓	
90	52.3	38.6	13.7 ^{14.0} ✓	739.50
			9.8 ^{137.20} ✓	
99.8	52.3	38.0	14.3 ^{14.75} ✓	150.45
			10.2 ^{15.35} ✓	
4510	52.4	37.2	18.2 ^{15.35} ✓	99.77
			6.5 ^{2250.87} ✓	
16.5	52.1	36.6	15.5 ^{15.45} ✓	54.07
	Downstream Rock Emb.			
16.5	52.1	36.6	15.5 ^{7.7} ✓	
			3.5 ^{2365.50} ✓	
20	52.0	36.6	15.4 ^{2375.50} ✓	
30	52.0	37.4	14.6 ^{2429.57} ✓	
40	52.2	39.7	12.5 ^{2419.57} ✓	
50	52.2	40.9	11.3 ^{11.3} ✓	
60	52.2	40.8	11.4 ^{12.3} ✓	
70	52.2	40.6	11.6✓	
80	52.5	40.9	11.6✓	
90	52.4	40.6	11.8✓	
4600	53.5	40.7	12.8✓	

N 3610
Downstream Rock Emb.

27

4610	52.7	40.9	11.8 ^{11.8} ✓	
20	53.6	40.7	12.9 ^{12.9} ✓	
30	53.7	40.5	13.2 ^{13.2} ✓	
40	53.2	40.8	12.4 ^{12.4} ✓	
50	53.3	41.2	12.1 ^{12.1} ✓	
60	53.6	42.2	11.4 ^{11.4} ✓	
70	53.4	45.3	8.1 ^{8.1} ✓	
80	53.6	45.1	8.5 ^{8.5} ✓	
90	53.4	45.2	8.2 ^{8.2} ✓	
4700	53.3	45.2	8.1 ^{8.1} ✓	
10	53.2	45.7	7.5 ^{7.5} ✓	
20	53.3	45.1	8.2 ^{8.2} ✓	
30	53.3	45.7	7.6 ^{7.6} ✓	
40	54.1	51.6	2.5 ^{2.5} ✓	
	Hydraulic Fill			
40	54.1	51.6	2.5 ^{2.5} ✓	
50	54.0	51.8	2.2 ^{2.2} ✓	
60	54.1	52.2	1.9 ^{1.9} ✓	
70	54.1	52.1	2.0 ^{2.0} ✓	
80	53.6	52.3	1.3 ^{1.3} ✓	

54.07
2365.50 ✓
2375.50

2429.57
2419.57 ✓

N 3610
Hydraulic Fill.

4790	537	52.4	1.3✓
4800	540	52.5	1.5✓
10	54.0	52.2	1.8✓
20	53.6	52.4	1.2✓
30	53.3	52.7	0.6✓
40	53.5	52.4	1.1✓
50	53.3	52.1	1.2✓
60	53.2	51.8	1.4✓
70	53.5	51.5	2.0✓
80	53.6	51.7	1.9✓
90	54.0	50.9	3.1✓
4900	53.6	49.2	4.4✓
10	54.1	47.9	6.2✓
20	54.1	46.3	7.8✓
30	54.4	43.1	11.3✓
40	54.8	38.6	16.2✓
50	55.9	38.7	17.2✓
60	56.2	38.8	17.4✓
70	56.3	39.0	17.3✓
80	55.8	39.1	16.7✓

N 3610
Hydraulic Fill.

28

4990	56.8	39.2	17.6✓
5000	57.9	39.2	18.7✓
10	59.3	39.3	20.0✓
20	59.8	39.5	20.3✓
30	60.6	39.0	21.6✓
40	60.4	38.6	21.8✓
50	60.4	38.8	21.6✓
60	60.2	38.5	21.7✓
70	61.0	38.5	22.5✓
80	61.3	38.3	23.0✓
90	61.6	38.8	22.8✓
5100	61.3	43.0	18.3✓
10	60.6	48.7	11.9✓
20	61.5	49.2	12.3✓
30	61.7	49.1	12.6✓
<u>4206.50</u> ✓			
Upstream Rock Emb.			
30	61.7	49.1	12.6✓
40	61.6	49.2	12.4✓
50	61.7	49.5	12.2✓
60	61.8	49.0	12.8✓

N 3610
Upstream Rock Emb.

5170	62.9	48.9	14.0
80	61.7	48.7	13.0
90	62.2	48.6	13.6
5200	62.3	48.7	13.6
10	62.2	48.8	13.4
20	62.3	48.9	13.4
30	62.4	48.9	13.5
40	62.3	49.1	13.2
50	62.9	49.2	13.7
60	62.7	48.9	13.8
70	62.9	48.8	14.1
80	63.0	48.6	14.4
90	63.0	47.7	15.3
5300	62.8	48.1	14.7
10	62.8	48.6	14.2
20	62.8	48.9	13.9
30	62.9	48.6	14.3
40	63.0	48.3	14.7
50	63.2	47.9	15.3
60	63.2	47.9	15.3

N 3610
Upstream Rock Emb.

5370	63.4	48.3	15.1
80	63.2	48.4	14.8
90	63.4	48.3	15.1
5400	63.4	48.0	15.4
10	63.2	48.2	15.0
20	63.1	48.4	14.7
30	63.3	49.5	13.8
40	63.4	49.4	14.0
50	63.2	50.4	12.8
60	63.2	46.4	16.8
70	63.2	39.8	23.4
80	63.6	36.0	27.6

93.1	63.4	37.1	26.3	5098.00
			26.95 13.1	353.04
				5451.04

Above Upstream toe wall

93.1	63.4	37.1	26.3
5509.8	63.0	38.5	24.5
26	63.4	38.0	25.4

			25.4 16.7	424.18
			24.95 16.2	404.19

N 3610
Above Upstream toe wall.

Station	Top El	Bottom Ht.	Mean Dist.	Area
5526	634	38.0	25.4 ✓	
			11.4 ✓	24.1 ✓ 4 ✓
30	635	40.7	22.8 ✓	96.40 ✓
40	635	47.6	15.9 ✓	
50	635	54.4	9.1 ✓	
60	639	61.2	2.7 ✓	377.50 ✓
			1.35 ✓ 3 ✓	4.05 ✓
63	639	63.9	0.0 ✓	1306.32 ✓

N 3620
Below downstream toe wall.

30

Station	Top El	Bottom Ht.	Mean Dist.	Area
4343	551.6	551.6	0.0 ✓	
			2.05 ✓ 7 ✓	14.35 ✓
50	51.6	47.5	4.1 ✓	
60	51.6	45.2	6.4 ✓	
70	51.6	43.8	7.8 ✓	
80	51.5	44.2	7.3 ✓	
90	51.5	43.3	8.2 ✓	276.50 ✓
			4.1 ✓	65.60 ✓
98	51.6	43.4	8.2 ✓	
			14.0 ✓ 5 ✓	70.00 ✓
4403	51.6	31.8	19.8 ✓	
			19.8 ✓ 12 ✓	237.60 ✓
15	51.6	31.8	19.8 ✓	
			19.75 ✓ 10 ✓	197.50 ✓
25	51.7	32.0	19.7 ✓	
			17.35 ✓ 13 ✓	225.55 ✓
38	51.8	36.8	15.0 ✓	
			7.5 ✓ 15.0 ✓ 12 ✓	180.00 ✓
50	51.8	36.8	15.0 ✓	
60	51.9	37.4	14.5 ✓	

N 3620
Below downstream toe wall

A470	51.8	38.0	13.8	✓	
80	52.0	37.8	14.2	✓	
90	52.2	38.1	14.1	✓	7.05 ✓
					570.50 ✓
			14.25	10.3	✓
4500.3	52.2	37.8	14.4	✓	146.77 ✓
			14.85	9.7	✓
10	52.2	36.9	15.3	✓	144.04 ✓
			15.65	6.8	✓
16.8	52.6	36.6	16.0	✓	106.42 ✓
					2234.83 ✓

Downstream Rock Emb

16.8	52.6	36.6	16.0	✓	
			16.05	3.2	✓
20	52.7	36.6	16.1	✓	51.36 ✓
30	52.9	36.6	16.2	11	✓
31	52.9	36.6	16.3	✓	178.20 ✓
			15.3	3	✓
34	52.9	38.6	14.3	✓	45.90 ✓
			14.15	6	✓
40	52.9	38.9	14.0	✓	84.90 ✓

N 3620
Downstream Rock Emb

31

4540	52.9	38.9	14.0	✓	7.0 ✓
50	53.0	38.8	14.2	✓	
60	53.0	38.7	14.3	✓	
70	53.5	38.8	14.7	✓	
80	53.7	38.9	14.8	✓	
90	54.0	38.9	15.1	✓	
4600	54.3	38.8	15.5	✓	
10	54.6	38.8	15.8	✓	
20	54.3	38.9	15.4	✓	
30	54.3	39.0	15.3	✓	
40	54.6	39.0	15.6	✓	
50	54.6	39.0	15.6	✓	
60	54.6	39.0	15.6	✓	
70	54.7	45.3	9.4	✓	
80	54.8	45.1	9.7	✓	
90	54.7	44.9	9.8	✓	
4700	54.4	45.1	9.3	✓	
10	54.4	44.9	9.5	✓	
20	54.0	45.3	8.7	✓	
30	53.9	45.4	8.5	✓	
40	53.9	51.7	2.2	✓	

2549.00 ✓

2909.36 ✓

N 3620
Hydraulic Fill.

			1.1 ✓
4740	53.9	51.7	2.2 ✓
50	53.6	52.0	1.6 ✓
60	54.1	51.9	2.2 ✓
70	54.5	52.2	2.3 ✓
80	54.4	52.1	2.3 ✓
90	54.2	52.2	2.0 ✓
4800	54.0	52.6	1.4 ✓
10	54.0	52.2	1.8 ✓
20	54.3	52.6	1.7 ✓
30	54.4	52.8	1.6 ✓
40	54.3	52.6	1.7 ✓
50	53.5	52.2	1.3 ✓
60	53.2	51.9	1.3 ✓
70	53.3	51.4	1.9 ✓
80	53.5	50.8	2.7 ✓
90	53.6	50.0	3.6 ✓
4900	53.8	49.0	4.8 ✓
10	54.0	47.8	6.2 ✓
20	53.9	46.9	7.0 ✓
30	54.4	42.4	12.0 ✓

N 3620
Hydraulic Fill.

32

4940	54.6	39.4	15.2 ✓
50	54.6	39.0	15.6 ✓
60	55.7	39.3	16.4 ✓
70	56.0	38.8	17.2 ✓
80	55.9	39.0	16.9 ✓
90	56.1	39.2	16.9 ✓
5000	56.3	39.4	16.9 ✓
10	56.9	39.6	17.3 ✓
20	57.2	39.8	17.4 ✓
30	58.3	39.0	19.3 ✓
40	58.3	39.0	19.3 ✓
50	58.8	38.4	20.4 ✓
60	59.7	38.6	21.1 ✓
70	57.9	38.6	19.3 ✓
80	57.7	38.6	19.1 ✓
90	57.5	39.4	18.1 ✓
5100	57.5	43.7	13.8 ✓
10	57.4	45.8	11.6 ✓
20	57.6	46.8	10.8 ✓
30	57.8	47.8	10.0 ✓

3881.00 ✓

N 3620
Upstream Rock Emb.

