



# 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 1½ see inside of back cover.

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MICROFILMED

APR 13 1965

This Field Book is manufactured 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.

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Trunk Sewer #1

Sec. 2

Carroll, Foster

W.D. 60058

0207

94+90

INDEXED

WK

DEC 23 1948

94+53.7

N. edge Pav

3' C.

94+33.7

S. edge Pav

94+03.7

beg. of Job

= S.W. DIAMOND

at Dawes St.

N.W. 7' CT

10.21

62.37

DIAMOND

+ Dawes

52.16

}  
FROM  
Beyond  
Missouri

MOORE  
BE99  
Green  
Robts.

FL.

1

Cuts 10' Lt.  
ON 1ST Bk

Thence,  
10' RT.

37.75

24.62

10.10

C 14.52

X ON Pav  
10' LT

37.65

24.72

10.62

C 14.10

37.60

24.77

10.69

10' Lt, X on Pav.

C 14.08

37.53

24.84

11.84

C 13.00

62.37

96+50

96+18 Construct Chimney  
IN ALLEY

96+00

+70

95+30

1237

2

3815  
24.22  
6.11  
C 18.11

3807  
24.30  
6.58  
C 17.72

3802  
24.35  
7.36  
C 16.99

37.95  
24.42  
7.72  
C 16.70

37.85  
24.52  
8.87  
C 15.65

62.37

TOPS

50.00  
12.37  
6.58  
C 5.79

98+30

M.H.  
T.P. stub 2.90 62.70 2.57 59.80

97+938 = Δ 90° Lt. M.H. #18  
on Missouri + Davies

97+60

97+30

96+90

62.37

F.C.

3

38.59  
24.11  
3.12  
C 20.97

62.70

38.50  
23.87  
2.57  
C 21.30

TOP  
59.77  
2.60  
2.57  
C 0.03

38.42  
23.95  
2.68  
C 21.07

38.35  
24.02  
4.04  
C 19.98

38.25  
24.12  
4.22  
C 18.90

62.37

100+30

39.09  
- 3.61  
2.57  
C 17.04

99+90

38.99  
- 2.71  
6.15  
C 17.56

99+50

38.89  
- 3.81  
5.50  
C 18.37

99+10

38.79  
- 3.91  
4.74  
C 19.17

98+70

38.69  
- 24.01  
3.78  
C 20.23  
  
62.70

62.70

102430

$$\begin{array}{r} 39.59 \\ 19.83 \\ 4.76 \\ \hline C 74.27 \end{array}$$

101790

$$\begin{array}{r} 39.49 \\ 19.73 \\ 4.07 \\ \hline C 15.66 \end{array}$$
T.P. 358 58.62 766 55.04
$$\begin{array}{r} 58.62 \\ \hline \end{array}$$

101450

$$\begin{array}{r} 39.39 \\ 23.31 \\ 7.66 \\ \hline C 15.65 \end{array}$$

101410

$$\begin{array}{r} 39.29 \\ 23.41 \\ 7.30 \\ \hline C 10.11 \end{array}$$

100470

$$\begin{array}{r} 39.19 \\ 23.51 \\ 6.90 \\ \hline C 16.57 \end{array}$$

$$\begin{array}{r} 62.70 \\ \hline \end{array}$$

$$\begin{array}{r} 62.70 \\ \hline \end{array}$$



104+07.57 W.L. Cass St  
B.M.  
SW Mon. 9.95 (52.83) 42.88  
T.P.  
SW. 7 CT. 7.05 51.57  
CASS &  
Missouri

103+67.57 M.H. #19

check to  
SW. Mon.  
Bayard  
and  
Missouri  
42.88

103+27.57 F.L. Cass St.

103+10

102+70  
vd

58.62

F.L.

6

40.04  
12.79  
9.80  
C 71.99

END STAKING 39.94  
v-13-48 18.68  
5.95  
C 72.73

51.57  
2.31  
C 3.88  
11.01  
42.87  
0.01

39.83  
18.79  
6.08  
C 72.71

39.79  
18.83  
5.71  
C 13.12

39.69  
18.93  
5.39  
C 73.54

58.62

106+00

$$\begin{array}{r} 40.50 \\ 12.31 \\ 3.55 \\ \hline C 8.76 \end{array}$$

105+60

$$\begin{array}{r} 40.42 \\ 12.41 \\ 2.99 \\ \hline C 9.42 \end{array}$$

105+20

$$\begin{array}{r} 40.32 \\ 12.51 \\ 2.51 \\ \hline C 10.00 \end{array}$$

104+80

$$\begin{array}{r} 40.22 \\ 12.61 \\ 1.91 \\ \hline C 10.70 \end{array}$$

104+40

$$\begin{array}{r} 40.12 \\ 12.71 \\ 1.30 \\ \hline C 11.41 \end{array}$$

(52.83)

108+00

$$\begin{array}{r} 41.02 \\ 11.81 \\ 6.15 \\ \hline C 5.66 \end{array}$$

107+60

$$\begin{array}{r} 40.92 \\ 11.91 \\ 5.77 \\ \hline C 6.14 \end{array}$$
107+20  
v.
$$\begin{array}{r} 40.82 \\ 12.01 \\ 5.22 \\ \hline C 6.79 \end{array}$$

106+80

$$\begin{array}{r} 40.72 \\ 12.11 \\ 4.25 \\ \hline C 7.46 \end{array}$$

106+40

$$\begin{array}{r} 40.62 \\ 12.21 \\ 4.05 \\ \hline C 8.16 \end{array}$$

(52.83)

109 + 73.02

BM. Swi 8.88 (51.76)

42.88

check % Swi Mon BM,  
Bayard & Missouri

1.95

42.88

42.882

109 + 43.02  $\Delta$  90° R. M.H. #20

39

109 + 08.02

108 + 70.02

108 + 32.02 Beg. Con. Cradle

(52.83)

A.L.

4-3-48

9

4145

10.31

6.12

C 4.19

4138

11.45

7.84

C 3.61

TOP M.H.

44.13

8.70

7.84

C 0.86

4129

11.54

7.40

C 4.14

4120

11.63

6.90

C 4.73

4110

11.73

6.39

C 5.34

SW. Mon.  
Bayard &  
Missouri

42.88

AL

R

10

"Tee"

109 111+18

CONST. "Tee" Conn  
+ Siphon IN  
alley

41.82  
9.94  
3.11  
C 6.83

42.65  
9.11  
3.11  
C 6.00

B.M. 5  
M

1400

Bay

109 110+94

41.76  
10.00  
3.71  
C 6.29

109 110+70

41.70  
10.06  
4.25  
C 5.81

108 110+33.02 end Conn. Cradle  
34.98

41.63  
10.13  
4.98  
C 5.15

108 110+03.02

41.53  
10.23  
5.59  
C 4.64

(51.76)

113+50

$$\begin{array}{r} 42.40 \\ 17.11 \\ \underline{6.21} \\ C 10.95 \end{array}$$

113+10

$$\begin{array}{r} 42.30 \\ 17.26 \\ \underline{6.88} \\ C 10.35 \end{array}$$

112+70

$$\begin{array}{r} 42.20 \\ 17.36 \\ \underline{7.22} \\ C 10.14 \end{array}$$

T.P. 8.36 (59.56) 0.56 51.20

112+30

$$\begin{array}{r} 42.10 \\ 9.66 \\ \underline{0.56} \\ C 9.10 \end{array}$$

111+90

$$\begin{array}{r} 42.00 \\ 9.76 \\ \underline{1.46} \\ C 8.30 \end{array}$$

111+50

(51.76)

$$\begin{array}{r} 41.90 \\ 9.86 \\ \underline{2.28} \\ C 7.58 \end{array}$$

115 + 40

10

BM

115

14

20

10

114 + 68.4 CONST. CHIMNEY

8"

114 + 30

L

113 + 90

L

(59.56)

Fl.

$$\begin{array}{r} 42.87 \\ 16.69 \\ 2.51 \\ \hline C 14.18 \end{array}$$

$$\begin{array}{r} 42.77 \\ 16.79 \\ 3.20 \\ \hline C 13.59 \end{array}$$

$$\begin{array}{r} 42.70 \\ 16.86 \\ 3.78 \\ \hline C 13.58 \end{array}$$

$$\begin{array}{r} \text{top ch. M.} \\ 49.00 \\ 10.56 \\ 3.78 \\ \hline C 6.78 \end{array}$$

$$\begin{array}{r} 42.60 \\ 16.96 \\ 4.62 \\ \hline C 12.34 \end{array}$$

$$\begin{array}{r} 42.50 \\ 17.06 \\ 5.48 \\ \hline C 11.58 \end{array}$$

check to

NW 13P

Law + Bayard 0.63 58.93 58.93

End Job

9002

116 + 45.43 Δ Lt M.H. #21

116 + 24.43

116 + 03.43 S.L. Lawi ST

115 + 80

(59.56)

42.13  
16.43  
0.64  
C 15.79

43.08  
16.48  
0.96  
C 15.52

43.03  
16.53  
1.35  
C 15.18

42.97  
16.59  
1.61  
C 14.98



W for Water Dept.  
on Chalcedony, Cass to Dawn  
N side

INDEXED  
WK  
DEC 23 1948

4+70	68x 3.8 3.0 C 0.8
4+30	67.9 4.3 3.0 C 0.7
3+84	67.0 5.2 4.5 C 0.7
3+05	65.8 2.4 5.9 C 0.5
2+30	64.8 7.4 7.6 F 0.2
1+60 from Cass	63.6 8.6 6.8 F 0.2
B.M. SWITK 12.65 (72.20) Chalcedony and Cass	59.55

South side

14

INDEXED

4+73	67.5 4.7 4.0 C 0.7
4+44	67.4 5.0 4.0 C 1.0
3+85	66.2 6.0 5.7 C 0.3
3+46	65.5 6.7 5.8 C 0.9
2+64	64.4 7.8 7.0 C 0.5
2+41	64.0 8.2 8.0 C 0.2
1+92	63.2 9.0 8.8 C 0.2
1+44 from Cass	62.5 9.7 9.8 F 0.1

