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.

Levels from Contour Map.

N 3760 - 3910 - 1-79

N3760

Cont. from F. Book #367

E		
5360	557.5	✓
70	57.6	✓
80	57.5	✓
90	57.2	✓
5400	57.1	✓
10	56.4	✓
20	56.6	✓
30	56.8	✓
40	56.8	✓
50	56.6	✓
60	56.8	✓
70	56.9	✓
80	56.8	✓
90	56.8	✓
5500	56.7	✓
10	57.0	✓
20	57.1	✓
30	57.0	✓
40	57.2	✓
50	57.1	✓
60	57.4	✓
70	57.4	✓
80	57.5	✓
90	57.1	✓
5600	57.2	✓

These notes are Original Ground at Dam Section and are checked for plotting to ✓ Elev.

N3760

E

5610

20

557.4 ✓

57.7 ✓

N3770

E		
4360	562.5	✓
70	62.3	✓
80	62.3	✓
90	62.4	✓
4400	62.4	✓
10	62.2	✓
20	62.1	✓
30	61.9	✓
40	62.0	✓
50	61.9	✓
60	61.5	✓
70	61.5	✓
80	61.7	✓
90	62.2	✓
4500	62.6	✓
10	62.3	✓
20	62.7	✓
30	62.5	✓
40	62.7	✓
50	63.3	✓
60	63.3	✓
70	63.3	✓
80	63.2	✓
90	63.2	✓
4600	63.4	✓

N3770

E		
4610	563.6	✓
20	63.8	✓
30	63.9	✓
40	64.2	✓
50	65.5	✓
60	67.5	✓
70	67.9	✓
80	79.0	✓
90	71.4	✓
4700	74.1	✓
10	76.8	✓
20	76.4	✓
30	75.9	✓
40	76.0	✓
50	75.3	✓
60	77.4	✓
70	78.4	✓
80	78.3	✓
90	79.5 ~~78.5~~	✓ ✓
4800	79.7	✓
10	81.5	✓
20	82.6	✓
30	84.1	✓
40	83.4	✓
50	82.9	✓

✓

B338 P14

N3770

E			
4860		581.2	✓
70		81.9	✓
80		81.4	✓
90		82.1	✓
? 4900		77.1	✓
10		73.0	✓
20		67.9	✓
30		68.8	✓
40		67.9	✓
50		67.1	✓
60		67.6	✓
70	64.6	~~64.1~~	✓ ✓
80		63.6	✓
90		62.4	✓
5000		61.4	✓
10		59.5	✓
20		58.8	✓
30		57.9	✓
40		57.4	✓
50		56.7	✓
60		56.2	✓
70		55.7	✓
80		55.7	✓
90		54.5	✓
5100		54.6	✓

✓

B337 P66

N3770

E	
5110	55.2 ✓
20	55.2 ✓
30	55.3 ✓
40	55.3 ✓
50	55.3 ✓
60	55.3 ✓
70	55.3 ✓
80	55.2 ✓
90	55.5 ✓
5200	55.4 ✓
10	55.3 ✓
20	55.6 ✓
30	55.8 ✓
40	55.6 ✓
50	55.7 ✓
60	55.9 ✓
70	56.0 ~~55.3~~ ✓ ✓
80	55.4 ~~55.5~~ ✓ ✓
90	55.8 ✓
5300	55.9 ✓
10	56.3 ✓
20	56.3 ✓
30	56.4
40	56.5 ✓
50	56.6 ✓

✓

B 334 P 39
" P 41

N 3770

E		
5360	5 56.6	✓
70	56.4	✓
80	56.4	✓
90	56.4	✓
5400	56.5	✓
10	56.7	✓
20	56.7	✓
30	57.0	✓
40	56.9	✓
50	57.2	✓
60	56.9	✓
70	57.0	✓
80	57.1	✓
90	56.9	✓
5500	57.0	✓
10	57.0	✓
20	57.0	✓
30	57.1	✓
40	57.3	✓
50	57.4	✓
60	57.3	✓
70	57.5	✓
80	57.5	✓
90	58.1	✓
5600	58.2	✓

N3770

E

5610

20

558.1

~~558.4~~ ✓ ✓

57.6 ✓

8

B338 P47

N3780

E		
4360	562.7	✓
70	63.0	✓
80	62.9	✓
90	62.8	✓
4400	62.8	✓
10	62.8	✓
20	62.5	✓
30	62.4 ~~63.4~~	✓ ✓
40	63.1	✓
50	62.0	✓
60	62.3 ~~63.3~~	✓ ✓
70	62.6	✓
80	63.0	✓
90	63.1	✓
4500	63.1	✓
10	63.2	✓
20	63.0	✓
30	62.5	✓
40	63.3	✓
50	63.5	✓
60	63.3	✓
70	63.4	✓
80	63.6	✓
90	63.7	✓
4600	63.8	✓

B 337 P53

B 337 P51

N3780

E		
4610	5651.0	✓
20	65.8	✓
30	69.2	✓
40	69.2	✓
50	70.1	✓
60	72.3 ~~73.3~~	✓ ✓
70	73.9	✓
80	75.3	✓
90	76.5	✓
4700	77.6	✓
10	78.1	✓
20	78.8	✓
30	79.4	✓
40	79.7	✓
50	80.7	✓
60	82.1	✓
70	73.0	✓
80	84.0	✓
90	87.4	✓
4800	88.7	✓
10	88.6	✓
20	87.4	✓
30	89.2	✓
40	90.9	✓
50	89.3	✓

✓

B 337 P62

N3780

E	
4800	587.3 ✓
10	88.0 ✓
20	88.3 ✓
30	88.6 ✓
4900	83.9 ✓
10	79.4 ✓
20	75.3 ✓
30	74.6 ✓
40	74.4 ✓
50	73.6 ✓
60	67.8 ✓
70	67.0 ✓
80	65.9 ✓
90	63.6 ✓
5000	62.7 ✓
10	62.4 ✓
20	62.2 ✓
30	59.7 ✓
40	57.7 ✓
50	58.0 ✓
60	57.1 ✓
70	56.6 ✓
80	56.7 ✓
90	56.4 ✓
5100	54.6 ✓

