EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

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

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.

386

Level 556.00

Tr. 565.73
0.29
566.02

565.73
Level 9.40
575.13
.44
574.69
12.50
Our Level 587.19
0.72
586.47
2.98
Co. Level 589.45

587.81
3.86
591.67 Co. Level
12.56
579.11
1.03
580.14 Tr.

Index

Downstream Spoil X-Sec Pages 1-80.

X Sections of Downstream Spoil

Orig grd.

B.M.	5.51	569 .16		563.65
	No Spoil on N 3380			
T.P.	7.96	576 .67	0.45	568 .71
		N 3390		
E 3890			11.0	65.7 ✓ 65.5
880			11.2	65.5 ✓ 65.7
870			11.1	65.6 ✓ 65.7
860			10.8	65.9 ✓ 65.8
850			11.0	65.7 ✓ 65.7
840			11.0	65.7 ✓ 65.3
830			10.9	65.8 ✓ 65.0
820			11.1	65.6 ✓ 65.1
810			11.1	65.6 ✓ 65.0
3800			11.0	65.7 ✓ 65.4
3790			10.7	66.0 ✓ 66.5

✓

Elliott – Notes
Simpson-Level
Soper – Rod W.Ch.
Remmen-T.Ch

1

Dec 22-1932

Note:
Where elev's show cut it is assumed that cut material was deposited in spoil bank and therefor is subtractive from spoil N.E.L.

	Fill □'	Cut □'
0.2 ✓	0.5 ✓	0.5 ✓
-0.2 ✓		1.5 ✓
-0.1 ✓	0.25 ✓	0.25 ✓
0.1 ✓	0.50 ✓	
0.0 ✓	2.00 ✓	
0.4 0.8	6.00 ✓	
0.8 0.5	7.00 ✓	
0.6	6.00 ✓	
0.6	4.50 ✓	
0.3	0.56 ✓	1.56 ✓
+0.5	27.31 ✓	3.81 ✓
	3.81	
	23.50 → N 3390	

576.67
N3400

		Org. Grd.		Fill '	Cut '
3700	11.0	65.7 ✓	65.2	0.5 ✓	0.25 ✓
710	11.6	65.1 ✓	64.0	1.1 ✓	
720	12.0	64.7 ✓	64.4	0.3 ✓	
730	11.3	65.4 ✓	64.7	0.7 ✓	
740	11.6	65.1 ✓	64.2	0.9 ✓	
750	11.4	65.3 ✓	64.4	0.9 ✓	
760	11.4	65.3 ✓	64.4	0.9 ✓	
770	11.1	65.6 ✓	64.5	1.1 ✓	
780	11.5	65.2 ✓	64.5	0.7 ✓	
790	10.6	66.1 ✓	64.2	1.9 ✓	
800	10.7	66.0 ✓	64.1	1.9 ✓	
810	10.7	66.0 ✓	64.2	1.8 ✓	
820	10.8	65.9 ✓	64.2	1.7 ✓	
830	10.8	65.9 ✓	63.6	2.3 ✓	
840	10.8	65.9 ✓	63.3	2.6 ✓	
850	10.6	66.1 ✓	63.0	3.1 ✓	
860	10.2	66.5 ✓	63.7	2.8 ✓	
870	10.5	66.2 ✓	64.0	2.2 ✓	
880	10.5	66.2 ✓	64.3	1.9 ✓	
890	10.6	66.1 ✓	64.3	1.8 ✓	
900	10.8	65.9 ✓	64.6	1.3 ✓	
910	10.8	65.9 ✓	64.8	1.1 ✓	0.55 ✓

327.00 ✓

				Orig Elev
	576.67			
	N3400			
3920		10.6	566.1	65.2
930		10.5	66.2	65.5
940		9.6	67.1	65.8
950		10:1	66.6	65.4
960		9.3	67.4	65.9
970		8.3	68.4	66.0
980		8.0	68.7	66.4
990		7.6	69.1	68.9
	N3410			
4100		5.2	71.5	68.2
4090		5.1	71.6	67.1
080		5.0	71.7	66.0
070		4.9	71.8	66.7
060		5.3	71.4	67.4
50		6.0	70.7	66.8
40		7.5	69.2	66.2
30		8.5	68.2	65.3
20		8.7	68.0	64.5
10		8.2	68.5	64.3
4000		8.1	68.6	64.1

327.00

Fill Area A'

	0.55
0.9	
0.7	
1.3	
1.2	
	109.50
1.5	
2.4	
2.3	
0.2	1.10
	43.65 × 10
	A36.50 → N3400
3.3	1.65
4.5	
5.7	
5.1	
4.0	407.00
3.9	
3.0	
2.9	
3.5	
4.2	
4.5	2.25

N3410

576.67

3990		8.2	568.5	63.7
80		8.7	68.0	62.5
70		8.4	68.3	63.6
60		8.6	68.1	63.5
50		10.3	66.4	63.4
40		10.4	66.3	63.9
30		10.4	66.3	62.9
20		10.8	65.9	62.4
10		10.1	66.6	62.2
3900		10.6	66.1	62.0
3890		10.5	66.2	61.1
80		10.1	66.6	60.5
70		9.8	66.9	60.7
60		9.6	67.1	60.6
50		10.9	65.8	60.5
40		11.9	64.8	61.0
30		10.0	66.7	61.1
20		10.6	66.1	60.8
10		10.1	66.6	60.3
3800		10.5	66.2	61.1
3790		10.7	66.0	61.5
80		15.1	61.6	61.5

407.00

~~364.50~~

4.8	
5.5	
4.7	
4.6	
3.0	
2.4	
3.4	
3.5	
4.4	
4.1	
5.1	
6.1	
6.2	1026.00
6.5	
5.3	
3.8	
5.6	
5.3	
6.3	
5.1	
4.5	
0.3	~~1008.50~~

(Extended in book 388 P66)

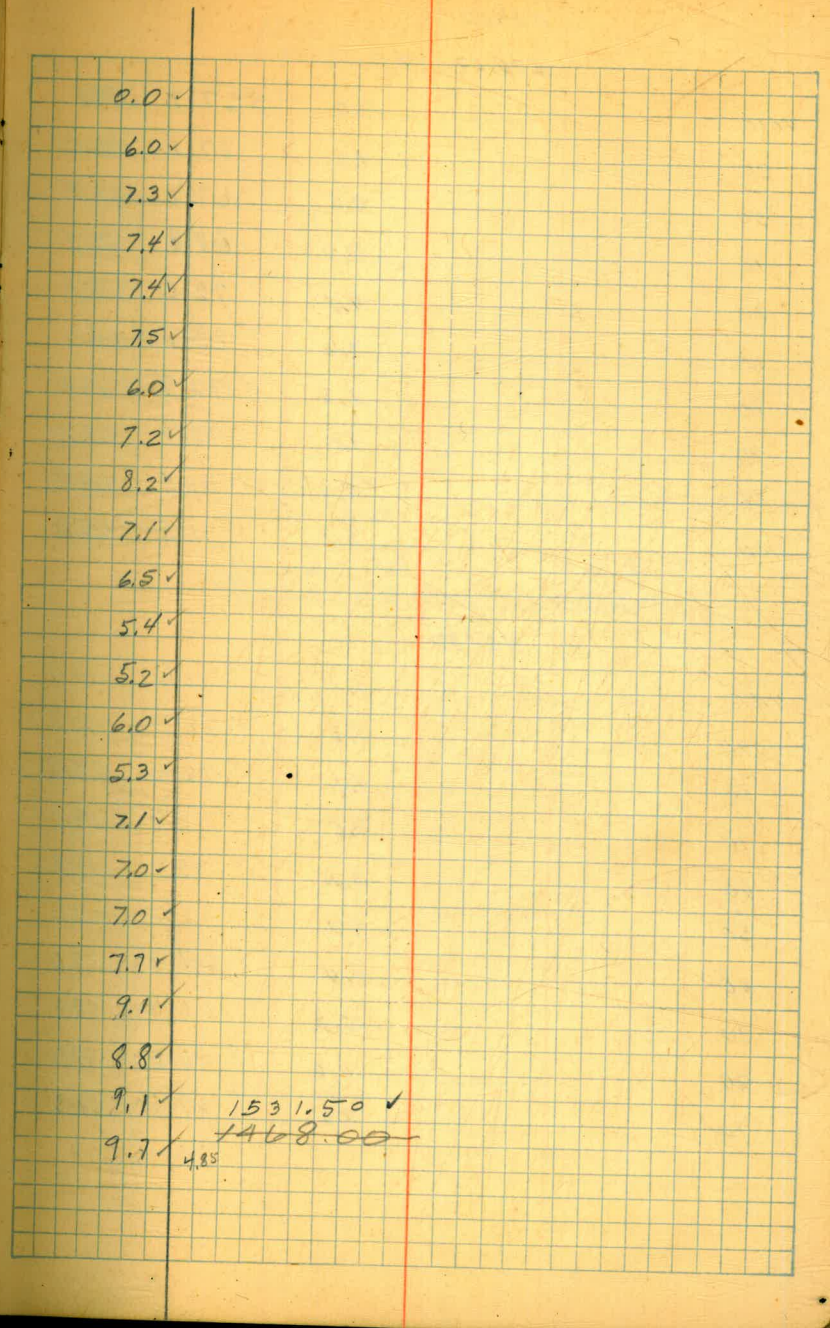
~~1370.00~~ → N 3410

1433.00 → N 3410

N3420

576.67

E3780	17.2	59.5	59.5
790	11.5	65.2	59.2
3800	10.5	66.2	58.9
10	10.5	66.2	58.8
20	10.5	66.2	58.8
30	10.0	66.7	59.2
40	11.5	65.2	59.2
50	10.6	66.1	58.9
60	9.6	67.1	58.9
70	9.7	67.0	59.9
80	10.0	66.7	60.2
90	11.0	65.7	60.3
3900	11.3	65.4	60.2
10	10.6	66.1	60.1
20	11.1	65.6	60.3
30	10.2	66.5	59.4
40	10.4	66.3	59.3
50	10.7	66.0	59.0
60	10.0	66.7	59.0
70	8.8	67.9	58.8
80	9.2	67.5	58.7
90	9.1	67.6	58.5
4000	8.7	68.0	58.3



	N3420				
	576.67				
4010		9.0	567.7	59.1	
20		9.6	67.1	60.0	
30		9.5	67.2	67.8	
40		8.9	67.8	63.7	
50		4.1	72.6	63.8	
60		3.2	73.5	64.0	
70		3.8	72.9	63.8	
80		4.0	72.7	62.9	
90		4.9	71.8	64.0	
4100		5.2	71.5	66.0	
	N3430				
4100		5.1	71.6	60.6	
4090		4.3	72.4	60.2	
80		4.1	72.6	59.8	
70		3.8	72.9	59.7	
60		3.5	73.2	59.7	
50		4.2	72.5	59.6	
40		9.4	67.3	59.6	
30		10.3	66.4	58.4	
20		10.2	66.5	57.3	
10		9.6	67.1	56.3	

1531.50 ✓
~~1468.00~~

8.6 ✓
7.1 ✓
5.4 ✓
4.1 ✓
8.8 ✓
9.5 ✓
9.9 ✓
10.7 ✓
7.8 ✓
5.5 ✓ 7.95

795.00 ✓
~~693.50~~
~~2161.50~~ – N 3420
2326.50 ✓ – N 3420 ✓

(See book 388 P67)

11.0 ✓ 5.5
12.2 ✓
12.8 ✓
13.2 ✓
13.5 ✓
12.9 ✓
7.7 ✓
8.0 ✓
9.2 ✓
10.8 ✓ 6.4

~~886.50~~
1004.00 ✓

		N3430			
		576.7			
4000			9.5	567.2	55.3
3990			9.2	67.5	55.5
80			9.4	67.3	55.8
70			9.8	66.9	56.0
60			10.2	66.5	56.2
50			10.3	66.4	56.5
40			9.9	66.8	56.3
30			9.9	66.8	57.7
20			9.8	66.9	58.2
10			10.2	66.5	56.8
3900			10.7	66.0	56.8
3890			9.9	66.8	56.9
80			9.5	67.2	57.2
70			9.6	67.1	55.8
60			9.8	66.9	55.0
50			10.0	66.7	52.7
40			10.6	66.1	54.6
30			10.1	66.6	54.7
20			10.3	66.4	53.3
10			10.6	66.1	53.6
3800			10.7	66.0	53.8
3790			14.6	62.1	54.8
80			22.4	54.3	54.0

1004.00 ✓
~~886.50~~

11.9	✓	
12.0	✓	
11.5	✓	
10.9	✓	
10.3	✓	
9.9	✓	
10.5	✓	
9.1	✓	
8.7	✓	
9.7	✓	
9.2	✓	
9.9	✓	
10.0	✓	
11.3	✓	
11.9	✓	
14.0	✓	
11.5	✓	
11.9	✓	
13.1	✓	
12.5	✓	
12.2	✓	
7.3	✓	2448.50 ✓
0.3	✓ 0.1	~~2320.00~~

End Dec 22-1932
(see book 388 p 68)

~~3106.50~~ → N 3430

3452.50 → N 3430

Dec 23 - 1932

N 3440

575.6

E 4170		4.7	570.9	63.9
60		4.8	70.8	62.2
50		4.8	70.8	60.4
40		4.7	70.9	59.2
30		4.6	71.0	57.7
20		5.1	70.5	57.1
10		4.2	71.4	56.8
4100		3.3	72.3	56.9
4090		3.2	72.4	57.4
80		2.3	73.3	57.6
70		3.1	72.5	56.5
60		2.9	72.7	55.5
50		7.0	68.6	55.3
40		9.7	65.9	55.2
30		9.7	65.9	54.9
20		9.2	66.4	54.7
10		9.0	66.6	53.5
4000		8.9	66.7	52.3
3990		8.6	67.0	52.6
80		8.9	66.7	52.9
70		9.2	66.4	53.2
60		9.3	66.3	53.5

7.0	35	
8.6		
10.4		
11.7		
13.3		
13.4		
14.6		
15.4		
15.0		
15.7		
16.0		
17.2		
13.3		
10.7		
11.0		
11.7		
13.1		
14.4		
14.4		
13.8		
13.2		2768.00
12.8	64	~~2604.50~~

