

1010

FIELD BOOK
360

100

KEUFFEL & ESSER CO.

DRAWING MATERIALS
AND
SURVEYING INSTRUMENTS.
NEW YORK.

CHICAGO. ST. LOUIS. SAN FRANCISCO. MONTREAL.

TABLES FOR EXCAVATIONS AND EMBANKMENTS.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.
ROADWAY 18 FEET WIDE. SIDE SLOPES 1 TO 1.
FOR SINGLE TRACK EXCAVATION.

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

Calculated by Julien A. Hall, M. Am. Soc. C. E.

For Keith's Railroad Curve Tables see end of book.

1010

121560 Cat.

6427
J 13.76

1135
5-47-20

39.5960
J 47.20
5-12-20

Index.

Page

Torrey Road from Prospect St to
foot Biological Grade

20-24

Survey of Torrey Road from end of Paving at
 Top of Biological Grade to connect with and
 of Paving at Torrey Pine Grade

of Davis
 of Hancock
 of Warrick

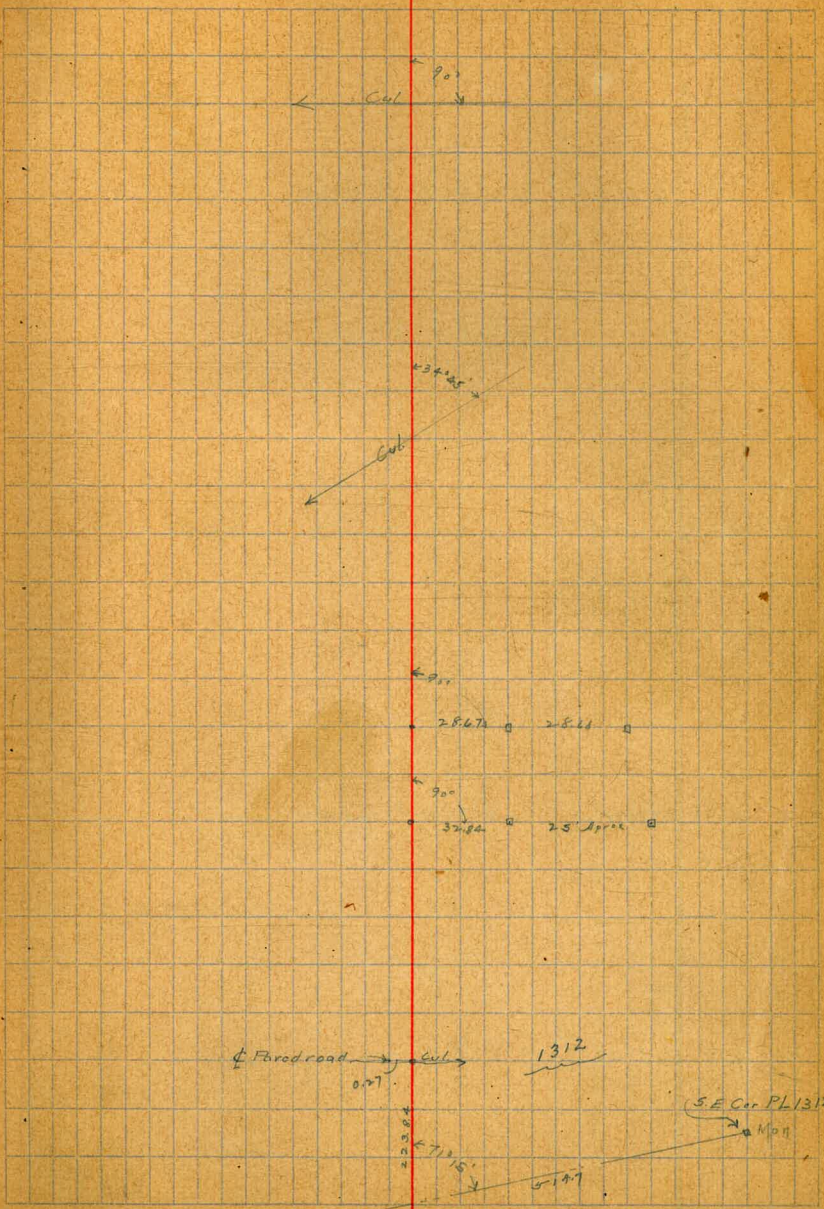
| Sta | Ang | Bearing | Mag Bearing |
|-------|-----|---------|--|
| 17+10 | | | Note - 12" Corrugated pipe already in in good condition |

12+50
 15+09.2

| | | | |
|---------|----------|-----------|----------|
| 5+99+6 | L 10°08' | N 0°34'E | N 1+000W |
| 4+59+56 | L 8°20' | N 10°39'E | N 4°45'W |

2+59+06

| | | | | |
|------|--|-----------|----------|--|
| 0+00 | | N 18°59'E | N 0°30'E | Note - Cul at Sta 4+00. 12" 6" Pipe - Should be 1" pipe |
|------|--|-----------|----------|--|



Sta Ang Bearing Mag Bearing

1196.5
37+02.78 R 10° 12' N 7° 41' E N 12° 40' W

1372.8
35+67.50 R 11° 58' 30" N 7° 31' W N 22° 45' W

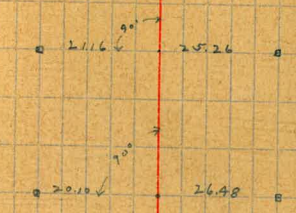
1197.20
45+29 10" Corrugated pipe good condition

460.30 L 18° 34' 30" N 19° 29' 30" W N 34° 45' W

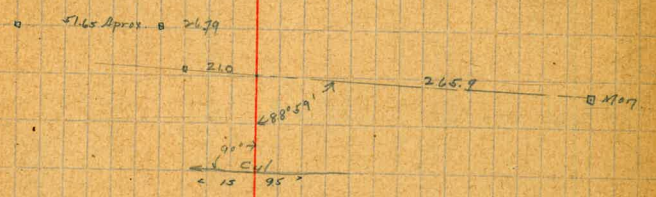
24+51.40 - PL
1197.20
23+84 12" Corrugated cul in fair condition
Could be used if extension made

21+09.10 L 1° 29' N 0.55 W N 16° 15' W

1509.60
20 8" Pipe will do for these culverts



1313



336 Approx 322.1 1312



Sta Ang Bearing Mag. Bearing

12+08 P.O.T.

5+17

1" Concrete pipe in
911 526

51+63.6 P.L. = 0+00

262.37

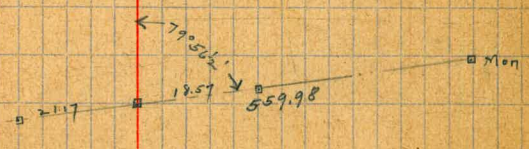
19+01.28 R 7° 40' N 102° 1' E $\sqrt{4000}$

1196.5



1324

Cul 142



1313



Sta Ang Bearing Mag Bearing

35+62.42 EC

34+74

33+71.02 PL L 11° 0'

N 15° 09' W / S 50° 20' W

12" pipe in place OK

31+86 Cul

31+78.50 RC

12" pipe Needed

30+12

8" pipe Needed

27+77.14 PL

26+66.34 EC

24+77.94 PI L 14° 30'

N 4° 09' W / N 19° 20' W

22+86.23 RC

18+14

12" Corrugated Cul is 10' long
Condition could be improved

4

38.92 39.71

Δ 110.0'

T 192.59

R 2000

L 383.97

38.63

38.27

Cul.

PL 1325

57.20

139.83

31.24

Δ 14° 30'

T 190.83

R 1500

L 379.61

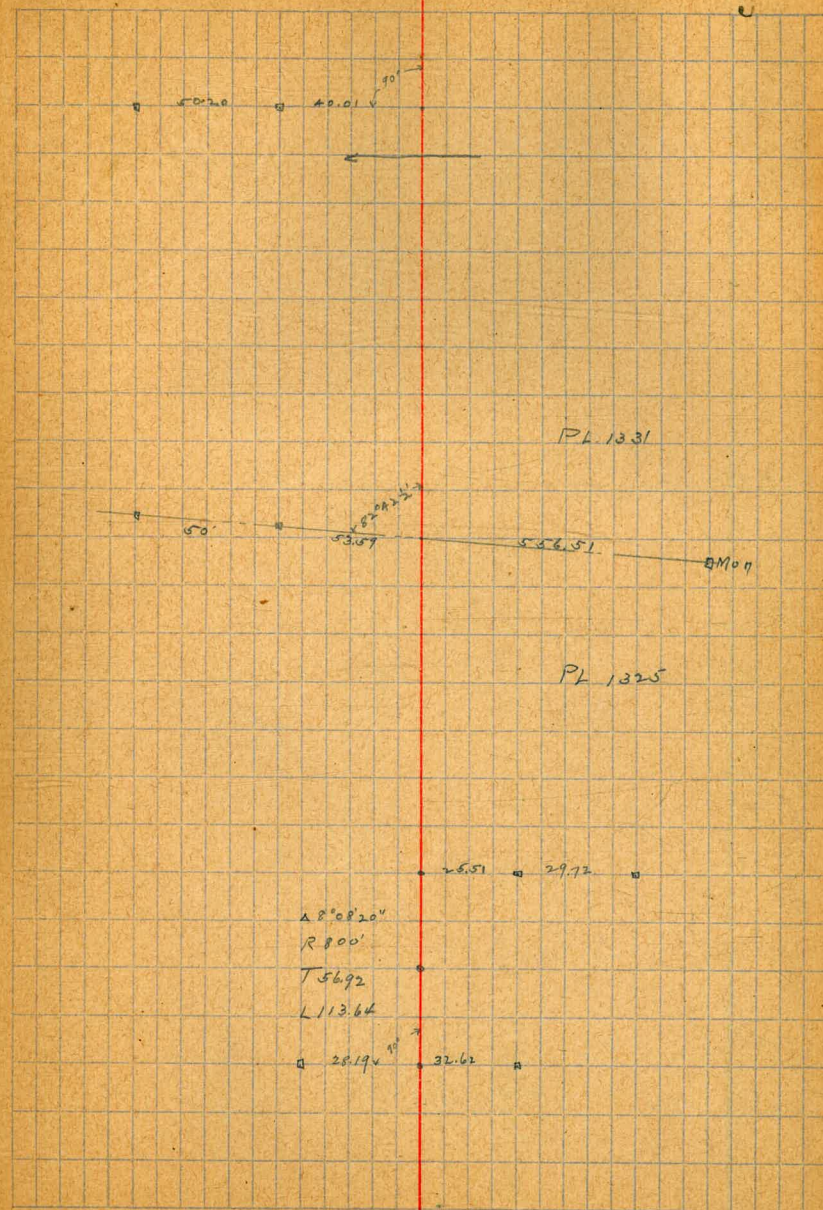
PL 1324

42.43

60.67

6° 26'

| Sta | Ang | Bearing | Mag Bearing |
|---------------------|------|-----------------------------|-------------|
| 62+76 ³⁴ | POT | | |
| 63+70 | Cul | | 12" pipe |
| 53+56 ³⁷ | P.L. | | |
| 42+38 ⁷⁴ | E.C. | | |
| 41+92 ⁰⁴ | PI | R 8° 08' 20" N 7° 00' 40" W | √ 22' 10" W |
| 41+25 ¹² | P.C. | | |

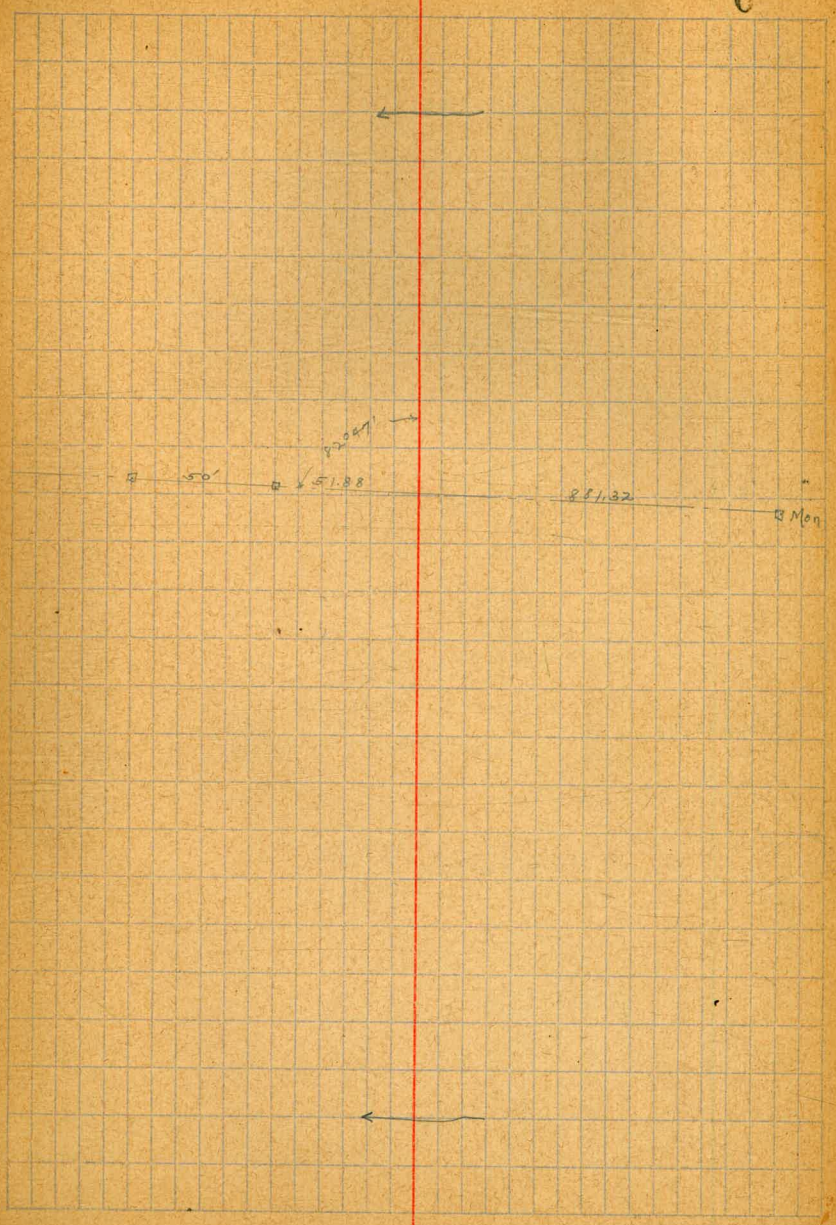


| Sta | Ang | Bearing | Meg. Bearing |
|-----|-----|---------|--------------|
|-----|-----|---------|--------------|

| | | | |
|-------|-----|--|----------|
| 90+25 | Cul | | 12" pipe |
|-------|-----|--|----------|

| | | | |
|----------|----|--|--|
| 79+17.80 | Pl | | |
|----------|----|--|--|

| | | | |
|-------|-----|--------------|----------|
| 65+63 | Cul | N 7°00'40" W | 12" pipe |
|-------|-----|--------------|----------|



8 Mon

Sta Ang Bearing Mag. Bearing

121+3264 EC

$\approx 69^{\circ} 57' 40'' W$

116+9647 P.I. L 54°30'

N 85° 0' W

111+8144 PC

110+8821 E.C.

$\approx 15^{\circ} 27' 40'' W$

109+7782 P.I. L 8°27'

N 30° 30' W

108+6699 PC

105+8054 PL

99+9066 POT

$\approx 7^{\circ} 00' 40'' W$

7

44.43 48.60

54.24

T 51503

R 1000

L 95120

E 12484

36.94

90°

89.71

67.21

90°

35.11

8°27'

T 110.81

R 1500

L 22122

90°

39.81

37.48

1419.53

$\approx 82^{\circ} 23' 10''$

49.72

50 Acres

34.23

27.28

90°

| Sta | Ang | Bearing | Mag Bearing |
|-----|-----|---------|-------------|
|-----|-----|---------|-------------|

140+56.55 End paving Torrey pine grade

140+179.6 EC N55°28'40"W

139+71.2 PI R32°26' N70°40'W

139+21.2 PC N87°54'40"W

128+93.2 EC

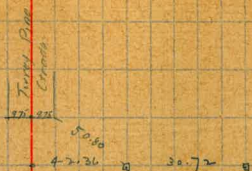
136+98.2 PI L47°03' S76°50'W

134+174.0 PC N40°17'40"W

125+18.0 EC

124+172.2 PI R29°40' N55°20'W

124+25.0 PC N69°57'40"W



$$A = 32^{\circ}26'$$

$$R = 170'$$

$$T = 49.44'$$

$$L = 96.73'$$

det. wt. 0.116 / 1" = 5.86'

| Station | Angle | Distance | Other |
|--------------|-----------|----------|----------|
| 1st point EC | 1°02'19" | L 19.96 | |
| 2nd " | 2°08'06" | R 18.45 | |
| 3rd " | 3°53'53" | 24.45 | 40.94 |
| 4th " | 5°19'40" | 24.45 | |
| 5th " | 6°25'21" | | 47.037' |
| 6th " | 8°11'14" | | |
| 7th " | 9°37'01" | | T 220.61 |
| 8th " | 11°02'48" | | R 500' |
| 9th " | 12°28'35" | | L 445.53 |
| 10th " | 13°54'22" | | |
| 11th " | 15°20'09" | | |
| 12th " | 16°45'56" | | |
| 13th " | 18°11'43" | | |
| 14th " | 19°37'30" | | |
| 15th " | 21°03'17" | | |
| 16th " | 22°29'04" | | |