N3780

E

5110	555.3	✓
20	55.7	✓
30	55.9	✓
40	55.7	✓
50	55.8	✓
60	56.9	✓
70	55.6	✓
80	55.6	✓
90	55.5	✓
5200	55.6	✓
10	55.6	✓
20	55.6	✓
30	55.4	✓
40	55.6	✓
50	55.6	✓
60	55.7	✓
70	55.7	✓
80	55.9	✓
90	560	✓
5300	55.6	✓
10	56.1	✓
20	56.3	✓
30	56.3	✓
40	56.4	✓
50	56.3	✓

N3780

E	
5360	56.2 ✓
70	56.1 ✓
80	56.3 ✓
90	56.5 ✓
5400	56.6 ✓
10	56.5 ✓
20	56.8 ✓
30	57.1 ✓
40	56.6 ✓
50	56.5 ✓
60	57.0 ✓
70	57.0 ✓
80	56.9 ✓
90	56.9 ✓
5500	57.1 ✓
10	57.1 ✓
20	57.2 ✓
30	57.3 ✓
40	57.4 ✓
50	57.4 ✓
60	57.5 ✓
70	57.5 ✓
80	58.5 ✓
90	58.7 ✓
5600	58.6 ✓

N 3780

E

5610 558.6 ✓

20 589 ✓

N3790

E		
4360	5C3.2	✓
70	63.5	✓
80	63.7	✓
90	63.5	✓
4400	63.5	✓
10	63.3	✓
20	63.0	✓
30	62.8	✓
40	62.5	✓
50	62.7	✓
60	62.9	✓
70	62.9	✓
80	63.0	✓
90	63.0	✓
4500	63.2	✓
10	62.8	✓
20	62.4	✓
30	63.5	✓
40	64.0	✓
50	64.5	✓
60	64.4	✓
70	64.3	✓
80	65.0	✓
90	66.0	✓
4600	67.4	✓

N3790

E	
4610	571.9 ✓
20	72.4 ✓
30	75.0 ✓
40	75.2 ✓
50	75.6 ✓
60	76.8 ✓
70	77.4 ✓
80	79.4 ✓
90	80.1 ✓
4700	81.4 ✓
10	82.1 ✓
20	82.7 ✓
30	84.5 ✓
40	84.7 ✓
50	85.7 ✓
60	87.4 ✓
70	87.9 ✓
80	89.5 ✓
90	91.8 ✓
4800	92.6 ✓
10	94.0 ✓
20	94.4 ✓
30	94.5 ✓
40	97.2 ✓
50	97.2 ✓

✓

N3790

E		
4860	598.0	✓
70	96.7	✓
80	97.6	✓
90	96.5	✓
4900	90.4	✓
10	86.4	✓
20	83.5	✓
30	79.9	✓
40	79.6	✓
50	77.5	✓
60	73.4	✓
70	72.2	✓
80	70.1	✓
90	68.4	✓
5000	63.6	✓
10	63.4	✓
20	62.4	✓
30	59.6	✓
40	59.3	✓
50	58.0	✓
60	57.4	✓
70	58.1 ~~58.0~~	✓ ✓
80	58.2	✓
90	57.4	✓
5100	56.9	✓

B 337 P 69

N3750

E

5110	554.8	✓
20	55.4	✓
30	56.3	✓
40	54.8	✓
80	55.8	✓
60	56.1	✓
70	54.8	✓
80	55.0	✓
90	56.1	✓
5200	55.8	✓
10	55.2	✓
20	55.3	✓
30	54.8	✓
40	54.8	✓
50	55.15 ~~54.3~~	✓
60	55.7	✓
70	55.6	✓
80	55.3	✓
90	554	✓
5300	54.7	✓
10	55.6	✓
20	55.8	✓
30	55.8	✓
40	56.1	✓
50	56.1	✓

B337 P75

N3790

E		
5360	556.4	✓
70	56.2	✓
80	56.4	✓
90	56.3	✓
5400	56.7	✓
10	56.7	✓
20	56.6	✓
30	56.4	✓
40	56.6	✓
50	56.4	✓
60	56.7	✓
70	56.5	✓
80	56.9	✓
90	57.3	✓
5500	57.2	✓
10	56.3	✓
20	56.9	✓
30	57.7	✓
40	58.0	✓
50	57.6	✓
60	59.0	✓
70	58.8	✓
80	58.9	✓
90	59.2	✓
5600	59.2	✓ ✓

N3790

E

5610

20

5-59.3 ✓

59.5 ✓

N3800

E			
4360		5 63.5	✓
70		63.9	✓
80		64.2	✓
90		64.3	✓
4400		63.9	✓
10		63.7	✓
20		63.6	✓
30		63.2	✓
40		63.0	✓
50		63.1	✓
60		63.2	✓
70		63.1	✓
80		63.2	✓
90	63.3	~~63.2~~	✓ ✓
4500		63.7	✓
10		65.7	✓
20		68.6	✓
30		66.7	✓
40		66.5	✓
50		67.7	✓
60		67.8	✓
70		69.4	✓
80		71.7	✓
90	73.0	~~71.7~~	✓ ✓
4600		74.0	✓

✓

B 337 P 48.

