

Wass

LEVEL BOOK

1890'S

449

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**THE FREDERICK POST CO.**  
*ENGINEERING and DRAFTING SUPPLIES*  
IRVING PARK STATION

CHICAGO, ILL.  
**MICROFILMED**

JAN 12 1965

D 662

U 650

Tile to  $\Delta = 144'$   
Left 48'  
Curve 32'

Profile of core wall for Est. #15 page 1

X Sections of Rock Emb. Est #15 p 1-4

" " " " " 27 " 43-46

Typical Hy. Fill Sec Est 15 Page 5

17 " 14

27 " 43-46

30 " 47-48

X Section Down Stream Spoil Est 15 " 6-7

" 16 " 10-11

" 17 " 12-14

" 18 " 18-21

" 19 " 22-25

" 20 " 27-30

" 21 " 31-32

" 22 " 33-35

" 23 " 38-39

" " " " After Nov. 16, 34 " 57-69

" " " " Finals " 70-73

X Section Upstream Spoil Est 16 7-10

" 18 15-18

" 23 36-37

" 24 39-41

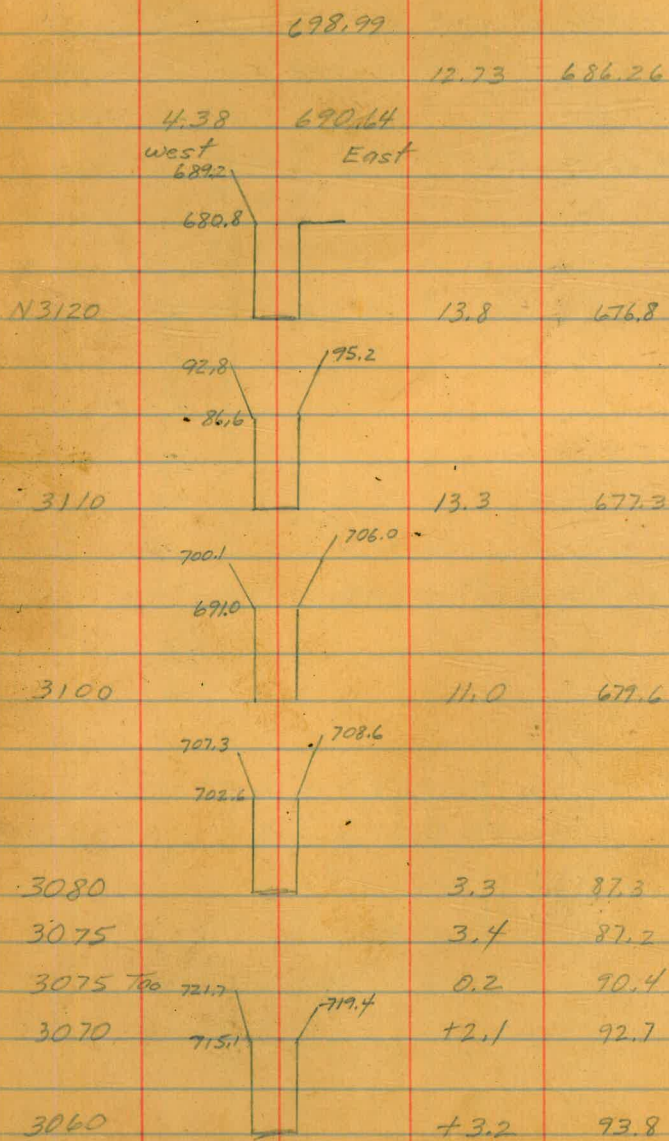
" 25 42

X Section of Plaza from Dam to West  
Prior to Placing DG. 50-53

Fence location around Plaza 54

Estimate of Down stream Rock Emb  
At 4040 to Elev. 770 Plaza 55

Profile of core wall  
for Monthly Est. #15  
Aug 1-1933



Upstream Rock Emb.  
for Mo. Estimate #15 Aug 1-1933

Station	Width	Elevation
N3160	15.0	681.6
666.2		
N3180		
5177	3.4	62.8
5230	4.4	61.8
5255	9.0	57.2
N3200		
5265	4.3	51.9
40	4.8	61.4
5220	4.2	62.0
5177	3.3	62.9
N3220		
5177	3.3	62.9
5235	4.4	61.8
5270	15.1	51.1
N3240		
5280 <sup>Z</sup>		650.0
5270 <sup>Z</sup>		650.0
5255	9.8	56.4
5240	5.1	61.1
5220	3.7	60.5
5177	3.5	62.7
N3280		
5177	3.9	62.3
5215	4.3	61.9
5225	2.6	63.6

Plotted Aug. 3, - R.E.L. & F.O.

666.2 N 3280 ✓  
5255 9.7 56.5

5270<sup>2</sup> 650.0  
5280<sup>2</sup> 650.0

N 3320 ✓

5280<sup>2</sup> 650.0  
5270 17.1 49.1

5255 10.2 56.6

5230 3.4 62.8

5220 4.9 61.3

5177 4.5 61.7

N 3360 ✓

5177 4.5 61.7

5225 5.3 60.9

5240 4.6 61.6

5253 9.1 57.1

5265 18.5 47.7

5280<sup>2</sup> 650.0

N 3400 ✓

5280<sup>2</sup> 650.0

5270 16.3 49.9

5255 12.6 53.6

5230 3.2 61.0

5210 4.5 61.7

5177 4.3 61.9

666.2

5177

5220

5235

5251

5265

5280<sup>2</sup>

0.0 663.1

5177

5220

5264

5271

5280<sup>2</sup>

5280<sup>2</sup>

70

60

30

5210

5177

N 3440 ✓

4.3 61.9

5.1 61.1

3.5 62.7

9.0 57.2

18.6 47.6

650.0 End Aug 1

663.1 ✓  
N 3480

1.5 61.6

2.0 61.1

8.3 54.8

13.2 49.9

650.0  
N 3520 ✓

15.0 48.1

8.4 54.7

2.8 60.3

17 61.4

1.5 61.6

Start Aug 2

663.1

N3560 ✓

5177	1.2	61.9
5220	2.3	60.8
35	2.7	60.4
62	8.0	55.1
70	14.2	48.9

5280?

650.0

N3600 ✓

5280?		650.0
67	14.0	49.1
60	7.7	55.4
40	3.3	59.8
26	2.4	60.7
5177	1.1	62.0

N3640 ✓

5177	0.8	62.3
5220	1.9	61.2
60	8.4	54.7
67	14.7	48.4

5280?

650.0

N3680 ✓

5280?		650.0
65	15.2	47.9
55	6.6	56.5
5230	2.3	60.8
5177	1.5	61.6

663.1

N3720 ✓

5177	2.4	60.7
5220	2.8	60.3
50	5.6	57.5
62	15.0	48.1

5280?

650.0

N3760 ✓

5280?		650.0
5265	15.0	48.1
52	7.5	55.6
40	5.3	57.8
5220	4.8	58.3
5177	3.8	59.3

N3800 ✓

5177	4.0	59.1
5220	4.1	59.0
51	5.4	57.7
60	16.2	46.9
5280?	16.2	46.9

N3840 ✓

5280?		650.0
75	16.2	46.9
60	16.2	46.9
50	5.9	57.2
5220	4.1	59.0
5177	3.5	59.6

663.1

N3880 ✓

5177	2.6	60.5
5220	3.4	59.7
55	5.4	57.7
67	15.2	47.9
52802		650.0

668.1

N3920 ✓

52802		650.0
77	20.2	47.9
67	20.4	47.7
56	9.2	58.9
5220	7.6	60.5
5177	7.0	61.1

N3960 ✓

5177	6.6	61.5
5220	7.1	61.0
43	6.4	61.7
67	21.2	46.9
52802		650.0

668.1

N4000 ✓

5295 ←	→ Finished to toe	
52802	21.7	46.4
60	21.7	46.4
43	7.2	60.9
5220	6.3	61.8
5177	6.0	62.1 ✓

N4040

5177	3.2	64.9
5220	4.0	64.1
35	4.4	63.7
67		644.9

5295 ←	→ Finished to toe	
	N4060	

5220	644.9	Toe
5235	2.5	65.6
5220	2.0	66.1
5177	1.2	66.9

New H. 2  
673.1

N4080 ✓

5177	4.4	68.7
5233	3.2	69.9 Toe

No rackon N4070

Typical Section of Hyd. Fill  
For Mo. Estimate Aug 2. 1933

Taken on N3620

	0.0	663.8	663.8	
5172		1.9	6.9	
5165		11.1	52.7	
5120		13.7	50.1	
5077			648.4	Water Surf.
4927			648.4	Water Surf.
4835		11.0	52.8	
4817		1.8	52.0	
4800		1.8	62.0	

Plotted Aug. 3

F.O. & R.E.K.



Xsections of Downstream  
 Spoil for Est. #15 Aug 4 - 1933  
 Elliott - Simpson - Super Remmen

6

B.M. 10.91 707.27 696.36

N4430 is O.G.

✓N4440

4625 0.G

4600 15.8 691.5

4470 0.G

✓N4460

4655 0.G

4600 0.0 707.3

T.P. 12.52 719.49 0.30 706.97

T.P. 2.82 721.10 1.21 718.28

4435 0.G

✓N4480

4650 721.10 0.G

4620 0.9 20.1

4595 3.6 17.5

4540 14.4 06.7

4480 27.7 93.4

679.2

4430 4.9 74.3

4415 16.9 67.3 0.G

679.2

✓N4500

4406 6.2 73.0 0.G

4450 +16.8 96.0

721.10

4480 14.7 06.4

4525 5.3 15.8

4605 0.G

✓N4520

4580 0.G

4460 8.9 12.2

4450 12.6 08.5

679.2

4390 2.2 77.0 0.G

✓N4530

4398 0.8 678.4 0.G

4450 721.10 8.9 712.2

4570 0.G

✓N4550

4530 0.G

4440 9.3 11.8

B.M. 11.88 679.16 667.28

4400 +2.8 82.0 0.G

721.10

N4570

4500

O.G.

4440

10.5 710.6

T.P. 0.21

709.04

12.27 708.83

4407

20.2 688.8 O.G.

N4590 is O.G.

T.P.

12.74 696.30

X Sections of Upstream  
Spoil for Est. #16 - Aug. 31, 1933

7

B.M. 12.97

708.57

695.60

N 3940 is O.G.

N 3920 v

6162

16.2 693.4 O.G.

6175

7.2 701.4

6225

3.8 711

6255

O.G.

N 3900

6283

O.G.

6255

1.4 707.2

6195

4.7 3.9

6152

O.G.

N 3880

6150

O.G.

6220

2.8 705.8

6260

1.5 711

6283

0.5 8.1

6318

O.G.

N 3860

6351

O.G.

6310

0.2 8.4

6280

1.1 7.5

6250

1.7 6.9

6225

10.5 698.1

6152

O.G.

	708.57	N3840		
6161		O.G.	✓	
6210		29.3 679.3	✓	
6278		1.8 706.8	✓	
6320		1.3 707.3	✓	
6345		1.3 707.3	✓	
6380		O.G.	✓	

		N3820		
6400		O.G.	✓	
6386		16.5 692.1	✓	
6362		0.3 708.3	✓	
6345		0.4 8.2	✓	
6280		13.6 695.0	✓	
6168		O.G.	✓	

B.M. 2.69 695.99 693.30

		N3800		
6425		O.G.	✓	
6400		5.6 690.4	✓	
6380		3.2 93.8	✓	
6360		+3.4 699.4	✓	
6320		9.2 86.8	✓	
6280		15.1 80.9	✓	
6250		25.6 70.4	✓	
6172		O.G.	✓	

	695.99	N3780		
6163		O.G.	✓	
6260		34.5 661.5	✓	
6280		29.7 66.3	✓	
6320		23.0 73.0	✓	
6350		4.3 91.7	✓	
6400		5.2 90.8	✓	
6435		4.7 91.3	✓	
6440		O.G.	✓	

		N3760		
6460		O.G.	✓	
6448		4.4 91.6	✓	
6420		5.6 90.4	✓	
6380		5.2 90.8	✓	
6355		4.8 91.2	✓	
6300		41.5 54.5	✓	
6265		48.1 47.9	✓	
6215		O.G.	✓	

		N3740		
6250		O.G.	✓	
6280		57.8 638.2	✓	
6370		4.9 91.1	✓	
6400		5.1 90.9	✓	
6440		4.7 691.3	✓	
6462		3.3 92.7	✓	
6480		O.G.	✓	

N3720

B.M.	2.60	695.90	693.30	
6495			O.G.	✓
6476	1.6	694.3		✓
6440	4.0	91.9		✓
6407	4.2	91.7		✓
6355	24.3	71.6		✓
6270			O.G.	✓

N3700

6275			O.G.	✓
6335	47.8	48.1		✓
6440	3.5	92.4		✓
6460	3.1	92.8		✓
6493	1.5	94.4		✓
6514			O.G.	✓

N3680

6538			O.G.	✓
6512	1.2	94.7		✓
6457	2.6	93.3		✓
6420	25.0	70.9		✓
6338	59.4	36.5		✓
6283			O.G.	✓

695.90

N3660

6356			O.G.	✓
6380	53.1	42.8		✓
6410	41.9	54.0		✓
6469	1.9	94.0		✓
6527	0.5	95.4		✓
6558			O.G.	✓

N3640

6580			O.G.	✓
6545	0.0	695.4		✓
6490	1.6	94.3		✓
6465	12.3	83.6		✓
6380			O.G.	✓

B.M. 6.23 699.53 693.30

N3620

6390			O.G.	✓
6470	26.0	73.5		✓
6514	4.5	95.0		✓
6560	3.2	96.3		✓
6591			O.G.	✓

N3600

6598			O.G.	✓
6555	4.3	95.2		✓
6540	4.2	5.3		✓
6520	11.4	88.1		✓
6400			O.G.	✓

699.53 N3580

6420		O.G.	✓
6510	28.1	71.4	✓
6535	20.4	79.1	✓
6555	18.4	81.1	✓
6600		O.G.	✓

6717 N3560

6450		O.G.	✓
6505	15.5	56.2	✓
6545	7.4	64.3	✓
6560	7.6	64.1	✓
6594		O.G.	✓

N3540

6585		O.G.	✓
6560	22.8	48.9	✓
6520	26.5	45.2	✓
6475		O.G.	✓

N3520 is O.G.

