

W

574

# 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  $30.6 + (20 - 16) \div 2$  or 2 ft. added to  $30.6 = 32.6$ . For slopes of 1 on  $1\frac{1}{2}$  see inside of back cover.

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# 574

The paper stock of this book is made of a high grade 50% rag paper having a water resisting surface and is sewed with Bing Special Enamel Waterproof Thread.

Made in U. S. A.

**MICROFILMED**

**JAN 13 1965**

Indexed top 56 - 6/12/46 - m.s.d.

11<sup>th</sup> St & profile

0-22 ✓

11<sup>th</sup> St alternate & profile, South from 7<sup>th</sup> & 11<sup>th</sup> 23-33 ✓

Profile - 7 offsets - 11<sup>th</sup> St. Loc.

✓ ✓ 11<sup>th</sup> Press - 04 Oct to 7<sup>th</sup> Jan 33-54

Grade Change - 11<sup>th</sup> St Pipeline - Profile & Grades 55-56 ✓

MICROFILMED

JAN 13 1982

4 profile, 11<sup>th</sup> St. Canyon location

B.M.	7.52	90.47	82.95
		6.08	84.39
TP B.M.	6.83	89.81	82.98
		7.6	82.2
0+50		5.9	83.9
0+00		6.8	83.0
0+50		6.3	83.5
		11.3	78.5
		16.1	73.7
1+00		5.5	84.3
1+50		5.6	84.2
2+00		4.6	85.2
2+50		4.5	85.3
3+00		4.2	85.6

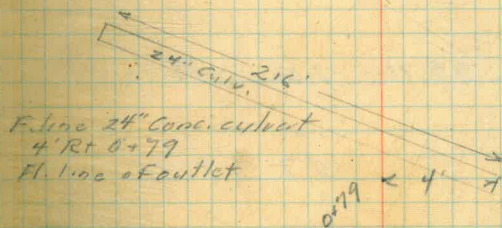
8/18/41  
Super  
Brooks  
Hodgeson

B.P.N.W. Cor. 11<sup>th</sup> & B.

B.P.N.W. Cor. 11<sup>th</sup> & A State elev. = 84.40

Set B.M. Nail in power pole, 11<sup>th</sup> & Russ, West side 11<sup>th</sup>

center of 24" horizontal gate valve 11<sup>th</sup> & A.



F. line 24" Conc. culvert  
4' Rt 0+79  
H. line of outlet

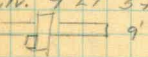
89.81

3+50			3.3	86.5 ✓
			6.4	83.4 ✓
4+00			2.9	86.9 ✓
4+50			2.5	87.3 ✓
4+71 <sup>40</sup> L			2.2	87.6 ✓
5+00			1.4	88.4 ✓
IT	6.98	95.71	1.08	88.73 ✓
5+50			5.7	90.0 ✓
			12.3	83.4 ✓
5+85			9.6	86.1 ✓
6+00			9.4	86.3 ✓
6+16 <sup>06</sup> L			8.8	86.9 ✓
6+50			9.4	86.3 ✓

Rim of sewer M.H. 39 ft 3+?

Stone B.M. elev. 88.73. Culv. headwall 50' H 5+50

Fl. line 24" Conc. Culv. 9' H 5+50



95.71

7+00 7.5 88.2 ✓

6+50 6.7 89.0 ✓

8+00 6.9 88.9 ✓

+08 6.7 89.0 ✓

+37 3.4 92.3 ✓

+50 3.5 92.2 ✓

+69 3.9 91.8 ✓

9+00 3.7 92.0 ✓

+50 3.1 92.6 ✓

+62 <sup>40</sup>/<sub>100</sub> B.C. 3.0 92.7 ✓

10 2.8 92.9 ✓

+50 2.5 93.2 ✓

toe of road fill

top " " "

95.71

TP	8.96	102.18	2.49	93.22
			14.0	88.2
			11.1	91.1
11+00			8.7	93.5
+50			8.0	94.2
12+00			7.4	94.8
+50			6.7	95.5
13+00			6.1	96.1
+50			5.8	96.4
14+00			5.6	96.6
+50			4.8	97.4
			9.5	92.7
			13.6	88.6

Fl. line 24" Conc. culv. 25 Lt. 10+86

" " " " 36 Rt. 10+86

Fl. line 24" conc. culv. 62 Rt 14+62

" " " " 58 Lt 14+62

	102.18		
15+00		4.1	98.1 ✓
		6.2	96.0 ✓
		6.9	95.3 ✓
			85.0
			99.1
15+50		3.2	99.0 ✓
+59.60 E.C.		2.7	99.5 ✓
+67.4 L.		2.6	99.6 ✓
16+00		3.2	99.0 ✓
+50		2.1	100.1 ✓
+66.54 L.		2.1	100.1 ✓
17+00		1.6	100.6 ✓
+50		0.9	101.3 ✓
18+00		0.2	102.0 ✓
TP	8.60	110.19	0.59 101.59 ✓

6.6  
6.6

5

Fl. line 24" conc. culv. 2<sup>nd</sup> RT 15+41  
 " " " " " 5 LT "  
 Fl. line 8" sewer in M.H-83' LT 15+40 } Intersection at 15+40  
 " " " " " 266' RT }



110.19

18+50	7.5	102.7 ✓
19+00	6.9	103.3 ✓
+50	6.4	103.8 ✓
20	6.1	104.1 ✓
+50	5.5	104.7 ✓
	9.9	100.3 ✓
	11.8	98.4 ✓
		93.8
	7.2	103.0 ✓
	7.7	102.5 ✓
20+98 <sup>37</sup> L	5.1	105.1 ✓
		103.0
Set B.M.	4.70	105.49 ✓
21+50	4.7	105.5 ✓
22+00	4.1	106.1 ✓
22+51 <sup>35</sup> back	3.7	106.5 ✓
22+50 ahead		

Fl. line 24" conc. culv. 7' RT 20+78

" " " " 27' LT "

Fl. line 8" sewer in M.H. 50' H, 20+83

Top of 12" gas 5' LT 20+94,

" " 4" " - 20+94 (ring)

Top of 8" O.D. sewer, 40' RT 21+06

South end of culv. headwall 29' RT 20+78

110.19

23+00 1.5 108.7'

TI 13.09 123.21' 0.07 110.12'

23+25 3.7 119.5'

+50 2.4 120.8'

24+00 1.5 121.7'

+38 1.3 121.9'

TI 7.53 118.38' 12.36 116.85'

25+00 8.3 110.1'

+50 7.8 110.6'

26+00 6.7 111.7'

+50 6.2 112.2'

10.1 108.3'

11.5 106.9'

7

 $\frac{1074}{3'}$ Top of bank  $\frac{1074}{6'}$  $\frac{1325}{36'}$  $\frac{1076}{8'}$   $\frac{1206}{2'}$  $\frac{1338}{34'}$  $\frac{1082}{14'}$   $\frac{1197}{10'}$  $\frac{1347}{37'}$ Top of bank  $\frac{1084}{9'}$  $\frac{1349}{41'}$  $\frac{1097}{5'}$ 

El line conc. culvert 24' RT 26+50

" " " 44' 14' "

118.38

B.M.	5.63	112.75 ✓
27+00	5.8	112.6 ✓
+50	4.7	113.7 ✓
+70	4.7	113.7 ✓
28+00	6.4	112.0 ✓
+50	6.5	111.9 ✓
29	6.5	111.9 ✓
+50	5.1	113.3 ✓
	10.4	108.0 ✓
	9.8	108.6 ✓
30+00	3.7	114.7 ✓
+50	1.5	116.9 ✓
+50		106.5
		116.5

State B.M. 112.76, on conc. hd wall. 24' RT 26+50

Fl. line 24" conc. culv. 19' Lt 29+56  
" " " " 5' RT 29+56

Fl. line sewer M.H. 40' Lt 30+72  
" " " " RT

(Stone) May 7, 1942 Sopor  
& profile 11<sup>th</sup> St. Loc.