B 337 P 61

N3800

E		
4610	577.0	✓
20	78.2	✓
30	79.3	✓
40	80.1	✓
50	79.9	✓
60	80.1	✓
70	81.8	✓
80	83.1	✓
90	83.8	✓
4700	85.4	✓
10	86.0	✓
20	87.1 ~~87.0~~	✓ ✓
30	88.6	✓
40	89.0	✓
50	91.2	✓
60	91.8	✓
70	93.9	✓
80	94.4	✓
90	96.7	✓
4800	98.4	✓
10	99.6	✓
20	600.5	✓
30	02.4	✓
40	01.7	✓
50	02.8	✓

B 338 P 16

N3800

E		
4860	604.1	✓
70	02.9	✓
80	02.7	✓
90	01.9	✓
4900	✓ 98.5	✓
10	94.9	✓
20	91.7	✓
30	87.4	✓
40	84.9	✓
50	82.6	✓
60	80.3	✓
70	78.0	✓
80	73.7	✓
90	72.0	✓
5000	68.0	✓
10	65.5	✓
20	63.8	✓
30	61.4	✓
40	60.1	✓
50	58.1	✓
60	57.4	✓
70	57.4	✓
80	58.8	✓
90	58.2	✓
5100	58.5	✓

N3800

E	
5110	56.2 ✓
20	55.5 ✓
30	55.6 ✓
40	56.2 ✓
50	56.2 ✓
60	56.3 ✓
70	56.6 ✓
80	56.7 ✓
90	56.5 ✓
5200	56.3 ✓
10	56.0 ✓
20	56.7 ✓
30	56.3 ✓
40	56.3 ✓
50	56.2 ✓
60	56.2 ✓
70	55.6 ✓
80	55.9 ✓
90	55.7 ✓
5300	55.9 ✓
10	54.9 ✓
20	55.1 ✓
30	56.1 ✓
40	55.6 ✓
50	56.0 ✓

N8800

E		
5260	55.4	✓
70	56.4	✓
80	56.3	✓
90	57.3	✓
5400	57.6	✓
10	57.2	✓
20	56.5	✓
30	56.2	✓
40	56.9	✓
50	56.7	✓
60	56.9	✓
70	57.5	✓
80	57.5	✓
90	56.6	✓
5500	57.0	✓
10	58.3	✓
20	57.9	✓
30	58.4	✓
40	58.7	✓
50	59.1	✓
60	59.1	✓
70	59.3	✓
80	59.0	✓
90	59.4	✓
5600	60.1	✓

N 3800

E

5610 5600.1 ✓

20 6100 ✓.

N3810

E			
4390		564.8	✓
4400		64.6	✓
10		64.2	✓
20		64.0	✓
30		63.6	✓
40		63.2	✓
50		63.3	✓
60		63.4	✓
70		63.6	✓
80		64.6	✓
90		65.2	✓
4500		66.3	✓
10		67.7	✓
20		68.8	✓
30		68.2	✓
40		70.0	✓
50		71.1	✓
60	72.0	~~72.2~~	✓ ✓
70		73.5	✓
80		75.9	✓
90		78.3	✓
4600	79.3	~~79.2~~	✓ ✓
10		81.3	✓
20		82.4	✓
30		83.7	✓

B 337 P 61

B 338 P 18

N 3810

E	
4640	583.9 ✓
50	84.8 ✓
60	84.8 ✓
70	85.9 ✓
80	87.2 ✓
90	89.0 ✓
4700	89.5 ✓
10	90.9 ✓
20	90.8 ✓
30	91.9 ✓
40	94.2 ✓
50	95.5 ✓
60	96.9 ✓
70	98.6 ✓
80	601.0 ✓
90	03.2 ✓
4800	03.1 ✓
10	05.4 ✓
20	05.1 ✓
30	07.3 ✓
40	07.2 ✓
50	08.2 ✓
60	10.2 ✓
70	09.0 ✓
80	07.8 ✓

✓

N 3810

E	
4890	605.5 ✓
4900	04.1 ✓
10	04.2 ✓
20	04.5 ✓
30	594.9 ✓
40	93.0 ✓
50	90.6 ✓
60	86.6 ✓
70	85.6 ✓
80	81.0 ✓
90	77.4 ✓
5000	74.6 ✓
10	72.1
20	68.3 ✓
30	64.7 ✓
40	62.8 ✓
50	62.1 ✓
60	58.4 ✓
70	55.8 ✓
80	58.3 ✓
90	59.6 ✓
5100	59.2 ✓
10	57.6 ✓
20	56.8 ✓
30	56.8 ✓

N3810

E		
5140	557.7	✓
50	58.3	✓
60	56.4	✓
70	57.4	✓
80	57.1	✓
90	56.6	✓
5200	56.9	✓
10	57.3	✓
20	57.2	✓
30	56.9	✓
40	56.5	✓
50	56.7	✓
60	56.6	✓
70	56.1	✓
80	56.4	✓
90	56.8	✓
5300	56.2	✓
10	56.8	✓
20	57.8	✓
30	56.8	✓
40	56.6	✓
50	56.2	✓
60	56.3	✓
70	56.2	✓
80	56.7	✓

N 3810

E		
5390	55.5	✓
5400	56.4	✓
10	56.2	✓
20	57.5	✓
30	57.0	✓
40	57.6	✓
50	57.8	✓
60	58.4	✓
70	58.0	✓
80	58.5	✓
90	59.1	✓
5500	58.5	✓
10	59.4	✓
20	59.0	✓
30	59.1	✓
40	59.1	✓
50	58.8	✓
60	59.0	✓
70	59.9	✓
80	60.1	✓
90	61.3	✓
5600	61.6	✓
10	63.0	✓
20	63.6	✓

N3820

E	
4400	565.4 ✓
10	65.0 ✓
20	64.5 ✓
30	63.9 ✓
40	63.7 ✓
50	64.0 ✓
60	64.8 ✓
70	65.8 ✓
80	68.1 ✓
90	69.2 ✓
4500	70.0 ✓
10	70.2 ✓
20	70.2 ✓
30	72.0 ✓
40	73.9 ✓
50	74.9 ✓
60	76.9 ✓
70	78.7 ✓
80	81.2 ✓
90	82.8 ✓
4600	83.3 ✓
10	84.8 ✓
20	87.1 ✓
30	87.7 ✓
40	88.2 ✓