Cross-sections of Downstream  
Spoil for Est. #16 Sept. 1, 1933

10

B.M.	12.46	680.88		668.42
T.P.	11.81	692.52	0.17	680.71
T.P.	12.55	704.52	0.55	691.97
Set B.M.			2.82	701.70

Spike in  
Bank

N4730 is O.G. ✓

N4710 ✓

4335	3.2	700.7	O.G.	✓
4305	3.0	701.5		✓
4275			O.G.	✓

N4690 ✓

4350	2.7	701.8	O.G.	✓
4320	2.8	701.7		✓
4271			O.G.	✓

N4670 ✓

4272			O.G.	✓
4330	5.7	698.8		✓
4345	1.8	702.7		✓
4360			O.G.	✓

T.P.	12.81	716.87	0.46	704.06
Set B.M.			3.17	713.70

716.87

N4650 ✓

4380

O.G. ↓

4500

4357

1.1

715.8

✓

4450

4340

0.6

716.3

✓

4350

4265

O.G. ↓

4318

Sept 2 - 1933

N4630 ✓

4214

4213

4330

4350

B.M.

5.36

719.06

713.70

4450

4233

O.G. ↓

4520

4325

2.6

716.5

✓

4380

4.3

714.8

✓

4405

O.G. ↓

4560

N4610 ✓

4500

4425

O.G. ↓

4450

4405

4.7

714.4

✓

4350

4360

4.6

14.5

✓

4325

4330

3.0

16.1

✓

4220

4217

O.G. ↓

B.M.

4.43

718.13

713.70

N4590 ✓

4585

4212

O.G. ↓

4550

4313

4.1

715.0

✓

4420

4360

5.3

13.8

✓

4365

4435

6.9

12.2

✓

4325

4445

O.G. ↓

4220

719.06

N4570 ✓

11

O.G. ✓

9.1

710.0

✓

5.6

13.5

✓

4.0

15.1

✓

O.G. ✓

N4550 ✓

O.G. ✓

4.4

714.9

✓

5.8

13.3

✓

8.1

11.0

✓

O.G. ✓

N4530 ✓

O.G. ✓

7.3

711.8

✓

7.5

11.6

✓

5.2

13.9

✓

14.6

04.5

✓

O.G. ✓

N4520 ✓

O.G. ✓

4.8

713.3

✓

6.8

11.3

✓

4.6

13.5

✓

19.8

698.3

✓

O.G. ✓

718.13

N4500V

697.30

N4440V

4630			0.6	✓	4287				
4560		2.3	715.8	✓	4360		41.8	655.5	✓
4470		5.2	12.9	✓	4480		26.3	71.0	✓
4370		16.9	701.2	✓	4550		16.6	80.7	✓
4320		33.7	684.4	✓	4600		6.1	91.2	✓
4220				0.6	4625				0.6

N4480V

N4430 is O.G.!

4650				0.6	✓				
4590		0.9	717.2	✓					
4515		11.6	706.5	✓					
4370		32.0	686.1	✓					
4315		47.0	671.1	✓					
4235				0.6	✓				

Sept 5 - 1933

B.M. 11.38 707.74 696.36

N4460V

4650				0.6	✓				
4600		1.8	705.9	✓					
4535		15.4	692.3	✓					
B.M.	0.94	697.30	696.36						
4500		7.2	690.1	✓					
4440		17.6	679.7	✓					
4350		28.6	68.7	✓					
4300		46.5	50.8	✓					
4250				0.6	✓				

Simpson  
Sagado  
McHugh

Cross-Sections of Downstream  
Spoil, For Est. #17 - Oct. 2-1933

721.05

12

B.M. 7.35 721.05

713.70

N 4730 15 O.G.

E 4200 Toe

O.G.

4270

22.8 698.3

4290

18.0 703.1

4309

20.4 700.7 O.G.

N 4720

4160 Toe

O.G.

4270

10.5 710.6

4295

5.5 715.6

4329 Toe

O.G.

N 4680

4353 Toe

O.G.

4315

4.2 716.9

4263

5.5 715.6

4120 Toe

O.G.

N 4660

4100 Toe

O.G.

4257

6.5 714.6

4342

4.0 717.1

4370

O.G.

4392

O.G.

4365

5.5 715.6

4317

5.3 15.8

4240

7.1 14.0

4095 Toe

O.G.

N 4620

4090 Toe

O.G.

4230

8.9 712.2

4320

6.0 15.1

4390

5.7 15.4

4412 Toe

O.G.

N 4600

4446

O.G.

4430

7.9 713.2

4380

6.7 14.4

4330

6.8 14.3

4230

9.3 11.8

4095 Toe

O.G.

N 4580

4093 Toe

O.G.

4235

9.7 711.4

4330

7.4 13.7

4400

8.2 12.9

4460

12.1 09.0

4480

O.G.



721.05

## N4560

4095	Toe	O.G.		
4240		10.0	711.1	
4350		7.8	13.3	✓
4410		8.9	12.2	
4470		11.6	09.5	
4520		10.7	10.4	O.G.

## N4540

4095	Toe	O.G.		
4257		10.1	711.0	
4340		8.3	12.8	✓
4470		10.4	10.7	
4550		8.2	12.9	O.G.

## N4520

4105	Toe	O.G.		
4225		33.2	687.9	
4277		9.4	711.7	
4350		8.5	12.6	✓
4380		8.4	12.7	
4435		9.8	11.3	
4550		6.3	14.8	

East of Here is Same as last est.

13

B.M.	3.99	717.69	713.70
------	------	--------	--------

## N4500

4110	Toe	O.G.	
4225		39.3	678.4
4277		19.7	698.0
4305		18.0	699.7
4370		16.6	701.1
4480		4.9	712.8

East of here is Same as last est.

T.P.	0.34	706.35	11.68	706.01
------	------	--------	-------	--------

T.P.	0.78	695.24	11.89	694.46
------	------	--------	-------	--------

## N4480

East of here is Same as last est.

4470		+4.0	699.2
------	--	------	-------

4390		7.2	688.0
------	--	-----	-------

4290		12.7	682.5
------	--	------	-------

4250		19.0	676.2
------	--	------	-------

4122	Toe	O.G.	
------	-----	------	--

T.P.		11.23	684.01
------	--	-------	--------

	0.78	684.79	
--	------	--------	--

	1.27	674.24	
--	------	--------	--

Elliot  
Simpson

Typical section of hydraulic  
fill for Est #17 Oct 2, 1933 '14

	674.24	N4460	
4131	Toe		O.G.
4245		14.7	659.5
4280		6.6	67.6
4385		1.5	72.7
4410		0.0	74.2
4470		+8.8	83.0

East of here same as last est.

		N4440	
			East of here same as last est.
4470		5.2	69.0
4410		14.0	60.2
4290		21.9	52.3
4260		25.0	49.2
4215		37.0	37.2
4145	Toe		O.G.

		N4420	
4210	Toe		O.G.
4270		38.1	36.1
4350			O.G.

N4410 is O.G.

B.M.	00	685.2	685.2
E5140		+2.8	88.0
5130		4.7	80.5
5100		6.7	78.5
5062 W.S.		8.7	76.5
5000			63.5

		685.5	
H926 W.S.		9.0	76.5
4875		6.2	79.3
4854		4.3	81.2
4843		+2.5	88.0

Rock embankment complete  
to Elev. 687.5 on both faces

Oct 30, 1933.

Simpson  
Salgado  
Remmen.

15

Cross-sections of Upstream Spill  
Bank For Monthly Est. #18.

708.32

N3860 ✓

B.M. 12.72 708.32 ✓ 695.60

N3940 15 O.G.

N3920 ✓

6159 toe 0.6 707.7

73 7.4 00.9

6200 5.5 02.8

26 3.3 05.0

55 0.6

N3900 ✓

6285 0.6

55 1.1 07.2

30 2.4 05.9

6195 4.6 03.7

6152 toe 0.6

N3880 ✓

6149 toe 0.6

6220 3.2 05.1

50 1.9 06.4

83 0.7 07.6

6315 0.6

6351

6311

6280

6249

6223

6153 toe

6162 toe

6226

T.P. 3.84 711.82 ✓

6278

6325

44

79

6407

6387

6362

49

25

6284

6169

0.6

0.1 708.2

0.9 07.4

1.7 06.6

11.2 97.1

0.6

N3840 ✓

0.6

22.2 86.1

0.34 707.98

5.6 06.2

4.4 07.4

4.4 07.4 4.1

0.6

696.71

N3820 ✓

6.5 90.2 0.6

4.1 92.6

3.7 08.1

2.7 09.1

9.9 01.9

15.3 96.5

0.6

711.82

B.M.	3.41	696.71	693.30	
			N3800 ✓	
6425	78	88.9	O.G.	
6400	6.3	90.4		
6380	3.7	93.0		
6360	+2.2	98.9		
6318	10.1	86.6		
6280	16.3	80.4		
6246	27.5	69.2		
6171			O.G.	

N3780 ✓

6162	O.G.		Toe
6270	32.9	63.8	
90	29.4	67.3	
6320	23.5	73.2	
50	5.4	91.3	
77	5.3	91.4	
6420	6.6	90.1	
35	6.4	90.3	
40	9.1	97.6	O.G.

696.71

N3760

16

6461	10.7	86.0	O.G.
47	5.4	91.3	
20	6.3	90.4	
6390	5.6	91.1	
80	6.1	90.6	
57	5.7	91.0	
33	19.2	77.5	
6300	41.9	54.8	
6272	47.0	49.7	
6217			Toe

N3740 ✓

6237			Toe
6280	60.0	36.7	O.G.
6350	17.1	79.6	
69	7.2	89.5	
80	6.2	90.5	
6400	6.0	90.7	
20	5.8	90.9	
40	5.4	91.3	
62	3.7	93.0	
80			O.G.

696.71

N3720 ✓

6496			O.G.
76	2.7	94.0	
60	3.4	93.3	
20	5.4	91.3	
6407	5.4	91.3	
6383	19.4	77.3	
6363	23.5	73.2	
6335	36.3	60.4	
6272	too		O.G.

Oct. 31, 1933.

B.M. 3.82 697.12

693.30

N3700 ✓

6270	too		O.G.
6350	41.6	55.5	
6370	37.5	59.6	
6400	22.1	75.0	
40	4.8	92.3	
70	3.9	93.2	
94	3.3	93.8	
6517			O.G.

697.12

N3680 ✓

6538			O.G.
6513	2.8	94.3	
6490	3.1	94.0	
6458	4.1	93.0	
6420	26.4	70.7	
6395	36.6	60.5	
6357	55.4	41.7	
6320	67.6	29.5	
6284	too		O.G.

N3660 ✓

6360	too		O.G.
6380	54.6	42.5	
6410	43.1	54.0	
6455	11.2	85.9	
6471	3.2	93.9	
6500	2.6	94.5	
6527	1.7	95.4	
6559			

N3640 ✓

6581			O.G.
6545	1.3	95.8	
6510	2.1	95.0	
6489	2.9	94.2	
6462	16.0	81.1	
6385	too		O.G.

697.12

N3620 ✓

6592

O.G.

6563

1.4

95.7

6535

1.3

95.8

6515

2.5

94.6

6468

24.0

73.1

6398 T.O.C.

O.G.

N3600 ✓

6400 T.O.C.

O.G.

6460

40.2

56.9

6520

10.0

87.1

6540

2.4

94.7

6555

0.6

96.5

6572

9.3

87.8

6596

O.G.

T.P.

1.04

685.82 ✓

12.34

684.78 ✓

N3580 ✓

6598

O.G.

6577

11.9

73.9

6552

5.4

80.4

6515

12.2

73.6

6422

O.G.

T.P.

12.77

673.05

1.11

674.16

17

674.16

N3560 ✓

6440 T.O.C.

O.G.

6506

17.5

56.7

37

10.2

64.0

67

11.2

63.0

93

O.G.

N3540 ✓

6585

O.G.

6563

25.3

48.9

6539

25.2

49.0

6500

33.0

41.2

6476

O.G.

B.M.

5.44

668.72

Rec. Elev.  
668.74

N3510 is O.G.

Cross-Sections of Downstream  
Spoil Bank, For Monthly Est. #18

Nov. 1, 1933.

B.M. 2.89 704.59 701.70

N4740 is O.G.

N4720 ✓

4310 4.0 00.6 O.G.