	3440			
	575.6			
3950		8.8	566.8	54.0
40		8.1	67.5	53.3
30		8.2	67.4	52.6
20		8.5	67.1	51.9
10		8.5	67.1	51.9
3900		8.6	67.0	51.8
3890		8.3	67.3	51.5
80		8.4	67.2	51.2
70		8.3	67.3	50.0
60		8.5	67.1	50.7
50		8.7	66.9	50.0
40		8.9	66.7	51.2
30		9.1	66.5	51.5
20		9.1	66.5	50.2
10		9.2	66.4	50.0
3800		9.7	65.9	49.6
	571.03			
790		10.9	60.1	49.8
780		17.4	53.6	49.8
770		21.4	49.6	49.5

2768.00
~~2569.50~~

12.8	
14.2	
14.8	
15.2	
15.2	
15.2	
15.8	
16.0	
17.3	
16.4	
16.9	
15.5	
15.0	
16.3	
16.4	
16.3	
10.3	
3.8	2698.00
0.0	~~2661.50~~

(See book 388 P 69)

~~5231.00~~ → N3440

5466.00 → N3440

N 3450

571.0

3780	21.6	49.4	49.1
790	15.4	55.6	49.2
3800	8.8	62.2	49.3
10	4.2	66.8	49.1
20	4.3	66.7	49.0
30	4.1	66.9	48.8
40	4.2	66.8	49.1
50	4.0	67.0	48.9
60	3.7	67.3	49.0
70	3.7	67.3	49.1
80	3.6	67.4	49.1
90	3.7	67.3	49.3
3900	3.5	67.5	49.3
10	3.4	67.6	49.6
20	3.3	67.7	49.7
30	3.1	67.9	50.2
40	3.0	68.0	51.0
50	3.4	67.6	51.3
60	4.2	66.8	51.7
70	4.5	66.5	52.0
80	4.4	66.6	52.0
90	4.4	66.6	52.5
4000	4.7	66.3	52.7

N 3360

N 3370

3780		22.1	
3790	0.3	0.15	17.9
	6.4		
	12.9		
	17.7		
	17.7		
	18.1		
	17.7		
	18.1		
	18.3		
	18.2		
	18.3		
	18.0		
	18.2		
	18.0		
	18.0		
	17.7		
	17.0		
	16.3		
	15.1		
	14.5		
	14.6		
	14.1		
	13.6	3518.50	
	6.8		

3790		22.0
3800		17.1

N3450

571.0

4010		4.5	566.5	53.3
20		4.8	66.2	53.3
30		5.1	65.9	53.6
40		5.5	65.5	53.8
50		5.5	65.5	53.8
60		4.0	67.0	54.0
70		0.8	70.2	54.5
80		0.0	71.0	55.6
90		0.2	70.8	56.1
	575.6			
4100		3.2	72.4	56.9
10		5.2	70.4	56.7
20		5.8	69.8	56.3
30		6.1	69.5	57.4
40		4.9	70.7	56.7
50		4.5	71.1	57.8
60		4.5	71.1	58.3
70		4.4	71.2	57.9

6.8 3518.50

13.2	
12.9	
12.3	
11.7	
11.7	
13.0	
15.7	
15.4	
14.7	
15.5	
13.7	
13.5	
12.1	
14.0	
13.3	
12.8	
13.3	

2289.50

(See book 388 P 69)

5808.00 → N3450

6.85

		N3460			
		571.0			
4170			1.6	569.4	53.4
60			2.4	68.6	53.1
50			0.0	71.0	52.9
40			0.3	70.7	52.6
30			3.5	67.5	53.3
20			3.5	67.5	54.2
10			5.6	65.4	52.3
4100			6.4	64.6	51.8
4090			6.0	65.0	51.6
80			5.5	65.5	51.8
70			5.4	65.6	51.6
60			5.7	65.3	51.7
50			5.9	65.1	51.6
40			5.4	65.6	51.6
30			5.0	66.0	51.4
20			4.9	66.1	51.3
10			4.7	66.3	51.2
4000			4.3	66.7	51.1
3990			4.3	66.7	51.0
80			4.2	66.8	50.6
70			3.9	67.1	50.0
60			4.1	66.9	49.7

81°		
16.0	✓	
15.5	✓	
18.1	✓	
18.1	✓	
14.2	✓	
13.8	✓	
13.1	✓	
12.8	✓	
13.4	✓	
13.7	✓	
14.0	✓	
13.6	✓	
13.5	✓	
14.1	✓	
14.6	✓	
14.8	✓	
15.1	✓	
15.6	✓	
15.7	✓	
16.2	✓	
17.1	✓	
17.2	✓	3131.00 ✓
86°		

N3460

571.0

3950	3.5	567.5	49.5
40	3.2	67.8	49.3
30	3.0	68.0	49.2
20	3.4	67.6	49.2
10	3.6	67.4	49.2
3900	3.7	67.3	49.2
3890	3.7	67.3	49.3
80	3.7	67.3	49.3
70	3.9	67.1	49.3
60	4.0	67.0	49.1
50	4.0	67.0	49.5
40	4.1	66.9	49.1
30	4.1	66.9	48.6
20	3.2	67.8	48.7
10	7.0	64.0	48.6
3800	12.5	58.5	48.6
3790	17.9	53.1	48.8
>80	22.1	48.9	48.6

8.6 3131.00

18.0	
18.5	
18.8	
18.4	
18.2	
18.1	
18.0	
18.0	
17.8	
17.9	
17.5	
17.8	
18.3	
19.1	
15.4	
9.9	
4.3	
0.3	2927.50

(See Loo 388 P 70)

6058.50 → N3460

IV3470

571.0

3790	22.0	549.0 ✓	48.8
800	17.1	53.9 ✓	48.9
10	11.5	59.5 ✓	49.0
20	9.5	61.5 ✓	49.0
30	8.5	62.5 ✓	49.1
40	7.9	63.1 ✓	49.2
50	5.4	65.6 ✓	48.9
60	4.3	66.7 ✓	49.1
70	4.0	67.0 ✓	49.1
80	3.8	67.2 ✓	49.2
90	3.8	67.2 ✓	49.3
3900	3.8	67.2 ✓	49.3
10	4.0	67.0 ✓	49.4
20	3.8	67.2 ✓	49.4
30	3.7	67.3 ✓	49.5
40	3.7	67.3 ✓	49.5
50	3.5	67.5 ✓	49.6
60	3.8	67.2 ✓	49.6
70	3.9	67.1 ✓	49.7
80	4.5	66.5 ✓	49.4
90	4.4	66.6 ✓	49.9

0.2	✓	
5.0	✓	
10.5	✓	
12.5	✓	
13.4	✓	
13.9	✓	
16.7	✓	
17.6	✓	
17.9	✓	
18.0	✓	
17.9	✓	
17.9	✓	
17.6	✓	
17.8	✓	
17.8	✓	
17.8	✓	
17.9	✓	
17.6	✓	
17.4	✓	
16.8	✓	
16.9	✓	3105.50 ✓

	3470			
	571.0			
4000		5,0	566.0 ✓	49.7
10		5.0	66.0 ✓	50.1
20		5,0	66.0 ✓	50.3
30		5,0	66.0 ✓	50.6
40		5.1	65.9 ✓	50.8
50		5.5	65.5 ✓	51.0
60		5.8	65.2 ✓	51.3
70		5.9	65.1 ✓	51.4
80		5.9	65.1 ✓	51.8
90		6,1	64.9 ✓	52.0
4100		6.1	64.9 ✓	51.7
10		6.2	64.8 ✓	52.2
20		6,1	64.9 ✓	52.2
30		5.5	65.5 ✓	52.3
40		6.0	65.0 ✓	52.1
50		7.1	63.9 ✓	52.6
60		7.0	64.0 ✓	52.2
70		7.3	63.7 ✓	52.4

8.45 3105.50 ✓

16.3	✓
15.9	✓
15.7	✓
15.4	✓
15.1	✓
14.5	✓
13.9	✓
13.7	✓
13.3	✓
12.9	✓
13.2	✓
12.6	✓
12.7	✓
13.2	✓
12.9	✓
11.3	✓
11.8	✓
11.3	✓

2485.00 ✓ (See book 388 P 70)

5590.50 ✓ → N 3470

N3480

571.0

4270	in outflow channel U.S.G.	22.5	48.5 ✓	54.0
60		17.3	53.7 ✓	53.7
50		13.8	57.2 ✓	53.8
40		13.0	58.0 ✓	52.4
30		12.3	58.7 ✓	53.0
20		11.6	59.4 ✓	53.1
10		10.8	60.2 ✓	53.4
4200		10.2	60.8 ✓	52.8
4190		9.8	61.2 ✓	53.3
80		9.4	61.6 ✓	52.9
70		8.9	62.1 ✓	52.7
60		8.3	62.7 ✓	51.7
50		7.7	63.3 ✓	52.0
40		7.2	63.8 ✓	52.1
30		7.0	64.0 ✓	51.9
20		6.8	64.2 ✓	51.5
10		6.7	64.3 ✓	51.2
4100		6.6	64.4 ✓	51.2
4090		6.4	64.6 ✓	51.0
80		6.1	64.9 ✓	50.9
70		5.8	65.2 ✓	50.9

0.0	
3.4	✓
5.6	✓
5.7	✓
6.3	✓
6.8	✓
8.0	✓
7.9	✓
8.7	✓
9.4	✓
11.0	✓
11.3	✓
11.7	✓
12.1	✓
12.7	✓
13.1	✓
13.2	✓
13.6	✓
14.0	✓
14.3	✓

1816.50 ✓

N3480

	571.0			
4060		5.4	565.6 ✓	50.9
50		5.2	658 ✓	50.6
40		5.6	65.4 ✓	50.2
30		5.4	65.6 ✓	49.9
20		5.4	65.6 ✓	49.9
10		5.0	66.0 ✓	49.8
4000		4.9	66.1 ✓	49.7
	570.3			
3990		4.0	66.3 ✓	49.6
80		4.0	66.3 ✓	49.5
70		3.8	66.5 ✓	49.4
60		3.5	66.8 ✓	49.3
50		3.5	66.8 ✓	49.2
40		3.6	66.7 ✓	49.2
30		3.2	67.1 ✓	49.1
20		3.5	66.8 ✓	49.1
10		3.5	66.8 ✓	49.1
3900		3.5	66.8 ✓	49.0
3890		4.7	65.6 ✓	49.0
80		8.1	62.2 ✓	48.9
70		7.9	60.4 ✓	48.9
60		10.8	59.5 ✓	48.8

7.15 1816.50 ✓

14.7	✓
15.2	✓
15.2	✓
15.7	✓
15.7	✓
16.2	✓
16.4	✓
16.7	✓
16.8	✓
17.1	✓
17.5	✓
17.6	✓
17.5	✓
18.0	✓
17.7	✓
17.7	✓
17.8	✓
16.6	✓
13.3	✓
11.5	✓
10.7	✓

End Dec 23 - 1932
Start Dec 24 - 1932

3374.00 ✓

5190.50 ✓

	3480			
	570.3			
3850		13.0	557.3 ✓	49.0
40		14.0	56.3 ✓	49.0
30		15.1	55.2 ✓	49.2
20		16.4	53.9 ✓	49.1
10		17.0	53.3 ✓	49.0
3800		21.3	49.0 ✓	48.9
	N3490			
3800		21.3	49.0 ✓	49.0
10		17.7	52.6 ✓	49.1
20		21.3	49.0 ✓	49.2
30		21.4	48.9 ✓	49.2
40		21.1	49.2 ✓	48.4
50		18.4	51.9 ✓	48.7
60		17.8	52.5 ✓	49.0
70		17.3	53.0 ✓	48.8
80		14.0	56.3 ✓	49.0
90		12.0	58.3 ✓	49.1
3900		10.8	59.5 ✓	49.0

5 35 5190.50 ✓

8.3	✓
7.3	✓
6.0	✓
4.8	✓
4.3	✓
0.1	✓

361.00 ✓

5551.50 — N3480

0.0	✓
3.5	✓
−0.2	✓
−0.3	✓
0.8	✓
3.2	✓
3.5	✓
4.2	✓
7.3	✓
9.2	✓
10.5	✓

16.54 ✓ 0.05 ✓

2.50 ✓

2.89 ✓ 0.41 ✓

330.50 ✓

349.93 ✓ 2.96 ✓

N3490

570.3

3910	10.6	559.7 ✓	49.0
20	8.5	61.8 ✓	49.1
30	7.8	62.5 ✓	49.1
40	6.9	63.4 ✓	49.2
50	6.3	64.0 ✓	49.2
60	4.5	65.8 ✓	49.2
70	3.5	66.8 ✓	49.2
80	4.2	66.1 ✓	49.3
90	4.3	66.0 ✓	49.4
4000	4.4	65.9 ✓	49.4
10	4.3	66.0 ✓	49.5
20	4.5	65.8 ✓	49.6
30	4.6	65.7 ✓	49.7
40	4.8	65.5 ✓	49.8
50	5.0	65.3 ✓	49.9
60	5.4	64.9 ✓	50.1
70	5.3	65.0 ✓	50.1
80	5.4	64.9 ✓	50.4
90	5.6	64.7 ✓	50.5
4100	5.9	64.4 ✓	50.7

5.25 349.93 ✓ 2.96 ✓

10.7	✓
12.7	✓
13.4	✓
14.2	✓
14.8	✓
16.6	✓
17.6	✓
16.8	✓
16.6	✓
16.5	✓
~~16.5~~ ~~15.5~~	
16.2	
16.0	
15.7	
15.4	
14.8	
14.9	
14.3	
14.2	3002 ✓
13.7	~~2992.00~~

~~3341.93~~ 2.96
3351.93 ✓

	N3490			
	570.3			
4110		6.4	563.9 ✓	51.0
20		6.4	63.9 ✓	51.4
30		6.3	64.0 ✓	51.4
40		6.7	63.6 ✓	51.6
50		7.5	62.8 ✓	51.5
60		8.1	62.2 ✓	52.1
70		8.6	61.7 ✓	52.5
80		8.9	61.4 ✓	52.5
90		9.3	61.0 ✓	52.3
4200		9.7	60.6 ✓	52.4
210		10.2	60.1 ✓	52.5
220		11.0	59.3 ✓	52.4
30		11.6	58.7 ✓	52.4
40		12.4	57.9 ✓	52.4
50		19.4	50.9 ✓	52.6
	N3500			
4240		20.2	50.1 ✓	52.8
230		18.4	51.9 ✓	52.8
20		12.1	58.2 ✓	52.7
10		10.6	59.7 ✓	52.4
200		10.0	60.3 ✓	52.4
190		9.5	60.8 ✓	52.1
80		9.0	61.3 ✓	52.1
70		8.4	61.9 ✓	51.8