5130	57.8	47.8	10.0 ^{5.0} ✓
40	57.7	49.9	7.8✓
50	57.8	49.5	8.3✓
60	57.7	49.3	8.4✓
70	61.9	48.9	13.0✓
80	58.5	48.9	19.6✓
90	58.9	48.7	10.2✓
5200	59.9	48.5	11.4✓
10	61.0	49.0	12.0✓
20	61.7	49.2	12.5✓
30	62.0	49.1	12.9✓
40	61.7	49.0	12.7✓
50	62.0	49.5	12.5✓
60	62.3	49.5	12.8✓
70	62.2	48.9	13.3✓
80	61.2	48.4	12.8✓
90	62.2	47.1	15.1✓
5300	62.4	47.9	14.5✓
10	62.4	48.1	14.3✓
20	62.7	48.0	14.7✓

N 3620
Upstream Rock Emb

33

5330	63.0	48.2	14.8✓
40	63.1	48.2	14.9✓
50	63.1	48.2	14.9✓
60	63.1	48.2	14.9✓
70	63.2	49.8	13.4✓
80	63.2	48.0	15.2✓
90	63.4	48.4	15.0✓
5400	62.5	48.3	14.2✓
10	63.3	48.3	15.0✓
20	63.2	48.2	15.0✓
30	63.5	48.8	14.7✓
40	63.2	48.8	14.4✓
50	63.7	49.2	14.5✓
60	63.7	43.6	20.1✓
70	63.2	37.4	25.8✓
80	63.3	36.5	26.8✓ 12.95✓
90	63.6	37.7	25.9✓
92.3	63.6	37.3	26.3✓

5103.50 ✓

26.1 ✓

2.3 ✓

60.03 ✓

5163.53 ✓

N 3620
Above Upstream toe wall

Station	Top El	Bottom	Ht	Mean Dist
5492.3	63.6	37.3	26.3	
			26.1	7.7
				200.97
5500	63.7	37.8	25.9	
			25.7	9
				231.30
09	63.9	38.4	25.5	
			25.95	11
				285.45
20	64.3	37.9	26.4	
			26.1	6
				156.60
26	63.8	38.0	25.8	
			24.25	4
				97.00
30	63.4	40.7	22.7	
			11.95	
40	64.7	47.4	17.3	
50	64.8	54.2	10.6	
60	65.0	60.9	4.1	
				413.00
			2.05	6
				12.30
66	65.0	65.0	0.0	
				1396.62

N 3630
Below downstream toe wall

Station	Top El	Bottom	Ht	Mean Dist
4343	552.2	552.2	0.0	
				2.85
				7
				19.95
50	52.9	47.2	5.7	
60	53.9	45.3	8.6	
70	53.8	44.8	9.0	
80	54.2	44.0	10.2	
			5.0	
90	53.7	43.7	10.0	
				356.50
				100
				11
				110.00
4401	53.8	43.8	10.0	
				15.35
				4
				61.40
05	53.5	32.8	20.7	
				20.75
				5
				103.75
10	53.3	32.5	20.8	
				21.05
				10
				210.50
20	53.3	32.0	21.3	
				21.1
				5
				105.50
25	53.6	32.7	20.9	
				18.8
				5
				94.00
30	53.8	37.1	16.7	
				8.35
40	54.0	36.7	17.3	

N 3630
Below downstream toe wall

4450	54.3	36.9	17.4	✓
60	54.5	37.1	17.4	✓
70	54.6	38.0	16.6	✓
80	54.5	38.3	16.2	✓
90	54.6	37.9	16.7	✓
4500	55.2	37.8	17.4	✓
			8.6	✓
10	54.6	37.4	17.2	✓
			17.55	6.9
			121.09	✓
16.9	55.1	37.2	17.9	✓
			2542.19	✓

Downstream Rock Emb.

16.9	55.1	37.2	17.9	✓
			17.9	3.1
			8.95	✓
20	55.3	37.4	17.9	✓
30	54.7	38.6	16.1	✓
40	54.8	41.0	13.8	✓
50	55.0	41.0	14.0	✓
60	56.4	40.9	15.5	✓
70	56.4	40.9	15.5	✓
80	57.6	40.1	17.5	✓

1359.50

121.09

2542.19

55.49

N 3630
Downstream Rock Emb.

35

4590	57.2	39.9	17.3	✓
4600	57.1	39.6	17.5	✓
10	57.7	39.8	17.9	✓
20	58.4	39.6	18.8	✓
30	57.7	39.9	17.8	✓
40	56.9	39.7	17.2	✓
50	57.3	39.6	17.7	✓
60	57.7	40.7	17.0	✓
70	55.7	45.0	10.7	✓
80	55.6	45.0	10.6	✓
90	55.1	45.0	10.1	✓
4700	55.2	44.9	10.3	✓
10	55.2	44.8	10.4	✓
20	55.3	44.8	10.5	✓
30	54.4	45.3	9.1	✓
			1.45	✓
40	54.3	51.4	2.9	✓
50	54.0	51.9	2.1	✓
60	53.6	50.5	3.1	✓

Hydraulic Fill.

55.49
3157.00

3212.49

N 3630
Hydraulic Fill.

4770	53.6	51.4	2.2 ✓
80	53.7	51.9	1.8 ✓
90	54.2	52.2	2.0 ✓
4800	54.1	52.6	1.5 ✓
10	54.3	52.5	1.8 ✓
20	54.3	52.7	1.6 ✓
30	54.4	52.8	1.6 ✓
40	54.4	52.9	1.5 ✓
50	54.3	52.6	1.7 ✓
60	54.3	52.2	2.1 ✓
70	53.4	51.9	1.5 ✓
80	53.5	51.4	2.1 ✓
90	53.6	50.9	2.7 ✓
4900	53.9	50.0	3.9 ✓
10	54.0	45.9	8.1 ✓
20	53.8	43.0	10.8 ✓
30	54.1	41.7	12.4 ✓
40	54.4	40.1	14.3 ✓
50	54.4	39.5	14.9 ✓
60	54.7	39.4	15.3 ✓

N 3630
Hydraulic Fill.

36

4970	55.0	39.3	15.7 ✓
80	55.9	39.3	16.6 ✓
90	56.0	39.2	16.8 ✓
5000	56.5	39.2	17.3 ✓
10	56.3	39.1	17.2 ✓
20	56.6	39.1	17.5 ✓
30	56.6	39.0	17.6 ✓
40	56.6	38.9	17.7 ✓
50	57.0	38.5	18.5 ✓
60	57.1	38.6	18.5 ✓
70	57.2	38.5	18.7 ✓
80	57.3	39.4	17.9 ✓
90	57.4	40.1	17.3 ✓
5100	57.5	42.3	15.2 ✓
10	57.4	44.4	13.0 ✓
20	57.8	45.6	12.2 ✓
30	57.8	46.7	11.1 ✓

3837.00 ✓

N3630
Upstream Rock Emb.

			5.55 ✓
5130	57.8	46.7	11.1 ✓
40	58.2	49.6	8.6 ✓
50	58.4	49.7	8.7 ✓
60	58.6	49.6	9.0 ✓
70	58.2	49.4	8.8 ✓
80	59.0	49.4	9.6 ✓
90	58.9	49.0	9.9 ✓
5200	58.5	49.0	9.5 ✓
10	59.0	49.0	10.0 ✓
20	59.3	49.4	9.9 ✓
30	60.2	49.8	10.4 ✓
40	60.5	49.7	10.8 ✓
50	60.5	49.9	10.6 ✓
60	62.3	49.2	13.1 ✓
70	59.8	48.8	11.0 ✓
80	60.0	47.7	12.3 ✓
90	60.5	47.4	13.1 ✓
5300	60.6	47.6	13.0 ✓
10	60.9	47.6	13.3 ✓
20	61.6	47.4	14.2 ✓

N3630
Upstream Rock Emb.

37

5330	62.3	47.7	15.6 ✓
40	62.4	48.0	14.4 ✓
50	62.6	48.2	14.4 ✓
60	63.0	48.1	14.9 ✓
70	62.6	48.3	14.3 ✓
80	62.8	49.1	13.7 ✓
90	62.8	48.6	14.2 ✓
5400	62.8	49.0	13.8 ✓
10	62.9	48.6	14.3 ✓
20	63.1	48.5	14.6 ✓
30	63.2	48.5	14.7 ✓
40	63.1	48.6	14.5 ✓
50	63.2	49.6	13.6 ✓
60	63.5	43.8	19.7 ✓
70	63.5	37.6	25.9 ✓ 13.7 ✓
80	63.9	36.5	27.4 ✓
			4576.50 ✓
			26.95 ✓ 11.6 ✓ 312.62 ✓
91.6	64.1	37.6	26.5 ✓
			<u>4889.12 ✓</u>

N 3630
Above Upstream toe wall.

5491.6	64.1	37.6	26.5 ✓		
				25.95 ✓ 16.7 ✓	433.36
5508.3	64.1	38.7	25.4 ✓		
				25.8 ✓ 11.7 ✓	301.86 ✓
20	64.4	38.2	26.2 ✓		
				26.15 ✓ 15 ✓	130.75
25	64.6	38.5	26.1 ✓		
				11.3 ✓ 24.35 ✓ 5 ✓	121.75 ✓
30	64.8	42.2	22.6 ✓		
40	65.0	49.5	15.5 ✓		
50	65.3	56.8	8.5 ✓		
			0.95 ✓		
60	65.4	63.5	1.9 ✓		362.50
				0.95 ✓ 2 ✓	1.90 ✓
62	65.5	65.5	0.0 ✓		1352.12 ✓

N 3640 38

Below downstream toe wall

East	Top El.	Bottom	Ht.	Mean	Dist	□'
4340	554.3	554.3	0.0 ✓			
				0.65 ✓	3 ✓	1.95 ✓
43	544	53.1	1.3 ✓			
				5.45 ✓	10 ✓	54.50 ✓
53	54.6	45.0	9.6 ✓			
				5.05 ✓	9.85 ✓	68.95 ✓
60	54.7	44.6	10.1 ✓			
70	54.4	43.6	10.8 ✓			
80	54.3	43.6	10.7 ✓			
90	54.6	43.6	11.0 ✓			
				5.65 ✓		
4400	54.4	43.1	11.3 ✓			432.00 ✓
				11.45 ✓	2 ✓	22.90 ✓
02	54.6	43.0	11.6 ✓			
				16.25 ✓	3 ✓	48.75 ✓
05	54.9	34.0	20.9 ✓			
				22.1 ✓	5 ✓	110.50 ✓
10	55.4	32.1	23.3 ✓			
				23.75 ✓	5 ✓	118.75 ✓
15	55.7	31.5	24.2 ✓			

N 3640
Below downstream toe wall

N 3640
Downstream Rock Emb □ 39

4415	55.7	31.5	24.2 ✓		
			24.3 ✓ 9'	218.70 ✓	
24	56.2	31.8	24.4 ✓		
			23.05 ✓ 2'	46.10 ✓ 26.10 ✓	
26	56.3	34.6	21.7 ✓		
			20.65 ✓ 4'	82.60 ✓	
30	56.5	36.9	19.6 ✓		
			9.8 ✓		
40	56.6	36.7	19.9 ✓		
50	56.9	37.0	19.9 ✓		
60	57.4	37.4	20.0 ✓		
70	58.6	37.7	20.9 ✓		
80	58.7	38.3	20.4 ✓		
90	58.6	38.3	20.3 ✓		
A500	58.4	37.7	20.7 ✓		
			10.35 ✓		
10	58.2	37.5	20.7 ✓	1622.50 ✓	
			20.75 ✓ 6.8'	141.10 ✓	
16.8	58.2	37.4	20.8 ✓	2929.30 ✓ 2969.30 ✓	