4286 3.0 01.6

4260 10.7 93.9

4210 14.7 89.9

4180 36.7 67.9

4071 Toe O.G.

N4700 ✓

B.M. 6.53 720.23 713.70

4329 O.G.

4295 4.5 15.7

4280 5.2 15.0

4267 10.0 10.2

4246 10.8 09.6

4222 18.2 02.0

4167 48.1 72.1

4075 O.G.

Jimpson Salgado Remmer. 720.23 N4680 ✓ 18

A028 Toe 44.0 76.2

A160 18.9 01.3

4200 6.9 13.3

25 5.3 14.9

60 4.3 15.9

90 3.7 16.5

4314 4353 O.G.

4369 N4660 ✓

4344 3.1 17.1

4310 4.4 15.8

4280 5.3 14.9

4240 6.8 13.4

4207 7.6 12.6

4175 24.7 95.5

4018 Toe O.G.

4015 Toe N4640 ✓

4190 7.4 12.8

4250 7.1 13.1

4280 5.9 14.3

4320 4.4 15.8

4366 4.7 15.5

4389 O.G.

720.23 N4620 ✓  
 4411 O.G.  
 4390 4.9 15.3  
 4335 5.3 14.9  
 4280 6.3 13.9  
 4220 8.3 11.9  
 4187 8.8 11.4  
 4010 Toe

O.G. N4600 ✓  
 4011 Toe O.G.  
 4190 8.5 11.7  
 4210 9.4 10.8  
 4250 7.7 12.5  
 4280 7.1 13.1  
 4330 5.9 14.3  
 4387 5.9 14.3  
 4418 7.0 13.2  
 4436 12.9 07.3  
 4456 12.9 07.3 O.G.

N4580 ✓  
 4480 11.6 08.6 O.G.  
 4449 11.1 09.1  
 4403 7.6 12.6  
 4343 6.6 13.6  
 4280 7.7 12.5  
 4240 8.6 11.6

720.23 N4580 ✓ 19#  
 4188 10.9 09.3  
 4013 Toe  
 4016 Toe  
 4187 14.4 05.8  
 4195 12.1 08.1  
 4205 9.9 10.3  
 25 10.2 10.0  
 60 8.4 11.8  
 4330 7.1 13.1  
 71 7.3 12.9  
 4440 9.3 10.9  
 80 10.6 09.6  
 4520 9.8 10.4  
 B.M. 6.52 713.71 Rec. Elev. 713.70  
 3.25 716.95

N4540 ✓  
 4022 Toe O.G.  
 4179 22.9 94.0  
 4206 8.2 08.7  
 30 7.7 09.2  
 80 5.7 11.2  
 4350 4.3 12.6  
 4430 5.5 11.4  
 4480 5.9 11.0  
 4550 4.0 12.9 O.G.



716.95

N4520 ✓

4025	Toe			0.5
4159		447	72.2	
4200		19.8	97.1	
30		7.2	09.7	
60		6.9	10.0	
4315		5.5	11.4	
70		4.3	12.6	
4440		5.9	11.0	
80		5.2	11.7	
4550		2.8	14.1	
4590		1.9	15.0	O.G.

N4510

4025	Toe			0.5
4160		47.4	69.5	
4216		18.6	98.3	
55		7.6	09.3	
80		6.0	10.9	
4303		9.6	07.3	
70		8.2	08.7	
4410		4.6	12.3	
50		5.6	11.3	
4520		3.5	13.4	
80		1.6	15.3	
4610		1.3	15.6	O.G.

716.95

N4490 ✓

4635		0.3	16.6	O.G.
4600		0.0	16.9	
4550		0.4	16.5	
4500		4.8	12.1	
4465		11.0	05.9	
4405		19.8	9.7.1	
4340		23.6	9.3.3	
4300		23.6	9.3.3	
4280		20.5	9.6.4	
4250		22.6	9.4.3	
4200		37.4	7.9.5	
4149		63.8	53.1	

4033 Toe

O.G.

Nov. 2, 1933

B.M.	2.91	level	716.61	713.70
T.P.	0.34	704.07	12.88	703.73
T.P.	0.55	691.61	13.01	691.06

N4470 ✓

		716.61		
4655		1.2	15.4	O.G.
4613		1.0	15.6	
4536		16.7	99.9	
4500		19.1	97.5	

691.61 N4470 ✓

4409	9.4	82.2
4307	15.2	76.4
A280	11.2	80.4
4243	14.1	77.5
T.P.	12.95	678.66
0.78	679.44	

4180	25.4	54.0
4118	58.0	21.4
4043	Too	O.G.

N4450 ✓ O.G.

4100	Too	O.G.
4160	47.5	31.9
4210	27.4	52.0
4240	18.6	60.8
4290	15.6	63.8
4315	18.3	61.1
4410	12.4	67.0
4500	+3.4	82.8
4540	+6.9	86.3

716.61

4610	16.9	99.7
4645	14.8	01.8 O.G.

O.G. East 21

679.44 N4430 ✓

4410		O.G.
4370	30.2	49.2
4280	31.6	47.8
4240	34.2	45.2
4190	48.4	31.0
4118	Too	O.G.

N4400 is O.G.

Simpson  
Salgado  
Remen

Cross-sections of Downstream  
Spoil Bank For Monthly Est. #19,  
Nov. 29, 1933.

		N 4740	is	O.G.
B.M.	7.36	721.06		713.70
				N 4720 ✓
E 4310			700.6	O.G.
4286			701.6	
4260			693.9	
4210			689.9	
4180			667.9	
4079	Toe			O.G.
				N 4700 ✓
4329				O.G.
4300		6.7	14.4	
4280		6.2	14.9	
4260		12.0	09.1	
4240		13.1	08.0	
4210		22.1	99.0	
4160		48.2	72.9	
4070	Toe			O.G.

721.06

N 4680 ✓

4353				O.G.
4315		4.9	16.2	
4290		5.0	16.1	
4260		6.2	14.9	
4215		8.0	13.1	
4180		28.3	92.8	
4145		50.5	70.6	
4020	Toe			O.G.
				N 4660 ✓
4369				O.G.
4344		3.5	17.6	
4305		5.6	15.5	
4260		7.1	14.0	
4230		7.9	13.2	
4202		8.4	12.7	
4190		14.2	06.9	
4155		36.5	84.6	
4020	Toe			O.G.

721.06

N4640 ✓

E4389			o.g.
4366	5.5	15.6	
4330	5.2	15.9	
4310	5.8	15.3	
4290	6.3	14.8	
4260	7.7	13.4	
4230	8.4	12.7	
4192	8.9	12.2	
4170	21.3	99.8	
4017 Toe			o.g.
T.P.	9.12	711.94	

3.39 715.33

N4620 ✓

4007 Toe			o.g.
4180	4.8	10.5	
4220	3.6	11.7	
4260	2.3	13.0	
4310	0.6	14.7	
4370	1.0	14.3	

East of Here same as last Est.

715.38

N4600 ✓

East of Here same as last Est.

4370	1.3	14.0	
4320	1.2	14.1	
4290	1.7	13.6	
4260	2.5	12.8	
4200	4.0	11.3	
4178	5.8	09.5	
4007 Toe			o.g.

N4580 ✓

4006 Toe			o.g.
4181	4.1	11.2	
4230	4.2	11.1	
4260	3.0	12.3	
4300	2.3	13.0	
4340	1.8	13.5	
4370	1.6	13.7	

East of Here same as last Est.

Note: All sections South are same as Last Estimate East of E.4370

715.33 N4560 ✓

4370	2.4	12.9
4320	2.5	12.8
4260	3.7	11.6
4220	4.6	10.7
4190	4.1	11.2
4010 toe		0.6

N4540 ✓

4370	3.0	12.3
4340	2.9	12.4
4310	3.7	11.6
4260	4.6	10.7
4235	4.7	10.6
4197	4.1	11.2

4012 Toe 0.6

N4520 ✓

4370	2.7	12.6
4320	3.7	11.6
4260	4.3	11.0
4220	4.8	10.5
4180	27.4	87.9
4015 Toe		0.6

24

715.33 N4510 ✓

4017 toe		0.6
4164	42.5	72.8
4200	20.2	95.1
4232	6.6	08.7
4260	4.7	10.6
4300	8.6	06.7
4340	6.4	08.9
4370	6.3	09.0
T.P.	12.61	702.72

0.54 703.26

N4490 ✓

4370	9.4	93.9
4332	10.6	92.7
4290	8.3	95.0
4250	6.0	97.3
4220	15.2	88.1
T.P.	12.77	610.49
0.78 691.27		
4200	10.5	80.8
T.P. 2.40 680.74	12.93	678.34
4160	20.0	60.7
4027 toe		0.6

680.74

N4470 ✓

A032 toe

O.G.

A160

31.4

49.3

A205

12.1

68.6

A240

1.2

79.5

A290

1.0

79.7

A325

3.6

77.1

A370

2.4

78.3

T.P.

12.57

668.17

0.41 668.58

N4450 ✓

A370

5.3

63.3

A310

7.5

61.1

A290

4.5

64.1

A250

3.4

65.2

A220

8.9

59.7

T.P.

12.93

655.65

0.48 656.13

A190

6.3

49.8

A130

33.5

22.6

A045 toe

O.G.

656.13

N4430 ✓

25

A070 toe

O.G.

A125

46.0

10.1

A180

23.1

33.0

A240

7.4

48.7

A270

6.9

49.2

A310

9.5

46.6

A370

7.2

48.9

N4410 ✓

A310

O.G.

A260

20.0

36.1

A235

22.2

33.9

A185

34.2

21.9

A126 toe

O.G.

T.P.

12.87

643.26

O.G. 643.89

B.M.

14.06

629.83

Rec. Fly.

629.89

N4390 is O.G.

Additional Loose Rock in Abutments  
above Elev. 700 Est. #20 Elliott  
Jan 2 - 1934 Delaney

26

Upstream

N3500 to 4040 = 20' wide 3' high

N3120 to 3500 = 10' wide 3' high

Downstream

N3160 to 3830 = 15' wide 2 1/2' high

Elliott  
Simpson  
Soper  
Temmen

Jan 3-1934  
Xsections of Distr. Spoil

720.91

N4680

27

N4750 is O.G.

B.M. 2.82 704.52 701.70

N4740

E 4260 O.G.

4180 40.4 664.1

4102 O.G.

N4720

4085 O.G.

4170 33.0 715

4200 19.6 84.9

4280 4.5 700.0

4310 O.G.

N4700

B.M. 7.21 720.91 713.70

4328 O.G.

4300 5.7 715.2

4280 6.3 14.6

4210 18.5 02.4

4170 30.1 690.8

4073 O.G.

E 4355

4315

4210

4135

4023

T.P.

T.P.

4017

4147

4195

4260

4345

4370

4015

4185

4260

4365

4394

O.G.

4.5 716.4

7.9 13.0

54.4 666.5

O.G.

4.78 716.13

End Jan 3

Start Jan 4

3.52 719.65 716.13

N4660

O.G.

682.0

6.5 713.1

5.9 13.7

2.5 17.1

O.G.

N4640

O.G.

7.1 712.5

6.4 13.2

4.1 15.5

O.G.



	719.65	N4620 <sup>1</sup>
4009		0.6,
4133		678.5 <sup>1</sup>
4180	8.0	711.6
4260	6.6	13.0
4330	4.7	14.9
4390	4.5	15.1
4410		0.6

		N4600 <sup>1</sup>
3980		0.6
4010		585.0
4175	7.0	10.6
4260	7.0	12.6
4310	5.7	13.9
4420	6.5	13.1
4435		0.6

		N4580 <sup>1</sup>
3990		0.6
4012		587.5
4130		683.0
4175	8.7	10.9
4230	8.8	10.8
4260	7.4	12.2
4340	6.1	13.5
4410	7.3	12.3
4480		0.6,

	719.65	N4560 <sup>1</sup>
3990		0.6
4010		585.0
4132		676.0
4180	10.0	709.6
4230	9.1	10.5
4260	8.1	11.5
4360	6.6	13.0
4460	9.6	10.0
4530		0.6,

		N4540 <sup>1</sup>
4010		0.6,
4144		676.1
4195	11.9	707.7
4215	9.4	10.2
4260	9.1	10.5
4350	7.1	12.5
4460	8.4	11.2
4560		0.6,

	0.51	716.64	716.13
			N4520 <sup>1</sup>
4015			0.6
4200		13.6	03.0
4215		7.6	09.0
4260		5.9	10.7
4350		4.5	12.1

716.64 level N4520 ✓

E 4460	5.4	11.2
4600		0.G.
		N4510
3990		0.G.
4020		583.0
4192	23.8	692.8
4215	12.8	703.8
4260	6.0	10.6
4310	9.4	07.2
4410	4.8	11.8
4460	5.0	11.6
4570	1.4	15.2
4620		0.G.
T.P.	12.41	704.23

0.37 704.60 T

N4490 ✓

716.64

4660		0.G.
4570	+0.3	16.9
4550	0.2	16.4
4485	7.1	09.5
	704.6 T	
4370	10.9	693.7
4310	10.0	94.6
4250	8.8	95.8

29  
704.60 T N4490 ✓

4215		15.3	689.3
T.P.	0.36	692.16 T	12.80 691.80
4185		13.5	78.7
4029			0.G.
			N4470 ✓
4037			0.G.
4165		36.7	55.5
4210		19.0	73.2
4250		11.6	80.6
4370		14.0	78.2
4500	716.64 T	19.1	97.5
4540		16.4	700.2
4610		1.3	15.3
4660			0.G.

N 4450 ✓

0.G.