33.45 28.77

48.26 25.68

$$\Delta 29^{\circ}40'$$

$$T 47.67$$

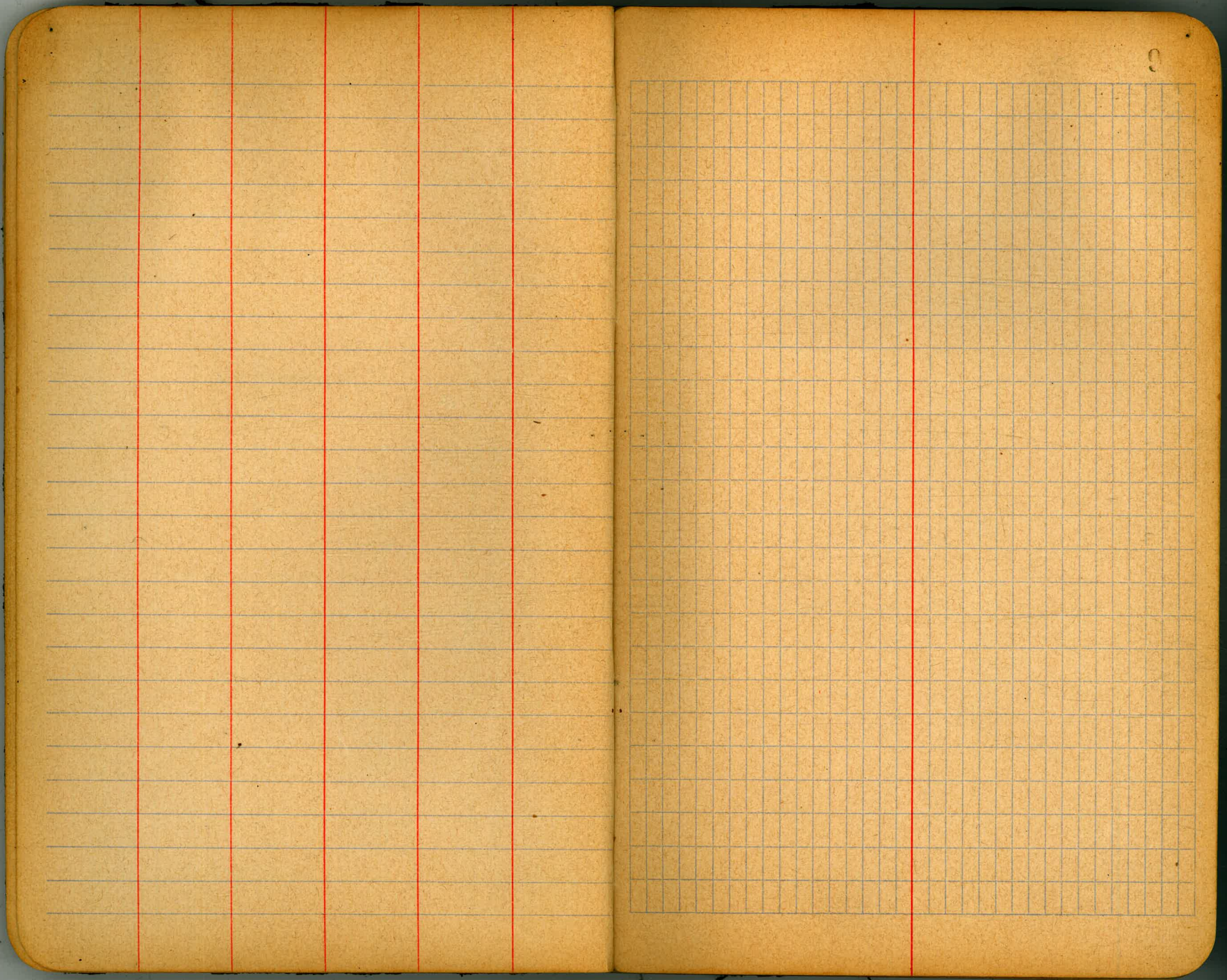
$$R 180'$$

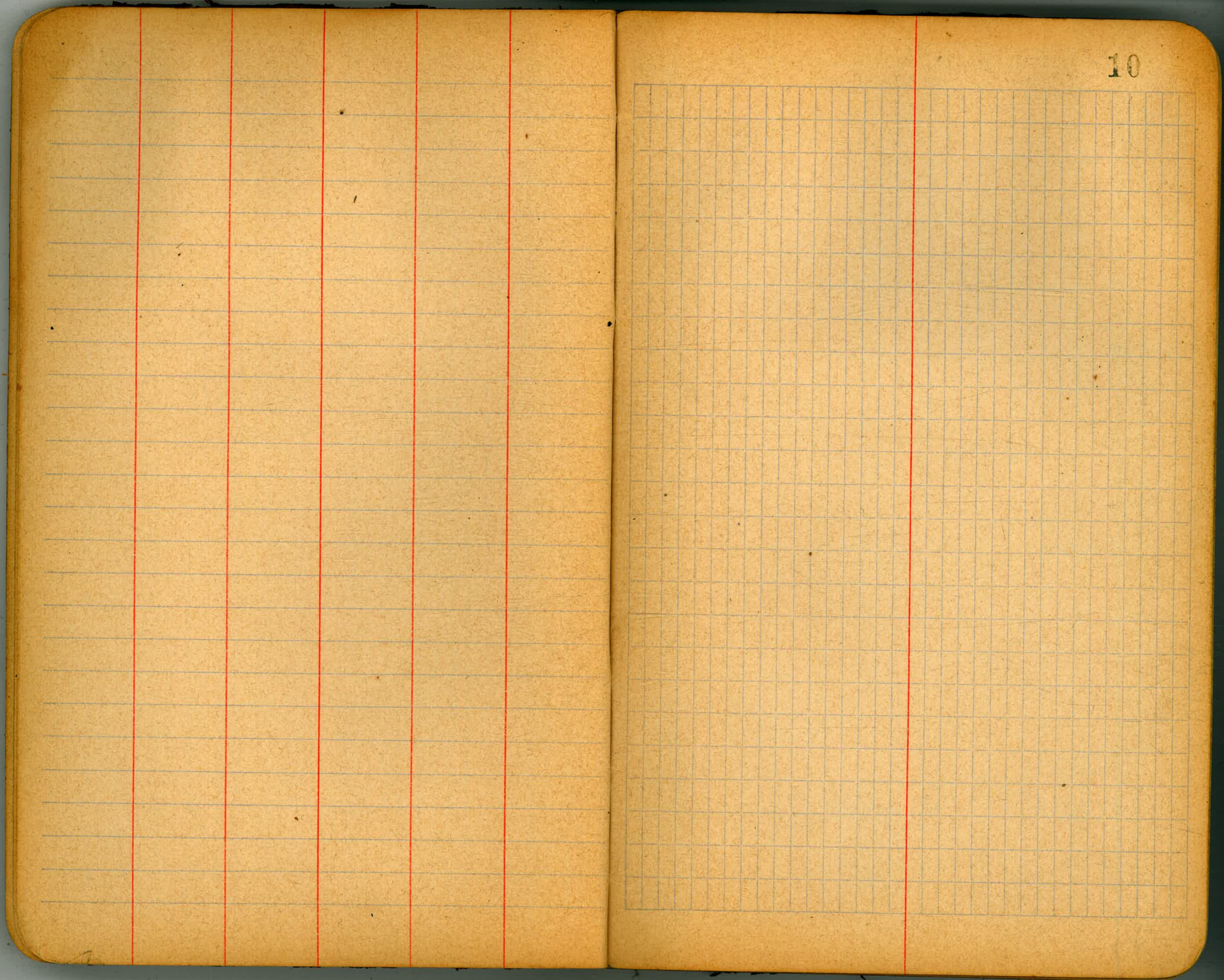
$$L 93.20$$

$$E 6.20$$

$$\square 317 \text{ Approx}$$

$$40.97$$





Location of Cotton Road from Torrey Road to City Turn

S. Davis
177
Hansen
Hatch

Sta Ang Bearing Mag Bearing

13771.8 x PC

107.47

12104.39 EC

PI L 22° 20'

N 77° 0' E

11716.69 PC

20107.32 PL

122.00

6474.63 EC

PI R 29° 52'

S 80° 40' E

5444.31 PC

210.70

1425.93 EC

PI R 68° 22'

N 52° 10' E

0+00-PC

11

Δ 22° 20'

R 225'

T 44.42

L 87.70

122.50

39° 34'

Hub
S.W. Cor. PL 12.80

Δ 29° 52'

R 250'

T 46.68

L 130.32

Geo. Co. Pole
60002

6437

K 49° 20'

6410

Δ 20° 30'

T 71.45

R 105.20

L 125.53

Torrey
EC

Road

PC 0+00 = 46+19.27
Torrey Road

Δ 20° 30'

R 740

T 133.81

L 264.77

PC

Sta Ang Bearing Mag Bearing

24+78.6 PC

15201

22+19.85 EC

PI L 17° 40'

N 34° 30' E

21+73.89 PC

19274

19+82.95 EC

PI L 7° 40'

N 52° 10' E

18+02.31 PC

32566

14+76.63 EC

PI L 17° 10'

N 59° 50' E

13+71.86 PC

1270

6x6 pool

1290

27

1289

Δ 17° 40'

R 475

T 73.82

L 146.16

1280

City

16654

Δ 7° 40'

R 1350

T 90.45

L 180.64

16010

Rosey

176.30

81.87

18+02.31 PC

17° 40'

10

29.01

Δ 17° 10'

R 350'

T 52.83

L 104.77

Sta Ang Bearing Mag. Bearing

37+82.63 N 2° 34' N 19° 30' W

244.96

31+37.67 EC

PT R 5° 32' N 16° 50' W

30+411.00 PC

208.88

28+32.22 C

PT L 35° 06' N 22° 30' W

27+12.89 PC

125.71

25+93.18 EC

PT L 21° 50' N 12° 30' E

24+78.00 PC

A 5° 22'

R 100'

T 48.33

L 96.57

A 35° 06'

R 185'

T 58.51

L 113.33

A 21° 50'

R 300'

T 57.86

L 114.32

Sta Ang Bearing Mag. Bearing

46+54^W EC

265.79

PI R 19°24'

N 10°40' W

45+72⁹⁸ PC

44+93⁷¹ EC

273.27

PI L 13°54'

N 30°0' W

43+96⁶⁷ PC

32.247

43+64⁴³ EC

PI R 9°44'

N 16°10' W

42+28⁸ PC

183.0

40+95⁵³ EC

PI L 6°30'

N 25°55' W

40+27⁴⁶ PC

244.20

Δ 19°24'

R 240'

T 41.05

L 81.26

Δ 13°54'

R 400'

T 48.76

L 97.04

Δ 9°44'

R 800'

T 68.11

L 135.90

Δ 6°30'

R 600'

T 34.07

L 68.07

Sta Ang Bearing Mag. Bearing

58+19.63 EC

PI RA 1°30'

NR 1°05' E

57+44.27 C

57+44.27

55+90.26 EC

PI RA 61°16'

N 42°35' E

51+33.63 PC

51+33.63

48+20.43 EC

PI RL 8°0'

N 18°40' W

47+36.65 PC

47+36.65

11

A 41°30'

R 200

T 75.77

L 144.86

A 41°16'

R 240

T 142.12

L 256.63

A 8°00'

R 600

T 419.6

L 83.78

| Sta | Ang | Bearing | Mag Bearing |
|-----|-----|---------|-------------|
|-----|-----|---------|-------------|

260.472

63+61.03 EC

PI L 44° 22'

N 5° 05' E

62+83.91 PC

62+57.43 EC

PI L 15° 40'

N 49° 25' E

61+89.22 PC

225.94

60+14.20 EC

PI L 19° 00'

N 65° 05' E

59+81.10 PC

183.97

 $\Delta 44^{\circ} 22'$

R 100'

T 40.78

L 77.43

 $\Delta 15^{\circ} 40'$

R 250

T 34.40

L 68.36

1296

SPIKE

 $\Delta 19^{\circ} 0'$

R 100'

T 16.73

L 33.16

1297

P.I.



Sta Ang Bearing Mag. Bearing

71+10.69 EC

PI R 9°52' N 21°55' W

70+07.27 PC

171.82

69+39.79 EC

PI L 19°50' N 31°45' W

68+35.94 PC

147.60

68+00.41 EC

PI R 12°24' N 11°50' W

66+91.90 PC

166.24

66+18.63 EC

PI L 29°26' N 24°20' W

65+44.57 PC

160.27

Δ 9°52'
R 600'
T 51.79
L 103.32

Δ 19°50'
R 300'
T 52.45
L 103.85

Δ 12°24'
R 500'
T 54.32
L 108.21

Δ 29°26'
R 150'
T 39.40
L 77.06

| Sta | Ang. | Bearing | Mag. Bearing |
|-------------|------|---------|--------------|
| 78+85.25 EC | | | |

| | |
|---------------|------------|
| PI, R 20° 24' | N 2° 15' E |
|---------------|------------|

77+07.23 PC

76+48.49 EC

| | |
|-------------|-------------|
| PI L 7° 52' | N 18° 10' W |
|-------------|-------------|

74+15.08 PC

73+46.17 EC

| | |
|---------------|-------------|
| PI, R 11° 46' | N 10° 15' W |
|---------------|-------------|

72+85.03 PC

∠ 20° 24'

R 500'

T 89.96

L 178.02

∠ 7° 52'

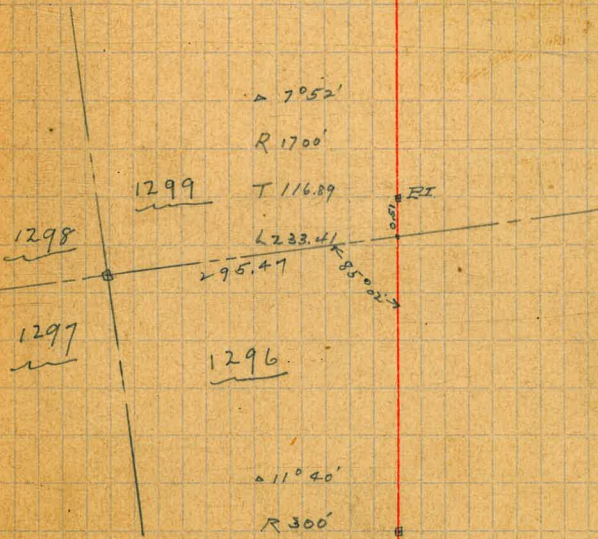
R 1700'

T 116.89

L 233.41

∠ 95.47

K 85.02



∠ 11° 40'

R 300'

T 30.65

L 41.09

216.50
256.78

Sta Ang Bearing Mag. Bearing

109+132.0 EC

Note: Road ends at No line

PL 1323, on last course

PI R 210.0

N 140.35' W

107+62.0 PC

106+50

390.09

105+50.0 EC

PI L 46.50'

N 36.18' W

103+73.8 PC

519.58

102+21.72 EC

PI R 9.14'

N 10.30' E

100+78.0 PC

99+25.78 E 35' Road East

99+47.48 Tree row west

98+99.78 Tree row East

96+58.0 End of Garden East also in line with pipeline & Hydrants

90+50 End of Garden West

5.25
47.46

10.23

0000

40.0

107 6.50
108 3.38
18.86

10

A 210.40

R N 0° 57' 20" E

R 400

T 76.54

105.50 81

35.18

107.23 99

L 1514.6

A 415.0'

N 20° 44' 40" W

121.00 R

R 220

T 96.28

109.13 91

15.10 82

124.23 86

L 179.83

N 26° 07' 20" E

1311

A 80.14'

1312

992.04

R 1000

PI

T 71.97

1299

L 143.70

1298

12.08

15.14

33.67

44.26

103.72 98

102.21 71

1.51.28

Sta Ang Bearing Mag. Bearing

10+05²³ 0+00 Hatch's Line

9+77¹⁴ EC

PI R 8°10'

N 56°20' E

7+77²³ PC

7+70²³ EC

PI L 16°0'

N 48°15' E

6+03²⁸ PC

5+13²⁶ EC

PI R 25°47½'

N 64°0' E

1+76²⁵ PC

0+00

N 38°15' E

171.75
26.15
25.77

729.12

11107

344.76

382.87

Levelling
Book 1017 p 2

171.75
26.15
25.77

20

Gas Co. pole # 1050 35.75

7+15 R 1400'

Δ 8°10'

Tei pole

T 99.95
L 199.55

P.I. 8+77.58

Tei pole 73.70

5285 R 600'

Δ 16°0'

T 84.82

L 167.55

Tei pole

PI. 6+87.60

Tei pole 18.35

R 750'

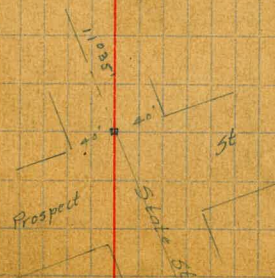
Δ 25°47½'

PI. 3+47.87

Gas Co. pole # 1540 29.70

T 171.72

L 337.61



54.5
17
25
40
40
2
20
26

27
309
6817

Sta Ang Bearing Mag Bearing

21+690.5 EC

PI R 40° 50'

N 76° 45' E

20+972 EC

130

19+133.2



17+79.91 EC

PI L 20° 00'

N 36° 15' E

14+299.7 EC

337.7

531.87

729.72

North pole
2020

40° 50'

R 100'

T 272.7

L 71.27
North pole
1960

P.I. 21+359

19+133.2
15
159.37
16+00.7
291.67

Note - These signs
Should be replaced
with pipe caps - 4 1/2" Long

40' CL lines
15 SE
10 SW

18' Right of Way

Pennrose Ave
2 1/2" C.B.

12.7

RR Spine Gas Co. Pole
1204

20° 00'

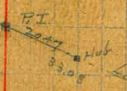
R 1000'

T 176.78

L 249.94

P.I. 16+06.75

179.62
92.15
87.07



La Valle
North pole

106.42

Sta Ang Bearing Mag Bearing

30+21.5° EC

PI R58°21'

S8°46'E

338.64

28+72.1° PC

PI L7°37'

N46°10'E

216.68

27+65.4° EC

27+07.2° PC

PI L7°20'

N69°20'E

265.69

25+67.4° EC

23+75.4° PC

205.13
27.13
178.00
47.13

115.8
27.4
200.79
23.4

330.71

For change sec book 10/F-73

187.4
29.27
216.68

76.12
23.7508
2471.54

314 377
20 21 110
132 17
80 05
202.82

80.68
102.60
3.45

53°31'

R 160'

P.L. 29+52.83

T 806.8

45'

L 141.115
40'

20' x Tie hub

North Gas cap pole 2 above ground
2190

28°37'

R 140'

P.L. 27+36.98

T 79.27

L 57.71

North Gas cap pole 2170
R 1500 12.77

7°20'

T 96.12

L 191.99

P.L. 24+71.54

28.7

22.57
10.87

Sta Ang Bearing Nag Bearing

48+72.64 EC

PI L 20°30' N12°5'W

46+94.21 - Otta Cañon Road

46+09.27 PC

45+88

Culvert

45+78.48 EC

PI L 50°10' N7°40'E

38+23.22 PC ✓

37+35 Cul

34+25 Cul

34+03.48 EC

PI L +1°20' N67°45'E

31+43.77 PC

For change see book 1018-73

4100.17

574.66

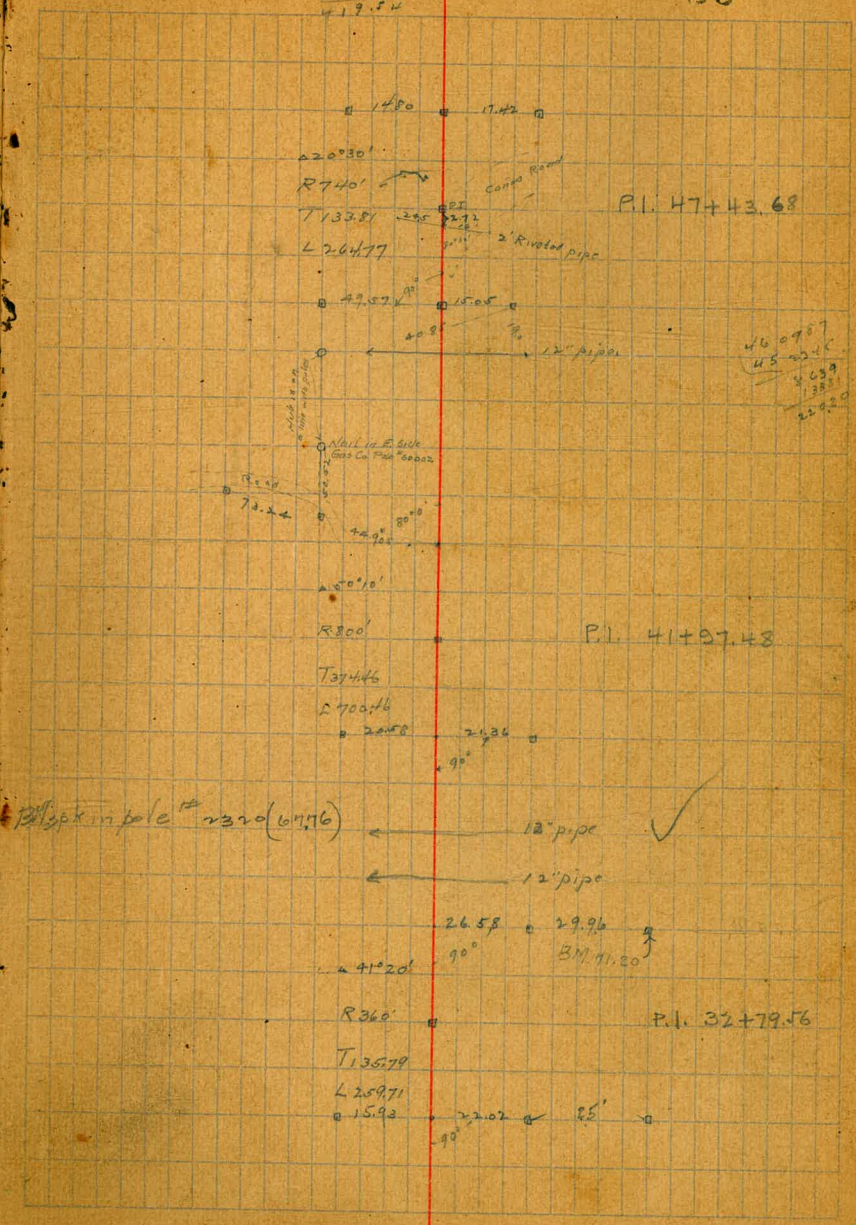
927.79

338.64

929.74
135.74
274.00
370.06
419.54

3721
3402.55
3175.2

15
10



4609.87
4502.2
4039
3821
227.20

3.563

Sta Arg Bearing Mag Bearing

88+41.00 End paving bottom Biological Grade

86+12 Cul.

