388.

EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

Distances from Center of Roadbed for Proportioning
Roadway 16 feet wide. Side Slopes 1 on 1.
For Single Track Embankment.

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

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

Up Stream Sport Area X Sec 9 Cal 1-65, 71-75, 77-78

Down " " " " " " " Extended 66-70, 76,

B.M.	7.80	593.28		585.48
		N3290		
6480			6.2	87.1 ✓ 87.1
460			5.8	87.5 ✓ 82.9
440			5.6	87.7 ✓ 78.7
420			5.6	87.7 ✓ 77.8
400			6.3	87.0 ✓ 77.5
380			7.2	86.1 ✓ 76.5
360			7.8	85.5 ✓ 76.4
340 - N.G.			17.8	75.5 ✓ 75.1
		N3280		
6350 - N.G.			17.8	75.5 ✓ 75.5
380			6.6	86.7 ✓ 77.4
400			6.0	87.3 ✓ 77.5
420			5.3	88.0 ✓ 77.4
440			4.5	88.8 ✓ 78.4
460			5.2	88.1 ✓ 82.3
480 - N.G.			7.0	86.3 ✓ 86.3

✓

Jan. 11, 1933
Simpson - notes
Elliott - "
Soper - "
Remmen-Hope
Stone - "
Gehlschlag - "

4.6 ✓
9.0 ✓
9.9 ✓
9.5 ✓
9.6 ✓
9.1 ✓
0.4 ✓
= 0.3

1036.00 ✓ → N3290 X

0.0
9.3 ✓
9.8 ✓
10.6 ✓
10.4 ✓
5.8 ✓
0.0 ✓

139.50 ✓
825.00 ✓
964.50 ✓ — N3280 X

N 3270

6490		6.4	86.9 ✓	86.9	0.0 ✓
470		2.7	90.6 ✓	80.9	9.7 ✓
440		4.4	88.9 ✓	78.1	10.8 ✓
420		5.0	88.3 ✓	77.8	10.5 ✓
395		6.2	87.1 ✓	77.3	9.8 ✓
365	N.G.	16.7	76.6 ✓	76.6	0.0 ✓

97.00 ✓
~~87.00~~
307.50 ✓
213.00 ✓
253.75 ✓
147.00 ✓
1018.25 ✓ → N 3270 ✓ X

N 3260

6380	N.G.	16.2	77.1 ✓	76.9	0.2 ✓
410		4.6	88.7 ✓	77.1	11.6 ✓
420		4.7	88.6 ✓	77.1	11.5 ✓
440		4.3	89.0 ✓	77.6	11.4 ✓
460		3.2	90.1 ✓	80.9	9.2 ✓
480		1.9	91.4 ✓	84.2	7.2 ✓
500		5.8	87.5 ✓	87.5	0.0 ✓

177.00 ✓
115.50 ✓
671.00 ✓
963.50 ✓ → N 3260 ✓ X

N 3250

6520	N.G.	4.8	88.5 ✓	88.5	0.0 ✓
500		0.6	92.7 ✓	85.7	7.0 ✓
480		2.1	91.2 ✓	82.8	8.4 ✓
460		3.3	90.0 ✓	80.0	10.0 ✓
440		3.8	89.5 ✓	77.1	12.4 ✓
420		9.1	89.2 ✓	76.6	12.6 ✓
6390		16.3	77.0	76.6	0.4 ✓

882.00 ✓
195.00 ✓
1077.00 ✓ → N 3250 ✓ X

593,28

N325.0

6390 = N.G	16.3	77.0 ✓	76.6

N3240

6410 = N.G.	17.2	76.1 ✓	76.0
420	13.3	80.0 ✓	76.6
440	7.1	86.2 ✓	76.7
450	3.1	90.2 ✓	78.0
480	2.0	91.~~8~~3	82.1
500	0.6	92.7 ✓	84.7
530	+1.5	94.8 ✓	88.8
545 = N.G.	2.5	90.8 ✓	90.8

N3230

6560 N.G.	1.6	91.7 ✓	91.7
550	+2.2	95.5 ✓	90.2
520	+0.9	94.2 ✓	86.5
500	0.5	92.8 ✓	84.0
480	1.4	91.9 ✓	81.5
475	1.5	91.8 ✓	80.8
460		~~86.6~~ 87.6	79.2
440 interpolate		~~81.5~~ 82.0	76.7
420 = N.G.	17.0	76.3 ✓	76.5

✓

0.0 ✓ — 17.00 ✓
3.4 ✓ — 129.00 ✓
9.5 ✓ — 108.50 ✓
12.2 ✓ — 321.00 ✓
~~8.7~~ 9.2 — 172.00 ✓
8.0 ✓ — 210.00 ✓
6.0 ✓ — 45.00 ✓
0.0 ✓ — 1002.50 ✓ → N 3240 ✗

0.0 ✓ — 26.50 ✓
5.3 ✓ — 195.00 ✓
7.7 ✓
8.8 ✓ — 357.00 ✓
~~7.7~~ 10.4 — 53.50 ✓
11.0 ✓ — 145.50 ✓
~~7.4~~ 8.4
~~4.8~~ 5.3 — 190.00 ✓
0.0 ✓ — 967.50 ✓ → N3230 ✗

N 3220

6450	= N.G.	16.9	76.4 ✓	76.4
460			79.8 ~~82.0~~ 86.6	77.8
480	interpolate		~~87.7~~	80.7
6500		0.8	93.3 ✓	83.6
520		+1.3	94.6 ✓	86.5
540		+2.2	95.5 ✓	89.3
560		+3.6	96.9 ✓	92.7
570	= N.G.			94.4

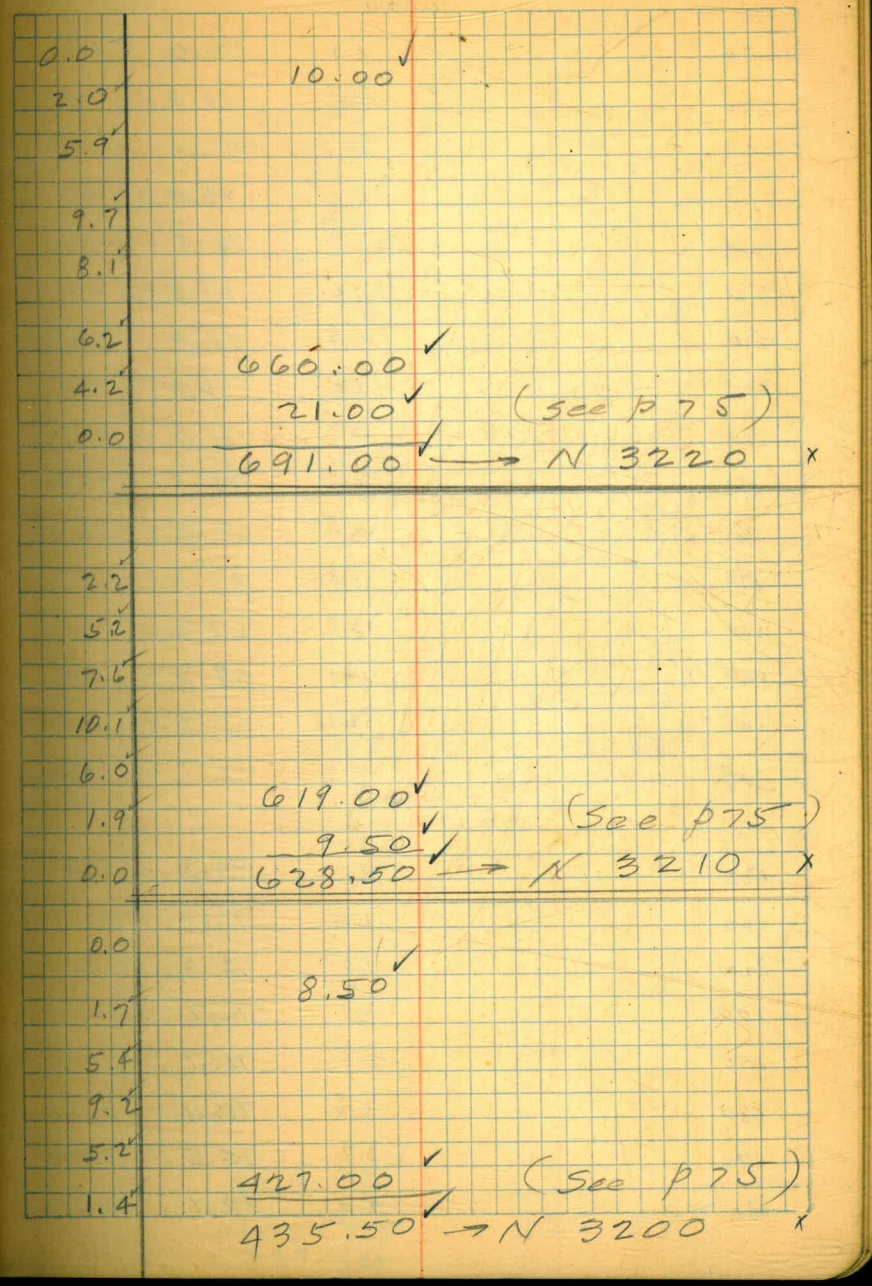
N 3210

6580		+5.0	98.3 ✓	96.1
560		+4.0	97.3 ✓	92.1
540		+2.4	95.7 ✓	88.1
520		+1.8	95.1 ✓	85.0
500			87.9	81.9
480	interpolate		80.7	78.8
470	= N.G.	16.1	77.2 ✓	77.2

N 3200

6490		15.8	77.5 ✓	77.7
500			81.X ✓	79.5
520	interpolate		88.6 ✓	83.2
540		+2.8	96.8 ✓	86.9
560		+3.2	96.5 ✓	91.3
580	= N.G.	+3.8	97.1 ✓	95.7

Note: N 3190 is natural ground. ✓



581.45

N 3460

6270 = N.C.		3.8	77.6 ✓	77.6
260		1.6	79.8 ✓	77.0
250		3.8	77.6 ✓	76.6
240		7.0	74.4 ✓	76.2
230		5.9	75.5 ✓	73.7
220		5.6	75.8 ✓	76.2
210		5.5	75.9 ✓	75.6
200		5.0	76.4 ✓	75.1
190		5.7	75.7 ✓	75.2
180		5.5	75.9 76.0	75.2
180 ↓ vertical		12.9	68.5 ✓	75.2
170		13.8	67.6 ✓	74.8
160		13.8	67.6 ✓	74.0
150		14.1	67.3 ✓	71.5
140		12.6	68.8 ✓	69.8
138		8.3	73.1 ✓	69.0
	574.27			
130		1.0	73.3 ✓	65.7
120		1.4	72.9 ✓	63.6
110		1.7	72.6 ✓	62.5
6100		2.1	72.2 ✓	62.5
090		2.6	71.7 ✓	62.5
080		3.2	71.1 ✓	62.6
070		3.7	70.6 ✓	60.0
060		4.0	70.3 ✓	60.1 ✓

Jan. 11, 1933

0.0
2.8 ✓
4.0 ✓
1.8 ✓
2.3 ✓
0.4 ✓
0.3 ✓
1.3 ✓
0.5 ✓
0.7
0.8
6.7 ✓
7.2 ✓
6.4 ✓
4.2 ✓
1.0 ✓
4. ✓
7.6 ✓
9.3 ✓
10.1 ✓
9.7 ✓
9.2 ✓
8.5 ✓
10.6 ✓
10.7 ✓

573.65 ✓
33.00 + 4.62
Level 5 = 4.27
1.78 ✓
6.46 ✓
9.80 ✓
0.64 ✓
23.00 ✓
3.28 ✓
1.25
46.80 ✓
663.00 ✓
785.73
787.76

585.48 = B.M.
+ 0.89
586.37
- 12.72
573.65
+ 7.80
581.45 = B. Trans. ✓
5.79 ✓
3.94 ✓
0.30 ✓
1.14 ✓
216.50 ✓
0.20 ✓
227.87 ✓

574.27

N 3460

6050	4.5	69.8 ✓	60.2
040	4.9	69.4 ✓	60.3
030	5.3	69.0 ✓	60.0
020	5.7	68.6 ✓	61.1
010	6.1	68.2 ✓	62.2
6000	6.4	67.9 ✓	62.3
5990	6.9	67.4 ✓	61.2
980	7.2	67.1 ✓	61.9
970	7.7	66.6 ✓	62.8
960	8.0	66.3 ✓	62.1
950	9.4	64.9 ✓	62.5
940	10.2	64.1 ✓	62.7
930		64.1	62.4
920		64.2	62.2
910		64.2	62.6
900		64.3	62.3
890		64.3	62.8
880		64.4	62.6
870	9.9	64.4 ✓	62.6
860	9.3	65.0 ✓	62.5
850	9.6	64.7 ✓	62.6
840	9.2	65.1 ✓	63.4
835	8.9	65.4 ✓	64.1
825	2.6	71.7 ✓	64.3
820	3.4	70.9 ✓	63.8

interpolate

✓

5.1 787.76 227.87 ✓

9.6	✓
9.1	✓
9.0	✓
7.5	✓
6.0	✓
5.6	✓
6.2	✓
5.2	✓
3.8	✓
4.2	✓
2.4	✓
1.4	✓
1.7	✓
2.0	✓
1.6	✓
2.0	✓
1.5	✓
1.8	✓
1.8	✓
2.5	✓
2.1	✓
1.7	✓
1.3	✓
7.4	✓
7.1	✓

929.50 ✓

7.50 ✓

43.50 ✓

36.25

~~35.75~~

~~801.98~~

1804.51

227.87 ✓

574.27

N 3460

5810	3.8	70.5 ✓	64.9
800	4.0	70.3 ✓	66.1
790	4.0	70.3 ✓	67.9

584.99

780	9.0	76.0 ✓	67.1
770	5.6	79.4 ✓	66.7
760	6.8	78.2 ✓	68.4
750	6.9	78.1 ✓	68.8
740	7.0	78.0 ✓	69.3
730	7.4	77.6 ✓	70.6
720	8.2	76.8 ✓	71.6
710	9.9	75.1 ✓	74.2
700	11.7	73.3 ✓	74.6
690	12.5	72.5 ✓	75.0
680	12.8	72.2 ✓	75.4
670	11.2	73.8 ✓	75.2
660	10.8	74.2 ✓	75.4
650	9.0	76.0 ✓	75.6
640	98	75.2 ✓	75.7
630	10.0	75.0 ✓	75.7
620	9.9	75.1 ✓	75.3
610	9.5	75.5 ✓	75.1
600	10.2	74.8 ✓	75.0
590	10.8	74.2 ✓	74.9
580	10.6	74.4 ✓	67.0

✓

3.55 1804.51 ✓ 227.8 ✓

575.00 = B.M.
9.99
584.99 = Leitz transit

5.6 ✓			
4.2 ✓			
2.4 ✓			
8.9 ✓			
12.7 ✓			
9.8 ✓			
9.3 ✓			
8.7 ✓			
7.0 ✓			
5.2 ✓			
0.9 ✓	778.00 ✓		
	1.84 ✓	1.3 ✓	3.31 ✓
		2.5 ✓	
		3.2 ✓	
		1.4 ✓	83.50
		1.2 ✓	82.60
0.4 ✓	0.50 ✓		4.50 ✓
	0.89 ✓	0.5 ✓	1.39 ✓
		0.7 ✓	
		0.2 ✓	10.50 ✓
	1.33 ✓		0.33 ✓
0.4 ✓	1.33 ✓		0.33 ✓
		0.2 ✓	4.50 ✓
		0.7 ✓	0.30 ✓
7.4 ✓	33.81 ✓		
	2622.21		336.46

	N3460			7.4	2622.21 ✓	336.46
573		74.1	64.0	10.1 ✓	61.25 ✓	
5570	10.9	74.1 ✓	64.9	9.2 ✓	28.95	
560	11.0	74.0 ✓	67.9	6.1 ✓		
550	9.9	75.1 ✓	70.9	4.2 ✓	154.00 ✓	
540	10.1	74.9 ✓	73.9	1.0 ✓	1.50 ✓	
537	10.0	75.0 ✓ = TOC WALL	75.0	0.0 ✓	2867.91	
					~~2865.38~~	~~335.62~~
					~~335.62~~	
	N3470				~~2529.76~~ → N3460	X
					2531.45	
5532	10.0	75.0 ✓ = TOC WALL		0.0 ✓	~~15.60~~	
540	9.5	75.5 ✓	72.6	2.9 ✓	11.60	
550	10.0	75.0 ✓	69.6	5.4 ✓		
560	10.7	74.3 ✓	66.5	7.8 ✓	198.00	
570	11.2	73.8 ✓	63.5	10.3 ✓	~~203.00~~	
574		73.7	62.0	11.7 ✓	44.00 ✓	
580	11.5	73.5 ✓	63.7	9.8 ✓	64.50 ✓	
590	11.4	73.6 ✓	74.3	0.7 ✓	45.72	0.23 ✓
600	11.5	73.5 ✓	74.6	1.1 ✓		
610	11.0	74.0 ✓	74.8	0.8 ✓		
620	11.0	74.0 ✓	75.0	1.0 ✓		
630	11.0	74.0 ✓	75.1	1.1 ✓		
640	10.7	74.3 ✓	74.9	0.6 ✓		
650	10.3	74.7 ✓	75.0	0.3 ✓		53.50 ✓
660	10.3	74.7 ✓	74.9	0.2 ✓	0.50 ✓	0.50 ✓
670	10.0	75.0 ✓	74.8	0.2 ✓	0.25 ✓	2.25 ✓
680	11.0	74.0 ✓	74.6	0.6 ✓		15.50 ✓
690	13.4	71.6 ✓	74.1	2.5 ✓	0.42 ✓	10.41 ✓
700	11.9	73.1 ✓	72.6	0.5 ✓	~~373.99~~	82.39 ✓
			✓		364.99	

584.99

N3470

5710		6.8	78.2 ✓ 70.0	8.2 ✓
720		7.2	77.8 ✓ 69.0	8.8 ✓
730		7.1	77.9 ✓ 69.0	8.9 ✓
740		6.9	78.1 ✓ 68.5	9.6 ✓
750		6.8	78.2 ✓ 67.0	11.2 ✓
760		6.5	78.5 ✓ 65.6	12.9 ✓
770		5.7	79.3 ✓ 66.2	13.1 ✓
780		5.6	79.4 ✓ 66.2	13.2 ✓
790		10.1	74.9 ✓ 66.9	8.0 ✓ ~~12.8~~
800		12.8	72.2 ✓ 65.1	7.1 ✓
810		13.2	71.8 ✓ 64.5	7.3 ✓
820		12.8	72.2 ✓ 64.2	8.0 ✓
	574.27			
830		3.8	70.5 ✓ 63.9	6.6 ✓
840		9.2	65.1 ✓ 62.5	2.6 ✓
850		10.0	64.3 ✓ 62.6	1.7 ✓
860		9.5	64.8 ✓ 62.4	2.4 ✓
870		9.0	65.3 ✓ 62.8	2.5 ✓
880		10.1	64.2 ✓ 62.5	1.7 ✓
890		11.3	63.0 ✓ 62.4	0.6 ✓
900		10.1	64.2 ✓ 62.4	1.8 ✓
910			64.1 62.4	1.7 ✓
920			64.0 62.2	1.8 ✓
930	interpolate		63.9 62.5	1.4 ✓
940			63.8 62.8	1.0 ✓