4645			
4600		18.0	698.6
		692.16 T	
4535		7.3	84.9
4500		9.8	82.4
T.P.	0.56	680.31	12.41 679.75
4410		12.7	67.6
T.P.	0.32	668.25	12.38 667.93
4310		7.5	60.7

668.25

N4450 ✓

4260		2.2	666.0
4200		11.0	57.2
	634.1		
4145		2.4	31.7
4113		2.9	31.2
4035			O.G.

N4430 ✓

4035			O.G.
4103		4.3	29.8
4165		3.3	30.8
4200		18.4	42.5

668.25

4260		18.4	49.8
4310		21.7	46.5
4370		19.4	48.8
4410		14.6	53.6
4530			O.G.

T.P.	1.93	656.89	13.29	654.96
	1.41	645.47	12.83	644.06

645.47

N4410 ✓

4310					0.6
4260			9.6		35.9
T.P.	1.44	634.06	12.85	632.62	
B.M.			4.20	629.86	629.89
	4.20	634.09			
4210			4.4		29.7
4102			4.4		29.7
4032					10.6

N4390

4270					O.G.
4200			4.6		29.5
4105			3.6		30.5
4030					O.G.

N4370

4280					O.G.
4190			4.1		30.0
4120			3.6		30.5
4090			20.9		13.2
4035					O.G.

N4325 is O.G.

End Jan 4 - 1934

X Sections of Downstream Spoil  
 For Est. #21 - Feb 1 - 1934  
 Elliott - Soper - Remmen

627.21 N4360

B.M.	0.53	604.35	603.82
N4320 (Average this section on the so. with 0.0 on N4310)			
E 4100			0.6
4080		16.7	587.6
4040			0.6
T.P.		1.22	603.13

4120		2.6	24.6
4100		5.0	22.2
4076		15.2	12.0
4015			0.6

T.P. 8.16 634.58 0.79 626.42

12.57 615.70  
 N4340 (Average this section on the South with 0.0 on N4325 between E. 4215 & 4120)

E 4250			0.6
4215		9.2	06.5
4200		7.0	08.7
4120		5.3	10.4
4090		10.4	05.3
4060		23.8	591.9
4025			0.6
T.P.	12.30	627.21	0.79 614.91

N4370			
4300			0.6
4255		7.8	26.8
4200		5.0	29.6
4105		4.5	30.1
4090		9.4	25.2
4070		21.1	13.5
4010			0.6

N4360

4265			0.6
4245		4.8	22.4
4215		5.9	21.3
4190		2.4	24.8

N4390			
4300			0.6
4250		7.4	27.2
4200		5.0	29.6
4100		5.0	29.6
4085		4.7	29.9
4007			0.6

N4410

4005			0.6
4077		5.0	29.6
4085		5.6	29.0

634.58

N4410 ✓

4195

4.8 29.8

on East same as Est. 20

↓

N4430 ✓

on East same as Est. 20

4165

3.6 31.0

4085

5.6 29.0

4075

4.7 29.9

4010

O.G.

N4450

4014

O.G.

4078

5.1 29.5

4145

2.8 31.8

↓ on East same as Est. 20

N4470

↑ on East same as Est. 20

4125

3.2 31.4

4090

3.6 31.0

B.M. 0.61 585.6

584.99

4023

3.3 82.3

4000

O.G.

Spoil N. of N4470 is same as Est. 20

X Sections of Downstr. Spoil

For Est #22 - Feb. 28 - 1934

Elliott - Soper - Trem 720

628.28

N4360 ✓

B.M. 0.70 604.52 603.82 4270  
 ✓ N4320 (Average this section on the so. with o.g. on N4300) 4215

4100 0.G. 4185

4065 16.6 87.9 4120

4022 0.G. 4080

✓ N4340 (Average this section on the so. with o.g. on N. 4325 between E4215 & 4100) 4050

4002 0.G.

T.P. 0.18 604.34

11.19 615.53

4009 0.G.

4065 12.7 02.8

N4370 ✓

4090 7.8 07.7

4120 5.6 09.9

4160 6.6 08.9

4190 6.6 08.9

4000 0.G.

4250 0.G.

4070 4.3 24.0

T.P. 0.03 615.50 ✓

T.P. 6.05 634.19 ✓ 0.14 628.14

End Feb 28 - 1934

4100 4.8 29.4

Start Mar 1 - 1934

4120 4.5 29.7

12.78 628.28 ✓ 615.50

4200 4.9 29.3

4300 0.G.

B.M. 4.42 629.77 629.89

4.42 634.31 ✓

634.31

N4390 ✓

4300

O.G.

4185

4.5 29.8

4120

4.7 29.6

4068

4.5 29.8

3998

O.G.

N4410 ✓

3997

O.G.

4068

4.2 30.1

4120

4.6 29.7

4220

4.7 29.6

4260

+1.5 30.8

4310

O.G.

N4430 ✓

634.31

4170

3.5 30.8

4120

4.5 29.8

4074

3.4 30.9

3999

O.G.

N4450 ✓

4003

O.G.

4080

634.3 3.5 30.8

4120

3.8 30.5

4145

3.0 31.3

N4470

4125	634.3	2.9	31.4
4095		2.8	31.5
4010			D.G.



X Sections of Spoil for Est. 23  
April 2 - 1934

36

E 5600 is O.G.

E 5520

B.M. 9.00 734.73<sup>m</sup> 725.73

745.97

E 5580

4240

4.8

41.2

4220 11.5 736.2

20

4.9

41.1

4210 11.5 36.2

4200

4.4

41.6

4195 6.0 28.7

4163

4.5

41.5

4144 28.8 05.9

4025

O.G.

4081 O.G.

E 5500

E 5560

4240

5.0

41.0

T.P. 6.72 741.15 0.30 734.43<sup>v</sup>

30

5.4

40.6

4220 3.2 38.0

10

4.8

41.2

4200 3.1 38.1

4180

4.7

41.3

4190 6.8 34.4

4165

6.3

39.7

80 8.2 33.0

4027

O.G.

60 15.4 25.8

45 23.2 18.0

4062 O.G.

E 5540

E 5480

T.P. 11.54 745.97 6.72 734.43<sup>v</sup>

4240

6.4

39.6

4230 6.3 39.7

30

6.0

40.0

20 5.2 40.8

10

5.2

40.8

4200 4.5 41.5

4180

5.8

40.2

4169 4.2 41.8

4034

O.G.

4020 O.G.

Plotted

Plotted

## E 5460

745.97

4240	7.8	738.2
20	7.5	38.5
4200	7.6	38.4
4170	16.0	30.0
4142	31.2	14.8
4060		O.G.

## E 5440

4230	7.7	36.3
4220	7.8	36.2
4202	22.0	24.0
4160	32.1	13.9
4061		O.G.

## E 5420

4230	11.9	34.1
23	11.4	34.6
4184	40.1	05.9
4147	52.8	693.2
4102		O.G.

All other Eastings remain  
as previously shown in notes  
for other estimates.

X Sections of downstr. Spoil Est. #23

April 3 - 1934

Elliott - Soper - Remmen.

38

N 4470

B.M.	1.90	634.54	632.64
E 4120		3.1	31.4
4100		3.0	31.5
4094		2.2	32.3
4012			O.G.

N 4450

4005			O.G.
4078		2.3	32.2
4085		3.7	30.8
4120		3.9	30.6

N 4430

4120	Plotted	4.6	29.9
4075		4.4	30.1
4071		2.2	32.3
3997			O.G.

N 4410

3994			O.G.
4064		3.2	31.3
4070		4.4	30.1
4120		4.6	29.9

N 4390

634.54

4120	4.8	29.7
4067	4.5	30.0
4064	3.5	31.0
3996		O.G.

N 4370

4120	4.9	29.6
4085	5.2	29.3
4070	10.5	24.0
4050	20.1	14.4
3998		O.G.

N 4360

4000		O.G.
4050	25.8	08.7
4070	17.9	16.6
4085	11.5	23.0
4097	10.6	23.9
4120	10.5	24.0
T.P.	12.49	22.05

0.73

6  
22.78

N 4340

(Average this section on the  
So. with D.O. on N. 4325 between  
E 4215 & E 4100)

4120	12.7	10.1
T.P.	12.59	10.19
0.26	6 10.45	

N4340  
<sup>6</sup> 710.45

4080                      4.0      06.5 ✓

4060                      11.8     598.7 ✓

4009                      0.6

N4320 (Average this section on  
 the Se. with 00 on N4300)

4024                      0.6

4070                      21.8     588.7 ✓

4100                      0.6

Plotted

April-27-1934

Simpson  
Joper  
Remmen

X Sections of East end of Spillway  
Excavation and Spoil bank for  
Estimate #2A.

B.M.	0.25	750.14	749.89
T.P.		12.66	737.48
	1.15	738.63	

E 5610 is O.G.

E 5600

North of 4160 is O.G.

NA 160	37.4	01.2	O.G.
4104	O.G.		Toe

E 5580

4081	O.G.		Toe
4140	35.0	03.6	
4190	13.8	24.8	
4210	2.5	36.1	
40	2.1	36.5	
43	3.6	35.0	
70	+1.6	40.2	
77	+5.3	43.9	
90	+7.7	46.3	

North of NA290 is finished to Neat Lines

738.63

E 5560

39

4063		0.6	Toe
4150		17.3	21.3
70		7.8	30.8
4200		0.7	37.9
T.P.		1.15	737.48
	12.88	750.36	

40		12.0	38.4
70		8.0	42.4
4300		7.8	42.6
20		7.2	43.2
33		1.3	49.1
T.P.		0.47	749.89

12.84 762.73

47	+11.2	73.9
62	+26.3	89.0
80	+36.6	99.3
90	+40.1	802.8 <sup>Top of</sup> Finished slope

Neat Line slope to O.G.

E 5540

Neat Line slope to O.G.

4403	+30.0	92.7 <sup>Top of</sup> Finished slope
4385	+20.6	83.3
60	+4.2	66.9
40	-11.8	50.9
4320	-14.1	48.6

E 5540 ✓

750.36

4280	7.6	42.8
60	9.9	40.5
40	10.3	40.1
20	9.5	40.9
4200	8.9	41.5
4180	8.7	41.7
4168	9.0	41.4
4028	0.G.	Toe

E 5520 ✓

4026	0.G.	Toe
4163	9.3	41.1
80	9.1	41.3
4240	9.3	41.1
90	5.2	45.2
4320	3.6	46.8
4340	2.6	47.8

762.73

60	3.6	59.1
78	0.0	62.7
4400	+12.6	75.3
08	-1.4	61.3

Neat line slope to O.G.

Finished Slope

E 5500 ✓

40

750.36

Finished slope to O.G.		
4443	+2.4	52.8
4409	16.6	33.8
4401	16.6	33.8
762.73		
4375	10.9	51.8
4342	12.0	50.7

Toe of finished slope

about toe of Ogee Conc.

about back of weir conc.

750.36

4320	3.8	46.6
4240	9.4	41.0
4210	9.3	41.1
4180	9.4	41.0
4165	11.1	39.3
4027	0.G.	Toe

April-28-1934

B.M. 0.71 750.60 749.89

E 5480 ✓

4032	0.G.	Toe
4168	10.3	40.3
4210	9.8	40.8
46	10.6	40.0
53	6.4	44.2
4320	3.2	47.4

E5480 ✓

750.60

4368	2.2	48.4	Back of Weir
4395	17.7	32.9	Toe of Ogee
4420	17.7	32.9	
4440	7.7	42.9	Toe of finished slope

Finished slope to O.G.

E5460 ✓

Finished slope to O.G.

4441	7.3	43.3	Toe of finished slope
4425	16.3	34.3	
4389	18.5	32.1	Toe of Ogee

↑ Same as last Est.  
↓

4220	12.4	38.2	
18	10.2	40.4	
4181	10.7	39.9	
4140	38.0	12.6	
4035			Toe

E5440 ✓

750.60

4064	0.6		Toe
4186	11.0	39.6	
4210	10.6	40.0	
20	14.4	36.2	

↑ same as last Est.  
↓

4382	14.2	36.4	Toe of Ogee
4400	17.8	32.8	
4430	17.1	33.5	
4438	12.7	37.9	Toe of finished slope

Finished slope to O.G.

E5420 ✓

Finished slope to O.G.

4440	11.1	39.5	
30	15.0	35.6	
4407	14.5	36.1	
4400	13.9	36.7	
4390	12.8	37.8	

↑ Same as last Est.  
↓

4221	16.5	34.1	
13	11.3	39.3	
4188	13.4	37.2	
4067	0.6		Toe

750.60  
 T.P. 9.98 740.62  
 0.72 741.34

## E5410

	O.G.	Toe
A068		
A180	12.1	29.2
A203	2.9	38.4
10	2.8	38.5
A220	8.4	32.9

on North same as last Est.

## E5390

on North same as last Est.

A219	11.5	29.8
11	17.2	24.1
A190	20.2	21.1
70	29.3	12.0
50	41.1	00.2
A088	O.G.	Toe

## E5370

A103	O.G.	Toe
A170	44.6	96.7
A196	34.5	06.8

on North same as last Est.

E.5350 is Same as last Est.