For Water Dept.  
on Chalcedony, Dawes Ely.  
N side

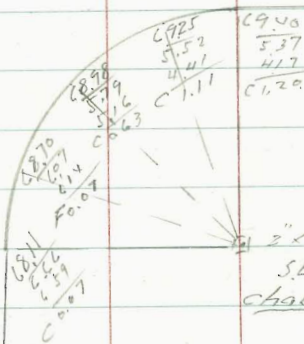
B.M. 10'  
disk

6.05 (7477)

68.72

15

INDEXED  
WK  
DEC 23 1919



2"x2" 30' cb. A. set.  
S.E. Return  
Chalcedony & Dawes

3431

74.3

3.6  
2.7  
C 0.9

3436

75.4

2.5  
2.3  
C 0.2

2465

73.3

4.6  
3.2  
C 1.4

2490

74.7

3.2  
2.8  
C 0.4

2445

72.9

5.0  
3.2  
C 1.8

1451

72.6

1.3  
1.2  
C 0.2

1487

72.1

5.8  
2.2  
C 7.6

1402

71.8

6.1  
5.9  
C 0.2

0409

69.4

0455 Front Dawes

71.1

1.8  
0.8  
0.0

B.M. SE  
10' disk

9.13

(77.85)

68.72

6.241-23

Chalcedony & Dawes

Grades on B.C. of Returns  
at Cass & Missouri

For Water Dept.

SW. 7 C.T.  
Cass  
Missouri

5.85 (57.31)

51.52

NW

NE

SE

52.37  
5.00

53.13  
4.24

52.51  
4.86

B.C. Ret. Bayard & Chalcedony

50.16

T.P.

6.47 (55.78) 1.85 49.31

N.E.

53.20  
2.58  
2.10  
C 0.42

S.E.

51.80  
3.98  
3.45  
C 0.53

INDEXED

WK  
DEC 23 1948

Grade of B.C. Returns  
on Dawes & Missouri

Water  
Dept.

3.54 65.72 62.18

N.E.

N.W.

S.W.

61.20

60.60

58.73

4.52

5.12

6.99

4.15

4.59

6.50

C 0.37

C 0.53

C 0.49

SW. 7 C.T. Missouri & Bayard  
SW. 7 C.T. Bayard  
Missouri B.C. Ret.

7.36

(50.16)

42.80

N.W.

S.W.

S.E.

N.E.

44.75

43.30

43.80

45.25

5.41

6.86

6.36

4.91

4.40

6.10

5.80

4.11

C 0.97

C 0.72

C 0.56

C 0.80

INDEXED

WK

DEC 23 1948

\* Pav. Alley 44 O.B.  
 9. Sta.  $\sqrt{10.31332}$

1+05

MOORE  
 SHORLON  
 BEGG  
 D. Sisson

INDEXED

WIK  
 APR 4 1949

3-28-49

L7

8

R7

17

24.36

24.26

24.65

4.30

4.01

4.00

1.14

C 0.30

C 2.87

0+70

24.42

24.12

24.48

4.44

4.18

4.31

3.18

C 0.13

C 2.00

0+35

24.07

23.97

24.32

4.59

4.34

4.92

4.18

F 0.33

C 0.16

0+00 to 1+40 grade raised  
 " raised 0.08 to 0.0 at 1+40

0+00 = Wly Sunset Cliffs Blvd.  
 Beg. Alley

23.43

~~23.75~~  
 23.83

24.15

4.73

Plan Change

4.51

4.63

4.11

C 0.10

C 0.40

0-03

23.74

28.01

23.81

4.80

4.31

new BP 7.47 (28.66)

2119

Bermuda  
 Sunset Cliffs Blvd

2+25 = SFLy Pescadero Dr.  
END ALLEY

2530  
5.11  
4.87  
C 0.24

2520

SE Cor  
& Lot 31  
2560  
4.81  
3.20  
C 1.61

2+00

25.03  
5.38  
5.78  
F 0.40

24.93

25.33  
5.08  
3.43  
C 1.55

1+80 EVC

24.82  
5.59  
6.00  
F 0.41

24.72

25.12  
5.29  
3.35  
C 1.94

1+60

24.63  
5.78  
6.49  
F 0.71

24.53

24.93  
5.48  
4.35  
C 1.13

T.P. 5.78 (30.41) 403 24.63

1+40 P.V.S.

24.51  
4.15  
4.37  
F 0.22

24.41

24.81  
3.85  
3.65  
C 0.20

(28.66)

Pav. Pescadero Dr.

47=W

±

17=E 19

1710

2500  
541  
437  
C 1.04

2460

2470  
571  
626  
F 0.55

INDEXED

WK  
APR 4 1949

0780

2440  
601  
617  
F 0.16

2400

2410  
631  
679  
F 0.48

0750

2380  
661  
650  
C 0.11

2340

2350  
691  
748  
F 0.57

0720 Brk.

2320  
721  
611  
C 1.10

2280

2290  
751  
774  
F 0.23

0700 N.G. Bermuda

2260  
781  
Pav

2210  
827  
826  
Pav

2250  
791  
796

.05 Pav Low

(30.41)  
2

## INDEXED

2 + 29.91

T.P. 646 (34.05) 2.82 27.59

1 + 94.91

1 + 59.91 w/ly Pescadero to S.  
11601 + 49.91 A 90° 01' LT = E alley to E  
11501 + 39.91 S.L. Alley to E  
1140

(30.41)

2800

$$\begin{array}{r} 6.05 \\ 6.42 \\ \hline F 0.41 \end{array}$$

$$\begin{array}{r} 26.80 \\ 3.21 \\ 3.02 \\ \hline C 0.57 \end{array}$$

$$\begin{array}{r} 2560 \\ \hline C 0.56 \end{array}$$


$$\begin{array}{r} 2560 \\ 4.81 \\ 4.25 \\ \hline C 0.56 \end{array}$$

2790

2550

2535

2520

2830

$$\begin{array}{r} 5.75 \\ 5.77 \\ \hline F 0.02 \end{array}$$

$$\begin{array}{r} 2710 \\ 3.31 \\ 2.57 \\ \hline C 0.74 \end{array}$$

$$\begin{array}{r} 2590 \\ 4.51 \\ 3.01 \\ \hline C 1.50 \end{array}$$

$$\begin{array}{r} 2560 \\ \hline \text{Lot } 31 \end{array}$$

$$\begin{array}{r} 2530 \\ 5.11 \\ 4.87 \\ \hline C 0.24 \end{array}$$

0+60

T.P. 620 (36.15) 4.10 29.95

0+20

0+00

2+84.91 = Nly Pescadero to E

2+74.91 = A 90° 01' Rt.

R.P. 25' Wily 2x2 Hub

2+64.91 = Ely Pescadero to W

(34.05)

31.00  
5.15  
4.20  
C 0.95

30.40  
3.25  
3.30  
C 0.31

29.80  
4.25  
4.00  
C 0.25

Swly  
Cor  
Alley 29.50  
4.55  
5.53  
F 0.98

29.20  
4.85  
5.62  
F 0.77

30.60

30.00

29.40

29.25

29.10

Rt. 21

30.76  
5.45  
5.06  
C 0.39

30.10  
3.95  
4.10  
F 0.15 2' back  
on Apron

29.50

29.50  
4.55  
4.50  
C 0.05

↑  
114.10  
↓



1740 S.G. Pescadero Ave.

$$\begin{array}{r} 32.54 \\ \underline{3.61} \\ 3.63 \\ F.02 \end{array}$$

March Pay

$$\begin{array}{r} \underline{32.36} \\ 32.17 \\ \underline{3.98} \end{array}$$

$$\begin{array}{r} 32.36 \\ \underline{3.79} \\ 3.84 \\ .03 \text{ Low} \end{array}$$

1720 BRK

$$\begin{array}{r} 32.20 \\ \underline{3.95} \\ 3.66 \\ C0.29 \end{array}$$

31.80

$$\begin{array}{r} 31.90 \\ \underline{4.25} \\ 4.24 \\ C0.01 \end{array}$$

0790

$$\begin{array}{r} 31.60 \\ \underline{4.55} \\ 4.19 \\ C0.36 \end{array}$$

31.20

$$\begin{array}{r} 31.30 \\ \underline{4.85} \\ 5.13 \\ F.028 \end{array}$$

(36.15)

Private Grading

Winchester St.

Sea Breeze to 1/2 Blk 5ly.

23

MORSE

Begg

Shannon

D. Sisson

3-31-49

NO. 80102

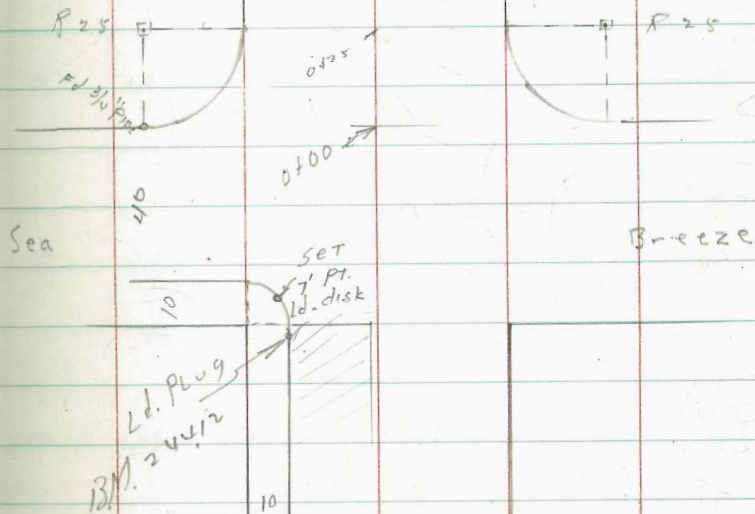
INDEXED

WK

APR 4 1949

30 30

Winchester St.