6.85 3351.93 ✓ 2.96 ✓
3341.93 Cut Area 0'

12.9
12.5
12.6
12.0
11.3
10.1
9.2
8.9
8.1
8.2
7.6
6.9
6.3
5.5
-1.7
=3.7
-1.7
=0.8
-1.9
5.5'
7.3'
7.9'
8.7'
9.2'
10.1'

1368.00 ✓
20.98 ✓ 1.40
4740.91 4.36 ✓
4.36 ✓
4736.55 ✓ — N 3490
18.0
18.5

~~20.46~~ ~~2.43~~
23.40 - 0.70

409.00 ✓
~~429.46~~ ~~20.93~~
432.40 ✓ 18.70 ✓

IV3500

570.3

4160		8.0	562.3	51.4
50		7.5	628	51.6
40		6.9	634	51.4
30		6.9	634	50.8
20		6.5	638	50.8
10		6.5	638	50.8
4100		6.3	640	50.9
4090		5.8	645	50.2
80		5.0	653	50.1
70		4.8	655	50.2
60		4.6	657	50.2
50		4.7	656	49.7
40		4.0	663	49.6
30		4.0	663	49.6
20		5.5	648	49.6
10		8.6	617	49.5
4000		8.5	618	49.4
3990		9.8	605	49.4
80		9.5	608	49.3
70		9.8	605	49.0
60		11.7	586	49.2
50		13.4	569	49.1

5.05 432.40 18.70

10.9		
11.9		
11.2		
12.0		
12.6		
13.0		
13.0		
13.1		
14.3		
15.2		
15.3		
15.5		
15.9		
16.7		
16.7		
15.2		
12.2		
12.4		
11.1		
11.5		
11.5		
9.4	2876.50	
7.8	2886.50	
	3315.96	20.93
	3308.90	18.70

N 3500

570.3

3940		15.2	555.1 ✓	49.2
30		15.5	54.8 ✓	48.9
20		17.2	~~52.1~~ 53.1	49.0
10		19.7	50.6 ✓	49.1
3900		21.8	48.5 ✓	49.2
3890		20.6	49.7 ✓	49.1
880		22.6	47.7 ✓	49.0

N3510

3950		22.7	47.6 ✓	48.9
60		20.0	50.3 ✓	49.1
70		18.1	52.2 ✓	49.1
80		17.2	53.1 ✓	48.9
90		17.0	53.3 ✓	49.2
4000		15.9	54.4 ✓	49.6
10		14.8	55.5 ✓	49.7
20		12.8	57.5 ✓	49.8
30		11.5	58.8 ✓	49.8
40		10.2	60.1 ✓	49.8
50		9.1	61.2 ✓	49.8

3.9 ✓ Fill Area □' Cut Area □'

1: ~~3915.96~~ 20.93

3308.90

5.9 ✓

5.9 ✓

4.1 ✓

1.5 ✓

205.50 ✓

1.11 ✓

−0.7 ✓ 5.10 ✓

0.6 ✓ ~~1.88~~ ~~1.38~~

1.40 2.20

0.94 ✓ 4.45 ✓

−1.3 ✓

3521.84 ~~3529.38~~ ~~27.87~~ 28.69

28.69 ~~27.87~~

3493.15 ~~3501.51~~ → N 3500

0.0

1.2 ✓

3.1 ✓

4.2 ✓

4.1 ✓

559.0

4.8 ✓

5.8 ✓

7.7 ✓

9.0 ✓

10.3 ✓

11.4 ✓

N3510

570.3

4060		7.9	62.4	50.2
70		5.9	64.4	50.2
80		4.6	65.7	50.3
90		4.8	65.5	50.3
100		5.3	65.0	50.4
10		5.8	64.5	50.3
20		6.2	64.1	50.3
30		6.5	63.8	50.4
40		6.9	63.4	50.4
50		7.3	63.0	50.2
60		7.7	62.6	50.7
70		8.3	62.0	50.5
80		8.9	61.4	50.6
90		9.4	60.9	51.3
200		10.1	60.2	51.6
10		17.1	53.2	52.2
20		21.0	49.3	52.2
	N3520			
	570.3			
4200		21.2	49.1	50.7
190		16.7	53.6	50.4
80		12.1	58.2	50.7

559.0

5.7 Fill Area □'

12.2
14.2
15.4
15.2
14.6
14.2
13.8
13.4
13.0
12.8
~~13.2~~

1979.0

11.9
11.5
10.8
9.6
8.6
1.0
0.0

2538.00
~~2542.00~~ → N3510

0.0
3.2
7.5

69.50

	N3520			
	570.3			
4170		8.0	562.3	50.7
60		8.1	62.2	50.6
50		7.7	62.6	50.5
40		7.9	62.4	50.5
30		7.4	62.9	50.4
20		8.6	61.7	50.5
10		9.4	60.9	50.4
100		10.4	59.9	50.4
090		10.8	59.5	50.1
080		11.7	58.6	50.3
070		13.3	57.0	50.2
060		15.3	55.0	50.1
050		17.3	53.0	49.7
040		17.9	52.4	49.4
030		20.4	49.9	49.3
	N3530			
4050		22.3	48.0 ~~47.0~~	49.9
060		20.6	49.7	50.4
070		20.5	49.8	50.4
080		20.9	49.4	50.4
090		19.9	50.4	50.5

69.50

3.75 Fill Area □' Cut Area □'

11.6		
11.6		
12.1		
11.9		
12.5		
11.2		
10.5		
9.5		
9.4	1306.5	
8.3		
6.8		
4.9		
3.3		
3.0	1376.00 → N3520	
0.6		
- 1.9		
- 0.7		
- 0.6		33.00
- 1.0		~~29.90~~
- 0.1	2.58	~~.07~~

N 3530

570.3

			51.1	
4100		19.2	50.1	50.5
110		18.7	51.6	50.6
120		16.2	54.1	50.4
130		16.3	54.0	50.6
140		15.2	55.1	50.6
150		14.6	55.7	50.6
160		14.0	56.3	50.8
170		18.2	52.1	50.9
4180		20.0	50.3	50.8

556.0

No Spool

4300		4.6	51.4	51.1
10		4.6	51.4	52.3
20		4.4	51.6	52.2
30		5.2	50.8	52.3

Elliott T-Notes 25
Soper - Rod.
Remmen - Ch.

B.M. 563.33
+ 1.68
565.01
- 11.81
553.20
+ 2.80
556.00

2.57

33.00
~~29.97~~ (Bef. Fwd.)

0.6
1.0
3.7
3.4
4.5
5.1
5.5
1.2
1.3
0.0

247
~~248.00~~

End Dec 24
Start Dec 27

0.3
-0.9
-0.6
-1.7

0.37

3.37

19.00
~~16.30~~

~~250.94~~
249.94

~~49.64~~
55.37

N3530

556.0

4340		6.6	549.4	49.5
50		6.9	49.1	49.0
60		6.8	49.2	49.0
70		6.2	49.8	49.4
80		7.2	48.8	49.5
85		12.9	43.1	43.0

N3540

		7.9		
		-.1		
4385		7.9	46.1	41.7
80		6.9	50.1	41.4
70		5.4	50.6	41.1
60		3.2	52.8	41.4
50		3.6	52.4	44.7
40		6.3	49.7	51.4
30		5.6	50.4	51.3
20		3.8	52.2	51.3
10		1.7	54.3	51.4
4300		3.6	52.4	51.5

Fill Area

Cut Area □'

- 0.05	249.94	55.37
	~~250.94~~	~~49.66~~
		~~6.30~~
-0.1 ✓		4.50 ✓
0.1 ✓	0.25 ✓	0.25 ✓
0.2 ✓		
0.4 ✓	4.50 ✓	
-0.7 ✓	0.73 ✓	2.22 ✓
0.1 ✓	0.06 ✓	3.06 ✓
	~~0.05~~	~~1.64~~
	~~255.48~~	
	~~256.42~~	~~60.05~~
	~~60.05~~	65.40
	65.40	
	~~196.37~~	→ N3530
	190.08	
4.4 ✓	32.75 ✓	
8.7 ✓	~~33.25~~	
9.5 ✓		
11.4 ✓		
7.7 ✓	291.00 ✓	
	~~32.00~~ ✓	1.53 ✓
	~~31.53~~	~~1.05~~
-1.7 ✓		13.00 ✓
-0.9 ✓	2.25 ✓	2.25 ✓
0.9 ✓		
2.9 ✓		
0.9 ✓	~~38.00~~	
	~~.08~~	~~16.30~~
	~~396.03~~	16.98
	~~16.30~~	
	~~16.98~~	
	~~379.73~~	→ N3540
	379.22	

	N3550				
	556.0				
4385		12.2	43.8 ✓	41.5	
80		6.8	49.2 ✓	41.3	
70		3.5	52.5 ✓	41.6	
60		2.2	53.8 ✓	42.0	
50		3.8	52.2 ✓	43.5	
40		6.0	50.0 ✓	48.0	
30		5.0	51.0 ✓	50.9	
20		4.5	51.5 ✓	51.5	
10		3.8	52.2 ✓	51.4	
4300		1.8	54.2 ✓	51.2	
3290		4.8	51.2 ✓	51.2	
			orig.		
4280		4.2	51.8 ✓	51.1	
	577.75				
Original Ground					
			0.6		
3870		23.8	53.9 ✓	50.8	
60		19.1	58.6 ✓	50.4	
50		19.6	58.1 ✓	50.3	
40		20.8	56.9 ✓	50.3	
30		19.8	57.9 ✓	49.9	
20		19.0	58.7 ✓	49.7	
10		19.0	58.7 ✓	50.4	
3800		17.5	60.2 ✓	49.8	
3790		20.6	57.1 ✓	49.8	
780		23.0	54.7 ✓	50.0	
70		24.3	53.4 ✓	50.6	
60		28.9	orig. Gr.	50.2	

Fill Area □'	Cut Area □'
2.3 ✓	25.5 ✓
7.9 ✓	
10.9 ✓	
11.8 ✓	
8.7 ✓	
2.0 ✓	
0.1 ✓	
0.0 ✓	
0.8 ✓	
3.0 ✓	
0.0 ✓	
0.0 ✓	412.50 ✓
3.1 ✓	
8.2 ✓	
7.8 ✓	
6.6 ✓	
8.0 ✓	
9.0 ✓	
8.3 ✓	
10.4 ✓	
7.3 ✓	
4.7 ✓	
2.8 ✓	
0.0	746.50 ✓
	1184.50 ✓ → N3550

N3560

556.0

4385		11.0	545.0 ✓	41.5
80		8.3	47.7 ✓	41.4
70		2.4	53.6 ✓	41.5
60		4.4	51.6 ✓	42.2
50		5.6	50.4 ✓	42.6
40		5.6	50.4 ✓	48.0
30		5.7	50.3 ✓	50.1
20		4.2	51.8 ✓	51.3
10		3.3	52.7 ✓	51.2
4300		2.4	53.6 ✓	51.3
4290		2.7	53.3 ✓	51.3
4280		Original Ground		51.3
	577.75			
Original Ground ↑				
3880 ↓		25.0	0.6 52.7 ✓	51.2

Fill Area

3.5 ✓	24.5 ✓
6.3 ✓	
12.1 ✓	
9.4 ✓	
7.8 ✓	
2.4 ✓	
0.2 ✓	
0.5 ✓	
1.5 ✓	
2.3 ✓	
2.0 ✓	
0.0	413.50 ✓
	438.0 ✓
0.0	

N3560

577.75

3870	18.1	559.6 ✓	51.2
860	15.0	62.7 ✓	51.3
850	14.3	63.4 ✓	51.3
40	15.1	62.6 ✓	51.6
30	14.4	63.3 ✓	51.2
20	14.5	63.2 ✓	50.9
10	15.7	62.0 ✓	51.2
3800	15.0	62.7 ✓	51.3
790	17.4	60.3 ✓	51.5
80	18.6	59.1 ✓	51.4
70	19.2	58.5 ✓	51.3
60	20.2	57.5 ✓	50.9
50	24.1	53.6 ✓	50.7
40	28.0	orig. Gr 49.7 ✓	51.3

complete

24.50 ✓
413.50
438.00 ✓

8.4 ✓	
11.4 ✓	
12.1 ✓	
11.0 ✓	
12.1 ✓	
12.3 ✓	
10.8 ✓	1427.0 ✓
11.4 ✓	
8.8 ✓	
7.7 ✓	
7.2 ✓	
6.6 ✓	
2.9 ✓	
0.0	1640.50

1665.00 ✓ – N 3560

N3570

556.00

4385	10.2	545.8	41.2
80	6.6	49.4	41.1
70	5.7	50.3	41.3
60	4.8	51.2	41.8
50	5.3	50.7	42.0
40	7.2	48.8	46.8
30	6.2	49.8	51.0
20	4.9	51.1	51.5
10	1.8	54.2	51.5
4300	2.4	53.6	51.5
290	2.2	53.8	51.4
280	2.1	53.9	51.3
270	0.0	56.0	51.1
260	0.0	56.0	51.1
250	3.0	53.0	51.1

Original Ground

Fill Area ☐' Cut Area ☐'

4.6			
8.3	32.25		
9.0			
9.4			
8.7			
7.0	322.50		
-1.2	6.25	2.25	
-0.4		8.00	
2.7	11.74	0.26	
2.1			
2.4			
2.6			
4.9			
4.9			
1.9			
0.0	201.50		
		10.51	
	574.24		