N 3820

E	
4650	588.6 ✓
60	88.7 ✓
70	89.7 ✓
80	90.9 ✓
90	92.1 ✓
4700	93.3 ✓
10	94.8 ✓
20	95.6 ✓
30	96.8 ✓
40	97.7 ✓
50	99.8 ✓
60	600.8 ✓
70	02.8 ✓
80	04.8 ✓
90	06.7 ✓
4800	08.1 ✓
10	09.8 ✓
20	10.8 ✓
30	11.6 ✓
40	11.8 ✓
50	12.6 ✓
60	14.4 ✓
70	13.7 ✓
80	11.5 ✓
90	12.5 ✓

N3820

E			
4900		612.3	✓
10		09.6	✓
20		07.3	✓
30		02.0	✓
40		598.3	✓
50		95.2	✓
60	93.9	~~94.1~~	✓ ✓
70		90.3	✓
80		86.0	✓
90		83.0	✓
5000		81.6	✓
10		81.5	✓
20		76.1	✓
30		69.6	✓
40		68.6	✓
50		65.8	✓
60		61.6	✓
70		60.5	✓
80		59.6	✓
90		60.2	✓
5100		59.8	✓
10		59.6	✓
20		57.8	✓
30		57.5	✓
40		56.9	✓

B338 P27

N3820

E	
5150	558.0 ✓
60	57.2 ✓
70	57.0 ✓
80	57.2 ✓
90	57.4 ✓
5200	57.4 ✓
10	57.1 ✓
20	56.8 ✓
30	57.5 ✓
40	57.4 ✓
50	57.2 ✓
60	56.8 ✓
70	56.9 ✓
80	56.9 ✓
90	56.6 ✓
5300	57.0 ✓
10	56.8 ✓
20	56.8 ✓
30	56.9 ✓
40	57.1 ✓
50	57.1 ✓
60	57.1 ✓
70	56.3 ✓
80	56.8 ✓
90	56.5 ✓

✓

N3820

E	
5400	56.9 ✓
10	57.5 ✓
20	57.4 ✓
30	57.6 ✓
40	57.4 ✓
50	58.1 ✓
60	58.3 ✓
70	58.2 ✓
80	58.5 ✓
90	58.8 ✓
5500	58.5 ✓
10	58.8 ✓
20	59.3 ✓
30	60.1 ✓
40	57.8 ✓
50	60.1 ✓
60	60.5 ✓
70	60.9 ✓
80	61.9 ✓
90	63.3 ✓
5600	64.9 ✓
10	66.6 ✓
20	67.8 ✓
30	
40	

N3830

E	
4400	56G.1 ✓
10	65.5 ✓
20	64.7 ✓
30	64.8 ✓
40	65.1 ✓
50	66.1 ✓
60	67.5 ✓
70	70.1 ✓
80	70.8 ✓
90	71.5 ✓
45 00	71.9 ✓
10	71.9 ✓
20	73.7 ✓
30	75.8 ✓
40	77.8 ✓
50	79.2 ✓
60	81.1 ✓
70	83.4 ✓
80	85.8 ✓
90	8C.7 ✓
4600	87.7 ✓
10	90.4 ✓
20	90.6 ✓
30	92.4 ✓
40	92.7 ✓

N 3830

E		
4650	593.2 ~~593.3~~	✓
60	93.1	✓
70	94.3	✓
80	95.1	✓
90	96.3	✓
4700	97.7	✓
10	99.9	✓
20	99.4	✓
30	600.8	✓
40	02.3	✓
50	04.6	✓
60	05.7	✓
70	07.6	✓
80	09.6	✓
90	11.4	✓
4800	12.8	✓
10	15.3	✓
20	17.0	✓
30	16.8	✓
40	21.9	✓
50	21.7	✓
60	21.1	✓
70	16.9	✓
80	19.6	✓
90	20.6	✓

✓

B 338 P 17

N 3830

E		
4900	619.9	✓
10	20.7	✓
20	18.7	✓
30	09.6	✓
40	04.1	✓
50	02.5	✓
60	02.7	✓
70	599.1	✓
80	93.9	✓
90	89.8	✓
5000	87.0	✓
10	85.4	✓
20	82.7	✓
30	79.1	✓
40	74.1	✓
50	69.7	✓
60	68.3	✓
70	65.8	✓
80	61.3	✓
90	61.5	✓
5100	61.8	✓
10	60.4	✓
20	59.7	✓
30	58.7	✓
40	57.9	✓

N3830

E			
51 50		57.8	✓
60		58.2	✓
70		57.9	✓
80		56.8	✓
90		56.8	✓
52 00		56.8	✓
10		58.1	✓
20		57.8	✓
30		57.6	✓
40		57.4	✓
50		57.5	✓
60		57.2	✓
70		56.9	✓
80		57.2	✓
90		57.6	✓
53 00		56.8	✓
10		56.6	✓
20	57.0	~~64.0~~	✓ ✓
30		57.4	✓
40		57.4	✓
50		57.4	✓
60		57.7	✓
70		57.9	✓
80		57.5	✓
90		58.1	✓

B 337 P 78

N3830

E	
5400	58.7 ✓
10	58.5 ✓
20	58.6 ✓
30	58.5 ✓
40	58.2 ✓
50	58.5 ✓
60	58.6 ✓
70	59.3 ✓
80	59.1 ✓
90	60.1 ✓
5500	60.6 ✓
10	60.4 ✓
20	60.7 ✓
30	61.1 ✓
40	61.4 ✓
50	62.0 ✓
60	62.8 ✓
70	65.6 ✓
80	67.1 ✓
90	69.6 ✓
5600	68.5 ✓
10	70.6 ✓
20	70.7 ✓
30	74.6 ✓
40	76.6 ✓

Notre Dame Lvel ft.