74+93 Cul

69+82.14 POT

66+25.88

59+76

56+47 Cul

For change of alignment
see book 1018-73

4100.17

1885.05

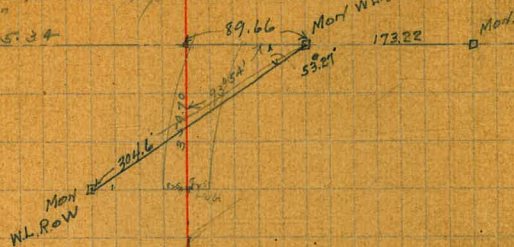
2215.12

1951

See Book 94 Page 11

Concrete Man

115.34



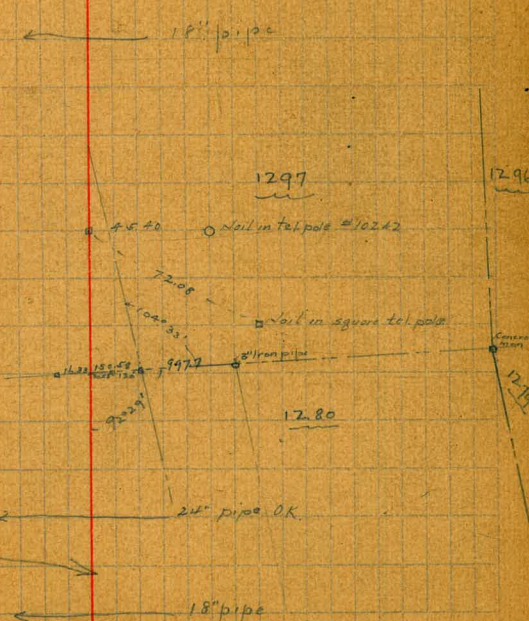
Section of Culvert

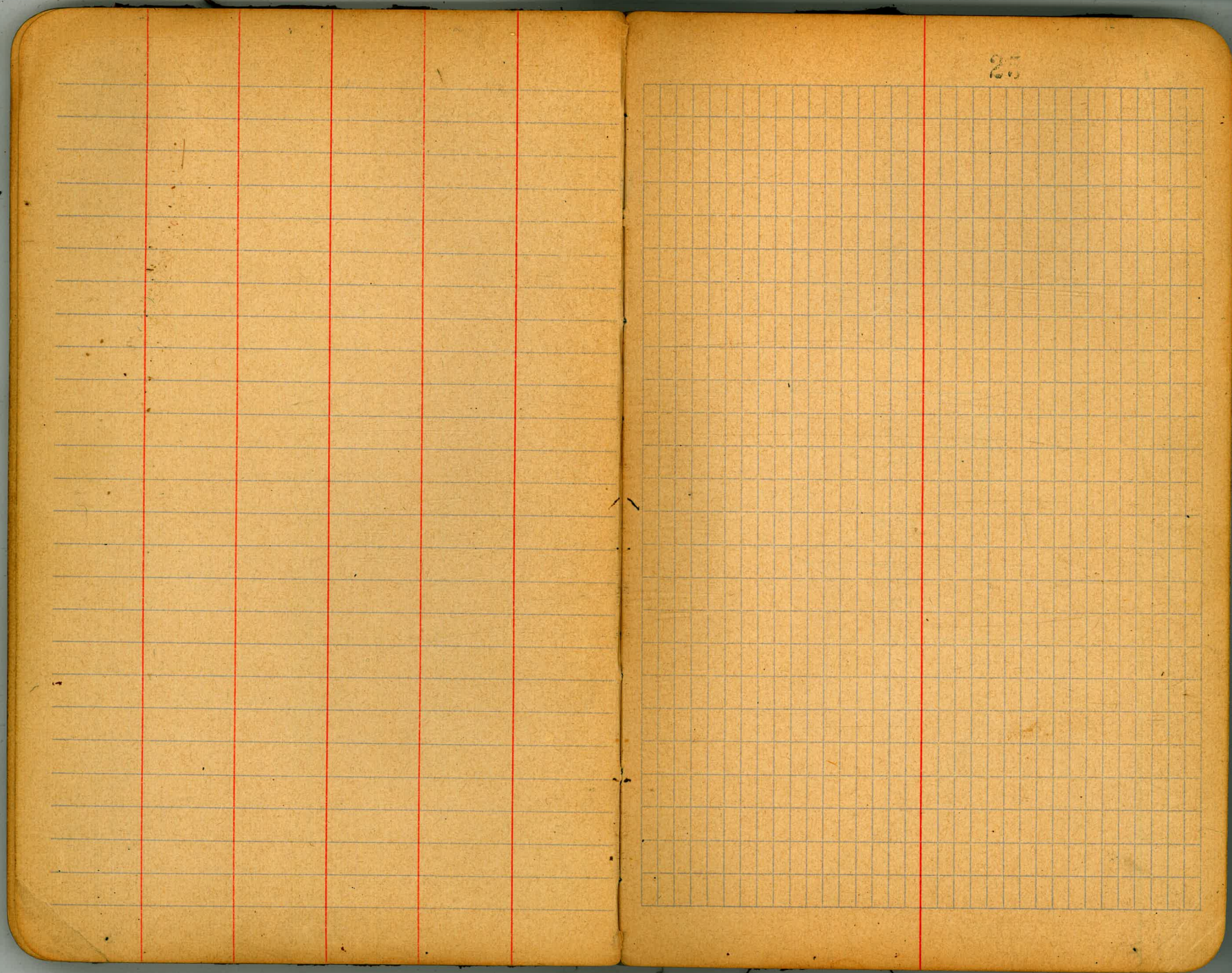


32.0 32.2
Concrete Cul.

487.26
398.64

This is moved 5' West.



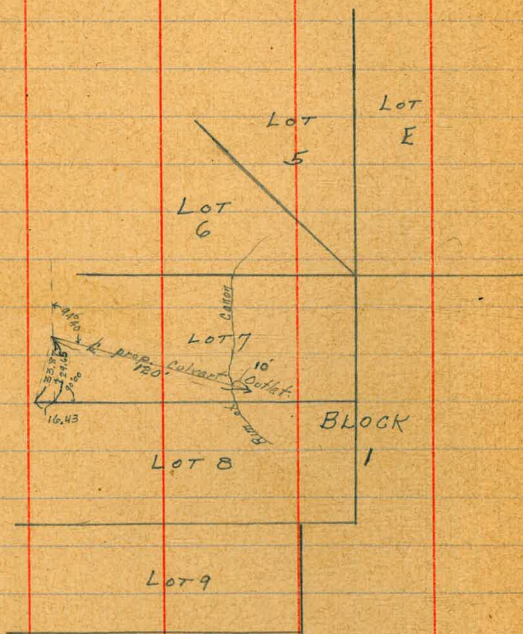


25

7/28/17
Gregory
Moore
Miller

17760
17760
17760

SURVEY OF LOCATION
FOR CULVERT ON
LOT 7 BLOCK 1
HILLCREST



Location of Road through Learitt's Add PL 1296

$\frac{1}{2}$ } Doris
 $\frac{2}{17}$ } Hancock
 } Hemick

Sta Ang Bearing Mag Bearing

12+96.4 EC
 278.92

R 24° 34' N 23° 33' E N 8° 15' E

13+108.5 PC
 400.23

9+403.2 EC

P.I. L 3° 00' N 10° 01' W N 16° 20' W

8+87.9 PC
 714.15

0+00.0 So line P.L. 1296 N 1° 59' E N 13° 20' W

27

CT in brace
 24° 34' P 2.95
 R 200'
 T 43.55
 L 85.75
 Hub 94.30
 CT in brace bolted on set pole

3° 00'
 R 1000'
 T 20.19
 L 52.34
 Hub

973.12
 340.00
 1640.00
 2958.97
 2958.97
 131

1296

1295

1292

646 Post 973.12

CT in brace
 pole base

1279

CT in top corner post
 345.85
 Hub on summit 640'
 N 89° 59' E
 640' Post

Sta Ang Bearing Mag Bearing

26+86.21 N.L. RL 1296

312.82

26+56.24 EC

x L 35° 00'

N 21° 55' 30" W

N 21° 45' 2" W N 37° 05' W

21+06.35 FC

759.09

16+95.83 EC

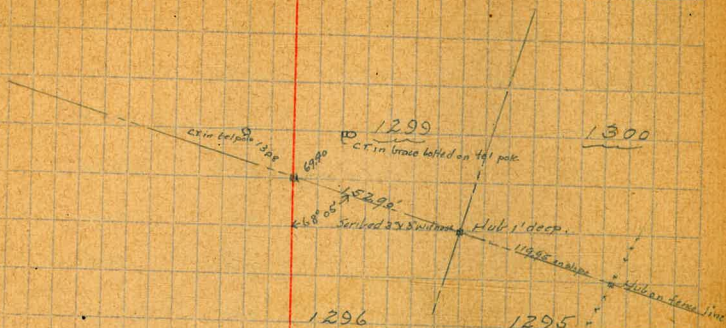
x L 10° 28' 1/2"

N 13° 04' 1/2" E

N 13° 14' 2" E N 2° 05' W

15+67.82 PC

278.07



Δ 35° 0'

R 900'

T 283.77

Hub

L 547.78

Δ 10° 28' 1/2"

R 700'

Hub

T 64.16

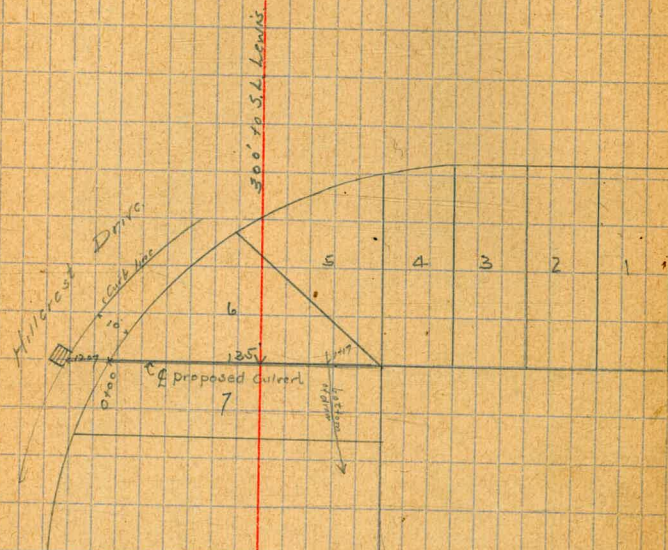
L 127.98

Levels over of proposed Culvert

| | | | |
|-------------|--------|------|---|
| ext | 290.26 | | 284.02. Pigt SW 5 th & Wash. |
| T.P. | 294 | 5.76 | 284.50 |
| Gutr | | 1.5 | 283.9 |
| ct. | | 0.94 | 284.50 |
| at 00° P.L. | | 0.6 | 284.8 |
| +50 | | 2.4 | 283.0 |
| +73 | | 3.5 | 281.9 |
| +100 | | 8.4 | 277.0 |
| +17 | | 17.7 | 267.7 |

Location of Culvert in Block 1 Hillcrest

8 Davis
15 Monroe
177 Lewis



5/21/33

Georgetown
Mission Hills
W. W.CROSS SECTION OF ALLEY
Block 6 MISSION HILLS
Witherby to Hickory

15' wide

B.P.N.W.
Witherby to Hick

| 07 BM | 125V | 263.88 EL Witherby | 251.06 | on cement curb on cement curb |
|------------------------------|-------|-----------------------|--------|----------------------------------|
| S | | 6.27 | 257.31 | |
| N | | 5.8 | 257.78 | |
| C | | 5.6 | 257.84 | |
| N | 5'E | 3.6 | 260.0 | |
| +3.5 | | 5.1 | 258.5 | |
| C | | 5.2 | 258.4 | |
| S | | 5.0 | 258.6 | |
| S | 14'E | 4.5 | 259.1 | |
| C | | 4.2 | 259.4 | |
| +5 | | 4.3 | 259.3 | |
| N | | 3.3 | 260.3 | |
| N | 42'E | 2.7 | 260.9 | |
| +1 | | 3.3 | 260.3 | |
| C | | 3.8 | 259.8 | |
| S | | 3.7 | 259.9 | |
| +2.2 = edge cement apron | | 3.63 | 259.95 | |
| +4.5 = garage | | 3.56 | 260.07 | |
| -3 = garage cement floor | 58'E | 3.95 | 259.63 | |
| S | | 3.6 | 260.0 | |
| C | | 3.6 | 260.0 | |
| +6.5 | | 3.1 | 260.5 | |
| N | | 2.5 | 261.1 | |
| -5.6 = garage cement floor | 35'E | 0.60 | 262.98 | |
| N = edge | | 2.35 | 261.23 | |
| +3 | | 3.0 | 260.6 | |
| C | | 3.1 | 260.5 | |
| S | | 3.0 | 260.6 | |
| S | 100'E | 2.7 | 260.9 | |
| C | | 2.6 | 261.0 | |
| +4.5 | | 2.6 | 261.0 | |
| N | | 2.0 | 261.6 | |
| N | 125'E | 0.9 | 262.7 | |
| +1 | | 1.4 | 261.9 | |
| C | | 1.6 | 262.0 | |
| S | | 1.0 | 262.6 | |
| S | 150'E | 0.6 | 263.0 | |
| C | | 1.0 | 262.6 | |
| N | | 0.6 | 263.0 | |
| T.P. | 8.25 | 272.13 | 0.30 | 263.28 |
| N | 175'E | 3.1 | 264.0 | |
| C | | 3.2 | 263.9 | |
| S | | 7.9 | 264.2 | |
| +6 = garage cement floor | 210'E | 7.55 | 264.58 | |
| S = garage board floor | | 5.73 | 266.40 | |
| +4 | | 6.4 | 265.7 | |
| C | | 6.3 | 265.8 | |
| N | | 6.0 | 266.1 | |
| -4.5 = garage cement floor | 242'E | 5.0 | 267.09 | |
| N | | 5.5 | 266.6 | |
| C | | 5.5 | 266.6 | |
| S | | 5.3 | 266.8 | |
| -3.6 = garage cement floor | 258'E | 3.2 | 268.99 | |
| -0.5 = edge apron | | 4.00 | 268.13 | |
| S | | 4.1 | 268.0 | |
| C | | 4.5 | 267.6 | |
| N | | 4.0 | 267.7 | |
| N = 4' = garage cement floor | 293'E | 4.15 | 267.98 | |

distances are all on E of alley.

40.50
128.5
53.5
306.50
485.02
511
51.1

| 325'E | 325'E | 3.77 | 268.36 | N.L. 511 | 51.1 |
|----------------------------|-----------------------|--------|--------|----------|--------|
| -4.5 = edge cement apron | | 3.8 | 268.3 | 325.57 | 324.41 |
| N | | | | | |
| N = garage dirt floor | 352'E | 3.7 | 268.4 | | |
| C | | 3.8 | 268.3 | 353.23 | 350.77 |
| S | | 3.4 | 268.7 | | |
| N-6 = garage dirt floor | 362'E | 3.7 | 268.4 | 363.47 | 360.53 |
| N-2 = garage dirt floor | 377'E | 3.7 | 268.4 | 378.82 | 375.18 |
| | 398'E | | | | |
| S | | 3.5 | 268.6 | 400.32 | 395.68 |
| C | | 3.4 | 268.7 | | |
| N | | 3.7 | 268.4 | 405.27 | 402.71 |
| +2.7 garage cement floor | | 3.60 | 268.53 | 402.69 | 402.71 |
| T.P. | 5.32 | 274.03 | 3.37 | 268.76 | |
| -5 = cement floor garage | 413'E | 5.02 | 269.06 | | |
| -2.5 = apron | | 5.28 | 268.80 | | |
| N | | 5.3 | 268.8 | 415.49 | 410.51 |
| C | | 5.4 | 268.7 | | |
| S = edge cement apron | | 5.16 | 268.92 | | |
| +6 = garage floor | | 4.86 | 269.22 | | |
| S | 440'E | 4.5 | 269.6 | | |
| C | | 4.9 | 269.2 | 442.47 | 437.51 |
| N | | 4.8 | 269.3 | | |
| -4.9 = garage cement floor | 486'E | 4.76 | 269.32 | | |
| -3.0 = edge apron | | 4.90 | 269.18 | | |
| N | | 4.8 | 269.3 | 488.49 | 483.51 |
| C | | 4.7 | 269.4 | | |
| +6 | | 4.1 | 269.7 | | |
| S | | 3.8 | 270.3 | | |
| S | 515'E | 3.9 | 270.2 | 517.49 | 512.51 |
| +1.5 | | 4.4 | 269.2 | | |
| C | | 4.4 | 269.2 | | |
| N | | 4.7 | 269.4 | | |
| N | 526'E | 4.9 | 269.2 | | |
| C | | 5.6 | 268.5 | 528.49 | 523.51 |
| +6 | | 5.7 | 268.4 | | |
| S | | 5.0 | 269.1 | | |
| S = on cement curb | 535.02 = M.L. Hickory | 6.24 | 267.81 | 542.69 | 527.31 |
| C = paving | | 6.91 | 267.17 | | |
| N = cement curb | | 6.95 | 267.13 | | |