N3570

577.75

3890	0.6		52.4
80	20.2	557.5 ✓	52.0
70	16.7	61.0 ✓	53.8
60	13.1	64.6 ✓	54.0
50	9.4	68.3 ✓	53.7
40	8.9	68.8 ✓	54.6
30	8.4	69.3 ✓	54.6
20	8.7	69.0 ✓	55.8
10	8.5	69.2 ✓	55.4
3800	9.0	68.7 ✓	53.6
3790	11.9	65.8 ✓	53.0
80	14.2	63.5 ✓	53.6
70	16.4	61.3 ✓	53.1
60	17.2	60.5 ✓	50.0
50	18.5	59.2 ✓	54.3
40	20.3	57.4 ✓	55.7
30	22.1	55.6 ✓	56.3
20	23.9	53.8 ✓	52.3
3710	25.7	0.6 52.0 ✓	50.8

Complete

4/7.2
18

574.24 ✓ 10.51 ✓

0.0	
5.5 ✓	
7.2 ✓	
10.6 ✓	
14.6 ✓	
14.2 ✓	
14.7 ✓	
13.2 ✓	
13.8 ✓	
15.1 ✓	
12.8 ✓	
9.9 ✓	
8.2 ✓	
10.5 ✓	
4.9 ✓	
1.7 ✓	
−0.7	
0.0	
1.5 ✓	
0.0	

4.02 ✓ 1.02 ✓
5.12 ✓ 1.11 ✓
7.50 ✓
~~1584.00~~
1560.50 12.64 ✓
2153.38
~~2158.24~~
~~10.51~~
~~2147.73~~ → N 3570
12.64
2140.74

N3580

556.0

4385	11.1	44.9	42.3	2.6
80	7.7	48.3	42.5	5.8
70	4.8	51.2	42.0	9.2
60	4.9	51.1	42.4	8.7
50	4.5	51.5	43.6	7.9
40	10.3	45.7	48.0	−2.3
30	9.7	46.8	50.6	−4.3
20	9.1	46.9	51.5	−4.6
10	4.9	51.1	51.5	−0.4
4300	2.3	53.7	51.4	2.3
4290	2.0	54.0	51.3	2.7
80	2.0	54.0	51.4	2.6
70	2.0	54.0	51.4	2.6
60	2.0	54.0	51.3	2.7
50	1.0	55.0	51.3	3.7
40	1.1	54.9	51.1	3.8
30	1.5	54.5	51.6	3.5
20	3.6	52.4	51.1	1.3
10	5.4	50.6	50.8	0.0

Original Ground ↑

21.0 ✓

247.50 ✓

30.57 2.60

102.50

9.80 0.30

240.50 ✓

549.37 ✓ 105.40 ✓

N3580

589.45

			orig. Ground		
3910					53.1
3900			31.6	57.8	53.9
3890			28.1	61.3	53.6
80			26.0	63.4	53.2
70			21.2	68.2	53.8
60			17.1	72.3	53.4
50			13.5	75.9	53.6
40			12.6	76.8	53.6
30			12.0	77.4	53.7
20			12.6	76.8	53.6
10			12.2	77.2	54.1
3800			12.8	76.6	53.9
T.P.	0.56	577.75	12.26	577.19	
3790			3.7	74.0	53.3
80			6.2	71.5	53.5
70			8.0	69.7	53.1
60			8.1	69.6	52.9
50			10.4	67.3	52.9
40				63.4	52.9
20	interpolate			55.6	52.3
3712	N.G.			52.4	52.4 Toe

Fill ☐' Cut ☐'

549.37 ✓ 105.40 ✓

0.0	
3.9 ✓	
7.7 ✓	
10.2 ✓	
14.4 ✓	
18.9 ✓	
22.3 ✓	
23.2 ✓	
23.7 ✓	
23.2 ✓	
23.1 ✓	
22.7 ✓	
20.7 ✓	
18.0 ✓	
16.6 ✓	
16.7 ✓	
14.4 ✓	
10.5 ✓	
3.3 ✓	
0.0	

2849.50
2725.00
124.50 ✓
138.00 ✓
13.20 ✓
~~216.50~~

3675.57
~~3569.37~~
105.40

~~3468.97~~ → N 3580
3570.17

N3590

556.00

43 80	10.8	45.2	42.9
70	4.6	51.4	42.3
60	3.6	52.4	43.2
50	4.5	51.5	46.8
40	5.5	50.5	51.4
30	6.6	49.4	51.7
20	8.1	47.9	51.7
10	4.5	51.5	51.5
4300	4.1	51.9	51.5
290	1.2	54.8	51.5
280	1.8	54.2	51.4
270	1.7	54.3	51.3
260	1.5	54.5	51.3
250	1.5	54.5	51.2
240	1.2	54.8	51.2
230	2.0	54.0	51.0
220	2.3	53.7	51.0
210	1.7	54.3	50.8
200	0.7	55.3	51.2
190	original Ground		51.4

Fill Area □' Cut Area □'

2.3 1.15
9.1
9.2
4.7
−0.9
−2.3
−3.8
0.0
0.4
3.3
2.8
3.0
3.2
3.3
3.6
3.0
2.7
3.5
4.1
0.0

218.00
19.71 · 0.72
65.50
329.00
566.71 · 66.22

N3590

35

← Origin

3920	587.2	original Ground	54.3	0.0
10		29.2	58.0 ✓ 54.4	3.6 ✓
3900		24.1	63.1 ✓ 54.6	8.5 ✓
3890		20.0	67.2 ✓ 54.4	12.8 ✓
80		16.0	71.2 ✓ 54.0	17.2 ✓
70		13.8	73.4 ✓ 54.1	19.3 ✓
	589.4			
60		11.8	77.6 ✓ 54.3	23.3 ✓
50		7.0	82.4 ✓ 55.1	27.3 ✓
40		4.4	85.0 ✓ 55.0	30.0 ✓
30		4.0	85.4 ✓ 55.0	30.4 ✓
20		4.2	85.2 ✓ 53.6	31.6 ✓
10		3.8	85.6 ✓ 53.3	32.3 ✓
3800		5.1	84.3 ✓ 53.3	31.0 ✓

5766.71 ✓ 66.22 ✓

2518.00 ✓

3084.71 ✓

N3590

589.4

3290			7.9	81.5	53.5
80			11.5	77.9	53.5
70			11.6	77.8	55.0
60			12.5	76.9	54.1
40				69.7	53.3
20				62.5	53.2
3695	N.G			53.3	Toe 53.3

15.5

28.0

24.4

22.8

22.5

16.4

9.3

0.0

3084.71 66.22

1019.50

389.00

257.00

116.25

4866.46

66.22

4800.24 → N 3590

	3600			
	556.00			
4380		11.0	45.0 ✓	43.2
70		7.3	48.7 ✓	42.7
60		3.9	52.1 ✓	43.5
50		3.5	52.5 ✓	47.1
40		4.1	51.9 ✓	51.7
30		4.1	51.9 ✓	51.8
20		7.7	48.3 ✓	51.6
10		4.6	51.4 ✓	51.5
4300		4.2	51.8 ✓	51.3
290		3.7	52.3 ✓	51.2
80		2.4	53.6 ✓	51.0
70		1.6	54.4 ✓	51.1
60		1.4	54.6 ✓	51.1
50		0.8	55.2 ✓	51.1
	566.0			
40		11.0	55.0 ✓	51.1
30		10.0	56.0 ✓	51.1
20		8.3	57.7 ✓	51.3
10		8.3	57.7 ✓	51.8
4200		8.3	57.7 ✓	51.9
190		8.4	57.6 ✓	51.5
180		11.9	54.1 ✓	51.8

1.8 ✓
6.0 ✓
8.6 ✓
5.4 ✓
0.2 ✓
0.1 ✓
−3.3 ✓
−0.1 ✓
0.5 ✓
1.1 ✓
2.6 ✓
3.3 ✓
3.5 ✓
4.1 ✓
3.9 ✓
4.9 ✓
6.4 ✓
5.9 ✓
5.8 ✓
6.1 ✓
2.3 ✓

211.5
~~208.4~~

0.01 ✓ 16.00 ✓
17.0 ✓
2.08 ✓ .08 ✓

490.00 ✓

~~700.48~~ ~~17.08~~
703.59 33.08

N3600

566.0

4170		13.2	52.8 ✓	52.2
4160		13.0	53.0 ✓	52.3
4040		12.4	53.6 ✓	52.9
	575.1			
4030		20.7	54.4 ✓	52.2
20		21.0	54.1 ✓	52.1
10		19.8	55.3 ✓	53.1
4000		19.1	56.0 ✓	53.3
3990		18.5	56.6 ✓	53.4

Original Ground

703.59 ✓ 33.08 ✓

~~760.48~~ ~~17.08~~

1.15 ✓

0.6 ✓

0.7 ✓

24.50 ✓

0.0

00

0.7 ✓

2.2 ✓

2.0 ✓

2.2 ✓

2.7 ✓

3.2 ✓

114.00 ✓

~~838.98~~ ~~17.08~~

842.09 ✓ 33.08 ✓

N3600

575.13

3980			18.5	56.6 ✓	54.3
70			17.9	57.2 ✓	53.4
60			17.6	57.5 ✓	54.1
50			17.0	58.1 ✓	54.3
40			17.0	58.1 ✓	54.7
30			15.7	59.4 ✓	54.7
20			15.3	59.8 ✓	54.7
10			13.1	62.0 ✓	55.3
3900			5.8	69.3 ✓	55.2
3890			0.8	74.8 ✓	55.3
T.P.	12.50	587.19 ✓	0.44	574.69 ✓	
80			8.7	78.5 ✓	55.0
70			6.3	80.9 ✓	54.9
60			3.3	83.9 ✓	55.1
50			0.3	86.9 ✓	54.6
40			+0.1	87.3 ✓	55.3
30			0.3	86.9 ✓	56.0
20			0.2	87.0 ✓	55.6
10			0.3	86.9 ✓	55.6
3800			+1.7	88.9 ✓	54.5

842.09 ~~4056.98~~ 33.08 ~~17.08~~

1.6 ✓		
2.3 ✓		
3.8 ✓		
3.4 ✓		
3.8 ✓		
3.4 ✓		
4.7 ✓		
5.1 ✓		
6.7 ✓		
14.1 ✓		
19.5 ✓		
23.5 ✓		
26.0 ✓		
28.8 ✓		
32.3 ✓		
32.0 ✓		
30.9 ✓		
31.4 ✓		
31.3 ✓		
34.4 ✓	3218.00 ✓	
	~~4056.98~~	~~17.08~~
	4060.09	33.08

N3600

587.19

3790		+1.7	88.9	53.6
80		1.6	85.6	53.4
70		2.0	85.2	52.6
60		2.0	85.2	54.0
40			77.4	53.2
20	interpolate		69.6	54.3
700			61.8	54.4
680	N.G.		54.0	Toe 54.0

17.2

4060.09 ~~4056.98~~

33.08 ~~17.08~~

35.3
32.2
32.6
31.2
24.2
15.3
7.4
0.0

1329.00

~~11.76.00~~
1350.00

6739.09

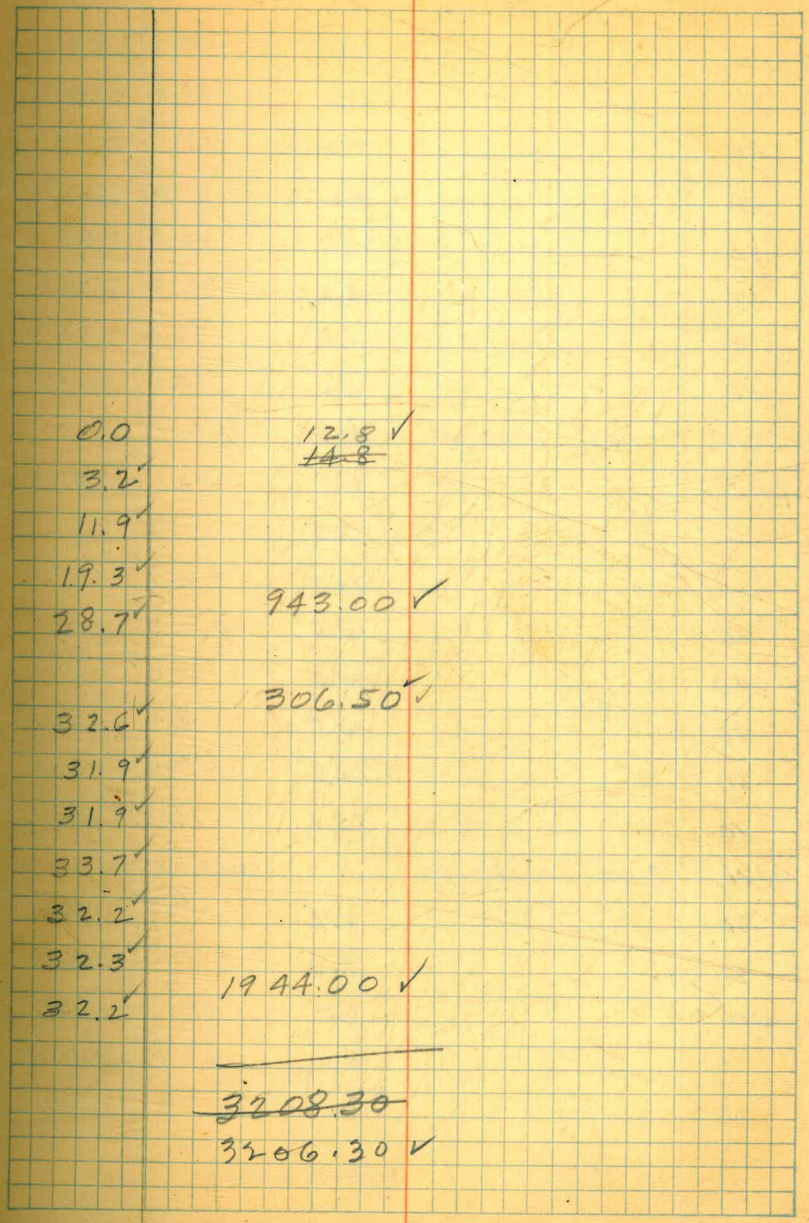
~~6561.98~~
~~17.08~~

~~6544.90~~ ← N3600

33.08

6706.01

~~B.M.~~	~~3.86~~	~~591.67~~		~~56.7~~	
3672	N.G.			56.7	Toe 56.7
680				59.9	56.7
700		interpolate		67.9	56.0
720				75.9	56.6
740				83.9	55.2
B.M.	3.86	591.67		582.81	
3750			3.7	88.0 ✓	55.4
60			3.6	88.1 ✓	56.2
70			4.5	87.2 ✓	55.3
80			4.4	87.3 ✓	53.6
90			4.5	87.2 ✓	55.0
3800			4.6	87.1 ✓	54.8
10			4.5	87.2 ✓	55.0