✓

0.25

~~373.99~~ 364.99

82 39 ✓

1418.50 ✓

~~1992.49~~ 1783.49

82.39 ✓

574.27

N3470

5950			63.7	62.2
960	interpolate		63.6	62.0
970		10.7	63.6 ✓	62.6
980		10.3	64.0 ✓	61.4
990		9.3	65.0 ✓	61.5
6000		8.3	66.0 ✓	61.8
010		7.5	66.8 ✓	61.7
020		5.8	68.5 ✓	57.4
030		5.5	68.8 ✓	60.1
040		5.0	69.3 ✓	60.0
050		4.4	69.9 ✓	60.1
060		3.7	70.6 ✓	60.0
070		3.2	71.1 ✓	61.4
080		2.8	71.5 ✓	62.5
090		2.3	72.0 ✓	62.1
6100		5.6	68.7 ✓	62.5
110		7.0	67.3 ✓	63.7
120		7.0	67.3 ✓	64.4
130		7.2	67.1 ✓	69.0
140		8.0	66.3 ✓	71.2
150		7.4	66.9 ✓	73.6
160		8.7	65.6 ✓	74.3
170		7.8	66.5 ✓	74.9
	581.45			
180		6.3	75.1 ✓	75.2 ✓

11

.5	~~1792.49~~ 1783.49	82.39 ✓
1.5 ✓		
1.6 ✓		
1.0 ✓		
2.6 ✓		
3.5 ✓		
4.2 ✓		
5.6 ✓		
9.1 ✓		
8.7 ✓		
9.3 ✓		
9.8 ✓		
10.6 ✓		
9.7 ✓		
8.0 ✓		
9.9 ✓		
6.2 ✓		
3.6 ✓		
2.9 ✓	1078.50 ✓	
	8.77 ✓	3.80
1.9 ✓		~~2.59~~
4.9 ✓		
6.7 ✓		
8.7 ✓		
8.4 ✓		
		297.00
0.1 ✓		~~293.40~~
	~~2874.76~~ 2870.76	~~378.12~~ 383.19

581.45

N 3470

6190		5.8	75.6 ↓ 75.3	0.3 ✓	
200		6.4	75.0 ↓ 75.1		0.1 ✓
210		5.7	75.7 ✓ 75.7	0.0 ✓	
220		6.6	74.8 ↓ 76.2		1.4 ✓
230		6.5	~~75.0~~ 74.9 75.9		1.0 ✓
240		6.5	~~75.0~~ 74.9 76.3		1.4 ✓
250		6.3	75.1 ↓ 76.7		1.6 ✓
260		1.2	80.2 ↓ 77.1	3.1 ✓	
265		+2.8	84.2 ↓ 77.3	6.9 ✓	
270		+2.8	84.2 ↓ 77.5	6.7 ✓	
280		+1.7	83.1 78.7	4.4 ✓	
290		1.3	80.1 ↓ 76.9	3.4 ✓	
300	N.C.	2.0	79.4 ↓ 79.4	0.0 ✓	

N 3480

6310		0.8	80.6 ↓ 80.6	0.0 ✓	
300		+2.9	84.3 ↓ 79.8	4.5 ✓	
290		+6.8	88.2 ↓ 79.5	8.7 ✓	
280		+9.4	90.8 ↓ 78.9	11.9 ✓	
275		+10.0	91.4 ↓ 79.0	12.4 ✓	
270		+5.1	~~96.5~~ 86.5 79.1	7.4 ✓	
260		+0.4	81.8 ↓ 76.9	4.9 ✓	
250		5.7	75.7 ↓ 77.3		1.6 ✓
240		6.1	75.3 ↓ 76.6		1.3 ✓
230		6.6	74.8 ↓ 76.1		1.3 ✓

✓

12

2870.76

0.1 ~~2899.76~~

1.12 ✓

1.12 ✓

0.1 ✓

1.4 ✓

1.0 ✓

1.4 ✓

1.6 ✓

10.23 ✓

25.00 ✓

34.00 ✓

111.50 ✓

~~3053.73~~

~~3062.73~~

~~427.58~~

~~2635.15~~ → N 3470 X

2621.08

191.50 ✓

160.75 ✓

~~45.45~~

49.50 ✓

61.50 ✓

18.47 ✓

1.6 ✓

1.3 ✓

1.3 ✓

~~399.67~~

381.72

383.19

~~378.12~~

0.12 ✓

0.12 ✓

0.50 ✓

7.00 ✓

39.00 ✓

2.72 ✓

~~427.58~~

432.60

1.97 ✓

27.50

~~34.00~~

~~35.97~~

29.47

581.45

N 3480

6220		6.4	75.0 ✓ 76.0		1.0 ✓	
210		5.8	75.6 ✓ 75.8		0.2 ✓	
200		6.4	75.0 ✓ 75.3		0.3 ✓	
190		6.5	~~75.0~~ 74.9 75.2		0.3 ✓	
180		6.4	75.0 ✓ 75.2		0.2 ✓	
↓ vertical						
	574.27					
180		6.5	67.8 ✓ 75.2		7.4 ✓	
170		7.8	66.5 ✓ 75.0		8.5 ✓	
160		9.0	65.3 ✓ 74.6		9.1 ✓	
150		8.3	66.0 ✓ 73.8		7.8 ✓	
140		7.3	67.0 ✓ ~~77.5~~		~~5.5~~ 4.5	
130		7.8	66.5 ✓ 69.5		3.0 ✓	
120		8.8	65.5 ✓ 68.6		3.1 ✓	
110		8.7	65.6 ✓ 65.1	0.5 ✓		
100		9.7	64.6 ✓ 63.4	1.2 ✓		
6090		8.4	65.9 ✓ 62.4	3.5 ✓		
080		8.5	65.8 ✓ 61.9	3.9 ✓		
070		7.7	66.6 ✓ 62.2	~~4.4~~ 3.6		
060		7.2	67.1 ✓ 61.3	5.8 ✓		
050		7.5	66.8 ✓ 60.0	6.8 ✓		
040		8.4	65.9 ✓ 60.0	5.9 ✓		
030		8.6	65.7 ✓ 60.1	5.6 ✓		
020		9.1	65.2 ✓ 60.1	5.1 ✓		
010		10.9	63.4 ✓ 60.1	3.3 ✓		
6000	interpolate		63.4 60.1 ✓	2.8 ✓		

.65 ✓ ~~.55~~

~~377.67~~ 381.72

~~35.97~~ 29.47

25.50 ~~24.60~~

0.35 ✓

391.50 ✓

13.34 ✓

469.00 ✓

~~847.02~~ 851.07

~~465.41~~ 459.81

574.27

N3480

5990			63.5	61.5
980			63.5	61.3
970			63.6	62.2
960			63.6	62.5
950	interpolate		63.7	62.1
940			63.7	62.6
930			63.8	62.5
920			63.8	61.9
910			63.9	61.9
900		10.3	64.0 ✓	62.2
890		9.7	64.6 ✓	62.1
880		10.1	64.2 ✓	62.3
870		9.2	65.1 ✓	62.5
860		8.5	65.8 ✓	62.6
850		7.3	67.0 ✓	62.6
840		4.0	70.3 ✓	62.6
830		1.0	73.8	63.4
	584.99			
820		11.7	73.3 ✓	63.7
810		12.1	72.9 ✓	64.2
800		11.5	73.5 ✓	64.7
790		9.8	80.2 ✓	66.2
780		5.1	79.9 ✓	65.3
770		5.8	79.2 ✓	65.6
760		6.0	79.0 ✓	65.2

✓

1.15 851.07 ~~847.02~~ 459.81 ~~465.41~~

2.0 ✓	
2.2 ✓	
1.4 ✓	
1.1 ✓	
1.6 ✓	
1.1 ✓	
1.3 ✓	
1.9 ✓	
2.0 ✓	
1.8 ✓	
2.5 ✓	
1.9 ✓	
2.6 ✓	
3.2 ✓	
4.4 ✓	
7.7 ✓	
9.8	
9.4 ✓	
8.7 ✓	
8.2 ✓	
14.0 ✓	
14.6 ✓	
13.6 ✓	1259.50
13.8 ✓	~~1728.50~~
	~~2578.52~~
	2110.57

~~465.41~~
459.81

584.99

N3480

5750	6.3	78.7 ✓	64.8
740	6.5	78.5 ✓	64.7
730	6.6	78.4 ✓	67.2
720	6.9	78.1 ✓	67.9
710	7.0	78.0 ✓	68.4
700	10.0	75.0 ✓	68.7
690	11.3	73.7 ✓	69.0
680	10.5	74.5 ✓	72.0
670	10.8	74.2 ✓	73.5
660	11.0	74.0 ✓	73.9
650	11.2	73.8 ✓	74.2
640	11.8	73.2 ✓	74.6
630	11.6	73.4 ✓	74.7
620	12.1	72.9 ✓	74.6
610	12.0	73.0 ✓	74.7
600	12.0	73.0 ✓	74.3
590	11.7	73.3 ✓	74.1
580	11.5	73.5 ✓	74.2
570	11.4	73.6 ✓	67.2
560	10.9	74.1 ✓	65.2
550	10.5	74.5 ✓	68.2
540	10.0	75.0 ✓	71.4
530	9.8	75.2 ✓	74.4
~~7~~	~~9.6~~ X	~~75.4~~	= toe wall

✓

15

6.9

~~2575.52~~

2110.57

~~465.41~~

459.81

13.9 ✓
13.8 ✓
11.2 ✓
10.2 ✓
9.6 ✓
6.3 ✓
4.7 ✓
2.5 ✓
0.7 ✓
0.1 ✓

798.50 ✓

0.10 ✓

1.60 ✓

0.4 ✓
1.4 ✓
1.3 ✓
1.7 ✓
1.7 ✓
1.3 ✓
0.8 ✓
0.7 ✓

53.69 ✓

87.50 ✓

0.20 ✓

11.4 ✓
8.9 ✓
6.2 ✓
3.6 ✓
0.8 ✓

549.11

248.00 ✓

3210.86 =

2661.75

~~3675.81~~

~~554.71~~

~~554.71~~

~~3121.10~~ → N3480 X

584.99

N 3490

5524		10.0	75.0 ✓	toe Wall
530		10.1	74.9 ✓	73.3
540		10.4	74.6 ✓	70.2
550		10.8	74.2 ✓	67.1
560		11.2	73.8 ✓	64.0
568			73.6	62.0
570		11.7	73.3 ✓	62.3
580		11.5	73.5 ✓	73.8
590		11.5	73.5 ✓	73.8
600		11.8	73.2 ✓	72.2
610		12.0	73.0 ✓	74.2
620		12.4	72.6 ✓	71.1
630		12.3	72.7 ✓	70.3
640		12.2	72.8 ✓	71.7
650		11.8	73.2 ✓	71.5
660		11.7	73.3 ✓	70.5
670		11.4	73.6 ✓	68.4
680		11.3	73.7 ✓	65.4
690		11.5	73.5 ✓	66.2
700		11.6	73.4 ✓	64.9
710	vertical	10.2	74.8 ✓	64.5
710		6.9	78.1 ✓	64.5
720		6.9	78.1 ✓	64.3
730		6.8	78.2 ✓	64.5
740		6.4	78.6 ✓	64.4
750		6.0	79.0 ✓	64.7 ✓

0.0 ✓
1.6 ✓
4.4 ✓
7.1 ✓
9.8 ✓
11.6 ✓
11.0 ✓
0.3 ✓
0.3 ✓
1.0 ✓
1.2 ✓
1.5 ✓
2.4 ✓
1.1 ✓
1.7 ✓
2.8 ✓
5.2 ✓
8.3 ✓
7.3 ✓
8.5 ✓
10.3 ✓
13.6 ✓
13.8 ✓
13.7 ✓
14.2 ✓
14.3 ✓

4.80
~~24.00~~

172.00 ✓
85.60 ✓
22.60
53 51 ✓

3.85 ✓
2.27 ✓
4.17 ✓

432.00 ✓

556.50 ✓

1356.50
1337.30

0.04 ✓
3.00 ✓
0 34 ✓
3.27 ✓
2.66 ✓

9.31 ✓

584.99

N3490

5760	5.7	79.3 ✓	64.9
770	5.9	79.1 ✓	64.5
780	5.3	79.7 ✓	64.7
790	4.1	80.9 ✓	65.3
800	10.2	74.8 ✓	64.2
810	10.5	74.5 ✓	63.9
820	10.2	74.8 ✓	64.0
830	8.9	76.1 ✓	62.8
835	6.5	78.5 ✓	62.6
850	10.9	74.1 ✓	62.6
860	12.8	72.2 ✓	62.4
870	12.3	74.7 ✓	62.4
880	14.9	70.6 ✓	62.2
890	15.1	69.9 ✓	62.1
900	16.2	68.8 ✓	61.9
	574.27		
910	7.6	66.7 ✓	61.6
920	9.0	65.3 ✓	61.5
930	9.8	64.5 ✓	62.8
940	10.2	64.0 ✓	62.8
950		64.0	61.8
960		64.0	62.3
970		63.9	61.7
980		63.9	61.2
990		63.8	61.3

interpolate

✓

17

7.15 ~~1356.50~~ 1337.30

9.31 ✓

14.4✓
14.6✓
15.0✓
15.6✓
10.6✓
10.6✓
10.8✓
13.3✓
15.9✓
11.5✓
9.8✓
12.3✓
8.4✓
7.8✓
6.9✓

1054.00
~~1154.00~~
73.00 ✓
205.50 ✓

5.1✓
3.8✓
1.7✓
1.2✓
2.2✓
1.7✓
2.2✓
2.7✓
2.5✓

728.00
~~726.00~~

~~3515.00~~
3397.80

9.31 ✓

574.27

N3490

6000			63.8	60.7
010			63.7	59.6
020			63.7	60.1
030			63.6	60.2
040			63.6	60.1
050			63.5	61.2
060			63.5	62.0
070			63.4	61.8
6080		11.0	63.3 ✓	62.1
090		9.5	64.8 ✓	64.3
100		9.5	64.8 ✓	66.2
110		8.6	65.7 ✓	67.4
120		8.0	66.3 ✓	70.0
130		8.3	66.0 ✓	72.9
140		8.5	65.8 ✓	73.5
150		8.7	65.6 ✓	74.3
160		8.4	65.9 ✓	74.9
170		6.8	67.5 ✓	75.0
180		6.2	68.1 ✓	75.0
↑ vertical	581.45			
↓ 180		6.9	74.5 ✓	75.0
190		5.3	76.1 ✓	75.2
200		6.0	75.4 ✓	75.4
210		5.1	76.3 ✓	75.6

interpolate

✓

18

1.25 ~~3515.00~~ 3397.80 9.31 ✓

3.1 ✓		
4.1 ✓		
3.6 ✓		
3.4 ✓		
3.5 ✓		
2.3 ✓		
1.5 ✓		
1.6 ✓		
1.2 ✓		
2.5 ✓		
	1.4 ✓	
	1.7 ✓	
	3.7 ✓	
	6.9 ✓	
	7.7 ✓	
	8.7 ✓	
	9.0 ✓	
	7.5 ✓	
	6.9 ✓	
	0.5 ✓	
0.9 ✓		
3.0 ✓		
0.7	+3	

258.00 ✓

0.66 ✓

5.16 ✓

493.50 ✓

2.89 ✓

0.89 ✓

8.00 ✓

~~3784.55~~ 3667.35

508.86 ✓

594.18

N3490

6220		16.8	77.4 ✓	76.3
230		19.6	74.6 ✓	76.7
240		19.2	75.0 ✓	76.5
250		14.3	79.9 ✓	76.6
260		8.1	86.1 ✓	77.5
270		2.2	92.0 ✓	79.0
280		+3.8	98.0 ✓	79.5
290			94.2	80.1
300	interpolate		90.3	80.8
310			86.5	82.4
320	= N.G.		82.6	82.6

607.90

N3500

6330	= N.G.		85.1	85.1 Toe
320			88.6	83.2
310	interpolate		92.2	83.8
300			95.8	82.5
290			99.3	81.1
280		5.0	02.9 ✓	80.3
270			96.4	79.4
260			89.9	79.2
250	interpolate		83.4	76.8
240		31.0	76.9 ✓	76.6
230		30.5	77.4 ✓	76.6
220		29.8	78.1 ✓	76.5
210		29.2	78.7 ✓	75.9

✓

3667.35
~~3784.55~~

508.86 ✓

.35

1.1 ✓

9.00 ✓

1.74 ✓

2.1 ✓

7.52 ✓

18.00 ✓

1.5 ✓

11.29 ✓

605.68
2.22
607.90 = Berger Transit

2.37 ✓

3.3 ✓

8.6 ✓

13.0 ✓

18.5 ✓

14.1 ✓

9.5 ✓

4.1 ✓

0.0 ✓

694.50 ✓
~~4501.08~~
536.75
~~3964.33~~

536.75 ✓

3847.13 → N3490

4383.88

0.0 ✓

5.4 ✓

8.4 ✓

13.2 ✓

18.2 ✓

22.6 ✓

17.0 ✓

10.7 ✓

6.6 ✓

0.3 ✓

0.8 ✓

1.6 ✓

2.8 ✓

~~106.90~~
1063.00

607.90

N3500

6200	30.2	77.7 ✓	75.5
190	30.0	77.9 ✓	75.5
180	32.5	75.4 ✓	75.2

574.27

175	5.1	69.2 ✓	75.1
170	5.7	68.6 ✓	75.1
160	7.8	66.5 ✓	74.0
150	8.2	66.1 ✓	74.9
140	8.7	65.6 ✓	74.2
130	9.4	64.9 ✓	73.3
120	8.9	65.4 ✓	71.1
110	8.7	65.6 ✓	67.5
100	9.6	64.7 ✓	67.0
090	11.0	63.3 ✓	65.0
080	9.7	64.6 ✓	64.2
070	10.5	63.8 ✓	63.1
060	11.0	63.3 ✓	61.9
050	11.9	62.4 ✓	62.4
040	13.0	61.3 ✓	60.3
030	12.8	61.5 ✓	60.1
020	11.3	63.0 ✓	60.1
010	10.9	63.4 ✓	60.0
6000	10.0	64.3 ✓	59.8
990	9.5	64.8 ✓	60.7
980	8.4	65.9 ✓	61.1 ✓

1063.00

~~106.30~~

1.4

2.2 ✓		
2.4 ✓		
0.2 ✓	61.00 ✓	
	0.02 ✓	14.28
		~~29.05~~
	5.9 ✓	
	6.5 ✓	31.00 ✓
	8.5 ✓	
	8.8 ✓	
	8.6 ✓	
	8.4 ✓	
	5.7 ✓	
	1.9 ✓	
	2.3 ✓	483.00
	1.7 ✓	~~480.40~~
	0.38 ✓	~~4.77~~
0.4 ✓		6.88
0.7 ✓		
1.4 ✓		
0.8 ✓		
1.0 ✓		
1.4 ✓		
2.9 ✓		
3.4 ✓		
4.5 ✓		
4.1 ✓		
4.2 ✓	220.00 ✓	

~~387.70~~ 1344.40

~~545.20~~ 535.16

574.27

N3500

5970		7.9	66.4 ✓	61.4
960		7.4	66.9 ✓	62.0
950		7.2	67.1 ✓	61.9
940		3.7	70.6 ✓	61.8
930		1.5	72.8 ✓	62.7
920		1.1	73.2 ✓	62.2
	584.90			
910		10.7	74.2 ✓	61.4
900		9.5	75.4 ✓	61.5
890		7.6	77.3 ✓	61.8
880		7.3	77.6 ✓	61.9
870		5.5	79.4 ✓	62.2
860		5.0	79.9 ✓	62.5
850		3.7	81.2 ✓	62.5
840		3.0	81.9 ✓	62.4
830		2.8	82.1 ✓	62.4
820		8.7	76.2 ✓	63.6
810		9.2	75.7 ✓	63.8
800		9.2	75.7 ✓	63.9
790		4.4	80.5 ✓	64.0
780		5.3	79.6 ✓	64.0
770		5.6	79.3 ✓	63.9
760		5.7	79.2 ✓	63.8
750		6.2	78.7 ✓	64.1
740		6.5	78.4 ✓	64.5

✓

~~545.20~~

2.4 ~~387.70~~

582.35 = B.M.