Levels on Cement sidewalk
on Bancroft St
from Elm to Grape Sts

| B.M. | 0.21 | 273.46 | 273.25 | spike SW Grape Bancroft |
|--|------|--------|--------|----------------------------|
| Walk on West side is 5.25 wide and inside edge | | | | |
| 13.75 from property line at Grape St for inside edge is | | | | |
| 1.8 from property line at Elm St for inside edge is 1.25 from PL | | | | |
| N.B. 8.7 No. of 52. Grape = N. end of walk | | | | |
| Inside edge West side | ✓ | 1.30 | 272.16 | |
| Outside edge | ✓ | 1.37 | 272.09 | |
| 31 Grape | | | | |
| Inside | ✓ | 1.72 | 271.74 | |
| Outside | ✓ | 1.77 | 271.69 | |
| 50' So. | | | | |
| Inside | ✓ | 3.99 | 269.47 | |
| Outside | ✓ | 4.06 | 269.40 | |
| 100' So. | | | | |
| Inside | ✓ | 6.53 | 266.93 | |
| Outside | ✓ | 6.65 | 266.81 | |
| 116' So. | | | | |
| Inside | ✓ | 7.70 | 265.76 | |
| Outside | ✓ | 7.77 | 265.69 | |
| 132' So. | | | | |
| Inside | ✓ | 8.93 | 264.53 | |
| Outside | ✓ | 8.97 | 264.49 | |
| 150' So. | | | | |
| Inside | ✓ | 9.84 | 263.66 | |
| Outside | ✓ | 9.94 | 263.52 | |

| | | 175' So. | 31 |
|-------------------|------|----------|-----------------|
| Inside, West side | ✓ | 11.02 | 262.44 |
| Outside | ✓ | 11.07 | 262.39 |
| 200' So. | | | |
| Inside | ✓ | 11.97 | 261.49 |
| Outside | ✓ | 12.04 | 261.42 |
| T.P. | 0.20 | 261.36 | 12.30 |
| 250' So. | | | |
| Inside | ✓ | 1.42 | 259.94 |
| Outside | ✓ | 1.65 | 259.73 |
| 296' So. | | | |
| Inside | ✓ | 3.29 | 258.07 |
| Outside | ✓ | 3.42 | 257.94 |
| 307.8' So. | | | |
| Inside | ✓ | 3.38 | 257.98 |
| Outside | ✓ | 3.76 | 257.60 |
| at B.M. | | 3.63 | 257.73 = 257.70 |
| 350' So. | | | |
| Inside | ✓ | 7.17 | 254.79 |
| Outside | ✓ | 7.50 | 253.86 |
| 395' So. | | | |
| Inside | ✓ | 9.17 | 252.19 |
| Outside | ✓ | 9.38 | 251.98 |
| 400' So. | | | |
| Inside | ✓ | 10.17 | 251.19 |
| Outside | ✓ | 10.33 | 251.03 |

| | | 26136 | | |
|-----------------------|------|----------|--------|--------|
| | | 425' So | | |
| Inside edge West side | | 11.06 | 250.30 | |
| Outside - - - | | 11.12 | 250.24 | |
| | | 1150' So | | |
| Inside - - - | | 12.02 | 249.34 | |
| Outside - - - | | 12.11 | 249.25 | |
| T.P. | 0.32 | 248.74 | 12.94 | 248.42 |
| | | 485' So | | |
| Inside - - - | | 1.10 | 247.64 | |
| Outside - - - | | 1.18 | 247.56 | |
| | | 500' So | | |
| Inside - - - | | 1.25 | 246.79 | |
| Outside - - - | | 2.08 | 246.68 | |
| | | 539' So | | |
| Inside - - - | | 4.09 | 244.60 | |
| Outside - - - | | 4.11 | 244.63 | |
| | | 565' So | | |
| Inside - - - | | 5.23 | 242.91 | |
| Outside - - - | | 5.27 | 242.77 | |
| | | 620' So | | |
| Inside - - - | | 8.51 | 240.23 | |
| Outside - - - | | 8.63 | 240.11 | |
| | | 620' So | | |
| Inside - - - | | 10.35 | 238.39 | |
| Outside - - - | | 10.53 | 238.21 | |
| T.P. | 9.19 | 245.15 | 12.78 | 235.96 |

| | | 650' So | 36 |
|---|--|------------------------------------|--------|
| Inside edge West side | | 9.83 | 235.32 |
| Outside - - - | | 9.91 | 235.24 |
| | | 680' So | NA Elm |
| Inside - - - | | 12.49 | 232.66 |
| Outside - - - | | 12.52 | 232.63 |
| | | 688' So = So end of walk west side | |
| Inside - - - | | 12.92 | 232.23 |
| Outside - - - | | 12.93 | 232.22 |
| <p>Walk on East Side is 533 wide and inside edge 13.55 from property line of north end, 5.3 from P.L. at So. end. 395.8 So. of Grape St. = No. end 245.15 = No.</p> | | | |
| Inside edge East Side | | 3.24 | 241.31 |
| Outside - - - | | 3.29 | 241.26 |
| | | 403' So. of Grape | |
| Inside - - - | | 3.27 | 241.88 |
| Outside - - - | | 3.32 | 241.83 |
| | | 425' So | |
| Inside - - - | | 3.91 | 241.24 |
| Outside - - - | | 4.02 | 241.13 |
| | | 450' So. | |
| Inside - - - | | 4.68 | 240.47 |
| Outside - - - | | 4.74 | 240.31 |

245.15

475 So

Inside edge East Side 5.36 239.79

Outside - - - 5.34 239.81

500 So

Inside edge W - 5.64 239.51

Outside - - - 5.72 239.43

525 So

Inside - - - 6.12 239.03

Outside - - - 6.16 238.99

550 So

Inside - - - 6.58 238.57

Outside - - - 6.62 238.43

575 So

Inside - - - 7.09 238.06

Outside - - - 7.15 238.00

586.5 So

Inside - - - 7.62 237.53

Outside - - - 7.76 237.39

600 So

Inside - - - 8.99 236.16

Outside - - - 9.17 235.98

615.5 So

Inside - - - 11.14 234.01

Outside - - - 11.36 233.79

33

628 So. of Grape = So End walk

Inside edge = 53 from Prop Line 12.14 233.01

Outside - - - 12.21 232.94

T.P. 626 238.51 12.90 232.25

chk BM. 11.06 227.45

227.29 5th
Elm - Bancroft
Spire driven in.

X sect Bancroft North line
 Intersections of Grape & Elm 14 cuts, 13'

2.79 ^{H.I.} 276.04 278.25

North line Grape

| | | |
|----------|-----|--------|
| W line | 1.8 | 274.2 |
| | 1.3 | 274.7 |
| | 1.6 | 274.4 |
| C | 1.5 | 274.5 |
| | 1.5 | 274.5 |
| | 1.4 | 274.6 |
| Elm line | 0.9 | 275.11 |
| | | no. 6. |
| Elm line | 1.7 | 274.31 |
| | 1.9 | 274.1 |
| | 2.1 | 273.9 |
| C | 2.2 | 273.8 |
| | 2.2 | 273.8 |
| | 2.3 | 273.7 |
| W line | 2.3 | 273.7 |

Grape to North line Class. ^{rebuilt} ^{away} ^{cut 3} ¹⁹¹⁷
 quarter & other sections +6 +28 +40 +58 +69 ^{from}
 B.M. Apple pole Grape + Bancroft ^{North line} (N.W. cor.)
 no 1/4

| | | |
|----------|-----|--------|
| W line | 3.1 | 272.9 |
| | 3.4 | 272.6 |
| | 3.2 | 272.8 |
| C | 3.0 | 273.0 |
| | 2.8 | 273.2 |
| | 2.6 | 273.4 |
| Elm line | 2.3 | 273.7 |
| | | Center |
| Elm line | 3.2 | 272.8 |
| | 3.5 | 272.5 |
| | 3.7 | 272.3 |
| C | 3.8 | 272.2 |
| | 4.1 | 271.9 |
| | 4.1 | 271.9 |
| W line | 3.5 | 272.5 |

| | So. 1/4 | | |
|--------|---------|-----|--------------------|
| W line | | 4.3 | 271.7 |
| | | 4.7 | 271.3 |
| | | 4.7 | 271.3 |
| C | | 4.6 | 271.4 |
| | | 4.4 | 271.6 |
| | | 4.4 | 271.6 |
| E line | | 4.1 | 271.9 ^v |
| | So. cb. | | |
| E line | | 5.4 | 270.6 ^v |
| | | 7.3 | 268.7 |
| | | 7.2 | 268.8 |
| C | | 6.5 | 269.5 |
| | | 5.6 | 270.4 |
| | | 5.2 | 270.8 |
| | | 3.9 | 272.1 |
| W line | | 3.5 | 272.5 |

| | So. line Graze | | |
|------------|----------------|------|--------------------|
| W line + 6 | walk | 4.4 | 271.6 |
| + 10 | | 4.8 | 271.2 |
| + 11 | | 5.6 | 270.4 |
| + 38 | | 6.0 | 270.0 |
| C = 40 | | 6.4 | 269.6 |
| + 46 | | 7.1 | 268.9 |
| + 50 | | 9.5 | 266.5 |
| + 58 | | 11.8 | 264.2 |
| + 69 | | 12.7 | 263.3 |
| E line | | 10.5 | 265.5 ^v |
| | 25' 20" 275 | | |
| E line | | 17.8 | 258.2 ^v |
| + 11 | | 17.0 | 259.0 |
| + 32 | | 11.3 | 264.7 |
| + 38 | | 9.0 | 267.0 |
| C = 440 | | 7.6 | 268.4 |
| + 52 | | 7.3 | 268.7 |
| + 70 | | 6.5 | 269.5 |
| + 73 | | 6.0 | 270.0 |
| + 74 | walk | 5.5 | 270.5 |

| | | | |
|----------|------------------------|------|-------|
| | 50' SO. 250 | | |
| Whist +6 | walk | 6.65 | 269.3 |
| +3 | | 7.1 | 268.9 |
| +4 | | 7.7 | 268.3 |
| +28 | | 8.6 | 267.4 |
| C = +40 | | 9.3 | 266.7 |
| +46 | | 9.2 | 266.8 |
| +58 | | 13.4 | 262.6 |
| +69 | | 17.0 | 253.0 |
| E line | | 18.6 | 257.4 |
| +15 | slope bottom of canyon | 25.2 | 250.8 |
| | 75' RO. (225) | | |
| +15.8 | slope bottom of canyon | 31.3 | 244.7 |
| E line | | 25.0 | 251.0 |
| +11 | | 19.9 | 256.1 |
| +12 | | 19.3 | 256.7 |
| +22 | | 17.4 | 258.6 |
| C = +40 | | 10.4 | 265.6 |
| +42 | | 9.8 | 266.2 |
| +52 | | 9.6 | 266.4 |
| +69 | | 9.1 | 266.9 |
| +70 | | 8.5 | 267.5 |
| +74 | walk. | 7.9 | 268.1 |

| | | | |
|----------|------------------------|-------|--------|
| | 100' SO. 200 | | |
| Whist +6 | walk | 9.2 | 266.8 |
| +9 | | 9.9 | 266.1 |
| +10 | | 10.8 | 265.2 |
| +28 | | 11.1 | 264.9 |
| C = +40 | H.I. | 15.6 | 260.4 |
| | J.P. 208 266.14 | 11.98 | 264.06 |
| +58 | | 8.0 | 258.1 |
| +69 | | 8.8 | 257.3 |
| +72 | | 9.3 | 256.8 |
| E line | | 13.6 | 252.5 |
| +18 | slope bottom of canyon | 23.1 | 243.0 |
| | 125' RO. (175) | | |
| 19 east | slope bottom canyon | 27.5 | 238.6 |
| E line | | 17.8 | 248.3 |
| +11 | | 12.5 | 253.6 |
| +18 | | 9.5 | 256.6 |
| +22 | | 8.0 | 258.1 |
| C = +40 | | 4.0 | 262.1 |
| +47 | | 2.5 | 263.6 |
| +52 | | 2.6 | 263.5 |
| +70 | | 2.3 | 263.8 |
| +71 | | 1.6 | 264.5 |
| +74 | walk | 1.14 | 265.0 |

| | | | |
|------------|-----------------------------|------|-------|
| | 150' SO. | 100 | |
| White + 6' | walk | 2.6 | 263.5 |
| +10' | | 4.3 | 261.8 |
| +28 | | 4.3 | 261.4 |
| C = +40 | | 8.2 | 257.9 |
| +48 | | 11.6 | 254.5 |
| +58 | | 12.8 | 253.3 |
| +64 | | 14.5 | 251.6 |
| +69 | | 17.7 | 248.4 |
| E line | | 25.4 | 240.7 |
| +13 | Slope bottom of canyon | 31.0 | 235.1 |
| | 175' SO. | 125 | |
| +9 | East slope bottom of canyon | 34.5 | 231.6 |
| E line | | 31.0 | 235.1 |
| +11 | | 28.1 | 238.0 |
| +32 | | 24.4 | 241.7 |
| C = +40 | | 13.1 | 253.0 |
| +47 | | 8.1 | 258.0 |
| +52 | | 6.5 | 259.6 |
| +69 | | 3.4 | 260.9 |
| +74 | walk | 3.75 | 262.3 |

| | | | |
|-----------|-----------------------------|-------|--------|
| | 200' SO. | 100 | |
| White + 6 | walk | 4.72 | 261.4 |
| +11 | | 6.5 | 259.6 |
| +28 | | 7.1 | 259.0 |
| C = +40 | | 9.7 | 256.4 |
| +51 | | 14.2 | 251.9 |
| | H.I. | | |
| T.P. | 7.18 260.69 | 12.63 | 253.51 |
| +58 | | 12.4 | 248.3 |
| +69 | | 17.2 | 243.5 |
| E line | | 24.1 | 236.6 |
| +16 | Slope bottom of canyon | 33.0 | 227.7 |
| | 225' SO. | 75 | |
| +50 | East slope bottom of canyon | 34.0 | 226.7 |
| E line | | 25.4 | 235.3 |
| +11 | | 18.5 | 242.2 |
| +30 | | 10.9 | 249.8 |
| +22 | | 10.2 | 250.5 |
| C = +40 | | 5.5 | 255.2 |
| +52 | | 3.0 | 257.7 |
| +70 | | 1.6 | 259.1 |
| +74 | walk | 0.08 | 260.6 |

250° 20. 50

| | | |
|--|------|-------|
| Whist +6' walk | 0.9 | 259.8 |
| +10 | 1.6 | 259.1 |
| +28 | 4.2 | 256.5 |
| C = +40 | 6.0 | 254.7 |
| +52 | 9.2 | 251.5 |
| +58 | 14.3 | 246.4 |
| +69 | 20.5 | 240.2 |
| E line | 26.7 | 234.0 |
| +50 slope bottom of canyon 275° 20 25 | 37.0 | 223.7 |
| +19 East slope bottom of canyon | 39.3 | 221.4 |
| E line | 29.6 | 231.1 |
| +11 | 21.7 | 239.0 |
| +22 | 12.7 | 248.0 |
| C = +40 | 7.0 | 253.7 |
| +52 | 5.5 | 255.2 |
| +70 | 4.3 | 256.4 |
| +74 walk | 1.94 | 258.8 |

300° 0, (no line Fir)

| | | |
|--|------|-------|
| West line +6' walk | 2.80 | 257.9 |
| +12 | 5.5 | 255.2 |
| +28 | 6.7 | 254.0 |
| C = +40 | 8.6 | 252.1 |
| +50 | 12.4 | 248.3 |
| +58 | 18.5 | 242.2 |
| +69 | 26.0 | 234.7 |
| E line | 29.1 | 231.6 |
| +23 slope bottom of canyon center Fir | 41.1 | 219.6 |
| +30 slope bottom of canyon | 44.6 | 216.1 |
| E line | 29.7 | 231.0 |
| +11 | 23.5 | 237.2 |
| +22 | 17.4 | 243.3 |
| +34 | 12.4 | 248.3 |
| C = +40 | 11.0 | 249.7 |
| +52 | 9.4 | 251.3 |
| +65 | 8.8 | 251.9 |
| +74 walk | 6.6 | 257.1 |

| 100' 201 | | 20 | |
|----------|------|------|-------|
| White +6 | walk | 3.4 | 247.8 |
| +12 | | 5.8 | 245.4 |
| +28 | | 6.7 | 244.5 |
| C = +40 | | 8.1 | 243.1 |
| +58 | | 10.1 | 241.1 |
| +63 | | 10.6 | 240.6 |
| +65 | | 11.3 | 239.9 |
| +67 | | 10.7 | 240.5 |
| +69 | walk | 11.5 | 239.7 |

| 125' 20. | | 15 | |
|----------|------|------|-------|
| Blue +11 | walk | 11.8 | 239.4 |
| +13 | | 11.2 | 240.0 |
| +15 | | 11.8 | 239.4 |
| +17 | | 10.7 | 240.5 |
| +22 | | 10.2 | 241.0 |
| C = +40 | | 8.5 | 242.7 |
| +52 | | 8.0 | 243.2 |
| +68 | | 6.9 | 244.3 |
| +74 | walk | 4.8 | 246.1 |

40

| 150' 20. | | 150 | |
|----------|------|-------|-------|
| White +6 | walk | 6.05 | 245.1 |
| +12 | | 7.8 | 243.4 |
| +28 | | 9.1 | 242.1 |
| C = +40 | | 9.4 | 241.8 |
| +58 | | 10.9 | 240.3 |
| +63 | | 11.5 | 239.7 |
| +65 | | 12.3 | 238.9 |
| +67 | | 11.8 | 239.4 |
| +69 | walk | 12.34 | 238.9 |

| 175' 20. | | 125 | |
|----------|------|-------|-------|
| Blue +11 | walk | 12.74 | 238.5 |
| +13 | | 12.3 | 238.9 |
| +15 | | 12.6 | 238.6 |
| +17 | | 11.8 | 239.4 |
| +22 | | 11.4 | 239.8 |
| C = +40 | | 10.8 | 240.4 |
| +52 | | 10.7 | 240.5 |
| +70 | | 9.2 | 242.0 |
| +74 | walk | 7.7 | 243.5 |

257.22

500' 20.

| | | | |
|-------------|------|-------|--------|
| W. line + 6 | walk | 9.55 | 241.6 |
| +10 | | 11.7 | 239.5 |
| +28 | | 12.7 | 238.5 |
| C = +40 | | 13.0 | 238.2 |
| J.P. | | 12.95 | 238.27 |
| +58 | | 1.9 | 238.0 |
| +69 | walk | 2.15 | 237.7 |

225' 20.

| | | | |
|--------------|------|------|-------|
| E line + 11' | | 4.45 | 235.4 |
| +22 | | 4.5 | 235.4 |
| C = +40 | | 3.3 | 236.6 |
| +52 | | 3.2 | 236.7 |
| +69 | | 2.5 | 237.4 |
| +74 | walk | 0.3 | 239.6 |

41

250' 20.

| | | | |
|-------------|------|---------------|-------|
| W. line + 6 | walk | 2.67 | 237.2 |
| +11 | | 4.1 | 235.8 |
| +28 | | 5.3 | 234.6 |
| C = +40 | | 6.5 | 233.4 |
| +38 | | 8.1 | 231.8 |
| +67 | | 8.6 | 231.3 |
| +69 | walk | + wall - 6.85 | 233.0 |
| | | ground - 9.0 | 230.9 |

275' 20.

| | | | |
|----------|------|------|-------|
| E line + | | 14.4 | 225.5 |
| +11 | | 14.2 | 225.7 |
| +22 | | 12.5 | 227.4 |
| C = +40 | | 9.2 | 230.7 |
| +52 | | 7.4 | 232.5 |
| +71 | | 6.2 | 233.7 |
| +74 | walk | 5.1 | 234.8 |

23990

300'so. (no. line blue)

| | | | |
|-----------|-------|-------------|-------|
| White + 6 | | 7.2 | 232.7 |
| +10 | | 8.7 | 231.2 |
| +18 | | 10.2 | 229.7 |
| C = +40 | | 12.5 | 227.4 |
| J.P. | 4.76 | H.T. 231.67 | 12.99 |
| +58 | | 7.2 | 224.5 |
| +69 | | 8.4 | 223.3 |
| Blue | | 9.8 | 221.9 |
| +10 slope | | 11.0 | 220.7 |
| +10 slope | No. 6 | 11.7 | 220.0 |
| Blue | | 10.4 | 221.3 |
| | | 8.9 | 222.8 |
| | | 7.7 | 224.0 |
| | | 5.9 | 225.8 |
| | | 3.6 | 228.1 |
| | | 2.3 | 229.4 |
| White | | 1.0 | 230.7 |