N3840

E	
4400	56.4 ✓
10	66.1 ✓
20	66.3 ✓
30	67.9 ✓
40	69.5 ✓
50	70.5 ✓
60	70.9 ✓
70	71.9 ✓
80	72.7 ✓
90	73.0 ✓
4500	72.9 ✓
10	74.3 ✓
20	75.9 ✓
30	78.6 ✓
40	80.2 ✓
50	81.3 ✓
60	83.6 ✓
70	85.6 ✓
80	87.0 ✓
90	89.1 ✓
4600	91.4 ✓
10	93.3 ✓
20	94.3 ✓
30	95.3 ✓
40	96.1 ✓

✓

E	N3840	
4650	596.6	✓
60	97.5	✓
70	98.1	✓
80	99.0	✓
90	99.7	✓
4700	601.1	✓
10	02.7	✓
20	04.0	✓
30	05.8	✓
40	06.5	✓
50	07.9	✓
60	09.9	✓
70	11.2	✓
80	13.1	✓
90	15.2	✓
4800	17.4	✓
10	21.1	✓
20	23.3	✓
30	24.1	✓
40	24.9	✓
50	25.2	✓
60	25.2	✓
70	25.4	✓
80	26.3	✓
90	26.3	✓

N3840

E			
4900		626.5	✓
10		24.8	✓
20		22.6	✓
30		17.1	✓
40		13.6	✓
50		11.5	✓
60		08.5	✓
70		05.9	✓
80		598.3	✓
90	93.3	~~98.3~~	✓ ✓
5000		91.6	✓
10		90.5	✓
20		87.2	✓
30		83.6	✓
40		81.3	✓
50		77.5	✓
60		69.3	✓
70		68.0	✓
80		65.6	✓
90		65.2	✓
5100		66.4	✓
10		61.4	✓
20		61.5	✓
30		61.8	✓
40		59.8	✓

✓

8338 P12

N3840

E.

51 50		59.1	✓
60		58.1	✓
70	57.3	~~57.3~~	✓
80		57.1	✓
90		57.6	✓
52 00		57.1	✓
10		57.4	✓
20		57.8	✓
30		57.8	✓
40		57.8	✓
50		57.7	✓
60		57.5	✓
70		57.3	✓
80		57.3	✓
90		57.4	✓
53 00		57.8	✓
10		58.1	✓
20		57.9	✓
30		57.9	✓
40		57.8	✓
50		57.8	✓
60		57.8	✓
70		57.8	✓
80		58.5	✓
90		58.0	✓

B337 P 72

N 3840

E		
5400	558.0	✓
10	58.2	✓
20	58.1	✓
30	58.1	✓
40	58.6	✓
50	59.2	✓
60	59.6	✓
70	60.3	✓
80	60.9	✓
90	61.9	✓
5500	62.3	✓
10	62.4	✓
20	62.3	✓
30	62.6	✓
40	63.1	✓
50	66.5	✓
60	64.4	✓
70	70.2	✓
80	73.3	✓
90	73.7	✓
5600	74.2	✓
10	75.2	✓
20	76.9	✓
30	81.2	✓
40	84.5	✓

Not on Same Sec. H.

N 3850

E	
4420	569.4 ✓
30	71.3 ✓
40	71.8 ✓
50	72.1 ✓
60	73.4 ✓
70	73.7 ✓
80	74.2 ✓
90	74.1 ✓
4500	74.3 ✓
10	76.8 ✓
20	78.2 ✓
30	80.7 ✓
40	82.7 ✓
50	83.2 ✓
60	86.1 ✓
70	87.8 ✓
80	88.4 ✓
90	93.4 ✓
4600	95.0 ✓
10	97.6 ✓
20	97.9 ✓
30	99.2 ✓
40	99.3 ✓
50	601.6 ✓
60	01.3 ✓

N3850

E			
4670		601.6	✓
80		02.7	✓
90		04.8	✓
4700		05.5	✓
10		08.2	✓
20		08.5	✓
30		09.9	✓
40		10.5	✓
50		12.9	✓
60		13.8	✓
70	15.1	~~13.7~~	✓ ✓
80		18.5	✓
90		19.1	✓
4800		23.5	✓
10		26.2	✓
20		26.9	✓
30		29.4	✓
40		29.1	✓
50		30.8	✓
60		31.6	✓
70		31.0	✓
80		31.5	✓
90		32.7	✓
4900		31.9	✓
10		30.0	✓

B 338 P 64

N3850

E	
4920	628.0 ✓
30	26.0 ✓
40	22.0 ✓
50	17.5 ✓
60	15.6 ✓
70	11.8 ✓
80	05.6 ✓
90	603.1 ✓
5000	599.8 ✓
10	98.6 ✓
20	94.0 ✓
30	90.4 ✓
40	88.2 ✓
50	87.2 ✓
60	81.7 ✓
70	75.9 ✓
80	71.9 ✓
90	69.5 ✓
5100	69.8 ✓
10	65.8 ✓
20	65.4 ✓
30	64.0 ✓
40	61.6 ✓
50	63.5 ✓
60	61.0 ✓

N3850

E		
5170	562.3	✓
80	59.3	✓
90	59.0	✓
5200	58.4	✓
10	58.7	✓
20	58.0	✓
30	58.7	✓
40	58.9	✓
50	57.6	✓
60	60.0	✓
70	59.7	✓
80	59.5	✓
90	59.4	✓
5300	59.6	✓
10	59.6	✓
20	59.7	✓
30	60.2	✓
40	60.1	✓
50	59.7	✓
60	59.8	✓
70	59.7	✓
80	59.1	✓
90	59.9	✓
5400	60.6	✓
10	59.6	✓

N 3850

E	
5420	59.8 ✓
30	60.1 ✓
40	60.0 ✓
50	60.8 ✓
60	61.2 ✓
70	62.9 ✓
80	62.3 ✓
90	62.4 ✓
5500	62.3 ✓
10	63.8 ~~62.8~~ ✓ ✓
20	65.8 ✓
30	69.1 ✓
40	69.3 ✓
50	73.6 ✓
60	72.7 ✓
70	74.0 ✓
80	79.4 ✓
90	81.1 ✓
5600	82.4 ✓
10	81.9 ✓
20	82.1 ✓
30	
40	
50	
60	