255

584.90 = Zeitz transit

535.16

5.0 ✓	1344.40
4.9 ✓	
5.2 ✓	
8.8 ✓	
10.1 ✓	
11.0 ✓	
12.8 ✓	
13.9 ✓	
15.5 ✓	
15.7 ✓	
17.2 ✓	
17.4 ✓	
18.7 ✓	
19.5 ✓	
19.7 ✓	
17.6 ✓	
11.9 ✓	
11.8 ✓	
16.8 ✓	
15.6 ✓	
15.4 ✓	
15.4 ✓	
14.6 ✓	
13.9 ✓	3185.50 ✓

~~3573.20~~ 4529.90

535.16 ~~545.20~~

584.90

N3500

5730	6.9	78.0 ✓	64.4
720	7.3	77.6 ✓	64.4
710	11.1	73.8 ✓	64.3
700	11.3	73.6 ✓	64.0
690	11.9	73.0 ✓	64.0
680	12.1	72.8 ✓	64.0
670	12.6	72.3 ✓	63.9
660	12.8	72.1 ✓	63.9
650	12.7	72.2 ✓	64.3
640	12.8	72.1 ✓	64.5
630	12.5	72.4 ✓	64.3
620	12.2	72.7 ✓	63.7
610	12.2	72.7 ✓	63.6
600	12.0	72.9 ✓	64.4
590	11.7	73.2 ✓	65.7
580	11.6	73.3 ✓	67.4
570	11.4	73.5 ✓	61.2
568		73.6	60.8
560	11.2	73.7 ✓	62.8
550	11.0	73.9 ✓	65.9
540	10.7	74.2 ✓	69.1
530	10.5	74.4 ✓	72.2
520	10.0	74.9 ✓	Toe Wall

✓

6.95

~~3573.20~~ 4529.90

~~545.20~~ 535.16

13.6 ✓
13.2 ✓
9.5 ✓
9.6 ✓
9.0 ✓
8.8 ✓
8.4 ✓
8.2 ✓
7.9 ✓
7.6 ✓
8.1 ✓
9.0 ✓
9.1 ✓
8.5 ✓
7.5 ✓
5.9 ✓
11.3 ✓
12.8 ✓
10.9 ✓
8.0 ✓
5.1 ✓
2.2 ✓
0.0 ✓

1565.00 ✓
24.10 ✓
94.80 ✓

207.50 ✓

6421.30
~~5464.60~~
~~545.20~~

~~4919.40~~ → N 3500
5886.14 →

~~545.20~~
535.16

584.90

N3510

5518	9.9	75.0 ✓	Tosswall	0.0 ✓
530	10.6	74.3 ✓	71.1	3.2 ✓
540	10.9	74.0 ✓	68.0	6.0 ✓
550	11.1	73.8 ✓	64.8	9.0 ✓
560	11.3	73.6 ✓	61.6	12.0 ✓
565	7.3 5		60.0	13.5 ✓
570	11.5	73.4 ✓	61.0	12.4 ✓
580	12.1	72.8 ✓	63.7	9.1 ✓
590	12.3	72.6 ✓	63.5	9.1 ✓
600	12.3	72.6 ✓	63.6	9.0 ✓
610	12.5	72.4 ✓	63.8	8.6 ✓
620	12.7	72.2 ✓	63.7	8.5 ✓
630	12.6	72.3 ✓	63.7	8.6 ✓
640	12.8	72.1 ✓	63.8	8.3 ✓
650	13.2	71.7 ✓	63.9	7.8 ✓
660	13.6	71.3 ✓	63.9	7.4 ✓
670	13.8	71.1 ✓	64.2	6.9 ✓
680	13.4	71.5 ✓	64.2	7.3 ✓
690	12.6	72.3 ✓	64.2	8.1 ✓
700	11.8	73.1 ✓	64.2	8.9 ✓
710	11.3	73.6 ✓	64.3	9.3 ✓
720	10.7	74.2 ✓	64.3	9.9 ✓
728 vertical	5.7	79.2 ✓	64.3	14.9 ✓
730	6.8	78.1 ✓	64.2	13.9
740	6.5	78.4 ✓	63.9	14.5 ✓
750	6.3	78.6 ✓	63.5	15.1 ✓
760	6.0	78.9 ✓	63.5	15.4 ✓
			✓	

19.20 ✓

226.00 ✓
63.75 ✓
64.75

1280.50 ✓

586.50 ✓

2240.70 ✓

584.90

N 3510

5770	5.5	79.4 ✓	63.6
780	5.2	79.7 ✓	63.6
790	3.7	81.2 ✓	63.8
800	8.3	76.6 ✓	64.0
810	8.2	76.7 ✓	63.0
820	7.4	77.5 ✓	63.6
830	2.9	82.0 ✓	62.5
840	2.4	82.5 ✓	62.3
850	2.2	82.7 ✓	62.4
860	1.7	83.2 ✓	62.4
870	1.3	83.6 ✓	61.9
880	0.8	84.1 ✓	61.5
890	0.8	84.1 ✓	61.3
900	3.1	81.8 ✓	61.2
910	3.1	81.8 ✓	61.0
920	3.9	81.0 ✓	62.7
930	4.3	80.6 ✓	63.1
940	6.6	78.3 ✓	61.6
950	8.3	76.6 ✓	61.8
960	9.0	75.9 ✓	61.4
970	9.7	75.2 ✓	61.2
980	10.9	74.0 ✓	61.0
990	11.3	73.6 ✓	59.8
	57427		
6000	1.5	72.8 ✓	60.0

✓

2x

7.7

2240.70 ✓

15.8	✓
16.1	✓
17.4	✓
12.6	
9.6	
13.7	✓
13.9	✓
19.5	✓
20.2	✓
20.3	✓
20.8	✓
21.7	✓
22.6	✓
22.8	✓
20.6	✓
20.8	✓
18.3	✓
17.5	✓
16.7	✓
14.8	✓
14.5	✓
14.0	✓
13.0	✓
13.8	✓
17.8	✓

4155.00 ✓

6395.70 ✓

574.27

N3510

6010	2.5	71.8	60.1
020	7.4	66.9	60.2
030	7.6	66.7	59.8
040	7.8	66.5	62.0
050	7.5	66.8	62.2
060	7.2	67.1	62.7
070	7.6	66.7	64.0
080	7.1	67.2	65.2
090	7.4	66.9	68.3
6100	10.1	64.2	69.5
110	8.6	65.7	68.8
120	7.7	66.6	69.1
130	8.6	65.7	71.6
140	8.0	66.3	74.7
150	6.0	68.3	75.0
160	3.5	70.8	75.5
	586.36		
170	8.6	77.8	75.5
180	7.3	79.1	75.6
190	3.6	82.8	75.6
200	1.1	85.3	76.1
210	1.7	84.7	76.6
220	+0.5	86.9	77.0
230	3.2	83.2	76.8
245	2.0	84.4	78.2

6.4
11.7
6.7
6.9
4.5
4.6
4.4
2.7
2.0

6395.70

574.27 : T.P.
− 0.62
573.65
+ 12.71
586.36 = Level

489.00
5.80
2.94

1.4
5.3
3.1
2.5
5.9
8.4
6.7
4.7

3.79

349.50
15.74

2.3
3.5
7.2
9.2
8.1
9.9
6.4
5.2

422.50
94.50
7411.29

368.18

607.90

N3510

6260			93.7	79.5
270	interpolate		99.8	80.0
280		2.0	05.9 ✓	80.9
290		1.7	06.2 ✓	80.8
300			01.3	81.4
310			96.4	81.7
320	interpolate		91.4	85.5
330 = N.G.			86.5	Toc 86,5

N3520

6335 = N.G			88.4	Toc 88.4
320	interpolate		96.1	85.8
300		1.5	06.4 ✓	83.0
290		1.5	06.4 ✓	81.9
280		1.6	06.3 ✓	82.1
270		1.7	06.2 ✓	81.0
260		2.1	605.8 ✓	80.0
250		9.0	598.9 ✓	79.8
240		15.7	92.2 ✓	78.7
230		17.3	90.6 ✓	77.6
220		13.3	94.6 ✓	77.8
210		14.0	93.9 ✓	77.0
200		14.0	93.9 ✓	76.9
190		19.0	88.9 ✓	76.2
180		21.8	86.1 ✓	75.2 ✓

6.2 ✓ 7411.29 ✓ 153.60 ✓ 368.18 ✓

14.2 ✓	
19.8 ✓	
25.5 ✓	
25.4 ✓	
19.9 ✓	
14.7 ✓	
5.9 ✓	
0.0 ✓	1183.00 ✓

8747.29 ✓ 368.18 ✓
368.18 ✓
8379.11 ✓ → N 3510 ✗

0.0 ✓	77.25 ✓
10.3 ✓	337.00 ✓
23.4 ✓	
24.6 ✓	
24.2 ✓	
25.2 ✓	
26.8 ✓	
19.1 ✓	
13.5 ✓	
13.3 ✓	
16.2 ✓	
16.9 ✓	
17.0 ✓	
12.9 ✓	
10.9 ✓	2258.50 ✓

2672.75 ✓

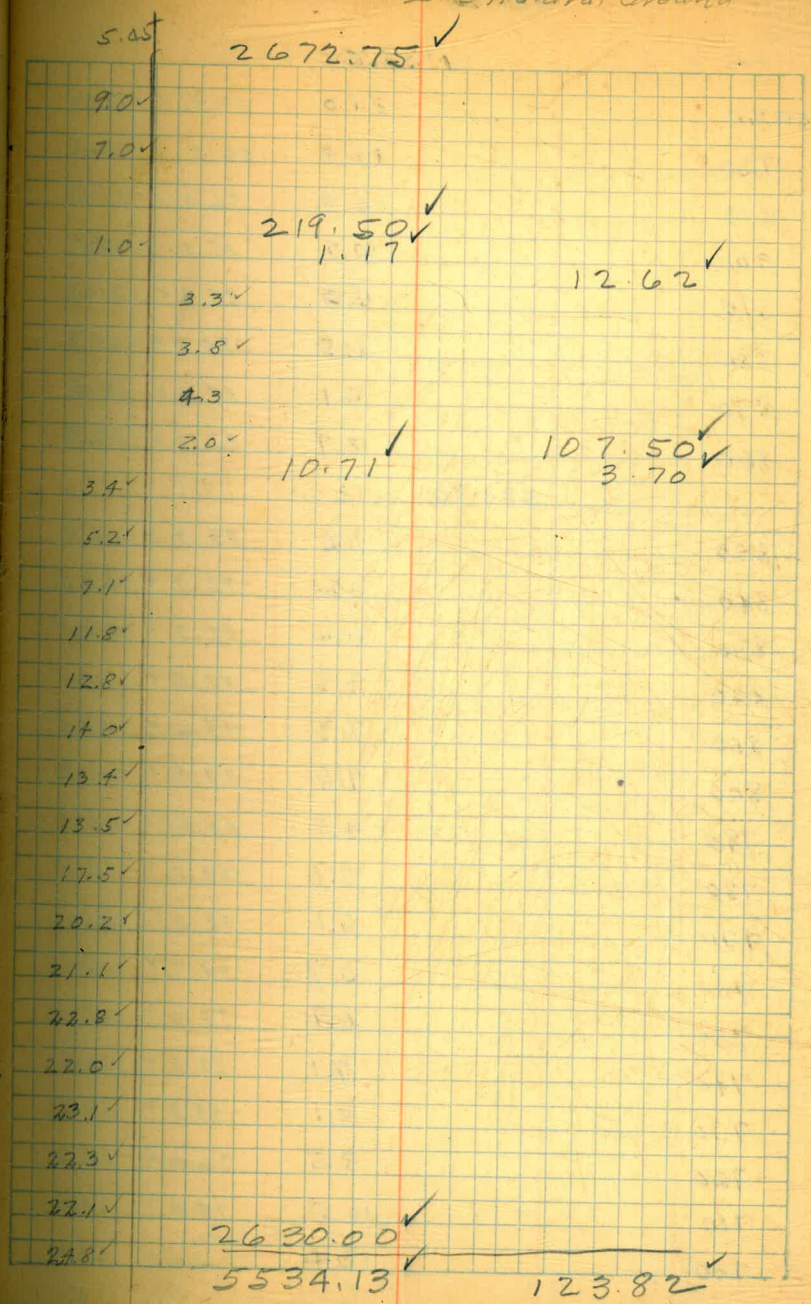
607.90

N3520

6170	24.3	83.6 ✓	74.6
160	26.4	81.5 ✓	74.5
	586.36		
150	10.5	75.9 ✓	74.9
140	15.0	71.4 ✓	74.7
130	15.8	70.6 ✓	74.4
120	16.9	69.5 ✓	73.8
110	15.9	70.5 ✓	72.5
100	12.4	74.0 ✓	70.6
090	12.4	74.0 ✓	68.8
080	10.5	75.9 ✓	68.8
070	9.8	76.6 ✓	64.8
060	10.5	75.9 ✓	63.1
050	9.9	76.5 ✓	62.5
040	10.7	75.7 ✓	62.3
030	10.5	75.9 ✓	62.4
020	8.8	77.6 ✓	60.1
010	6.6	79.8 ✓	59.6
6000	5.7	80.7 ✓	59.6
5990	4.4	82.0 ✓	59.2
980	3.9	82.5 ✓	60.5
970	2.3	84.1 ✓	61.0
960	3.1	83.3 ✓	61.0
950	2.8	83.6 ✓	61.5
940	0.2	86.2 ✓	61.4

✓

N.G. = Natural Ground



2672.75 ✓

219.50 ✓
1.17

12.62 ✓

10.71 ✓

107.50 ✓
3.70

2630.00 ✓

5534.13 ✓

123.82 ✓

586.36

N3520

5930		+1.0	87.4 ✓	61.6
920		+0.4	86.8 ✓	63.0
910		0.4	86.0 ✓	61.8
900		0.7	85.7 ✓	60.7
890		1.0	85.4 ✓	61.3
880		1.5	84.9 ✓	61.2
870		2.1	84.3 ✓	61.4
860		2.7	83.7 ✓	62.0
	584.90			
850		1.6	83.3 ✓	62.2
840		2.2	82.7 ✓	62.4
830		2.6	82.3 ✓	62.4
820		3.3	81.6 ✓	62.7
810		7.3	77.6 ✓	62.8
800		7.5	77.4 ✓	63.3
790		4.5	80.4 ✓	63.9
780		5.1	79.8 ✓	63.7
770		6.1	78.8 ✓	63.2
760		6.7	78.2 ✓	63.7
750		6.9	78.0 ✓	63.5
740		7.1	77.8 ✓	63.5
730		5.1	79.8 ✓	63.7
720		8.5	76.4 ✓	63.6
710		10.5	74.4 ✓	63.7
700		12.4	72.5 ✓	63.9

✓

12.4 5534.13 ✓ 123.82 ✓

25.8	✓
23.8	✓
24.2	✓
25.0	✓
24.1	✓
23.7	✓
22.9	✓
21.7	✓
21.1	✓
20.3	✓
19.9	✓
18.9	✓
14.8	✓
14.1	✓
16.5	✓
16.1	✓
15.6	✓
14.5	✓
14.5	✓
14.3	✓
16.1	✓
12.8	✓
10.7	✓
8.6	✓

4481.00 ✓

10,015.13 ✓ 123.82 ✓

584.90

N3520

5690	13.2	71.7	63.9
680	13.8	71.1	63.9
670	13.9	71.0	63.9
660	13.6	71.3	63.9
650	13.4	71.5	63.8
640	13.3	71.6	63.9
630	13.2	71.7	63.9
620	13.1	71.8	63.9
610	13.0	71.9	64.2
600	12.9	72.0	64.1
590	12.6	72.3	64.1
580	12.2	72.7	63.7
570	11.9	73.0	59.1
567		73.1	58.5
560	11.6	73.3	60.6
550	11.1	73.8	63.8
540	10.7	74.2	67.0
530	10.7	74.2	70.1
520	10.3	74.6	73.3
515	10.0	74.9	Toe Wall

N3530

5512	10.0	74.9	Toe Wall
520	10.6	74.3	72.4
530	10.7	74.2	69.2
540	10.8	74.1	66.0
550	11.4	73.5	62.8

4.3 10,015.13 123.82

7.8
7.2
7.1
7.4
7.7
7.7
7.8
7.9
7.7
7.8
8.2
9.0 — 1046.50
13.9 — 42.75
14.6 — 95.55
12.7
10.0
7.2
4.1
1.3
0.0 — 283.00
3.25
11,486.18 — 123.82
123.82
11,362.36 → N3520
0.0
3.60
0.9
5.0
8.1
10.7 — 189.00
192.60

584.90

N 3530

5560	11.7	73.2	59.6
562.5		73.1	58.5
570	11.9	73.0	59.5
580	12.2	72.7	63.9
590	12.6	72.3	63.9
600	12.9	72.0	63.9
610	13.1	71.8	64.0
620	13.2	71.7	64.0
630	13.6	71.3	64.1
640	13.8	71.1	64.1
650	13.9	71.0	63.9
660	13.9	71.0	63.7
670	13.7	71.2	63.9
680	13.3	71.6	63.8
690	13.2	71.7	63.8
700	12.8	72.1	63.7
710	11.1	73.8	63.7
720	11.8	73.1	64.1
730	8.8	76.1	63.2
740	8.1	76.8	63.6
750	7.8	77.1	63.3
760	7.5	77.4	63.1
770	7.3	77.6	64.1
780	6.4	78.5	64.2
790	5.3	79.6	63.4
800	6.7	78.2	62.8

535 192.60

121.50

35.25

105.37

13.6	
14.6	
13.5	
8.8	
8.4	
8.1	
7.8	
7.7	
7.2	
7.0	
7.1	
7.3	
7.3	
7.8	
7.9	
8.4	
10.1	
9.0	
12.9	
13.2	
13.8	
14.3	
13.5	
14.3	
16.2	
15.4	

2325.50

~~2658.72~~

2780.22

584.90

N3530

5810	6.4	78.5 ✓	62.5	16.0 ✓
820	3.8	81.1 ✓	62.5	18.6 ✓
830	3.1	81.8 ✓	62.4	19.4 18.4
840	2.3	82.6 ✓	62.1	20.5 ✓
850	1.9	83.0 ✓	61.4	21.6 ✓
860	1.5	83.4 ✓	60.4	23.0 ✓
870	1.0	83.9 ✓	60.9	23.0 ✓
880	0.5	84.4 ✓	60.0	23.4 ✓
890	0.0	84.9 ✓	60.3	24.6 ✓
900	+0.6	85.5 ✓	60.1	23.4 ✓
910	+1.0	85.9 ✓	62.4	23.5 ✓
920	+1.4	86.3 ✓	61.4	24.9 ✓
930	+2.1	87.0 ✓	61.4	25.6 ✓
940	+2.7	87.6 ✓	61.6	26.0 ✓
950	+3.2	88.1 ✓	61.1	27.0 ✓
960	+3.7	88.6 ✓	61.1	27.5 ✓
970	+4.4	89.3 ✓	60.7	28.6 ✓
980	+2.2	87.1 ✓	59.2	27.9 ✓
990	+2.7	87.6 ✓	59.2	28.4 ✓
6000	+1.4	86.3 ✓	59.5	26.8 ✓
010	+1.6	86.5 ✓	59.4	27.1 ✓
	586.36			
020	2.0	84.4 ✓	60.6	23.8 ✓
030	3.8	82.6 ✓	62.5	20.1 ✓
040	4.1	82.3 ✓	62.7	19.6 ✓
			✓	