4516.8	58.2	37.4	20.8 ✓		
			20.7 ✓ 3.2'	66.24 ✓	
20	58.2	37.6	20.6 ✓		
			10.3 ✓		
30	58.5	39.0	19.5 ✓		
40	58.6	43.9	14.7 ✓		
50	58.7	43.3	15.4 ✓		
60	59.0	43.0	16.0 ✓		
70	59.2	42.6	16.6 ✓		
80	59.0	42.6	16.4 ✓		
90	58.8	42.7	16.1 ✓		
4600	58.5	42.9	15.6 ✓		
10	58.3	43.4	14.9 ✓		
20	57.9	43.9	14.0 ✓		
30	58.3	44.2	14.1 ✓		
40	58.0	45.1	12.9 ✓		
50	57.8	45.2	12.6 ✓		
60	58.0	45.0	13.0 ✓		
70	58.0	45.0	13.0 ✓		
80	57.6	45.2	12.4 ✓		
90	57.4	45.2	12.2 ✓		

N3640
Downstream Rock Emb

4700	57.2	45.1	12.1 ✓
10	55.8	45.0	10.8 ✓
20	55.5	44.7	10.8 ✓
30	55.6	45.0	10.6 ✓
40	55.2	51.6	3.6 ✓ 1.8 ✓

Hydraulic Fill

40	55.2	51.6	3.6 ✓ 1.8 ✓
50	54.4	51.6	2.8 ✓
60	54.3	51.2	3.1 ✓
70	53.8	51.5	2.3 ✓
80	54.5	51.9	2.6 ✓
90	53.7	52.5	1.2 ✓
4800	54.1	52.8	1.3 ✓
10	54.2	53.1	1.1 ✓
20	53.9	53.3	0.6 ✓
30	53.9	53.2	0.7 ✓
40	54.1	52.9	1.2 ✓
50	54.2	52.4	1.8 ✓
60	54.5	51.6	2.9 ✓
70	54.7	50.5	4.2 ✓

N3640
Hydraulic Fill

40

4880	54.5	48.3	6.2 ✓
90	53.5	47.9	5.6 ✓
4900	53.6	46.5	7.1 ✓
10	54.0	45.1	8.9 ✓
20	53.9	43.3	10.6 ✓

30	54.2	41.8	12.4 ✓
40	54.1	40.6	13.5 ✓
50	54.3	40.1	14.2 ✓
60	54.7	39.9	14.8 ✓ 7.4

67	55.0	40.3	14.7 ✓
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70	55.2	40.3	14.9 ✓ 7.45
80	54.6	40.1	14.5 ✓
90	55.2	39.9	15.3 ✓
5000	55.8	39.8	16.0 ✓
10	56.0	39.6	16.4 ✓
20	56.1	39.4	16.7 ✓
30	56.5	39.3	17.2 ✓
40	56.6	39.2	17.4 ✓

66.20
3058.00 ✓

3119.24

3124.24 ✓

1135.00 ✓

103.25 ✓

44.40 ✓

N 3640
Hydraulic Fill

5050	56.7	38.5	18.2 ✓
60	56.9	39.4	17.5 ✓
70	57.4	38.8	18.6 ✓
80	58.1	40.0	18.1 ✓
90	58.8	40.7	18.1 ✓
5100	60.7	42.3	18.4 ✓
70	61.0	45.4	15.6 ✓ 7.75 ✓
20	61.3	45.8	15.5 ✓

2532.00

Upstream Rock Emb. 3814.65 ✓

20	61.3	45.8	15.5 ✓ 7.75 ✓
30	61.1	46.6	14.5 ✓
40	61.2	50.2	11.0 ✓
50	60.2	49.7	10.5 ✓
60	60.5	49.7	10.8 ✓
70	58.8	49.5	9.3 ✓
80	60.2	49.6	10.6 ✓
90	60.4	49.3	11.1 ✓
5200	59.0	48.9	10.1 ✓
10	59.4	48.8	10.6 ✓
20	59.4	49.2	10.2 ✓

N 3640
Upstream Rock Emb

5230	59.3	49.8	9.5 ✓
40	59.5	49.7	9.8 ✓
50	59.4	49.4	10.0 ✓
60	60.0	49.0	11.0 ✓
70	60.8	47.9	12.9 ✓
80	61.0	46.4	14.6 ✓
90	62.0	46.9	15.1 ✓
5300	62.2	46.8	15.4 ✓
10	62.3	47.2	15.1 ✓
20	62.5	46.9	15.6 ✓
30	62.5	46.2	16.3 ✓
40	62.6	47.8	14.8 ✓
50	62.6	48.4	14.2 ✓
60	62.8	48.0	14.8 ✓
70	63.0	49.3	13.7 ✓
80	63.0	48.9	14.1 ✓
90	63.2	48.5	14.7 ✓
5400	63.1	48.5	14.6 ✓
10	63.3	48.5	14.8 ✓
20	63.2	48.8	14.4 ✓

N 3640
Upstream Rock Emb.

5430	63.2	48.2	15.0	
40	63.2	48.4	14.8	
50	63.2	49.2	14.0	
60	63.6	45.4	18.2	
70	63.7	38.4	25.3	
80	63.9	37.3	26.6	4924.50
			26.35	11.1
				292.48
91.1	64.1	38.0	26.1	5216.98

Above Upstream toe wall

91.1	64.1	38.0	26.1	
			26.15	8.9
				232.73
5500	64.5	38.3	26.2	
			26.1	7.8
				203.58
07.8	64.5	38.5	26.0	
			26.0	2.2
				57.20
10	64.5	38.5	26.0	
20	64.9	38.6	26.3	261.50
			26.3	4
				105.20
24	64.9	38.6	26.3	

N 3640
Above Upstream toe wall. 42

5524	64.9	38.6	26.3	
			24.4	6
				146.40
30	64.9	42.4	22.5	
			11.25	
40	65.0	49.2	15.8	
50	65.2	55.9	9.3	
			1.35	
60	65.2	62.5	2.7	377.00
			1.35	4
				5.40
64	65.1	65.1	0.0	1389.01

N 3650
Below downstream toe wall

East	Top El.	Bottom	Ht.	Area	Dist.
4343	553.7	553.7	00	✓	
				4.05	4.05 ✓ 7 ✓
50	56.1	48.0	8.1	✓	28.35 ✓
60	55.4	44.6	10.8	✓	
70	54.8	42.8	12.0	✓	
80	55.9	42.6	13.3	✓	
90	55.8	42.9	12.9	✓	
AA00	54.0	42.8	11.2	✓	586.50 ✓ 750.10 ✓
				11.6	3 ✓ 34.80 ✓
03	54.8	42.8	12.0	✓	
03	54.8	32.2	22.6	✓	
				23.75	7 ✓ 166.25 ✓
10	56.8	31.9	24.9	✓	4500
				25.3	5 ✓ 126.50 ✓
15	57.4	31.7	25.7	✓	
				26.0	5 ✓ 130.00 ✓
20	58.0	31.7	26.3	✓	
				26.35	4 ✓ 105.40 ✓
24	58.1	31.7	26.4	✓	

N 3650
Below downstream toe wall. 43

T	B.	H	M	D.
4424	58.1	31.7	26.4	✓
				24.75
				3 ✓ 74.25 ✓
27	58.2	35.1	23.1	✓
				22.85
				3
30	58.3	35.7	22.6	✓
				11.3
40	59.0	36.8	22.2	✓
50	59.0	37.1	21.9	✓
60	59.3	37.6	21.7	✓
70	59.1	37.7	21.4	✓
80	59.2	38.4	20.8	✓
90	59.1	38.5	20.6	✓
4500	59.3	38.1	21.2	✓
10	58.9	38.0	20.9	✓
				10.45
				20.9
				21.3
				6.4
164	59.6	37.9	21.7	✓
				136.32 ✓
				3172.42 ✓
				3336.02 ✓
Downstream Rock Emb.				
164	59.6	37.9	21.7	✓
				21.7
				3.6
20	60.0	38.3	21.7	✓
				10.85
30	59.2	41.1	18.1	✓
				78.12 ✓

N 3650
Downstream Rock Emb.

4540	59.2	432	16.0	✓
50	59.2	42.8	16.4	✓
60	59.1	43.0	16.1	✓
70	59.0	42.4	16.6	✓
80	59.2	42.6	16.6	✓
90	59.0	42.3	16.7	✓
4600	58.9	43.1	15.8	✓
10	58.7	43.1	15.6	✓
20	58.8	43.7	15.1	✓
30	58.4	44.1	14.3	✓
40	58.5	44.3	14.2	✓
50	58.3	44.5	13.8	✓
60	58.1	44.8	13.3	✓
70	58.4	45.2	13.2	✓
80	58.4	45.4	13.0	✓
90	57.8	45.7	12.1	✓
4700	57.6	45.1	12.5	✓
10	57.5	44.6	12.9	✓
20	58.2	44.4	13.8	✓
30	57.5	44.8	12.7	✓
40	56.5	52.1	4.4	✓

78.12 ✓
321 8.50

3296.62 ✓

N 3650
Hydraulic Fill.

44

4740	56.5	52.1	2.2	✓
50	56.7	52.2	4.5	✓
60	55.1	52.2	2.9	✓
70	54.9	52.3	2.6	✓
80	54.3	52.9	1.4	✓
90	55.7	52.6	3.1	✓
4800	55.6	53.3	2.3	✓
10	54.6	53.7	0.9	✓
20	54.9	53.8	1.1	✓
30	55.2	53.7	1.5	✓
40	55.4	53.1	2.3	✓
50	54.5	52.6	1.9	✓
60	54.5	52.0	2.5	✓
70	54.3	51.5	2.8	✓
80	54.8	50.5	4.3	✓
90	54.4	50.7	3.7	✓
4900	53.9	50.2	3.7	✓
10	53.4	49.3	4.1	✓
20	54.0	48.7	5.3	✓
30	54.1	46.2	7.9	✓

N3650
Hydraulic Fill.

4940	54.2	41.2	13.0	✓	
50	54.2	40.7	13.5	✓	
60	54.8	40.7	13.6 ^{6.8}	✓	943.00
70			13.55	7✓	94.85
67	54.8	41.3	13.5	✓	
			13.6	3✓	40.80
70	55.0	41.3	13.7 ^{6.85}	✓	
80	54.9	40.9	14.0	✓	
90	54.6	40.6	14.0	✓	
5000	55.1	40.3	14.8	✓	
10	55.3	40.0	15.3	✓	
20	55.7	39.7	16.0	✓	
30	56.2	39.4	16.8	✓	
40	56.2	39.5	16.7	✓	
50	56.3	39.5	16.8	✓	
60	56.6	39.6	17.0	✓	
70	57.0	39.0	18.0	✓	
80	57.6	40.3	17.3	✓	
90	58.6	39.3	19.3	✓	
5700	59.9	40.2	19.7	✓	

N3650
Hydraulic Fill.

45

5110	62.4	44.3	18.1	✓	
20	63.2	46.3	16.9	✓	2653.00
30	62.1	46.6	15.5 ^{7.75}	✓	3731.65

Upstream Rock Emb.

30	62.1	46.6	15.5 ^{7.75}	✓	
40	62.2	50.2	12.0	✓	
50	62.0	49.8	12.2	✓	
60	62.2	49.6	12.6	✓	
70	60.4	49.3	11.1	✓	
80	63.5	49.4	14.1	✓	
90	61.7	49.1	12.6	✓	
5200	61.7	48.8	12.9	✓	
10	61.5	48.5	13.0	✓	
20	62.1	49.0	13.1	✓	
30	61.7	49.3	12.4	✓	
40	61.6	49.5	12.1	✓	
50	62.1	48.8	13.3	✓	
60	62.5	49.0	13.5	✓	
70	63.1	48.4	14.7	✓	
80	63.3	47.5	15.8	✓	

N 3650
Upstream Rock Emb.