42

42

no. 1/4

| | | | |
|-----------|--------|------|-------|
| White | | 2.1 | 229.6 |
| | | 3.6 | 228.1 |
| | | 4.6 | 227.1 |
| C | | 6.4 | 225.3 |
| | | 8.1 | 223.6 |
| | | 9.6 | 222.1 |
| Blue | | 10.9 | 220.8 |
| +10 slope | | 12.0 | 219.7 |
| | Center | | |
| +10 slope | | 12.0 | 219.7 |
| Blue | | 11.4 | 220.3 |
| | | 10.0 | 221.7 |
| | | 8.7 | 223.0 |
| C | | 7.1 | 224.6 |
| | | 5.3 | 226.4 |
| | | 4.3 | 227.4 |
| White | | 3.1 | 228.6 |

231,67

43

| | So. W. | | |
|-----------|--------|------|-------|
| W line | | 4.3 | 227.4 |
| | | 5.2 | 226.5 |
| | | 6.3 | 225.4 |
| C | | 7.6 | 224.1 |
| | | 9.1 | 222.6 |
| | | 10.2 | 221.5 |
| E line | | 11.2 | 220.5 |
| +10 slope | | 12.2 | 219.5 |
| | So. E. | | |
| +10 slope | | 11.9 | 219.8 |
| E line | | 11.2 | 220.5 |
| | | 10.4 | 221.3 |
| | | 9.2 | 222.5 |
| C | | 7.9 | 223.8 |
| | | 7.0 | 224.7 |
| | | 6.0 | 225.7 |
| W line | | 5.1 | 226.6 |

| | South line E line | |
|-------------------------------|-------------------|--------|
| W line | 6.4 | 225.3 |
| | 6.8 | 224.9 |
| | 7.5 | 224.2 |
| C | 8.2 | 223.5 |
| | 9.2 | 222.5 |
| | 10.2 | 221.5 |
| E line | 11.0 | 220.7 |
| +10 slope | 11.6 | 220.1 |
| chk on B.M. | 4.21 | 227.45 |
| (Spk in pole) S.W. cor E line | | 227.45 |
| driven in | | |

Gregory
Mason
Miller

Survey Raso Conar Road

Angle

48

47

48

47

51

51

5

10

11

12

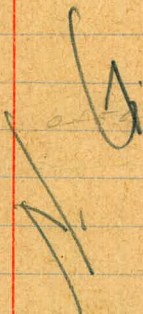
14

15

16

17

18



6+13



0+11.4



MA

hub center of graded road

Elevation on 6th + Date

Bst

Nov 6 1917

45
45

| B.M. | 11.92 | 142.92 | 131.00 | B.P.N.W. 5 th + Date |
|--|-------|--------|--------|------------------------------------|
| SE 5 th + Date | | 129.2 | 130.00 | |
| NE 5 th + Date | | 119.2 | 131.00 | |
| NW 6 th + Date | | 1.71 | 141.21 | |
| Ht. of All. coc = around return on 6 th St | | 13.9 | | |
| Slk 5 th + Date same all around | | 0.73 | 142.19 | on B.M. |
| M.L. 6 th St No. of Date = 158.6 E. of 5 th St | | | | |
| v. 6 th - 50. v. v. = 200.6 - - - | | | | |

1/27 Gregory Moore Miller
Survey of Rose Canyon Road

19+50 Δ 14°27' L

14+40 Δ 18°04' L

12+70 Δ 13°04' R

12+45 Δ 14°35' R

9+40 Δ 12°33' R

7+70 Δ 19°20' R

6+00 Δ 0°57' R

0+00

46
46

Δ hub center graded Road

11/21/8

Survey of Graded Road Through Leavitt's Add. P.L. 1296

33+10.27

27+19.14

2670.27 Δ $6^{\circ}03\frac{1}{2}'L$ Ex = 1.0 - 2.0

R = 92.17
E = 1.29
T = 49.17
L = 98.22

N 24 35 45 W

N 18 32 15 W

25+45.17 Δ $14^{\circ}20'L$ Ex = 5.0

R = 250.37
E = 4.25
T = 190.23
L = 191.02

N 4 12 15 W

24+45.47 Δ $11^{\circ}37'L$ Ex = 2.0 - 5.0

N 7 24 45 E

21+04.56 Δ $29^{\circ}34'L$ Ex = 5.0 - 7.0

R = 175 Ex = 399
T = 46.12
L = 90.31

N 36 58 45 E

19+33.51 Δ $18^{\circ}40\frac{1}{2}'R$ Ex = 3.0 - 4.0

R = 250 Ex = 336
T = 41.10
L = 81.47

N 18 18 30 E

13+48.19 Δ $15^{\circ}20'R$ Ex = 3.0 - 5.0

R = 450 Ex = 4.06
T = 60.58
L = 120.43

N 2 58 30 E

7+84.63 Δ $3^{\circ}55\frac{1}{2}'R$ Ex = 0.5 - 2.0

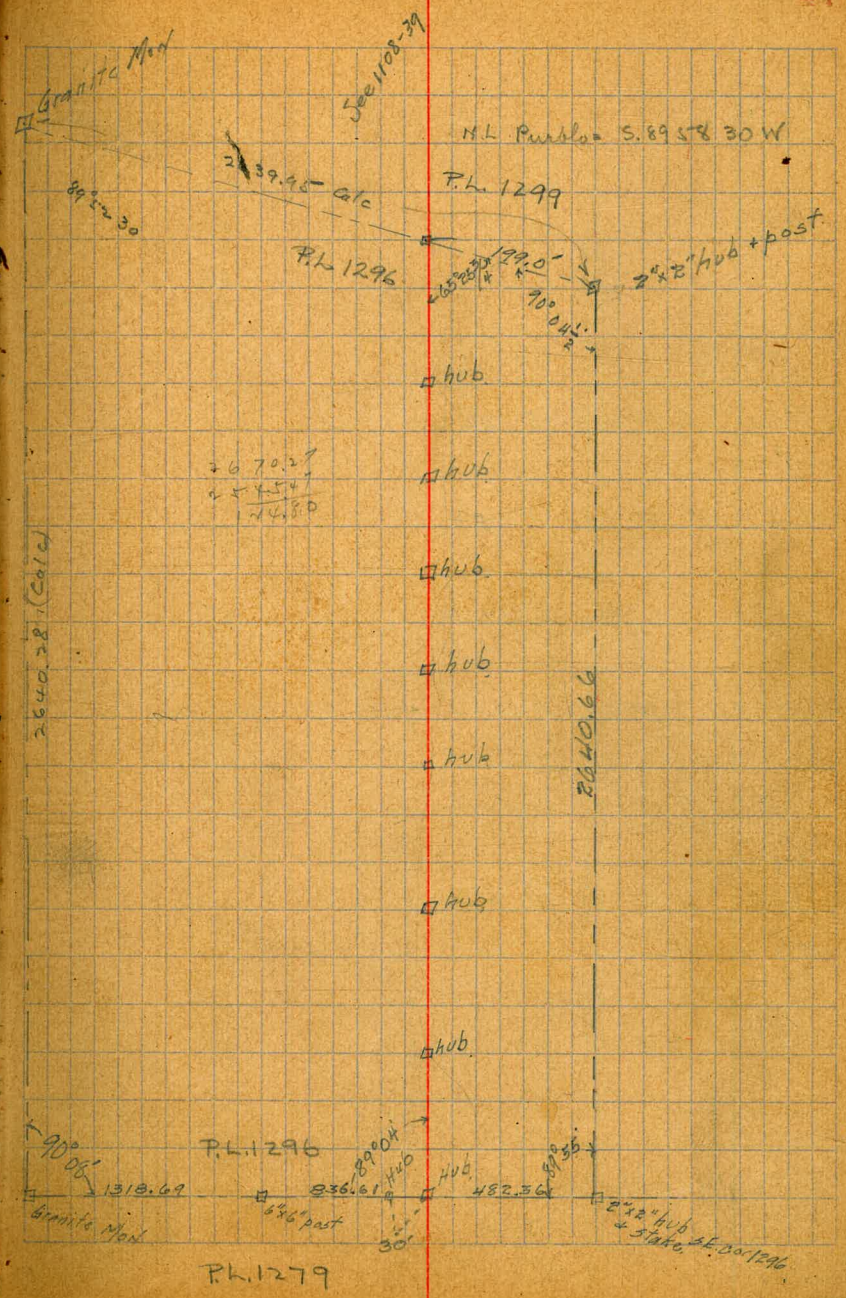
R = 1500 Ex = 0.88
T = 51.40
L = 102.76

N 0 57 W

0+00

St. P.L.

S 89 59 W



12/13/78 Geop. Survey of Present Road
Through Pueblo Lot 1778

48

23+87.01 R 16°41½ E = 40-50

19+46.7 R 20°41 E = 50

17+91.7 L 41°35 E 100-140

16+27.7 R 27°20 E 100-120

13+62.7 R 17°10 E 40-60

12+18.7 L 33°59 E 90-110

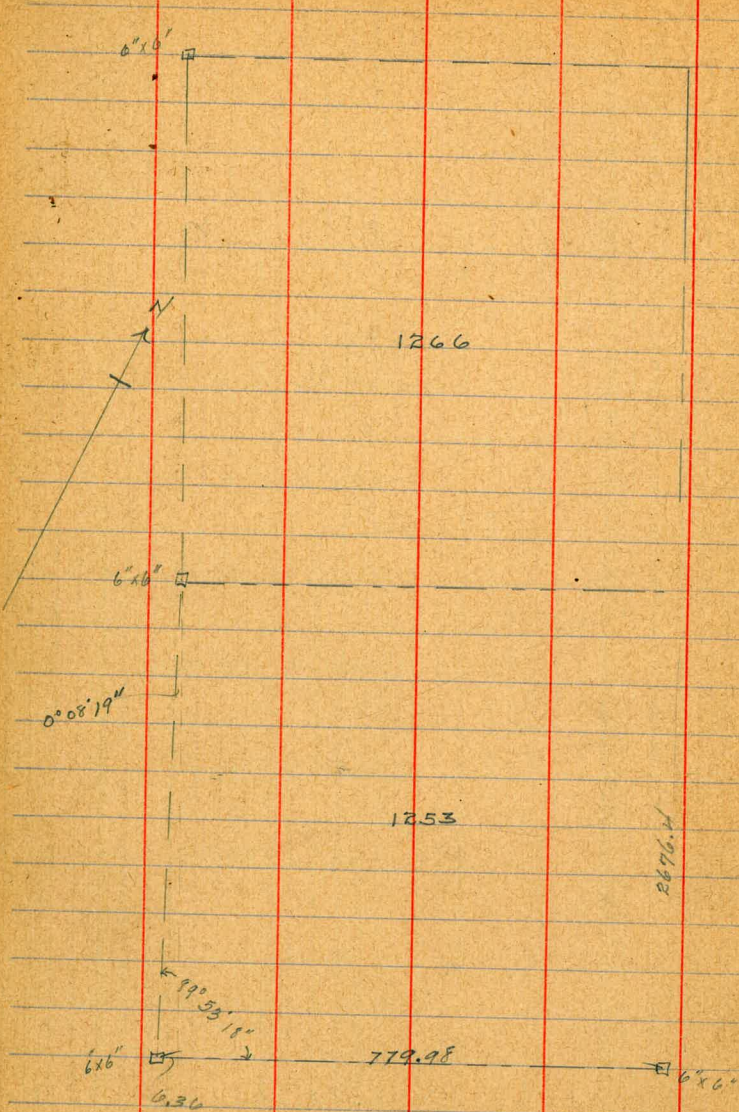
4+50.7 = R 5°31 E = 10-20

0+00 = 55+59.5 Back 125-152



12/10/8 Gregor's Survey of P.L. 1266+1253

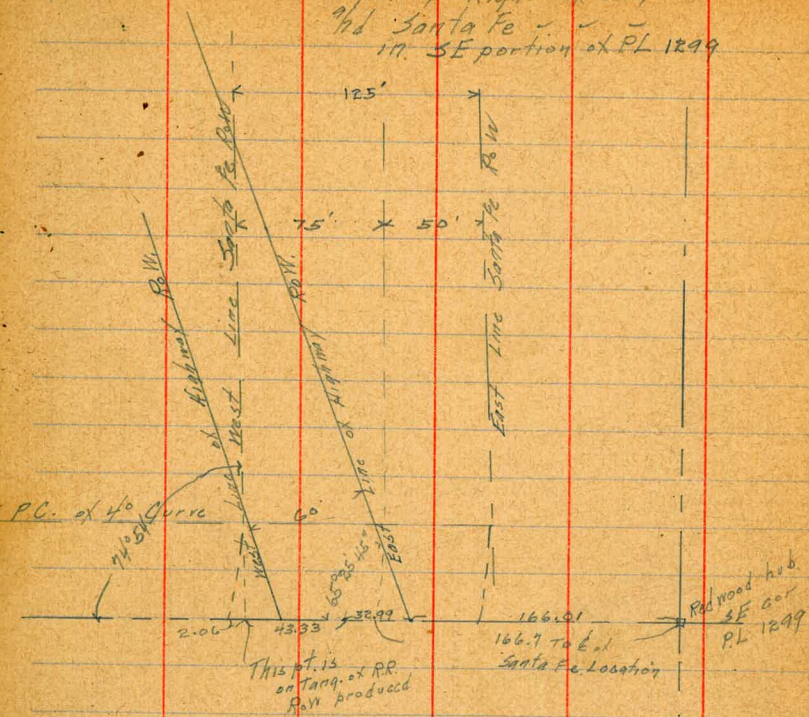
499



4/2/19 Gagan

Survey of Conflict bet
Highway Right of Way
& Santa Fe
17. SE portion of PL 1299

50



3/23/23

Gregory
Miller
Span

CROSS SECTIONS OF BERMS TORREY ROAD

| | | | | | | |
|------|------|---------------------------------|-------|-------|------|------|
| 12.0 | 5 | 89.86 | 83.79 | 83.79 | 12 | 12 |
| 7.4 | 7.3 | 83.7 | 83.5 | 83.5 | 6.4 | 4.9 |
| 8.2 | 8.0 | 83.7 | 83.5 | 83.5 | 7.0 | 5.7 |
| 13 | 5 | 83.5 | 82.9 | 82.9 | 5 | 4.2 |
| 8.2 | 7.9 | 83.5 | 82.9 | 82.9 | 5 | 4.2 |
| 8.5 | 8.2 | 83.5 | 82.9 | 82.9 | 5 | 4.2 |
| 15 | 3 | 13+50 | | | 12 | 12 |
| 9.9 | 7.9 | 13+50 | | | 7.4 | 6.7 |
| 8.0 | 8.0 | 13+50 | | | 8.3 | 8.2 |
| 16 | 4.7 | 12+50 | | | 5 | 12 |
| 11.0 | 6.7 | 12+50 | | | 7.3 | 6.9 |
| 78.7 | 83.2 | 12+50 | | | 8.2 | 8.0 |
| 17 | 4 | 12+75 | | | 5 | 12 |
| 13.0 | 9.8 | 12+75 | | | 6.8 | 6.1 |
| 14.0 | 10.0 | 12+75 | | | 6.8 | 6.1 |
| 86.1 | 75.8 | 12+75 | | | 80.8 | 83.8 |
| 16 | 5 | 17+00 | | | 13 | 13 |
| 13.0 | 5.7 | 17+00 | | | 6.1 | 4.8 |
| 9.1 | 5.7 | 17+00 | | | 8.7 | 8.8 |
| 80.8 | 84.2 | 17+00 | | | 83.8 | 83.1 |
| 13 | 5 | 11+76 | | | 6 | 12 |
| 6.1 | 4.6 | 11+76 | | | 4.8 | 3.0 |
| 83.8 | 85.4 | 11+76 | | | 85.1 | 86.9 |
| 14 | 5 | 11+50 | | | 6 | 12 |
| 5.8 | 3.5 | 11+50 | | | 4.8 | 3.0 |
| 84.1 | 80.4 | 11+50 | | | 85.1 | 86.9 |
| 10 | 3 | 10+93 = center of road way or x | | | 10 | 10 |
| 8.4 | 7.0 | 10+93 | | | 0.4 | 0.8 |
| 81.5 | 82.9 | 10+93 | | | 89.1 | 89.5 |
| T.P. | 7.59 | 97.50 | 0.15 | 89.71 | | |
| 25 | 19 | 10+50 | | | 5 | 13 |
| 12.2 | 11.6 | 10+50 | | | 6.1 | 5.3 |
| 85.3 | 86.9 | 10+50 | | | 91.9 | 92.7 |
| 10 | 11 | 10+00 | | | 10 | 10 |
| 2.7 | 2.4 | 10+00 | | | 4.5 | 4.5 |
| 94.8 | 95.1 | 10+00 | | | 95.1 | 95.0 |

61

83.79
31.9
86

7.6

18 51
15.80
17.80
15.90
17.80

Sections further N. on Station 12+25

N.D. 63.9

| | | | |
|--------------------------------------|------|------|-------------|
| 37' N. Edge of paving 24" corrugated | 7.5 | 56.4 | = flow line |
| ground | 16.7 | 47.2 | |
| | 17.0 | 46.9 | |
| | 17.7 | 46.2 | |

83.79
26.6
86.45
rod 17.80

67.65 = Elev flow line inlet of 24"
Terra Cotta Pipe 31' S. of S. Edge
paving at Sta 12+25 see opp.
page + above for additional notes

10 wide

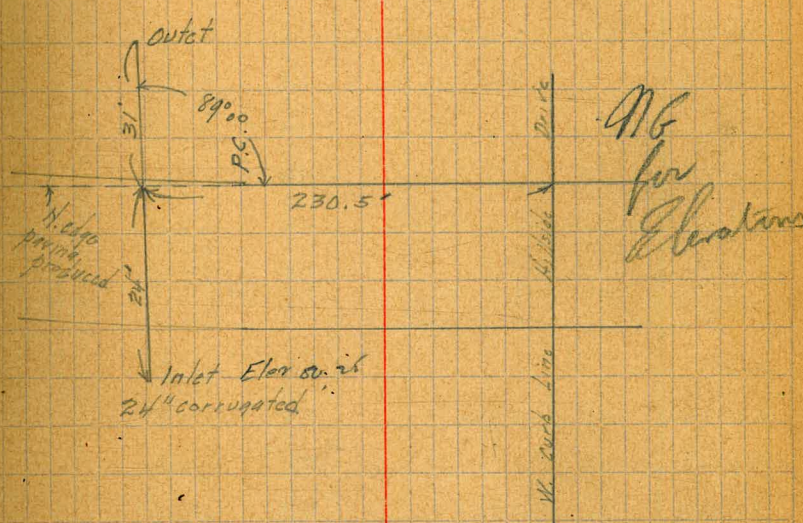
N/ops

X section of Hole at Hillside Drive

| | | | | |
|---------------------|----------------------------|-------|-------|-------------------|
| | 1.60 | 100.4 | 98.80 | = Top curb |
| | N. L. of Terrace Road | | | |
| Ecob Hillside | | 7.7 | 92.7 | |
| 7. W. | | 7.8 | 92.4 | |
| 14 ✓ | | 10.1 | 90.3 | |
| 16 ✓ | | 8.9 | 91.5 | |
| 31 ✓ | | 11.9 | 89.3 | |
| 37 ✓ | | 11.2 | 89.2 | |
| 43 ✓ | | 16.6 | 83.8 | |
| 50 ✓ | | 16.6 | 83.8 | |
| 57 ✓ | | 11.8 | 88.6 | |
| 68 ✓ | | 12.6 | 82.8 | |
| | 46' S of N.L. Terrace Road | | | |
| 50' W of Ecob | | 7.2 | 93.2 | |
| 38 ✓ - - | | 7.3 | 93.1 | |
| 34 ✓ - - | | 13.6 | 86.8 | End of pipe 15835 |
| 21 - - - | | 11.8 | 88.6 | |
| 9' - - - | | 4.0 | 96.4 | |
| Ecob Line | | 4.1 | 96.3 | |
| | 5' N of N edge pavement | | | |
| Ecob Line Hillside | | 2.1 | 98.3 | |
| 12' W. | | 2.6 | 97.8 | |
| 50 ✓ | | 4.4 | 96.9 | |
| | N. Edge of pavement | | | |
| 50' W. of Ecob Line | | 3.97 | 96.43 | |
| ✓ - - | | 1.62 | 98.78 | |