586.36 : Level

3,

7.7

~~2658.72~~

2780.22

5682.00 ✓

~~8340.72~~

8462.22

586.36

N3530

6050.	3.2	83.2 ✓	63.7	19.5 ✓
060	3.2	83.2 ✓	65.4	17.8 ✓
070	3.5	82.9 ✓	68.0	14.9 ✓
080	2.4	84.0 ✓	68.8	15.2 ✓
090	2.3	84.1 ✓	69.5	14.6 ✓
100	2.3	84.1 ✓	70.9	13.2 ✓
110	7.1	79.3 ✓	71.2	8.1 ✓
120	4.9	81.5 ✓	71.6	9.9 ✓
130	6.1	80.3 ✓	72.7	7.6 ✓
140	4.4	82.0 ✓	73.4	8.6 ✓
150	2.8	83.6 ✓	73.9	9.7 ✓
160	+2.0	88.4 ✓	74.3	14.1 ✓
170	+5.0	91.4 ✓	75.4	16.0 ✓
180	+6.2	92.6 ✓	76.3	16.3 ✓
190	+9.6	96.0 ✓	77.0	19.0 ✓
607.90				
200	5.1	02.8 ✓	77.2	25.6 24.6
210	4.5	03.4 ✓	77.3	26.1 ✓
220	4.1	03.8 ✓	77.7	26.1 ✓
230	3.6	04.3 ✓	78.1	26.2 ✓
240	3.2	04.7 ✓	80.2	24.5 ✓
250	2.7	05.2 ✓	80.3	24.9 ✓
260	2.2	05.7 ✓	80.5	25.2 ✓
270	1.8	06.1 ✓	80.8	25.3 ✓
280	1.3	06.6 ✓	82.2	24.4 ✓

✓

~~8340.72~~

8462.22

4304.00 ✓

~~12,644.72~~

12766.22

607.90

N3530

6290		1.0	06.9 ✓	83.2
300		1.6	06.3 ✓	84.2
310		1.0	06.9 ✓	85.0
320	interpolate		01.5	86.3
330			96.2	88.3
340	N.G.		90.8	Toe 90.8

N3540

6345	N.G.		93.0	Toe 93.0
340			95.1	92.4
330			99.3	90.5
320	interpolate		03.5	90.2
310		0.2	07.7 ✓	88.8
300		0.5	07.4 ✓	87.4
290		0.9	07.0 ✓	85.9
280		1.4	06.5 ✓	84.0
270		2.0	05.9 ✓	82.0
260		2.4	05.5 ✓	81.0
250		2.7	05.2 ✓	80.8
240		3.2	04.7 ✓	80.6
230		3.7	04.2 ✓	80.7
220		4.1	03.8 ✓	78.5
210		4.7	03.2 ✓	78.2
200		5.2	02.7 ✓	78.1
190		5.7	02.2 ✓	77.7

✓

12.2

~~12,644.72~~ 12,766.22

23.7 ✓	
22.1 ✓	
21.9 ✓	
15.2 ✓	
7.9 ✓	
0.0 ✓	1030.00 ✓ 13,796.22
	~~13,674.72~~ → N3530 ✓
0.0 ✓	6.75 ✓
2.7 ✓	
8.8 ✓	
13.0 ✓	
18.9 ✓	
20.3 ✓	
21.1 ✓	
22.5 ✓	
23.9 ✓	
24.5 ✓	
24.4 ✓	
24.1 ✓	
23.5 ✓	
25.3 ✓	
25.0 ✓	3132.00
24.6 ✓	~~3122.00~~
24.5 ✓	~~3128.75~~
	3138.75

607.90

N3540

6180		6.1	01.8 ✓	76.6
170		9.3	98.6 ✓	75.3
160		14.0	93.9 ✓	75.5
150		16.2	91.7 ✓	75.4
140		17.9	90.0 ✓	74.4
130		18.2	89.7 ✓	73.1
120		18.9	89.0 ✓	72.0
	594.53			
110		10.2	84.3 ✓	71.1
100		3.3	91.2 ✓	70.0
090		3.6	90.9 ✓	68.5
080		3.6	90.9 ✓	67.4
070		3.8	90.7 ✓	66.1
060		43	90.2 ✓	65.1
050		4.7	89.8 ✓	63.9
040		4.4	90.1 ✓	63.3
030		4.2	90.3 ✓	63.0
020		3.6	90.9 ✓	62.3
010		3.8	90.7 ✓	59.3
6000		4.6	89.9 ✓	59.3
5990		4.9	89.6 ✓	59.2
980		5.0	89.5 ✓	59.9
970		5.7	88.8 ✓	60.6
960		6.3	88.2 ✓	60.9
950		6.8	87.7 ✓	60.9 ✓

12.25 ~~31.28.75~~ 3138.75

582.35
12.18
594.53 = Level

589.90 = Keitz transit

25.2 ✓	
23.3 ✓	
18.4 ✓	
16.3 ✓	
15.6 ✓	
16.6 ✓	
17.0 ✓	
13.2 ✓	
21.2 ✓	
22.4 ✓	
23.5 ✓	
24.6 ✓	
25.1 ✓	
25.9 ✓	
26.8 ✓	
27.3 ✓	
28.6 ✓	
31.4 ✓	
30.6 ✓	
30.4 ✓	
29.6 ✓	
28.2 ✓	
~~27.3~~ 27.3	
26.8 ✓	5741.50 ✓
	~~8870.25~~ 8880.25

594.53

N3540

5940	7.3	87.2 ✓	61.8	13.4 ~~8870.25~~ 8880.75
930	7.8	86.7 ✓	61.3	25.4 ✓
920	8.3	86.2 ✓	61.3	24.9 ✓
910	8.7	85.8 ✓	61.3	24.5 ✓
900	9.3	85.2 ✓	61.4	23.8 ✓
890	9.8	84.7 ✓	60.6	24.1 ✓
880	10.1	84.4 ✓	60.4	24.0 ✓
870	10.6	83.9 ✓	60.7	23.2 ✓
860	11.2	83.3 ✓	60.5	22.8 ✓
850	11.9	82.6 ✓	60.2	22.4 ✓
840	12.9	81.6 ✓	61.3	20.3 ✓
5849.0				
830	3.8	81.1 ✓	62.2	18.9 ✓
820	4.4	80.5 ✓	62.4	18.1 ✓
810	5.4	79.5 ✓	62.3	17.2 ✓
800	6.0	78.9 ✓	62.7	16.2 ✓
790	6.4	78.5 ✓	63.0	15.5 ✓
780	6.6	~~77.3~~ 78.3	63.3	15.0 ✓
770	7.3	77.6 ✓	63.9	13.7 ✓
760	7.8	77.1 ✓	63.8	13.3 ✓
750	8.3	76.6 ✓	63.4	13.2 ✓
740	8.9	76.0 ✓	63.3	12.7 ✓
730	10.1	74.8 ✓	63.3	11.5 ✓
720	11.3	73.6 ✓	63.4	10.2 ✓
710	12.0	72.9 ✓	63.8	9.1 ✓ 4542.50 ✓
		✓		~~13,412.75~~ 13422.75

584.90

N3540

5700	12.9	72.0 ✓	63.7
690	13.3	71.6 ✓	63.5
680	13.6	71.3 ✓	63.6
670	14.0	70.9 ✓	63.7
660	14.3	70.6 ✓	63.8
650	14.2	70.7 ✓	63.9
640	13.6	71.3 ✓	64.0
630	13.3	71.6 ✓	63.9
620	13.0	71.9 ✓	63.9
610	12.8	72.1 ✓	63.7
600	12.6	72.3 ✓	63.8
590	12.4	72.5 ✓	63.6
580	12.0	72.9 ✓	63.7
570	11.7	73.2 ✓	59.8
562		73.3	58.2
560	11.5	73.4 ✓	58.7
550	11.2	73.7 ✓	61.9
540	10.7	74.2 ✓	65.1
530	10.5	74.4 ✓	68.4
520	10.4	74.5 ✓	71.6
509	9.9	75.0 ✓	75.0 Too Hall

✓

4.5 ✓ ~~13,412.75~~ 13,422.75 ✓

8.3 ✓
8.1 ✓
7.7 ✓
7.2 ✓
6.8 ✓
6.8 ✓
7.4 ✓
7.7 ✓
8.0 ✓
8.4 ✓
8.5 ✓
8.9 ✓
9.2 ✓
13.4 ✓
15.1 ✓
13.7 ✓
11.8 ✓
9.1 ✓
4.0 ✓
2.9 ✓
0.0 ✓

1142.50 ✓
~~1420~~
29.80 ✓
114.00

357.00 ✓
15.95 ✓

~~15,072.20~~ → N3540 X
15,082.00 →

584.90

N3550

5507	9.9	75.0 ✓	75.0 Rod nail
520	10.5	74.4 ✓	70.8
530	10.5	74.4 ✓	67.5
540	11.0	73.9 ✓	64.3
550	10.8	74.1 ✓	61.0
560	11.0	73.9 ✓	57.8
5625		73.8	57.0
570	11.2	73.7 ✓	61.9
580	11.5	73.4 ✓	63.8
590	12.2	72.7 ✓	64.1
600	12.4	72.5 ✓	64.1
610	12.6	72.3 ✓	63.6
620	13.1	71.8 ✓	63.6
630	13.2	71.7 ✓	63.6
640	13.6	71.3 ✓	63.5
650	14.1	70.8 ✓	63.1
660	14.2	70.7 ✓	63.3
670	14.2	70.7 ✓	63.3
680	14.0	70.9 ✓	63.3
690	13.8	71.1 ✓	63.2
700	13.3	71.6 ✓	63.4
710	12.7	72.2 ✓	62.9
720	11.8	73.1 ✓	63.0
730	10.7	74.2 ✓	63.5
740	9.8	75.1 ✓	63.9
750	9.0	75.9 ✓	63.9

✓

0.0 ✓	
3.6 ✓	23.40 ✓
6.9 ✓	
9.6 ✓	
13.1 ✓	
16.1 ✓	394.50 ✓
16.8 ✓	41.12 ✓
11.8 ✓	107.25
9.6 ✓	
8.6 ✓	
8.4 ✓	
8.7 ✓	
8.2 ✓	
8.1 ✓	
7.8 ✓	
7.7 ✓	
7.4 ✓	
7.4 ✓	
7.6 ✓	
7.9 ✓	
8.2 ✓	
9.3 ✓	
10.1 ✓	
10.7 ✓	
11.2 ✓	
12.0 ✓	1588.00 ✓
	2154.27 ✓

584.90

N3550

5760	8.3	76.6 ✓	63.4
770	7.8	77.1 ✓	63.8
780	7.4	77.5 ✓	63.2
790	6.8	78.1 ✓	62.9
800	6.1	78.8 ✓	62.6
810	5.2	79.7 ✓	62.2
820	4.3	80.6 ✓	62.0
830	3.7	81.2 ✓	61.0
840	3.0	81.9 ✓	60.0
850	2.2	82.7 ✓	60.6
860	1.4	83.5 ✓	60.5
870	0.8	84.1 ✓	60.4
880	0.2	84.7 ✓	60.8
	594.53		
890	9.4	85.1 ✓	61.1
900	9.0	85.5 ✓	61.3
910	8.6	85.9 ✓	61.2
920	8.1	86.4 ✓	61.4
930	7.8	86.7 ✓	61.4
940	7.3	87.2 ✓	61.4
950	7.0	87.5 ✓	60.7
960	6.4	88.1 ✓	60.6
970	6.0	88.5 ✓	59.2
980	5.5	89.0 ✓	59.5
990	4.9	89.6 ✓	59.6

✓

6.0	2154.27 ✓	
13.2 ✓		
13.3 ✓		
14.3 ✓		
15.2 ✓		
16.2 ✓		
17.5 ✓		
18.6 ✓		
20.2 ✓		
21.9 ✓		
22.1 ✓		
23.0 ✓		
23.7 ✓		
23.9 ✓		
24.0 ✓		
24.2 ✓		
24.7 ✓		
25.0 ✓		
25.3 ✓		
25.8 ✓		
26.2 ✓		
27.5 ✓		
29.3 ✓		
29.5 ✓		
30.0 ✓	5262.00 ✓	
	7416.27 ✓	

	594.53			
		N 3550		
6000		4.1	90.4 ✓	59.3
010		3.7	90.8 ✓	61.1
020		3.1	91.4 ✓	62.6
030		2.6	91.9 ✓	63.1
040		2.0	92.5 ✓	63.8
050		1.3	93.2 ✓	65.0
060		0.7	93.8 ✓	66.1
070		0.3	94.2 ✓	67.3
	607.90			
080		13.0	94.9 ✓	68.6
090		12.8	95.1 ✓	69.7
100		12.6	95.3 ✓	72.5
110		16.4	91.5 ✓	73.7
120		12.6	95.3 ✓	74.6
130		12.0	95.9 ✓	75.1
140		10.6	97.3 ✓	74.8
150		10.1	97.8 ✓	74.7
160		7.7	600.2 ✓	75.7
170		6.7	01.2 ✓	76.1
180		6.0	01.9 ✓	76.8
190		5.6	02.3 ✓	78.3
200		5.0	02.9 ✓	79.1
210		4.5	03.4 ✓	81.3
220		4.3	03.6 ✓	81.2
230		3.8	04.1 ✓	81.2
				✓

15 7416.27 ✓ 607.90 = Berger Transit.

31.1 ✓	
29.7 ✓	
28.8 ✓	
28.8 ✓	
28.7 ✓	
28.2 ✓	
27.7 ✓	
26.9	
26.3	
28.3	
25.4 ✓	
22.8 ✓	
17.8 ✓	
20.8 ✓	
20.8 ✓	
22.5 ✓	
23.1 ✓	
24.5 ✓	
25.1 ✓	
25.1 ✓	
24.0 ✓	
23.8 ✓	
22.1 ✓	
22.4 ✓	
22.9 ✓	6028.50 ✓
	13444.77 ✓

607.90

N3550

6240	3.5	04.4 ✓	81.2
250	3.0	04.9 ✓	81.3
260	2.4	05.5 ✓	82.4
270	1.9	06.0 ✓	83.7
280	1.4	06.5 ✓	86.3
290	0.8	07.1 ✓	88.3
300	+0.5	08.4 ✓	89.6
310	+1.1	09.0 ✓	91.0
320	+1.7	09.6 ✓	92.2
330	2.5	05.4 ✓	92.9
340	1.2	06.7 ✓	93.5
350	3.0	04.9 ✓	95.2
360	0.1	07.8 ✓	96.5
70			97.3
80 Road			00.6
390	2.7	05.2 ✓	93.8
400 - N.G.		06.8	= top 068

N3560

6415 - N.G.		15.3	= "15.3
405	2.1	05.8 ✓	12.0
Road			
350	1.7	06.2 ✓	96.3
340	0.6	07.3 ✓	95.6
330	+0.3	08.2 ✓	95.7 ✓

11.4 ✓ 13,444.77 ✓

23.2 ✓
23.6 ✓
23.1 ✓
22.3 ✓
20.2 ✓
18.8 ✓
18.8 ✓
18.0 ✓
17.4 ✓
12.5 ✓
13.2 ✓
9.7 ✓
11.3 ✓

2379.00 ✓

190.50 ✓
7.00 ✓
Cut East side Rd
17,021.27 ✓ → N3550 X

1.4 ✓
3.2
" " "
3.0
6.2 ✓

31.00 ✓
167.95 ✓
65.31 ✓

9.9 ✓
11.7
12.5 ✓

229.00 ✓
396.95 ✓
96.31 ✓

607.90

N 3560

6320	+0.2	608.1 ✓	95.4
310	0.0	07.9 ✓	94.7
300	0.5	07.4 ✓	94.2
290	1.3	06.6 ✓	91.3
280	1.4	06.5 ✓	89.5
270	1.6	06.3 ✓	87.6
260	2.1	05.8 ✓	85.1
250	2.7	05.2 ✓	82.7
240	3.1	04.8 ✓	82.1
230	3.6	04.3 ✓	81.8
220	4.0	03.9 ✓	81.8
210	4.5	03.4 ✓	81.7
200	5.0	02.9 ✓	80.0
190	5.7	02.2 ✓	78.7
180	6.5	01.4 ✓	77.5
170	6.8	01.1 ✓	76.8
160	7.3	600.6 ✓	76.2
150	8.3	599.6 ✓	76.2
140	8.8	99.1 ✓	75.7
130	9.8	98.1 ✓	75.3
120	10.5	97.4 ✓	74.6
110	11.3	96.6 ✓	74.2
6100	12.1	95.8 ✓	72.8

✓

6.25 396.95 ✓ 96.31 ✓

12.7 ✓	
13.2 ✓	
13.2 ✓	
15.3 ✓	
17.0 ✓	
18.7 ✓	
20.7 ✓	
22.5 ✓	
22.7 ✓	
22.5 ✓	
22.1 ✓	
21.7 ✓	
22.9 ✓	
23.5 ✓	
23.9 ✓	
24.3 ✓	
24.4 ✓	
23.4 ✓	
23.4 ✓	
22.8 ✓	
22.8 ✓	
22.4 ✓	
23.0	4738.50 ✓
end Jan. 11, 1933	
	5135.45 ✓ 96.31 ✓

594.76

N3560

6090	+0.8	95.6	71.8
080	0.0	94.8	71.0
070	0.5	94.3	66.1
060	1.1	93.7	67.4
050	1.7	93.1	66.6
040	2.4	92.4	64.5
030	2.9	91.8	63.5
020	3.5	91.3	63.1
010	4.1	90.7	61.9
6000	4.6	90.2	60.9
5990	5.2	89.6	59.3
980	5.6	89.2	59.5
970	6.1	88.7	59.8
960	6.2	88.6	59.8
950	6.9	87.7	59.7
940	7.4	87.4	60.8
930	7.8	87.0	61.3
920	8.2	86.6	61.7
910	8.6	86.2	61.5
900	9.0	85.8	61.6
890	9.5	85.3	61.7
880	10.1	84.7	61.4
870	10.7	84.1	61.3
860	11.2	83.6	60.6

11.5

5135.45

96.31

Jan. 12, 1933
Simpson
Elliott
Speer
Kerrigan
Osborne

582.35 = B.M.
12.41
594.76 = level

23.8	
	23.8
	28.2
	26.3
	26.5
	27.9
	28.3
	28.2
	28.8
	29.3
	30.3
	29.7
	28.9
	28.8
	28.0
	26.6
	25.7
	24.9
	24.7
	24.2
	23.6
	23.3
	22.8
	23.0