0+00<sup>Upas St.</sup> - 65+50 - Book 574/23-31  
65+87 - 70+22<sup>70</sup> " 275/75  
70+22<sup>70</sup> - 10+05<sup>91</sup> " 574/39-37  
10+00 - 2+00 " 573/46-45  
1+93 - 0-51<sup>4</sup> " 574/34

Grades - 11<sup>th</sup> St - Book 574/34-54

0-51<sup>4</sup> to 10+05<sup>91</sup> at Russ St.

10+05<sup>91</sup> = 73+33<sup>12</sup>

73+33<sup>12</sup> to 69+93<sup>50</sup>

69+93<sup>50</sup> = 70+22<sup>70</sup>

70+22<sup>70</sup> to 0+00 Upas St.  
about Ash St.

		118.38		
TT	9.20	127.17	0.41	117.97
31+00			8.3	118.9
+ 50			8.7	118.5
32			8.1	119.1
+ 50			7.5	119.7
B.M.			7.60	119.57
			13.8	113.4
			15.0	112.2
33			7.0	120.2
+ 50			6.7	120.5
34			6.1	121.1
+ 50			5.4	121.8
35			4.7	122.5
+ 09 <sup>80</sup> E.C.			4.6	122.6

8/19/41  
Super  
Brooks  
Hodgeson

9

State B.M. elev. 119.58 on hdwall 16' Rt 32+67

Fl. line 24° conc. curb. 16' Rt 32+67

" " " " 33 Lt "

127.17			
		110.8	
		110.0	
35+50	4.1	123.1	✓
36	3.5	123.7	✓
+50	2.8	124.4	✓
37	2.1	125.1	✓
+52 <sup>30</sup> B.C.	1.5	125.7	✓
	7.2	120.0	✓
38	1.1	126.1	✓
+50	0.5	126.7	✓
77	9.09	135.69	✓
	0.58	126.59	✓
39+00	8.3	127.4	✓
	11.9	123.8	✓ H
	11.1	124.6	✓ RT

Fl. L. 8" sewer in M.H. 85' Lt. 35+10

" 12" " " " " " "

Fl. line 12" Corro. I. Culv. 28' Lt. 37+71 (other end covered)

Fl. line 24" Conc. Culv. 5' Lt. 39+36  
 " " " " 5' to Rt  
 30°

135.68

B.M.	6.40	129.28 ✓
39+50	8.0	127.7 ✓
40	7.8	127.9 ✓
+ 50	7.6	128.1 ✓
41	7.1	128.5 ✓
+ 50	6.2	129.5 ✓
42	5.3	130.4 ✓
+ 50	4.8	130.9 ✓
43	4.0	131.7 ✓
+ 50	3.5	132.2 ✓
44	3.1	132.6 ✓
+ 50	2.4	133.3 ✓
	3.8	131.9 ✓

11

State B.M. on bidwall 30' RT 39+40 129.30

Ft. L. 12" sewer in M.H. 45' RT 39+64 { F.L. = 119.8 from  
 City Engrs. plans

Ft. line 12" Corr. I drain in manhole 27 RT 44+77  
 outlet not found.

135.68

45+03.4		1.0	134.8 <sup>7</sup>
TP	6.67	141.99	0.36 135.32
45+50		7.2	134.8
46		6.6	135.4
+ 50		5.5	136.5
+98 <sup>20</sup> L		4.7	138.3 <sup>7</sup>
B.M.		4.11	137.88
		4.0	138.0 RT
		6.5	135.5 RT
		10.0	132.0 RT
		3.9	138.1 Lt
		6.4	135.6 Lt
		10.3	131.7 Lt

(check, to see if footings for bridge will interfere with our location.)

State B.M. on sidewalk 15' RT 47+10

Top of arch culv. headwall 148 RT 47+23

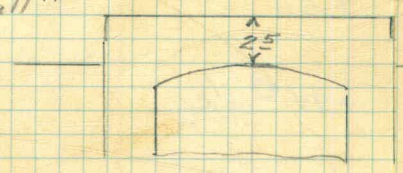
Top of arch

Fl. line of creek (check for conc. floor)

Top culv. headwall to Lt

Top of arch to Lt

Fl. line to Lt.





141.99

47+41 8' Back  
47+41 9' ahead.

4.4 137.6 ✓

47+96 4' BC.

4.0 138.0 ✓

+50

3.6 138.4 ✓

49

3.2 138.8 ✓

129.5

TP

5.80

145.45 ✓

2.34 139.65 ✓

49+50

6.5 139.0 ✓

50

6.1 139.4 ✓

+50

5.7 139.8 ✓

+94 5' E.C.

5.3 140.2 ✓

51

5.3 140.2 ✓

+50

5.0 140.5 ✓

52

4.5 141.0 ✓

13

F.L. 8" sewer in M.H. 71' RT 49+24

145.45

52+50 3.9 141.6 ✓

53 3.2 142.3 ✓

+50 2.3 143.2 ✓

54+00 1.4 144.1 ✓

+15<sup>83</sup> B.C. 1.1 144.4 ✓

+50 0.4 145.1 ✓

TP 10.22 154.54 1.13 144.32 ✓

55+00 8.5 146.0 ✓

+50 7.5 147.0 ✓

56 6.6 147.9 ✓

+50 5.5 149.0 ✓

57 5.0 149.5 ✓

154.54

	8.8	145.7	✓
	10.0	144.5	✓
57+50	4.7	149.8	✓
58	4.4	150.1	✓
+25 <sup>98</sup> E.C.	4.1	150.4	✓
+50	3.9	150.6	✓
59	3.3	151.2	✓
+50	2.7	151.8	✓
60	2.0	152.5	✓
+50	1.3	153.2	✓
61	0.6	153.9	✓
TP	12.97	166.91	✓
	0.60	153.94	✓
61+50	12.2	154.7	✓

15

El. line 24" conc culv. 4<sup>3</sup> Lt 57+01  
" " " " 31<sup>2</sup> Rt "