B 338 - P5

N3860

E	
4440	573.5 ✓
50	74.4 ✓
60	74.8 ✓
70	75.0 ✓
80	75.2 ✓
90	75.8 ✓
4500	76.7 ✓
10	78.0 ✓
20	79.8 ✓
30	82.2 ✓
40	84.6 ✓
50	86.5 ✓
60	88.7 ✓
70	90.8 ✓
80	93.3 ✓
90	96.3 ✓
4600	97.1 ✓
10	600.1 ✓
20	01.2 ✓
30	02.0 ✓
40	03.5 ✓
50	04.4 ✓
60	05.4 ✓
70	06.2 ✓
80	07.6 ✓

✓

N3860

E		
4690	608.9	✓
4700	09.9	✓
10	11.8	✓
20	13.2	✓
30	14.4	✓
40	15.4	✓
50	16.6	✓
60	18.6	✓
70	21.8	✓
80	22.8	✓
90	25.6	✓
4800	28.1	✓
10	31.9	✓
20	33.6	✓
30	34.6	✓
40	34.0	✓
50	35.1	✓
60	35.9	✓
70	34.8	✓
80	36.3	✓
90	37.0	✓
4900	38.0	✓
10	34.6	✓
20	35.1	✓
30	34.2	✓

N3860

E			
4940		628.8	✓
50		25.4	✓
60		23.7	✓
70		20.8	✓
80	154	~~16.4~~	✓
50		12.6	✓
~~5000~~		10.8	✓✓
10		07.0	✓
20		02.7	✓
30		~~598.8~~	✓
40		94.4	✓
50		92.6	✓
60		91.7	✓
70		86.2	✓
80		82.1	✓
90		77.6	✓
5100		74.7	✓
10		71.4	✓
20		68.1	✓
30		67.1	✓
40		66.4	✓
50		66.6	✓
60		65.7	✓
70		65.4	✓
80		63.8	✓

B338 - P45

N38 60

E		
5190	56.9	✓
5200	60.3	✓
10	60.8	✓
20	60.4	✓
30	61.1	✓
40	60.3	✓
50	61.2	✓
60	61.7	✓
70	61.3	✓
80	61.1	✓
90	60.1	✓
5300	60.0	✓
10	60.5	✓
20	60.5	✓
30	61.0	✓
40	60.7	✓
50	60.5	✓
60	62.5	✓
70	64.6	✓
80	64.2	✓
90	63.5	✓
5400	62.3	✓
10	61.4	✓
20	62.0	✓
30	62.4	✓

N3860

E	
5440	562.7 ✓
50	64.2 ✓
60	65.3 ✓
70	66.3 ✓
80	67.0 ✓
90	65.6 ✓
5500	65.0 ✓
10	65.5 ✓
20	69.4 ✓
30	78.7 ✓
40	79.3 ✓
50	77.8 ✓
60	81.5 ✓
70	81.7 ✓
80	85.4 ✓
90	87.4 ✓
5600	87.8 ✓
10	87.3 ✓

N3870

E		
4440	575.3	✓
50	75.8	✓
60	76.1	✓
70	76.3	✓
80	76.8	✓
50	77.3	✓
4500	78.3	✓
10	79.4	✓
20	81.5	✓
30	84.0	✓
40	86.6	✓
50	89.4	✓
60	91.6	✓
70	93.8	✓
80	95.3	✓
90	99.7	✓
4600	600.6	✓
10	02.5	✓
20	04.3	✓
30	06.6	✓
40	07.5	✓
50	09.1	✓
60	09.3	✓
70	11.1	✓
80	12.8	✓

N3870

E			
4690		613.7	✓
4700		14.8	✓
10	16d	~~13.1~~	✓ ✓
20		17.6	✓
30		19.0	✓
40		19.9	✓
50		21.7	✓
60		25.1	✓
70		27.6	✓
80		30.2	✓
90		34.9	✓
4800		36.2	✓
10		37.9	✓
20		39.6	✓
30		40.3	✓
40		41.4	✓
50		41.4	✓
60		40.5	✓
70		41.7	✓
80		42.9	✓
90		42.5	✓
4900		43.3	✓
10		43.7	✓
20		43.6	✓
30		42.4	✓

B 338 P 6✓

N3870

E	
4940	639.0 ✓
50	33.9 ✓
60	32.1 ✓
70	29.5 ✓
80	25.1 ✓
90	21.4 ✓
5000	17.7 ✓
10	14.7 ✓
20	12.2 ✓
30	09.0 ✓
40	600.4 ✓
50	00.3 ✓
60	596.3 ✓
70	95.1 ✓
80	90.0 ✓
90	87.1 ✓
5100	82.0 ✓
10	78.0 ✓
20	75.7 ✓
30	73.8 ✓
40	73.7 ✓
50	73.2 ✓
60	72.0 ~~70.0~~ ✓ ✓
70	71.5 ✓
80	67.8 ✓

B338 P 11

E	N3870		
5150		568.8	✓
5200	66.8	~~68.8~~	✓
10		65.8	✓
20		64.7	✓
30		66.5	✓
40		64.9	✓
50		65.1	✓
60		63.5	✓
70		65.0	✓
80		63.0	✓
90		64.0	✓
5300		62.2	✓
10		61.5	✓
20		61.2	✓
30		62.1	✓
40		63.3	✓
50		62.5	✓
60		65.2	✓
70		68.5	✓
80		68.0	✓
90		67.7	✓
5400		65.0	✓
10	66.6	~~66.0~~	✓
20		67.0	✓
30		69.7	✓