5290	62.8	46.7	16.1	✓
5300	63.5	46.8	16.7	✓
10	63.5	47.3	16.2	✓
20	63.4	47.0	16.4	✓
30	63.7	47.0	16.7	✓
40	63.8	47.3	16.5	✓
50	63.9	47.6	16.3	✓
60	63.7	48.3	15.4	✓
70	64.0	48.7	15.3	✓
80	63.7	48.5	15.2	✓
90	64.0	49.0	15.0	✓
5400	63.4	49.2	14.2	✓
10	63.6	48.6	15.0	✓
20	63.7	48.5	15.2	✓
30	63.7	48.4	15.3	✓
40	64.2	49.7	14.5	✓
50	64.5	49.8	14.7	✓
60	64.6	45.2	19.4	✓
70	64.6	37.4	27.2	✓
80	64.9	37.5	27.4	✓

5281.50 ✓

N 3650
Upstream Rock Emb.

46

	T	B	H	M	D	
5480	64.9	37.5	27.4			
						27.25 108 ✓
						5281.50 ✓
						294.30 ✓
90.8	64.7	37.6	27.1			5575.80 ✓
						Above Upstream toe wall.
90.8	64.7	37.6	27.1			
5500	64.4	38.4	26.0			26.55 x 9.2 ✓
						244.26 ✓
						26.0 x 7.3 ✓
						189.80 ✓
07.3	65.0	39.0	26.0			
						26.15 x 2.7 ✓
						70.60 ✓
10	65.2	38.9	26.3			
						26.5 x 10 ✓
20	65.3	38.6	26.7			265.00 ✓
						26.85 x 4 ✓
						107.40 ✓
24	65.4	38.4	27.0			
						25.0 x 6 ✓
						150.00 ✓
30	65.5	42.5	23.0			
40	65.6	49.2	16.4			
50	65.7	56.1	9.6			
60	65.1	63.0	2.1			1.05 ✓
						385.50 ✓
						1.05 x 3 ✓
						3.15 ✓
63	65.0	65.0	0.0			
						1415.71 ✓
						Total

N 3660
Below downstream toe wall.

East	Top El	Bottom	Ht	W	Dist.	□'
4330	560.1	560.1	0.0	✓		
40	597	54.1	5.6	✓		
50	58.4	47.9	10.5	✓		
60	57.2	44.2	13.0	✓		
70	55.3	41.9	13.4	✓		
80	55.4	42.1	13.3	✓		
90	55.4	42.3	13.1	✓	6.55	623.50
					12.95	9
					116.55	99.1
99	548	42.0	12.8	✓		
					18.0	4
					72.00	45
4403	55.4	32.2	23.2	✓		
					23.95	7
10	56.9	32.2	24.7	✓		
					26.25	10
20	59.8	32.0	27.8	✓		
					27.8	4
24	59.8	32.0	27.8	✓		
					26.05	1
25	59.7	35.4	24.3	✓		
					23.7	15
40	59.6	36.5	23.1	✓		355.50

N 3660
Below downstream toe wall

T	B	H	M	D	□'
4440	59.6	36.5	11.55	23.1	✓
50	60.0	37.6	22.4	✓	
60	59.8	37.8	22.0	✓	
70	59.6	38.1	21.5	✓	
80	59.8	38.5	21.3	✓	
90	59.6	38.8	10.4	20.8	✓
					21.05
					9.1
					1091.50
					191.55
					21.65
					16.6
					359.40
					3377.40
					45
					15.7
					59.7
					37.7
					22.0
					22.15
					4.3
					95.25
					11.15
					22.3
					20
					59.7
					37.4
					30
					59.9
					39.5
					20.4
					40
					59.6
					43.9
					15.7
					50
					59.7
					43.0
					16.7
					60
					59.3
					43.0
					16.3
					70
					59.4
					42.5
					16.9
					80
					59.5
					42.0
					17.5

Downstream Rock Emb

N 3660
Downstream Rock Emb.

4590	59.4	42.1	17.3	✓
4600	59.3	43.2	16.1	✓
10	59.1	43.1	16.0	✓
20	59.0	43.6	15.4	✓
30	58.9	44.0	14.9	✓
40	58.9	44.3	14.6	✓
50	58.6	45.0	13.6	✓
60	58.7	44.6	14.1	✓
70	58.4	45.0	13.4	✓
80	58.4	45.5	12.9	✓
90	58.3	45.9	12.4	✓
4700	57.9	45.2	12.7	✓
10	57.7	44.9	12.8	✓
20	57.8	44.6	13.2	✓
30	57.7	44.6	13.1	✓
40	57.7	55.0	2.7	✓

95.25
3285.00 ✓
3085.00

3180.25

3380.25 ✓

N 3660
Hydraulic Fill.

48

4740	57.7	55.0	2.7	✓
50	57.7	55.0	2.7	✓
60	57.4	54.5	2.9	✓
70	55.8	53.6	2.2	✓
80	54.5	53.9	0.6	✓
90	54.1	54.1	0.0	✓
4800	54.4	54.3	0.1	✓
10	54.7	54.5	0.2	✓
20	54.8	54.1	0.7	✓
30	54.9	53.7	1.2	✓
40	54.8	53.5	1.3	✓
50	55.3	53.9	1.4	✓
60	54.8	53.3	1.5	✓
70	54.7	53.6	1.1	✓
80	54.3	53.6	0.7	✓
90	54.2	53.1	1.1	✓
4900	54.5	52.8	1.7	✓
10	53.7	53.0	0.7	✓
20	54.2	52.4	1.8	✓
30	54.0	50.2	3.8	✓

N 3660
Hydraulic Fill.

4940	54.0	46.3	7.7	✓
50	54.2	41.4	12.8	✓
60	54.2	41.8	12.4	✓
			12.2	✓ 6 ✓
66	54.2	42.4	12.0	✓
			12.2	✓ 4 ✓
70	54.6	42.2	12.4	✓
80	55.4	41.8	13.6	✓
90	55.0	41.4	13.6	✓
5000	54.6	41.0	13.6	✓
10	54.9	40.6	14.3	✓
20	55.1	40.1	15.0	✓
30	55.4	39.9	15.5	✓
40	56.5	40.2	16.3	✓
50	56.3	40.6	15.7	✓
60	56.4	40.4	16.0	✓
70	56.6	39.8	16.8	✓
80	56.5	40.3	16.2	✓
90	56.6	39.7	16.9	✓
5100	57.6	40.1	17.5	✓

50
537.40

73.20

48.8

N 3660
Hydraulic Fill.

49

5110	58.8	42.4	16.4	✓
20	60.0	45.9	14.1	✓
30	Upstream Rock Emb			✓
20	60.0	45.9	14.1	✓
30	62.0	48.2	13.8	✓
40	61.8	50.0	11.8	✓
50	63.0	49.7	13.3	✓
60	62.8	49.3	13.5	✓
70	62.2	49.2	13.0	✓
80	61.7	49.2	12.5	✓
90	60.9	49.5	11.4	✓
5200	62.7	49.0	13.7	✓
10	62.8	48.5	14.3	✓
20	64.6	48.6	16.0	✓
30	64.9	49.2	15.7	✓
40	65.2	49.7	15.5	✓
50	65.1	48.5	16.6	✓
60	65.0	48.5	16.5	✓
70	63.8	47.7	16.1	✓
80	63.8	47.7	16.1	✓

2306.50 ✓

2966.00 ✓

2965.90

7.05

7.05

N 3660
Upstream Rock Emb

5290	64.0	47.0	17.0	✓	
5300	63.8	46.5	17.3	✓	
10	64.2	46.1	18.1	✓	
20	63.9	46.7	17.2	✓	
30	63.8	46.7	17.1	✓	
40	63.9	46.9	17.0	✓	
50	63.8	47.5	16.3	✓	
60	63.8	48.1	15.7	✓	
70	63.9	48.0	15.9	✓	
80	64.1	47.9	16.2	✓	
90	63.9	49.7	14.2	✓	
5400	64.0	48.9	15.1	✓	
10	64.2	49.4	14.8	✓	
20	64.6	49.0	15.6	✓	
30	64.6	48.7	15.9	✓	
40	64.9	49.6	15.3	✓	
50	64.9	50.3	14.6	✓	
60	65.3	48.3	17.0	✓	
70	65.6	40.7	24.9	✓	
80	65.8	37.9	27.9	✓	5660.00 ✓

N 3660
Upstream Rock Embankment. 50

5480	65.8	37.9	27.9	✓	
			28.2	✓	10.7 ✓
					301.74 ✓
90.7	66.3	37.8	28.5	✓	5961.74 ✓
Above upstream toe wall					
90.7	66.3	37.8	28.5	✓	
			27.65	✓	-9.3 ✓
					257.14 ✓
5500	65.7	38.9	26.8	✓	
			26.6	✓	-7.2 ✓
					191.52 ✓
07.2	66.2	39.8	26.4	✓	
			26.6	✓	-2.8 ✓
					74.48 ✓
10	66.4	39.6	26.8	✓	
			27.15	✓	x 10 ✓
20	66.6	39.1	27.5	✓	271.50 ✓
			27.45	✓	-4 ✓
					109.80 ✓
24	66.4	39.0	27.4	✓	
			25.2	✓	-6 ✓
					151.20 ✓
30	66.0	43.0	23.0	✓	
			11.5	✓	
40	64.8	49.7	15.1	✓	
50	64.6	56.3	8.3	✓	
			0.65	✓	
			1.3	✓	
60	64.3	63.0	1.3	✓	1.3 ✓
			0.65	✓	-2 ✓
					1412.44 ✓
62	64.2	64.2	0.0	✓	

N 3670
Below down stream toe wall

East	Top El	Bottom	Ht	Mean Dist	D'
4330	562.3	562.3	0.0	✓	
40	61.7	53.8	7.9	✓	
50	60.6	46.9	13.7	✓	
60	60.0	42.3	17.7	✓	
70	59.1	41.6	17.5	✓	
80	58.9	41.6	17.3	✓	
90	57.7	42.0	15.7	✓	819.50
			14.9	8	119.20
98	56.0	41.9	14.1	✓	
			16.35	2	32.70
4400	55.6	37.0	18.6	✓	
			21.1	2	42.20
02	55.8	32.2	23.6	✓	
			23.95	8	191.60
10	56.6	32.3	24.3	✓	
			25.25	7	176.75
17	58.8	32.6	26.2	✓	
			26.05	3	78.15
20	59.4	33.5	25.9	✓	

N 3670

4420	59.4	33.5	25.9		
				24.9	5
25	59.6	35.7	23.9		124.50
				23.4	5
30	59.8	36.9	22.9		117.00
				11.45	
40	60.3	37.6	22.7		
50	60.1	38.0	22.1		
60	60.0	38.0	22.0		
70	60.2	38.5	21.7		
80	60.0	38.7	21.3		
90	60.0	38.9	21.1		
				10.55	
				21.15-83	1318.00
983	59.9	38.7	21.2		175.55
				21.45-165	353.92
4514.8	60.0	38.3	21.7		3549.07
Downstream Rock Emb.					
4514.8	60.0	38.3	21.7		
				21.75	52
20	59.9	38.1	21.8		113.10

N 3670
Downstream Rock Emb.