## Winchester Returns

INDEXED

WK

APR 4 1949

N.E. Ret.

 $\Delta = 89^{\circ}58'30''$ 

R 25

Curb  
grades

4 E.C. Winchester = 0+25

244.50

$$\begin{array}{r} 9.3 \\ 10.1 \\ \hline F 0.8 \end{array}$$

3

244.38

$$\begin{array}{r} 9.4 \\ 10.3 \\ \hline F 0.9 \end{array}$$

2

243.95

$$\begin{array}{r} 9.9 \\ 10.5 \\ \hline F 0.6 \end{array}$$

1

243.26

$$\begin{array}{r} 10.5 \\ 10.9 \\ \hline F 0.4 \end{array}$$

Sea Breeze B.C.

242.36

$$\begin{array}{r} 11.0 \\ 11.3 \\ \hline C 0.1 \end{array}$$
W.S.  
B.M. 1d plug.

sw curb

9.70

253.82

244.12

Sea Breeze

Winchester 1642-73

5' offset  
stakes

S.E. Ret.

 $\Delta 90^{\circ}01'30''$ 

R 25

C6.  
95.

④ E.C. Winchester = 0+25

245.00

$$\begin{array}{r} 8.8 \\ 5.9 \\ \hline C 2.9 \end{array}$$

③

44.96

$$\begin{array}{r} 8.9 \\ 5.7 \\ \hline C 3.2 \end{array}$$

②

45.07

$$\begin{array}{r} 8.7 \\ 5.7 \\ \hline C 3.0 \end{array}$$

①

45.30

$$\begin{array}{r} 8.5 \\ 5.1 \\ \hline C 3.4 \end{array}$$

Sea Breeze B.C.

245.80

$$\begin{array}{r} 8.0 \\ 4.4 \\ \hline C 3.6 \end{array}$$

1735.93 (3)

46.17  
7.6  
6.7  
C 0.9

46.6

46.65  
7.2  
5.4  
C 1.8

1715.93 (4)

45.65  
8.2  
6.5  
C 1.7

45.74

46.14  
7.7  
5.8  
C 1.9

0795.93 (1)

45.26  
8.6  
8.5  
C 0.1

45.36

45.76  
8.0  
4.6  
C 3.4

0775.93 PVC

45.00  
8.8  
9.4  
C 0.6

45.10

45.50  
8.3  
4.6  
C 3.7

0725 E.C. Retucus

244.50

44.60

245.00

253.82

0700 → 43.85

G  
CG

♀

P.  
CG

26

243593 ENC.

$$\begin{array}{r} 50.63 \\ \underline{3.2} \\ 2.1 \\ \hline C 1.1 \end{array}$$

50.66

$$\begin{array}{r} 50.98 \\ \underline{2.8} \\ 2.7 \\ \hline C 0.1 \end{array}$$

2415.9 (7)

$$\begin{array}{r} 49.48 \\ \underline{4.3} \\ 3.0 \\ \hline C 1.3 \end{array}$$

49.53

$$\begin{array}{r} 49.87 \\ \underline{3.9} \\ 3.0 \\ \hline C 0.5 \end{array}$$

14959 (6)

$$\begin{array}{r} 48.47 \\ \underline{5.3} \\ 4.0 \\ \hline C 1.3 \end{array}$$

48.53

$$\begin{array}{r} 48.88 \\ \underline{4.9} \\ 4.3 \\ \hline C 0.6 \end{array}$$

1475.9 (5)

$$\begin{array}{r} 47.58 \\ \underline{6.2} \\ 5.0 \\ \hline C 1.2 \end{array}$$

47.65

$$\begin{array}{r} 48.02 \\ \underline{5.8} \\ 4.7 \\ \hline C 1.1 \end{array}$$

145593 (4)

$$\begin{array}{r} 246.81 \\ \underline{7.0} \\ 6.0 \\ \hline C 1.0 \end{array}$$

4689

$$\begin{array}{r} 247.27 \\ \underline{6.6} \\ 5.2 \\ \hline C 1.4 \end{array}$$

$$\underline{253.82}$$

Cut back sdw.

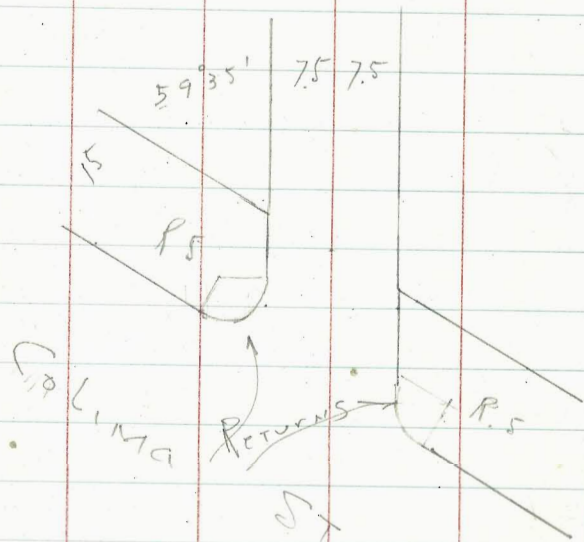
for alley Returns

Blk 22 Bind Rock Add.

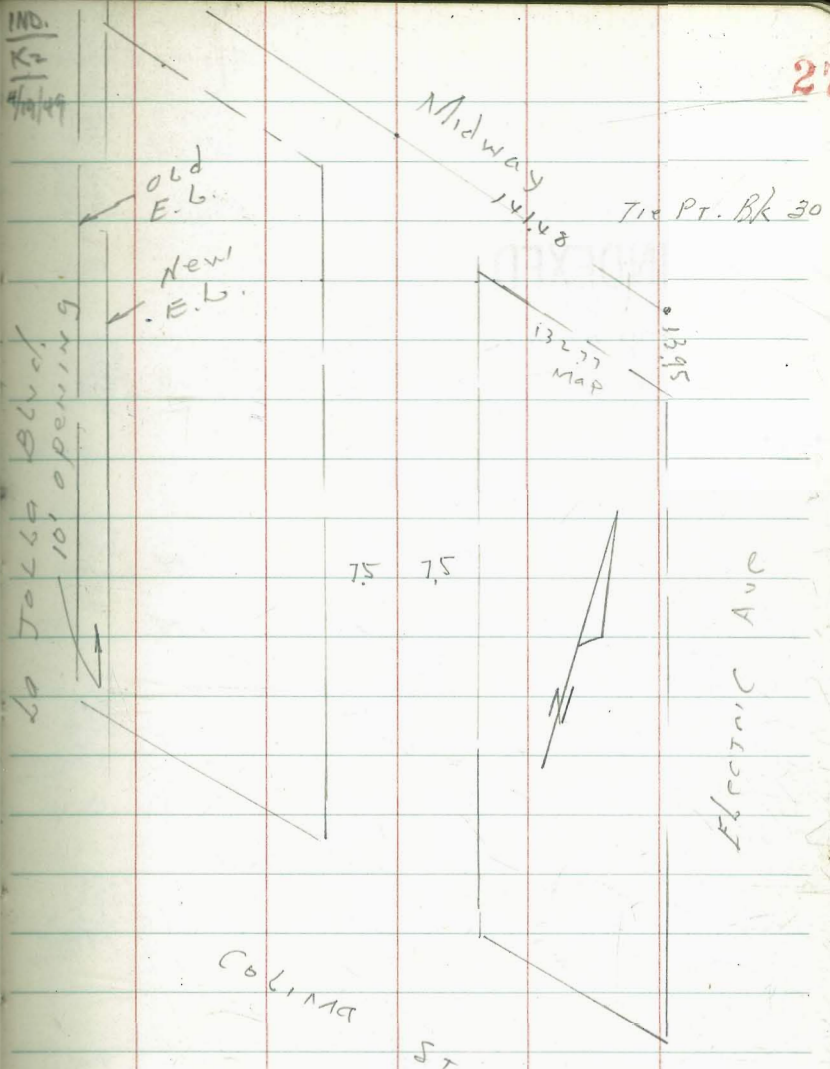
Moore  
Begg  
Sheeman  
D. Simpson  
x-13-49.

Match Sidewalk  
for grade

W.O. 60135



Midway Returns  
same in reverse



Paving Grader Filley Block 21 Ocean Beach  
 Between Del Mar + Santa Cruz From Froude  
 to Ebers

Apr. 1-20-49  
 R.S. 5197  
 D. Smith  
 # 8076

140 81504  
 #1545 Cross Sec.  
 Souths

Norths

28

	Souths	Norths	Mail Fence
TP 1:44	123.68	123.55	122.24
+40 = P.V.C.	122.91	122.51	122.51

INDEXED  
 WK

APR 22 1949

1+10	126.39	126.09	126.09
------	--------	--------	--------

194	130.44	130.14	130.14
-----	--------	--------	--------

+75	134.90	133.74	133.74
-----	--------	--------	--------

TP 1:16	134.90	133.74	133.74
---------	--------	--------	--------

+40 = F.V.C.	134.49	134.19	134.19
--------------	--------	--------	--------

+40	129.49	129.49	129.49
-----	--------	--------	--------

+20	136.61	136.24	136.24
-----	--------	--------	--------

0+0 - W.L. Froude	138.35	137.78	137.78
-------------------	--------	--------	--------