6356.00

11,491.45

96.31

594.76

N3560

5850			12.0	82.8 ✓	59.8
840			12.8	82.0 ✓	59.7
830			13.4	81.4 ✓	60.7
B.M.	1.02	583.37			
820			2.9	80.5 ✓	60.5
10			3.6	79.8 ✓	61.0
800			4.4	79.0 ✓	61.9
790			5.4	78.0 ✓	62.6
80			6.0	77.4 ✓	62.6
60			7.3	76.1 ✓	63.2
40			8.8	74.6 ✓	63.9
20			10.2	73.2 ✓	64.2
700			11.7	71.7 ✓	63.3
680			12.5	70.9 ✓	63.9
60			12.6	70.8 ✓	63.5
40			12.1	71.3 ✓	63.4
20			11.4	72.0 ✓	63.5
600			10.8	72.6 ✓	63.6
575 ~~580~~			10.0	~~73.4~~ ✓	63.6
70				73.7	60.6
25.5				73.9	55.5
~~60~~			9.4	74.0 ✓	~~57.1~~
40			8.8	74.6 ✓	63.6
20			8.8	74.6 ✓	70.1 ✓
5505			8.4	75.0 ✓	74.0

✓

11,491.45 ✓

96.31 ✓

11.5

Level B.M. 582.35
+1.02
583.37

23.0 ✓
22.3 ✓
20.7 ✓
20.0 ✓
18.8 ✓
17.1 ✓
15.4 ✓
14.8 ✓ — 1562.00 ✓
12.9 ✓
10.7 ✓
9.0 ✓
8.4 ✓
7.0 ✓
7.3 ✓
7.9 ✓
8.5 ✓
9.0 ✓ — 1672.00 ✓
9.8 ✓ — 235.00 ✓
13.1 ✓ — 57.25 ✓
12.3 ✓ — 70.65 ✓
11.0 ✓ — 373.57 ✓
4.5 ✓ — 155.00 ✓
0.0 — 33.75 ✓

15,650.67 ✓ — 96.31
96.31 ✓
15,554.36 → N3560 X

N3580

583.37

5502			8.4	75.0 ✓	75
20			8.0	75.4 ✓	68.8
40			8.3	75.1 ✓	67.2
			74.7		54.5
C3.5	60		8.4	~~75.0~~ ✓	~~55.7~~
	70			~~74.5~~	~~65.4~~
80			9.3	74.1 ✓	63.5
600			10.4	73.0 ✓	63.4
20			10.6	72.8 ✓	63.5
40			10.7	72.7 ✓	63.2
60			10.7	72.7 ✓	63.4
80			12.4	71.0 ✓	64.7
700			12.7	70.7 ✓	64.4
20			10.8	72.6 ✓	63.7
40			9.1	~~73.3~~ 74.3	63.3
60			7.7	75.7 ✓	62.6
80			6.7	76.7 ✓	61.1
800			5.1	78.3 ✓	61.5
20			3.3	80.1 ✓	60.2
40			1.8	81.6 ✓	60.1
B.M.	0.68	594.18		593.50	
60			11.1	83.1 ✓	61.7
80			9.6	84.6 ✓	61.7
900			8.2	86.0 ✓	61.7
20			7.0	87.2 ✓	61.5
40			6.4	87.8 ✓	60.3
60			5.5	88.7 ✓	59.7

✓

Leitz Transit 594.18

0.0 ✓	59.40 ✓
6.6 ✓	195.00 ✓
12.9 ✓	388.92
20.2 ✓	~~771.25~~ ✓
11.1	101.72 ✓
10.6 ✓	108.50
9.6 ✓	
9.3 ✓	
9.5 ✓	
9.3 ✓	
6.3 ✓	
6.3 ✓	
8.9 ✓	
11.0	
15.0	
13.1 ✓	
15.6 ✓	
16.8 ✓	
19.9 ✓	
21.5 ✓	
21.4 ✓	
22.9 ✓	
24.3 ✓	
25.7 ✓	
27.5 ✓	
29.0 ✓	5974.00 ✓
	~~6709.62~~
	6827.54

594.18

N3580

5980			4.5	89.7 ✓ 59.6
6000			3.8	90.4 ✓ 62.3
020			2.9	91.3 ✓ 63.2
040			1.8	92.4 ✓ 69.8
B.M.	4.80	610.48		605.68
060			16.2	94.2 ✓ 69.9
080			15.5	95.0 ✓ 72.3
100			14.4	96.1 ✓ 74.4
120			13.0	97.5 ✓ 75.0
140			11.5	99.0 ✓ 76.2
160			9.9	600.6 ✓ 77.4
180			8.3	02.2 ✓ 80.9
200			7.0	03.5 ✓ 82.6
220			6.3	04.2 ✓ 82.8
240			5.2	05.3 ✓ 84.5
260			4.0	06.5 ✓ 91.4
280			3.2	07.3 ✓ 97.4
300			3.2	07.3 ✓ 00.3
320			3.3	07.2 ✓ 01.9
Road				
385			4.3	06.2 ✓ 10.2 = East 15.8 = Top cut
6400	N.G.			

✓

14.5

6709.62 + Berger transit. = 610.48

30.1 ✓
28.1 ✓
28.1 ✓
22.6 ✓
24.3 ✓
22.7 ✓
21.7 ✓
22.5 ✓
22.8 ✓
23.2 ✓
21.3 ✓
20.9 ✓
21.4 ✓
20.8 ✓
25.1 ✓
9.9 ✓
7.8 ✓
5.3 ✓

7793.00 ✓
98.05 ✓

56.00 ✓

edge Rd. 4.0
+ east edge Rd. 0.0

30.00 ✓

14,600.67 ✓
86.00 ✓

86.00 ✓

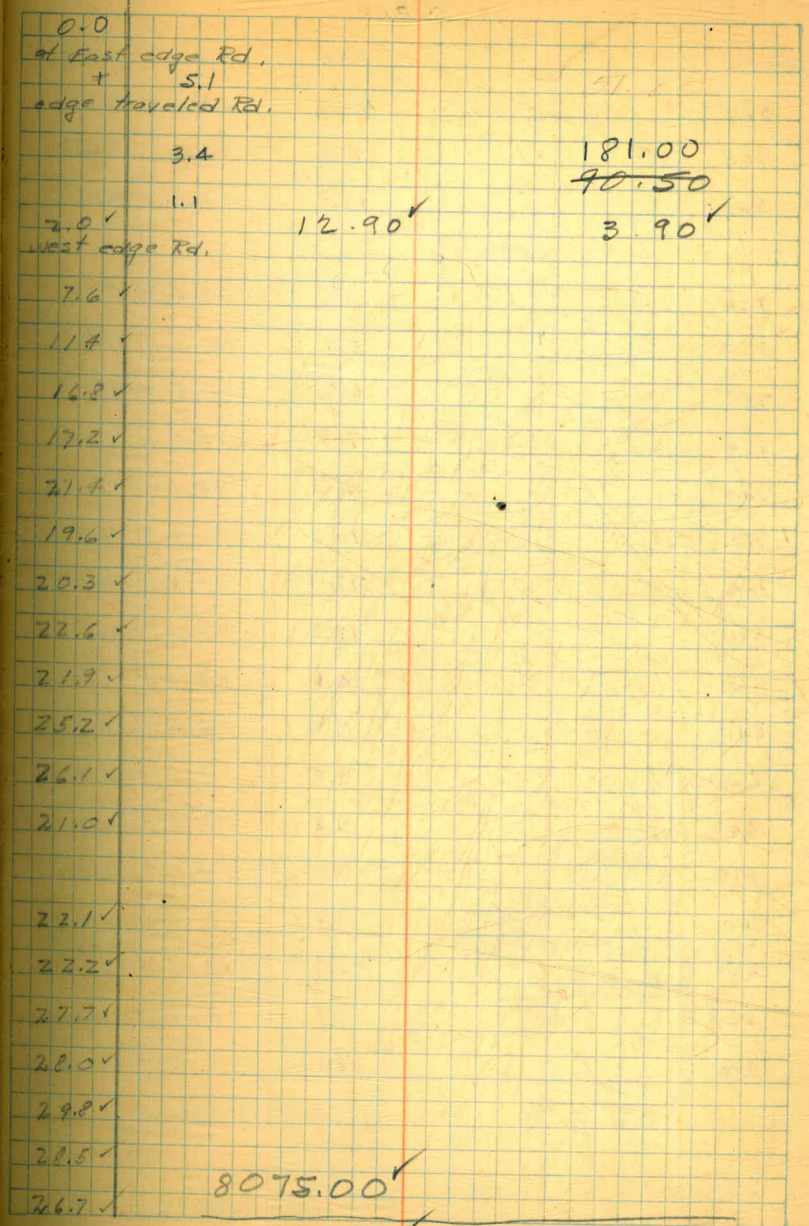
14,514.67 ✓ → N3580 ✓

6 10.48

N 3600

6380	=N.G.			17.1 =Top cut
360		4.1	606.4 ✓	11.6 East
340		3.9	06.6 ✓	10.0
320		3.4	07.1 ✓	08.2
300		3.3	07.2 ✓	05.2 about
280		1.8	08.7 ✓	01.1
260		3.7	06.8 ✓	95.4
240		5.0	05.5 ✓	88.7
220		6.1	04.4 ✓	87.2
200		6.5	04.0 ✓	82.6
180		8.1	02.4 ✓	82.8
160		9.4	01.1 ✓	80.8
140		10.8	99.7 ✓	77.1
120		12.5	98.0 ✓	76.1
100		13.9	96.6 ✓	71.4
080		15.0	95.5 ✓	69.4
060		16.6	93.9 ✓	72.9
	594.18			
040		0.6	93.6 ✓	71.5
020		2.3	91.9 ✓	69.7
6000		3.1	91.1 ✓	63.4
5980		4.0	90.2 ✓	62.2
960		5.2	89.0 ✓	59.2
940		5.9	88.3 ✓	59.8
920		7.0	87.2 ✓	60.5

✓



12.90 ✓

181.00
~~90.50~~
3.90 ✓

8075.00 ✓

8087.90 ✓

~~94.40~~
184.90

	594.18				
		N3600			
5900		8.4	85.8 ✓	61.4	
880		10.3	83.9 ✓	61.5	
860		11.6	82.6 ✓	61.7	
840		12.8	81.4 ✓	61.8	
	583.37				
820		3.6	79.8 ✓	60.0	
800		5.1	78.3 ✓	59.3	
780		6.9	76.5 ✓	60.1	
760		7.8	75.6 ✓	61.1	
740		9.3	74.1 ✓	61.5	
720		11.1	72.3 ✓	62.7	
700		12.1	71.3 ✓	63.4	
680		13.2	70.2 ✓	64.1	
660		14.1	69.3 ✓	64.6	
640		9.0	74.4 ✓	64.9	
620		9.5	73.9 ✓	64.5	
600		9.8	73.6 ✓	64.0	
580		9.4	74.0 ✓	63.8	
560		9.2	74.2 ✓	63.6	
50			74.3	56.0	
540		8.9	74.5 ✓	61.2	
520		8.5	74.9 ✓	67.2	
498		8.1	75.3 ✓	Toe Wall	
					✓

13.35 8087.90 94.40

24.4 ✓
22.4 ✓
20.9 ✓
19.6 ✓
19.8 ✓
19.0 ✓
16.7 ✓
14.5 ✓
12.5 ✓
9.6 ✓
7.9 ✓
6.1 ✓
4.7 ✓
9.5 ✓
9.4 ✓
9.6 ✓
10.2 ✓
10.6 ✓
18.3
13.3 ✓
7.1 ✓
0.0 ✓

5105.00
~~510400~~
144.50
158.00 ✓
204.00 ✓
78.10 ✓

~~13,761.75~~
~~94 40~~
~~13,667.35~~ → N3600 X

13,777.50
94.40
13683.10 ✓

94.40 ✓

583.37

N3620

5496		8.4	75.0 ✓	Toe Wall
520		8.0	75.4 ✓	67.1
540		8.5	74.9 ✓	60.5
560		8.6	74.8 ✓	53.8
70			74.6	65.0
580		8.9	74.5 ✓	65.2
600		9.3	74.1 ✓	65.0
620		8.8	74.6 ✓	64.2
640		8.4	75.0 ✓	64.3
660		14.8	68.6 ✓	61.1
680		13.7	69.7 ✓	63.2
700		11.3	72.1 ✓	61.9
720		11.6	71.8 ✓	61.1
740		9.7	73.7 ✓	61.9
760		8.0	75.4 ✓	59.3
780		6.7	76.7 ✓	59.5
800		5.5	77.9 ✓	59.7
820		3.7	79.7 ✓	61.5
840		2.3	81.1 ✓	61.4
860		0.8	82.6 ✓	61.4
	594.18			
880		10.3	83.9 ✓	61.6
900		9.0	85.2 ✓	60.5
920		7.2	87.0 ✓	59.5
940		6.0	88.2 ✓	59.5
960		5.0	89.2 ✓	62.0

✓

0.0		
8.3 ✓		99.60 ✓
14.4 ✓		
21.0 ✓		581.00 ✓
9.6 ✓		153.00 ✓
9.3 ✓		94.50 ✓
9.1 ✓		
12.4 ✓		
10.7 ✓		
7.5 ✓		
6.5 ✓		
10.2 ✓		
10.7 ✓		
11.8 ✓		
16.1 ✓		
17.2 ✓		
15.2 ✓		
15.2 ✓		
19.7 ✓		
21.2 ✓		
22.3 ✓		
24.7 ✓		
27.5 ✓		
23.7 ✓		6179.00
27.2 ✓		~~6169.00~~
		~~7097.10~~
		7107.10

594.18

N3620

5980		3.8	90.4 ✓ 62.7
6000			91.6 69.9
020	interpolate		92.6 72.4
030		1.0	93.2 ✓ 72.4
040			93.8 72.4
060			95 0 73.5
080			96.2 75.1
100	interpolate		97.4 76.3
120			98.6 78.3
	610.48		
140		10.7	599.8 ✓ 81.2
160		9.1	601.4 ✓ 83.7
180		8.2	02.3 ✓ 84.5
200		7.2	03.3 ✓ 86.3
220	interpolate		04.8 87.6
240		4.2	06.3 ✓ 92.1
260		2.9	07.6 ✓ 97.3
280		3.0	07.5 ✓ 06.4
300		3.2	07.3 ✓ 10.1
310		3,3	07 .2 ✓ 12.6
325		2.9	07.6 ✓ = East 15.3
346 = N.G.			= Top cut 20.0

✓

49

7107.10

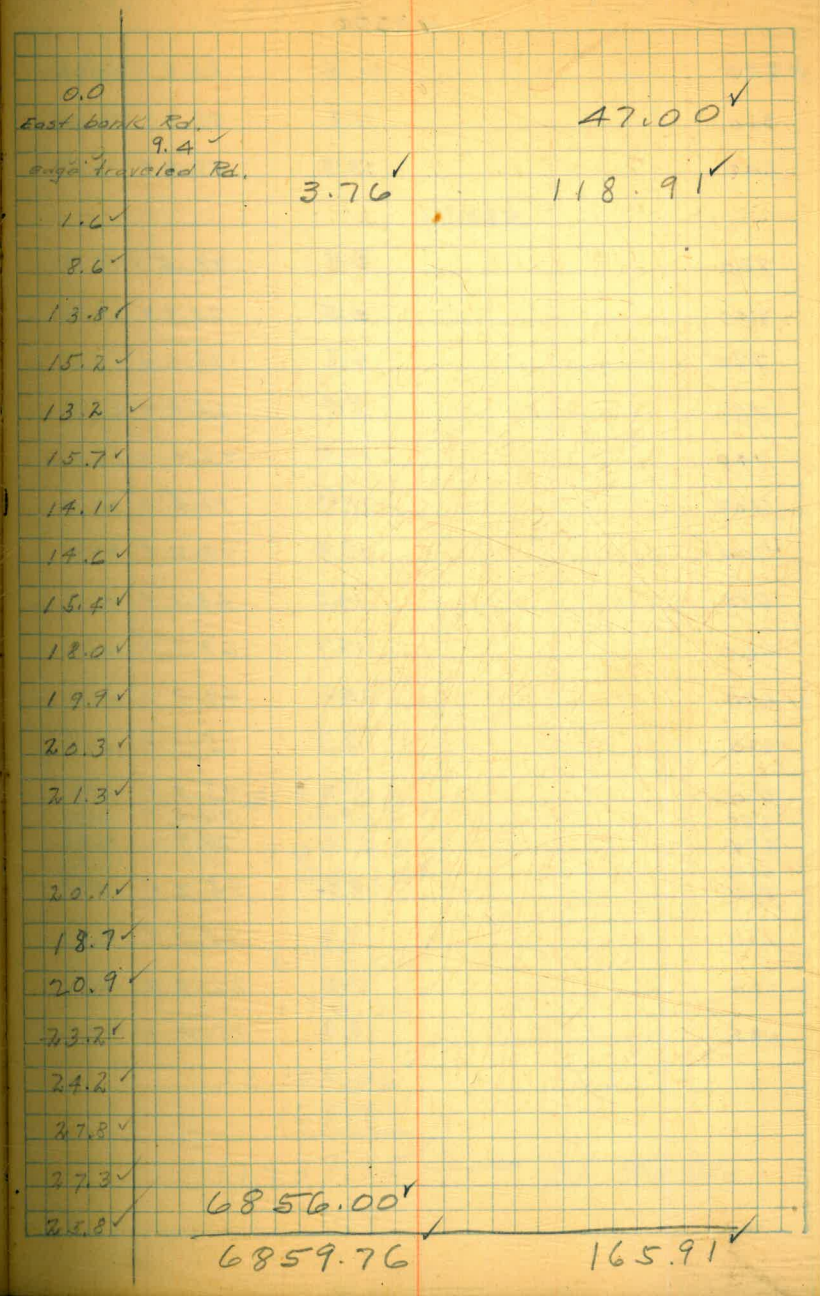
~~7077.10~~ 610.98

13.6		
27.7 ✓		
21.7 ✓		
20.2 ✓		
~~20.2~~		
21.4 ✓		
21.5 ✓		
21.1 ✓		
21.1 ✓		
20.3 ✓		
18.6 ✓		
17.7 ✓		
17.8 ✓		
17.0 ✓		
17.2 ✓		
14.2 ✓		
10.3 ✓		
1.1 ✓	6039.00 ✓	20.09 ✓
	3.11 ✓	41.00 ✓
	2.8 ✓	98.25 ✓
	5.4 ✓	~~78.35~~
edge traveled Rd.	7.7 ✓ Rd.	80.85
0.0 East Cut	Bank of Rd.	
	13,149.21	~~229.69~~
	~~13,139.21~~	240.19
	~~229.69~~	
	~~12 909.52~~ →	N 3620 ✗
	12,909.02 →	

610.48

N 3640

6320	N.G.			? Top cut 17.2
310		2.7	607.8 ✓	East ✓
280		2.6	07.9 ✓	06.3
260		2.8	07.7 ✓	99.1
240		3.8	06.7 ✓	92.9
220			05.3	90.1
200			04.0	90.8
180	interpolate		02.7	87.8
160		9.1	601.4 ✓	87.3
140			600.2	85.6
120			98.9	83.6
100			97.7	79.7
080	interpolate		96.5	76.6
060			95.3	75.0
040			94.1	72.8
	594.18			
020		1.3	92.9 ✓	72.8
6000			91.6	72.9
5980	interpolate		90.3	69.4
970		4.5	89.7 ✓	66.5
960			89.0	64.8
940		5.9	88.3 ✓	60.5
920		7.6	86.6 ✓	59.3
900		9.0	85.2 ✓	59.4 ✓