May 29-1934  
Added X Sections of spillway spoil  
for Est. #25

42

B.M. 1.43 751.32 749.89

T.P. 0.91 742.93 9.30 742.02

0.91 742.93

E. of E. 5460 same as previous

E 5460 ✓

N. 4220 4.6 38.3

4215 2.3 40.6

4178 3.4 39.5

4037 0.6

E 5440 ✓

4220 6.9 36.0

4215 3.3 39.6

4185 3.6 39.3

4065 0.6

E 5420 ✓

4220 8.7 34.2

4214 4.3 38.6

4190 4.0 38.9

4069 0.6

E 5400 ✓

4219 11.5 31.4

4209 4.4 38.5

4193 3.8 39.1

4067 0.6

742.93

T.P. 12.49 730.44

0.37 730.81

E 5380 ✓

4215 3.0 27.8

4205 1.4 29.4

4180 9.0 21.8

4090 0.6

E 5360 ✓

4197 16.8 14.0

4172 25.9 04.9

4155 33.3 97.5

4092 0.6

E 5340 ✓

4158 42.5 88.3

4140 49.0 81.8

4100 0.6

W. of 5340 same as previous

Monthly Estimate <sup>27</sup> July 1934.  
Hydraulic fill & rock embank.

N.S. 712.0

Converse }  
Salgado } Aug. 1, 1934. 43  
Isbell }  
DeLong }  
N. 3800.

	712.0	N. 3900	5/1/34 Reduce 87%	
E. A837		10.0	702.0 ✓	
61		5.5	706.5 ✓	
96		+1.4	13.4 ✓	
1906		+1.7	13.7 ✓ 713.0	
45		00	12.0 ✓	
50		0.5	11.5 ✓	
60		1.0	11.0 ✓	
70		3.0	09.0 ✓	
80		4.0	08.0 ✓	
90		4.0	08.0 ✓	
5000		4.0	08.0 ✓	
10		6.0	06.0 ✓ 709.2	
20		5.0	07.0 ✓	
30		5.5	06.5 ✓	
40		3.0	09.0 ✓	
50		0.5	11.5 ✓	
58		00	12.0 ✓	
90		+1.0	13.0 ✓	
5103		+2.9	14.9 ✓ 713.6	
17		+2.6	14.6 ✓	
30		4.0	708.0 ✓	

Plotted By J.W. Williams

	712.0		
E A837		11.0	701.0 ✓
53		11.3	00.7 ✓
63		5.0	07.0 ✓
78		4.0	08.0 ✓
97		+2.0	14.0 ✓
1918		+2.2	14.2 ✓ 713.4
50		0.0	12.0 ✓
60		0.5	11.5 ✓
70		2.5	09.5 ✓
80		4.5	07.5 ✓
90		4.0	08.0 ✓
5000		4.5	07.5 ✓
10		6.0	06.0 ✓ 709.2
20		5.5	06.5 ✓
30		4.0	08.0 ✓
40		2.5	09.5 ✓
50		0.5	11.5 ✓
58		00	12.0 ✓
5105		+3.4	15.4 ✓ 714.4
19		+3.7	15.7 ✓
30		1.3	10.7 ✓

Plotted By J.W. Williams

Use this section from N. 3900  
to north abutment.

N. 3700

712.0

E. 4836	10.5	701.5	✓
50	9.9	02.1	✓
65	3.0	09.0	✓
80	2.8	09.2	✓
98	+2.8	14.8	✓
A913	+2.3	14.3	✓ 713.7
50	0.0	12.0	✓
60	0.5	11.5	✓
70	1.0	11.0	✓
80	3.0	09.0	✓
90	7.5	04.5	✓
5000	7.5	04.5	✓ 708.7
10	5.5	06.5	✓
20	7.0	05.0	✓
30	4.5	07.5	✓
40	3.0	09.0	✓
50	0.5	11.5	✓
55	0.0	12.0	✓
94	+2.5	14.5	✓ 714.0
5101	+3.3	15.3	✓
17	+4.2	16.2	✓
30	1.3	10.7	✓

Plotted by J.M.

N. 3600

712.0

E. 4836	17.0	700.0	✓
51	10.5	01.5	✓
64	3.2	08.8	✓
80	2.5	09.5	✓
98	+2.0	14.0	✓
A915	+2.0	14.0	✓ 713.3
50	0.0	12.0	✓
60	0.5	11.5	✓
70	3.0	09.0	✓
80	6.0	06.0	✓
90	6.5	05.5	✓
5000	7.0	05.0	✓ 708.7
10	5.5	06.5	✓
20	4.5	07.5	✓
30	3.0	09.0	✓
40	1.0	11.0	✓
50	0.0	12.0	✓
92	+1.7	13.7	✓ 713.9
5102	+3.9	15.9	✓
19	+4.5	16.5	✓
31	1.2	10.8	✓

Plotted by J.M.

N. 3500

712.0

E 4836	12.0	700.0	✓
52	11.0	01.0	✓
64	1.4	10.6	✓
80	1.8	10.2	✓
94	+3.0	15.0	✓
A91A	+2.5	14.5	✓ 714.0
50	0.0	12.0	✓
60	0.5	11.5	✓
70	3.0	09.0	✓
80	5.5	06.5	✓
90	6.5	05.5	✓
5000	5.5	06.5	✓ 708.7
10	5.5	06.5	✓
20	5.0	07.0	✓
30	5.5	06.5	✓
40	2.5	09.5	✓
50	0.5	11.5	✓
55	0.0	12.0	✓
5102	+3.3	15.3	✓ 714.2
19	+3.3	15.3	✓
30	1.0	711.0	✓

Plotted by J.M.

N. 3400

712.0

E. A836	11.8	700.2	✓
52	10.5	01.5	✓
69	1.5	10.5	✓
80	1.7	10.3	✓
95	+3.0	15.0	✓
A913	+2.8	14.8	✓ 714.0
60	0.0	12.0	✓
70	3.5	08.5	✓
80	7.0	05.0	✓
90	7.5	04.5	✓
5000	6.0	06.0	✓ 707.3
10	5.5	06.5	✓
20	6.0	06.0	✓
30	6.0	06.0	✓
40	5.5	06.5	✓
50	0.0	12.0	✓
97	+2.7	14.7	✓ 714.0
5118	+3.0	15.0	✓
30	3.0	09.0	✓

Plotted by J.M.

N. 3300

712.0

E. 4836	17.0	700.0 ✓	
53	10.5	01.5 ✓	
68	7.0	10.0 ✓	
90	2.0	10.0 ✓	
4902	+3.0	15.0 ✓	
18	+2.5	14.5 ✓	714.0
60	0.0	12.0 ✓	
70	3.0	09.0 ✓	
80	6.0	06.0 ✓	
90	8.0	04.0 ✓	
5000	6.5	05.5 ✓	
10	6.0	06.0 ✓	707.5
20	5.5	06.5 ✓	
30	7.0	05.0 ✓	
40	6.0	06.0 ✓	
50	2.0	10.0 ✓	
55	0.0	12.0 ✓	
80	+2.0	14.0 ✓	713.5
5118	+2.6	14.6 ✓	
30	2.2	09.8 ✓	

Use this section for N. 3250 also.

N. 3200

712.0

E. 4836	17.0	700.0 ✓	
55	9.3	702.7 ✓	
67	3.3	08.7 ✓	
80	1.8	10.2 ✓	
4900	+3.0	15.0 ✓	At 714.0
20	+3.0	15.0 ✓	
60	0.0	12.0 ✓	
70	5.0	07.0 ✓	
80	8.0	04.0 ✓	
90	6.5	05.5 ✓	50
5000	2.0	05.0 ✓	At 706.6
10	6.0	06.0 ✓	
20	2.0	05.0 ✓	
30	8.5	03.5 ✓	
40	6.0	06.0 ✓	
50	0.0	12.0 ✓	
97	+3.0	15.0 ✓	At 711.2
5107	5.5	706.5 ✓	
25	5.0	07.0 ✓	8/2/34
31	3.5	08.5 ✓	Reduce 2.0 ch 2000

Use this section including N 3240 to south abutment

Cross Section of Top of Dam  
For Est. # 30

Nov. 1, 1934  
Osborne  
Remmen  
Adams

47

N 3400

B.M.	7.52	771.97	764.45
		N 3100	
4976	Finish Rock	7.6	764.4 ✓ 1114
80		8.0	764.0 ✓
87		3.1	768.9 ✓
5005		3.2	768.8 ✓
16		8.9	763.1 ✓
26	Finish Rock	8.3	763.7 ✓

N 3200

4977		6.6	765.4 ✓
80		6.6	765.4 ✓
83		4.8	767.2 ✓
5009		5.2	766.8 ✓
16		8.0	764.0 ✓
25		7.0	765.0 ✓

N 3300

4975		7.0	765.0 ✓
78		7.2	764.8 ✓
80		5.8	766.2 ✓
5011		5.4	766.6 ✓
17		6.7	765.3 ✓
25		6.6	765.4 ✓

4973	7.5	764.5 ✓
75	7.8	764.2 ✓
80	4.9	767.1 ✓
5012	5.7	766.3 ✓
18	8.0	764.0 ✓
27	6.5	765.5 ✓
T.P.	6.88	765.09 ✓

6.42 771.51

N 3500

4971	7.2	764.3 ✓
74	8.2	763.3 ✓
80	5.2	766.3 ✓
5016	4.8	766.7 ✓
26	5.3	766.2 ✓

N 3600

4972	7.5	764.0 ✓
75	8.1	763.4 ✓
80	5.2	766.3 ✓
5014	4.4	767.1 ✓
26	5.0	766.5 ✓

N 3700

771.51

4971	7.9	763.6	✓
74	8.4	763.1	✓
80	4.9	766.6	✓
5014	4.2	767.3	✓
21	9.5	762.0	✓ ✓
32	8.4	763.1	✓

N 3800

4974	7.5	764.0	✓
77	7.9	763.6	✓
80	4.5	767.0	✓
5013	4.3	767.2	✓ ✓
40	7.9	763.6	✓
32	8.8	762.7	✓

N 3900

T.P.	7.68	763.83	✓
7.76	771.59		
4976	6.8	764.8	✓
78	7.5	764.1	✓
83	4.4	767.2	✓ ✓
5011	3.7	767.9	✓
16	8.2	763.4	✓
28	8.0	763.6	✓

N 4000

48

771.59 ✓

4976	7.0	764.6	✓
79	7.8	763.8	✓
83	5.0	766.6	✓
5011	4.9	766.7	✓ ✓
18	9.1	762.5	✓
27	7.7	763.9	✓

Note - Use section on N 3100 to  
South abutment

Use section on N 4000 to north  
abutment except for warped  
section on upstream from N 4110  
to N 4180, and downstream  
rock embankment which  
extends only to N 4050.

Cross Section of Spoil South of Dam  
For Est. # 30

49

B.M.

N 4		13.7
4200		2.2
4170	edge of rock	1.4
E 5060		
4232		11.1
23		4.6
4189		3.1
4160		2.6
40		3.0



Final Cross Section of Plaza N.W. of Dam  
Prior to Placing of D.G. for finishing.

Osborne  
Remmen  
Adams

N 4180 Spillway- 50

Nov. 7, 1934

B.M. 3.73 773.27 769.54

N 4213 = 0.0 N. Edge

N 4210

5004 on Core wall 3.6 769.7 ✓

5000 2.9 770.4 ✓

4990 3.0 770.3 ✓

80 edge 3.0 770.3 ✓

N 4200

5005 conc. 3.6 769.7 ✓

5000 2.6 770.7 ✓

4990 2.7 770.6 ✓

80 2.8 770.5 ✓

70 2.8 770.5 ✓

60 3.0 770.3 ✓

N 4190

5000 conc. 3.7 769.6 ✓

4990 2.0 771.3 ✓

80 3.3 770.0 ✓

70 3.2 770.1 ✓

60 2.8 770.5 ✓

50 2.6 770.7 ✓

40 3.2 770.1 ✓

30 edge 3.1 770.2 ✓

Reduced by G.P.H.  
 Plotted by G.P.H.  
 checked by A.M.

from page 50 to 53

773.27

4910

20

30

40

50

60

70

80

90

5000 conc.