BM 0:44	146.99	146.55	146.55
---------	--------	--------	--------

+40	107.10	106.80	106.80
-----	--------	--------	--------

2+0	110.12	109.80	109.80
-----	--------	--------	--------

+90 = ⑤ #2074	105.55	105.55	105.55
---------------	--------	--------	--------

TP 2:07	113.22	111.15	111.15
---------	--------	--------	--------

+60	113.10	112.80	112.80
-----	--------	--------	--------

+40 = ③ #3026	109.66	109.66	109.66
---------------	--------	--------	--------

2+20	116.10	115.80	115.80
------	--------	--------	--------

+80 = F.V.C.	119.10	118.80	118.80
--------------	--------	--------	--------

1+60	120.91	120.61	120.61
------	--------	--------	--------

123.68

	South	North	Sub Grade	Top Wall
+60	89.17 11.12 14.59 2.5 TOP CONC WALL	88.87 14.42 0.41		
+40	91.46 11.83 16.09 10.74 TOP CONC WALL	91.16 12.13 11.51 0.92 3'	+50 = Fly Wall FL Ebers St. 6.87 5.59 c 7.28	83.15 88.15 1.87 5.59 F3.72 4' N of N.H. Fly
+20	93.44 9.85 8.76 1.45 3'	93.14 10.15 9.80 0.35 3'	+30 6.08 2.48 c 3.60	86.11 89.47 92.19 2.72 2.48 0.21 4'
+10			+10 14.58 12.85 c 1.73	88.71 90.79 1.50 1.85 FO 3.5 4'
5+0 = P.V.C.	95.18 8.19 7.35 0.84 3'	94.80 8.19 7.32 0.87 1.90 on 3' Wall	0+0 = Fly Wall 13.41 11.86 c 1.75	89.88 91.45 103.29 11.84 11.86 c 0.18 4' N of N.H. line
			TP 6.43	90.02 8.60 83.39 on DISC. FLY FL line Ebers TOP CONC WALL
+60	98.10 5.19 4.81 1.55 3' Rail Fence	97.80 5.19 6.04 FO 3.5	For Check	88.31 88.32 #15-45-47
			+98.55 F.L. Ebers 7.68 VOR PAR	84.51 83.48 8.21 on PAR
4+20	101.10 2.19 1.14 1.55 1.85 FO 3'	100.80 2.41 2.83 FO 3.2 3'	490 = #1 on H	81.65 10.51 9.89 0.75 5' N of N.H.
TP	2.49	103.29		12.42 100.80
3+80	104.10 9.17 8.29 0.83 3'	103.80 9.41 9.37 0.03 3'	5+80	86.55 5.64 1.22 3.92 0.5 TOP CONC WALL
			TP	1.98 92.19 13.08 90.21 103.29



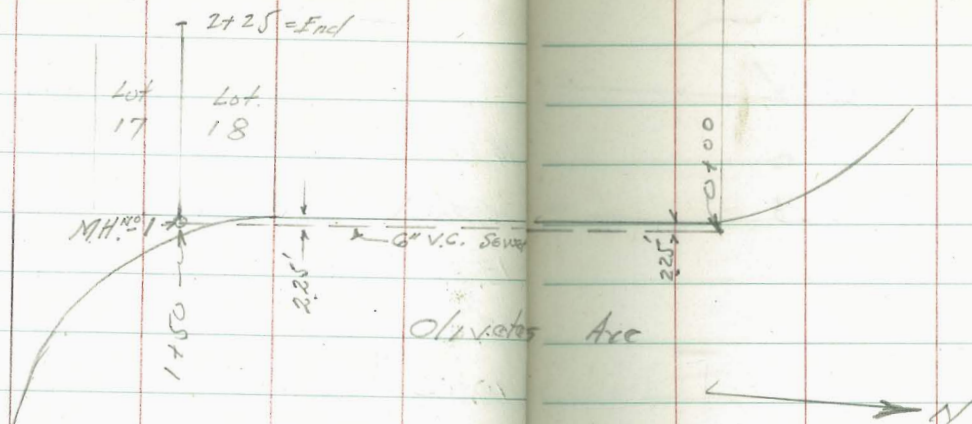
Const. Grades - Sewer in Olivetas Ave  
 And Pearl Ave, & E. Basement lots 17, 18  
 in La Jolla

Plan # 3747-B  
 WO C2163

30

Cont. P-31

1+50		0.80	49.18	35.00	14.18	6' Lt.	at RTA to Forward Turn
1+50=NH.		0.88	49.10	34.90	14.20	6' Lt	" " " " Back Turn
1+20		1.67	48.31	34.42	13.89	"	= Cross on walk
0+90		3.95	46.03	33.94	12.09	"	" " "
0+60		6.46	43.52	33.46	10.06	"	" " "
0+30		9.24	40.74	32.98	7.76	"	" " "
0+00		12.05	37.93	32.50	5.43	"	" " "
			12.01	37.97			City Eng. E.C. Radtke Cap. Disk on SM 7 Line Ravina & Olivetas
T.P.	9.80	47.78 <sup>98</sup>	12.68	39.98 <sup>18</sup>			
T.P.	3.68	52.66 <sup>86</sup>	7.78	48.98 <sup>18</sup>			
T.P.	0.43	56.76 <sup>76</sup>	12.45	56.33 <sup>53</sup>			
			2.70	66.28 <sup>28</sup>			S.E. B.P. Pearl & La Jolla Blvd.
T.P.	0.57	68.78 <sup>98</sup>	12.67	68.41 <sup>61</sup>			
	0.22	81.28	0.22	81.06 <sup>06</sup>			Record - office - obtained BM. by phone to Humphreys S.E. B.P. Pearl & Cuvier
T.P.	0.25	81.08	10.42	80.83			
T.P.	0.38	91.25	11.92	90.87			
T.P.	0.78	102.79	8.53	102.01			S.E. B.P. Pearl & Fods
T.P.	3.13	110.54	7.83	107.41			
	0.07	115.24		115.17			BM. S.E. B.P. PEARL <sup>And</sup> GIRARD



Olivatus

Est. Flow Line

Cuts offsets

Pearl

Check SW Tract				003					
EP Lapelle & Pearl				64.16	Record				6' Lt. = stake
				64.19					
			503	63.99					
IP	505	67.22	0.59	64.17					
				63.97					
T.P	1177	64.76		99					
		64.56	104	52.79					
2+25 = End									
		5403	917	44.86	35.75		9.11		
TP	907	53.83	502	44.76					
2+00			502	44.96	35.50		9.46		
1+75			311	46.87	35.25		11.62		
Conf. file 11		4998							
P-30		4978							

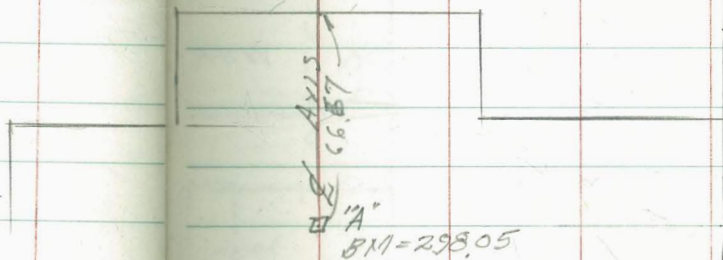
San Diego Veterans

War Memorial Bld.

— Bench Marks —

Sketch P-33

○ Ritt, M.H.  
Elev. 293.49



374 298.03  
298.06

BM. on Hub "A" 3.75 298.05

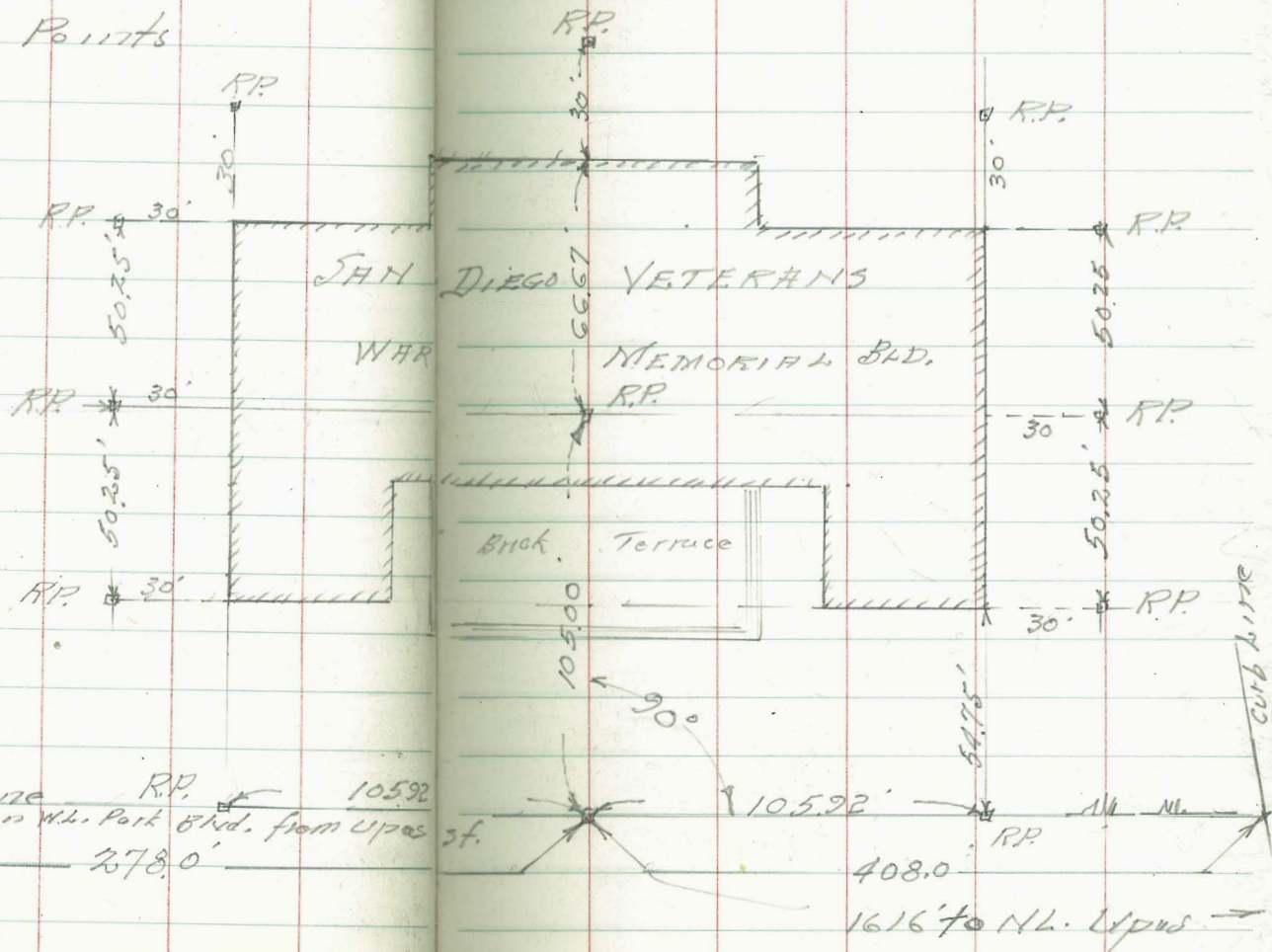
8.31 301.80 293.49

BM. on Ritt, M.H. in Zoo Road Bld. Axis  
N.W. of E. of

Haking for  
 San Diego Veterans  
 War Memorial Bld  
 in Balboa Park  
 □ = 2" x 2" Redwood Hub.  
 R.P. = Reference Points