Location 24" Pipe N. of Ecob Hillside D. 532

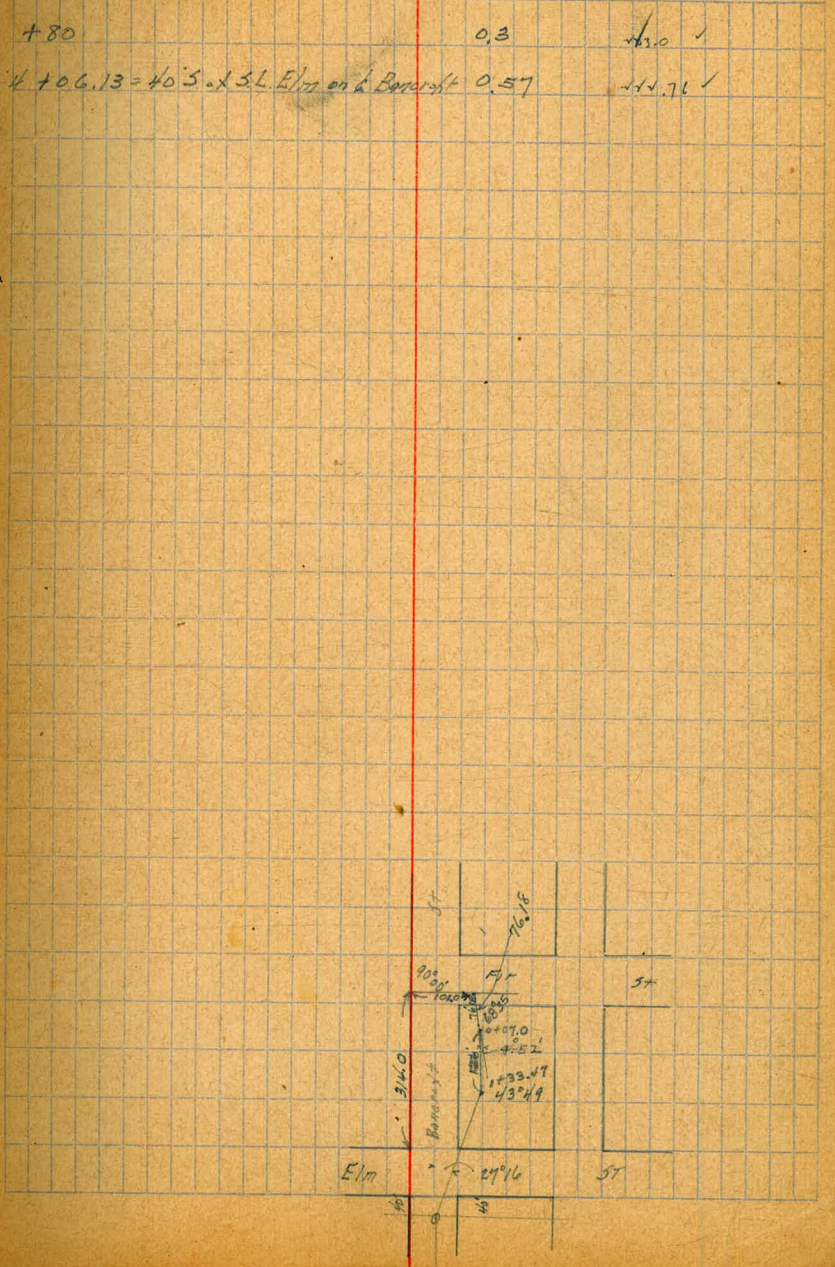
| | | | | |
|----------------------|-----|-------|-------|-------|
| TP | 408 | 92.92 | 12.16 | 88.54 |
| Eli Flow Line Outlet | | | 13.81 | 77.11 |
| ✓ - - Inlet | | | 9.19 | 83.73 |



See Book 1018 Page 80

3/15/04 Gregory Senior Elm East of Bancroft
 2nd Elm - Fir

| | | | | | |
|----------------------------|------|--------|-------|----------|----------------------------|
| B.M. | 1250 | 232.65 | | 220.13 | 55 32" Elm |
| T.P. | 1139 | 244.07 | 0.0 | 232.65 | |
| T.P. | 459 | 239.6 | 9.0 | 235.03 | |
| | 0.41 | 227.90 | 13.03 | 226.59 | |
| 0+00 is top of lot line | | | 6.0 | 220.0 ✓ | |
| 0+07.0 curb | | | 6.15 | 220.85 ✓ | |
| +09.0 | | | 6.7 | 220.3 ✓ | |
| +50 | | | 5.2 | 221.5 ✓ | |
| +51 | | | 8.1 | 218.9 ✓ | |
| +55, Fence | | | 7.3 | 219.7 ✓ | |
| +56 | | | 8.8 | 218.1 ✓ | |
| +65 | | | 4.6 | 221.1 ✓ | |
| +70 | | | 1.7 | 223.3 ✓ | |
| +81 | | | 1.7 | 223.3 ✓ | |
| +100 | | | 4.4 | 221.1 ✓ | |
| +17 | | | 5.4 | 221.89 ✓ | |
| T.P. | 5.14 | 226.89 | | 221.75 | 218.22 |
| +12.57 | | | 2.1 | 224.9 ✓ | |
| +80 | | | 1.6 | 223.3 ✓ | |
| 2+07.56 = wall of garage | | | 2.4 | 223.5 ✓ | Floor of garage 2.8 higher |
| 2+12.8 = 3. ✓ ✓ | | | 2.4 | 223.5 ✓ | |
| 2+19.4 = N. wall of house | | | 2.5 | 224.4 ✓ | |
| T.P. | 6.73 | 223.33 | 10.29 | 216.60 | |
| 2+20.4 = under house | | | 1.3 | 224.0 ✓ | |
| 2+36 = ✓ ✓ | | | 3.1 | 220.4 ✓ | |
| 2+56 = ✓ ✓ | | | 3.6 | 219.7 ✓ | |
| 2+57.5 = S. Wall house | | | 3.3 | 220.0 ✓ | |
| 2+69.31 = PDT | | | 4.05 | 219.8 ✓ | on slab |
| 3 | | | 3.8 | 219.5 ✓ | |
| +20 | | | 3.0 | 220.0 ✓ | |
| +35 | | | 2.3 | 221.0 ✓ | |
| +53 | | | 0.2 | 223.1 ✓ | |



Levels on Rose Canal Survey

142.52

47
45

524

| Station | Reading | Height | Assumed | Grade |
|---------|---------|--------|----------------|------------------|
| on hub | 8.33 | 158.33 | 150.00 assumed | |
| 0+00 | | 8.0 | 150.3 | |
| 1 | | 8.9 | 149.4 | 149.4 |
| +50 | | 10.1 | 148.2 | 148.2 |
| 2 | | 9.5 | 148.8 | 8.7 149.6 148.8 |
| +50 | | 9.5 | 148.8 | 8.3 150.0 149.2 |
| 3 | | 10.3 | 148.0 | 9.3 149.0 148.0 |
| +50 | | 9.7 | 148.6 | 8.2 150.1 149.3 |
| 4 | | 13.1 | 145.2 | 10.6 147.7 145.3 |
| +50 | | 13.6 | 144.7 | 12.0 146.3 144.9 |
| T.P. | 6.38 | 151.97 | 12.74 | 145.59 |
| 5 | | 8.0 | 144.0 | 4.9 47.1 144.0 |
| +50 | | 9.6 | 142.4 | 4.7 47.3 143.6 |
| 6 | A | 9.7 | 144.3 | 0.1 51.9 143 |
| +50 | | 10.0 | 142.0 | +0.5 53.5 141.5 |
| 7 | | 12.0 | 140.0 | 4.8 47.8 140.5 |
| +50 | | 13.8 | 138.2 | 8.3 43.7 139.5 |
| T.P. | 7.66 | 149.12 | 10.51 | 141.46 |
| +80 | | 10.6 | 138.5 | 4.2 144.3 138.5 |
| 8+10 | | 10.2 | 38.9 | 3.1 46.0 38.0 |
| +50 | | 10.8 | 38.3 | 3.5 45.6 38.1 |
| +75 | | 11.6 | 37.5 | |
| 9 | | 10.4 | 38.7 | 3.5 45.6 38.1 |
| +40 | | 11.6 | 37.5 | 6.2 42.7 35.4 |
| T.P. | 3.91 | 142.52 | 10.51 | 138.61 |

| | | | | | |
|-------|------|--------|------|-------|-------------|
| 9+80 | 8.4 | 34.1 | 54 | 37.1 | 10' W 359.5 |
| 10+20 | 10.8 | 31.7 | | | 7.0 35.0 |
| +40 | 9.4 | 33.1 | 60 | 36.5 | 10' 135.6 |
| +60 | 9.4 | 35.1 | | | 13.49 |
| 11+00 | 8.4 | 34.1 | 59 | 36.6 | 13.48 |
| +30 | 9.2 | 33.3 | | | 13.50 |
| +50 | 7.9 | 34.6 | 55 | 37.0 | 13.51 |
| 12 | 5.2 | 37.3 | 3.2 | 39.3 | 13.52 |
| +45 | 5.0 | 37.5 | | | 13.53 |
| T.P. | 0.75 | 139.13 | | | 13.54 |
| +70 | 4.4 | 38.38 | | | |
| 13+10 | 1.4 | 37.7 | | | 13.56 |
| +50 | 1.9 | 37.2 | | | |
| 14 | 3.1 | 36.0 | | | 13.58 |
| +40 | 3.8 | 35.3 | | | 13.59 |
| 15 | 6.8 | 32.3 | | | 13.60 |
| +70 | 5.4 | 33.7 | | | 13.61 |
| 16 | 2.9 | 36.2 | | | 13.62 |
| +60 | 2.4 | 36.7 | | | 13.63 |
| 17 | 3.0 | 36.1 | | | 13.64 |
| +25 | 4.4 | 34.7 | | | 13.65 |
| +50 | 4.8 | 34.3 | | | 13.66 |
| +75 | 2.6 | 36.5 | | | 13.67 |
| 18 | 0.6 | 38.5 | | | 13.68 |
| 19 | 0.5 | 38.6 | | | 13.69 |
| T.P. | 1.65 | 140.40 | 0.38 | 38.75 | 13.70 |

| | | | | | |
|------|------|-------|------|-------|-------|
| +30 | | | 36 | 1368 | |
| +40 | | | 43 | 1311 | |
| +50 | | | 60 | 1344 | 1354 |
| +53 | | | 46 | 1358 | |
| 18 | | | 51 | 35.3 | 1351 |
| +50 | | | 49 | 35.5 | 1348 |
| 19 | | | 5.9 | 34.5 | 134.5 |
| +50 | | | 64 | 34.0 | 33.98 |
| +85 | | | 40 | 364 | |
| 20 | A | | 7.3 | 33.1 | 32.94 |
| +50 | | | 12.7 | 27.7 | 30.14 |
| +60 | | | 13.6 | 26.8 | 132.0 |
| 21 | | | 9.0 | 31.4 | 132.4 |
| +50 | | | 60 | 344 | 132.9 |
| 22 | | | 48 | 36.6 | 1334 |
| T.P. | 7.99 | 43.89 | 4.50 | 35.90 | |
| +50 | | | 10.5 | 23.4 | 133.9 |
| +75 | | | 12.0 | 31.9 | |
| 23 | | | 87 | 35.2 | 1344 |
| +50 | | | 6.7 | 37.2 | 134.9 |
| +75 | | | 33 | 40.6 | |
| 24 | | | 34 | 40.5 | 1354 |
| +35 | | | 82 | 35.4 | |
| +50 | | | 7.6 | 36.3 | 135.9 |
| 25 | | | 5.5 | 38.4 | 136.4 |
| +25 | | | 48 | 39.1 | |

| | | | | | | | |
|------|------|-------|--|--|-------|------------|------------|
| +50 | | | | | 67 | 372 | 136.90 |
| +40 | | | | | 49 | 390 | 137.0 |
| 46 | | | | | 46 | 393 | 136.36 |
| +35 | | | | | 28 | 411 | 135.56 |
| +50 | | | | | 45 | 374 | |
| +70 | | | | | 93 | 34.6 | 134.77 |
| 27 | | | | | 108 | 33.1 | 133.97 |
| +50 | | | | | T.P. | 6.26 38.72 | 1143 32.46 |
| 28 | | | | | 91 | 29.6 | 133.18 |
| +50 | | | | | 62 | 32.5 | 132.38 |
| 29 | | | | | 111 | 34.3 | 131.59 |
| +50 | | | | | 45 | 34.2 | 130.79 |
| +90 | | | | | 52 | 33.5 | |
| 30 | | | | | 64 | 32.3 | 130.0 |
| 12.5 | | | | | 11.6 | 27.1 | |
| +50 | | | | | 73 | 31.4 | 128.75 |
| +75 | | | | | 58 | 32.9 | |
| 31 | | | | | 68 | 31.9 | 127.5 |
| +50 | | | | | 88 | 29.9 | 126.25 |
| T.P. | 1.43 | 27.64 | | | 12.51 | 26.21 | |
| 32 | | | | | 53 | 22.3 | 125.0 |
| +15 | | | | | 71 | 20.5 | |
| +50 | | | | | 51 | 22.5 | 124.75 |
| 33 | | | | | 3.6 | 44.0 | 124.5 |
| 32 | | | | | 3.4 | 24.2 | |
| +35 | | | | | 58 | 21.8 | |

27.64

| | | | | | |
|-------|------|-------|-------|-------|-------------|
| +38 | | | 84 | 19.2 | |
| +52 | | | 80 | 19.6 | |
| +58 | | | 3.5 | 24.1 | |
| +60 | | | 3.1 | 24.5 | 124.3 |
| +68 | | | 3.6 | 24.0 | |
| +73 | | | 8.1 | 19.8 | |
| +77 | | | 8.3 | 19.3 | |
| +85 | | | 1.9 | 25.9 | |
| 34 | | | 2.1 | 25.5 | 124.0 |
| +50 | | | 4.1 | 23.5 | 122.5 |
| +75 | | | 5.8 | 21.8 | |
| 35 | | | 4.4 | 23.2 | slope 121 |
| +50 ▽ | | | 5.4 | 22.2 | slope 119.5 |
| 36 | | | 10.1 | 17.5 | 118 |
| +20 | | | 12.0 | 15.6 | |
| TP | 8.99 | 23.50 | 11.03 | 16.61 | |
| +32 | | | 9.6 | 15.9 | |
| +35 | | | 10.5 | 15.0 | |
| +44 | | | 10.3 | 15.2 | |
| +46 | | | 9.0 | 16.3 | |
| +60 | | | 8.0 | 17.5 | 116.2 |
| 37 | | | 8.1 | 17.4 | 115.0 |
| +40 | | | 11.2 | 14.3 | |
| +50 | | | 10.7 | 14.8 | 113.5 |
| 38 | | | 12.4 | 13.4 | 112.0 |
| TP | 2.09 | 16.17 | 11.40 | 14.10 | |

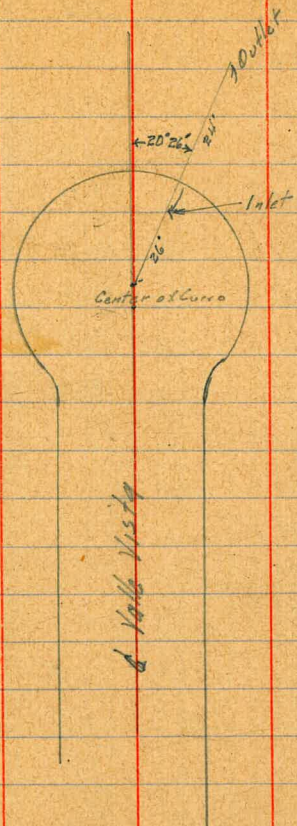
116.17

3.6

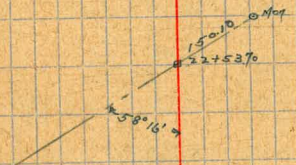
| | | | | | |
|-----|------|-------|------|---------------------|-------|
| +50 | 55 | 107 | | | 110.5 |
| 39 | 7.1 | 109.1 | | | 109.0 |
| +50 | 7.6 | 108.6 | | | 108.5 |
| +76 | 8.2 | 108.0 | | | |
| +88 | 10.7 | 105.5 | road | | |
| 40 | 10.2 | 106.0 | road | 10 ^m 7.0 | 108.0 |
| +50 | 8.3 | 107.9 | | | 108.5 |
| 41 | 7.5 | 108.4 | | | 109.0 |
| +50 | 6.5 | 109.7 | | | 109.5 |

10/13/27
Geo. W. Ellis

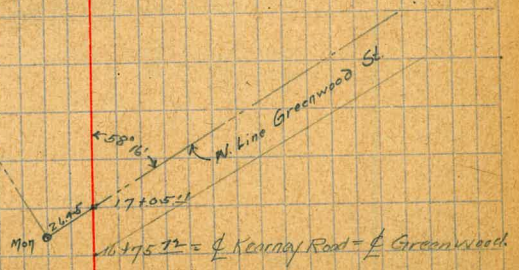
Survey to locate pipe at N. End of Valle Vista



Dyke Road



N



Cross-section of Dyke Road - Taylor St to Greenwood

| | | | |
|-----------------------------------|-------|------|------------------------------|
| 10.03 | 16.07 | | 6.04 B.M. Mon Taylor & Court |
| T.P. 5.84 | 21.69 | 0.22 | 15.85 |
| Top floor So. End Pile bridge | 2.75 | | 18.94 |
| Top floor So. End Concrete bridge | 2.65 | | 19.04 |
| Top concrete pile | | 9.85 | 11.84 |
| 5.69 | 20.25 | 7.13 | 14.56 on W side |

| W | | 0 + 0 | | E | |
|---|------|-------|-------|------|------|
| 15.0 | 14.6 | 15.1 | 15.9 | 16.5 | 16.1 |
| 50 | 18 | 26 | 44 | 50 | |
| 0 + 50 | | | | | |
| 17.1 | 17.1 | 15.0 | 15.0 | 15.3 | 14.9 |
| 50 | 47 | 42 | 30 | 60 | |
| 1 + 00 | | | | | |
| 18.6 | 18.6 | 14.2 | 18.1 | 18.2 | 18.0 |
| 50 | 38 | 11 | 5 | 10 | 29 |
| 1 + 08 | | | | | |
| 18.8 | 18.8 | 17.0 | 16.1 | 15.3 | 18.6 |
| 50 | 38 | 20 | 15 | 4 | 26 |
| 1 + 17.5 - Taken parallel to So end pile bridge | | | | | |
| 18.9 | 18.9 | 14.2 | 13.8 | 14.7 | 18.9 |
| 50 | 39 | 15 | 2 | 4.5 | 22.5 |
| 1 + 20 - Taken parallel to So end pile bridge | | | | | |
| | 13.9 | 14.0 | 15.5 | 14.4 | 14.3 |
| | | 24 | 25 | 37 | 50 |
| 1 + 28 - Taken parallel to So end Concrete bridge | | | | | |
| 18.9 | 18.9 | 13.2 | 13.0 | | |
| 50 | 34.5 | 12 | | | |
| 1 + 35 | | | | | |
| | 12.2 | 8.2 | 8.6 | 7.6 | |
| | | 25 | 36 | 50 | |
| 1 + 50 | | | | | |
| 10.3 | 11.0 | 10.8 | 8.5 | 8.7 | 7.6 |
| 50 | 30 | 13 | 6 | 26 | 50 |
| T.P. | 2.51 | 11.23 | 11.43 | 8.82 | |