166.91

62 11.4 155.5 ✓

B.M. 10.69 156.22 ✓

62+50 10.7 156.2 ✓

+77<sup>25</sup> B.C. 10.3 156.6 ✓

63 10.0 156.9 ✓

+50 9.4 157.5 ✓

64 8.7 158.2 ✓

+50 7.7 159.2 ✓

65 6.5 160.4 ✓

5.3 161.6 ✓

7.6 159.3 ✓

12.2 154.7 ✓

16

Set B.M. on conc. hdwall 26' Rt 62+26

Top of arch culv. hdwall 13° Lt 65+11

Top of arch

Fl. line (cemented rock floor 12" thick)

166.91

6.1 160.8 ✓

7.9 159.0 ✓

13.0 153.9 ✓

65+50

5.1 161.8 ✓

66

4.1 162.8 ✓

+50

4.3 162.6 ✓

7.3 159.6 ✓

8.7 158.2 ✓

67

4.6 162.3 ✓

+50

4.3 162.6 ✓

3.8 163.1 ✓

5.6 161.3 ✓

8.9 158.0 ✓

3.8 163.1 ✓

5.6 161.3 ✓

8.9 158.0 ✓

17

Top of arch culv. hdwall. 27' RT 65+11

Top of arch

Fl. line

Fl. line 12" conc. culv. 15' RT 66+83

" " 12" " " 43' LT "

Top of arch culv. <sup>hdwall</sup> 8' RT 67+59

Top of arch

Fl. line (cemented rock floor) 6" floor

Top of arch culv. hdwall 17' LT

Top of arch

Fl. line

166.91

B.M		3.76	163.15 ✓
67+75		4.2	162.7 ✓
68		3.9	163.0 ✓
+50		3.5	163.4 ✓
69		3.0	163.9 ✓
TT	8.76	172.50 ✓	3.17
		10.8	161.7 ✓
+50		7.9	164.6 ✓
69+95 <sup>90</sup> L		7.1	165.4 ✓
70+00		7.0	165.5 ✓
+50		6.4	166.1 ✓
+71 <sup>28</sup> B.C.		6.1	166.4 ✓

18

State B.M. on culv. hd/wall 8' RT 67+60. Elev. 163.17

Fl. line 12" Corr. J. Culv. 22' RT 69+36 (other end not found)

172.50

71+00 5.5 167.0 ✓

+50 4.9 167.6 ✓

72 4.4 168.1 ✓

+05 3.4 169.1 ✓

+50 1.1 171.4 ✓

TP 7.37 176.90 2.97 169.53 ✓

73+01<sup>08</sup> 3.6 173.3 ✓

+50 2.3 174.6 ✓

74 1.4 175.5 ✓

+50 2.0 174.9 ✓

75 3.0 173.6<sup>9</sup> ✓

TP 8.83 180.30 5.37 171.53 ✓

19

RT

6.1  
7.08.3  
12

in wash

3.7  
6.07.7  
16

in wash

180.36

75+50	6.1	174.3 ✓
+57 <sup>17</sup> B.C.	6.0	174.4 ✓
+95	5.8	174.6 ✓
76+04	8.3	172.1 ✓
+15	9.0	171.4 ✓
+16	5.9	174.5 ✓
+50	4.9	175.5 ✓
77+00	3.0	177.4 ✓
+33	3.2	177.2 ✓ 171.2
+39	6.4	174.0 ✓
+48	5.5	174.9 ✓
+50	3.3	177.1 ✓
78+00	1.7	178.7 ✓
+09	1.5	178.9 ✓

20

in wash

in wash

Fl. L. 8<sup>th</sup> sewer in M.H. 29' RT 77+36

in wash

" "



	180.36		
78+10		4.7	175.7 ✓
TR	9.03	186.03	3.36 177.00 ✓
78+50		7.6	178.4 ✓
79		5.9	180.1 ✓
+50		4.8	181.2 ✓
80+00		4.4	181.6 ✓
TR	8.19	190.65 ✓	3.57 182.46 ✓
80+17		8.6	182.1 ✓
+18		10.8	179.9 ✓
+37		10.7	180.0 ✓
+37		6.9	183.8 ✓
+50		4.8	185.9 ✓

19 wash

LT

8.2  
16

7.0  
17.0

4.9  
9.0

19 wash

floor of apron for arch culvert (cemented rock)

Top of rock wall

19065

80+749

4.8 185.9 ✓

10.1 180.6 ✓

B.M.

4.38 186.27 ✓

22

Fl. line 24" G.V. on Upas St line. Sta 80+749

State B.M. on calc. sidewalk 60' S. Upas St. line Elev. 186.35

on Juniper.  
 E profile, location thru Park, South from 7<sup>th</sup> & Upas

B.M. 6.52 295.59 289.07 ✓

0400 8.3 287.3 ✓

0403 8.3 87.3 ✓

0403 6.1 89.5 ✓

0+18<sup>th</sup> B.C. 5.1 90.5 ✓

0+50 4.3 91.3 ✓

1400 5.0 90.6 ✓

1450 4.9 90.7 ✓

2+00 5.6 90.0 ✓

2+10 5.9 89.7 ✓

+20 7.1 88.5 ✓

+50 7.7 87.9 ✓

3+00 8.9 86.7 ✓

+28<sup>th</sup> E.C. 9.7 85.9 ✓

TP 0.19 285.86 9.92 285.67 ✓

3+50 0.6 85.3 ✓

4+00 1.8 84.1 ✓

+50 2.9 83.0 ✓

5.0 80.9 ✓

6.1 79.8 ✓

4+67<sup>th</sup> B.C. 3.2 82.7 ✓

5400 3.7 82.2 ✓

+50 4.1 81.8 ✓

-11<sup>th</sup> St alternate

B.P. S.W. Cor. 6<sup>th</sup> & Upas 289.07

10/14/41  
 50 per  
 Brooks  
 Hodgeson

23

Fl line 12" cons. cul. 23' R/L 4+58

" " " " " 11' L " "

285.86

6400		4.5	281.4	✓	
+50		4.8	81.1	✓	
7400		5.1	80.8	✓	
+50		5.4	80.5	✓	
8400		5.6	80.3	✓	
+50		5.9	80.0	✓	
		8.3	77.6	✓	
		9.2	76.7	✓	
9400		6.0	79.9	✓	
+50		6.1	79.8	✓	
10400		6.2	79.7	✓	
TP	2.58	282.03	6.41	279.45	✓
10450		2.6	79.4	✓	
11400		2.9	79.1	✓	
+50		3.2	78.8	✓	
11491 <sup>20</sup> F.C.		3.6	78.4	✓	
12400		3.7	78.3	✓	
+50		4.0	78.0	✓	
		7.4	74.6	✓	
		8.3	73.7	✓	
13400		4.2	77.8	✓	
+50		4.4	77.6	✓	
4851 <sup>10</sup> B.C.		4.7	77.3	✓	
14		4.7	77.3	✓	
+50		4.9	77.1	✓	