N 4170

4993 edge

90

80

70

60

50

40

30

20

10

4900

4890

83 edge

3.4 769.9 ✓

3.1 770.2 ✓

3.1 770.2 ✓

3.3 770.0 ✓

2.6 770.7 ✓

2.7 770.6 ✓

3.6 769.7 ✓

3.9 769.4 ✓

2.5 770.8 ✓

3.9 769.4 ✓

3.2 770.1 ✓

3.1 770.2 ✓

3.7 769.6 ✓

3.7 769.6 ✓

2.8 770.5 ✓

3.2 770.1 ✓

3.4 769.9 ✓

3.5 769.8 ✓

2.5 769.8 ✓

3.4 769.9 ✓

3.5 769.8 ✓

3.7 769.6 ✓

3.9 769.4 ✓

Plotted on  
 from 7/17/34

N 4160

773.27

4860	3.8	769.5	✓
70	3.8	769.5	✓
80	3.8	769.5	✓
90	3.6	769.7	✓
4900	3.8	769.5	✓
10	3.7	769.6	✓
20	3.8	769.5	✓
30	4.0	769.3	✓
40	3.6	769.7	✓
50	3.5	769.8	✓
60	3.7	769.6	✓
70	3.7	769.6	✓
80	2.3	771.0	✓
85	2.3	771.0	✓

N 4150

4980	2.5	7708	✓
70	3.7	769.6	✓
60	3.9	769.4	✓
50	4.0	769.3	✓
40	3.7	769.6	✓
30	3.7	769.6	✓
20	3.4	769.9	✓
10	4.2	769.1	✓
4900	3.8	769.5	✓

N 4150

773.27

4890	3.7	769.6	✓
80	4.1	769.2	✓
70	3.7	769.6	✓
60	3.7	769.6	✓
57 edge	3.7	769.6	✓

N 4140

4845	3.6	769.7	✓
50	2.6	770.7	✓
60	3.8	769.5	✓
70	3.7	769.6	✓
80	4.0	769.3	✓
90	2.9	770.4	✓
4900	3.6	769.7	✓
10	4.2	769.1	✓
20	4.3	769.0	✓
30	3.9	769.4	✓
40	4.0	769.3	✓
50	3.9	769.4	✓
60	3.5	769.8	✓
70	3.0	770.3	✓
75 edge	2.7	770.6	✓
80 on fill	8.1	765.2	✓

12/2/21  
Rothson  
Bamke  
HTW

N 4130

773.27

4980	on fill	8.1	7652 ✓
70	" "	7.6	7657 ✓
60	edge	2.6	770.7 ✓
50		3.8	769.5 ✓
40		4.0	769.3 ✓
30		4.0	769.3 ✓
20		4.6	768.7 ✓
10		4.7	768.6 ✓
4900		5.1	768.2 ✓
4890		3.2	770.1 ✓
80		4.1	769.2 ✓
70		4.0	769.3 ✓
60		3.9	769.4 ✓
50		3.5	769.8 ✓
40	edge	4.1	769.2 ✓

N 4120

4840	edge	1.7	771.6 ✓
50		3.9	769.4 ✓
60		4.0	769.3 ✓
70		4.5	768.8 ✓
80		4.1	769.2 ✓
90		4.7	768.6 ✓
4900		5.1	768.2 ✓
10		4.6	768.7 ✓
20		5.1	768.2 ✓

N 4120

773.27

4930		4.3	7690 ✓
40		3.8	769.5 ✓
50		3.7	769.6 ✓
60	edge of fill	6.5	766.8 ✓
70	fill	7.5	765.8 ✓
80	"	8.1	765.2 ✓

N 4110

4980	fill	7.9	7654 ✓
70	"	7.3	768.0 - 766.0 ✓
60	"	6.2	767.1 ✓
50		3.7	769.6 ✓
40		3.9	769.4 ✓
30		4.7	768.6 ✓
20		5.2	768.1 ✓
10		5.1	768.2 ✓
4900		4.7	768.6 ✓
4890		4.7	768.6 ✓
80		4.4	768.9 ✓
70		4.3	769.0 ✓
60		4.0	769.3 ✓
50		3.8	769.5 ✓
40		3.8	769.5 ✓

info from  
Blotted and  
seen here  
9/27/20

N. 4100

773.27

4845	edge	3.8	769.5	✓
50		4.2	769.1	✓
60		3.9	769.4	✓
70		4.2	769.1	✓
80		3.0	770.3	✓
90		5.0	768.3	✓
4900		5.3	768.0	✓
10		5.0	768.3	✓
20		5.2	768.1	✓
30		4.5	768.8	✓
40	edge	4.2	769.1	✓
50	on f. 11	5.2	768.1	✓
60	" "	6.2	767.1	✓
80	" "	7.6	765.7	✓

B.M. 354 773.08

769.54

N 4090

4933		4.5	768.6	✓
20		5.0	768.1	✓
10		5.0	768.1	✓
4900		5.1	768.0	✓
4890		5.0	768.1	✓
80		1.2	771.9	✓
76		2.3	770.8	✓
60		2.5	770.6	✓

N 4090

773.08

4850	edge	4.6	768.5	✓
4870	edge	2.7	770.4	✓
80		3.5	769.6	✓
90		4.6	768.5	✓
4900		5.7	767.4	✓
10		4.5	768.6	✓
20		4.4	768.7	✓

N 4070

4895 South edge 6.3 766.8

11/2/24  
 B.M. 354  
 on f. 11

53

Location of Fence line Around Plaza

Nov. 9, 1934

Osborne  
Remmen  
Adams

0+00 = West tile set in curb = N. 4212.72  
E. 4997.00

Set Nail + Stake every 8'

1+44 = South  $66^{\circ}30'$  West - 144'

Set Nail + Stake every 8'

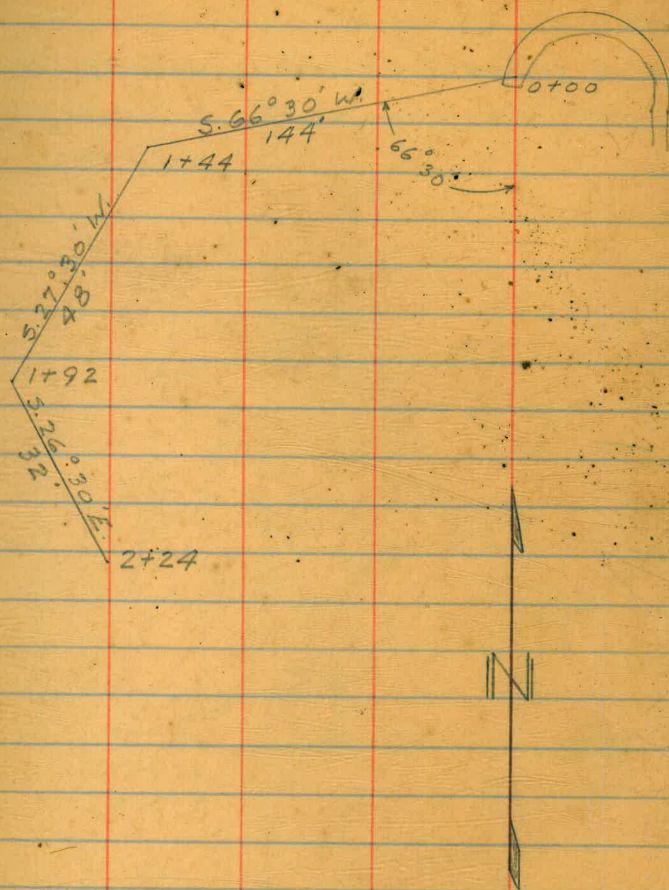
1+92 = South  $27^{\circ}30'$  West - 48'

Set Nail + Stake every 8'

2+24 = South  $26^{\circ}30'$  East - 32'

Cross Chiseled in Large Boulder

54

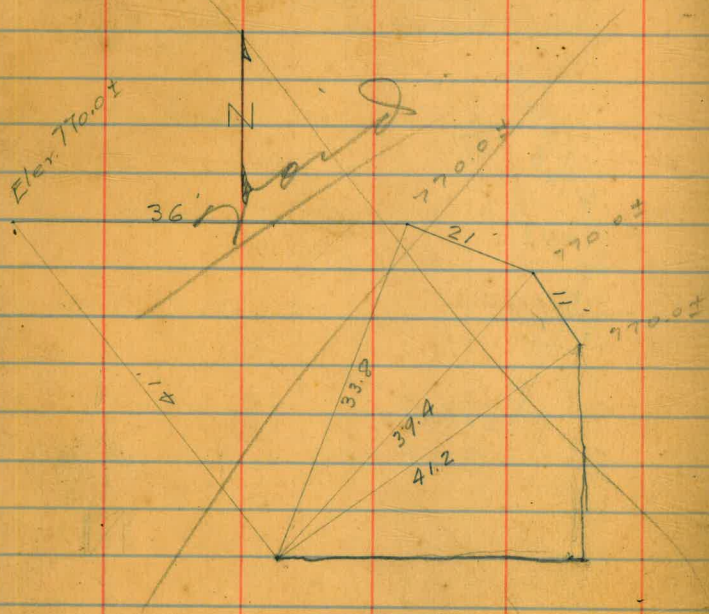


# Estimate of Rock Cap on fill Adjacent to Plaza

Nov. 10, 1934

Osborne  
Remmen  
Adams

Note: Owing to lack of X-Sections the Surface area of the rock fill was measured and Est. to be 3' thick - See sketch

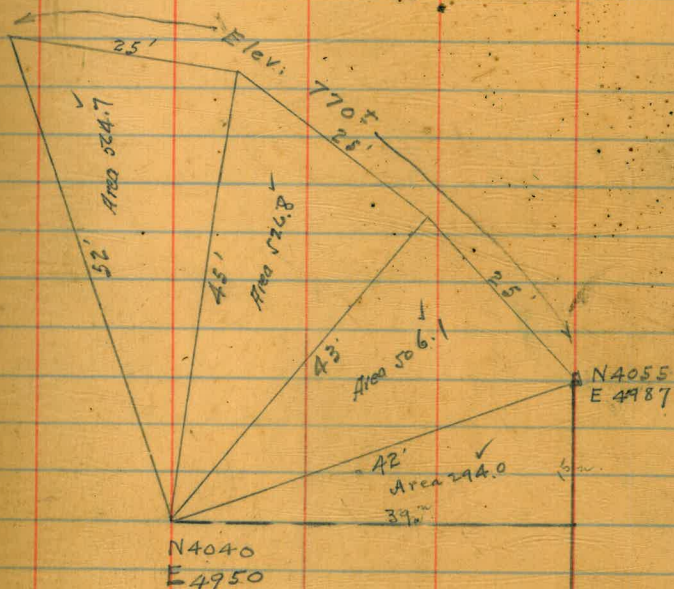


# Estimate of Rock Cap on Fill Adjacent to Plaza

Dec. 17-1934

55  
Simpson  
Soper  
Tsbell

Sketch of Surface Area of Rock Cap on Fill Adjacent to Plaza, as Layed By the Contractors.



Volume Rock =

294.0 ✓
506.1 ✓
526.8 ✓
564.7 ✓

$$\text{Area } 1891.6 \text{ E' } \times \frac{3 \text{ thick}}{27} = 210.2 \text{ ✓ } \text{ cu yds.}$$

XTM.



X Sections of Spoil Area For Material  
 Moved From spillway, on and After Nov. 13-1934.  
 These x sections are over the portion of the  
 original spoil bank that has been excavated  
 to be put in the Dam. (See Page 70 For Finals)

Simpson-Notes,  
 Saper-Level  
 Mayer-Level  
 Salgado - "  
 Isbell - Tape  
 Remmen - "

Nov. 13-1934.

M-7-51

57

		N 4480		N 4490	
B.M.	3.78	717.48	713.70	705.16	701.4
T.P.		13.03	704.45		701.4
	0.71	Level ✓			701.4
		717.48			701.4
E 4527		11.0	706.5	4542	701.4
		705.16			701.4
4515		5.3	699.9	4543	701.4
4496		2.3	7029		701.4
4485		3.1	702.1	4518	701.4
				10	701.4
				4500	701.4
				4490	701.4
				80	701.4
				70	701.4

Notes Reduced from Page  
 57 to 69 By C.B.H.  
 Checked - A.V.M.

Plotted

Plotted

Plotted



N4510

705.16

4462	9.8	6954
70	10.1	6951
80	9.6	6956
90	9.6	6956
4500	9.6	6956
10	9.2	6960
18	9.1	6961

Plotted

717.48

4545	2.9	714.6	0.6
------	-----	-------	-----

N4520

4543	3.5	714.0
------	-----	-------

705.16

18	9.3	6959
10	9.3	6959
4500	10.0	6952
4490	9.5	6957
80	9.2	6960
70	9.5	6957
60	9.5	6957
4445	9.6	6956

Plotted

N4530

58

705.16

4426	9.3	6959
40	9.3	6959
50	9.4	6958
60	9.3	6959
70	9.3	6959
80	9.5	6957
90	9.7	6955
4500	9.8	6954
14	9.0	6962

Plotted

717.48

38	3.9	713.6	0.6
----	-----	-------	-----

N4540

4525	5.6	11.8	0.6
24	9.9	707.6	East
14	13.2	7043	

705.16

4500	9.0	6962
4490	9.8	954
80	9.9	953
70	10.0	952
60	9.6	956
50	9.3	959
40	9.3	959
4428	9.0	96.2

Plotted

705.16

N4550

4424	9.0	6962
30	8.8	964
40	9.2	960
50	9.0	962
60	9.3	959
70	9.4	958
80	9.5	957
85	9.5	6957
4500	3.0	7022

717.48

08	73.1	7044
4509	6.7	7108

N4560

4494	7.6	709.9
91	2.0	7032
80	3.4	701.8
70	3.3	701.9
60	8.6	6966
50	8.8	6964
40	9.0	962
30	9.0	962
20	8.8	964
4408	8.8	964

705.16

705.16

N4570

4405	8.4	6968
20	8.7	6965
30	8.8	6964
40	8.7	6965
50	8.9	6963

717.48

65	12.5	7050
4470	8.3	709.2

N4580

4454	8.7	708.8
------	-----	-------

705.16

50	4.0	701.2
40	4.0	701.2
30	1.7	7035
20	5.4	6998
10	8.0	6972
4400	8.0	6972

Plotted

O.G. on East

O.G. on East

Plotted

Plotted

O.G. on East

Plotted

	717.48	N4590		
4430		6.0	711.5	O.S. on East,
29		9.0	708.5	
	725.16			
20		2.5	702.7	
10		7.2	698.0	
4400		8.0	697.2	
4395		8.0	697.2	
T.P.		6.52	698.64	End of Nov. 12-1934.

Plotted

Nov. 16-1934.

Simpson - Notes  
Meyer - Level  
Salgado - Level

Saper - Red  
Isbell - Tape  
Remmen - "

			698.64	
	1.04		699.68	
T.P.		11.55	688.13	
	0.73		688.86	

		N4470		
E 4410		5.1	683.8	O.G.
20		4.7	684.2	
30		7.4	681.5	
40		7.3	681.6	
55		6.0	682.9	
	699.68			
66		8.7	691.0	O.G. on East.