3.76 ✓

47.00 ✓

118.91 ✓

6856.00 ✓

6859.76

165.91 ✓

	594.18		
	N 3640		
5880		10.4	83.8 ✓ 60.2
860		11.8	82.4 ✓ 61.9
840		13.3	80.9 ✓ 61.3
	583.37		
820		3.9	79.5 ✓ 61.2
800		5.5	77.9 ✓ 61.6
780		6.8	76.6 ✓ 59.7
760		8.4	75.0 ✓ 59.8
740		10.0	73.4 ✓ 59.8
720		11.9	71.5 ✓ 61.2
700		13.4	70.0 ✓ 61.0
680		14.3	69.1 ✓ 61.3
660		15.7	67.7 ✓ 62.2
640		15.6	67.8 ✓ 63.3
620		8.3	75.1 ✓ 63.9
600		9.5	73.9 ✓ 67.2
580		8.8	74.6 ✓ 64.7
575			74.9 64.8
562			75.0 53.8
560		8.2	75.2 ✓ 53.3
540		7.7	75.7 ✓ 59.9
520		7.4	76.0 ✓ 66.7
495		8.4	75.0 ✓ = toe wall

✓

12.9 6859.76 ✓ 165.91 ✓

23.6 ✓
20.5 ✓
19.6 ✓
18.3 ✓
16.3 ✓
16.9 ✓
15.2 ✓
13.6 ✓
10.3 ✓
9.0 ✓
7.8 ✓
5.5 ✓
4.5 ✓
1.2 ✓
9.6 ✓
9.9 ✓
10.1 ✓
22.2 ✓
21.9 ✓
15.9 ✓
9.3 ✓
6.0 ✓

4195.00 ✓
50.00 ✓
209.95 ✓
44.10 ✓

628.00 ✓
116.25 ✓

12,103.06 ✓ 165.91 ✓
165.91 ✓

11,937.15 ✓ → N 3640 X

583.37

N3660

5495	8.4	75.0 ✓	T.W.
510	10.6	72.8 ✓	69.9
520	16.3	67.1 ✓	66.6
540	20.1	63.3 ✓	60.0
560	20.2	63.2 ✓	53.4
563		63.3	52.7
575		63.5	64.0
580	19.9	63.5 ✓	63.9
600	14.7	68.7 ✓	63.4
620	19.5	63.9 ✓	62.6
640	19.5	63.9 ✓	61.7
660	18.0	65.4 ✓	61.1
680	16.5	66.9 ✓	61.8
700	14.1	69.3 ✓	59.5
720	12.3	71.1 ✓	59.6
740	10.3	73.1 ✓	59.2
760	8.7	74.7 ✓	61.5
780	6.9	76.5 ✓	61.5
800	6.0	77.4 ✓	60.7
820	4.3	79.1 ✓	61.5
840	2.7	80.7 ✓	60.9
860	1.4	82.0 ✓	61.0

594.18

880	10.8	83.4 ✓	58.8
900	9.2	85.0 ✓	59.3
920	7.8	86.4 ✓	60.2
940	6.3	87.9 ✓	64.3

✓

0.0 ✓
2.9 ✓
0.5 ✓
3.3 ✓
9.8 ✓
10.6 ✓
9.5 ✓
(0.4) ✓
5.3 ✓
1.3 ✓
2.2 ✓
4.3 ✓
5.9 ✓
9.8 ✓
12.5 ✓
13.6 ✓
13.2 ✓
15.0 ✓
16.7 ✓
17.6 ✓
19.8 ✓
21.0 ✓
14.6 ✓
25.7 ✓
26.2 ✓
22.9 ✓

21.75 ✓
17.00 ✓

169.00 ✓
30.60 ✓
120.60 ✓
23.75 ✓

4713.00 ✓

5095.70 ✓

594.18

N3660

5960			4.9	89.3 ✓ 69.2
970			3.9	90.3 ✓ 70.8
980		interpolate		91.3 72.4
6000				92.3 72.4
020			1.0	93.2 ✓ 72.6
B.M.	12.15	605.65		593.50
6040				94.4 73.6
060				95.6 76.2
080				96.8 81.1
100		interpolate		98.0 84.1
120				99.2 84.7
140				00.4 85.6
160			3.8	01.8 ✓ 91.9
190			2.4	03.2 ✓ 93.6
200			1.9	03.7 ✓ 93.5

✓

11.95 5095.70 ✓

440.00

~~220.00~~

198.00 ✓

192.00 ✓

20.1 ✓
19.5 ✓
18.9 ✓
19.9 ✓
20.6 ✓
end Jan. 12, 1933

Jan. 13, 1933
Simpson
Sapar
Spring

20.8 ✓
19.4 ✓
15.7 ✓
13.9 ✓
14.5 ✓
14.8 ✓

3080.00 ✓

9.9 ✓

292.50 ✓

9.6 ✓

99.00 ✓

10.2 ✓

~~9177.20~~ → N 3660 X

9397.20

Spoil

6200

Road.

Spoil

1½ : 1

Note: Run Rd. Spoil to Natural Ground.

605.65

N3680

6200		1.4	04.2 ✓ = inter-	00.4
180		2.5	03.1 ✓	98.1
160		3.5	02.1 ✓	88.5
140			00.9	89.2
120			99.6	82.1
100	interpolate		98.3	84.5
080			97.0	84.3
B.M.	11.76	594.11	582.35	
060			95.7	84.1
040			94.4	80.5
020	interpolate		93.1	75.3
6000		2.3	91.8 ✓	73.6
5970		4.2	89.9 ✓	72.8
960		4.9	89.2 ✓	71.8
940		6.7	87.4 ✓	71.6
920		8.1	86.0 ✓	64.8
900		9.9	84.2 ✓	59.7
880		11.2	82.9 ✓	59.5
860		12.7	81.4 ✓	58.5
840		14.2	79.9 ✓	60.3
820		15.7	78.4 ✓	60.9
800		17.1	77.0 ✓	61.7
780		18.2	75.9 ✓	60.7
760		19.6	74.5 ✓	60.8 ✓

3.8 ✓

section of Spoil from Dam and Road Spoil

5.0 ✓

13.6 ✓

11.7 ✓

17.5 ✓

13.8 ✓

12.7 ✓

11.6 ✓

13.9 ✓

17.8 ✓

18.2 ✓

~~17.1~~ ✓

17.4 ✓

15.9 ✓

21.2 ✓

24.5 ✓

23.4 ✓

22.9 ✓

19.6 ✓

17.5 ✓

15.3 ✓

15.2 ✓

13.7 ✓

6747.00 ✓

N3680

B.M.	0.79	574.00		573.21	
5740			1.4	~~72.6~~	61.7
720			2.6	71.4	60.5
700			4.9	69.1	59.5
680			7.2	66.8	59.3
660			9.0	65.0	60.0
640			10.1	63.9	61.6
620			9.8	64.2	61.1
600			9.7	64.3	62.0
580				63.8	63.4
575				63.5	63.4
564				63.4	52.0
560			10.7	63.3	53.3
540			9.9	64.1	59.9
520			4.4	69.6	66.7
500			0.0	74.0	73.4
495			+1.0	75.0	= Toe Wall

N3700

5497			+1.0	75.0	= Toe Wall
520			4.6	69.4	67.1
540			9.3	64.7	60.5
560			9.9	64.1	53.8
564				64.1	52.4
575				64.1	61.6
580			9.9	64.1	61.4
600			11.7	62.3	61.3
620			9.0	65.0	60.0
640			8.6	65.4	59.2

6.85 6747.00

10.9	
10.9	
9.6	
7.5	
5.0	
2.3	
3.1	
2.3	
0.4	1173.00
0.1	1.25
11.4	63.25
10.0	42.80
4.2	
2.9	248.00
0.6	1.50
0.0	8276.80 → N 3680

0.0	26.45
	~~39.95~~
2.3	
4.2	210.00
	~~220.00~~
10.3	44.00
11.7	78.10
2.5	13.00
2.7	
1.0	
5.0	209.00
6.2	~~602.05~~
	580.55

574.00

N3700

5660	8.7	65.3 ✓	58.9
680	7.3	66.7 ✓	59.5
700	4.6	69.4 ✓	61.1
720	1.9	~~72.1~~ ~~68.1~~ ✓	60.6
740	1.7	~~72.3~~ ~~68.3~~ ✓	60.4
760	+0.2	74.2 ✓	60.3
780	+1.5	75.5 ✓	60.4
800	+2.6	76.6 ✓	59.9
820	+3.0	77.0 ✓	58.7
830	+3.2	77.2 ✓	58.5
840	+5.9	79.9 ✓	58.4
	594.11		
860	13.1	81.0 ✓	58.8
880	11.8	82.3 ✓	59.2
900	10.2	83.9 ✓	60.8
920	8.5	85.6 ✓	71.1
940	6.8	87.3 ✓	73.6
960	5.2	88.9 ✓	74.2
980	3.8	90.3 ✓	74.3
6000	2.0	92.1 ✓	77.3
020		93.4	81.6
040		94.7	86.5
060		96.0	91.6
080		97.3	93.7
100	interpolate	98.6	94.6 ✓

3.1

~~602.05~~ 580.55

594.11 = Trans ✓

6.4 ✓
7.2 ✓
8.3 ✓
11.5 ✓
11.9 ✓
13.9 ✓
15.1 ✓
14.7 ✓
18.3 ✓
18.7 ✓
21.5 ✓

22.2 ✓
23.1 ✓
23.1 ✓
14.5 ✓
13.7 ✓
14.7 ✓
16.0 ✓
14.8 ✓
11.8 ✓
8.2 ✓
4.4 ✓
3.6 ✓
4.0 ✓

2065.00 ✓
185.00 ✓
201.00 ✓

3657.00 ✓

~~6710.05~~
6688.55

594.11

N 3700

6120			99.9	91.4
140	interpolate		01 2	91.3
160		+ 8.3	602.4	- inter - 97.5

N 3720

6030				
6010		1.5	97.6 ✓	83.4
6000		2.4	91.7 ✓	81.7
5980		3.5	90.6 ✓	77.1
960		5.2	88.9 ✓	74.8
940		7.2	86.9 ✓	73.7
920		8.7	85.4 ✓	72.5
900		10.2	83.9 ✓	70.3
880		11.9	82.2 ✓	66.1
860		13.4	80.7 ✓	60.6
840		14.8	79.3 ✓	58.6
	574.00			
830		+ 1.8	75.8 ✓	58.4

✓

6688.55
~~6710.05~~

2.0
8.5 ✓
9.9 ✓
section of Spoil from Dam and Rd Spoil
4.9 ✓

457.00 ✓

~~7167.05~~ → N 3700 X
7145.55 →

- inter-section of spoil from Dam and Rd Spoil

9.2 ✓
10.0 ✓
13.5
~~12.5~~
14.1 ✓
13.2 ✓
12.9 ✓
13.6 ✓
16.1 ✓
20.1 ✓
20.7 ✓

96.00 ✓

2377.00 ✓
190.50 ✓
2663.50 ✓

17.4 ✓

574.00

N 3720

5800	+1.4	75.4 ✓	57.8
780	+1.1	75.1 ✓	54.8
760	0.0	74.0 ✓	57.9
740	1.5	72.5 ✓	58.6
720	1.9	72.1 ✓	58.3
700	1.7	72.3 ✓	58.1
680	7.6	66.4 ✓	57.8
660	9.2	64.8 ✓	57.5
640	9.4	64.6 ✓	57.8
620	9.1	64.9 ✓	57.6
600	18.0	56.0 ✓	57.3
580	20.0	54.0 ✓	57.6
570	9.2	64.8 ✓	57.8
563		65.1	53.8
540	8.5	65.5 ✓	61.2
520	2.9	71.1 ✓	67.8
498	+1.0	75.0 ✓	Toe Wall

N 3740

5501	+1.0	75.0 ✓	Toe Wall
520	3.7	70.3 ✓	68.8
540	9.2	64.8 ✓	62.2
560	15.5	58.5 ✓	55.7
570	22.0	52.0 ✓	52.4
570		52.6	57.6
580	20.8	53.2 ✓	57.6
590	19.5	54.5 ✓	57.6

✓

2663.50 ✓

525.00 ✓

8.7

17.6 ✓
20.3 ✓
16.1 ✓
13.9 ✓
13.8 ✓
14.2 ✓
8.6 ✓
7.3 ✓
6.8 ✓

2269.00 ✓

7.3 ✓ 62.05 ✓ 1.95 ✓

1.3 ✓ 49.00 ✓

3.6 ✓ 6.12 ✓

7.0 ✓ 23.10 ✓
11.3 ✓ 64.05 ✓
4.3 ✓ 179.40 ✓
3.3 ✓ 76.00 ✓
0.0 ✓ 36.30 ✓

5898.40 ✓ 57.07 ✓
57.07
5841.33 ✓ → N 3720 X

0.0 ✓ 14.25 ✓
1.5 ✓
2.6 ✓ 95.00 ✓
2.8 ✓ 12.25 ✓ 0.25 ✓
0.4 ✓
5.0 ✓
4.4 ✓ 84.50 ✓
3.1 ✓

721.50 ✓ 84.75

574.00

N3740

5610	10.8	63.2 ✓	57.7
640	9.7	64.3 ✓	57.7
660	9.6	64.4 ✓	58.1
680	7.6	66.4 ✓	58.0
700	+ 1.0	75.0 ✓	57.6
720	1.4	72.6 ✓	57.7
740	1.0	73.0 ✓	58.1
760	0.0	74.0 ✓	57.2
780	+0.3	74.3 ✓	58.2
800	+0.8	74.8 ✓	58.9
820	+1.1	75.1 ✓	59.6
840	+1.0	75.0 ✓	62.2
	594.11		
850	14.6	79.5 ✓	65.2
880	11.8	82.3 ✓	71.2
900	10.7	83.4 ✓	72.4
920	9.0	85.1 ✓	74.3
940	6.9	87.2 ✓	77.5
960	5.1	89.0 ✓	79.7
980	3.7	90.4 ✓	80.8
6000	2.8	91.3 ✓	83.5
020	0.5	93.6 ✓ inter- 90.4	

✓

59

1.55 121.50 ✓ 84.75 ✓

3.1 35 20 ✓ 594.11 11.16

181.50 ✓

3.5 ✓
6.6 ✓
6.3 ✓
3.4 ✓
17.4 ✓
14.9 ✓
14.9 ✓
16.2 ✓
16.1 ✓
15.9 ✓
15.5 ✓
12.8 ✓

2706.00 ✓

135.50 ✓

14.3 ✓
11.1 ✓
11.0 ✓
10.8 ✓
9.7 ✓
9.3 ✓
9.6 ✓
7.8 ✓

381.00 ✓

1307.00 ✓

3.2 ✓ section of Spoil from Dam and Road spoil.

4867.70 ✓ 95.91 ✓

95.91

4771.79 ✓ → N 3740 X

575.9

N3760

5505			0.9	75.0 ✓	Toe Wall
20			5.2	70.7 ✓	70.1
40			13.0	62.9 ✓	63.6
50			15.8	60.1 ✓	60.3
60			20.8	55.1 ✓	57.1
66				59.6	55.2
70			15.8	60.1 ✓	57.4
80			13.5	62.4 ✓	57.5
5600			13.8	62.1 ✓	57.2
20			12.8	63.1 ✓	57.5
40			16.0	59.9 ✓	57.7
60			11.2	64.7 ✓	57.7
80			2.2	73.7 ✓	59.5
		583.00			
5700			8.4	74.6 ✓	59.4
20			9.1	73.9 ✓	59.2
40			9.2	73.8 ✓	59.2
60			8.5	74.5 ✓	60.2
80			7.8	75.2 ✓	61.0
5800			7.8	75.2 ✓	62.6
20			9.8	73.2 ✓	64.9
40			8.6	74.4 ✓	71.3
50			9.1	73.9 ✓	72.4
60			3.1	79.9 ✓	72.4
T.P.	12.75	595.20	0.55	582.45 ✓	

✓

0.0 ✓
0.6 ✓
0.7 ✓
0.2 ✓
2.0 ✓
2.4 ✓
2.2 ✓
4.9 ✓
4.9 ✓
5.6 ✓
3.2 ✓
7.0 ✓
14.2 ✓
15.2 ✓
14.7 ✓
14.6 ✓
14.3 ✓
14.2 ✓
12.6 ✓
8.5 ✓
2.1 ✓
1.5 ✓
7.5 ✓

4.50 ✓
2.77 ✓
3.94 ✓
10.20 ✓
38.00 ✓

3.76 ✓

15.50
~~9.50~~ ✓
2.72

2640.00 ✓
68.00 ✓
2767.41 ✓

~~15.98~~
21.98

595.20

N3760

5880			10.5	84.7 ✓ 73.7
5900			8.9	86.3 ✓ 75.3
20			5.8	89.4 ✓ 80.3
40			5.2	90.0 ✓ 82.9
60			5.1	90.1 ✓ 86.0
80			5.0	90.2 ✓ 87.0
6000			4.1	91.1 ✓ 89.9 Inter

N3780

				95.1
5985			3.6	91.6 ✓ Inter
80			4.6	90.6 ✓ 94.6
60			5.1	90.1 ✓ 92.7
40			4.9	90.3 ✓ 89.5
20			5.2	90.0 ✓ Int. C.P. 86.2
5900			5.5	89.7 ✓ 82.2
5880			0.6 11.7	83.5 ✓ 79.4
T.P.	0.25	582.70	12.75	582.45 ✓
60			8.6	74.1 ✓ 74.5
40			9.3	73.4 ✓ 73.8
20			7.7	75.0 ✓ 71.2
10			4.0	78.7 ✓ 67.0
5800			6.3	76.4 ✓ 71.1
5780			7.1	75.6 ✓ 70.6
60			7.1	75.6 ✓ 68.2
40			7.0	75.7 ✓ 65.9
20			7.0	75.7 ✓ 66.6
5700			6.6	76.1 ✓ 65? ✓

61

37 ✓

2767.41 ✓

21.98
15.98

11.0 ✓
11.0 ✓
9.1 ✓
7.1 ✓
4.1 ✓
3.2 ✓
1.2 ✓

997.00 ✓

section of spoil + road fill

3764.41 3742.43 +5.98 21.98

~~+5.98~~
3.5 ✓ ~~3748.43~~ → N 37.60

section of spoil + road fill

4.0 ✓
2.6 ✓

18.75
66.00 ✓
1.89 ✓
19.86 ✓

0.8 ✓
3.8 ✓
6.9 ✓
4.1 ✓

263.00 ✓
37.35 ✓
0.36 ✓

0.4 ✓
0.4 ✓

8.00
34.43 ✓
0.38 ✓
3.8 ✓
11.7 ✓
5.3 ✓
5.0 ✓
7.4 ✓
9.8 ✓
9.1 ✓
10.4 ✓

77.50 ✓
85.00 ✓

783.00 ✓
End Ft. Jan 13 - 1933

1282.17 ✓ 113.35 ✓

			N. 3780		
	9.10	584.10		575.0	
5680			6.7	77.4 ✓	62.2
90			7.7	76.4 ✓	62.5
60			11.5	72.6 ✓	61.6
40			23.0	61.1 ✓	59.6
30			25.0	59.1 ✓	59.4
20			21.2	62.9 ✓	58.9
5600			15.3	68.8 ✓	58.6
80			15.1	69.0 ✓	58.5
64				65.5	57.7
60			22.2	61.9 ✓	58.7
50			28.7	55.4 ✓	61.9
40			19.7	64.4 ✓	65.1
20			11.6	72.5 ✓	71.6
55 09				75.0	Toewall
		N. 3800			
55 15					Toewall
20			10.3	73.8 ✓	73.3
40			14.7	69.4 ✓	67.0
50			20.0	64.1 ✓	63.8
60			13.0	71.1 ✓	60.6
63				72.6	59.2
80			2.5	81.6 ✓	59.0
5600			4.4	79.7 ✓	60.1
10			5.1	79.0 ✓	60.1
20			9.4	74.7 ✓	61.0
35			18.7	65.4 ✓	62.3