Walker  
 Johnson  
 Pope  
 Crawford  
 7-13-49

33





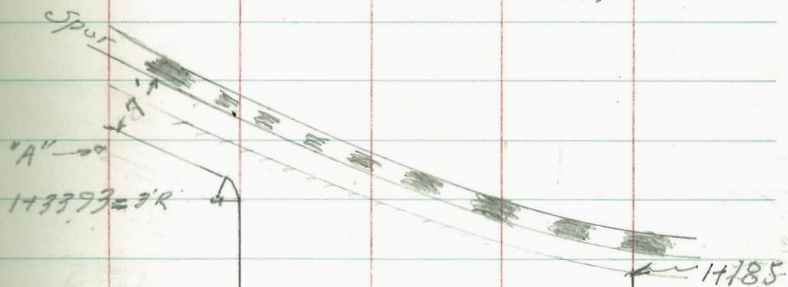
"F" St. Paving & Curbs

W.O. 62141

35

CALIFORNIA

St.



12' x 25.5 x 25.5 x 12'

"F" St.  
 20' P41 -  
 - Subgrades

0164.65

0117 3' R →  
 0114

0100 E. Prop. L. 116

341

PACIFIC

Hwy.

Walker  
Johnson  
Pope  
Crawford  
7-14-49

Grades For Curb  
& Commercial Gutter  
on "F" St

"A" stake on Lt. = 10' from outer Rail

1+3393 = B.C. 3' Cb R on Lt.

1+185 = End Pav. on Rt.

1+00 on Rt.

0+97 on Lt. = Bk.

0+64.65 = End Curb on Rt.

0+57 on Lt.

0+32.3

0+17 = B.C. 3' R on Lt.

0+00 = E.H. Pacific

T.P.	5.70	8.75	6.81	3.05
	4.41	9.86		5.45

N Line    N Cb    E    S Cb    S Line

36

C 0.62

3.70

3.08 = E.H. Stake

4.67 Rod

F 0.25 F 0.42

3.67    2.86 = Grade

3.44    3.44

5.31    5.31 Rod

F 0.04

3.07 = First Rail

3.05

5.70

C 0.12

2.88

3.00

5.75

F 0.16

3.92 = Grade

3.76

4.99

F 0.20

4.00

3.79

4.96

F 0.31

3.72 = Grade

3.41

5.34 Rod

F 0.02

3.84 = Grade

3.82

4.95 = Rod

F 0.10

3.95 = Grade

3.95

4.90 Rod

8.75

B.M. S.E. B.R. "F" Kettner Plan 7462-L

F-St. Gutter Grades  
From Pacific - East

37

0+17

0+00

0-

= E. Rail on South

5.27 9.09

3.82

3.35

3.87



Walker  
Johnson  
Pope  
Crawford  
7-14-49

G. ST. PAVING  
From Pacific to Calif. St  
Plan 7462-L

NO. 62141

1+80.94 = West edge W. Rail

1+60.45 = Bk

1+59.9 = RC. 2' Rad. on 15th

1+17.25

0+97 = Bk on R. Gutter

0+74.05 = Bk on N

0+37

0+100 = Finish Pacific

J.R.	5.08	6.99	4.19	1.91
	3.14	6.10		2.96

Nh Ncb L Sb Skine

38

C000  
1.86  
 1.86  
 5.13

1.74 169 = Gutter

003  
1.57 9th  
 1.60 Rail  
 5.39 Rod.

C022  
2.24  
 2.24  
 4.75

F012  
1.96 = cb 203  
 1.96 191  
 503 508

C066  
2.98  
 2.98  
 4.01

1.85 = Gutter

C007  
2.62 2.88 = cb  
 2.69  
 4.70

6.99

B.M. S.W. B.P. - G-St. And K.H. med.

F. St. Parking, Between  
Pacific & Calif St.

Gutter Grades

Walker  
7-19-49

		001
		305
chk 1185 P-36	526	304

0184

016465

189 8.30 3.91

£ Rt.  
Gutter.

39

000  
305 = gutter  
305  
5.25

000  
312 = gutter  
312  
5.18

8.30

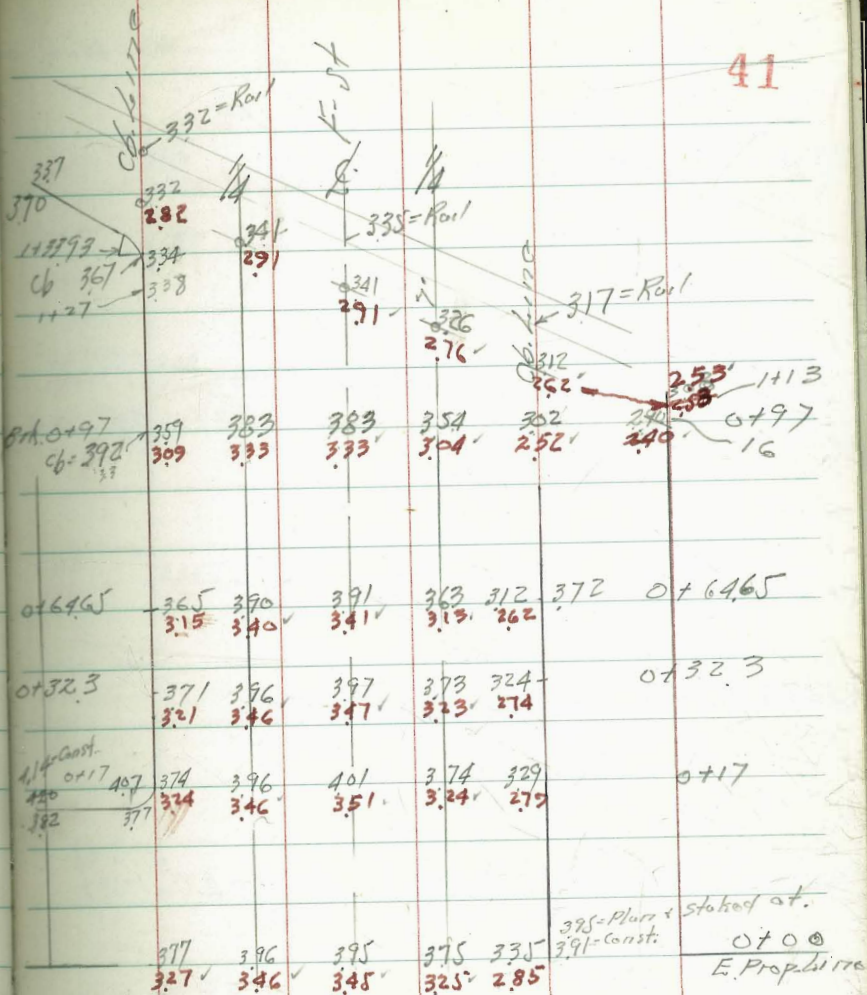
R.M. 012 Hoke 016465 012 Rt - P-36



F. St. Gutter Grades

Black figures = Finish Grades

Red. Figures = Subgrades



chk Rail	5		387-Plur
cb. line		533	3.88
	539	9.21	8M. Stake
			0+32.3
			P. 4

Pacific

G. St. Parry

1769 →

Black Fig. = Finish Parry  
Red Fig. = Subgrades

151  
15445 -190

1+22 299

530 7.26

196

8M. cb  
1+599

Chk Rail Sch Lane G. St 606

577 7.73

196

8M Sch  
R. 5' cb  
1+599 P. 33

146  
0400  
0-26

318  
330-Rail

339

338

343 Rail

311

259

260

253 = Rail

0+120 Pacific  
0-17

284

317

323

298

246

0+16.75

267

296

300

276

227

0+424

250

275

277

254

207

0+6805

292  
192

230

251

251

229

195 Brk.

0+97

220  
170

208

222

222

207

178

1+2865

189

139

194

194

186

171

196 Top cb.  
1+6035

186

136

178

173

1481

157

42

CALIFORNIA ST

Y Rail →

182

128

123

159

183 cut

144

144

136

ST.