24

Fl. line 12" Corr. I. Culv. 23' RT 8472

" " " " " " 10' RT "

Fl. line 12" Corr. I. Culv. 25' RT 12076

" " " " " " 7' RT "

282.03

15400		5.1	276.9	✓	
+50		5.3	76.7	✓	
16400		5.4	76.6	✓	
		8.1	73.9	✓	
		9.7	72.3	✓	
16453 <sup>59</sup> E.C.		5.6	76.4	✓	
Set B.M.		5.66	276.37	✓	
17400		5.7	76.3	✓	
+50		5.9	76.1	✓	
18400		6.1	75.9	✓	
TP	0.86	276.74	6.15	275.88	✓
18450		1.1	75.6	✓	
19		1.5	75.2	✓	
+50		1.9	74.8	✓	
20		2.4	74.3	✓	
+50		3.1	73.6	✓	
21		3.8	72.9	✓	
+50		4.6	72.1	✓	
22		5.6	71.1	✓	
		8.8	67.9	✓	
		9.7	67.0	✓	
22450		6.3	70.4	✓	
23		7.3	69.4	✓	
+50		8.4	68.3	✓	
24		9.5	67.2	✓	

25

Fl. line 12" Corr. I. Culv. 31' Rt 16409  
 " " " " " " 45' Lt "

Mark on Culv. headwall 31' Rt 16409 N.W. Cor. Quince.

Fl. line 12" Corr. I. Culv. 24' Rt 22445  
 " " " " " " 9' Lt "

276.74

24+50		10.6	266.1	✓
+63 <sup>95</sup> B.C.		10.9	65.8	✓
25		11.4	65.3	✓
+50		12.2	64.5	✓
26		13.0	63.7	✓
π	0.79	264.62	12.91	263.83 ✓
26+50		1.6	63.0	✓
27		2.3	62.3	✓
+50		2.9	61.7	✓
+94" E.C.		3.3	61.3	✓
28+00		3.4	61.2	✓
		5.9	58.7	✓
		6.8	57.8	✓
28+50		4.2	60.4	✓
29		4.8	59.8	✓
+38 <sup>35</sup> B.C.		5.2	59.4	✓
+50		5.3	59.3	✓
30+00		6.1	58.5	✓
+50		6.9	57.7	✓
31		8.1	56.5	✓
+50		9.4	55.2	✓
		13.5	51.1	✓
		13.9	50.7	✓
32		10.7	53.9	✓
+360' E.C.		11.6	53.0	✓

Fl. line 12" Corr. I. Culm. 25' Rt 27+96  
 " " " " " 7' Lt "

Fl. line 12" Corr. I. Culm. 22' Rt 31+48  
 " " " " " 11' Lt "

264.62

32+50		11.9	252.7	✓
TP	1.41	253.27	12.76	251.86 ✓
33+00		1.9	51.4	✓
+50		3.0	50.3	✓
34		4.1	49.2	✓
+50		5.0	48.3	✓
		7.1	46.2	✓
		6.9	46.4	✓
35+00		5.4	47.9	✓
		9.6	43.7	✓
		10.8	42.5	✓
35+50		5.4	47.9	✓
36		5.5	47.8	✓
Set B.M.		4.94	248.33	✓
36+50		5.0	48.3	✓
+77 <sup>54</sup> B.C.		5.1	48.2	✓
37+00		5.1	48.2	✓
+50		5.1	48.2	✓
		7.3	46.0	✓
		9.2	45.1	✓
36+00		5.2	48.1	✓
+50		5.2	48.1	✓
39+01 <sup>23</sup> E.C.		5.2	48.1	✓
+50		5.4	47.9	✓
39+87 <sup>18</sup> B.C.		5.6	47.7	✓

27

Fl. line catch basin 10' LT 34+78

" " " " 28' RT "

Fl. line storm drain M.H. 80' RT 35+46

" " " " 46' LT 35+46

Set B.M. on 2" reinforcing bar in curbing 11<sup>5</sup> LT 36+16

Fl. line 8" Conc. Culv. 28' RT 37+86

" " " " 8' LT

253.27

40400			5.6	247.7	✓
TP	2.16	249.65	5.78	247.49	✓
40450			2.2	47.5	✓
41400			2.6	47.1	✓
450			3.2	46.5	✓
41484"			3.6	46.1	✓
42400			3.7	46.0	✓
			5.9	43.8	✓
			7.7	242.0	✓
42435 L			4.2	45.5	✓
+46			4.7	45.0	✓
450			4.0	45.7	✓
43400			6.7	43.0	✓
+35			8.7	41.0	✓
440			9.8	39.9	✓
450			10.2	39.5	✓
			15.3	34.4	✓
44400			12.9	36.8	✓
TP	0.38	236.96	13.07	236.58	✓
44450			2.6	34.4	✓
44474 L			3.5	33.5	✓
45			4.4	32.6	✓
+49 <sup>38</sup>			6.2	30.8	✓
46			8.5	28.5	✓
450			10.7	26.3	✓

Fl. line 12" Conc. I Culv, 20' R<sub>2</sub> 42+27  
 " " " " " 5' L "

Fl. line 6" Conc. Culv, 14' L<sub>2</sub> 43+86



		236.96		
46+58 <sup>23</sup>		11.1	225.9	✓
47+00		12.8	24.2	✓
		15.1	21.9	✓
TP	0.35	224.37	12.94	224.02 ✓
		3.9	20.5	✓
47+50		2.0	22.4	✓
+87 <sup>31</sup> L		3.5	20.9	✓
48+00		4.0	20.4	✓
+50		5.8	18.6	✓
49		7.8	16.6	✓
		10.1	14.3	✓
49+50		9.6	14.8	✓
		11.3	13.1	✓
50+00		11.4	13.0	✓
+41 <sup>98</sup> L		12.6	11.8	✓
+50		12.9	11.5	✓
TP	0.98	212.39	12.96	211.41 ✓
		3.7	202.7	✓
		5.5	206.9	✓
51+00		2.3	210.1	✓
+20 <sup>45</sup> L		2.8	209.6	✓
+50		3.6	208.8	✓
52+00		4.6	207.8	✓
		6.3	206.1	✓
		10.1	202.3	✓

Fl. line 6" Steel Culv. 17' Rt 47+31

Fl. line 6" " " 12' Lt 47+31

Fl. line 6" Steel Culv. 15' E Rt. 49+26

Fl. line 6" Steel Culv. 6' E Lt. 49+57

Fl. line 14" Steel Culv. 17' Rt 50+84

" " " " " 6' Lt "

Fl. line 6" Steel Culv. 16' Rt 52+05

" " " " " 26' Lt "