✓

52 | 1282.17 ✓ | 113.35 ✓ | 67

15.2 ✓
~~13.9~~ ✓
11.0 ✓ — 643.00
~~639.40~~
1.5 ✓ — ~~4.75~~ — 0.25 ✓
0.3 ✓ — 6.30 — 0.10 ✓
4.0 ✓ — 18.60 ✓
10.2 ✓
10.5 ✓ — 349.00 ✓
7.8 ✓ — 146.40 ✓
3.2 ✓ — 22.00 ✓
5.28 ✓ — 21.77 ✓
6.5 ✓
0.7 ✓ — 36.00
5.06 ✓ — 3.06 ✓
0.9 ✓
4.95 ✓
0.0 ✓ — 2482.76
2477.61 — 2308.23 — 174.53 ✓
174.53 ↓
~~2303.08~~ → N 3780 x
0.0 ✓ — 1.25 ✓
0.5 ✓ — 29.00 ✓
2.4 ✓ — 13.50 ✓
0.3 ✓ — 54.00 ✓
10.5 ✓ — 35.85 ✓
13.4 — 306.00 ✓
22.6 ✓ — 422.00 ✓
19.6 ✓
18.9 ✓ — 355.50 ✓
12.7 ✓ — 126.00 ✓
3.1 ✓
1343.10 ✓

N. 3800

584.10

5655		7.0	77.1 ✓	65.3
60		5.7	78.4 ✓	65.6
80		5.7	78.4 ✓	72.9
5700		5.8	78.3 ✓	73.9
20		6.9	77.2 ✓	75.1
40		8.6	75.5 ✓ O.G.	75.6
60		7.9	76. ✓ O.G. ✓	76.5
80		5.4	78.7 ? O.G. ✓	78.4
5800		5.0	79.1 " ✓	76.9
20		6.1	78.0 ✓	76.5
40		7.3	76.8 ✓	79.5
60		9.7	74.4 ✓	84.1
70		10.4	73.7 ✓	84.1
80		+ 1.0	85.1 ✓	86.1
5900		+ 1.6	85.7 ✓	90.0
20		+ 8.7	92.8 ✓	93.9
40		+ 8.7	92.8 ✓	95.8
60		+ 6.0	90.1 ✓	01.2
5990		+ 8.6	92.7 ✓	02.0
	N 3820			
5680			O.G.	22.5
65		4.0	80.1 ✓	79.7
60		4.4	79.7 ✓	78.7

✓

63

1.55

1343.10 ✓

149.00 ✓

61.50

~~60.50~~

11.8 ✓

12.8 ✓

5.5 ✓

4.4 ✓

2.1 ✓

0.0 ✓

00 ✓

0.3 ✓

2.2 ✓

1.5 ✓

7.3 ✓

5-21.00 ✓

31.39 ✓

55.29 ✓

100.50

57.00

9.7 ✓

10.4 ✓

1.0 ✓

Line of excavation of mixing plant

4.3 ✓

1.1 ✓

0.50 ✓

11.1 ✓

9.3

329.00

~~644.00~~

306.00

~~+005 29~~

847.79

2105.99

~~2104.99~~

10 05 29

~~+0 99 70~~

1258.20 → N 3800

0.0

0.7 ✓

1.0 ✓

5.25 ✓

4.25

9.50 ✓

E5860

E5865

E5870

E5880

E5720

E5960

X

		584.10	N 3820		
5640			4.5	79.6	71.5
30			6.4	77.7	70.4
20			4.2	79.9	67.8
5600			4.2	79.9	64.9
80			4.2	79.9	61.9
70			3.6	80.5	60.9
66				78.1	60.7
50			15.7	68.4	65.9
40			12.5	71.6	69.1
5521				Toe wall	
		N 3840			
5529				Toe wall	75.0
40			10.5	73.6	71.4
50			14.1	70.0	68.3
56				72.0	66.5
70			7.3	76.8	70.2
80			5.3	78.8	73.3
5600			4.2	79.9	74.2
20			4.2	79.9	76.9
40			3.6	80.5	84.5
50			3.0	81.1	85.0
70				O.G.	90.0
		N 3860			
5610				O.G.	87.3
5600			2.5	81.6	87.8
5580			4.5	79.6	85.4
5560			4.7	79.4	81.5
40					

0.5 9.50
~~86.00~~
8.1 91.00
7.3 174.00
12.1
15.0 601.00
18.0 188.00
19.6 74.00
17.4 159.20
2.5 25.00
2.5 23.75
0.0
~~1340.45~~ → N 3820 X
1345.45

0.0 12.10
2.2 19.50
1.7 21.60
5.5 84.70
6.6 ~~61.50~~
5.5 60.50
5.7 199.00
3.0 12.90
4.0 22.80
3.9 39.50
410.30 39.00
0.0 ~~411.30~~ 101.30 X
1.01.30
~~310.00~~ N3840
309.00
00 31.00
6.2
5.8 220.00
2.1
00 — 251.00 — N3860

N 3860

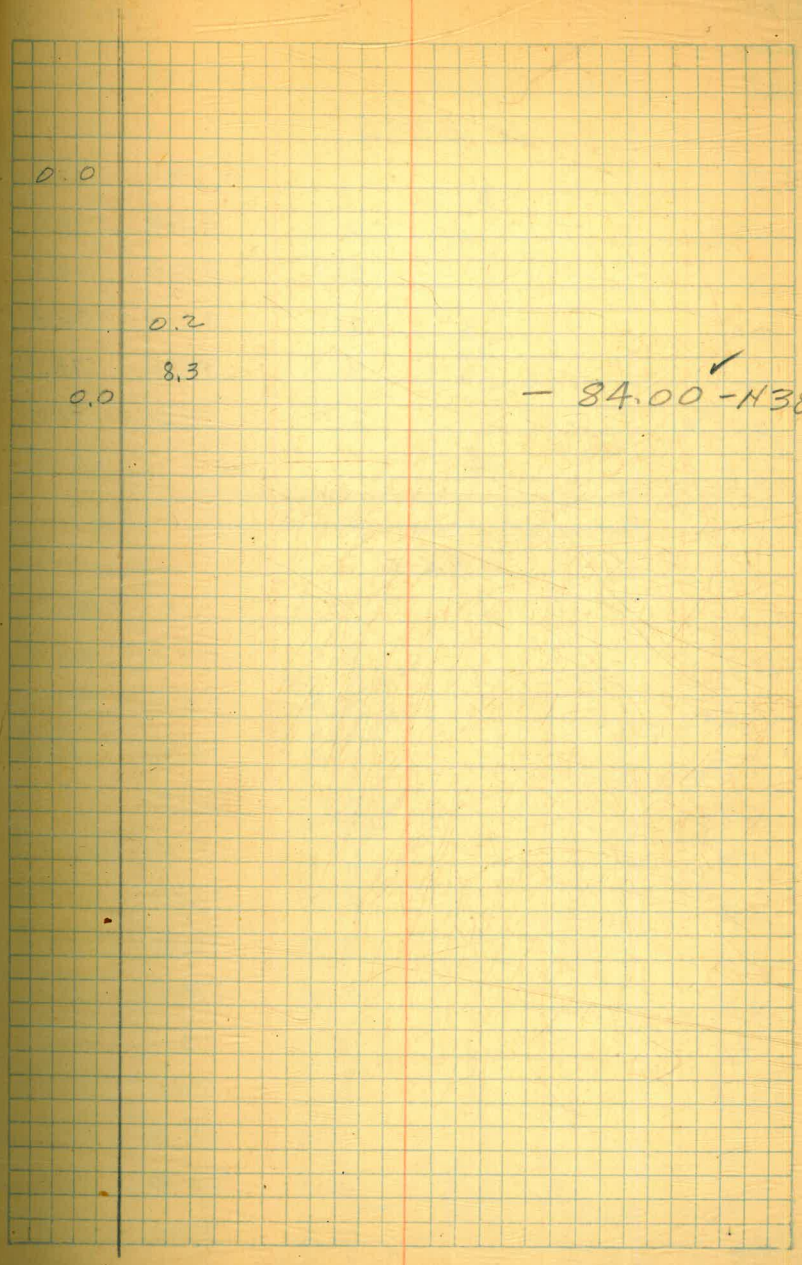
584.10

5540	7.1	77.0 ✓	77.0
5536		Toe xwall	

N 3880

5540	5.1	79.0 ✓	79.2
50	3.1	81.0 ✓	89.3
60		O.G.	91.0

✓



– 84.00 ✓ – N3880

Elliot
Simpson
Soper

Extended spoilbank x Sections

Jan 25-33

BM	7.43	576.14		568.71	
		N 3390			
40 90				0.6. 70.0	73.1
4100			2.7	73.4	73.8
10			2.7	73.4	75.2
20			2.7	73.4	76.5
30			2.7	73.4	78.3
40			2.7	73.4	80.2
50				o.k.	82.0

crank house cut

Extended from book 386 P4

N 3410

4100				71.5	68.2
4110			4.9	71.2	69.0
20			5.4	70.7	70.0
30			6.0	70.1	70.8
40			5.7	70.4	71.6
50			1.7	74.4	72.7
60			5.0	71.1	73.7
70			3.5	72.6	75.8
80			2.0	74.1	77.9
90			0.0	76.1	77.9
4200			2.0	74.1	78.1
10			2.8	73.3	77.8
20			2.8	73.3	78.8
30			2.8	73.3	78.8

compressor house cut

South side of river by compressor plant

66

	3.1		
	0.4		
	1.8		
	3.1		
	4.9		
	6.8		
0.0			185.5 ✓ - N 3390 ✓
3.3			
2.2			
0.7		42.00 ✓	
	0.7	1.75 ✓	1.75 ✓
	1.2		9.50 ✓
1.7		4.98 ✓	2.48 ✓
	2.6	3.37 ✓	7.85 ✓
	3.2		
	3.8		
	1.8		
	4.0		
	4.5		
	5.5		
	5.5	52.10 ✓	268.50 ✓
			290.08 ✓

N 3410

576.14

4240		2.8	573.3	80.4
50	comp house cut		0.6	81.5

N 3420

4250		0.6		77.3
45		2.7	73.4	76.9
40		2.7	73.4	76.5
30	compressor house cut	2.7	73.4	76.6
20		2.7	73.4	76.0
10		3.1	73.0	74.3
4200		3.8	72.3	74.8
4190		4.6	71.5	74.2
80		5.0	71.1	73.4
70		5.4	70.7	69.4
60		5.8	70.3	69.3
50		5.9	70.2	68.8
40		5.7	70.4	68.6
30		5.6	70.5	69.0
20		5.3	70.8	67.7
10		5.2	70.9	66.7
4100			71.5	66.0

52.10 ✓

290.08 ✓ 67

2.75

7.1

0.0

98.50 ✓

52.10 ✓

388.58

52.10

N 3410 — 336.48 ✓ X

0.0

3.5 — 8.75

3.1 — 16.50

3.2

2.6

1.3

2.5

2.7 — 150.00

~~2.3~~ — ~~200.50~~

2.34 ✓ — ~~5.06~~

1.3 — 7.36

1.0

1.4

1.8

1.5

3.1

4.2

5.5

164.00 ✓

182.61

~~205.56~~

166.34 ✓

166.34

N 3420 — ~~34.22~~

→ -16.27 X

N 3430

576.14

4100		71.6	60.6
10	5.2	70.9	61.0
20	5.5	70.6	61.5
30	5.8	70.3	64.1
40	5.7	70.4	65.5
50	5.7	70.4	67.6
60	5.6	70.5	69.6
70	5.2	70.9	70.0
80	4.9	71.2	70.3
90	4.8	71.3	70.8
4200	4.2	71.9	71.3
10	3.0	73.1	72.0
20	2.7	73.4	72.4
30	2.7	73.4	72.7
40	2.7	73.4	72.7
50	2.7	O.G. 73.4	72.7

5.0
9.9
9.1
6.2
4.9
2.8
0.9
0.9
0.9
0.5
0.6
1.1
1.0
0.7
0.7
0.7

A30.50 ✓ → N 3430 ✗

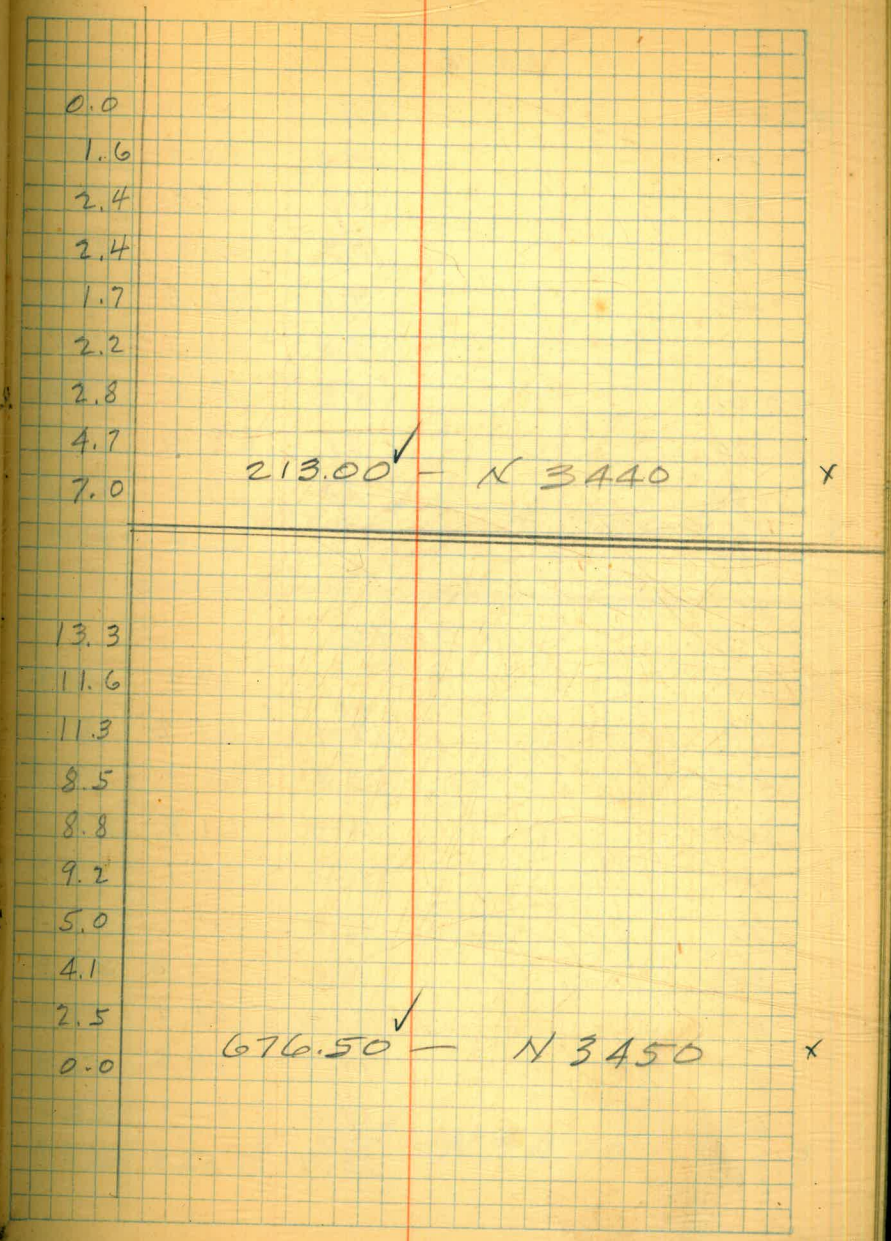
N 3440

576.14

4250		O.G.	71.4
40	2.7	573.4	71.8
30	2.7	73.4	71.0
20	2.7	73.4	71.0
10	3.9	72.2	70.5
4200	4.6	71.5	69.3
4190	4.9	71.2	68.4
80	5.2	70.9	66.2
70		70.9	63.9

N 3450

4170		71.2	57.9
80	5.4	70.7	59.1
90	5.3	70.8	59.5
4200	4.5	71.6	63.1
10	4.5	71.6	62.8
20	2.8	73.3	64.1
30	4.0	72.1	67.1
40	5.0	71.1	67.0
50	6.8	69.3	66.8
60	O.G.		68.1



N3460

576.14

4260	O.G.	64.2	64.2
50	13.4	62.7	60.2
40	11.8	64.3	59.3
30	10.3	65.8	57.0
20	9.6	66.5	55.5
10	9.4	66.7	54.9
4200	8.3	67.8	54.2
4190	8.1	68.0	54.5
80	8.4	67.7	54.0
70		69.4	53.4

N3470

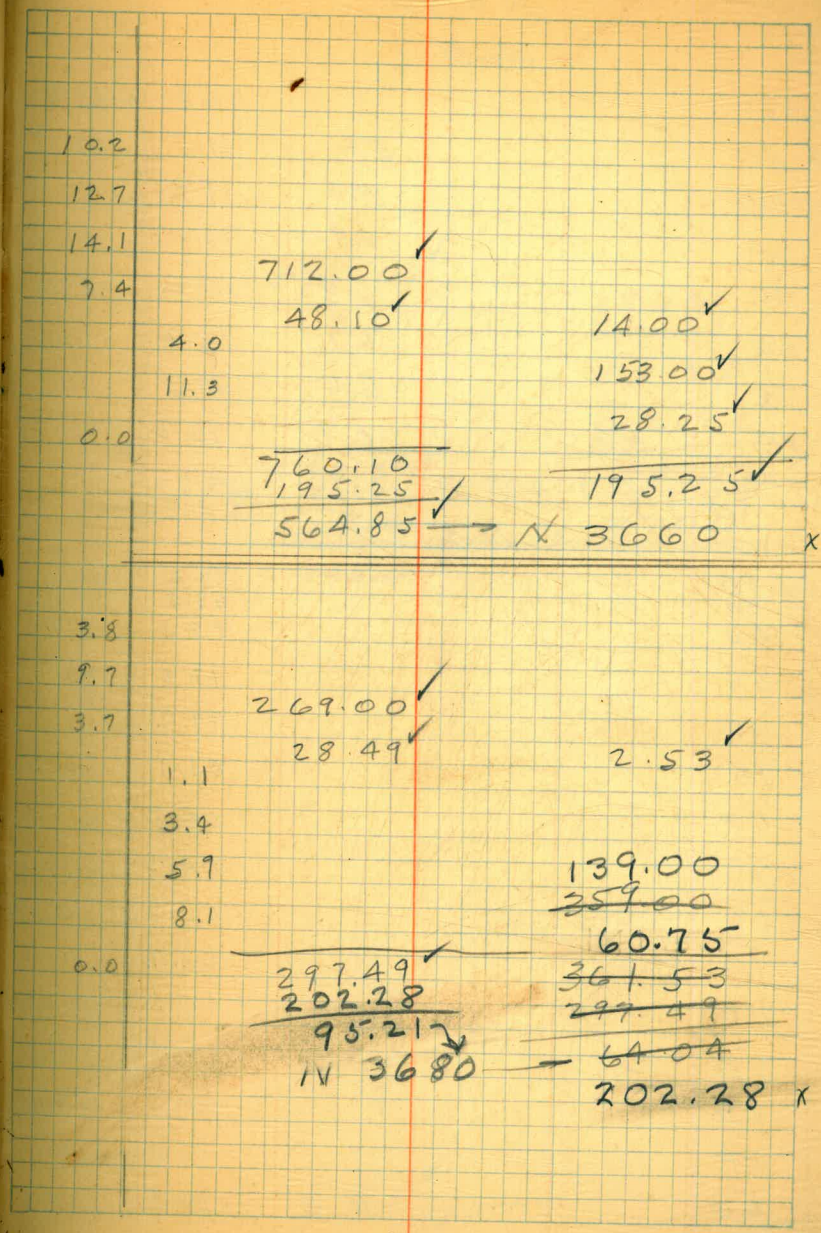
4170		63.7	52.4
80	12.9	63.2	52.4
90	13.8	62.3	52.3
4200	14.3	61.8	52.5
10	14.0	62.1	52.3
20	15.0	61.1	52.3
30	16.1	60.0	53.3
40	17.2	58.9	52.6
50	17.8	58.3	53.3
60	19.0	57.1	52.7
70	20.7	a.g. 55.5	53.9