		N3610			
		591.67			
3820			4.5	87.2	54.6
30			4.5	87.2	54.3
40			4.6	87.1	54.7
50			4.5	87.2	55.2
60			5.0	86.7	55.1
70			5.2	86.5	55.2
80			6.7	85.0	55.2
90			11.6	80.1	54.9
T.P.	1.03	580.14	12.56	579.11	
3900			6.0	74.1	55.4
10			12.5	67.6	55.7
20			13.4	66.7	55.9
30			13.6	66.5	55.9
40			14.5	65.6	55.7
50			15.0	65.1	55.3
60			15.5	64.6	55.5
70			15.6	64.5	55.7
B.M.	3.32	569.05		565.73	
80			4.3	64.7	55.5
90			5.3	63.7	56.0
4000			6.0	63.0	56.6
10			6.6	62.4	56.0
20			7.7	61.3	55.8

3706.30 ✓
~~3708.30~~

16.1	
32.6	
32.9	
32.4	
32.0	
31.6	
31.3	
29.8	
25.2	
18.7	
11.9	
10.8	
10.6	
9.9	
9.8	
9.1	
8.8	
9.2	
7.7	
6.4	
6.4	
5.5	

3859.50 ✓

~~7967.80~~
7065.80 ✓

		N3610 569.05			
4030			8.6	60.4	55.2
40			9.3	59.7	55.8
50			10.7	58.3	56.0
60			12.0	57.0	55.1
70			12.2	56.8	55.0
80				O.G.	
90					
4100					
10					
20					
30					
40					
50					
60					
				O.G.	
70			15.3	53.7	52.8
80			13.5	55.5	52.1
90			12.8	56.2	52.8
4200			11.1	57.9	52.4
10			10.3	58.7	52.0
20			10.8	58.2	52.2
30			11.9	57.1	52.4
40			12.8	56.2	52.0
T. P.	0.23	556.76	12.52	556.53	

Original Ground

2 7.5
5.2
3.9
2.3
1.9
1.8
0.0

7065.80
~~7069.80~~

178.50

0.0
0.9
3.4
3.4
5.5
6.7
6.0
4.7
4.2

327.00

~~7578.30~~
7571.30

N3610

556.76

4250		1.3	55.5	51.4
60		2.0	54.8	51.1
70		3.1	53.7	51.2
80		4.0	52.8	51.4
90		4.7	52.1	51.5
300		5.1	51.7	51.5
10		5.9	50.9	51.5
20		7.7	49.1	51.6
30		5.8	51.0	51.8
40		5.0	51.8	51.7
50		4.6	52.2	48.3
60		4.0	52.8	43.8
70		3.9	52.9	43.0
80		5.3	51.5	43.2
4390		11.2	45.6	43.0

2.1

4.1

3.7

2.5

1.4

0.6

0.2

-0.6

-2.5

-0.8

+0.1

3.9

9.0

9.9

8.3

2.6

7571.30

~~7573.30~~

145.00

0.25

~~0.75~~

2.25

32.00

0.05

19.01

36.50

3.55

324.50

~~304.50~~

~~8042.76~~

8041.10

~~38.75~~

~~38.75~~

37.80

~~8004.01~~ ← N 3610

37.80

8003.30

N362.0

556.76

4395			14.1	42.7 ✓	43.3
90			8.2	48.6 ✓	43.3
80			3.9	52.9 ✓	44.2
70			3.7	53.1 ✓	43.8
60			3.8	53.0 ✓	45.2
50			4.5	52.3 ✓	47.5
40			5.3	51.5 ✓	51.6
30			5.7	51.1 ✓	51.6
20			6.4	50.4 ✓	51.7
10			6.4	50.4 ✓	51.7
4300			6.7	51.1 ✓	51.4
4290			5.2	51.6 ✓	51.4
80			3.6	53.2 ✓	51.8
70			3.1	53.7 ✓	52.4
60			2.0	54.8 ✓	52.7
50			1.1	55.7 ✓	52.8
	12.35	568.88 ✓	0.23	556.53 ✓	
40			12.6	56.3 ✓	53.2
30			11.4	57.5 ✓	53.1
20			10.3	58.6 ✓	53.6
10			10.2	58.7 ✓	53.8

0.0
5.3 ✓
8.7 ✓
9.3 ✓
7.8 ✓
4.8 ✓
-0.1 ✓
-0.5 ✓
-1.3 ✓
-1.3 ✓
-0.3 ✓
0.2 ✓
1.4 ✓
1.3 ✓
2.1 ✓
2.9 ✓
3.1 ✓
4.4 ✓
5.0 ✓
4.9 ✓

13.25 ✓

308.50 ✓
23.52 ✓
~~2.35~~

0.0 1 ✓

0.40 ✓

33.00 ✓
0.90 ✓

227.50
~~232.50~~

~~557.00~~ 339.0 ✓
573.17 ✓

		3620			
		568.88			
4200			11.1	57.8 ✓	54.1
190			12.5	56.4 ✓	54.2
180			13.4	55.5 ✓	54.0
170			13.4	55.5 ✓	54.0
60			13.8	55.1 ✓	54.7
50			13.2	55.7 ✓	55.6
40			12.7	56.2 ✓	56.1
30			11.9	57.0 ✓	56.7
20			10.8	58.1 ✓	57.2
10			9.9	59.0 ✓	56.8
4100			9.2	59.7 ✓	57.0
4090			7.5	61.4 ✓	56.5
80			6.7	62.2 ✓	57.7
70			6.0	62.9 ✓	57.7
60			4.5	64.4 ✓	57.6
50			3.1	65.8 ✓	58.0
40			1.8	67.1 ✓	57.5
30			0.0	68.9 ✓	57.3
T.P.	11.76	580.10	0.54	568.34 ✓	
20			11.1	69.0 ✓	57.0
10			10.1	70.0 ✓	57.2
4000			8.2	71.9 ✓	57.1

2.45
~~2.85~~ 573.17 ✓
~~557.00~~ 33.90 ✓

3.7 ✓
2.2 ✓
1.5 ✓
1.5 ✓
0.4 ✓
0.1 ✓
0.1 ✓
0.3 ✓
0.9 ✓
2.2 ✓
2.7 ✓
4.9 ✓
4.5 ✓
5.2 ✓
6.8 ✓
7.8 ✓
9.6 ✓
11.6 ✓
12.0 ✓
12.8 ✓
14.8 ✓

1006.50
~~1011.50~~
~~1568.50~~ 33.90 ✓
1579.67 ✓

N3620

580.10

3990			8.3	71.8 ✓	56.9
80			7.1	73.0 ✓	56.6
76			7.5	72.6 ✓	56.5
60			7.8	72.3 ✓	56.5
50			7.5	72.6 ✓	56.5
40			6.5	73.6 ✓	56.6
30			5.4	74.7 ✓	56.5
20			5.3	74.8 ✓	57.1
10			5.8	74.3 ✓	56.5
3900			0.7	79.4 ✓	56.6
	3.86	591.67 ✓		587.81	
3890			7.0	84.7 ✓	56.3
80			6.0	85.7 ✓	56.1
70			5.5	86.2 ✓	55.8
60			4.9	86.8 ✓	55.7
50			4.8	86.9 ✓	55.3
40			4.7	87.0 ✓	55.2
30			4.8	86.9 ✓	54.6
20			4.7	87.0 ✓	55.0
10			4.5	87.2 ✓	54.6
3800			4.7	87.0 ✓	54.3

7.4 ✓ 1579.67 ✓

~~1568.50~~ 33.90 ✓

14.9 ✓	
16.4 ✓	
16.1 ✓	
15.8 ✓	
16.1 ✓	
17.0 ✓	
18.2 ✓	
17.7 ✓	
17.8 ✓	
22.8 ✓	
28.4 ✓	
29.6 ✓	
30.4 ✓	
31.1 ✓	
31.6 ✓	
31.8 ✓	
32.3 ✓	
32.0 ✓	
32.6 ✓	
32.7 ✓	

4763.50 ✓

~~6332.00~~ 33.90 ✓

6343.17 ✓

		3620			
		591.67			
3790			4.4	87 3 ✓	54.7
80			4.5	87 2 ✓	54.9
70			4.2	87.5 ✓	55.6
60			4.2	87.5 ✓	55.8
50			4.2	87.5 ✓	55.8
40			3.2	88.5 ✓	55.3
30			4.1	87.6 ✓	57.6
20			8.2	83.5 ✓	56.9
10			10.6	81.1 ✓	55.8
3700			15.7	76.0 ✓	56.6
680	interpolate			64.8	57.1
3666	N.G.			56.9	Toe 56.9

N3630

3660	N.G.	56.7	Toe 56.7
680	interpolate	69.1	57.5

16.35 ✓ 6343.17
6332.00

33.90 ✓

32.6 ✓
32.3 ✓
31.9 ✓
31.7 ✓
31.7 ✓
33.2 ✓
30.0 ✓
26.6 ✓
25.3 ✓
19.4 ✓
7.7 ✓
0.0

3013.50
~~2760.50~~
271.00 ✓
~~261.00~~
53.90 ✓

9681.57 ✓
~~9407.67~~
33.90 ✓
~~9373.50~~ → N3620
9647.67 →

33.90 ✓

0.0
11.6 ✓

116.00 ✓

3680	591.67			
3700		10.3	81.4 ✓	57.1
10		5.6	86.1 ✓	56.6
20		3.5	88.2 ✓	56.0
30		3.7	88.0 ✓	56.9
40		3.7	88.0 ✓	57.6
50		4.1	87.6 ✓	55.7
60		4.3	87.4 ✓	55.9
70		4.5	87.2 ✓	56.6
80		4.3	87.4 ✓	57.7
90		4.7	87.0 ✓	57.1
3800		4.7	87.0 ✓	57.0
10		4.6	87.1 ✓	58.1
20		4.8	86.9 ✓	58.4
30		4.9	86.8 ✓	58.1
40		4.6	87.1 ✓	56.6
50		4.8	86.9 ✓	56.6
60		4.8	86.9 ✓	56.3
70		4.6	87.1 ✓	56.5
80		4.8	86.9 ✓	56.6
90		4.5	87.2 ✓	56.7

5.8 ✓

24.3 ✓
29.5 ✓
32.2 ✓
31.1 ✓
30.4 ✓
31.9 ✓
31.5 ✓
30.6 ✓
29.7 ✓
29.9 ✓
30.0 ✓
29.0 ✓
28.5 ✓
28.7 ✓
30.5 ✓
30.3 ✓
30.6 ✓
30.6 ✓
30.3 ✓
30.5 ✓

116.00 ✓

359.00 ✓

5727.00 ✓

6202.00 ✓

N3630

591.67

3900		8.2	83.5 ✓	57.0
10		8.4	83.3 ✓	57.1
20		8.7	83.0 ✓	56.9
30		9.7	82.0 ✓	57.1
40		9.7	82.0 ✓	57.2
50		10.2	81.5 ✓	57.2
60		11.2	80.5 ✓	57.4
70		11.6	80.1 ✓	57.6
80		12.1	79.6 ✓	57.8
90		12.7	79.0 ✓	57.8
	580.10			
4000		1.9	78.2 ✓	57.8
10		2.9	77.2 ✓	57.6
20		3.5	76.6 ✓	57.6
30		3.8	76.3 ✓	57.8
40		4.5	75.6 ✓	57.9
50		7.0	73.1 ✓	57.0
60		8.1	72.0 ✓	57.3
70		9.3	70.8 ✓	57.4
80		9.6	70.5 ✓	57.7
90		11.1	69.0 ✓	56.7
4100		13.1	67.0 ✓	57.2

15.25 6202.00 ✓

26.5 ✓	
26.2 ✓	
26.1 ✓	
24.9 ✓	
24.8 ✓	
24.3 ✓	
23.1 ✓	
22.5 ✓	
21.8 ✓	
21.2 ✓	
20.4 ✓	
19.6 ✓	
19.0 ✓	
18.5 ✓	
17.7 ✓	
16.1 ✓	
14.7 ✓	
13.4 ✓	
12.8 ✓	
12.3 ✓	4260.50 ✓
09.8 ✓	
	10,462.50 ✓

N 3630

668.88

4110	3.7	65.2 ✓	57.1
20	5.3	63.6 ✓	57.3
30	8.3	60.6 ✓	57.4
40	11.1	57.8 ✓	57.7
50	10.4	58.5 ✓	57.9
60	10.0	58.9 ✓	57.4
70	7.3	61.6 ✓	56.8
80	4.9	64.0 ✓	56.8
90	6.8	62.1 ✓	56.0
4200	8.0	60.9 ✓	55.5
10	8.1	60.8 ✓	54.7
20	9.7	59.2 ✓	54.7
30	10.7	58.2 ✓	54.2
40	12.2	56.7 ✓	54.1
50	13.2	55.7 ✓	53.9
60	13.8	55.1 ✓	53.5
70	14.2	54.7 ✓	53.2
80	14.8	54.1 ✓	53.0
90	15.1	53.8 ✓	53.6

+ 4.9 ✓ − 10,462.50

8.1 ✓
6.3 ✓
3.2 ✓
0.1 ✓
0.6 ✓
1.5 ✓
4.8 ✓
7.2 ✓
6.1 ✓
5.4 ✓
6.1 ✓
4.5 ✓
4.0 ✓
2.6 ✓
1.8 ✓
1.6 ✓
1.5 ✓
0.2 ✓

695.50
~~680.00~~
4.69 ✓
0.9
0.19 ✓

1.69 ✓
3.68 ✓
5.37 ✓

~~11,147.38~~
11,162.88 ✓

		3630			
		568.88			
4300			15.0	53.9 ✓	52.3
10			14.3	54.6 ✓	53.5
20			14.6	54.3 ✓	52.1
30			15.9	53.0 ✓	52.3
40			17.2	51.7 ✓	51.9
50			16.7	52.2 ✓	52.8
60			15.9	53.0 ✓	47.2
70			15.2	53.7 ✓	45.3
80			15.5	53.4 ✓	44.8
90			20.3	48.6 ✓	44.0
95			22.8	46.1 ✓	43.7
		N3640			
B.M.	1.42	564.75		563.33	
4400			20.6	44.1 ✓	43.1
87			10.9	53.8 ✓	43.6
80			11.2	53.5 ✓	43.6
70			11.7	53.0 ✓	43.6
60			12.0	52.7 ✓	44.6
50			12.2	52.5 ✓	47.0
40			12.0	52.7 ✓	54.3
30			11.6	53.1 ✓	54.1
20			11.4	53.3 ✓	54.2
10			11.3	53.4 ✓	54.5
4300			11.0	53.7 ✓	54.7