Plotted

Note: South of N4470 is original spoil bank, Not disturbed.

	688.86	N4480		
4450		10.6	678.3	
		10.2	678.7	
		9.7	679.2	
		8.8	680.1	
		8.2	680.7	
4400		7.4	681.5	
4390		6.0	682.9	
		4.9	684.0	
		5.1	683.8	
A 360		3.4	685.5	O.G.

Plotted

N4490

	699.68			
		4320		
		30		
	688.86			
		40		
		50		
		60		
		70		
		80		
		90		
4400		7.4	681.5	
		8.0	680.9	
		8.7	680.2	
		8.9	680.0	

Plotted

Theodore G. Cook

688.86 N4490.

4440 9.7 679.2 ✓

4453 10.3 678.6 ✓

N4500

4464 2.8 686.1 ✓

50 10.3 678.6 ✓

40 10.1 678.8 ✓

30 9.0 679.9 ✓

20 8.4 680.5 ✓

10 7.8 681.1 ✓

4400 7.3 681.6 ✓

4390 6.9 682.0 ✓

80 6.6 682.3 ✓

70 4.9 684.0 ✓

60 3.2 685.7 ✓

50 4.5 684.4 ✓

40 5.9 683.0 ✓

30 6.7 682.2 ✓

699.68

20 14.5 685.2 ✓

688.86

10 0.7 688.2 ✓

4300 1.5 687.4 ✓

Plotted

Plotted

688.86 N4510

4300 6.2 682.7 ✓

10 5.7 683.2 ✓

20 5.0 683.9 ✓

30 3.4 685.5 ✓

40 3.8 685.1 ✓

50 6.5 682.4 ✓

60 5.1 683.8 ✓

70 6.6 682.3 ✓

80 6.8 682.1 ✓

90 5.8 683.1 ✓

4400 6.4 682.5 ✓

10 7.5 681.4 ✓

20 8.3 680.6 ✓

30 7.6 681.3 ✓

40 8.0 680.9 ✓

50 5.7 683.2 ✓

4459 2.3 686.6 ✓

N4520

1.3 687.6 ✓

1.5 687.4 ✓

3.0 685.9 ✓

3.2 685.7 ✓

4.9 684.0 ✓

5.7 683.2 ✓

7.5 681.4 ✓

Plotted

Plotted

688.86 N4520

4370	6.8	6821 ✓
60	6.4	6825 ✓
50	6.4	6825 ✓
40	6.0	6829 ✓
30	6.2	6827 ✓
20	5.8	6831 ✓
10	5.8	6831 ✓
4300	6.5	6824 ✓

Plotted

N4530

4300	6.3	6826 ✓
10	5.7	6832 ✓
20	5.7	6832 ✓
30	5.7	6832 ✓
40	5.8	6831 ✓
50	6.2	6827 ✓
60	6.4	6825 ✓
70	7.2	6817 ✓
80	7.4	6825 681.5 ✓
90	8.1	6808 ✓
4400	7.7	6812 ✓
10	7.3	6816 ✓
23	0.0	688.9 ✓

Plotted

688.86 N4540

4425	0.0	688.9 ✓
12	6.9	682.0 ✓
4400	7.9	681.0 ✓
90	7.9	681.0 ✓
80	8.3	680.6 ✓
70	7.4	681.5 ✓
60	6.6	682.3 ✓
50	5.8	683.1 ✓
40	5.4	683.5 ✓
30	5.4	683.5 ✓
20	5.7	683.2 ✓
10	5.9	683.0 ✓
4300	6.3	682.6 ✓

Plotted

699.68 N4550

4421	10.0	689.7 ✓
10	1.3	687.6 ✓
4400	3.3	685.6 ✓
4395	7.8	681.1 ✓
80	8.1	680.8 ✓
70	7.7	681.2 ✓
60	6.6	682.3 ✓
50	5.8	683.1 ✓
40	5.4	683.5 ✓
30	5.3	683.6 ✓

Plotted

Spoil Bank X Sections cont'd.

Nov. 16-1934.

63

688.86

N 4550

4320 5.5 6834 ✓  
 10 5.6 6833 ✓  
 4300 5.8 6831 ✓

Plotted

N 4560

4300 5.0 6839 ✓  
 10 5.3 6836 ✓  
 20 5.1 6838 ✓  
 30 5.4 6835 ✓  
 40 5.7 6832 ✓  
 50 6.2 6827 ✓  
 60 7.2 6817 ✓  
 70 7.6 6813 ✓  
 80 7.6 6813 ✓  
 90 6.6 6823 ✓  
 4405 10.0 6897 ✓

Plotted

N 4570

4402 9.1 6906 ✓  
 688.86  
 4385 6.8 6831 682.1 ✓  
 70 7.0 6819 ✓  
 60 6.8 6821 ✓  
 50 6.4 6835 682.5 ✓  
 40 5.4 6835 ✓  
 30 5.6 6833 ✓  
 20 5.4 6835 ✓

Plotted

688.86

N 4570

4310 5.1 6838 ✓  
 4300 4.7 6842 ✓  
 4290 4.2 6847 ✓  
 80 1.9 6870 ✓  
 70 4.6 6843 ✓  
 60 4.3 6846 ✓  
 50 3.2 6857 ✓

Plotted

N 4580

4210 2.5 6863 ✓  
 20 2.6 6863 ✓  
 30 3.0 6859 ✓  
 40 2.7 6862 ✓  
 50 3.1 6858 ✓  
 60 3.6 6853 ✓  
 70 2.5 6864 ✓  
 80 4.0 6849 ✓  
 90 4.0 6849 ✓  
 4300 4.5 6844 ✓  
 10 4.8 6841 ✓  
 20 5.4 6835 ✓  
 30 5.3 6836 ✓  
 40 5.7 6832 ✓  
 50 6.2 6827 ✓  
 60 4.1 6848 ✓  
 70 4.7 6842 ✓

Plotted

Spoil Bank Xsections cont'd,

Nov. 16-1934.

64

688.86

N4580

4380 3.4 6855 ✓

699.68

4390 9.1 6906 ✓

N4590

4383 10.0 6897 ✓

75 10.3 6894 ✓

688.86

65 2.7 6862 ✓

50 5.6 6833 ✓

40 5.6 6833 ✓

30 5.2 6837 ✓

20 5.0 6839 ✓

10 4.6 6843 ✓

4300 4.0 6849 ✓

4290 3.8 6851 ✓

80 3.7 6852 ✓

70 3.5 6854 ✓

60 2.7 6862 ✓

50 2.7 6862 ✓

40 2.7 6862 ✓

30 2.4 6865 ✓

20 2.1 6868 ✓

10 2.0 6869 ✓

Plotted

Plotted

688.86

N4600

4210 1.3 6876 ✓

20 1.7 6872 ✓

30 2.2 6867 ✓

40 2.3 6866 ✓

50 2.3 6866 ✓

60 2.7 6862 ✓

70 3.2 6857 ✓

80 3.4 6855 ✓

90 3.8 6851 ✓

4300 3.8 6851 ✓

10 3.9 6850 ✓

20 4.0 6849 ✓

30 4.8 6841 ✓

40 4.1 6848 ✓

50 1.4 6875 ✓

699.68

60 10.1 6896 ✓

75 9.1 6906 ✓

90 2.6 6971 ✓

4402 2.4 6973 ✓

T.P. 12.52 711.16 698.64 ✓

15 8.4 702.8 ✓

25 0.7 710.5 ✓ o.g.

4435 4.3 706.9 ✓ "

Plotted

Spoil Bank X Sections Cont'd.

Nov. 16-1934,

65

711.16

N4610

699.68

N4620

4425	5.2	706.0	0.6
18	2.8	708.4	0.6
10	6.8	704.4	
4400	10.0	701.2	
4390	12.6	698.6	
82	10.8	700.4	
699.68			
65	9.4	690.3	
50	10.2	689.5	
40	10.2	689.5	
30	7.1	692.6	
20	10.2	689.5	
10	12.2	687.5	
4300	14.3	685.4	
4290	14.5	685.2	
80	14.0	685.7	
70	13.7	686.0	
60	13.3	686.4	
50	13.0	686.7	
40	11.2	688.5	
30	12.4	687.3	
20	11.9	687.8	
10	11.9	687.8	
4200	11.4	688.3	

Plotted

4200	10.7	689.0	
10	11.5	688.2	
20	11.8	687.9	
30	10.4	689.3	
40	12.2	687.5	
50	12.8	686.9	
60	13.0	686.7	
70	12.9	686.8	
80	13.4	686.3	
90	13.4	686.3	
4300	11.2	688.5	
10	10.0	689.7	
20	3.0	696.7	
30	8.4	691.3	
40	9.7	690.0	
50	9.1	690.6	
60	9.1	690.6	
70	5.7	694.0	
80	0.0	699.7	
711.16			
90	6.4	704.8	
4402	1.5	709.7	0.6
10	4.6	706.6	0.6

Plotted



Spoil Bank Xsections cont'd.

Nov. 16-1934.

66

	711.16	N4630	
4410		5.7	705.5 O.G.
4395		1.2	710.0 O.G.
85		6.4	704.8 ✓
75		13.0	698.2 ✓
	699.68		
70		1.7	698.0 ✓
60		8.1	691.6 ✓
50		8.0	691.7 ✓
40		8.1	691.6 ✓
30		8.1	691.6 ✓
17		1.6	698.1 ✓
10		7.3	692.4 ✓
4300		10.7	689.0 ✓
4290		11.5	688.2 ✓
80		10.3	689.4 ✓
70		12.6	687.1 ✓
60		12.7	687.0 ✓
50		12.6	687.1 ✓
40		12.5	687.2 ✓
35		12.4	687.3 ✓
25		8.6	691.1 ✓
20		11.0	688.7 ✓
10		10.9	688.8 ✓
4200		11.0	688.7 ✓

	699.68	N4640	
4200		10.4	689.3 ✓
10		9.8	689.9 ✓
20		8.9	690.8 ✓
30		11.1	688.6 ✓
40		11.9	687.8 ✓
50		11.9	687.8 ✓
60		11.7	688.0 ✓
70		9.2	690.5 ✓
80		1.3	698.4 ✓
90		2.0	697.7 ✓
4300		1.3	698.4 ✓
10		0.9	698.8 ✓
20		4.3	695.4 ✓
30		6.5	693.2 ✓
40		7.2	692.5 ✓
50		7.0	692.7 ✓
60		6.6	693.1 ✓
	711.16		
70		11.4	699.8 ✓
78		10.5	700.7 ✓
85		3.8	707.4 O.G.
95		5.9	705.3 O.G.

*Botted*

*Botted*

Spoil Bank Xsections Contd.

Nov. 16-1934.

	711.16	N 4650
4390		7.0 7042 O.G.
77		5.8 7054 O.G.
70		9.5 7017 ✓
	699.68	
60		2.3 6974 ✓
50		6.3 6934 ✓
40		6.0 6937 ✓
30		5.6 6941 ✓
20		5.1 6946 ✓
10		0.9 6988 ✓
4300		1.0 6987 ✓
4290		1.8 6979 ✓
80		1.3 6984 ✓
75		1.1 6986 ✓
70		5.3 6944 ✓
60		9.8 6899 ✓
50		10.8 6889 ✓
40		10.9 6888 ✓
30		10.0 6897 ✓
20		9.2 6905 ✓
10		9.1 6906 ✓
4200		10.0 6897 ✓

	699.68	N 4660
4200		9.6 6901 ✓
10		9.2 6905 ✓
20		8.6 6911 ✓
30		8.8 6909 ✓
40		9.1 6906 ✓
50		9.0 6907 ✓
60		8.3 6914 ✓
70		1.5 6982 ✓
80		1.4 6983 ✓
	711.16	
90		12.6 6986 ✓
4300		12.2 6990 ✓
	699.68	
10		2.7 6970 ✓
20		3.8 6959 ✓
30		4.5 6952 ✓
40		4.6 6951 ✓
50		4.0 6957 ✓
	711.16	
60		10.5 7007 ✓
67		6.1 7051 O.G.
4370		7.6 7036 O.G.

*Plotted*

*Plotted*

Spoil Bank Xsections Cont'd.

Nov. 16-1934.

68

	711.16	N 4670	
4370		8.5 7027 O.G.	
60		8.0 7032 O.G.	
50		10.8 7004	
	699.68		
40		2.3 6974	
30		3.2 6965	
20		2.7 6970	
10		2.4 6973	
4300		1.0 6987	
4290		0.9 6988	
	711.16		
80		12.8 6984	
70		13.0 6982	
	699.68		
60		3.0 6967	
50		5.9 6938	
40		6.5 6932	
30		7.5 6922	
20		8.0 6917	
10		8.7 6910	
4200		8.9 6908	

Botted

	699.68	N 4680	
4200		8.5 6912	
10		8.4 6913	
20		7.5 6922	
30		6.6 6931	
40		5.2 6945	
50		2.0 6977	
	711.16		
60		13.6 6976	
70		13.1 6981	
80		12.4 6988	
90		11.8 6994	
4300		12.0 6992	
10		12.9 6983	
20		13.1 6981	
30		13.1 6981	
40		9.4 7018	
50		7.8 7034	
55		9.2 7020 O.G.	