Elev Top of Dyke = 17.0 - H.W.

| W | | 1 + 74 | | E | |
|--------------------------|-----|--------|-----|-------|------|
| 5.1 | 7.9 | 5.7 | 5.0 | 3.7 | 3.4 |
| 50 | 32 | 21 | 13 | 21.00 | 16 |
| 2 + 00 | | | | | |
| 3.9 | 4.7 | | | 5.3 | 5.1 |
| 50 | 34 | | | 20 | 50 |
| 3 + 00 | | | | | |
| | | 3.8 | 5.5 | 5.6 | |
| | | 50 | | 50 | |
| 3 + 35 | | | | | |
| | | 4.3 | 4.4 | 4.7 | 2.1 |
| | | 50 | | 31 | 42 |
| 3 + 47 | | | | | |
| | | 3.1 | 3.0 | 2.1 | 2.0 |
| | | 50 | 10 | | 50 |
| 4 + 00 | | | | | |
| 1.7 | 2.5 | 1.7 | 2.0 | 2.5 | 2.3 |
| 50 | 200 | 100 | 50 | 50 | 100 |
| 2 + 200 | | | | | |
| 4 + 67 | | | | | |
| | | 2.0 | 2.2 | 2.3 | |
| | | 50 | | 50 | |
| T.P. 7.32 9.71 8.94 2.39 | | | | | |
| 5 + 00 | | | | | |
| | | 3.9 | 3.8 | 3.3 | |
| | | 50 | | 50 | |
| 6 + 00 | | | | | |
| | | 4.6 | 4.2 | 3.8 | 1.3 |
| | | 60 | | 30 | 46 |
| 6 + 59 | | | | | |
| | | 4.0 | 3.4 | 1.1 | 4.3 |
| | | 37 | 51 | 71 | 100 |
| 6 + 74 | | | | | |
| | | | | 0.0 | 4.0 |
| | | | | 71 | 80 |
| 6 + 82 | | | | | |
| 4.8 | 4.6 | 3.6 | 3.4 | 0.1 | -5.0 |
| 50 | 20 | | 25 | 40 | 75 |
| 00 | | | | | |
| 38 | | | | | |
| 39 | | | | | |
| 125 | | | | | |

| W | | C | | E | |
|----|----|----|------|------|-----|
| 49 | 46 | 35 | 0.0 | -1.0 | 0.9 |
| 50 | 25 | 16 | | 6 | 18 |
| | | | 7+01 | | 29 |
| | | | | | 50 |
| | | | | | 67 |
| | | | | | 120 |
| | | | | | 127 |
| | | | -1.0 | | |

7+20 Taken parallel to No End of Pile bridge

| | | | | | | | | | |
|----|----|-----|------|-----|-----|------|------|------|------|
| 44 | 32 | 0.0 | 0.4 | 3.0 | 5.1 | -5.0 | 0.0 | 3.2 | 2.1 |
| 50 | 37 | 10 | | 40 | 60 | 9.5 | 11.7 | 12.3 | 11.0 |
| | | | 7+42 | | | | | | |

| | | | | | | | | | | | |
|------|-------|-------|-----|------|------|------|-----|-----|-----|-----|-----|
| 7.6 | 1.3 | 2.4 | 3.0 | 5.4 | 13.5 | 13.7 | 8.7 | 5.1 | 2.0 | 3.6 | 3.0 |
| 50 | 23 | 17 | | 24 | 38 | 60 | 80 | 89 | 90 | 120 | 150 |
| T.P. | 10.05 | 17.56 | | 2.21 | | 7.00 | | | | | |

8+00

| | | | | | | |
|-----|-----|-----|------|------|-----|-----|
| 3.8 | 4.4 | 4.0 | 13.0 | 13.2 | 4.5 | 3.2 |
| 50 | | 22 | 29 | 6.5 | 83 | 100 |
| | | | 9+00 | | | |

| | | | | | | |
|-----|-----|-----|-------|------|-----|-----|
| 4.5 | 2.6 | 4.6 | 12.5 | 12.6 | 5.4 | 3.0 |
| 50 | | 30 | 43 | 70 | 87 | 100 |
| | | | 10+00 | | | |

| | | | | | | | | |
|------|------|-------|------|-----|-------|------|-----|-----|
| 4.8 | 4.8 | 2.4 | 4.7 | 6.0 | 12.7 | 12.9 | 4.7 | 3.1 |
| 50 | 37 | | 13 | 26 | 38 | 61 | 77 | 100 |
| T.P. | 1.32 | 14.46 | 4.41 | | 13.14 | | | |

11+00

| | | | | | | |
|-----|-----|-----|-------|------|-----|-----|
| 3.0 | 3.4 | 3.7 | 12.5 | 12.8 | 5.1 | 3.0 |
| 50 | | 10 | 26 | 49 | 66 | 100 |
| | | | 12+00 | | | |

| | | | | | | |
|-----|-----|-----|-------|------|-----|-----|
| 3.0 | 3.2 | 5.9 | 13.1 | 13.1 | 4.4 | 2.1 |
| 50 | 9 | | 12 | 35 | 52 | 100 |
| | | | 12+84 | | | |

| | | |
|-----|-----|-------|
| 3.4 | 2.5 | 13.7 |
| 50 | 18 | |
| | | 13+00 |

| | | | | | | |
|-----|-----|------|------|------|-----|-----|
| 2.8 | 3.3 | 14.0 | 13.9 | 13.5 | 4.8 | 3.4 |
| 50 | 20 | 1.0 | | 21 | 41 | 50 |

W C E

| | |
|-----|-----|
| 33 | 25 |
| 173 | 150 |

13+15

| | | | | |
|-----|------|------|------|------|
| 9.6 | 10.8 | 11.8 | 13.6 | 13.8 |
| 50 | 36 | 12 | 4 | |

| | | | | |
|------|------|-------|------|-------|
| T.P. | 4.67 | 18.69 | 0.44 | 14.02 |
|------|------|-------|------|-------|

14+00

| | | | | | | | |
|-----|-----|------|-------|------|-----|-----|-----|
| 9.4 | 9.0 | 14.1 | 14.2 | 14.2 | 5.9 | 8.4 | 8.4 |
| 50 | 17 | 12 | 17 | 17 | 34 | 46 | 50 |
| | | | 15+00 | | | | |

| | | | | | | | | |
|-----|-----|------|-------|------|-----|-----|-----|-----|
| 9.0 | 8.2 | 14.4 | 14.2 | 14.1 | 7.3 | 6.1 | 8.6 | 8.6 |
| 50 | 24 | 13 | | 16 | 31 | 40 | 46 | 50 |
| | | | 15+91 | | | | | |

14+00

| | | | |
|------|------|-----|-------|
| 14.1 | 13.9 | 7.6 | 1.2 |
| 17 | 31 | 50 | |
| | | | 16+00 |

| | | | | | | |
|-----|-----|------|-------|------|-----|-----|
| 9.0 | 9.6 | 14.1 | 14.1 | 13.8 | 7.7 | 7.2 |
| 50 | 26 | 14 | | 26 | 50 | 60 |
| | | | 16+23 | | | |

14+00

| | | | |
|------|------|------|-------|
| 14.1 | 13.8 | 12.7 | 11.9 |
| 22 | 20 | 50 | |
| | | | 16+23 |

14+00

| | | | | |
|------|------|-----|------|------|
| 14.1 | 14.0 | 9.1 | 11.8 | 11.7 |
| 19 | 28 | 41 | 50 | |

16+47 Taken parallel with Greenwood St. Top slope Kearney Road.

14+00

| | | | |
|------|------|-----|-----|
| 14.7 | 14.1 | 8.0 | 7.9 |
| 24 | 45 | 50 | |

16+58 Taken parallel with Greenwood St. S. Line Kearney Road. Top bank

14+00

| | |
|------|------|
| 14.2 | 14.0 |
| | 50 |

16+93 Taken parallel with Greenwood St. N. Line Kearney Road. Top bank

14+00

| | |
|------|------|
| 14.2 | 14.1 |
| | 50 |

17+00

| | | | | |
|-----|-----|-----|------|------|
| 8.0 | 8.9 | 9.1 | 13.7 | 14.2 |
| 50 | 41 | 22 | 14 | |

17+05 N. Line Greenwood. Taken parallel with N. Line. Top slope Kearney Road

14+00

| | | |
|------|-----|-----|
| 14.0 | 7.9 | 8.5 |
| 35 | 62 | 80 |

1869

W

C

E

17470

140 $\frac{138}{19}$ $\frac{73}{34}$ $\frac{68}{50}$

18400

$\frac{73}{50}$ $\frac{81}{21}$ $\frac{139}{12}$ 140 $\frac{141}{16}$ $\frac{83}{28}$ $\frac{56}{44}$ $\frac{70}{50}$

T.P

7.41

11.28

Spk T₁ pale
E. side Dyke Spk R

68^v

| | Levels on West Curb and Palm to | 4 th St Property Line Redwood | Curb 14' from Prop Line | |
|---|---------------------------------------|--|----------------------------|-------------------|
| on B.M. | 1.72 | 269.14 | 267.42 | NE of the Palm |
| | | No. Line Palm | | |
| W Cb. | | 2.59 | 266.55 | on curb |
| W Line | | 2.7 | 266.24 | |
| | | 23' No. = So. end of Wall | | |
| W Line is 2' west of Concrete Foundation of Porch | | 3.0 | 266.1 | on ground |
| 2' E of W.L. | | 3.0 | 266.1 | |
| 7' - - - | | 2.8 | 266.3 | |
| W Cb. | | 2.0 | 267.1 | |
| 5' E of W Cb. | | 1.9 | 267.2 | |
| | | 33' No. = No. end of Wall | | |
| 5' E of W Cb. | | 2.0 | 267.1 | |
| W Cb. | | 2.7 | 266.4 | |
| 12' W. of Cb. | | 11.9 | 257.2 | |
| W Line | | 12.7 | 256.4 | |
| | | 45' No. | | |
| W Line | | 13.2 | 255.9 | |
| W Cb. | | 4.5 | 264.6 | |
| 5' E of Cb. | | 2.1 | 267.0 | edge road |
| T.P. | 3.41 | 270.83 | 1.72 | 267.12 |
| | | 57' No. | | |
| 4' E of W Cb. | | 4.1 | 266.7 | edge bank |
| W Cb. | | 4.9 | 265.9 | |
| W Line | | 15.7 | 255.7 | |

| | | 270.83 | | |
|----------------|--|----------|-------|-----------|
| | | 75' No. | | |
| W. | | 16.5 | 254.3 | |
| cb. | | 5.6 | 265.2 | |
| 4' E of Cb | | 4.0 | 266.8 | edge bank |
| | | 100' No. | | |
| 5' E of W Cb | | 4.1 | 266.7 | edge bank |
| W Cb | | 6.8 | 264.0 | |
| W Line | | 15.4 | 252.4 | |
| | | 125' No. | | |
| W Line | | 18.8 | 252.0 | |
| W Cb. | | 7.4 | 263.4 | |
| 5' E of Cb | | 4.2 | 266.6 | edge bank |
| | | 150' No. | | |
| 5' E of W Cb. | | 3.6 | 267.2 | edge bank |
| W Cb | | 7.2 | 263.6 | |
| W Line | | 18.3 | 252.5 | |
| | | 175' No. | | |
| W Line | | 16.5 | 254.3 | |
| W Cb. | | 6.2 | 264.6 | |
| 5.5' E of W Cb | | 3.3 | 267.5 | edge bank |
| | | 196' No. | | |
| 4' E of W Cb | | 2.4 | 268.4 | edge bank |
| W Cb. | | 4.3 | 266.5 | |
| W Line | | 13.9 | 258.9 | |
| | | 200' No. | | |
| W Line | | 13.8 | 257.0 | |

| | | | |
|--|------|-------|-----------|
| 7' E of W.C. | 8.4 | 262.4 | |
| 8' - - - | 4.5 | 266.3 | |
| W. Cb. | 2.7 | 268.1 | |
| 4' E of W.Cb. | 1.9 | 268.9 | |
| 225' No. | | | |
| 4' E of W.Cb. | 1.8 | 269.0 | |
| W. Cb. | 2.3 | 268.5 | |
| W. Line | 13.1 | 257.7 | |
| 250' No. | | | |
| W. Line | 13.8 | 257.0 | |
| W. Cb. | 3.2 | 267.6 | |
| 4' E of W.Cb. | 2.2 | 268.6 | edge bank |
| 275' No. | | | |
| 4' E of W.Cb. | 2.5 | 268.3 | edge bank |
| W. Cb. | 4.3 | 266.5 | |
| W. Line | 13.2 | 257.6 | |
| 300' No. = 3L Quince ^{50' 34"} _{19' 10"} | | | |
| W. Line | 15.2 | 255.6 | |
| W. Cb. | 4.8 | 266.0 | |
| 4' E of W.Cb. | 2.6 | 268.2 | edge bank |
| So. Curb | | | |
| 4' E of W.Cb. | 2.6 | 268.2 | |
| W. Cb. | 4.8 | 266.0 | |
| W. Line | 15.6 | 255.2 | |
| So. Quarter | | | |
| W. Line | 16.3 | 254.5 | |

| | | | |
|---|------|-------|-------------|
| W.Cb. | 5.4 | 265.4 | |
| 5' E of W.Cb. | 2.9 | 267.9 | edge bank |
| 7' No. of So. Quarter = So. Side of 7.3' Wooden foot bridge | | | |
| 4' E of W.Cb. | 3.6 | 267.2 | = Top Step. |
| W. Cb. | 5.7 | 265.1 | on Step |
| W. Line | 13.7 | 257.1 | - - |
| Center Quince | | | |
| 5' E of W.Cb. | 3.1 | 267.7 | edge bank |
| W. Cb. | 7.2 | 263.6 | |
| W. Line | 16.7 | 254.1 | |
| No. Quarter | | | |
| W. Line | 16.7 | 254.1 | |
| W. Cb. | 5.9 | 264.9 | |
| 4' E of W.Cb. | 3.0 | 267.8 | edge bank |
| No. Curb | | | |
| 4' E of W.Cb. | 2.8 | 268.0 | ✓ ✓ |
| W. Cb. | 4.8 | 266.0 | |
| W. Line | 16.0 | 254.8 | |
| No. Line Quince St | | | |
| W. Line | 14.5 | 256.3 | |
| W. Cb. | 3.9 | 266.9 | |
| 3' E of W.Cb. | 2.4 | 268.4 | edge bank |
| 30' No. of Quince | | | |
| 3' E of W.Cb. | 1.7 | 269.1 | edge road |
| W. Cb. | 2.1 | 268.7 | |

These elev. are
of bridge
Not ground

270.83

| | | | | |
|--------------|----------|--------|-------|-----------|
| W Line | | 10.1 | 260.7 | |
| | 50' No. | | | |
| W Line | | 12.7 | 258.1 | |
| W Cb | | 3.4 | 267.4 | |
| 3' E of W Cb | | 2.4 | 268.4 | edge bank |
| | 75' No. | | | |
| 3' E of W Cb | | 2.6 | 268.2 | |
| W Cb | | 4.0 | 266.8 | edge bank |
| W Line | | 14.9 | 255.9 | |
| T.P. | 320 | 271.75 | 228 | 268.55 |
| | 100' No. | | | |
| W Line | | 16.0 | 255.8 | |
| W Cb | | 5.2 | 266.6 | |
| 4' E of W Cb | | 3.3 | 268.5 | edge bank |
| | 125' No. | | | |
| 3' E of W Cb | | 3.1 | 268.7 | v v |
| W Cb | | 4.9 | 265.9 | |
| W Line | | 15.6 | 256.2 | |
| | 150' No. | | | |
| W L | | 15.9 | 255.9 | |
| W Cb | | 4.6 | 267.2 | |
| 3' E of W Cb | | 2.9 | 269.1 | edge |
| | 175' No. | | | |
| 2' E of W Cb | | 2.8 | 269.0 | edge |
| W Cb | | 4.0 | 267.8 | |
| W Line | | 14.7 | 257.1 | |

271.75
200' No.47th St 65'
65'

| | | | | |
|--------|--------------------------|------|-------|----------------------|
| W Line | | 11.2 | 260.6 | |
| W Cb | | 2.3 | 269.5 | on St. |
| | 225' No. | | | |
| W Cb | | 1.4 | 270.4 | |
| 5' W | | 1.1 | 270.7 | |
| W Line | | 6.4 | 265.4 | |
| | 250' No. | | | |
| W Line | | 7.9 | 263.9 | |
| 9' E | | 1.4 | 270.4 | |
| W Cb | | 1.6 | 270.2 | |
| | 275' No. | | | |
| W Cb | | 1.3 | 270.5 | |
| W W | | 1.6 | 270.2 | |
| W Line | | 8.8 | 263.0 | |
| | 300' No. = 5L Redwood St | | | 70 wide 14' walks |
| W Line | | 10.4 | 260.4 | |
| 4' E | | 2.8 | 269.0 | |
| W Cb | | 1.9 | 269.9 | |
| | So. Curb | | | |
| W Cb | | 1.3 | 270.5 | |
| 5' W | | 2.2 | 269.5 | |
| W Line | | 8.6 | 263.2 | |
| | So. Quarter | | | |
| W Line | | 4.7 | 267.1 | |
| W Cb | | 1.6 | 270.2 | |

271.75

Center Redwood

W Cb. 1.6 270.2

W Line 5.3 266.5

No. Quarter

W Line 4.3 267.5

S E 2.7 269.1

W Cb. 2.0 269.8

No. Curb

W Cb. 1.8 270.0

11' W 2.7 269.1

W Line 4.2 267.6

No Line Redwood

W Line 4.2 267.6

6' E 1.8 270.0

W Cb. 1.83 269.92 on curb.

on BM. 1.39 270.36 - ^{BPNE 1/2}
38 Redwood

Elevations on Si Dyke - Old Town

4th St 66

| At 0+00 | FS on | DiKE |
|-----------|-------|------|
| Ang | Dist | Elev |
| R 37° 04' | 134 | 14.6 |
| R 61° 33' | 174 | 13.3 |