0.1 ✓

11,162.88

~~11,147.38~~

5 37 ✓

1.6 ✓
1.1 ✓
2.2 ✓
0.7 ✓

53.50 ✓

2.72 ✓

0.22 ✓

0.2 ✓

0.6 ✓

25.8 ✓
~~26.27~~ ✓
27.17

4.00 ✓
~~0.33~~ ✓
~~0.28~~
0.20

5.8 ✓
8.4 ✓
8.6 ✓
4.6 ✓

222.00 ✓

17.50 ✓

2.4 ✓ Ended Dec 27-1932

~~11484.4~~ 11478.27
9.92 ✓
~~11474.48~~ ✓
9.79

~~9.79~~
9.92 ✓

Started Dec 29-1932

~~11,474.48~~
11,460.48 → N3630 Remmen

Elliott Gottschling

1.0 ✓
10.2 ✓

72.80 ✓

9.9 ✓

70.35 ✓

9.4 ✓
8.1 ✓
5.5 ✓

252.00 ✓
21.28 ✓
21.39

1.80 ✓
~~1.78~~

1.6 ✓
1.0 ✓
0.9 ✓
1.1 ✓
1.0 ✓

43.00
~~52.00~~

~~416.54~~
416.43 ✓

~~53.78~~
44.80

N3640

564.75

4290			10.7	54.0	54.8
80			9.8	54.9	54.8
70			9.6	55.1	54.9
60			9.3	55.4	55.3
50			8.8	55.9	55.9
40			7.7	57.0	55.9
30			6.0	58.7	56.2
20			4.9	59.8	56.7
10			3.8	60.9	57.2
4200			2.8	61.9	57.6
190			1.6	63.1	58.1
180			0.4	64.3	57.5
B.M.	12.69	578.42		565.73	
70			13.2	65.2	58.1
60			12.3	66.1	58.4
50			13.0	65.4	58.4
40			12.9	65.5	57.7
30			11.2	67.2	58.4
20			8.0	70.4	58.5
10			7.7	70.7	58.4
4100			7.1	71.3	57.9

416.43
~~416.54~~

44.80
~~53.78~~

0.8 9.0
0.05

3.56
3.60

0.1
0.2
0.1
0.6
1.1
2.5
3.1
3.7
4.3
5.5
6.8
7.1
7.7
7.0
7.8
8.8
11.9
12.3
13.4

961.50

~~1378.09~~
1386.98

~~57.38~~
48.36

N3640

		578.42			
4090			6.6	71.8	57.7
80			6.2	72.2	57.3
70			5.7	72.7	57.7
60			5.0	73.4	57.6
50			4.3	74.1	57.5
40			3.6	74.8	57.6
30			3.1	75.3	57.6
20			2.5	75.9	57.8
10			2.1	76.3	57.9
4000			1.3	77.1	57.7
B.M.	12.84	590.43		577.59	
3990			12.5	77.9	57.9
80			11.8	78.6	58.1
70			11.0	79.4	57.9
60			10.2	80.2	57.6
50			9.3	81.1	57.8
40			8.6	81.8	57.6
30			7.9	82.5	57.4
20			7.1	83.3	57.4
10			6.4	84.0	57.3

6.7 ✓

1386.48
~~1378.09~~

~~48.36~~
~~57.38~~

14.1 ✓
14.9 ✓
15.0 ✓
15.8 ✓
16.6 ✓
17.2 ✓
17.7 ✓
18.1 ✓
18.4 ✓
19.4 ✓

20.0 ✓
20.5 ✓
21.5 ✓
22.6 ✓
23.3 ✓
24.2 ✓
25.1 ✓
25.9 ✓
26.7 ✓

3703.50 ✓

~~5081.59~~
5090.48 ✓

~~57.38~~
48.36

N3640

590.43

3900		5.9	84.5 ✓	57.6
890		5.0	85.4 ✓	57.8
80		4.0	86.4 ✓	58.3
70		3.2	87.2 ✓	58.0
60		3.3	87.1 ✓	56.9
50		3.2	87.2 ✓	57.1
40		3.4	87.0 ✓	57.5
30		3.7	86.7 ✓	58.3
20		3.5	86.9 ✓	58.8
10		3.4	87.0 ✓	58.0
3800		3.4	87.0 ✓	57.3
3790		3.4	87.0 ✓	58.0
80		3.4	87.0 ✓	58.7
70		3.3	87.1 ✓	58.3
60		3.2	87.2 ✓	58.7
50		3.1	87.3 ✓	56.9
40		3.0	87.4 ✓	58.4
30		2.9	87.5 ✓	57.4
20		2.7	87.7 ✓	57.5
10		1.6	88.8 ✓	57.5
3700		0.4	90.0 ✓	57.2
680			75.3	57.2
660	interpolate		60.6	56.9
3655	N.G.		56.9	56.9 TOC

13.35 ✓

5090.48

5081.59

48.36

~~57.38~~

26.9 ✓
27.6 ✓
28.1 ✓
29.2 ✓
30.2 ✓
30.1 ✓
29.5 ✓
28.4 ✓
28.1 ✓
29.0 ✓
29.7 ✓
29.6 ✓
28.3 ✓
28.8 ✓
28.5 ✓
30.4 ✓
29.0 ✓
30.1 ✓
30.2 ✓
31.3 ✓
32.8 ✓
18.1 ✓
3.7 ✓
0.0

6121.50 ✓

727.00 ✓
~~717.00~~
9.25 ✓
~~8.75~~
11,948.23
~~11,926.84~~
~~57.38~~
11,899.87
~~11,869.46~~ → N3640

~~11,948.23~~
~~48.36~~

~~57.38~~
48.36

N 3650
590.43

3653	N.G.		56.8	TBC 56.8
660	interpolate		62.1	56.0
680			77.1	57.4
3690		5.8	84.6	56.8
700		1.3	89.1	58.0
10		2.7	87.7	56.9
20		2.5	87.9	57.1
30		2.8	87.6	56.4
40		3.0	87.4	58.8
50		2.7	87.7	56.9
60		3.0	87.4	58.1
70		3.0	87.4	58.9
80		3.4	87.0	58.3
90		3.4	87.0	57.6
3800		3.3	87.1	57.4

0.0	
6.1	21.35
19.7	258.00
27.8	
31.1	
30.8	
30.8	
31.2	
28.6	
30.8	
29.3	
28.5	
28.7	
29.4	3517.00
29.7	
	3796.35

N3650
590.43

3810	3.4	87.0	57.3
20	3.4	87.0	57.7
30	3.3	87.1	57.7
40	3.2	87.2	57.8
50	3.4	87.0	57.5
60	3.6	86.8	57.1
70	4.1	86.3	57.3
80	4.7	85.7	57.2
90	5.2	85.2	56.9
3900	5.5	84.9	57.2
10	5.5	84.9	57.6
20	5.8	84.6	57.9
30	6.0	84.4	58.1
40	3.9	86.5	58.2
50	4.2	86.2	58.2
60	4.0	86.4	58.2
70	6.6	83.8	58.1
80	6.7	83.7	57.8
90	6.9	83.5	58.0
4000	9.1	81.3	58.2
10	8.5	81.9	57.9
20	9.5	80.9	58.3

14.85

3796.35

29.4	
29.3	
29.4	
29.4	
29.5	
29.7	
29.6	
28.5	
28.3	
27.7	
27.3	
26.7	
26.3	
28.3	
28.0	
28.2	
25.7	
25.9	
25.5	
23.1	
24.0	
22.6	

60.56.50

~~9853.05~~

9852.85

		N 3650 590.43			
4030			11.4	79.0 ✓	58.2
40			13.0	77.4 ✓	58.3
B.M	1.00	578.59 ✓		577.59	
50			2.3	76.3 ✓	58.6
60			5.2	73.4 ✓	58.6
70			6.2	72.4 ✓	58.6
80			6.9	71.7 ✓	58.6
90			7.3	71.3 ✓	58.9
4100			7.7	70.9 ✓	58.3
10			8.3	70.3 ✓	58.2
20			9.1	69.5 ✓	58.3
30			9.8	68.8 ✓	58.4
40			10.7	67.9 ✓	58.7
50			11.5	67.1 ✓	58.6
60			12.2	66.4 ✓	58.5
70			13.0	65.6 ✓	58.4
80			14.2	64.4 ✓	58.4
B.M	1.42	564.75 ✓		563.33	
90			10.0	54.7 ✓	58.7
4200			2.5	62.2 ✓	58.5
10			3.0	61.7 ✓	59.0
20			4.7	60.0 ✓	59.0

11.3'

9852.85
~~9853.05~~

20.8'
19.1'
17.7'
14.8'
13.8'
13.1'
12.4'
12.6'
12.1'
11.2'
10.4'
9.2'
8.5'
7.9'
7.2'
6.0'
6.0'
3.7'
2.7'
1.0'

2210.00 ✓

~~12,063.05~~

12,062.85 ✓

N3650
564.75

4230	6.1	58.6	58.5
40	7.0	57.7	58.4
50	7.7	57.0	58.4
60	8.0	56.7	58.5
70	5.2	59.5	58.1
80	4.6	60.1	57.5
90	4.2	60.5	56.7
4300	4.9	59.8	56.5
10	7.0	57.7	56.5
20	7.7	57.0	57.3
30	7.6	57.1	56.8
40	10.8	53.9	56.0
50	12.3	52.4	48.0
60	11.8	52.9	44.6
70	11.6	53.1	42.8
80	10.7	54.0	42.6
90	12.7	52.0	42.9
4400	18.8	45.9	42.8

12,062.85
~~12,063.05~~

0.5

0.1 5.50 0.06 3.06

0.7 1.4 1.8 26.50 29.60

1.4 3.07 5.06

2.6

3.8

3.3

1.2 110.00

0.3 4.80 0.30

0.75 0.75

0.3 0.19 9.19

~~15.22~~ ~~3.33~~

2.1 14.89 3.39

4.4

8.3

10.3

11.4

9.1 428.50

3.1 345.50

12 630.61 48.25

~~12,547.81~~ ~~51.35~~

48.25

~~51.35~~

~~12,496.46~~ → N3650

12 582.36 →

N3660
564.75

4400	22.0	42.7 ✓	42.0
4390	14.0	50.7 ✓	42.3
80	11.4	53.3 ✓	42.1
70	11.3	53.4 ✓	41.9
60	11.6	53.1 ✓	44.2
50	12.0	52.7 ✓	47.9
40	10.1	54.6 ✓	54.1
30	4.8	59.9 ✓	60.1
20	4.4	60.3 ✓	60.7
10	3.6	61.1 ✓	61.1
4300	3.3	61.4 ✓	61.2
4290	3.3	61.4 ✓	61.1
80	3.5	61.2 ✓	60.8
70	4.4	60.3 ✓	60.6
60	5.4	59.3 ✓	60.1
50	6.9	57.8 ✓	59.9
40	6.3	58.4 ✓	59.6
30	5.7	59.0 ✓	59.5
20	5.8	58.9 ✓	59.4
10	3.0	61.7 ✓	59.2
4200	1.3	63.4 ✓	59.1

0.7 ✓
8.4 ✓
11.2 ✓
11.5 ✓
8.9 ✓
4.8 ✓
0.5 ✓
0.2 ✓
0.4 ✓
0 ✓
0.2 ✓
0.3 ✓
0.4 ✓
0.3 ✓
0.8 ✓
2.1 ✓
1.2 ✓
0.5 ✓
0.3 ✓
2.5 ✓
4.3 ✓

454.00 ✓
1.78 ✓
7.00 ✓
1.14 ✓
10.42 ✓
34.00 ✓
~~508.37~~
508.34 ✓

0.29 ✓
3.00 ✓
2.00 ✓
0.64 ✓
~~0.62~~
50.00 ✓
0.41 ✓
~~56.32~~
56.34 ✓

N3660

B.M.	1.00	578.59		577.59	
4190			14.8	63.8 ✓	59.0
80			13.0	65.6 ✓	58.8
70			12.3	66.3 ✓	59.2
60			11.6	67.0 ✓	58.7
50			11.0	67.6 ✓	59.1
40			10.4	68.2 ✓	59.1
30			9.8	68.8 ✓	59.2
20			9.1	~~68.5~~ 69.5	59.1
10			8.5	70.1 ✓	59.2
4100			7.9	70.7 ✓	59.0
4090			5.4	73.2 ✓	58.9
80			3.2	75.4 ✓	58.7
70			0.0	78.6 ✓	59.4
B.M.	4.01	591.82		587.81	
60			8.7	83.1 ✓	59.0
50			8.2	83.6 ✓	58.6
40			7.6	84.2 ✓	58.5
30			7.2	84.6 ✓	58.2
20			7.1	84.7 ✓	58.3
10			7.1	84.7 ✓	58.4

508.34 ✓ ~~508.37~~

56.34 ✓ ~~56.32~~

2.15 ✓

4.8 ✓
6.8 ✓
7.1 ✓
8.3 ✓
8.5 ✓
9.1 ✓
9.6 ✓
10.4 ✓
10.9 ✓
11.7 ✓
14.3 ✓
16.7 ✓
19.2 ✓

24.1 ✓
25.0 ✓
25.7 ✓
26.4 ✓
26.4 ✓
26.3 ✓

2803.00 ✓

3311.37 ~~3311.34~~

56.34 ✓ ~~56.32~~

3660

591.82

4000	6.8	85.0	58,0
3990	6.5	85.3	58,1
80	6.3	85.5	58,4
70	6.2	85.6	58,5
60	6,1	85.7	58,3
50	5,8	86.0	58,2
40	5,5	86.3	57.3
30	5.2	86.6	58,0
20	4,9	86.9	58,2
10	4,9	86.9	58,3
3900	4,6	87.2	58,4
3890	4,5	87.3	58,3
80	4,6	87.2	57.6
70	4,5	87.3	57.2
60	4,7	87.1	57.5
50	4,8	87.0	67.6
40	4,7	87.1	57.6
30	4,7	87.1	57.5
20	4,7	87.1	57.6
10	4,8	87.0	57.5
3800	4,7	87.1	57,5