0

246

250

226

267

279

298

318

339

338

Pacific

Ave

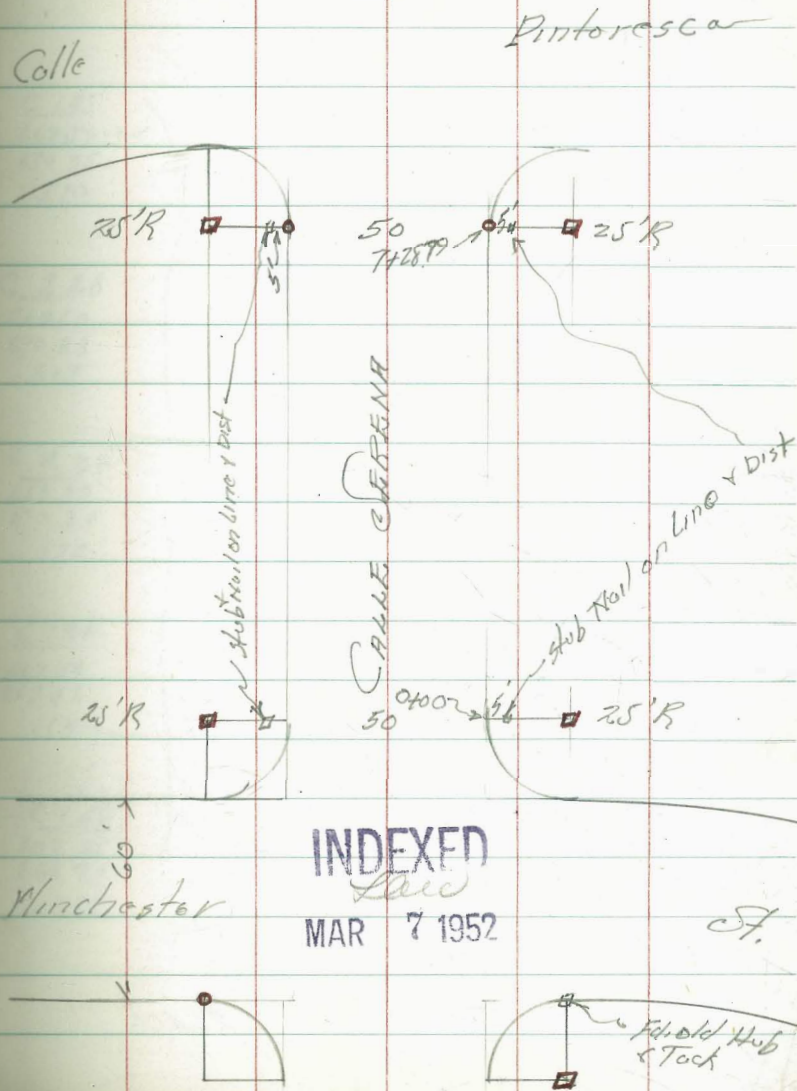
Rough Grades - CALLE SERENA  
 from Winchester to Calle Pintoresca

○ = Fd 3/4 Iron Pipes

□ = Set 2" x 2" Redwood Hub & Disk

Walker  
 Johnson  
 Pope  
 Crawford  
 8-3-49

X/P = 20544



Rough Grades Calle Severna

Note: Grades shown = Top of cb = Profile

0+40

T.P. 12.27 286.05 2.27 273.78

+826/0

④ = E.C. = 0+00

③

②

①

P.C. on Winchester

11.99 276.05

264.06

25'  
4

4

25'  
14

44

C 0.98  
272.80  
273.78  
12.27

C 3.24  
278.80  
276.54  
2.27

286.05

C 1.45  
269.50 - 6rd  
270.95  
5.10

C 2.28  
268.00  
270.88  
5.17

C 2.33  
268.00  
270.33  
5.72

C 1.84  
267.58  
269.42  
6.63

C 1.48  
267.25  
268.73  
7.32

C 4.13  
270.00 - 4rd  
274.13  
1.92

C 3.87  
269.40  
273.27  
2.78

C 3.36  
269.50  
272.86  
3.19

C 3.55  
270.05  
273.60  
2.45

C 3.15  
271.00  
274.15  
1.90

Return

Return

276.05

2773 Bk.

$$\begin{array}{r} 25' \\ 4. \\ \hline C 0.68 \\ 287.48 \\ 288.16 \\ \hline 9.18 \end{array}$$

$$\begin{array}{r} 25' \\ 17. \\ \hline C 4.81 \\ 287.98 \\ 292.79 \\ \hline 4.55 \end{array}$$

45

2733 "

$$\begin{array}{r} C 1.07 \\ 286.07 \\ 287.14 \\ \hline 10.30 \end{array}$$

$$\begin{array}{r} C 4.52 \\ 286.57 \\ 291.09 \\ \hline 6.25 \end{array}$$

1793 "

$$\begin{array}{r} C 1.62 \\ 284.15 \\ 285.77 \\ \hline 11.57 \end{array}$$

$$\begin{array}{r} C 4.15 \\ 284.65 \\ 288.80 \\ \hline 8.54 \end{array}$$

T.P. 11.26 297.34 0.67 285.38

297.34

1753 "

$$\begin{array}{r} C 1.39 \\ 281.74 \\ 283.13 \\ \hline 2.92 \end{array}$$

$$\begin{array}{r} C 3.14 \\ 282.24 \\ 285.38 \\ \hline 0.67 \end{array}$$

1713 = PVC

$$\begin{array}{r} C 1.13 \\ 278.83 \\ 279.96 \\ \hline 6.09 \end{array}$$

$$\begin{array}{r} C 1.96 \\ 279.33 \\ 282.29 \\ \hline 3.76 \end{array}$$

0780

$$\begin{array}{r} 9/1928 \\ \hline 1828 \end{array}$$

286.05

$$\begin{array}{r} C 1.17 \\ 276.10 \\ 277.27 \\ \hline 8.78 \end{array}$$

$$\begin{array}{r} C 2.99 \\ 276.60 \\ 279.59 \\ \hline 6.46 \end{array}$$

286.05



Calle Serena

5+53 P.V.C

5+13

4+73

4+33

3+93 = F.V.C.

3+53 P.K.

3+13 "

- 1.237 0/0

25'  
4.  
F287 F 2.00  
287.56 286.69  
284.69  
12.65

F4.31 F 3.67  
287.83 287.19  
283.52  
13.82

F2.67 F 2.24  
288.11 287.68  
285.44  
11.90

F0.04 G 0.17  
288.39 288.18  
288.35  
8.99

C 0.95  
288.67  
289.62  
7.72

C 1.16  
288.81  
289.97  
7.37

C 1.28  
288.40  
289.68  
7.66

25'  
4.

25'  
17.

C 1.94 C 1.07 46  
287.19 288.06  
289.13  
8.21

C 0.45 F 0.19  
287.69 288.33  
288.14  
9.20

C 1.84 C 1.41  
288.18 288.61  
290.02  
7.32

C 4.25 C 4.04  
288.68 288.99  
292.93  
4.41

C 4.85  
289.17  
294.02  
3.32

6.28  
289.31  
295.59  
17.5

C 5.59  
288.90  
294.49  
28.5

29734

Colle Sereno

①

TP 532 292.27 1039  $\frac{201}{289.94 = 25' R^4}$  on Pipe 286.95 114199 FB 170629

7 + 2883-PC Bk.

7+13

6+73

6+33

5+93

25'

♀

25'

R<sup>4</sup>

47

C 4.93 C 3.93  
279.60 280.60  
284.53  
7.74

C 6.22 C 5.52  
280.30 281.00  
286.52  
5.75

292.27

C 4.21 C 5.21  
281.20 280.30  
285.51  
11.83

C 6.33 C 5.33  
280.80 281.80  
287.13  
10.21

C 4.47 C 5.52  
282.24 281.19  
286.71  
10.63

C 7.28 C 6.33  
281.69 282.74  
289.09  
8.27

C 4.21 C 5.34  
284.36 283.23  
288.57  
8.77

C 8.48 C 7.35  
283.73 284.86  
292.21  
5.13

C 2.52 C 3.65  
285.95 284.82  
288.47  
8.87

C 7.36 C 6.23  
285.32 286.45  
292.68  
4.66

F 0.7804 C 0.27  
287.02 285.97  
286.24  
11.10

C 5.29 C 4.24  
286.47 287.52  
291.76  
5.58

297.34

Left B.M.

829 283.98

on Radius Hub. 7+2883 = 50' LA of L

④ = F.C.

C 405 C305  
 278.00 278.50  
 282.05  
 10.22

C 5.45 C.425  
 284.50 281.00  
 285.95  
 6.32

③

C 3.93 C3.43  
 278.70 279.20  
 282.63  
 9.64

C 5.64 C5.14  
 280.20 280.70  
 285.84  
 6.43

②

C 4.42 C3.72  
 279.20 279.90  
 283.62  
 8.65

C 5.87 C5.32  
 280.15 280.70  
 286.02  
 6.25

292.27

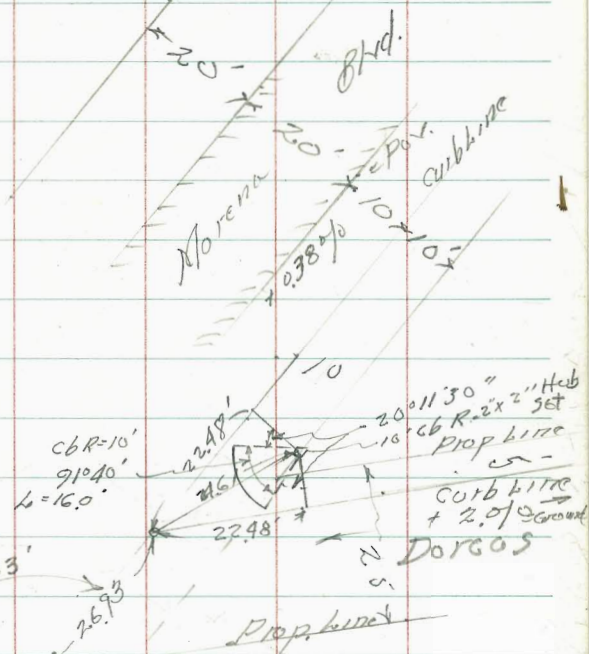
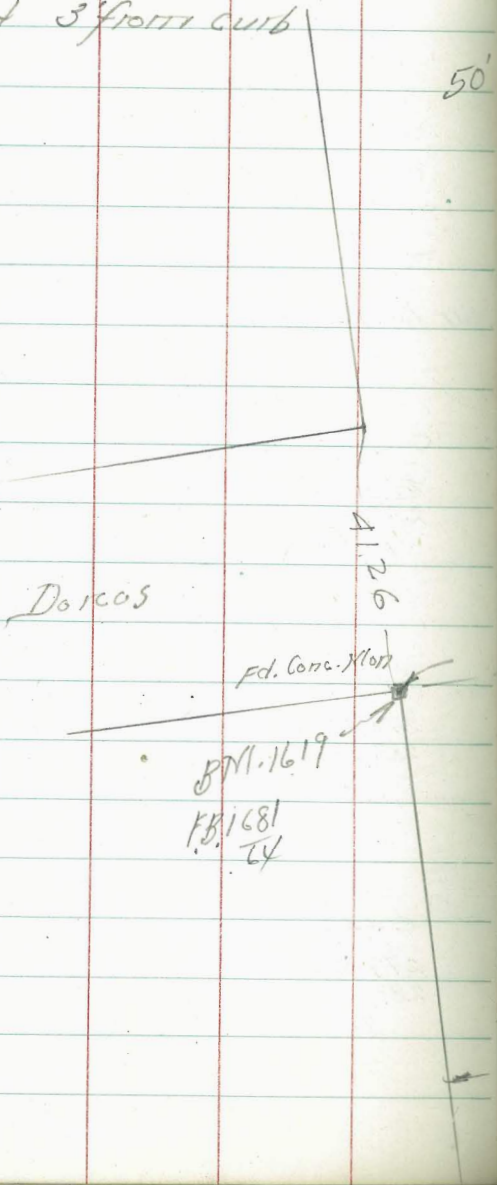
292.27