0.0	
2.5	
5.0	
8.8	
11.0	
11.8	
13.6	
13.5	
13.7	
16.0	879.00✓ — N3460 X
11.3	
10.8	
10.0	
9.3	
9.8	
8.8	
6.7	
6.3	
5.0	
4.4	
1.6	775.50✓ — N3470 X

Extended x sections on spoil dumps

Jan 27-33 71

BM	11.20	616.88	605.68	
		N 3660		
6200			603.7	93.5
6220		8.9	08.0	95.3
40		8.9	08.0	93.9
60		8.3	08.6	01.2
80		8.3	08.6	12.6
6300		8.1	08.8	19.1
6305		+2.1	19.0	19.0
		N 3680		
6200			04.2	00.4
6220		5.6	11.3	01.6
40		7.0	09.9	06.2
60		7.2	09.7	10.8
70		7.2	09.7	13.1
80		7.4	09.5	15.4
90		7.3	09.6	17.7
6305		+3.3	20.2	20.2



N3700

616.88

6160				02.4	97.5
6180			5.4	11.5	00.5
6200			5.4	11.5	03.5
20			5.9	11.0	06.5
40			6.3	10.6	09.5
60			6.7	10.2	12.5
75			6.6	10.3	14.7
85	N.G.		0.7	16.2	16.2
T.P.	7.59	622.51	1.96	614.92	

N3720

60 10				92.6	83.4
30				93.5	88.2
40				95.4	90.6
50				97.3	92.9
60				99.2	96.4
70				01.1	99.5
80				03.0	02.5
90				04.9	02.6
6100				06.8	02.2
10				08.7	01.7
20				10.6	01.7
30			10.2	12.3	98.8
40				12.3	96.4
50				12.4	00.7
60			10.0	12.5	04.7

4.9
11.0
8.0
4.5
1.1
2.3
4.4
0.0

530.00 ✓
3.57 ✓
533.57 ✓
94.52
439.05
145.00 ✓

15.64
22.27
50.25 ✓
22.00 ✓
94.52
87.89

445.68 → N 3700 X

9.2
5.3
4.8
4.4
2.8
1.6
0.5
2.3
4.6
7.0
8.9
3.5
5.9
11.7
7.8

645.50 ✓
790.50 ✓

N3720

622.57

6170			10.2	12.3	06.4
80			10.2	12.3	08.1
6200			10.7	11.8	11.5
20			11.6	10.9	14.9
30	N.G.		2.4	14.0	16.6
40				17.1	18.3
50	N.G.		2.4	20.1	20.1

N3740

6020				93.6	90.4
6040			18.5	04.0	94.7
60			11.5	11.0	059
80			7.2	15.3	08.6
6100			6.5	16.0	11.6
20			8.5	14.0	11.8
40			9.0	13.5	05.5
60			9.6	12.9	03.5
80			10.2	12.3	14.8
6210			+3.6	26.1	26.1

3.9 790.50 ✓

5.9 119.00 ✓

4.2 45.00 ✓

0.3 0.21 ✓ 37.22 ✓

4.0

2.6

1.2 58.00 ✓

0.0 954.71 ✓ 95.22 ✓

95.22 ✓

859.49 → N 3720 X

3.2

9.3

5.1

6.7

4.4

2.7

8.0

9.4 850.00 ✓ 5.25 ~~8.16~~

74.26 ✓ ~~52.50~~ 37.50

2.5

0.0 924.26 ~~60.66~~ 60.66

~~863.60~~ → N 3740 X 42.75

42.75 ✓

881.51

N 3760

622.57

6000			91.1	89.9
20			03 5	95.6
40		6.6	15.9	00.4
60		6.9	15.6	92.5
80		7.2	14.3	96.5
6100		8.0	14.5	00.5
20		8 3	14.2	04.5
40		9.0	13.5	08.5
60	0.6	10.1	12.4	12.4

N 3780

6020		23.7	98.8	02.8
6000		18.8	03.7	97.1
5985			91.6	95.1

1.2
7.9
15.5
23.1
17.8
14.0
9.7
5.0
0.0

1872.00 ✓ — N 3760 X

4.0
6.6
3.5

41.08 ✓
~~42.90~~
32.34
~~83.98~~
~~27.35~~
~~56.63~~ → N 3780
7342
24.20
49.22

15.10 ✓
9.10
~~12.25~~
~~27.35~~
24.20

N 3200

599.70

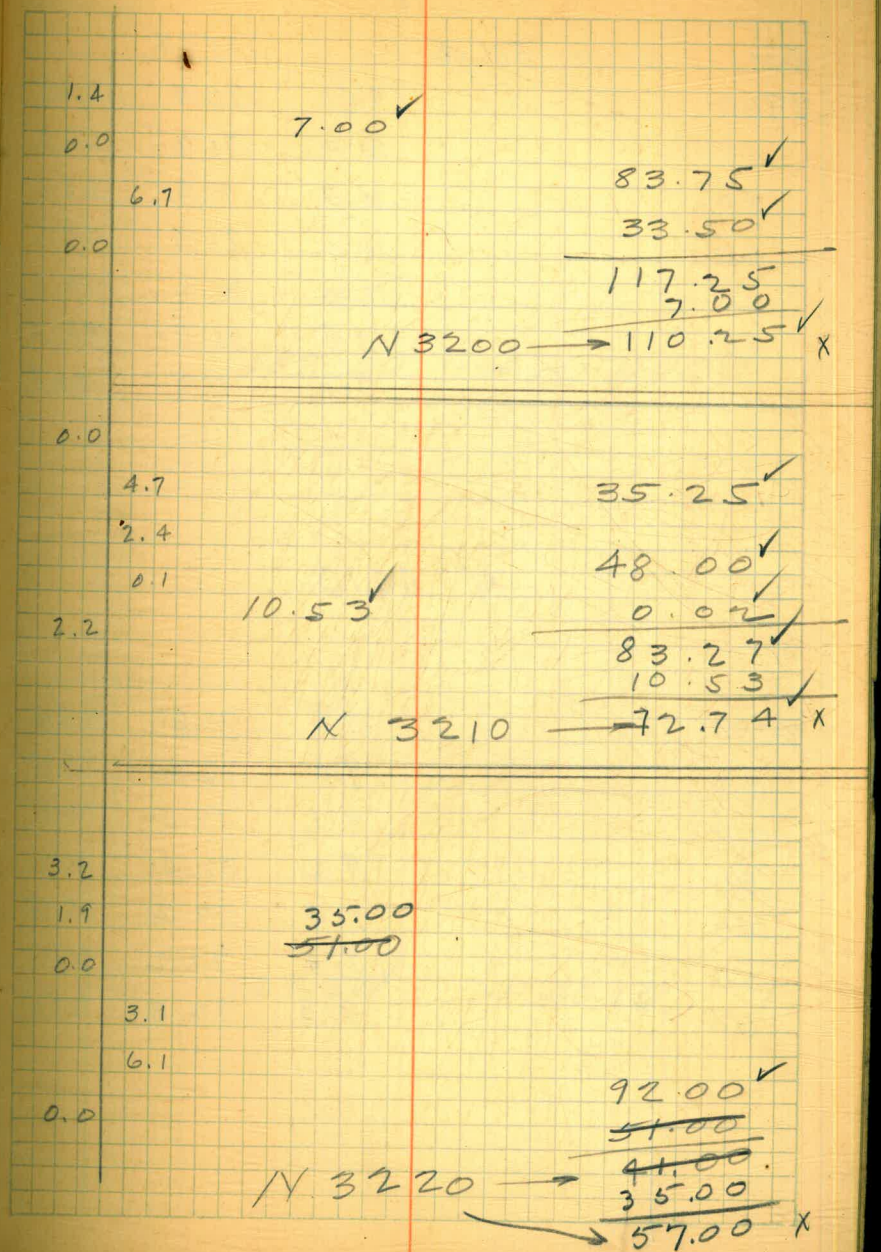
6580			97.1	95.7
6590		1.7	98.0	98.0
6615		2.4	97.3	04.0
6625	N.G.	+6.6	06.3	06.3

(Ext. from p 5) N 3210

6625		+6.5	06.2	06.2
10		2.0	97.7	02.4
6600		1.9	97.8	00.2
6590		1.7	98.0	98.1
6580		1.4	98.3	96.1

(Ext. from p 5) N 3220

6570		2.1	97.6	94.4
80		1.7	98.0	96.1
90		1.6	98.1	98.1
6600		2.0	97.7	00.8
10		2.3	97.4	03.5
20	O.G.	+6.6	06.3	06.3



(Extended from book 887-39)

N 4000

B.M.	6.57	581.62		575.05	
3960			9.5	72.4	65.5
50			10.4	71.2	66.6
40			10.3	71.3	67.5
30			10.1	71.5	68.5
20			10.0	71.6	70.0
10			9.8	71.8	70.5
3900			9.7	71.9	71.9

N 4010

3900			8.8	72.8	72.8
10			9.0	72.6	72.0
20			9.1	72.5	71.5
30			9.2	72.4	71.0
40			9.4	72.2	69.5
50			9.4	72.2	67.7
60			9.3	72.3	66.8

6.9	
5.2	
3.8	
3.0	
1.4	
1.3	
0.0	183.50 → N 4000
0.0	
0.6	
1.0	
1.4	
2.7	
4.5	
5.5	129.50 N 4010

X section at Mixing plant

N3800

584.10 (see p. 63)

5840	7.3	76.8	79.8
E 58.60	9.7	74.4	84.1
70	10.4	73.7	84.1
80	+1.0	85.1	86.1
5900	+1.6	85.7	90.0
20	+8.7	92.8	93.9
40	+8.7	92.8	97.8
60	+6.1	90.1	01.2
5990	+8.6	92.7	02.0

N3810

5870		84.1	84.1
E5870	9.7	74.4	84.1
80	10.4	73.7	86.1
80	+1.0	85.1	87.0
5900	+1.6	85.7	90.0
20	+8.7	92.8	94.0
40	+8.7	92.8	98.0
60	+6.0	90.1	02.0
80	+17.9	02.0	02.

55.29

9.7 100.50

10.4 57.00

1.0

4.3

1.1

5.0 329.00

11.1 306.00

9.3

− 8479 = N 3800

0.0

9.7' 110.50

12.4 ~~90.6~~

~~6.7~~ ~~51.8~~

1.9'

4.3'

1.2'

5.2'

11.9'

471.00

0.0

− 581.50 = N 3810

N3820

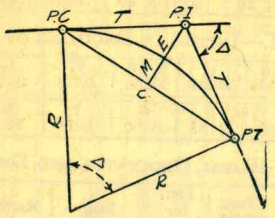
584.10

E5870	0.0	84.1	84.1
70 again	9.7	74.4	84.0
80	10.4	73.7	86.0
80	+1.0	85.1	87.0
5900	+1.6	85.7	91.0
20	+8.7	92.8	94.0
40	+13.9	98.0	98.0

N3830 is about natural ground

Cut	
0.0	
9.6 ✓	
12.3 ✓	109.50
1.9 ✓	
5.3 ✓	
1.2 ✓	
0.0	149.00
	258.50 = N3820

DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES



CURVE FORMULAS

Radius=R=$\frac{50}{\text{sin. } D/2}$ (1) Degree of Curve=D and sin. $\frac{D}{2}=\frac{50}{R}$ (2)

Tangent=T=R tan $\frac{\Delta}{2}$ (3) Length of Curve=L=$100\frac{\Delta}{D}$ (4)

Middle ordinate=M= R(1—cos. $\frac{\Delta}{2}$) (5) =R vers $\frac{\Delta}{2}$ (6)

External=E=T tan $\frac{\Delta}{4}$ (7) =R ÷ cos. $\frac{\Delta}{2}$ —R (8) =R exsec $\frac{\Delta}{2}$ (9)

Long Chord=C=2 R sin. $\frac{\Delta}{2}$ (10) Δ=Central Angle

EXPLANATION AND USE OF TABLES

Stations.—Given P. I.=Sta. 161 +60.35 to find Sta. of P. C. and P. T. Δ=62° 10′ D=8° 20′. From Table IV for 1° curve T=3454.1 and ÷8⅓=414.49 ft. From Table V correction=.36 or T=414.85 ft. P. C.=Sta. P.I.—T=157 +45.50. Also from (4) L=746.00 and P. T.=Sta. P. C. +L=164 +91.50.

Offsets.—Tangent offsets vary (approximately) directly with D and with square of the distance. Thus tangent offset for Sta. 158 on above curve is 2.16 ft. found as follows. From Table III tangent offset for 100 ft.=7.27 ft. Distance=158—Sta. P. C.=54.50, hence offset=7.27 (54.50 ÷100)²=2.16 ft. Also square of any distance divided by twice the radius equals (approximately) the distance from tangent to curve. Thus (54.50)² ÷(2 x 688.26)=2.16 ft.

Deflections.—Deflection angle=½ D for 100 ft., ¼ D for 50 ft., etc. For c ft.=(in minutes) .3 x C x D° or=defl. for 1 ft. from Table III x C. For Sta. 158 of above curve=.3 x 54.5 x 8⅓=136.2′ or 2° 16.2′, or=2.50 x 54.5=136.2′ from Table III. For Sta. 159 deflection angle=2° 16.2′ +8° 20′ ÷2=6° 26.2′, etc.

Externals.—May be found in similar manner to tangents. Thus E for curve above is 91.37. For from Table IV for 1° curve E=960.6 for 8° 20′=960.6 ÷8⅓=91.27 and from Table V correction=.10 or E=91.37 ft. Or suppose Δ=32° and E is measured and found to be 42 ft. What is D? From Table IV E=230.9 and ÷42=5.5 or D=5° 30′.

0+56—
0+72—

84.10
8.2
75.90

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1½.

For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.2	8.3	8.5	8.6	8.8	8.9	9.1	9.2	9.4	0
1	9.5	9.7	9.8	10.0	10.1	10.3	10.4	10.6	10.7	10.9	1
2	11.0	11.2	11.3	11.5	11.6	11.8	11.9	12.1	12.2	12.4	2
3	12.5	12.7	12.8	13.0	13.1	13.3	13.4	13.6	13.7	13.9	3
4	14.0	14.2	14.3	14.5	14.6	14.8	14.9	15.1	15.2	15.4	4
5	15.5	15.7	15.8	16.0	16.1	16.3	16.4	16.6	16.7	16.9	5
6	17.0	17.2	17.3	17.5	17.6	17.8	17.9	18.1	18.2	18.4	6
7	18.5	18.7	18.8	19.0	19.1	19.3	19.4	19.6	19.7	19.9	7
8	20.0	20.2	20.3	20.5	20.6	20.8	20.9	21.1	21.2	21.4	8
9	21.5	21.7	21.8	22.0	22.1	22.3	22.4	22.6	22.7	22.9	9
10	23.0	23.2	23.3	23.5	23.6	23.8	23.9	24.1	24.2	24.4	10
11	24.5	24.7	24.8	25.0	25.1	25.3	25.4	25.6	25.7	25.9	11
12	26.0	25.2	26.3	26.5	26.6	26.8	26.9	27.1	27.2	27.4	12
13	27.5	27.7	27.8	28.0	28.1	28.3	28.4	28.6	28.7	28.9	13
14	29.0	29.2	29.3	29.5	29.6	29.8	29.9	30.1	30.2	30.4	14
15	30.5	30.7	30.8	31.0	31.1	31.3	31.4	31.6	31.7	31.9	15
16	32.0	32.2	32.3	32.5	32.6	32.8	32.9	33.1	33.2	33.4	16
17	33.5	33.7	33.8	34.0	34.1	34.3	34.4	34.6	34.7	34.9	17
18	35.0	35.2	35.3	35.5	35.6	35.8	35.9	36.1	36.2	36.4	18
19	36.5	36.7	36.8	37.0	37.1	37.3	37.4	37.6	37.7	37.9	19
20	38.0	38.2	38.3	38.5	38.6	38.8	38.9	39.1	39.2	39.4	20
21	39.5	39.7	39.8	40.0	40.1	40.3	40.4	40.6	40.7	40.9	21
22	41.0	41.2	41.3	41.5	41.6	41.8	41.9	42.1	42.2	42.4	22
23	42.5	42.7	42.8	43.0	43.1	43.3	43.4	43.6	43.7	43.9	23
24	44.0	44.2	44.3	44.5	44.6	44.8	44.9	45.1	45.2	45.4	24
25	45.5	45.7	45.8	46.0	46.1	46.3	46.4	46.6	46.7	46.9	25
26	47.0	47.2	47.3	47.5	47.6	47.8	47.9	48.1	48.2	48.4	26
27	48.5	48.7	48.8	49.0	49.1	49.3	49.4	49.6	49.7	49.9	27
28	50.0	50.2	50.3	50.5	50.6	50.8	50.9	51.1	51.2	51.4	28
29	51.5	51.7	51.8	52.0	52.1	52.3	52.4	52.6	52.7	52.9	29
30	53.0	53.2	53.3	53.5	53.6	53.8	53.9	54.1	54.2	54.4	30
31	54.5	54.7	54.8	55.0	55.1	55.3	55.4	55.6	55.7	55.9	31
32	56.0	56.2	56.3	56.5	56.6	56.8	56.9	57.1	57.2	57.4	32
33	57.5	57.7	57.8	58.0	58.1	58.3	58.4	58.6	58.7	58.9	33
34	59.0	59.2	59.3	59.5	59.6	59.8	59.9	60.1	60.2	60.4	34
35	60.5	60.7	60.8	61.0	61.1	61.3	61.4	61.6	61.7	61.9	35
36	62.0	62.2	62.3	62.5	62.6	62.8	62.9	63.1	63.2	63.4	36
37	63.5	63.7	63.8	64.0	64.1	64.3	64.4	64.6	64.7	64.9	37
38	65.0	65.2	65.3	65.5	65.6	65.8	65.9	66.1	66.2	66.4	38
39	66.5	66.7	66.8	67.0	67.1	67.3	67.4	67.6	67.7	67.9	39
40	68.0	68.2	68.3	68.5	68.6	68.8	68.9	69.1	69.2	69.4	40

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

Made in Germany.