13.15 3311.37 56.32

27.0		
27.2		
27.1		
27.1		
27.4		
27.8		
29.0		
28.6		
28.7		
28.6		
28.8		
29.0		
29.6		
30.1		
29.6		
29.4		
29.5		
29.2		
29.5		
29.5		
29.6	6010.50	
	9321.87	56.32

		3660			
		59.82			
3790			4.6	87.2	57.5
80			4.9	86.9	57.2
70			4.7	87.1	57.3
60			4.7	87.1	57.3
50			4.2	87.6	57.2
40			4.2	87.6	57.7
30			4.3	87.5	56.8
20			4.4	87.4	56.8
10			4.1	87.7	57.9
3700			2.7	89.1	57.4
3690			6.1	85.7	57.9
680				77.9	57.0
660	interpolate			62.3	56.9
3653	N.G.			56.8	Toe 56.8
		N3670			
3651	N.G.			57.6	toe 57.6
660	interpolate			63.9	56.8
680				78.0	58.4
				85.1	

14.8 ✓ 9321.87 84 56.34 ~~32~~

29.7 ✓		
29.9 ✓		
29.8 ✓		
29.8 ✓		
30.4 ✓		
29.9 ✓		
30.7 ✓		
30.6 ✓		
29.8 ✓		
31.7 ✓		
27.8 ✓		
20.9 ✓	3551.50 ✓	
5.4 ✓	263.00 ✓	
0.0	18.90 ✓	
	13,155.14 ~~27~~	56.34 ~~32~~
	56.34 ~~32~~	
	13,098.95 →	N3660
	13,098.90 →	

0.0		
7.1 ✓	31.95 ✓	
19.6 ✓	267.00 ✓	
	298.95 ✓	

N3670

591.82

3690	6.7	85.1	56.9
3700	4.4	87.4	58.0
10	4.2	87.6	58.0
20	4.3	87.5	58.0
30	4.6	87.2	57.0
40	4.6	87.2	57.1
50	4.7	87.1	57.5
60	4.6	87.2	57.2
70	4.6	87.2	57.4
80	4.8	87.0	57.6
90	4.4	87.6	57.6
3800	4.6	87.2	57.6
10	4.5	87.3	57.8
20	4.6	87.2	58.0
30	4.8	87.0	58.0
40	4.9	86.8	58.0
50	4.6	87.2	58.4
60	4.4	87.4	58.8
70	4.6	87.2	59.1
80	4.8	87.0	59.4
90	5.0	86.8	59.0
3900	5.0	86.8	59.4

9.8

298.95

28.2	
29.4	
29.6	
29.5	
30.2	
30.1	
29.6	
30.0	
29.8	
29.4	
29.8	
29.6	
29.5	
29.2	
29.5	
28.9	
28.8	
28.6	
28.1	
27.6	
27.8	
27.4	

6362.00

6660.95

N3670

591.82

3910			5.1	86.7	60.1
20			5.2	86.6	59.8
30			5.3	86.5	59.8
40			5.5	86.3	59.6
50			5.8	86.0	59.3
60			6.1	85.7	59.2
70			6.3	85.5	59.2
80			6.5	85.3	59.4
90			6.8	85.0	59.1
4000			7.0	84.8	57.7
10			7.3	84.5	58.8
20			7.7	84.1	59.6
30			7.9	83.9	58.4
40			8.4	83.4	58.4
50			8.8	83.0	58.7
60			9.2	82.6	59.0
70			9.5	82.3	58.7
80			9.7	82.1	58.7
90			9.7	82.1	38.8
4100			13.0	78.8	59.2
B.M.	1.89	579.48		577.59	
10			3.8	75.7	59.0

13.7 ✓ 6660.95 ✓

266	✓
268	✓
267	✓
267	✓
267	✓
265	✓
263	✓
259	✓
259	✓
271	✓
257	✓
245	✓
255	✓
250	✓
243	✓
236	✓
236	✓
234	✓
233	✓
196	✓
167	✓

5257.50 ✓

11,918.45 ✓

		3670			
		579.48			
4120			5.5	74.0	59.1
30			7.8	71.7	59.0
40			9.0	70.5	58.9
50			9.7	69.8	58.9
60			10.0	69.5	58.9
70			10.3	69.2	59.1
80			12.2	67.3	59.2
90			13.4	66.1	59.3
4200			14.6	64.9	59.7
	1.42	564.75		563.33	
10			3.4	61.3	60.0
20			5.0	59.7	60.0
30			5.3	59.4	60.6
40			5.7	59.0	61.5
50			5.6	59.1	61.5
60			3.4	61.3	61.9
70			3.0	61.7	62.3
80			2.9	61.8	62.5
90			2.6	62.1	62.6
4300			2.6	62.1	62.3
10			2.5	62.2	62.2
20			0.6	64.1	62.4
26				61.7	62.2
30			4.6	60.1	57.8

8.35 ✓ 11,918.45 ✓

14.9 ✓
12.7 ✓
11.6 ✓
10.9 ✓
10.6 ✓
10.1 ✓
8.1 ✓
6.8 ✓
5.2 ✓
1.3 ✓

999.00
~~998.10~~
5.28 ✓
4.55

0.28 ✓

0.3 ✓
1.2 ✓
2.5 ✓
2.4 ✓
0.6 ✓
0.6 ✓
0.7 ✓
0.5 ✓
0.2 ✓

0 ✓
1.7 ✓
2.3 ✓
0.5 ✓

8.50 ✓
5.85 ✓
3.94 ✓
3.78 ✓

88.50 ✓
~~87.50~~ ✓
~~87.84~~ ✓
0.17 ✓

~~12,933.44~~
12,938.95

~~83.09~~
89.29

	3670				
	564.75				
4340		4.8	59.9	53.8	
50		10.0	54.7	46.9	
60		9.2	55.5	42.3	
70		10.7	54.0	41.6	
80		11.2	53.5	41.6	
90		11.2	53.5	42.0	
4400		14.4	50.3	38.3	
410		21.3	43.4	41.7	
	3680				
4410		22.7	42.0	42.2	
00		14.6	50.1	39.0	
4390		11.1	53.6	42.1	
80		11.1	53.6	41.7	
70		11.0	53.7	41.5	
60		8.5	56.2	42.5	
50		10.0	55.0	43.9	
4.5		7.7	57.0	47.0	
37		2.4	58.6	53.0	
35		2.5	59.6	53.6	
20		2.9	62.2	62.5	
10			61.8	62.7	

1.15 ~~12,933.44~~ ~~83.09~~

6.1 12,938.95 89.29

7.8

13.2

12.4

11.9

11.5

12.0

1.7 ~~766.30~~ 769.00

13,707.95 89.29
89.29

13,618.66 → N 3670

0.0 0.2

11.1

11.5

11.9

12.2

13.7

659.50

11.1 52.75

10.0 62.40

5.6 11.60

6.0 42.84 0.11

0.3 6.00

0.9

829.09 6.11

		3680			
		564.75			
4300			2.9	61.8	62.5
4290			2.9	61.8	62.8
80			3.3	61.4	62.9
70			2.9	61.8	62.6
60			3.0	61.7	62.5
50			2.6	62.1	62.3
40			5.3	59.4	62.2
30			4.6	60.1	61.9
20			3.0	61.7	61.6
10			0.0	64.7	61.3
	1.89	579.48		572.59	
4200			9.8	69.7	60.8
4190			5.5	74.0	60.6
80			3.8	75.7	60.0
70			4.1	75.4	59.9
60			3.5	76.0	59.8
50			3.3	76.2	59.4
40			4.9	74.C	59.3
30			1.8	77.7	59.1
	4.01	591.82		587.81	
20			12.0	79.8	59.0
10			11.2	80.6	59.0
4100			10.9	80.9	58.7

0.45 ✓ 829.09 ✓ 6.11 ✓

0.7 ✓
1.0 ✓
1.5 ✓
0.8 ✓
0.8 ✓
0.2 ✓
2.8 ✓
1.8 ✓

91.50 ✓
0.03 ✓ 8.52 ✓

0.1 ✓
3.4 ✓
8.9 ✓
13.4 ✓
15.7 ✓
15.5 ✓
16.2 ✓
16.8 ✓
15.3 ✓
18.6 ✓
20.8 ✓
21.6 ✓
22.1 ✓

1773.50 ✓

2602.62 ✓ 106.13 ✓

	3680			
	591.82			
4090		11.0	80.8	58.8
80		10.7	81.1 → 81.0	58.5
70		10.0	81.8	58.7
60		9.5	82.3	58.7
50		9.2	82.6	58.6
40		8.6	83.2	58.7
30		8.1	83.7	58.6
20		7.7	84.1	58.3
10		7.3	84.5	58.0
4000		6.9	84.9	59.0
3990		6.8	85.0	60.5
80		6.5	85.3	60.4
70		6.4	85.4	60.7
60		6.0	85.8	60.7
50		5.9	85.9	60.6
40		5.5	86.3	60.9
30		5.3	86.5	60.6
20		5.2	86.6	60.3
10		5.2	86.6	60.4
3900		5.1	86.7	60.2
3890		5.0	86.8	60.0
80		4.9	86.9	59.8

11.1 ✓ 2602.62 ✓ 106.13

22.0	
22.6	
23.1	
23.6	
24.0	
24.5	
25.1	
25.8	
26.5	
25.9	
24.5	
24.9	
24.7	
25.1	
25.3	
25.4	
25.9	
26.3	
26.2	
26.5	
26.8	
27.1	5493.50 ✓

8096.12 ✓ 106.13 ✓

		3680			
		591.82			
3870			4.9	86.9	59.9
60			4.6	87.2	60.0
50			4.6	87.2	59.5
40			4.6	87.2	58.6
30			4.7	87.1	59.2
20			4.5	87.3	59.2
10			4.1	87.7	59.3
3800			4.5	87.3	58.4
3790			4.6	87.2	59.0
80			4.6	87.2	59.4
70			4.7	87.1	59.3
60			4.6	87.2	59.2
50			4.7	87.1	59.6
40			4.7	87.1	59.1
30			4.8	87.3	58.9
20			4.5	87.3	58.6
10			4.1	87.7	58.5
3700			4.3	87.5	59.0
3690			3.6	88.2	58.0
680				80.3	56.3
660	interpolate			64.5	58.6
3652	N.G.			58.0	To 580

13.55 ✓ 8096.12 ✓ 106.13 ✓

27.0	✓
27.2	✓
27.7	✓
28.6	✓
27.9	✓
28.1	✓
28.4	✓
28.9	✓
28.2	✓
27.8	✓
27.8	✓
28.0	✓
27.5	✓
28.0	✓
28.4	✓
28.7	✓
29.2	✓
28.5	✓
30.2	✓
24.0	✓
5.9	✓
0.0	

5616.50 ✓
299.00 ✓
23.60 ✓

14,035.22 ✓ 106.13 ✓
106.13
13,929.09 ✓ → N 3680

N3690

3650 = N.G.			57.9	Toe 57.9
3660	interpolate		65.5	58.0
3680			80.7	59.0
		591.82		
3690		3.5	88.3	58.4
3700		4.3	87.5	58.3
10		4.5	87.3	58.7
20		4.6	87.2	59.7
30		4.5	87.3	60.3
40		4.7	87.1	60.8
50		4.5	87.3	60.3
60		4.6	87.2	60.5
70		4.6	87.2	59.8
80		4.7	87.1	58.8
90		4.7	87.1	60.6
3800		4.2	87.6	59.6
10		4.0	87.8	59.4
20		4.4	87.4	59.9

0.0		
7.5	37.50	
21.7	292.00	
29.9		
29.2		
28.6		
27.5		
27.0		
26.3		
27.0		
26.7		
27.4		
28.3		
26.5		
28.0		
28.4		
28.0	3856.50	
		4186.00

	3690			
	591.82			
3830		4.4	87.4	58.5
40		4.6	87.2	59.4
50		4.6	87.2	60.0
60		4.7	87.1	60.3
70		4.9	86.9	60.2
80		5.0	86.8	60.1
90		5.0	86.8	60.0
3900		5.0	86.8	59.9
10		5.0	86.8	58.9
20		5.2	86.6	60.5
30		5.4	86.4	60.7
40		5.5	86.3	61.0
50		5.9	85.9	60.6
60		6.4	85.4	60.8
70		6.5	85.3	60.8
80		6.8	85.0	61.0
90		7.0	84.8	60.8
4000		7.3	84.5	61.4
10		7.8	84.0	60.7
20		8.2	83.6	60.6
30		8.7	83.1	60.0
40		9.3	82.5	60.0
50		10.0	81.8	60.1

14.0

4186.00

28.9
27.8
27.2
26.8
26.7
26.7
26.8
26.9
27.9
26.1
25.7
25.3
25.0
24.6
24.5
24.0
24.0
23.1
23.3
23.0
23.1
22.5
21.7

5850.50

10,036.50

		3690			
∠		591.82			
4060			10.4	81.4	60.5
70			10.9	80.9	60.4
80			11.3	80.5	61.0
90			11.9	79.9	60.3
4100			12.0	79.8	60.2
10			12.7	79.1	60.2
20			13.1	78.7	60.0
30			13.6	78.2	59.8
40			14.2	77.6	60.5
50			14.2	77.6	60.9
60			14.4	77.4	61.0
70			14.7	77.1	61.3
80			15.5	76.3	61.9
90			16.5	75.3	61.7
4200			18.4	73.4	61.6
10			25.0	66.8	61.9
	1.42	564.75		513.33	
20			3.4	61.3	62.2
30			4.0	60.7	62.4
40			4.7	60.7	62.7
50			4.3	60.4	62.6
60			3.8	60.9	62.7
70			3.2	61.5	63.5
80			2.8	61.9	63.7

10.85 ✓ 10,036.50 ✓

20.9 ✓
20.5 ✓
19.5 ✓
19.6 ✓
19.6 ✓
18.9 ✓
18.7 ✓
18.4 ✓
17.1 ✓
16.7 ✓
16.4 ✓
15.8 ✓
14.4 ✓
13.6 ✓
11.8 ✓
4.9 ✓