Botted

711.16

N4690

4345	9.7	7015	0.6
35	5.9	7053	
25	11.0	7002	
10	11.7	6995	
4300	11.9	6993	
4290	12.1	6991	
80	12.2	6990	
70	12.8	6984	
60	13.3	6979	
50	14.8	6964	
40	16.4	6948	
30	17.4	6938	

699.68

20	7.1	6926	
10	8.1	6916	
4200	8.6	6911	

N4700

4200	8.6	6911	
10	8.0	6917	
20	7.0	6927	
30	16.9	6943	
40	15.6	6956	
50	14.7	6965	
60	13.7	6975	

711.16

711.16

N4700

4270	12.6	6986	
80	12.4	6988	
90	12.1	6991	
4300	11.6	6996	
10	11.2	7000	
20	10.3	7009	
30	10.1	7011	
40	10.2	7010	
T.P.	2.77	708.39	

5.52 713.91

0.24 713.67 - check on  
B.M. Elev.  
713.70

Plotted

Plotted

Reduced by G.B.H.

Final X Sections of Downstream Spoil Bank, For  
Material From Spillway Road.

(See Pages 57-61 - For original X sections)

B.M. 1.80 ✓ <sup>"A"</sup> 715.50 ✓ 713.70

T.P. 0.32 ✓ <sup>"B"</sup> 702.90 ✓ 12.92 702.58

N 4470 is Original Ground.

N4480

<sup>"A"</sup>  
715.50

E 4540 7.2 708.3

30 7.1 708.4

20 8.6 706.9

10 10.4 705.1

4500 12.6 702.9

4496 12.8 702.7 O.G.

<sup>"B"</sup>  
702.90

70 11.0 691.9 O.G.

60 17.2 685.7

4447 24.5 678.4 O.G.

N4490

4442 23.8 679.1 O.G.

50 19.0 683.9

60 13.2 689.7

70 6.7 696.2

Plotted & Reduced. Sta. 24 B.S.N.

Dec. 1934  
Simpson  
Soper  
Jebel  
Emmer  
Salgado

<sup>"A"</sup>  
715.50

N4490

4480 13.6 701.9

90 9.2 706.3

4500 6.1 709.4

10 3.1 712.4

20 2.2 713.3

30 1.8 713.7

45 40 1.3 714.2 O.G.

N4500

4550 0.5 715.0 O.G.

4540 1.0 714.5

30 1.3 714.2

20 1.5 714.0

10 1.7 713.8

4500 2.2 713.3

4490 2.9 712.6

80 7.8 707.7

<sup>"B"</sup>  
702.90

70 2.7 700.2

60 9.2 693.7

50 16.3 686.6

4439 23.7 679.2 O.G.

Reduced & Plotted by B.S.N.

## N4510

"B"  
702.90

4438	21.8	681.1	O.G.
50	14.0	688.9	
60	6.2	696.7	

"A"  
715.50

70	11.3	704.2	
80	3.7	711.8	
90	2.6	712.9	
4500	2.1	713.4	
10	2.0	713.5	
20	1.9	713.6	
30	1.6	713.9	
40	1.2	714.3	
50	0.5	715.0	

## N4520

4550	1.3	714.2	O.G.
40	1.4	714.1	
30	1.9	713.6	
20	2.2	713.3	
10	2.4	713.1	
4500	2.5	713.0	
4490	2.8	712.7	
78	3.7	711.8	
4470	8.5	707.0	

Dec. 7-1934

"B"  
702.90

## N4520

4460	3.5	699.4	
4454	7.3	695.6	O.G.

## N4530

4452	7.2	695.7	O.G.
60	1.2	701.7	

"A"  
715.50

70	6.6	708.9	
74	4.1	711.4	
80	3.4	712.1	
90	3.1	712.4	
4500	3.0	712.5	
10	2.9	712.6	
20	2.8	712.7	
30	2.4	713.1	
4540	1.9	713.6	

## N4540

4530	3.0	712.5	O.G.
20	3.3	712.2	
10	3.6	711.9	
4500	3.6	711.9	
4490	3.5	712.0	
80	3.9	711.6	

71

Reduce &amp; Plot by EPA

Dec. 7-1934

N4540"A"  
715.50

4470	4.2	711.3
60	10.1	705.4
	"B"	702.90
4447	7.0	6959 O.G.

N4550

4445	6.7	6962 O.G.
50	2.7	7002
	"A"	715.50

60	5.9	7096
70	5.2	710.3
80	4.7	710.8
90	4.5	711.0
4500	4.1	711.4
10	4.3	711.2
20	4.0	711.5
4530	3.8	711.7 O.G.

N4560

4530	4.4	7111 O.G.
20	4.6	710.9
10	4.7	710.8
4500	4.8	710.7
4490	5.0	710.5

N4560"A"  
715.50

4480	5.2	710.3
70	5.6	709.9
63	5.8	709.7
60	8.2	707.3
	"B"	702.90
50	2.9	700.0
4444	6.5	6964 O.G.

N4570

4433	6.2	6967 O.G.
40	3.4	699.5
	"A"	715.50
50	11.4	704.1
59	6.6	708.9
70	6.1	709.4
80	5.9	709.6
90	5.5	710.0
4500	5.5	710.0
4510	5.5	710.0 O.G.

N4580

4500	6.2	709.3 O.G.
4490	6.6	708.9
80	6.7	708.8

72

Plotted &amp; Reduced by E.B.H.

## N4580

"H"  
715.50

4470	6.7	7088
60	6.7	7088
50	7.0	708.5
40	10.1	705.4
4430	11.5	704.0 O.G.

## N4590

4470	7.5	708.0 O.G.
60	7.5	708.0
50	7.5	708.0
40	8.0	707.5
30	7.6	707.9
26	7.4	708.1
20	11.0	704.5

"B"  
702.90

4410 4.9 698.0 O.G.

## N4600

4401	5.6	697.3 O.G.
10	0.6	702.3

Dec. 7-1934

## N4600

"H"  
715.50

4420	8.7	706.8
30	8.3	707.2
40	8.5	707.0
4430	8.4	707.1 O.G.

## N4610

4440	8.9	706.6 O.G.
30	9.1	706.4
20	9.0	706.5
10	8.9	706.6

"B"  
702.90

4400	0.9	702.0
4387	4.0	698.9 O.G.

## N4620

4380	2.6	700.3 O.G.
------	-----	------------

"H"  
715.50

90	10.0	705.5
4400	8.8	706.7
10	9.2	706.3
4420	9.4	706.1
4430	9.4	706.1 O.G.

N4630 is Original Ground,

73

Blotted &amp; Reduced Dec. 31, 1934

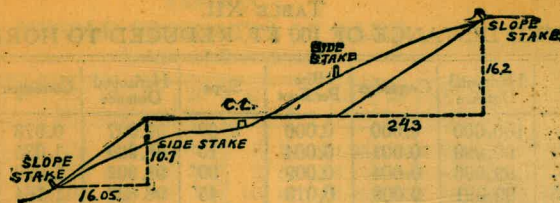






B.M.	9.87	712.46	722.59	Grade
4028	F.1 <sup>00</sup>	+ 0.54	713.00	714.00
4036	F.1 <sup>00</sup>	+ 4.54	717.00	718.00
4044	F.1 <sup>50</sup>	+ 8.04	720.50	722.00
4052	F.1 <sup>00</sup>	+ 8.54	721.00	722.00
4060	F.1 <sup>00</sup>	+ 12.54	725.00	726.00
4068	F.1 <sup>00</sup>	+ 12.54	725.00	726.00
4076	F.1 <sup>00</sup>	+ 16.54	729.00	730.00

DIRECTIONS FOR USE OF TABLES  
 712.46  
 17  
 712.29  
 729.50  
 712.29  
 8.21  
 712.26  
 4.80  
 717.00  
 712.46  
 728.07  
 712.29  
 8.61  
 IMPROVED TABLES  
 AND  
 INFORMATION



**DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING.**

SLOPE  $1\frac{1}{2}$  TO 1. ROADWAY OF ANY WIDTH.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0 00	0 15	0 30	0 45	0 60	0 75	0 90	1 05	1 20	1 35	0
1	1 50	1 65	1 80	1 95	2 10	2 25	2 40	2 55	2 70	2 85	1
2	3 00	3 15	3 30	3 45	3 60	3 75	3 90	4 05	4 20	4 35	2
3	4 50	4 65	4 80	4 95	5 10	5 25	5 40	5 55	5 70	5 85	3
4	6 00	6 15	6 30	6 45	6 60	6 75	6 90	7 05	7 20	7 35	4
5	7 50	7 65	7 80	7 95	8 10	8 25	8 40	8 55	8 70	8 85	5
6	9 00	9 15	9 30	9 45	9 60	9 75	9 90	10 05	10 20	10 35	6
7	10 50	10 65	10 80	10 95	11 10	11 25	11 40	11 55	11 70	11 85	7
8	12 00	12 15	12 30	12 45	12 60	12 75	12 90	13 05	13 20	13 35	8
9	13 50	13 65	13 80	13 95	14 10	14 25	14 40	14 55	14 70	14 85	9
10	15 00	15 15	15 30	15 45	15 60	15 75	15 90	16 05	16 20	16 35	10
11	16 50	16 65	16 80	16 95	17 10	17 25	17 40	17 55	17 70	17 85	11
12	18 00	18 15	18 30	18 45	18 60	18 75	18 90	19 05	19 20	19 35	12
13	19 50	19 65	19 80	19 95	20 10	20 25	20 40	20 55	20 70	20 85	13
14	21 00	21 15	21 30	21 45	21 60	21 75	21 90	22 05	22 20	22 35	14
15	22 50	22 65	22 80	22 95	23 10	23 25	23 40	23 55	23 70	23 85	15
16	24 00	24 15	24 30	24 45	24 60	24 75	24 90	25 05	25 20	25 35	16
17	25 50	25 65	25 80	25 95	26 10	26 25	26 40	26 55	26 70	26 85	17
18	27 00	27 15	27 30	27 45	27 60	27 75	27 90	28 05	28 20	28 35	18
19	28 50	28 65	28 80	28 95	29 10	29 25	29 40	29 55	29 70	29 85	19
20	30 00	30 15	30 30	30 45	30 60	30 75	30 90	31 05	31 20	31 35	20
21	31 50	31 65	31 80	31 95	32 10	32 25	32 40	32 55	32 70	32 85	21
22	33 00	33 15	33 30	33 45	33 60	33 75	33 90	34 05	34 20	34 35	22
23	34 50	34 65	34 80	34 95	35 10	35 25	35 40	35 55	35 70	35 85	23
24	36 00	36 15	36 30	36 45	36 60	36 75	36 90	37 05	37 20	37 35	24
25	37 50	37 65	37 80	37 95	38 10	38 25	38 40	38 55	38 70	38 85	25
26	39 00	39 15	39 30	39 45	39 60	39 75	39 90	40 05	40 20	40 35	26
27	40 50	40 65	40 80	40 95	41 10	41 25	41 40	41 55	41 70	41 85	27
28	42 00	42 15	42 30	42 45	42 60	42 75	42 90	43 05	43 20	43 35	28
29	43 50	43 65	43 80	43 95	44 10	44 25	44 40	44 55	44 70	44 85	29
30	45 00	45 15	45 30	45 45	45 60	45 75	45 90	46 05	46 20	46 35	30
31	46 50	46 65	46 80	46 95	47 10	47 25	47 40	47 55	47 70	47 85	31
32	48 00	48 15	48 30	48 45	48 60	48 75	48 90	49 05	49 20	49 35	32
33	49 50	49 65	49 80	49 95	50 10	50 25	50 40	50 55	50 70	50 85	33
34	51 00	51 15	51 30	51 45	51 60	51 75	51 90	52 05	52 20	52 35	34
35	52 50	52 65	52 80	52 95	53 10	53 25	53 40	53 55	53 70	53 85	35
36	54 00	54 15	54 30	54 45	54 60	54 75	54 90	55 05	55 20	55 35	36
37	55 50	55 65	55 80	55 95	56 10	56 25	56 40	56 55	56 70	56 85	37
38	57 00	57 15	57 30	57 45	57 60	57 75	57 90	58 05	58 20	58 35	38
39	58 50	58 65	58 80	58 95	59 10	59 25	59 40	59 55	59 70	59 85	39
40	60 00	60 15	60 30	60 45	60 60	60 75	60 90	61 05	61 20	61 35	40
41	61 50	61 65	61 80	61 95	62 10	62 25	62 40	62 55	62 70	62 85	41
42	63 00	63 15	63 30	63 45	63 60	63 75	63 90	64 05	64 20	64 35	42
43	64 50	64 65	64 80	64 95	65 10	65 25	65 40	65 55	65 70	65 85	43
44	66 00	66 15	66 30	66 45	66 60	66 75	66 90	67 05	67 20	67 35	44
45	67 50	67 65	67 80	67 95	68 10	68 25	68 40	68 55	68 70	68 85	45
46	69 00	69 15	69 30	69 45	69 60	69 75	69 90	70 05	70 20	70 35	46
47	70 50	70 65	70 80	70 95	71 10	71 25	71 40	71 55	71 70	71 85	47
48	72 00	72 15	72 30	72 45	72 60	72 75	72 90	73 05	73 20	73 35	48
49	73 50	73 65	73 80	73 95	74 10	74 25	74 40	74 55	74 70	74 85	49
50	75 00	75 15	75 30	75 45	75 60	75 75	75 90	76 05	76 20	76 35	50

Computed by L. Leland Locke.

Cornwall  
Elev. 740 - 4160 to 0+15

3203.5

62.9  
37.1  
47.1

N 4643.68  
E 4514.42

7.52

2.68

24

63  
67  
130