212.39

52+50			5.6	206.8	✓
53			6.8	205.6	✓
150			8.2	204.2	✓
54+00			9.4	203.0	✓
+106 <sup>08</sup> B.C.			9.6	202.8	✓
+50			10.9	201.5	✓
55+00			12.6	199.8	✓
TP	0.81	200.72	12.48	199.91	✓
+50			2.8	197.9	✓
+1814 <sup>8</sup> E.C.			4.1	96.6	✓
56			4.7	96.0	✓
			6.6	94.1	✓
			8.8	91.9	✓
56+50			6.3	94.4	✓
57			7.6	93.1	✓
150			8.9	91.8	✓
			13.8	86.9	✓
57+76 <sup>50</sup> L			9.3	91.4	✓
58+00			11.0	89.7	✓
R	0.25	188.57	12.40	188.32	✓
			7.3	181.3	✓
			8.4	80.2	✓
58+50			3.2	85.4	✓
59			7.2	81.4	✓
+27 <sup>00</sup> L			9.1	79.5	✓

30

Fl. line 6" steel Culv. 18' RT 56+22

" " " " " 4' LT 56+61

Fl. line 14" steel Culv. 16' RT 57+63

Fl. line 8" Conc Culv. 14' RT 58+80

" " " " " 8' LT "

	188.57			
59+50		11.0	177.6	✓
Set BM.		6.53	182.04	✓
TP	1.02	176.59	13.00	175.57 ✓
60+00		3.2	73.4	✓
+50		7.9	68.7	✓
		13.1	63.5	✓
		14.9	61.7	✓
61+00		12.4	64.2	✓
TP	0.09	163.96	12.72	163.87 ✓
61+45 <sup>00</sup> L		3.4	60.6	✓
62+00		8.5	55.5	✓
+40 <sup>00</sup>		11.9	52.1	✓
+50		12.9	51.1	✓
TP	0.53	151.50	12.99	150.97 ✓
		8.7	42.8	✓
		9.6	41.9	✓
63+00		5.3	46.2	✓
+37 <sup>00</sup> L		8.9	42.6	✓
+50		10.2	41.3	✓
TP	0.22	139.05	12.67	138.83 ✓
64+00		2.1	37.0	✓
+50		6.4	32.7	✓
65+00		10.3	28.8	✓
TP	0.07	126.22	12.90	126.15 ✓
65+50		1.3	24.9	✓

Cont'd in book 275 page 75

Nail in stump 21' RT 59+29

Fl line 8" Conc. Culv. 14' RT 60+75

" " " " 23' Lt "

Fl line 8" Conc. Culv. 14' RT 63+07

" " " " 7' Lt "

		126.22			
65+87			3.8	122.4	✓
Set B.M.			5.95	120.27	✓
TP	0.16	113.42	12.96	113.26	✓
TP	0.15	100.62	12.95	100.47	✓
TP	2.64	97.11	6.15	94.47	✓
B.M.			8.34	88.77	✓
B.M.	3.36	123.63		120.27	✓
			7.1	16.5	✓
66+00			2.1	21.5	✓
+50			5.6	18.0	✓
67			8.5	15.1	✓
+50			11.3	12.3	✓
			15.8	107.8	✓
TP	1.28	111.89	13.02	110.61	✓
			6.4	105.5	✓
67+97 <sup>00</sup> L			2.4	109.5	✓
68+50			5.7	106.2	✓
69+00			8.6	103.3	✓
+50			11.1	100.8	✓
TP	1.18	100.23	12.84	99.05	✓
70+00			1.9	98.3	✓
70+21 <sup>00</sup> L			2.6	97.6	✓
			5.6	94.6	✓

Stake in ground, west end of Culv. Hdwall-

Point on Culv. hdwall 50' LT 5150 elev. 88.73

10/15/41  
Soper  
Brakes  
Hedgson

Fl. line 16" Culv. 22' RT 65+90 (see note in alignment book 275

Fl. line 8" Conc. Culv. 15' RT 67+77

Fl. line 8" Conc. Culv. 26' LT 67+77

Fl. line 6" Culv. 4' RT 70+42

100.23

70+50	5.1	95.1	✓
+61	4.4	95.8	✓
+81	13.1	87.1	✓
+81	17.6	82.6	✓
70+90	17.6	82.6	✓
70+90	13.2	87.0	✓
71+07	6.0	94.2	✓
+35	7.1	93.1	✓
+35	5.6	94.6	✓
+45	4.5	95.7	✓
+50	5.3	94.9	✓
71+88 <sup>15</sup>	5.1	95.1	✓
ck on & sta 12+00	5.4	94.8	✓ Rec. 94 <sup>8</sup>

33

Top of drain ditch

Bottom of " "

" " " "

Top " " "

Fl. line 6" Culp 16' RT 71434

± and offset profile, beginning at 11<sup>th</sup> & Russ

B.M.	6.20	89.18	82.98	Grade
				7.37 81.81
0-50 7' off.				5.7 83.5 79.4
0-45 7' off				5.7 83.5 79.2
0+00 ±				6.2 83.0
" 7' off.				6.4 82.8 77.80 78.20
0+51 ±				5.3 83.9
" 7' off.				6.0 83.2 75.80 76.20
0+82 <sup>nd</sup> ±				5.6 83.6
" 7' off.				5.6 83.6 75.40 75.80
1+14 <sup>th</sup> ±				4.9 84.3
" 7' off				5.3 83.9 76.00 76.40
1+46 <sup>th</sup> ±				2.9 86.3
" 7' off.				4.5 84.7 77.20 77.60
1+77 <sup>th</sup> ±				0.9 88.3
" 7' off				4.0 85.2 78.50 78.90
1+93 <sup>rd</sup> ±				0.2 89.0
" 7' off.				3.5 85.7 79.10 79.50

3/17/42  
Sooper  
Bowlin  
Davis 34

Nail in power pole 11<sup>th</sup> & Russ. West side 11<sup>th</sup> St.  
Dist.

0 4.1

0 4.3

0 4.6 0 5.0

0 7.0 7.4

0 7.8 8.2

0 7.5 7.9

7.1 7.5

6.3 6.7

6.2 6.6

	89.18		Grade	
2+10 - 7' off. x		3.3	85.9	<sup>79.40</sup> 79.80
2+50 "		3.5	85.7	<sup>79.58</sup> 79.98
3+00 x		3.2	86.0	<sup>79.80</sup> 80.20
TP	723	93.20	3.21	85.97
3+50			6.9	86.3
4+00			5.9	87.3
4+50			2.0	91.2
5+00			4.7	88.5
5+50 x			4.1	89.1
6+00			7.3	85.9
6+50			4.9	88.3
7+00 x			2.9	90.3
TP	5.99	96.34	2.85	90.35
7+50			6.0	90.3

Cut.	
C-6.1	6.5
5.7	6.1
6.8	6.2
6.1	6.5
7.0	7.4
10.9	11.3
8.1	8.5
8.7	9.1
4.5	4.9 5.2
5.9	6.3 6.8
6.9	7.3 8.1
6.5	6.9 7.1 8.0

	96.34		Grade
8400	5.4	90.9	82.40 83.40 83.40 84.20
+50	5.0	91.3	82.50 83.50 84.60
9400 x	4.8	91.5	82.60 82.70 84.00
+50	5.1	91.2	85.00 82.98 83.55
+62.80 Bl.	5.9	90.4	83.07 85.89
don Bl. E.	4.15	92.2	Eko. 92.2