2752.00 ✓
20.70
~~24.93~~

0.70 ✓

0.9 ✓
1.7 ✓
2.0 ✓
2.2 ✓
2.0 ✓
2.0 ✓
1.8 ✓

~~12,813.43~~
12,809.20

112.50
~~109.40~~
~~110.10~~
113.20

		3690			
		564.75			
4290			3.0	61.7	62.3
4300			3.0	61.7	62.8
	3.63	366.96		563.33	6?
10			4.6	62.4	63.8
20			4.4	62.6	62.7
30			2.6	64.4	62.2
40			4.0	63.0	47.1
50			8.4	58.6	43.4
60			10.7	56.3	43.1
70			12.7	54.3	41.7
80			12.5	54.5	41.9
85			12.6	54.4	41.8
95			23.4	43.6	41.8
		N3700			
43 95			22.0	45.0	38.8
85			15.6	51.4	41.8
80			13.1	53.9	41.7
70			11.8	55.2	41.7
60			5.7	61.3	43.8
50			4.3	62.7	44.0
40			4.0	63.0	45.3
30			4.1	62.9	56.0
20			4.8	62.2	62.0
43 10			4.6	62.4	63.1

0.9 12,809.20 113.20

0.6

1.1

0.6 32.50

0.1 10.53 0.02

2.2

15.9

15.2

13.2

12.6 643.00

12.6 63.00

12.6 72.00

1.8

13,597.73 145.72

1 45.72

13,452.01 = N3690

6.2 79.00

9.6 54.50

12.2

13.5

17.5

18.7

17.7

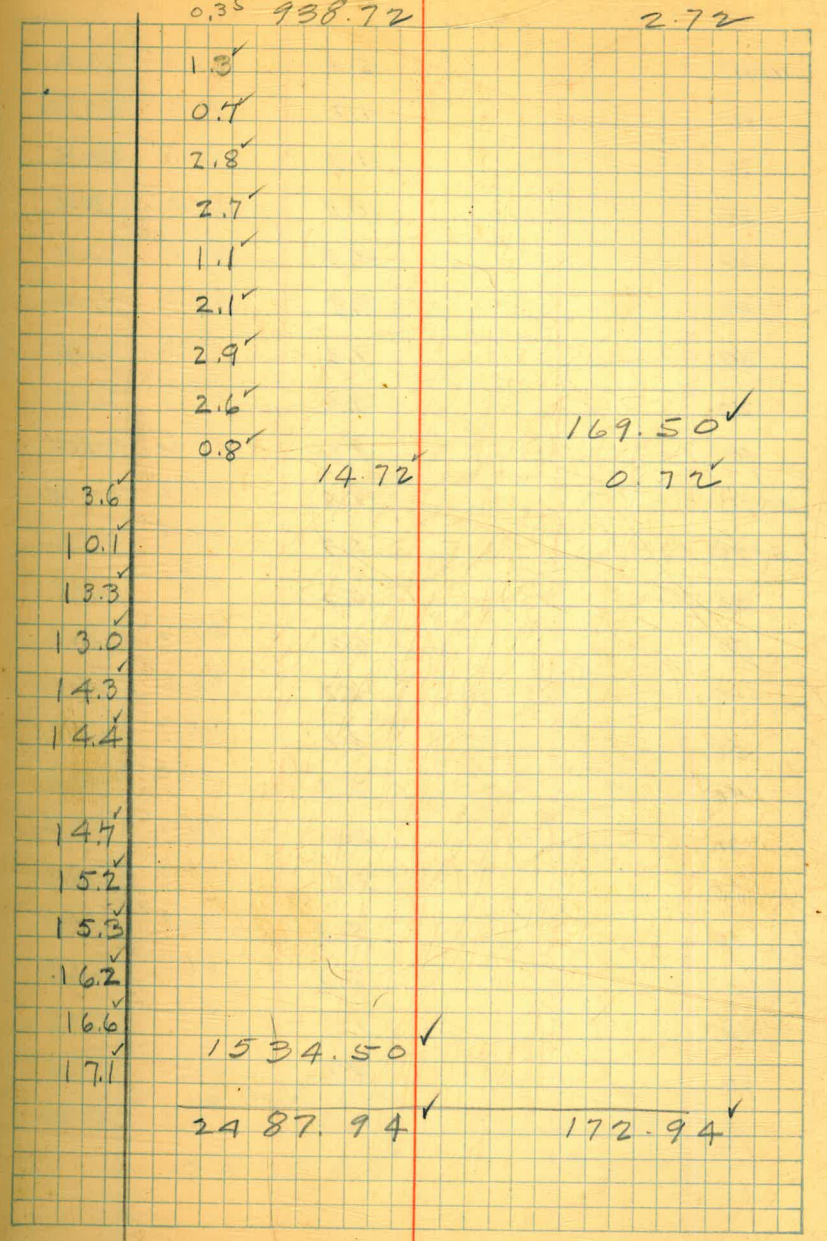
16.9 805.00

0.2 0.22 2.72

0.7

938.72 2.72

		3700			
		566.96			
4300			5.4	61.6	62.9
4290			5.3	61.7	62.4
80			5.3	61.7	64.5
70			5.5	61.5	64.2
60			5.8	61.2	62.3
50			6.4	60.6	62.7
40			6.2	60.8	63.7
30			5.9	61.1	63.7
20			5.5	61.5	62.3
10			1.3	65.7	62.1
4200			+5.3	72.3	62.2
4190			+8.3	75.3	62.0
80			+8.4	75.4	62.4
70			+8.8	75.8	61.5
60			+9.2	76.2	61.8
B.M	4.01	591.82		587.81	
50			15.0	76.8	62.1
40			14.8	77.0	61.8
30			14.4	77.4	62.1
20			13.6	78.2	62.0
10			13.3	78.5	61.9
4100			13.0	78.8	61.7



3700
591.82

4090	12.3	79.5	61.4
80	11.7	80.1	61.2
70	11.3	80.5	61.3
60	10.8	81.0	61.4
50	10.3	81.5	61.2
40	9.8	82.0	61.0
30	9.2	82.6	61.3
20	8.6	83.2	61.4
10	8.2	83.6	61.2
4000	7.6	84.2	60.9
3990	6.9	84.9	60.6
80	6.7	85.1	61.1
70	6.2	85.6	61.1
60	6.2	85.6	61.1
50	6.1	85.7	60.9
40	5.9	85.9	60.5
30	5.9	85.9	60.4
20	5.5	86.3	60.3
10	5.1	86.7	59.9
3900	5.1	86.7	60.3
3890	4.8	87.0	59.9
80	4.7	87.1	59.8
70	4.7	87.1	60.0

8.55 ✓ 2487.94 ✓ 172.94 ✓

18.1 ✓
18.9 ✓
19.2 ✓
19.6 ✓
20.3 ✓
21.0 ✓
21.3 ✓
21.8 ✓
22.4 ✓
23.3 ✓
24.3 ✓
24.0 ✓
24.5 ✓
24.5 ✓
25.0 ✓
25.4 ✓
25.5 ✓
26.0 ✓
26.8 ✓
26.4 ✓
27.1 ✓
27.3 ✓
27.1 ✓

5348.00 ✓

7835.94 ✓ 172.94 ✓

		3700			
		591.82			
3860			4.6	87.2	60.1
50			4.5	87.3	60.1
40			4.5	87.3	59.4
30			4.5	87.3	59.4
20			4.3	87.5	58.6
10			4.0	87.8	58.9
3800			4.1	87.7	59.4
3790			4.6	87.2	59.8
80			4.7	87.1	59.5
70			4.3	87.5	60.9
60			4.7	87.1	60.3
50			4.6	87.2	59.5
40			4.8	87.0	60.3
30			4.6	87.2	60.3
20			4.8	87.0	59.5
10			4.8	87.0	59.3
3700			4.8	87.0	59.6
3690			4.6	87.2	59.2
80			8.9	82.9	59.1
60		interpolate		70.3	58.1
3650	N.G.			57.8	Toe 57.8

13.5 ✓ 7835.94 ✓ 172.94 ✓

27.1	
27.2	
27.9	
27.9	
28.9	
28.9	
28.3	
27.4	
27.6	
26.6	
26.8	
27.7	
26.7	
26.9	
27.5	
27.7	
27.4	
28.0	
23.8	
12.2	
0.0	

5219.50 ✓
360.00 ✓
61.00 ✓
13,476.44 ✓
172.94
13,303.50 ✓ → N 3700

172.94 ✓

3710

3650	N.G.		58.0	Toe 58.0	0.0
660			66.2	57.8	8.4 ✓
670	interpolate		74.4	58.0	16.4 ✓
	591.82				
3680		9.2	82.6 ✓	59.4	23.2 ✓
90		3.9	87.9 ✓	59.4	28.5 ✓
3700		4.9	86.9 ✓	58.3	28.6 ✓
10		4.8	87.0 ✓	59.2	27.8 ✓
20		4.9	86.9 ✓	58.3	28.6 ✓
30		4.5	87.3 ✓	59.3	28.0 ✓
40		4.8	87.0 ✓	59.3	27.7 ✓
50		4.6	87.2 ✓	59.3	27.9 ✓
60		4.6	87.2 ✓	59.4	27.8 ✓
70		4.2	87.6 ✓	59.6	28.0 ✓
80		4.7	87.1 ✓	59.0	28.1 ✓
90		4.6	87.2 ✓	59.4	27.8 ✓
3800		4.0	87.8 ✓	58.8	29.0 ✓
10		4.0	87.8 ✓	58.4	29.4 ✓
20		4.3	87.5 ✓	59.0	28.5 ✓
30		4.4	87.4 ✓	59.3	28.1 ✓

4577.50 ✓

3710

591.82

3840	4.4	87.4	59.4
50	4.4	87.4	59.5
60	4.4	87.4	59.5
70	4.5	87.3	60.0
80	4.7	87.1	60.5
90	4.7	87.1	60.7
3900	5.1	86.7	60.5
10	5.4	86.4	60.7
20	5.9	85.9	61.0
30	5.8	86.0	61.2
40	5.9	85.9	61.6
50	6.2	85.6	61.8
60	6.5	85.3	61.8
70	6.7	85.1	61.7
80	6.8	85.0	61.1
90	7.0	84.8	61.6
4000	7.8	84.0	61.1
10	8.5	83.3	61.5
20	9.1	82.7	61.5
30	9.5	82.3	61.4
40	10.2	81.6	61.5
50	10.8	81.0	61.6

14:05

4577.50

28.0
27.9
27.9
27.3
26.6
26.4
26.2
25.7
24.9
24.8
24.3
23.8
23.5
23.7
23.9
23.2
22.9
21.8
21.2
20.9
20.1
19.4

5387.50

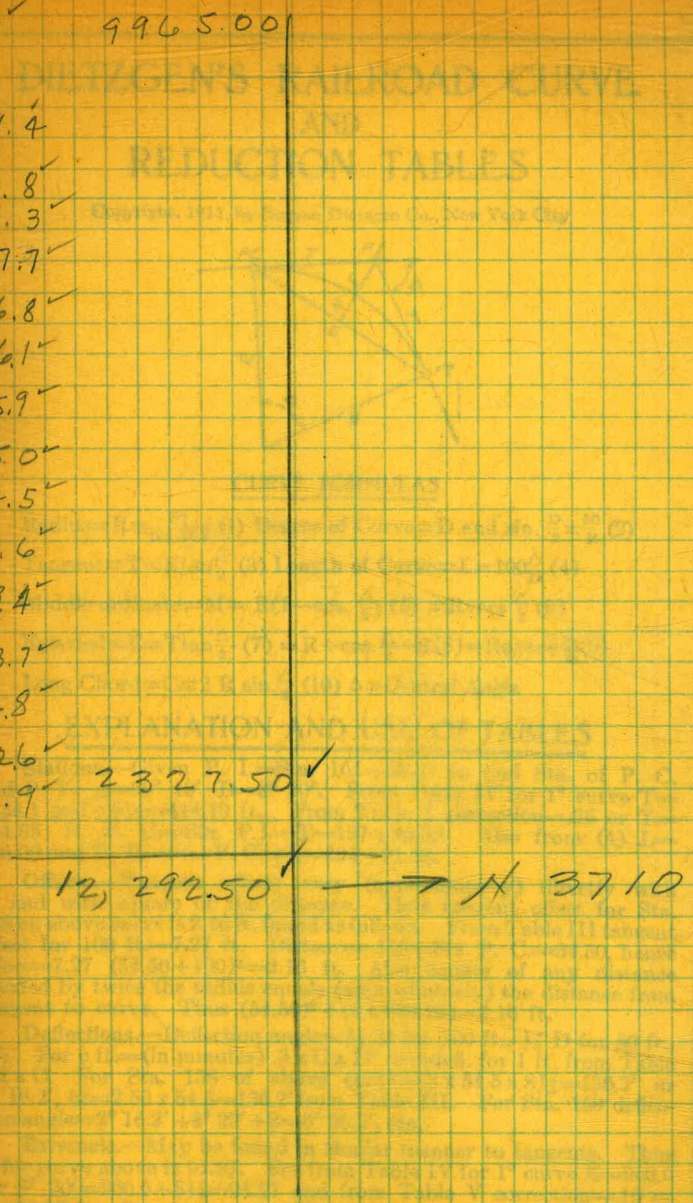
9965.00

3710

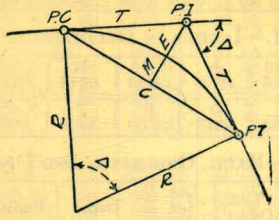
591.82

4060	11.2	80.6	61.2
70	11.8	80.0	61.2
80	12.2	79.6	61.3
90	12.7	79.1	61.4
4100	13.3	78.5	61.7
10	13.8	78.0	61.9
20	13.9	77.9	62.0
30	14.6	77.2	62.2
40	15.3	76.5	62.0
50	15.9	75.9	62.3
60	16.3	75.5	62.1
70	16.5	75.3	61.6
80	16.8	75.0	62.2
90	17.1	74.7	62.1
4200	20.3	71.5	62.6

Continued in Book 387 Page 0



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′.

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.