Curb Inlet Grades  
 Morena Blvd & Dorcos  
 Grades P-50

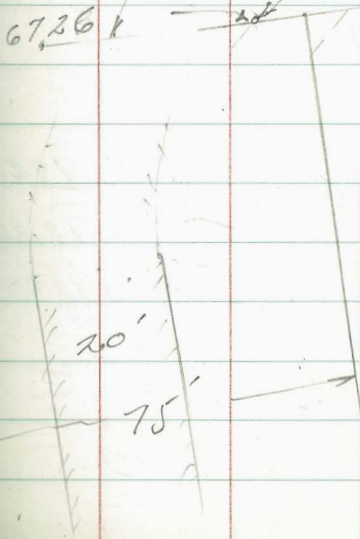
Stakes set 3' from curb

50'

Walker  
 Johnson  
 Pope  
 Crawford  
 8-8-49



INDEXED  
 Law  
 MAR 7 1952



Curb Inlet Grades N.E. Cor  
 Morona Blvd And Dorcas  
 Sketch P-45

End Inlet on Dorcas	5.57	18.45	18.45
E Inlet	5.72	18.30	18.30
Bay Inlet on Morona	5.72	18.30	18.30

783 2402 1619

Grades - Sewer Lateral No 1

Block 39-56 Normal Hts

Between Kellors & 34th

South of Adams

Drawing 3639-B W.O. 62134

Walker 8-16-49  
Pope  
Gardner  
Clark  
Acorn

34th

INDEXED

Law

MAR 7 1952

51

Adams

Lot No 1 →

Alley

75 | 75

1124

Kellors

Elev. Floor

Cut offset

452 390.49 386.21

428 5' N on p.



4.49 395.01 525 390.52

6.52 395.77 389.25

B.M. 511 B.P. Adams & 34th

Walker  
Pope  
Transfer of  
clock  
2 corners  
8-16-49

Myrtle St Farm Drain  
at Marlborough  
Plan 7067-L No. 31470

0+57	4.55	309.60	305.39	4.21
0+28.5	4.85	309.30	305.67	3.63
0+00	6.16	307.99	305.25	2.04

410 314.15 310.05

INDEXED  
File  
MAR 5 1952

B.M. N.W. Myrtle & Marlborough

Curb Returns Grades  
 S.W. of Myrtle & Marlborough  
 Drawing 7067-L

1460 = Bk.			307.92		
0+50	545	308.50	308.50	= First curb.	
0+25	531	308.64	308.81	-0.17	
0+10 = Bk.	512	308.83	309.00	-0.17	
0+00 T.P. 486					
Shine Myrtle	313.95	509	309.06	309.09	-0.03
K.C. 10 R		505	309.10	309.12	-0.02
E. Ret.		507	309.08	309.15	-0.07
B.C. 10 R		507	309.08	309.18	-0.10
0+548					
M.L. Marlborough		514	309.01	309.20 <sub>98</sub>	F019
+27.4		321	310.24	310.18	C006
0+00 = End Main Ch.		299	311.16	311.16	
410	314.15		310.05		

B.M. NW. Myrtle & Marlborough



Grades Curb on Marlborough  
at Redwood

54



chk end

4.72 297.04

5.18 291.86

292.72

RM. 02145 - by Cber 41  
FB 178X.55

Marlborough

C6 line

Curb Grades on Marlborough

at Redwood 92 per sketch P. 54

602  
297.32  
6.46 297.30

chk. and Existing cb = +14.5 FB 1784-55

2A'N of #9	5.29	293.47		
#9	5.48	293.28	292.80	C 0.48
#8	6.14	292.62	292.39	C 0.23
#7	6.55	292.21	292.10	C 0.11
#6 end cb inlet	6.28	292.48	292.07	C 0.41
#5 L inlet	8.06	290.70	292.00	F 1.30
#4 = Beg. cb inlet	7.57	291.19	292.00	F 0.81
#3	6.05	292.71	292.00	C 0.71
#2	6.95	291.81	292.00	F 0.19
#1	6.29	291.77	292.10	F 0.33

T.P. 2.33 298.76 7.05 296.43

166 303.48 301.82

B.M. H.V. B.P. Thorn - Marlborough

Curb Cuts Central Ave  
Thorn to Myrtle

cb.	320.40		320.00
	E	±	W
6+00	319.65		319.20
5+80	319.23		318.83
5+40	318.23		317.83

Rake

0+40	305.33		305.73
0+20			
0+00	304.33		304.73
cb	305.00		305.40

Stakes For Station D1914

44<sup>th</sup> at Thorn

57

π 310.58

c

W End 299<sup>00</sup> 6.30 304.28 5.28

+ 29' 298<sup>50</sup> 6.79 303.79 5.29

+ 58' 298<sup>00</sup> 6.20 304.38 6.38

Curb Cuts Myrtle Ave  
Between E Line Central w/Line 41"

58

S Line

N Line

3+00 320.55

2+60 320.34

320.74

Rake



+60 319.87

320.27

0+00 319.73

320.13

Curb cuts Marlborough st

Myrtle To Dwight

W

E

59

Top cb 330.40

330.40

6+00 329.38

329.38

5+85 329.03

329.03

5+70 328.53

3+00 319.53

319.53

0+40 310.69

310.69

0+20

0+00  
N line Myrtle 309.33

309.33

Top cb 310.00

310.00

310.07

Curb Cuts From W. side Alley To

W. curb Marlborough on Myrtle

N

S

1+60 309.23 308.53

1+40 309.98 309.98

1+20 310.74 310.08

0+80 312.25 311.63

0+40 313.76 313.18

0+20  
E. side Alley 314.62 314.10

0+00  
W. side Alley 315.48 315.02

Curb cuts on Myrtle Ave Marlborough

61

	N	S
To 42 <sup>nd</sup> st		
3+00	321.00	319.96
	20.58	
2+80	320.16	319.18
	18.62	17.68
	17.07	16.17
Ailey 1+60	315.52	314.66
Ailey 1+40	314.74	313.91
0+40	310.80	310.14
0+20		309.38
0+10		309.06
ELI Ho Marlboro 0+00	309.23	309.78



Curb cuts From 42<sup>nd</sup> - Van Dyke

on Myrtle

S

N

62

3+00 320.10

321.10

2+60 320.60

321.53

0+20 324.60

325.13

E. Line 42<sup>nd</sup>

0+00 325.10

325.42

































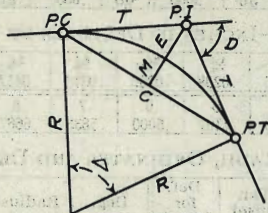






# DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES

Copyright, 1914, by Eugene Dietzgen Co., New York City



## CURVE FORMULAS

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

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

$$\text{Middle ordinate} = M = R \left(1 - \cos \frac{\Delta}{2}\right) \quad (5) = R \text{vers } \frac{\Delta}{2} \quad (6)$$

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

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

## 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  $\div 8\frac{1}{3} = 414.49$  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 =  $7.27 \frac{54.50}{100} = 2.16$  ft. Also square of any distance divided by twice the radius equals (approximately) the distance from tangent to curve. Thus  $\frac{54.50^2}{2 \times 688.26} = 2.16$  ft.

**Deflections.**—Deflection angle =  $\frac{1}{2} D$  for 100 ft.,  $\frac{1}{4} D$  for 50 ft., etc. For  $c$  ft. = (in minutes)  $.3 \times C \times D^2$  or = defl. for 1 ft. from Table III  $\times C$ . For Sta. 158 of above curve =  $.3 \times 54.5 \times 8\frac{1}{3} = 136.2'$  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 115.37. For from Table IV for  $1^\circ$  curve  $E = 960.6$  for  $8^\circ 20' = 960.6 \div 8\frac{1}{3} = 115.27$  and from Table V correction = .10 or  $E = 115.37$  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  $D = 5^\circ 30'$ .

TABLE I.—MINUTES IN DECIMALS OF A DEGREE.

1'	.0167	11'	.1833	21'	.3500	31'	.5167	41'	.6833	51'	.8500
2	.0333	12	.2000	22	.3667	32	.5333	42	.7000	52	.8667
3	.0500	13	.2167	23	.3833	33	.5500	43	.7167	53	.8833
4	.0667	14	.2333	24	.4000	34	.5667	44	.7333	54	.9000
5	.0833	15	.2500	25	.4167	35	.5833	45	.7500	55	.9167
6	.1000	16	.2667	26	.4333	36	.6000	46	.7667	56	.9333
7	.1167	17	.2833	27	.4500	37	.6167	47	.7833	57	.9500
8	.1333	18	.3000	28	.4667	38	.6333	48	.8000	58	.9667
9	.1500	19	.3167	29	.4833	39	.6500	49	.8167	59	.9833
10	.1667	20	.3333	30	.5000	40	.6667	50	.8333	60	1.0000

TABLE II.—INCHES IN DECIMALS OF A FOOT.