4520	59.9	38.1	10.9 ✓ 21.8 ✓
30	60.2	39.2	21.0 ✓
40	60.0	43.0	17.0 ✓
50	59.9	42.6	17.3 ✓
60	60.0	42.4	17.6 ✓
70	59.8	42.6	17.2 ✓
80	59.8	42.0	17.8 ✓
90	59.8	42.8	17.0 ✓
H600	59.8	42.8	17.0 ✓
10	59.4	43.1	16.3 ✓
20	59.5	43.5	16.0 ✓
30	59.3	43.7	15.6 ✓
40	59.5	43.9	15.6 ✓
50	59.3	44.4	14.9 ✓
60	59.1	45.2	13.9 ✓
70	59.2	45.4	13.8 ✓
80	58.9	45.5	13.4 ✓
90	58.5	45.3	13.2 ✓
H700	58.9	45.1	13.8 ✓
10	58.9	44.8	14.1 ✓

N 3670
Downstream Rock Emb.

52

4720	58.9	44.7	14.2 ✓
30	58.9	44.8	14.1 ✓
40	59.0	49.4	4.8 ✓ 9.6 ✓

3465.00 ✓

3578.10 ✓

Hydraulic Fill

40	59.0	49.4	4.8 ✓ 9.6 ✓
50	58.4	57.0	14. ✓
60	58.4	56.0	2.4 ✓
70	57.7	56.6	1.1 ✓
80	57.3	55.9	1.4 ✓
90	56.7	55.4	1.3 ✓
H800	55.6	55.4	0.2 ✓
10	55.5	54.8	0.7 ✓
20	55.1	54.1	1.0 ✓
30	54.4	53.7	0.7 ✓
40	54.3	53.5	0.8 ✓
50	55.3	53.5	1.8 ✓
60	55.7	53.7	2.0 ✓
70	55.9	53.7	2.2 ✓
80	55.3	53.5	1.8 ✓
90	54.8	54.1	0.7 ✓

N 3670
Hydraulic Fill

4900	54.7	53.7	1.0	
10	54.3	53.2	1.1	
20	54.2	52.7	1.5	
30	54.3	52.6	1.7	
40	54.3	45.2	9.1	
50	54.3	43.0	11.3	
60	54.1	42.7	11.5	557.50
			11.4	79.80
67	54.2	42.9	11.3	
			11.35	34.05
70	54.3	42.9	11.4	
80	54.1	42.3	11.8	
90	55.3	41.8	13.5	
5000	55.7	41.3	14.4	382.00
			14.55	87.30
06	55.7	41.0	14.7	
			14.7	58.80
10	55.7	41.0	14.7	
			14.55	43.65
13	55.4	41.0	14.4	

N 3670
Hydraulic Fill

53

5013	55.4	40.7	14.7	
			14.6	7
			7.25	102.20
20	54.7	40.2	14.5	
30	55.1	40.4	14.7	
40	55.3	40.7	14.6	
50	55.9	41.1	14.8	
60	56.6	41.0	15.6	
70	56.4	40.5	15.9	
80	56.5	40.0	16.5	
90	56.7	41.0	15.7	
5100	56.7	40.7	16.0	
10	57.1	41.2	15.9	1390.00
			13.15	65.75
15	57.6	47.2	10.4	
			9.8	5
20	58.0	48.8	9.2	49.00
30	58.6	49.9	8.7	8.95
			8.95	10
				89.50
				2939.55

N 3670
Upstream Rock Emb

5130	58.6	49.9	4.35 ✓ 8.7 ✓
40	61.5	49.9	11.6 ✓
50	61.8	49.7	12.1 ✓
60	61.6	49.2	12.4 ✓
70	61.8	49.0	12.8 ✓
80	61.3	48.9	12.4 ✓
90	62.0	48.5	13.5 ✓
5200	62.9	48.8	14.1 ✓
10	65.2	48.6	16.6 ✓
20	66.4	48.5	17.9 ✓
30	66.4	49.2	17.2 ✓
40	66.5	49.8	16.7 ✓
50	66.5	48.9	17.6 ✓
60	66.5	48.9	17.6 ✓
70	66.4	48.1	18.3 ✓
80	65.8	47.8	18.0 ✓
90	65.5	47.3	18.2 ✓
5300	64.8	46.8	18.0 ✓
10	64.5	46.3	18.2 ✓
20	64.9	46.4	18.5 ✓

N 3670
Upstream Rock Emb

54

5330	64.6	46.4	18.2 ✓
40	64.8	46.8	18.0 ✓
50	64.5	47.2	17.3 ✓
60	64.3	47.8	16.5 ✓
70	64.4	48.2	16.2 ✓
80	64.4	46.5	17.9 ✓
90	64.7	47.9	16.8 ✓
5400	64.8	49.6	15.2 ✓
10	64.9	48.8	16.1 ✓
20	65.0	48.8	16.2 ✓
30	65.3	48.8	16.5 ✓
40	65.4	49.4	16.0 ✓
50	66.2	49.8	16.4 ✓
60	66.5	48.0	18.5 ✓
70	67.2	44.2	23.0 ✓ 14.5 ✓
80	67.3	38.3	29.0 ✓
90.8	66.7	38.4	28.3 ✓

5793.50 ✓

28.65 ✓ 10.8 ✓

309.42 ✓

6102.92 ✓

N 3670
Above Upstream toe wall

5490.8	66.7	38.4	28.3 ✓		
				27.55 ✓	9.2 ✓ 253.46 ✓
5500	66.3	39.5	26.8 ✓		
				26.05 ✓	7.3 ✓ 190.16 ✓
07.3	65.7	40.4	25.3 ✓		
				25.25 ✓	2.7 ✓ 68.18 ✓
10	65.5	40.3	25.2 ✓		
				25.55 × 10 ✓	
20	65.7	39.8	25.9 ✓		255.50 ✓
				25.8 ✓	5 ✓ 129.00 ✓
25	65.0	39.3	25.7 ✓		
				23.6 ✓	5 ✓ 118.00 ✓
30	64.2	42.7	21.5 ✓	10.75 ✓	
				21.5 ✓	
40	64.1	49.3	14.8 ✓		
				3.75 ✓	
50	63.6	56.1	7.5 ✓		293.00 ✓
				3.75 ✓	11 ✓ 41.25 ✓
61	63.6	63.6	0.0 ✓		1348.55 ✓

N. 3680
Below downstream toe wall

55

East	Top El	Bottom	Ht.	Area	Dist	∆'
4323	562.4	562.4	0.0 ✓			
				7.45 ✓	22 ✓	163.90 ✓
45	61.9	47.0	14.9 ✓			
				16.35 ✓	7 ✓	114.45 ✓
52	61.7	43.9	17.8 ✓			
				18.6 ✓	8 ✓	148.80 ✓
60	61.9	42.5	19.4 ✓	9.7 ✓		
				19.4 ✓		
70	61.4	41.5	19.9 ✓			
				18.5 ✓		
80	60.2	41.7	18.5 ✓	7.4 ✓		
				14.8 ✓		555.00 ✓
90	56.9	42.1	14.8 ✓			
				14.4 ✓	8 ✓	115.20 ✓
98	56.4	42.4	14.0 ✓			
				18.75 ✓	2 ✓	37.50 ✓
4400	56.3	32.8	23.5 ✓			
				24.9 × 10 ✓		
10	59.3	33.0	26.3 ✓			249.00 ✓
				26.45 ✓	7 ✓	185.15 ✓
17	59.4	32.8	26.6 ✓			
				25.85 ✓	3 ✓	77.55 ✓
20	59.5	34.4	25.1 ✓			

N 3680
Below downstream toe wall.

4420	59.5	34.4	^{12.55} 25.1 ✓	
30	60.0	36.1	23.9 ✓	
40	60.3	37.9	22.4 ✓	
50	60.4	38.2	22.2 ✓	
60	60.3	37.2	23.1 ✓	
70	60.2	38.9	21.3 ✓	
80	60.7	39.1	21.6 ✓	
90	60.6	39.3	^{10.65} 21.3 ✓	1577.00 ✓
			21.3 ✓ 7.1 ✓	151.23 ✓
97.1	60.4	39.1	21.3 ✓	
			21.5 ✓ 16.6 ✓	356.90 ✓
4513.7	60.1	38.4	21.7 ✓	3731.68 ✓
Downstream Rock Emb				
13.7	60.1	38.4	21.7 ✓	
			21.6 ✓ 6.3 ✓	136.08 ✓
20	60.2	38.7	^{10.75} 21.5 ✓	
30	60.2	39.7	20.5 ✓	
40	60.1	43.5	16.6 ✓	
50	60.1	42.6	17.5 ✓	
60	60.2	42.4	17.8 ✓	

N 3680
Downstream Rock Emb.

56

4570	59.9	42.5	17.4 ✓
80	60.0	42.5	17.5 ✓
90	60.0	42.5	17.5 ✓
4600	60.2	43.0	17.2 ✓
10	60.0	43.0	17.0 ✓
20	60.1	43.2	16.9 ✓
30	59.8	43.5	16.3 ✓
40	59.8	43.5	16.3 ✓
50	59.7	44.6	15.1 ✓
60	59.6	45.4	14.2 ✓
70	59.7	45.7	14.0 ✓
80	59.4	45.6	13.8 ✓
90	59.4	45.5	13.9 ✓
4700	60.6	45.1	15.5 ✓
10	60.5	45.1	15.4 ✓
20	59.9	45.7	14.2 ✓
30	59.9	48.0	^{5.95} 11.9 ✓

3413.00 ✓

3549.08 ✓

Hydraulic N 3680
Fill

4730	59.9	48.0	5.95 ✓ 11.9 ✓
40	59.5	54.7	4.8 ✓
50	59.4	58.5	0.9 ✓
60	59.4	58.2	1.2 ✓
70	59.2	57.6	1.6 ✓
80	58.8	56.8	2.0 ✓
90	57.9	56.1	1.8 ✓
4800	56.6	55.4	1.2 ✓
10	56.1	54.5	1.6 ✓
20	56.3	53.8	2.5 ✓
30	55.3	55.3	0.0 ✓
40	55.3	53.1	2.2 ✓
50	54.3	53.5	0.8 ✓
60	55.4	53.6	1.8 ✓
70	54.9	53.8	1.1 ✓
80	55.0	54.0	1.0 ✓
90	55.5	53.6	1.9 ✓
4900	55.1	53.5	1.6 ✓
10	55.0	53.4	1.6 ✓
20	53.9	53.6	0.3 ✓

Hydraulic N 3680
Fill

57

4930	54.3	51.7	2.6 ✓
40	54.5	46.8	7.7 ✓
50	54.4	44.9	9.5 ✓
60	54.3	44.3	5.0 ✓ 10.0 ✓
			9.85 ✓ 5 ✓
65	54.3	44.6	9.7 ✓
			9.95 ✓ 5 ✓
70	54.4	44.2	5.1 ✓ 10.2 ✓
80	54.1	43.5	10.6 ✓
90	53.9	42.7	11.2 ✓
5000	55.3	42.0	6.65 ✓ 13.3 ✓
			13.4 ✓ 5 ✓
65	55.3	41.8	13.5 ✓
			13.5 ✓ 5 ✓
10	55.3	41.8	13.5 ✓
			13.55 ✓ 3
13	55.4	41.8	13.6 ✓
			14.45 ✓ 7 ✓
20	55.8	40.5	7.65 ✓ 15.3 ✓
30	55.1	40.1	15.0 ✓
			606.50 ✓
			49.25 ✓
			49.75 ✓
			335.50 ✓
			67.00 ✓
			67.50 ✓
			40.65 ✓
			101.15 ✓

N 3680
Hydraulic Fill.