B.M. 9.68 98.41 88.73

14.8 83.6

9.7 88.7

## Cut

C-6.7 9.1 7.5-8.5

6.7 7.1 7.7 8.8

6.5 6.9 7.7 8.9

7.3 8.2

6.5 7.3

Book 573-96

Top 12" Gas

" " "



4 + offset profile

B.M.	7.91	96.64		88.73
IT	5.24	98.61	3.27	93.37
↑ 10105 <sup>21</sup> E			5.7	92.9
" 7'off.			9.6	89.6
32'				83.40 83.91
↓ 73101 <sup>12</sup> E			5.2	93.4
" 7'off.			9.3	89.3
				93.64 83.95
72+69 <sup>32</sup> E			6.9	91.7
" 7'off.			8.6	90.2
				93.88 83.98
72+53 <sup>42</sup> X 7'off.				90.2
				84.00
72+37 <sup>52</sup> E			6.7	91.9
" 7'off.			7.7	90.9
				84.54
72+05 <sup>72</sup> E			6.5	92.1
" 7'off.			6.9	91.7
				85.61
IT	3.54	95.54	6.61	92.00
71+73 <sup>92</sup> E			3.8	91.7
" 7'off.			5.0	90.5
				86.69

B.M. Culver headwall 50' Lx 3750

5.7' 6.2

5.3' 5.7

6.0' 6.1

6.2'

6.4'

6.1'

3.8'

244 Cul. 14 RT 72+53  
" 16

93.51

71+41 <sup>92</sup> E	7.7	87.8	
" 7' off. (opp. side)	6.1	89.4	87.76

C-1.6

71+40 <sup>0</sup> Top rock lined drain ditch	9.0	86.5	
71+40 <sup>0</sup> Bottom ditch	13.8	81.7	
71+29 <sup>3</sup> "	13.8	81.7	
71+29 <sup>3</sup> Top	8.7	86.8	

71+25-7' off.		89.1	88.34
---------------	--	------	-------

C-0.8

71+10 E	3.9	91.6	
71+0.0 E	2.2	93.3	
" 7' off.	2.5	93.0	89.18

C-3.8

IT	6.32	100.34	1.52	94.02
----	------	--------	------	-------

70+75 E	5.4	94.9	
---------	-----	------	--

70+50 E	4.8	95.5	90.87
" 7' off <sub>x</sub>	4.7	95.6	90.87

4.7

70+25 <sup>5</sup> E	3.4	96.9	91.40
" 7' off <sub>x</sub>	3.3	97.0	91.72

C-5.3 5.6

70+00 E	2.1	98.2	92.2
" 7' off	1.8	98.5	92.56

5.9 6.3

Profile - 7' offsets

B.M.	9.15	97.88		88.73
IP	11.75	107.02	2.61	95.27
69+93 <sup>50</sup> 70+22 <sup>70</sup> x			8.7	98.3 92.50 92.80
70+00 x			7.0	100.0 93.69
69+50			5.3	101.7 95.64
69+00 x			3.1	103.9 97.60
IP	13.07	118.93	1.16	105.86
68+50			11.4	107.5 100.22
67+96 <sup>09</sup>			9.8	109.1 103.05
67+79 <sup>10</sup> x			8.7	110.2 103.90
67+47 <sup>24</sup>			6.4	112.5 105.80
67+15 <sup>38</sup>			4.6	114.3 107.70

On curb. bed wall - 5+50.

5.5' 5.8'

6.3'

6.1'

6.3'

7.3'

6.0'

6.3'

6.7'

6.6'

118.93

67+00 x 3.8 115.1 108.60

6.5

66+50 0.8 118.1 112.35

5.7

π 11.76 130.66 0.03 118.90

on Enail 66+35

66+18<sup>41</sup> 10.3 120.4 114.70

5.7

65+86<sup>58</sup> 8.1 122.6 117.09

5.5

65+54<sup>26</sup> 5.8 124.9 119.46

5.4

65+25 3.7 127.0 121.71

5.3

65+00 x 1.9 128.8 123.60

5.2

π 12.77 143.34 0.09 130.57

64+50 10.7 132.6 127.70

4.9

64+00 x 6.5 136.8 131.80

5.0

63+47<sup>41</sup> 1.9 141.4 135.18

6.2

143.34

63+31 <sup>57</sup> <sub>x</sub>		0.4	142.9	136.20
$\pi$	12.57	155.80	0.11	143.23
63400 x		10.1	145.7	139.60
62+67 <sup>98</sup> <sub>x</sub>		7.1	148.7	144.0
62+36 <sup>27</sup> <sub>x</sub>		4.1	151.7	147.30
62+04 <sup>60</sup>		1.3	154.5	150.00
$\pi$	12.94	168.65	0.07	155.71
61472 <sup>76</sup>		11.2	157.5	152.70
61+41 <sup>02</sup> <sub>x</sub>		8.3	160.4	155.40
61400 x		5.0	163.7	157.90
60+75 x		2.7	166.0	159.90
60+50 x		0.4	168.3	162.40
$\pi$	13.03	181.57	0.11	168.54

41

6.7

6.1

4.7

4.4

4.5

4.8

5.0

5.8

6.1

5.9

181.57

60+29<sup>74</sup> 11.5 170.1 164.7159+97<sup>98</sup><sub>X</sub> 8.6 173.0 168.3059+50<sup>34</sup> 4.6 177.0 171.8159+18<sup>65</sup> 2.0 179.6 174.2359+02<sup>83</sup> 0.8 180.8 175.41

TP 13.04 194.25 0.35 181.22

ck on B.M. 12.20 182.06

58+75<sub>X</sub> 10.9 183.4 177.50

58+50 ⊕ 8.6 185.7 178.86

58+00 ⊕ 4.2 190.1 181.57  
181.357+76<sup>50</sup> ⊕ L-tutor ahead 2.9 191.4 182.3  
182.84" " " " back ⊕ 2.8 191.5 182.3  
182.8457+50 ⊕ 2.2 192.1 182.7  
184.28

TP 9.63 203.40 0.49 193.77

5.4

4.7

5.1

5.4

5.4

Rec. 182.08

5.9

6.3

8.5 8.8

8.6 9.1

8.7 9.2

9.3 9.4

203.40

57+25	⊕		192.6	183.40
57+00x		10.1	193.3	184.8 187.00
56+75			194.0	186.8
56+50	⊕	8.7	194.7	188.80
56+00		7.2	196.2	190.60
55+81 <sup>48</sup> EC		6.6	196.8	191.27
55+50		5.6	197.8	192.40
55+00		3.8	199.6	194.20
54+50		2.0	201.4	196.00
54+06 <sup>08</sup> BC		0.8	202.6	197.58
54+00x		0.6	202.8	197.80
TP		8.25	211.21	0.44 202.96
53+50		6.9	204.3	198.80
53+00		5.4	205.8	199.80
52+50		4.3	206.9	200.80