B 337 P 73

B 338 P 1

N 3870

E		
5440	569.8	✓
50	71.8	✓
60	71.2	✓
70	73.6	✓
80	71.6	✓
90	70.0	✓
5500	68.1	✓
10	68.3	✓
20	72.9	✓
30	81.8 ~~71.8~~	✓ ✓
40	89.0	✓
50	85.5	✓
60	87.5	✓
70	88.7	✓
80	89.9	✓
90	91.4	✓
5600	92.4	✓
10	94.1	✓

B 338 P 9

N 3880

E		
4440	5 76.5	✓
50	77.2	✓
60	77.3	✓
70	77.8	✓
80	78.2	✓
90	78.6	✓
4500	79.6	✓
10	80.8	✓
20	83.0	✓
30	85.6	✓
40	88.2	✓
50	91.7	✓
60	93.7	✓
70	96.3	✓
80	98.9	✓
90	601.4	✓
4600	04.7	✓
10	06.3	✓
20	07.6	✓
30	10.0	✓
40	11.0	✓
50	12.8	✓
60	13.7	✓
70	15.6	✓
80	17.1	✓

N3880

E		
4690		618.3 ✓
4700		18.7 ✓
10		20.0 ✓
20		21.7 ✓
30		23.2 ✓
40		24.2 ✓
50		26.5 ✓
60		29.1 ✓
70		32.8 ✓
80		35.3 ✓
90		37.7 ✓
4800		40.4 ✓
10		43.4 ✓
20		44.9 ✓
30		46.0 ✓
40		46.7 ✓
50		46.7 ✓
60		46.5 ✓
70	45.7	~~46.7~~ ✓ ✓
80		48.6 ✓
90		49.9 ✓
4900		49.2 ✓
10		49.0 ✓
20		49.2 ✓
30		49.1 ✓

B 338. PT1

N 3880

E		
4940	44.2	✓
50	42.0	✓
60	38.1	✓
70	33.7	✓
80	34.3	✓
90	30.2	✓
5000	26.9	✓
10	21.8	✓
20	18.7	✓
30	11.8	✓
40	11.0	✓
50	07.3	✓
60	05.3	✓
70	01.2	✓
80	97.5	✓
90	92.6	✓
5100	90.4	✓
10	87.0	✓
20	85.6	✓
30	82.7	✓
40	83.4	✓
50	83.3	✓
60	82.3	✓
70	77.6 ~~71.6~~	✓ ✓
80	73.9	✓

B 338 P 11

N3880

E	
5190	593.2 ✓
5200	72.1 ✓
10	70.1 ✓
20	70.1 ✓
30	68.5 ✓
40	69.4 ✓
50	68.5 ✓
60	68.7 ✓
70	68.6 ✓
80	67.3 ✓
90	66.8 ✓
5300	658 ✓
10	64.6 ✓
20	64.6 ✓
30	66.1 ✓
40	67.0 ✓
50	69.6 ✓
60	68.2 ✓
70	69.8 ✓
80	70.3 ✓
90	69.7 ✓
5400	69.7 ✓
10	70.8 ✓
20	73.7 ✓
30	77.5 ✓

E	N3880	
5440	579.0	✓
50	81.0	✓
60	81.0	✓
70	79.7	✓
80	77.5	✓
90	74.6	✓
5500	70.7	✓
10	71.7	✓
20	78.0	✓
30	834 ~~73.4~~	✓ ✓
40	87.8	✓
50	89.3	✓
60	91.1	✓
70	92.6	✓
80	93.4	✓
90	95.0	✓
5600	92.6	✓
10	98.2	✓

B 338 P 9

N3890

E		
4440	576.8	✓
50	77.9	✓
60	78.8	✓
70	78.9	✓
80	79.8	✓
90	80.2	✓
4500	81.2	✓
10	82.4	✓
20	84.9	✓
30	87.2	✓
40	90.2	✓
50	93.2	✓
60	95.8	✓
70	98.2	✓
80	601.1	✓
90	05.5	✓
4600	07.4	✓
10	09.4	✓
20	12.0	✓
30	14.6	✓
40	15.8	✓
50	17.1	✓
60	18.9	✓
70	20.2	✓
80	21.5	✓

N3890

E		
4690	622.6	✓
4700	23.5	✓
10	24.6	✓
20	26.7	✓
30	28.2	✓
40	29.0	✓
50	31.6	✓
60	34.6	✓
70	37.1	✓
80	39.4	✓
90	46.0	✓
4800	46.9	✓
10	50.1	✓
20	51.5	✓
30	51.7	✓
40	51.5	✓
50	52.4 ~~52.6~~	✓
60	52.4	✓
70	52.1	✓
80	53.8	✓
90	53.5	✓
4900	54.9	✓
10	55.9	✓
20	53.9	✓
30	54.9	✓

B338 P70

N3890

E		
4940	65.20	✓
50	49.5	✓
60	45.4	✓
70	42.6	✓
80	43.1	✓
90	38.6	✓
5000	32.9	✓
10	27.5	✓
20	26.1	✓
30	19.6	✓
40	22.9	✓
50	18.5	✓
60	13.3	✓
70	09.0	✓
80	04.0	✓
90	02.6	✓
5100	596.2	✓
10	94.7	✓
20	95.4	✓
30	92.5	✓
40	92.2	✓
50	93.7	✓
60	90.3	✓
70	88.7	✓
80	86.9	✓

✓

N3890

E		
5190	58.4	✓
5200	83.0	✓
10	84.9	✓
20	79.9	✓
30	77.6	✓
40	77.3	✓
50	74.2	✓
60	74.5	✓
70	75.7	✓
80	76.6	✓
90	74.1	✓
5300	72.5	✓
10	68.4	✓
20	67.8	✓
30	68.6	✓
40	74.6	✓
50	78.0	✓
60	76.9	✓
70	77.0	✓
80	74.7	✓
90	78.6	✓
5400	80.7	✓
10	82.8	✓
20	83.2	✓
30	87.7	✓