5040	54.6	41.1	13.5	✓
50	55.2	41.7	13.5	✓
60	55.7	42.0	13.7	✓
70	56.2	41.6	14.6	✓
80	56.6	40.7	15.9	✓
90	56.7	40.9	15.8	✓
5100	56.7	40.7	16.0	✓
10	56.7	42.9	13.8	✓
20	56.9	50.7	6.2	✓
30	57.1	50.4 ^{3.35}	6.7	✓

Upstream Rock Emb

30	57.1	50.4 ^{3.35}	6.7	✓
40	57.3	49.5	7.8	✓
50	58.4	49.3	9.1	✓
60	60.5	49.0	11.5	✓
70	60.9	48.9	12.0	✓
80	61.5	48.5	13.0	✓
90	64.6	48.4	16.2	✓
5200	65.1	48.3	16.8	✓
10	65.8	48.2	17.6	✓

1490.00
2807.30 ✓

N 3680
Upstream Rock Emb.

58

5220	66.6	48.5	18.1	✓
30	67.1	48.6	18.5	✓
40	67.0	49.0	18.0	✓
50	66.8	48.7	18.1	✓
60	66.7	48.4	18.3	✓
70	66.9	48.0	18.9	✓
80	67.0	47.8	19.2	✓
90	66.8	47.6	19.2	✓
5300	66.4	47.0	19.4	✓
10	66.2	46.7	19.5	✓
20	66.4	46.4	20.0	✓
30	66.5	47.3	19.2	✓
40	66.7	46.7	20.0	✓
50	66.4	47.1	19.3	✓
60	65.9	47.4	18.5	✓
70	65.9	47.2	18.7	✓
80	66.1	47.5	18.6	✓
90	66.2	47.5	18.7	✓
5400	66.4	46.9	19.5	✓
10	66.6	47.7	18.9	✓

N 3680
Upstream Rock Emb.

5420	66.5	488	17.7	✓	
30	66.6	49.0	17.6	✓	
40	66.7	48.6	18.1	✓	
50	66.8	48.9	17.9	✓	
60	67.3	48.0	19.3	✓	
70	66.7	44.4	22.3	✓	
80	66.2	38.6	27.6	✓	6126.50
90			26.8	11.1	297.48
91.1	64.8	38.8	26.0	✓	6423.98

Above upstream toe wall.

91.1	64.8	38.8	26.0	✓	
			24.05	16.4	394.42
5507.5	63.1	41.0	22.1	✓	
			21.65	12.5	270.62
20	62.0	40.8	21.2	✓	
			21.95	6	131.70
26	62.3	39.6	22.7	✓	
			21.4	4	85.60
30	62.5	42.4	20.1	✓	
40	62.7	49.5	13.2	✓	

N 3680
Above upstream toe wall.

59

5550	62.6	56.5	6.1	✓	
60	63.5	63.5	0.0	✓	293.50
					1175.84

N 3690

Below downstream toe wall.

4330	562.2	562.2	0.0	✓	78.00
40	62.7	47.1	15.6	✓	7.8 x 10
			16.7	4	66.80
44	62.4	44.6	17.8	✓	
			18.2	6	109.20
50	62.0	43.4	18.6	✓	9.3
60	62.4	43.1	19.3	✓	
70	61.2	41.7	19.5	✓	
80	59.9	41.9	18.0	✓	
90	57.5	41.8	15.7	✓	7.85
			15.9	5	739.50
			15.9	5	79.50
95	57.9	41.8	16.1	✓	
			20.6	4	82.40
99	58.2	33.1	25.1	✓	
			25.6	11	281.60
4410	57.2	33.1	26.1	✓	

N 3690
Below downstream toe wall.

4410	59.2	33.1	26.1	✓		
					26.05	5 ✓ 130.25 ✓
15	59.1	33.1	26.0	✓		
					26.1	5 ✓ 130.50 ✓
20	60.0	33.8	26.2	✓		
					25.8	5 ✓ 129.00 ✓
25	60.0	34.6	25.4	✓		
					23.65	5 ✓ 118.25 ✓
30	59.9	38.0	21.9	✓		
					10.95	✓
40	60.5	38.4	22.1	✓		
50	60.5	38.1	22.4	✓		
60	60.7	37.2	23.5	✓		
70	60.6	37.9	22.7	✓		
80	60.5	39.9	20.6	✓		
90	60.5	39.7	20.8	✓		
					10.4	✓
						1326.50 ✓
					20.65	6 ✓ 123.90 ✓
96	60.4	39.9	20.5	✓		
					20.9	16.3 ✓ 340.67 ✓
45 12.3	60.4	39.1	21.3	✓		
						3736.07 ✓

N 3690
Downstream Rock Emb.

60

4512.3	60.4	39.1	21.3	✓		
					21.35	7.7 ✓ 164.40 ✓
20	60.2	38.8	21.4	✓		
					10.7	✓
30	60.4	40.0	20.4	✓		
40	60.3	44.8	15.5	✓		
50	60.2	42.3	17.9	✓		
60	60.3	42.3	18.0	✓		
70	60.3	42.1	18.2	✓		
80	60.3	42.2	18.1	✓		
90	60.4	42.0	18.4	✓		
4600	60.2	42.0	18.2	✓		
10	60.4	42.0	18.4	✓		
20	60.3	42.0	18.3	✓		
30	60.1	42.2	17.9	✓		
40	60.2	42.2	18.0	✓		
50	60.0	42.0	18.0	✓		
60	60.1	42.7	17.4	✓		
70	60.1	45.8	14.3	✓		
80	60.2	45.9	14.3	✓		
90	59.9	45.7	14.2	✓		

N 3690 Downstream Rock Emb			
4700	60.1	45.8	1.3 ✓
4810	60.4	46.0	1.4 ✓
20	60.1	50.8	9.3 ✓
30	60.3	59.5	0.8 ✓
HYDRAULIC FILL			
30	60.3	59.5	0.8 ✓
40	60.1	59.6	0.5 ✓
50	60.1	59.3	0.8 ✓
60	60.1	59.0	1.1 ✓
70	60.2	58.1	2.1 ✓
80	59.9	57.6	2.3 ✓
90	59.1	57.3	1.8 ✓
4800	57.3	56.8	0.5 ✓
10	56.2	56.2	0.0 ✓
20	56.3	56.3	0 ✓
30	56.7	56.7	0 ✓
40	56.2	52.8	3.4 ✓
50	55.0	53.4	1.6 ✓
60	55.4	53.8	1.6 ✓
70	55.2	53.6	1.6 ✓
80	54.7	54.1	0.6 ✓
90	54.9	54.0	0.9 ✓

3446.00 ✓
3610.40 ✓

N 3690 Hydraulic Fill.				61
4900	55.1	53.6	1.5 ✓	
10	55.2	53.4	1.8 ✓	
20	54.8	53.1	1.7 ✓	
30	53.9	52.9	1.0 ✓	
40	54.3	51.6	2.7 ✓	
50	54.4	48.9	5.5 ✓	
60	54.6	48.0	6.6 ✓	367.00 ✓
			7.55 ✓	5 ✓ 37.75 ✓
65	54.3	45.8	8.5 ✓	
			8.5 ✓	5 ✓ 42.50 ✓
70	53.9	45.4	8.5 ✓	
80	54.5	44.6	9.9 ✓	
90	54.4	43.7	10.7 ✓	
5000	53.6	42.9	10.7 ✓	302.00 ✓
			10.85 ✓	3 ✓ 32.55 ✓
03	53.7	42.7	11.0 ✓	
			11.25 ✓	7 ✓ 78.75 ✓
10	54.2	42.7	11.5 ✓	
			11.5 ✓	3 ✓ 34.50 ✓
13	54.2	42.7	11.5 ✓	

N 3690
Hydraulic Fill

5013	54.2	41.9	123	✓	
			12.65	7	88.55
20	54.3	41.3	130	✓	
			13.2	2	26.40
22	54.5	41.1	134	✓	
			13.4	8	107.20
30	55.4	42.0	134	6.7 ✓	
40	55.5	41.9	136	✓	
50	55.4	42.5	129	✓	
60	55.0	43.2	118	✓	
70	55.4	43.0	124	✓	
80	55.8	42.5	133	✓	
90	56.5	42.5	140	✓	
5100	56.7	42.3	144	✓	
10	57.2	42.9	143	✓	
20	56.9	48.3	8.6	✓	
30	56.9	49.4	7.5	3.75 ✓	

1257.50 ✓

2374.70 ✓

N 3690
Upstream Rock Emb.

62

5130	56.9	49.4	7.5	3.75 ✓	
40	57.1	48.9	8.2	✓	
50	57.3	48.9	8.4	✓	
60	57.2	48.9	8.3	✓	
70	60.0	48.5	11.5	✓	
80	62.1	48.5	13.6	✓	
90	64.3	48.2	16.1	✓	
5200	64.4	48.0	16.4	✓	
10	65.0	48.0	17.0	✓	
20	66.3	48.0	18.3	✓	
30	66.6	48.4	18.2	✓	
40	67.0	48.8	18.2	✓	
50	66.9	48.4	18.5	✓	
60	67.2	48.0	19.2	✓	
70	67.0	47.9	19.1	✓	
80	67.0	47.6	19.4	✓	
90	67.0	47.7	19.3	✓	
5300	67.0	47.5	19.5	✓	
10	67.2	47.3	19.9	✓	
20	66.2	47.2	19.0	✓	

N3690

Upstream Rock Emb.

5330	67.0	47.8	19.2	✓
40	66.8	47.5	19.3	✓
50	67.4	47.3	20.1	✓
60	66.9	47.3	19.6	✓
70	66.2	47.3	18.9	✓
80	66.4	47.2	19.2	✓
90	66.6	47.6	19.0	✓
5400	66.5	47.6	18.9	✓
10	66.3	47.6	18.7	✓
20	66.1	48.1	18.0	✓
30	66.1	48.5	17.6	✓
40	66.0	48.7	17.3	✓
50	65.0	49.2	15.8	✓
60	64.9	46.2	18.7	✓
70	64.2	41.4	22.8	✓
80	63.5	39.3	24.2	✓
			23.6	✓
			11.6	✓
91.6	62.0	39.0	23.0	✓

6070.50 ✓
 273.76 ✓
 6344.26 ✓

N3690

Above Upstream toe wall

63

5491.6	62.0	39.0	23.0	✓
			21.85	84
				183.54 ✓
5500	61.0	40.3	20.7	✓
			20.0	7.9
				158.00 ✓
07.9	60.9	41.6	19.3	✓
			19.4	12.1
				234.74 ✓
20	60.9	41.4	19.5	✓
			20.95	9
				188.55 ✓
29	62.9	40.5	22.4	✓
			18.9	11
				207.90 ✓
40	63.6	48.2	7.7	15.4
50	63.2	55.2	8.0	✓
60	63.0	63.0	0.0	✓
				157.00 ✓
				1129.73 ✓

N 3700
Below downstream toe Wall

East	Top El.	Bottom	Ht.	Mean	Dist.
4310	563.1	563.1	0.0		
20	62.9	62.0	0.9		
30	62.4	56.0	6.4	3.2	41.00
27	61.8	46		10.95	7
37	61.9	46.4	15.5		76.65
33	61.8	45.3		15.95	3
40	61.7	45.3	16.4		47.85
				16.6	10
50	60.8	44.0	16.8		166.00
				16.1	3
53	60.5	45.1	15.4		48.30
				15.75	7
60	59.9	43.8	16.1		110.25
				16.9	5
65	59.5	41.8	17.7		84.50
				17.5	5
70	59.0	41.7	17.3	8.65	87.50
80	58.3	41.7	16.6	9.15	
90	60.2	41.9	18.3		344.00

N 3700

64

Δ'

4390	60.2	41.9	18.3		
				18.3	2
92	60.2	41.9	18.3		36.60
				22.6	5
97	60.0	33.1	26.9		113.00
				26.9	3
4400	60.0	33.1	26.9		80.70
				27.0	10
10	60.3	33.2	27.1		270.00
				26.75	6
16	59.7	33.3	26.4		160.50
				24.55	3
19	59.5	36.8	22.7		73.65
				22.0	6
25	59.9	38.6	21.3		132.00
				21.6	5
30	60.4	38.5	21.9	10.95	108.00
40	60.5	38.7	21.8		
50	60.7	37.4	23.3		
60	60.7	37.4	23.3		

N 3700
Below downstream toe wall.