43

1	9.2
6.3	8.5
	7.2
5.9	
5.6	
5.5	
5.4	
5.4	
5.4	
5.0	
5.0	
5.0	
5.5	
6.0	
6.1	

Q Nail 54+00

211.21

IT	10.92	217.85	4.28	206.93
52+00			9.9	208.0 201.80
51+47 <sup>48</sup> <sub>x</sub>			8.7	209.2 202.82
51+15 <sup>56</sup>			7.8	210.1 203.66
50+67 <sup>65</sup> <sub>x</sub>			6.6	211.3 205.00
50+35 <sup>73</sup>			5.6	212.3 206.23
50+00			4.6	213.3 207.61
49+50			2.9	215.0 209.54
49+00			1.1	216.8 211.46
IT	12.99	230.32	0.52	217.33
48+50			11.7	218.6 213.39
48+11 <sup>82</sup>			10.3	220.0 214.87
47+79 <sup>91</sup>			9.1	221.2 216.10
47+50			8.0	222.3 217.25

off. nail 52+50				6.2
				6.4
				6.4
				6.3
				6.1
				5.7
				5.5
				5.3
				5.2
				5.1
				5.1
				5.0



230.32

47+00		6.1	224.2	219.18
46+68 <sup>03</sup>		4.9	225.4	220.41
46+36 <sup>20</sup>		3.5	226.8	221.63
46+00		1.8	228.5	223.04
ck on of sta 46+00		1.8	228.5	Rec. 228.5
∏	10.54	239.04	1.82	228.50
45+72 <sup>20</sup>		9.3	229.7	224.12
45+39 <sup>46</sup>		8.0	231.0	225.36
45+07 <sup>64</sup> x		6.8	232.2	226.60
44+75 <sup>82</sup> 29		5.7	233.3	227.90
44+44 <sup>00</sup>		4.6	234.4	229.20
44+00 x		2.4	236.6	231.00
∏	12.67	249.37	2.34	236.70

5.0
5.0
5.2
5.5
∅ end 46+00
5.6
5.6
5.6
5.4
5.2
5.6

249.37

43+50 9.5 239.9 234.00

43+25 x 8.2 241.2 235.50

43+00 5.8 243.6 236.50

42+50 4.2 245.2 238.50

42+35 3.7 245.7 239.10

42+00 x 3.3 246.1 240.50

41+84<sup>11</sup> E.C. 3.1 246.3 240.89

41+75 x 2.9 246.5 241.10

41+50 2.7 246.7 241.36

TP 6.27 252.97 2.67 246.70

41+00 5.9 247.1 241.88

40+50 x 5.4 247.6 242.40

40+00 5.2 247.8 242.40

5.9

5.7

7.1

6.7

6.6

5.6

5.4

5.4

5.3

5.2

5.2

5.4

252.97

39+27<sup>18</sup> B.C. 5.1 247.9 242.40

39+50 5.0 248.0 242.40

39+01<sup>23</sup> F.C. 4.8 248.2 242.40

38+50 4.8 248.2 242.40

38+00 4.7 248.3 242.40

37+50 4.6 248.4 242.40

37+00 4.5 248.5 242.40

ck. on B.M. 4.63 248.34 Rec. 248.33

B.M. 5.76 254.09

36+75 x 5.6 248.5 242.40

36+50 x 5.8 248.3 242.00

36+00 x 6.2 247.9 240.20

35+75 x 6.2 247.9 239.80<sup>60</sup>35+50 x 6.2 247.9 239.90<sup>50</sup>

5.5

5.6

5.8

5.8

5.9

6.0

6.1

1/2" reinf. bar in curb 11"  $\approx$  L<sub>4</sub> 36+16

6.1

6.3

7.7

8.3 ✓  
8.18.4  
8.0Grade dropped to clear culvert  
7/11/46. 4/13/92

254.09

35+25 x		6.2	247.9	240.4 <sup>10</sup>
34+75 x		5.9	248.2	242.40
34+50		5.7	248.4	242.95
34		4.9	249.2	244.06
33+50		3.7	250.4	245.17
33		2.5	251.6	246.29
32+50 x		1.3	252.8	247.40
+36 <sup>01</sup> EC.		1.0	253.1	247.44
32+00		0.1	254.0	247.54
TP.	10.38	264.36	0.11	253.98
31+75 x		9.8	254.6	247.60
31+50 x		9.2	255.2	247.80
31+25 x		8.7	255.7	248.50
31+00		8.0	256.4	249.70

7.7
<del>7.5</del>
5.8
5.4
5.1
5.2
5.3
5.4
5.7
6.5
7.0
7.4
7.2
6.7

264.36

30450 x 6.9 257.5 252.10 5.4

30425 x 6.4 258.0 252.90 5.1

30400 6.0 258.4 253.30 5.1

29450 5.3 259.1 254.10 5.0

29425 x 4.9 259.5 254.50 5.0

29400 4.6 259.8 254.60 5.2

28450 3.9 260.5 254.80 5.7

28 x 3.1 261.3 255.00 6.3

27450 2.5 261.9 255.82 6.1

27 1.9 262.5 256.64 5.9

26450 1.2 263.2 257.46 5.7

TP 8.75 271.17 1.92 262.44

271.19

26			7.3	263.9	258.28
25+50	x		6.6	264.6	259.10
25			5.9	265.3	260.10
24+50			5.0	266.2	261.10
24			4.0	267.2	262.10
23+50	x		2.7	268.5	263.10
23			1.6	269.6	263.69
22+50			0.6	270.6	264.28
140	x		0.5	270.7	264.40
$\pi$	9.47	280. <sup>11</sup> <sub>13</sub>	6.55	270.64	
22+00			8.7	271.4	265.57
21+75	x		8.2	271.9	266.30
150			7.8	272.3	266.70
21			7.0	273.1	267.50

5.6'

5.5'

5.2'

5.1'

5.1'

5.4'

5.9'

6.3'

6.3'

5.8'

5.6'

5.6'

5.6'

280.13

20+50	6.3	273.8	268.30
20	5.6	274.5	269.10
+50 x	5.1	275.0	269.90
19	4.7	275.4	269.94
18+50	4.3	275.8	269.98
18	4.0	276.1	270.03
17+50	3.9	276.2	270.07
H. cken B.M.	3.72	276.39	Rec. 276.37
6.35	282.72	276.37	
17+00	6.4	276.3	270.11
16+53 <sup>59</sup> E.C.	6.2	276.5	270.16
16+00 x	5.9	276.8	270.20
15+50	5.8	276.9	270.32
15	5.6	277.1	270.44

5.5'
5.4'
5.1'
5.5'
5.8'
6.1'
6.1'
Calv. Helmoll 31 RT 16+09
6.2'
6.3'
6.6'
6.6'
6.7'

282.72

14150 5.4 277.3 270.57 6.7'

14 5.2 277.5 271.69 6.8'

13450 5.0 277.7 270.82 6.9'