1/16	3/32	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	7/8
.0052	.0078	.0104	.0156	.0208	.0260	.0313	.0417	.0521	.0625	.0729
1	2	3	4	5	6	7	8	9	10	11
.0833	.1667	.2500	.3333	.4167	.5000	.5833	.6667	.7500	.8333	.9167

TABLE III.—RADI, ORDINATES AND DEFLECTIONS.

Deg.	Radius	Mid. Ord.	Tan Offset	Def. for 1 Foot	Deg.	Radius	Mid. Ord.	Tan Offset	Def. for 1 Foot	
0°	10'	34377.5	.036	.145	0.05'	7°	819.02	1.528	6.105	2.10'
	20	17188.8	.073	.291	0.10	20	781.84	1.600	6.395	2.20
	30	11459.2	.109	.436	0.15	30	764.49	1.637	6.540	2.25
	40	8594.42	.145	.582	0.20	40	747.89	1.673	6.685	2.30
	50	6875.55	.182	.727	0.25					
1	10	5729.65	.218	.873	0.30	8	716.78	1.746	6.976	2.40
	20	4911.15	.255	1.018	0.35	20	688.16	1.819	7.266	2.50
	30	4297.28	.291	1.164	0.40	30	674.69	1.855	7.411	2.55
	40	3819.83	.327	1.309	0.45	40	661.74	1.892	7.556	2.60
	50	3437.87	.364	1.454	0.50					
	60	3125.36	.400	1.600	0.55					
2	10	2864.93	.436	1.745	0.60	9	637.28	1.965	7.846	2.70
	20	2644.58	.473	1.891	0.65	20	614.56	2.037	8.136	2.80
	30	2455.70	.509	2.036	0.70	30	603.80	2.074	8.281	2.85
	40	2292.01	.545	2.181	0.75	40	593.42	2.110	8.426	2.90
	50	2148.79	.582	2.327	0.80					
	60	2022.41	.618	2.472	0.85					
3	10	1910.08	.655	2.618	0.90	10	573.69	2.183	8.716	3.00
	20	1809.57	.691	2.763	0.95	20	546.44	2.292	9.150	3.15
	30	1719.12	.727	2.908	1.00	30	521.67	2.402	9.585	3.30
	40	1637.28	.764	3.054	1.05	40	499.06	2.511	10.02	3.45
	50	1562.88	.800	3.199	1.10	50	478.34	2.620	10.45	3.60
	60	1494.95	.836	3.345	1.15					
4	10	1432.69	.873	3.490	1.20	11	459.28	2.730	10.89	3.75
	20	1375.40	.909	3.635	1.25	11	441.68	2.839	11.32	3.90
	30	1322.53	.945	3.718	1.30	12	425.40	2.949	11.75	4.05
	40	1273.57	.982	3.926	1.35	12	410.28	3.058	12.18	4.20
	50	1228.11	1.018	4.071	1.40	13	396.20	3.168	12.62	4.35
	60	1185.78	1.055	4.217	1.45					
5	10	1146.28	1.091	4.362	1.50	14	383.07	3.277	13.05	4.50
	20	1109.33	1.127	4.507	1.55	14	370.78	3.387	13.49	4.65
	30	1074.68	1.164	4.653	1.60	15	359.27	3.496	13.92	4.80
	40	1042.14	1.200	4.798	1.65	15	348.45	3.606	14.35	4.95
	50	1011.51	1.237	4.943	1.70	16	338.27	3.716	14.78	5.10
	60	982.64	1.273	5.088	1.75	16	319.62	3.935	15.64	5.40
6	10	955.37	1.309	5.234	1.80	17	302.94	4.155	16.51	5.70
	20	929.57	1.346	5.379	1.85	17	287.94	4.374	17.37	6.00
	30	905.13	1.382	5.524	1.90	18	274.37	4.594	18.22	6.30
	40	881.95	1.418	5.669	1.95	18	262.04	4.814	19.08	6.60
	50	859.92	1.455	5.814	2.00	19	250.79	5.035	19.94	6.90
	60					19	240.49	5.255	20.79	7.20
						20	231.01	5.476	21.64	7.50
						21	222.27	5.697	22.50	7.80
						22	214.18	5.918	23.35	8.10
						23	206.68	6.139	24.19	8.40
						24	199.70	6.360	25.04	8.70
						25	193.18	6.583	25.88	9.00

NOTE. Chord Deflection=2 times tangent deflection.

600  
388  
0.38

TABLE IV.—TANGENTS AND EXTERNALS TO A 1° CURVE.

Central Angle	Tangent	External	Central Angle	Tangent	External	Central Angle	Tangent	External
1°	50.00	.22	11°	551.70	26.50	21°	1061.9	97.57
10'	58.34	.30	10'	560.11	27.31	10'	1070.6	99.16
20	66.67	.39	20	568.53	28.14	20	1079.2	100.75
30	75.01	.49	30	576.95	28.97	30	1087.8	102.35
40	83.34	.61	40	585.36	29.82	40	1096.4	103.97
50	91.68	.73	50	593.79	30.68	50	1105.1	105.60
2	100.01	.87	12	602.21	31.56	22	1113.7	107.24
10	108.35	1.02	10	610.64	32.45	10	1122.4	108.90
20	116.68	1.19	20	619.07	33.35	20	1131.0	110.57
30	125.02	1.36	30	627.50	34.26	30	1139.7	112.25
40	133.36	1.55	40	635.93	35.18	40	1148.4	113.95
50	141.70	1.75	50	644.37	36.12	50	1157.0	115.66
3	150.04	1.96	13	652.81	37.07	23	1165.7	117.38
10	158.38	2.19	10	661.25	38.03	10	1174.4	119.12
20	166.72	2.43	20	669.70	39.01	20	1183.1	120.87
30	175.06	2.67	30	678.15	39.99	30	1191.8	122.63
40	183.40	2.93	40	686.60	40.99	40	1200.5	124.41
50	191.74	3.21	50	695.06	42.00	50	1209.2	126.20
4	200.08	3.49	14	703.51	43.03	24	1217.9	128.00
10	208.43	3.79	10	711.97	44.07	10	1226.6	129.82
20	216.77	4.10	20	720.44	45.12	20	1235.3	131.65
30	225.12	4.42	30	728.90	46.18	30	1244.0	133.50
40	233.47	4.76	40	737.37	47.25	40	1252.8	135.35
50	241.81	5.10	50	745.85	48.34	50	1261.5	137.23
5	250.16	5.46	15	754.32	49.44	25	1270.2	139.11
10	258.51	5.83	10	762.80	50.55	10	1279.0	141.01
20	266.86	6.21	20	771.29	51.68	20	1287.7	142.93
30	275.21	6.61	30	779.77	52.89	30	1296.5	144.85
40	283.57	7.01	40	788.26	53.97	40	1305.3	146.79
50	291.92	7.43	50	796.75	55.13	50	1314.0	148.75
6	300.28	7.86	16	805.25	56.31	26	1322.8	150.71
10	308.64	8.31	10	813.75	57.50	10	1331.6	152.69
20	316.99	8.76	20	822.25	58.70	20	1340.4	154.69
30	325.35	9.23	30	830.76	59.91	30	1349.2	156.70
40	333.71	9.71	40	839.27	61.14	40	1358.0	158.72
50	342.08	10.20	50	847.78	62.38	50	1366.8	160.76
7	350.44	10.71	17	856.30	63.63	27	1375.6	162.81
10	358.81	11.22	10	864.82	64.90	10	1384.4	164.86
20	367.17	11.75	20	873.35	66.18	20	1393.2	166.95
30	375.54	12.29	30	881.88	67.47	30	1402.0	169.04
40	383.91	12.85	40	890.41	68.77	40	1410.9	171.15
50	392.28	13.41	50	898.95	70.09	50	1419.7	173.27
8	400.66	13.99	18	907.49	71.42	28	1428.6	175.41
10	409.03	14.58	10	916.03	72.76	10	1437.4	177.55
20	417.41	15.18	20	924.58	74.12	20	1446.3	179.72
30	425.79	15.80	30	933.13	75.49	30	1455.1	181.89
40	434.17	16.43	40	941.69	76.86	40	1464.0	184.08
50	442.55	17.07	50	950.25	78.26	50	1472.9	186.29
9	450.93	17.72	19	958.81	79.67	29	1481.8	188.51
10	459.32	18.38	10	967.38	81.09	10	1490.7	190.74
20	467.71	19.06	20	975.96	82.53	20	1499.6	192.99
30	476.10	19.75	30	984.53	83.97	30	1508.5	195.25
40	484.49	20.45	40	993.12	85.43	40	1517.4	197.53
50	492.88	21.16	50	1001.7	86.90	50	1526.3	199.82
10	501.28	21.89	20	1010.3	88.39	30	1535.3	202.12
10	509.68	22.62	10	1018.9	89.89	10	1544.2	204.44
20	518.08	23.38	20	1027.5	91.40	20	1553.1	206.77
30	526.48	24.14	30	1036.1	92.92	30	1562.1	209.12
40	534.89	24.91	40	1044.7	94.46	40	1571.0	211.48
50	543.29	25.70	50	1053.3	96.01	50	1580.0	213.86

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	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  $41.9 + (20 - 16) \div 2$  or 2 ft. added to 41.9 = 43.9. For slopes of 1 on 1 see inside of front cover.

MADE IN U.S.A.

2016 575  
15.52 486  
12) 464 389  
36  
104  
96  
80

387 1508  
40  
15480

314 74  
310 80  
3 94  
40

1552  
155  
2 17.07 31080  
155  
2+40 18.62 31237  
157  
31394

1918.377  
1466  
10 14  
151  
1.63  
151  
13.16 377  
40  
15680