4470	60.9	38.5	22.4	✓	
80	60.7	40.5	20.2	✓	
90	60.7	40.5	20.2	✓	1320.50
					20.25 ✓ 4.5 ✓
94.5	60.7	40.4	20.3	✓	91.12 ✓
					20.15 ✓ 5.5 ✓
4500	60.6	40.6	20.0	✓	110.83 ✓
					20.45 ✓ 10.6 ✓
10.6	60.4	39.5	20.9	✓	216.77 ✓
					3719.72 ✓

Downstream Rock Emb.

10.6	60.4	39.5	20.9	✓	
					20.9 ✓ 9.4 ✓
20	60.2	39.3	20.9	✓	196.46 ✓
					10.45 ✓
30	60.3	40.4	19.9	✓	
40	60.1	40.8	19.3	✓	
50	60.0	40.8	19.2	✓	
60	59.8	41.0	18.8	✓	
70	60.0	40.9	19.1	✓	
80	60.3	41.0	19.3	✓	
90	60.1	41.0	19.1	✓	

N 3700
Downstream Rock Emb.

4600	60.3	41.0	19.3	✓	
10	60.2	40.9	19.3	✓	
20	60.1	40.9	19.2	✓	
30	60.1	40.9	19.2	✓	
40	60.0	40.7	19.3	✓	
50	60.1	40.7	19.4	✓	
60	60.0	40.9	19.1	✓	
70	60.0	47.7	12.3	✓	
80	59.9	47.7	12.2	✓	
90	59.8	47.8	12.0	✓	

4700	59.8	49.4	10.4	✓	
10	59.7	50.0	9.7	✓	
20	60.0	49.1	10.9	✓	
30	60.1	49.7	10.4	✓	3526.50 ✓

Hydraulic Fill.

30	60.1	49.7	10.4	✓	
					5.2
40	60.0	50.5	9.5	✓	
50	59.9	51.5	8.4	✓	
60	59.9	53.0	6.9	✓	
70	59.6	56.6	3.0	✓	

3722.96 ✓

N 3700
Hydraulic Fill

4780	59.2	59.1	0.1 ✓
90	59.3	59.0	0.3 ✓
4800	58.4	58.4	0.0 ✓
10	56.6	56.6	
20	55.9	55.9	
30	56.1	56.1	
40	56.1	55.4	0.7 ✓
50	54.9	54.9	0.0 ✓
60	55.4	54.4	1.0 ✓
70	55.2	53.7	1.5 ✓
80	55.4	54.5	0.9 ✓
90	55.6	54.5	1.1 ✓
4900	56.1	53.6	2.5 ✓
10	56.5	53.5	3.0 ✓
20	56.7	53.2	3.5 ✓
30	55.4	52.7	2.7 ✓
40	54.1	51.3	2.8 ✓
50	54.2	50.3	3.9 ✓
60	54.1	48.6	5.5 ✓
70	54.1	47.9	6.2 ✓

N 3700
Hydraulic Fill

66

4980	54.3	47.3	7.0 ✓
90	54.1	46.6	7.5 ✓
5000	54.5	46.0	8.5 ✓
10	54.5	45.5	4.5 ✓ 9.0 ✓
			9.0 ✓ 3 ✓
13	54.5	45.5	9.0 ✓
13	54.5	45.1	9.4 ✓
			9.65 ✓ 7 ✓
20	54.5	44.6	4.95 ✓ 9.9 ✓
30	54.1	44.0	4.95 ✓ 10.1 ✓
40	54.4	44.0	10.4 ✓
50	55.5	44.1	11.4 ✓
60	55.3	44.5	10.8 ✓
70	55.5	44.3	11.2 ✓
80	55.7	44.2	11.5 ✓
90	55.5	44.6	10.9 ✓
5100	55.8	44.9	10.9 ✓
10	56.1	44.0	12.1 ✓
20	57.1	48.3	8.8 ✓
30	57.4	48.9	4.25 ✓ 8.5 ✓
			1173.00 ✓
			2229.55 ✓

N 3700
Upstream Rock Emb.

5130	57.4	48.9	4.25 ✓ 8.5 ✓
40	56.9	48.8	8.1 ✓
50	57.0	48.5	8.5 ✓
60	57.2	48.4	8.8 ✓
70	57.5	48.1	9.4 ✓
80	58.9	48.1	10.8 ✓
90	62.6	47.9	14.7 ✓
5200	63.8	48.4	15.4 ✓
10	64.2	48.0	16.2 ✓
20	64.7	47.9	16.8 ✓
30	66.6	48.3	18.3 ✓
40	67.0	48.2	18.8 ✓
50	67.0	48.2	18.8 ✓
60	67.0	48.3	18.7 ✓
70	67.1	47.5	19.6 ✓
80	67.1	48.0	19.1 ✓
90	67.1	48.0	19.1 ✓
5300	67.0	47.7	19.3 ✓
10	67.2	47.4	19.8 ✓
20	66.0	47.5	18.5 ✓

N 3700
Upstream Rock Emb.

5330	67.0	47.1	19.9 ✓	
40	66.6	48.3	18.3 ✓	
50	67.0	47.8	19.2 ✓	
60	67.5	47.6	19.9 ✓	
70	66.9	47.7	19.2 ✓	
80	66.2	47.6	18.6 ✓	
90	66.0	47.3	18.7 ✓	
5400	65.6	47.1	18.5 ✓	
10	64.8	48.2	16.6 ✓	
20	64.7	47.4	17.3 ✓	
30	64.8	48.4	16.4 ✓	
40	63.9	48.1	15.8 ✓	
50	63.3	48.2	15.1 ✓	
60	62.5	47.6	14.9 ✓	
70	62.1	41.3	20.8 ✓	
80	61.9	40.5	21.4 ✓	
90	61.6	40.3	10.65 ✓ 21.3 ✓	60 42.00 ✓
			21.4 ✓ 23 ✓	49.22 ✓
92.3	61.8	40.3	21.5 ✓	60 91.22 ✓

N3700
Above Upstream toe wall.

5492.3	61.8	40.3	21.5	✓				
			21.45	✓	7.7	✓	165.16	
5500	62.7	41.3	21.4	✓				
			21.45	✓	8.2	✓	175.89	
08.2	63.8	42.3	21.5	✓				
			21.65	✓	1.8	✓	38.97	
10	64.1	42.3	21.8	✓				
			21.6	✓	10	✓		
20	63.5	42.1	21.4	✓			216.00	
			21.45	✓	9	✓	193.05	
29	62.7	41.2	21.5	✓				
			17.65	✓	11	✓	194.15	
40	62.5	48.7	6.9	✓				
			13.8	✓				
50	62.7	55.4	7.3	✓				
60	62.2	62.2	0.0	✓				
							142.00	
							1125.22	✓

N3710
Below downstream toe wall.

68

East	Top El	Bottom	Ht	Mean	Dist			
4317	561.9	561.9	0.0	✓				
						0.65	3	1.95
20	61.9	60.6	1.3	✓				
						2.8	6	16.80
26	61.5	57.2	4.3	✓				
						8.85	5	44.25
31	61.1	47.7	13.4	✓				
						14.65	9	131.85
40	60.4	44.5	15.9	✓	7.95			
50	59.5	42.4	17.1	✓				
60	59.8	41.9	17.9	✓				
70	61.2	41.7	19.5	✓				
80	61.0	41.7	19.3	✓	9.65			721.00
						18.9	11	207.90
91	60.5	42.0	18.5	✓				
						22.6	5	113.00
96	60.7	34.0	26.7	✓				
						26.85	4	107.40
4400	61.0	34.0	27.0	✓				
10	60.9	34.0	26.9	✓	26.95 x 10			269.50

N 3710
Below downstream toe wall.

4410	60.9	34.0	26.9	✓	
			26.7	✓	5 ✓ 133.50
15	60.5	34.0	26.5	✓	
			23.6	✓	5 ✓ 118.00
20	60.0	39.3	20.7	✓	
			10.35	✓	
30	60.1	38.7	21.4	✓	
40	60.4	38.7	21.7	✓	
50	60.5	38.4	22.1	✓	
60	60.7	37.5	23.2	✓	
70	60.8	38.8	22.0	✓	
80	60.8	41.2	19.6	✓	
90	60.8	40.8	20.0	✓	
			10.0	✓	1503.50
			20.1	✓	2.7 ✓ 54.27
92.7	60.8	40.6	20.2	✓	
			20.25	✓	16 ✓ 324.00
4508.7	60.7	40.4	20.3	✓	3746.92

Downstream Rock Emb.

08.7	60.7	40.4	20.3	✓	
			20.8	✓	11.3 ✓ 235.04
20	60.7	39.4	21.3	✓	
			10.65	✓	

N 3710
Downstream Rock Emb.

4530	60.5	40.3	20.2	✓	
40	60.3	42.9	17.4	✓	
50	60.0	43.1	16.9	✓	
60	59.9	42.7	17.2	✓	
70	60.0	42.2	17.8	✓	
80	60.0	42.3	17.7	✓	
90	60.0	43.2	16.8	✓	
4600	60.0	44.1	15.9	✓	
10	60.1	43.7	16.4	✓	
20	60.1	43.7	16.4	✓	
30	60.0	43.8	16.2	✓	
40	60.0	44.0	16.0	✓	
50	59.9	44.2	15.7	✓	
60	59.9	44.7	15.2	✓	
70	59.7	48.8	10.9	✓	
80	59.7	48.8	10.9	✓	
90	59.6	51.1	8.5	✓	
4700	59.5	59.5	0.0	✓	

2767.50 ✓
3002.54 ✓

↓ Item 3 to 4770

N 3710
Hydraulic Fill.

4770	59.8	59.8	0.0	✓
80	59.8	59.4	0.4	✓
90	59.9	59.3	0.6	✓
4800	60.1	59.4	0.7	✓
10	60.3	59.0	1.3	✓
20	59.7	58.3	1.4	✓
30	59.1	58.5	0.6	✓
40	59.4	59.2	0.2	✓
50	58.9	58.9	0.0	✓
60	58.2	58.2		
70	56.6	56.6	0.0	✓
80	56.4	55.2	1.2	✓
90	55.8	54.2	1.6	✓
4900	56.2	53.8	2.4	✓
10	56.8	53.7	3.1	✓
20	56.3	53.4	2.9	✓
30	56.4	53.0	3.4	✓
40	56.6	52.2	4.4	✓
50	55.3	50.4	4.9	✓
60	54.7	50.0	4.7	✓

314.50 ✓

N 3710
Hydraulic Fill.

70

4960	54.7	50.0	4.7	✓	
			5.5	5	25.75 ✓
65	54.5	48.9	5.6	✓	
			5.65	5	28.25 ✓
70	54.3	48.6	5.7	✓	
80	54.4	47.9	6.5	✓	
90	54.2	47.2	7.0	✓	
5000	54.5	46.5	8.0	✓	
10	54.5	45.9	8.6	✓	
20	54.6	45.2	9.4	✓	
30	54.6	46.2	8.4	✓	
40	54.6	46.3	8.3	✓	
50	54.3	46.3	8.0	✓	
60	54.6	46.2	8.4	✓	
70	54.9	45.5	9.4	✓	
80	54.9	45.3	9.6	✓	
90	55.2	45.2	10.0	✓	
5100	55.2	47.1	8.1	✓	
10	55.0	47.0	8.0	✓	
20	56.0	48.9	7.1	✓	
30	57.2	48.7	8.5	✓	
					1319.00 ✓
					1687.50 ✓

N 3710
Upstream Rock Emb.