E	N3890	
5440		589.6 ✓
50		91.9 ✓
60		88.6 ✓
70		85.9 ✓
80		84.7 ✓
90		81.0 ✓
5500		76.4 ✓
10		75.9 ✓
20		82.3 ✓
30		85.6 ✓
40		90.4 ✓
50		93.0 ✓
60		94.9 ✓
70		95.7 ✓
80		97.8 ✓
90	98.0	~~98.8~~ ✓ ✓
5600		99.6 ✓
10		601.9 ✓

B338 P37

N3900

E	
4440	577.3 ✓
50	78.7 ✓
60	79.9 ✓
70	80.3 ✓
80	80.7 ✓
90	81.6 ✓
4500	82.6 ✓
10	84.1 ✓
20	86.4 ✓
30	88.9 ✓
40	91.8 ✓
50	94.9 ✓
60	99.2 ✓
70	99.9 ✓
80	603.5 ✓
90	07.3 ✓
4600	11.2 ✓
10	13.0 ✓
20	15.7 ✓
30	17.3 ✓
40	19.1 ✓
50	20.7 ✓
60	22.4 ✓
70	24.0 ✓
80	25.5 ✓

N3900

E	
4690	626.0 ✓
4700	27.7 ✓
10	28.8 ✓
20	31.0 ✓
30	32.7 ✓
40	35.4 ✓
50	36.5 ✓
60	37.5 ✓
70	41.7 ✓
80	46.0 ✓
90	49.9 ✓
4800	52.0 ✓
10	55.0 ✓
20	56.4 ✓
30	57.8 ✓
40	58.7 ✓
50	59.6 ✓
60	63.2 ✓
70	65.0 ✓
80	61.3 ✓
90	61.9 ✓
4900	61.9 ✓
10	60.9 ✓
20	59.9 ✓
30	57.2 ✓

N3900

E	
4940	657.1 ✓
50	54.0 ✓
60	51.5 ✓
70	50.5 ✓
80	49.7 ✓
90	48.7 ✓
5000	38.0 ✓
10	35.2 ✓
20	22.9 ✓
30	29.8 ✓
40	31.5 ✓
50	27.0 ✓
60	21.6 ✓
70	14.6 ✓
80	11.6 ✓
90	09.8 ✓
5100	06.6 ✓
10	04.7 ✓
20	02.3 ✓
30	600.9 ✓
40	01.4 ✓
50	599.9 ✓
60	99.6 ✓
70	95.7 ✓
80	95.4 ✓

N 3900

E	
5190	94.7 ✓
5200	93.1 ✓
10	92.7 ✓
20	90.1 ✓
30	87.9 ✓
40	85.3 ✓
50	83.9 ✓
60	81.0 ✓
70	83.7 ✓
80	86.4 ✓
90	84.6 ✓
5300	81.2 ✓
10	75.4 ✓
20	72.9 ✓
30	78.0 ✓
40	82.9 ✓
50	83.7 ✓
60	85.3 ✓
70	83.2 ✓
80	85.2 ✓
90	87.1 ✓
5400	87.1 ✓
10	88.7 ✓
20	95.5 ✓
30	96.4 ✓

N3900

E	
5440	599.9 ✓
50	97.4 ✓
60	93.6 ✓
70	90.5 ✓
80	88.2 ✓
90	85.9 ✓
5500	85.5 ✓
10	80.2 ✓
20	80.4 ✓
30	83.0 ✓
40	93.2 ✓
50	97.7 ✓
60	98.4 ✓
70	600.5 ✓
80	00.5 ✓
90	01.3 ✓
5600	03.2 ✓
10	05.8 ✓

N3910

E	
4440	577.8 ✓
50	79.5 ✓
60	80.7 ✓
70	81.2 ✓
80	81.7 ✓
90	82.8 ✓
45 00	84.0 ✓
10	85.5 ✓
20	87.8 ✓
30	90.8 ✓
40	93.1 ✓
50	95.6 ✓
60	99.4 ✓
70	603.5 ✓
80	05.2 ✓
90	09.8 ✓
4600	13.2 ✓
10	16.1 ✓
20	18.9 ✓
30	19.7 ✓
40	23.8 ✓
50	25.0 ✓
60	27.5 ✓
70	27.8 ✓
80	29.6 ✓

✓

N 3910

E			
4690		630.7	✓
4700		32.3	✓
10		34.0	✓
20		36.4	✓
30		38.7	✓
40		40.0	✓
50		41.4	✓
60		44.2	✓
70		48.4	✓
80		50.5	✓
90		55.0	✓
4800		57.1	✓
10		61.8	✓
20		63.2	✓
30		65.7	✓
40		65.7	✓
50		70.6	✓
60		69.9	✓
70		71.1	✓
80		67.8	✓
90	69.3	69.2	✓ ✓
4900		67.8	✓
10		66.8	✓
20		64.4	✓
30		63.6	✓

✓

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N 3910

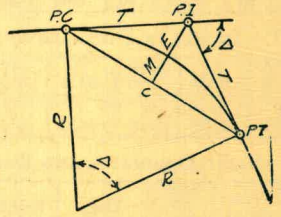
E				
4940			661.3	✓
50			59.8	✓
60			57.6	✓
70			56.6	✓
80			55.0	✓
90			54.5	✓
50 00		51.7	~~51.5~~	✓ ✓
10			44.6	✓
20			39.3	✓
30			38.5	✓
40			41.1	✓
50			33.0	✓
60			26.0	✓
70			24.5	✓
80			19.5	✓
90			20.2	✓
51 00			17.6	✓
10			15.7	✓
20			13.2	✓
30			11.5	✓
40			12.6	✓
50			12.0	✓
60			10.6	✓
70			05.0	✓
80			04.9	✓

Cont. in F. Book # 369

These notes Original Ground Dam Sections are same
Checked to ✓ LBH

B 338 P 62

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.