13 4.8 277.9 270.94 7.0'

12+75 x 4.7 278.0 271.00 7.0'

12450 4.6 278.1 271.27 6.8'

12900 4.2 278.5 271.82 6.7'

TP 5.99 284.90 3.81 278.91

on off 11450

11+75 x 6.2 278.7 272.10 6.6'

+50 6.0 278.9 272.52 6.4'

11 5.7 279.2 273.37 5.8'

10+75 x 5.6 279.3 273.80 5.5'



284.90

10+50

5.5 279.4 273.84

5.6

10

5.3 279.6 273.93

5.7

9+50

5.1 279.8 274.02

5.8

9

4.9 280.0 274.11

5.9

8+50 x

4.7 280.2 274.20

6.0

8 x

4.4 280.5 275.20

5.3

7+50

4.1 280.8 275.50

5.3

7

3.9 281.0 275.80

5.2

TP

6.44 287.44

3.90 281.00

20 off. 7+50

6+50

6.1 281.3 276.10

5.2

6

5.9 281.5 276.40

5.1

5+50

5.5 281.9 276.70

5.2

5

5.0 282.4 277.00

5.4

		287.44			
4450	x		4.4	283.0	277.30
4100	x		3.4	284.0	278.40
3150	x		2.2	285.2	280.50
3+28 <sup>40</sup>	S.C.		1.5	285.9	280.97
3100	x		0.8	286.6	281.60
TP	8.47	295.10	0.81	286.63	
2450			7.0	288.1	281.78 281.70
2000			6.0	289.1	281.97 281.80
1450			4.4	290.7	282.15 281.90
1100			4.1	291.0	282.33 282.00
0750			3.6	291.5	282.51 282.10
0418 <sup>10</sup>			4.2	290.9	282.63 282.16
0400			7.5	287.6	282.70 282.20
ck. on B.M.			6.01	289.09	

5.7	
5.6	
4.7	
4.9	
5.0	
\$ 3200	
6.4	6.3
7.3	7.1
8.8	8.6
9.0	8.7
9.4	9.0
8.7	8.3
5.4	4.9
B.P.S.W. Cor 6 <sup>th</sup> + Upas Rec. 289.07	

Bliss  
King  
7/11/46  
5/18/46

# Grade Change 11<sup>th</sup> St. Pipeline

BM.	1.08	99.62	98.54	State BM Grade Elev
70+25 <sup>50</sup>		Ground 3.2		
		Grade Stake 2.6	97.0	91.40
70+50		Ground 4.3		
		Grade Stake 4.0	95.6	81.50
+75		4.9		
		G.S. 5.0	94.6	80.50
71+00		4.1		
		G.S. 6.3	93.3	79.50
+25		7.1		
		G.S. 10.1	89.5	78.50
+27		15.2		
+39		15.5		
+41		10.4		
"		Grade Stake 9.2	90.4	78.50
+54		7.2		
+75 <sup>40</sup> EC.		7.3		
		Grade Stake 6.8	92.8	82.20
72+00		7.8		
"		G.S. 6.4	93.2	82.6

99.62  
4.

55

Cuts

5.6

14.1

14.1

13.8

11.0

11.9

10.6

10.6

99.62

72+25

8.2

"

Grade stake

6.1

93.5' 83.05

10.5

+53 <sup>42</sup>

Bear's Mark

6.2

Grade stake

6.3

93.3' 84.00

9.3

+75

6.1

"

Grade Stake

6.2

99.62

Lt

Rt

 $\frac{6.1}{10}$ 

8.2

 $\frac{9.8}{10}$ 

10

10

 $\frac{6.1}{10}$  $\frac{6.5}{2}$  $\frac{9.7}{10}$ 

10

10

 $\frac{6.2}{10}$ 

6.1

 $\frac{6.8}{2}$  $\frac{10.8}{10}$ 

10

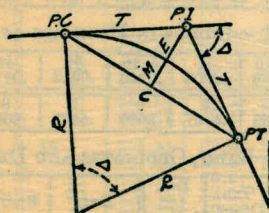
2

10

B.M. 11th + A N.W. cor. B.P. 87.91 ?  
 " " B " " " 82.85  
 Vpas st. sta. 84+48.2 40' Rt. Rinn of  
 sewer M.H. - - - 189.68

## DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES

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### CURVE FORMULAS

Radius= $R = \frac{50}{\sin D/2}$  (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)  $= R \text{vers} \frac{\Delta}{2}$  (6)

External= $E = T \tan \frac{\Delta}{4}$  (7)  $= R \div \cos \frac{\Delta}{2} - R$  (8)  $= R \text{exsec} \frac{\Delta}{2}$  (9)

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

### EXPLANATION AND USE OF TABLES

**Stations.**—Given P. I.—Sta. 161+60.35 to find Sta. of P. C. and P. T.  $\Delta = 62^\circ 10'$   $D = 8^\circ 20'$ . From Table IV for  $1^\circ$  curve  $T = 3454.1$  and  $\div 8\frac{1}{2} = 414.49$  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 =  $7.27 (54.50 \div 100)^2 = 2.16$  ft. Also square of any distance divided by twice the radius equals (approximately) the distance from tangent to curve. Thus  $(54.50)^2 \div (2 \times 688.26) = 2.16$  ft.

**Deflections.**—Deflection angle =  $\frac{1}{2} D$  for 100 ft.,  $\frac{1}{4} D$  for 50 ft., etc. For c ft. = (in minutes)  $.3 \times C \times D^\circ$  or = def. for 1 ft. from Table III  $\times C$ . For Sta. 158 of above curve =  $.3 \times 54.5 \times 8\frac{1}{2} = 136.2'$  or  $2^\circ 16.2'$ , or =  $2.50 \times 54.5 = 136.2'$  from Table III. For Sta. 159 deflection angle =  $2^\circ 16.2' + 8^\circ 20' \div 2 = 6^\circ 26.2'$ , etc.

**Externals.**—May be found in similar manner to tangents. Thus  $E$  for curve above is 91.37. For from Table IV for  $1^\circ$  curve  $E = 960.6$  for  $8^\circ 20' = 960.6 \div 8\frac{1}{2} = 91.27$  and from Table V correction = .10 or  $E = 91.37$  ft. Or suppose  $\Delta = 32^\circ$  and  $E$  is measured and found to be 42 ft. What is  $D$ ? From Table IV  $E = 230.9$  and  $\div 42 = 5.5$  or  $D = 5^\circ 30'$ .

9500 - Int. gas

Natural eucalyptus  
7' above Fl. line  
6.0

9762 80 State ours  
= 52776 90

31  
+24  
= 550  
+75

8013  
368  
7645

287.601  
295.08  
86.423  
8745

DISTANCES FROM CENTER OF ROADWAY FOR  
CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1 1/2  
For Single Track Embankment.

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

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 41.9. For same slopes but other widths of roadbed correct above figures by one-half difference in width of roadbed; thus in example above for 20 ft. roadbed 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.

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