5130	57.2	48.7	^{4.25} 8.5 ✓
40	57.7	48.9	8.8 ✓
50	57.4	48.6	8.8 ✓
60	57.2	48.6	8.6 ✓
70	57.3	48.1	9.2 ✓
80	57.4	47.8	9.6 ✓
90	58.0	47.8	10.2 ✓
5200	58.8	47.8	11.0 ✓
10	63.7	47.7	16.0 ✓
20	63.4	47.5	15.9 ✓
30	64.6	47.6	17.0 ✓
40	66.4	47.8	18.6 ✓
50	67.0	48.0	19.0 ✓
60	67.0	48.3	18.7 ✓
70	67.1	47.6	19.5 ✓
80	67.4	47.5	19.9 ✓
90	67.1	48.6	18.5 ✓
5300	66.3	47.7	18.6 ✓
10	66.9	47.6	19.3 ✓
20	65.8	48.4	17.4 ✓

N 3710
Upstream Rock Emb

71

5330	66.0	47.8	18.2 ✓
40	65.2	47.7	17.5 ✓
50	65.0	47.8	17.2 ✓
60	65.0	48.0	17.0 ✓
70	64.7	47.9	16.8 ✓
80	64.8	48.1	16.7 ✓
90	64.7	47.4	17.3 ✓
5400	64.8	47.1	17.7 ✓
10	64.4	47.1	17.3 ✓
20	63.5	47.0	16.5 ✓
30	62.9	47.6	15.3 ✓
40	62.1	47.8	14.3 ✓
50	61.9	48.8	13.1 ✓
60	61.9	49.7	12.2 ✓
70	62.2	42.4	19.8 ✓
80	62.2	41.3	20.9 ✓
90	62.5	41.4	^{10.55} 21.1 ✓
93.1	62.4	41.4	21.0 ✓

21.05 3.1 ✓

5672.00 ✓

65.25 ✓

5737.25 ✓

N 3710
Above upstream toe wall.

5493.1	62.4	41.4	21.0	✓	
			20.65	6.9	142.48
5500	62.2	41.9	20.3	✓	
			19.6	8.7	170.52
08.7	61.5	42.6	18.9	✓	
			18.9	11.3	213.57
20	62.0	43.1	18.9	✓	
			19.0	12	228.00
32	61.3	42.2	19.1	✓	
			16.4	8	131.20
40	61.2	47.5	13.7	6.85 ✓	
50	61.1	54.2	6.9	✓	
60	61.2	61.2	0.0	✓	137.50
					1023.27

N 3720
Below downstream toe wall.

East	Top El	Bottom Ht	Mean Dist		
4320	560.3	560.3	0.0	✓	
			1.55	3	4.65
23	60.3	57.2	3.1	✓	
			7.1	4	28.40
27	60.2	49.1	11.1	✓	
			12.45	3	37.35
30	60.2	46.4	13.8	✓	
			14.6	10	146.00
40	59.9	44.5	15.4	✓	
			16.8	5	84.00
45	61.2	43.0	18.2	✓	
			18.65	5	93.25
50	61.5	42.4	19.1	9.55 ✓	
60	61.3	42.1	19.2	✓	
70	61.4	41.8	19.6	✓	
80	61.3	41.6	19.7	9.85 ✓	582.00
			19.55	8	156.40
88	61.3	41.9	19.4	✓	
			20.1	2	40.20
90	61.3	40.5	20.8	✓	

N 3720
Below downstream toe wall

4390	61.3	40.5	20.8	✓		
			22.6	✓ 2	45.20	✓
92	61.2	36.8	24.4	✓		
			25.4	✓ 8	203.20	✓
4400	60.9	34.5	26.4	✓		
10			26.6	✓ 10	266.00	✓
10	61.2	34.4	26.8	✓		
			26.65	✓ 5	133.25	✓
15	60.9	34.4	26.5	✓		
			23.25	✓ 3	69.75	✓
18	60.7	40.7	20.0	✓		
			19.7	✓ 3	59.10	✓
21	60.6	41.2	19.4	✓		
			20.35	✓ 2	40.70	✓
23	60.6	39.3	21.3	✓		
			21.25	✓ 7	148.75	✓
30	60.5	39.3	21.2	✓		
			21.1	✓ 5	105.50	✓
				✓ 3	63.30	✓
35	60.5	39.5	21.0	✓		

N 3720
Below downstream toe wall 73

4435	60.5	39.5	21.0	✓		
			21.6	✓ 5	108.00	✓
40	60.4	38.2	22.2	✓		
			22.2	✓		
50	60.5	38.3	22.2	✓		
60	60.7	37.6	23.1	✓		
70	60.8	39.1	21.7	✓		
			18.9	✓		
80	60.7	41.8	18.9	✓	875.50	✓
			18.9	✓ 10.5	198.45	✓
90.5	60.7	41.8	18.9	✓		
			19.25	✓ 9.5	182.88	✓
4500	61.0	41.4	19.6	✓		
			19.7	✓ 6.5	128.05	✓
06.5	60.9	41.1	19.8	✓		
					3694.38	
					3736.58	✓
Downstream Rock Emb.						
06.5	60.9	41.1	19.8	✓		
			19.95	✓ 13.5	269.33	✓
20	60.5	40.4	20.1	✓		
			20.1	✓		
30	60.8	41.9	18.9	✓		
40	60.5	43.9	16.6	✓		
50	60.4	43.5	16.9	✓		

N 3720
Downstream Rock Emb

4560	60.5	42.7	17.8	✓
70	60.2	42.5	17.7	✓
80	60.2	42.4	17.8	✓
90	60.1	44.0	16.1	✓
4600	60.1	43.2	16.9	✓
10	59.9	43.9	16.0	✓
20	69.8	45.1	24.7	✓
30	69.8	46.9	22.9	✓
40	69.7	48.6	21.1	✓
50	69.7	47.9	21.8	✓
60	69.7	48.3	21.4	✓
70	59.7	51.5	8.2	✓
80	59.7	52.6	7.1	✓
90	59.7	56.8	2.9	✓
4700	59.7	52.5	7.2	✓
10	59.7	59.7	0.0	✓

3020.50

3289.83

N 3720
Hydraulic Fill

74

4770	59.8	59.8	0.0	✓
80	59.9	59.5	0.4	✓
90	60.2	59.3	0.9	✓
4800	60.6	59.8	0.8	✓
10	61.1	59.5	1.6	✓
20	61.4	58.8	2.6	✓
30	61.1	58.3	2.8	✓
40	61.2	59.5	1.7	✓
50	61.1	60.8	0.3	✓
60	61.2	61.2	0.0	✓
70	60.5	60.5	0.0	✓
80	58.8	56.9	1.9	✓
90	57.2	54.0	3.2	✓
4900	55.8	54.3	1.5	✓
10	55.9	54.1	1.8	✓
20	55.8	54.4	1.4	✓
30	56.2	53.5	2.7	✓
40	56.4	53.2	3.2	✓
50	56.5	51.5	5.0	✓
60	55.2	51.0	4.2	✓

339.00

N 3720
Hydraulic Fill.

4960	55.2	51.0	4.2 ✓		
			A.6 ✓	5 ✓	23.00 ✓
65	55.5	50.5	5.0 ✓		
			5.25 ✓	5 ✓	26.25 ✓
70	55.8	50.3	5.5 ✓		
			2.75 ✓		
80	55.8	49.9	5.9 ✓		
90	53.7	49.5	4.2 ✓		
5000	54.3	49.1	5.2 ✓		
10	54.2	48.6	5.6 ✓		
20	54.4	48.2	6.2 ✓		
30	54.6	48.0	6.6 ✓		
40	54.5	47.7	6.8 ✓		
50	54.8	47.6	7.2 ✓		
60	54.5	46.9	7.6 ✓		
70	54.9	46.4	8.5 ✓		
80	54.7	46.6	8.1 ✓		
90	55.0	46.9	8.1 ✓		
5100	55.5	47.2	8.3 ✓		
10	55.3	47.2	8.1 ✓		
20	55.3	47.7	7.6 ✓		

N 3720
Hyd. Fill.

75 ✓

					1106.00 ✓
5130	55.8	48.1	7.7 ✓		1494.25 ✓
			3.85 ✓		
	Upstream Rock Emb.				
30	55.8	48.1	7.7 ✓		
			3.85 ✓		
40	56.4	48.7	7.7 ✓		
50	57.0	48.9	8.1 ✓		
60	57.2	48.7	8.5 ✓		
70	56.5	48.2	8.3 ✓		
80	56.9	47.6	9.3 ✓		
90	56.9	47.5	9.4 ✓		
5200	57.0	47.5	9.5 ✓		
10	57.8	47.5	10.3 ✓		
20	58.5	47.4	11.1 ✓		
30	59.3	47.5	11.8 ✓		
40	62.4	47.8	14.6 ✓		
50	64.2	47.9	16.3 ✓		
60	66.3	47.6	18.7 ✓		
70	66.7	47.2	19.5 ✓		
80	66.2	47.3	18.9 ✓		
90	64.9	48.0	16.9 ✓		
5300	65.4	47.1	18.3 ✓		

N 3720
Upstream Rock Emb

76
59.1
42.2
16.9

5310	65.2	48.1	17.1	✓	5490	61.4	42.0	19.4	✓		
20	64.5	47.2	17.3	✓				19.5	4.2	81.90	✓
30	64.4	47.9	16.5	✓	94.2	61.6	42.0	19.6	✓	5253.40	✓
40	64.2	47.7	16.5	✓	Above upstream toe wall						
50	64.5	47.6	16.9	✓	94.2	61.6	42.0	19.6	✓		
60	64.7	47.9	16.8	✓				19.45	5.8	112.81	✓
70	64.8	48.1	16.7	✓	5500	61.9	42.6	19.3	✓		
80	63.2	48.1	15.1	✓				18.95	9.5	180.02	✓
90	62.7	47.3	15.4	✓	09.5	62.1	43.5	18.6	✓		
5400	62.6	47.1	15.5	✓				17.45	10.5	183.23	✓
10	62.2	47.0	15.2	✓	20	60.3	44.0	16.3	✓		
20	62.0	46.9	15.1	✓	30	60.5	41.8	18.7	17.5	10	175.00
30	61.9	47.0	14.9	✓				18.45	3	55.35	✓
40	62.0	47.4	14.6	✓	3.3	60.4	42.2	18.2	✓		
50	61.9	47.5	14.4	✓				16.2	7	113.40	✓
60	61.3	48.6	12.7	✓	40	61.0	46.8	14.2	✓		
70	61.0	44.4	16.6	✓	50	60.4	53.3	7.1	10.65	10	106.50
80	61.1	42.0	19.1	✓				3.55	1.9	31.95	✓
90	61.4	42.0	19.4	✓	5171.50	59	59.1	59.1	0.0	✓	958.26

TABLE IX.—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	2.45	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 $1/2$ the roadbed $= w$, add the triangles formed by taking the distance out to each break in turn ($= w$'s) by the difference between the cuts (or fills) on each side of it ($= h$'s) always subtracting the outer from the inner.

DISTANCES FROM CENTER OF ROADWAY FOR
CROSS-SECTIONING.Roadway 16 feet wide. Side Slopes 1 on $1\frac{1}{2}$.

For Single Track Embankment.

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

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

Made in Germany.