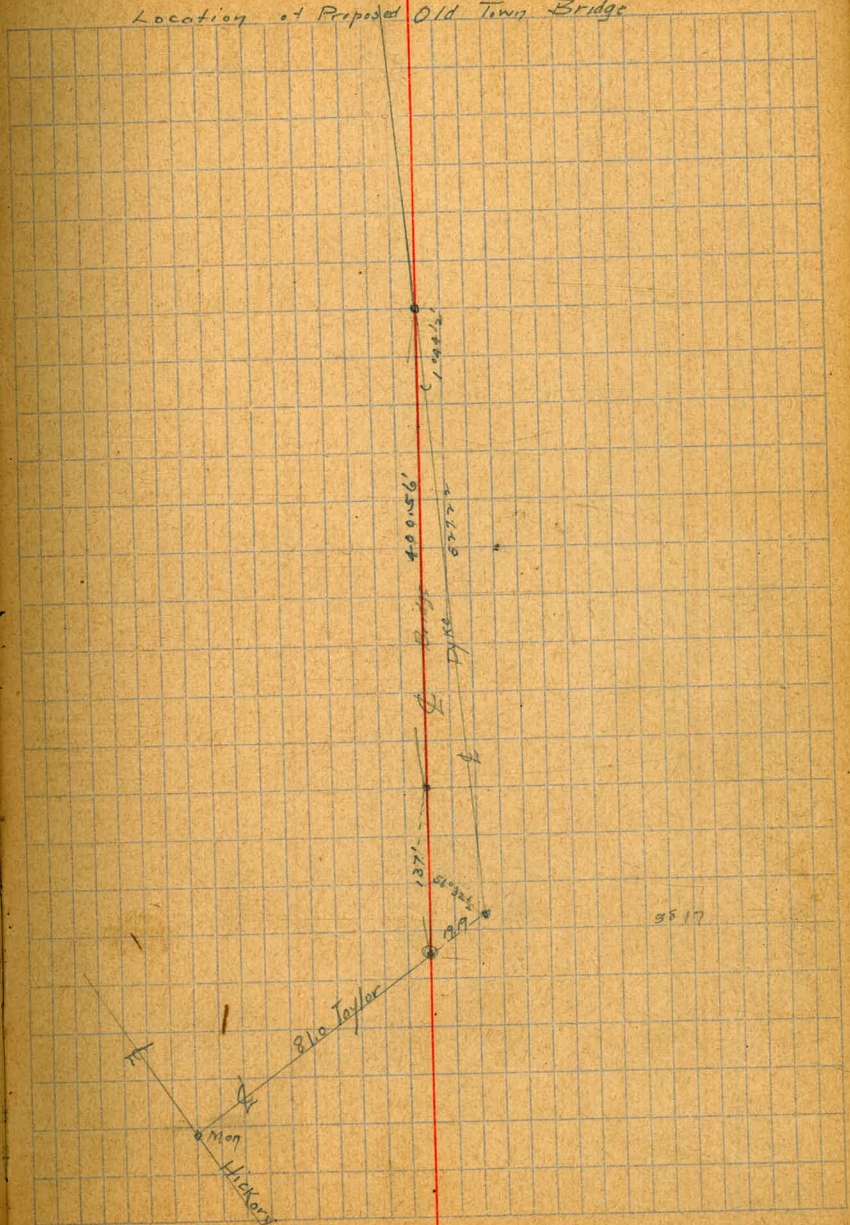
Levels over Proposed Old Town Bridge

$\frac{2}{19}$ (Gregory
Doris
Miller

| | 4.92 | 19.48 | | 14.56 |
|-------------------|------|-------|-------|-------|
| 0+00 | | | 49 | 14.6 |
| +50 | | | 45 | 15.0 |
| +95 | | | 28 | 15.7 |
| 1 | | | 35 | 16.0 |
| +12 | | | 35 | 16.0 |
| +25 | | | 52 | 14.3 |
| +50 | | | 74 | 12.1 |
| T.P. | 3.27 | 10.64 | 12.11 | 7.87 |
| +82 | | | 48 | 5.8 |
| +86 | | | 72 | 3.4 |
| +96 | | | 56 | 5.0 |
| 2+00 | | | 56 | 5.0 |
| +50 | | | 50 | 5.6 |
| +80 | | | 47 | 5.9 |
| 3 | | | 51 | 5.5 |
| +35 | | | 59 | 4.7 |
| +59 | | | 84 | 2.2 |
| +71 | | | 89 | 1.7 |
| 4 | | | 80 | 2.6 |
| +20 | | | 88 | 1.8 |
| +50 | | | 83 | 2.3 |
| +85 | | | 89 | 1.7 |
| +87 | | | 78 | 2.8 |
| 5 | | | 73 | 3.3 |
| +37 ⁵⁶ | | | 65 | 4.1 |

+37⁵⁶ = 5+27²² Old Location

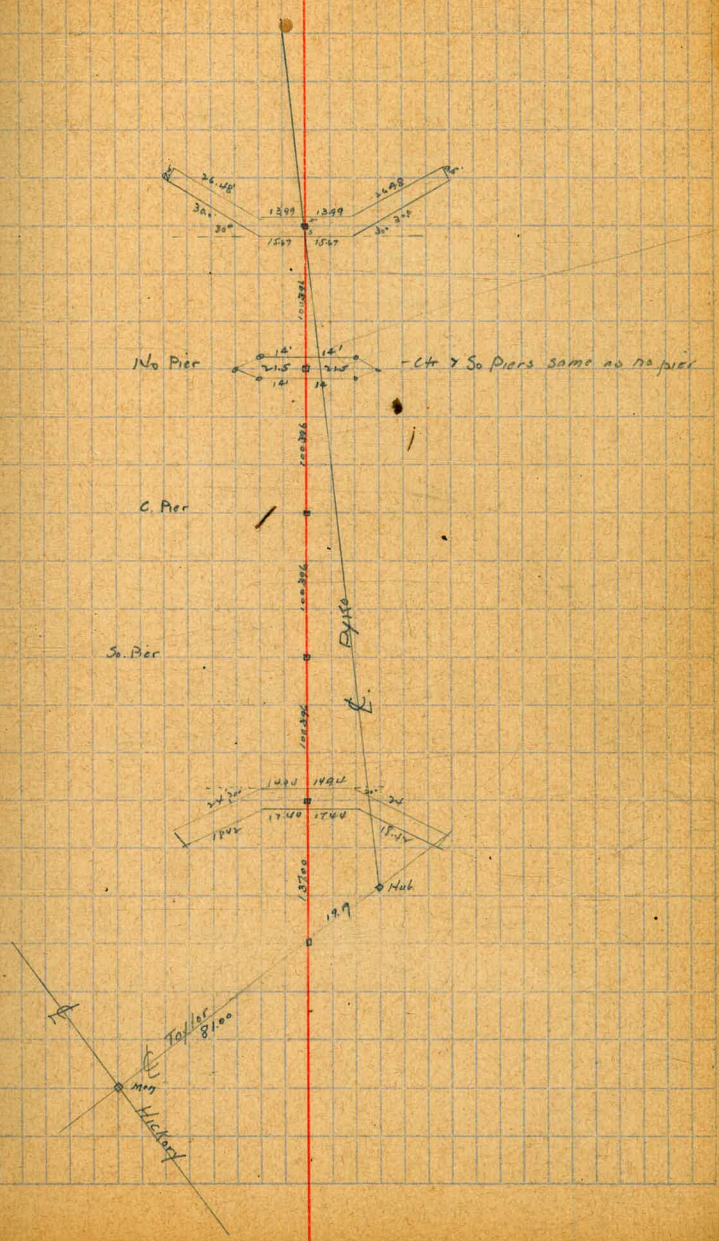
Location of Proposed Old Town Bridge



2) Davis
 21) Shonw 588
 19) Fische

Location of Bridge Piers: Old Town

| | | | | |
|----------------------|------|-------|-------|---------------|
| | 4.52 | 19.08 | | 1456 Hub area |
| TIR | 3.20 | 10.40 | 11.88 | 720 |
| Water Level No. Pier | | | 10.05 | 0.37 |
| " " Ch " | | | 10.05 | 0.35 |



Gregory Miller SHAN Levels on Bancroft St

| | | | |
|--------|------------------------|--------|-------------------------------|
| 0.2 | 273.49 | 273.25 | |
| 20' | So. of Grape West Side | 2.6 | 70.9 walk to house |
| 67' | | 4.9 | 68.6 Walk to bottom of stairs |
| 67' | | 3.0 | 70.8 Top Step |
| 87' | | 5.86 | 267.6 on walk from to Garage |
| 107' | | 7.05 | 266.5 Walk to house |
| 135.5 | | 8.49 | 265.0 on walk from to Garage |
| 146.6 | | 9.74 | 263.8 on walk + |
| 146.6 | | 9.56 | 263.9 Top Step |
| 163.25 | | 10.60 | 262.9 runway to garage |
| 187.1 | | 11.59 | 261.9 walk to house |
| 205 | | 12.17 | 261.3 runway to Garage |
| 226 | | 12.83 | 260.7 on walk front house |
| 226 | | 11.65 | 261.9 Top Step |
| TP. | 1.20 | 261.66 | 13.03 260.46 |
| 246 | | 1.63 | 260.1 runway to Garage |
| 271.8 | | 2.65 | 259.1 walk to house |
| 271.8 | | 2.06 | 259.6 Top Step |
| 270.8 | | 10.50 | 251.2 walk to house |
| 68.6 | | 12.25 | 249.5 |
| TP. | 1.20 | 249.99 | 12.87 248.79 |
| 90.5 | | 1.68 | 248.3 runway to Garage |
| 119.8 | | 3.13 | 246.9 walk to house |
| 129 | | 4.23 | 245.8 runway to Garage |
| 170.5 | | 6.13 | 243.9 walk to house |
| 193 | | 7.71 | 242.3 runway to Garage |

All runway are dirt + Elev. are taken on W side of Sidewalk where machines have made tracks

| | | | |
|----------------------------------|----------------------|-------|------------------------|
| 201' | So. of Fir West Side | 9.90 | 240.1 walk to house |
| 246 | | 12.21 | 237.8 runway |
| East Side patches are E. of E.L. | | | |
| 19.7' | So. of Fir East Side | 7.87 | 42.12 walk to house |
| | | 6.89 | 43.10 porch of |
| 71.7 | | 9.51 | 240.5 walk to house |
| | | 7.95 | 242.0 porch of |
| 130' | | 10.62 | 239.4 walk to |
| | | 8.82 | 241.2 porch of |
| 178.7 | | 11.47 | 238.5 walk to |
| | | 10.70 | 239.3 porch of |
| 196 | | 11.96 | 238.0 runway to garage |
| 226.4' | | 14.52 | 235.5 walk to house |
| | | 11.99 | 238.0 porch of house |

Elev. marked walk are taken on E. edge of adjacent walk which is not on property line

7/10/19

Levels on Lines 15 E-W
of 6 of Arctic St
from Date North

1.51 43.98 42.47 SW Date + India

5.17 37.13 12.02 31.96

NL Date

15' E of Arctic 6.5

15' W - - 7.8

5.19 No. on E }
00 - - W } = 00

15' E 6.3

+50

15' E 5.9

15' W 7.5

1400

15' W 7.0

15' E 5.4

1450

15' E 4.9

15' W 7.0

2400

15' W 6.5

15' E 4.7

2450

15' E 4.3

15' W 6.0

3400

15' W 5.0

15' E 3.9

350.72 No. on E }
345.12 - - W } = 3L FIR ST. 70

15' E 3.0

15' W 3.9

NL FIR

15' W 3.8

15' E 2.2

+20

15' E 1.3

+50

15' E 1.8

15' W 3.8

1400

15' W 4.0

15' E 4.2

T.P. 242 37.88 173 35.40

1450

15' E 2.9

15' W 4.8

2400

15' W 5.3

15' E 4.0

2450

15' E 4.6

15' W 6.0

3400 - 3L GRAPE

15' W 6.4

15' E 4.5

37.87

NL GARPE

| | | | | |
|-------|----------------------|---------------|------|-------|
| 15' E | | | 4.3 | |
| 15' W | | | 5.1 | |
| | + 30 | | | |
| 15' W | | | 3.5 | |
| | + 50 | | | |
| 15' W | | | 3.8 | |
| 15' E | | | 2.6 | |
| | 1+00 | | | |
| 15' E | | | 1.9 | |
| 15' W | | | 3.1 | |
| | 1+50 | | | |
| 15' W | | | 4.2 | |
| 15' E | | | 2.7 | |
| | 2+00 | | | |
| 15' E | | | 4.1 | |
| 15' W | | | 5.1 | |
| | 2+50 | | | |
| 15' W | | | 5.2 | |
| 15' E | | | 4.6 | |
| | 3+00 = S.L. Hawthorn | | | |
| 15' E | | | 5.0 | |
| 15' W | | | 6.1 | |
| T.P. | 2.08 | 36.95 | 4.95 | 37.87 |
| | | N.L. Hawthorn | | |
| 15' W | | | 5.1 | |
| 15' E | | | 4.0 | |

ARCTIC

71

+ 50

| | | | | |
|-------|-----------------|--|-----|--|
| 15' E | | | 4.0 | |
| 15' W | | | 6.1 | |
| | 1+00 | | | |
| 15' W | | | 6.0 | |
| 15' E | | | 4.2 | |
| | 1+50 | | | |
| 15' E | | | 3.5 | |
| 15' W | | | 5.8 | |
| | 2+00 | | | |
| 15' W | | | 6.2 | |
| 15' E | | | 4.1 | |
| | 2+50 | | | |
| 15' E | | | 4.1 | |
| 15' W | | | 6.7 | |
| | 3+00 = S.L. Ivy | | | |
| 15' W | | | 6.4 | |
| 15' E | | | 3.6 | |
| | N.L. Ivy | | | |
| 15' E | | | 3.4 | |
| 15' W | | | 6.1 | |
| | + 50 | | | |
| 15' W | | | 5.6 | |
| 15' E | | | 3.7 | |
| | 1+00 | | | |
| 15' E | | | 1.6 | |
| 15' W | | | 4.9 | |

34.95

1+20

15' W

5.0

15' E

1.5

1+50

15' E

2.9

15' W

5.5

2+00

15' W

7.2

15' E

4.8

2+50

15' E

5.1

15' W

7.1

T.P.

7.43

35.36

7.02

27.93

3+00 = SL JUNIPER

15' W

5.9

15' E

5.0

NL JUNIPER

15' E

4.5

15' W

6.1

+50

15' W

5.8

15' E

3.9

1+00

15' E

3.2

15' W

5.1

ARCTIC

72

1+50

15' W

4.9

15' E

3.9

2+00

15' E

5.7

15' W

4.9

2+50

15' W

5.3

15' E

7.0

2+89

15' E

9.3

2+93

15' W

5.2

2+94

15' W

10.7

15' E

16.3

3+00 = SL Kalmia

15' E

16.3

15' W

10.9

NL Kalmia

15' W

5.0

15' E

9.4

+50

15' E

6.9

15' W

6.0

35.36

1+00

15' W

5.9

15' E

5.4

1+50

15' E

4.0

15' W

5.9

2+00

15' W

4.7

15' E

1.2

2+50

15' E

4.4

35.8

15' W

3.5

3+00 - SL Laurel

15' W

2.7

15' E

Get this

T.P.

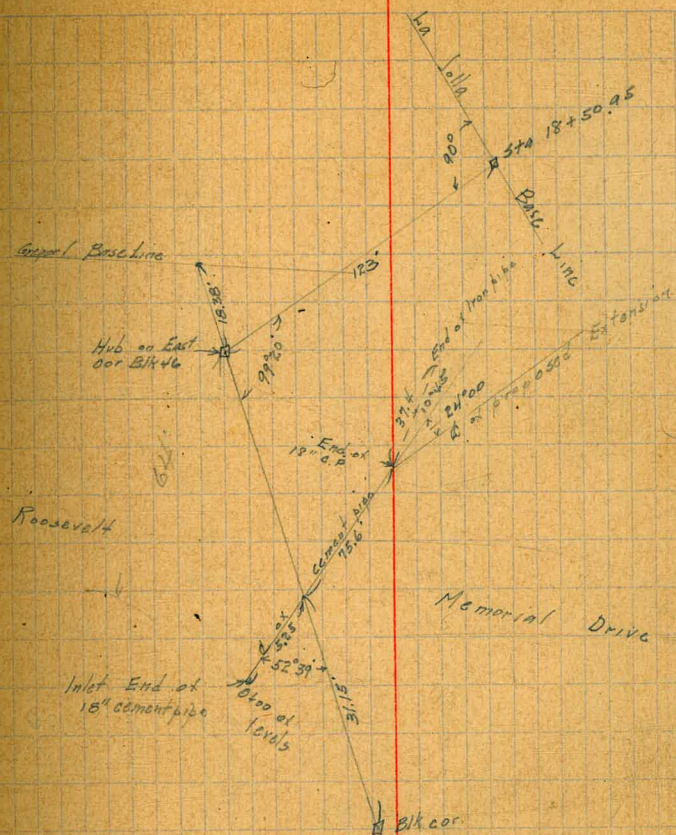
4.13

30.93

4.13
pale N.W.

Gregory
Miller
Shaw
Levels for pipe Drain
on Roosevelt Memorial Drive

| | | | | |
|---------------------------------|---|--------|--------|--------------------|
| | 0.85 | 118.39 | 117.54 | Gas Pole +156.0 |
| 0+00 = Inlet of 18" cement pipe | | 12.85 | 105.54 | Flow Line |
| +00.5 | | 10.5 | 107.9 | |
| +10 | | 8.7 | 109.7 | |
| +30 | | 7.8 | 110.6 | |
| +65 | | 8.9 | 109.5 | |
| +72.5 | | 8.3 | 110.1 | |
| T.P. | 0.09 | 105.83 | 12.65 | 105.74 |
| +80.85 = End of Cement pipe | | 1.9 | 103.7 | = Ground |
| +80.85 = - - - - - | | (7.0) | 98.83 | = Flow line |
| T.P. | 0.10 | 92.90 | 13.03 | 92.80 |
| 1+11.0 | | 5.4 | 97.5 | |
| 1+19 | | 13.0 | 99.9 | |
| T.P. | 0.75 | 81.77 | 11.88 | 81.02 |
| +33 | Not necessary to built drain further than this | | 6.5 | 75.3 |
| +50 | | 8.5 | 73.3 | |
| +68 | | 10.5 | 71.3 | |
| +90 | | 13.6 | 68.2 | |



Lords & Roosevelt Memorial
on sub grade

| | 4.15 | 51.03 | 46.88 | d Grade |
|-----------------------|------|-------|-------|------------|
| 88+41 = end of paving | | | 46.83 | 46.80 |
| 88 | | | 45.30 | 45.75 |
| 87+50 | | | 44.0 | 44.46 |
| 87 | | | 42.8 | 43.15 |
| 86+50 | | | 41.9 | 42.46 |
| 86 | | | 41.0 | 41.35 |
| 85+50 | | | 40.9 | 41.30 |
| 85 | | | 40.9 | 41.25 |
| 84+50 | | | 41.50 | 41.94 ✓ |
| 84 | | | 42.1 | 42.62 ✓ |
| 83+50 | | | 42.9 | 43.30 ✓ |
| 83 | | | 43.3 | 43.65 ✓ |
| 82+50 | | | 43.7 | 44.0 ✓ |
| 82 | | | 43.9 | 44.15 ✓ |
| 81+50 | | | 43.9 | 44.30 ✓ |
| 81 | | | 43.6 | 43.80 ✓ |
| 80+50 | | | 42.8 | 43.20 ✓ |
| 80 | | note. | 41.5 | 42.00 ✓ |
| 79+50 | | | 39.8 | 40.25 ✓ |
| T.P. | 0.57 | 40.53 | 39.96 | |
| 79 | | | 38.1 | 38.5 |
| 78+50 | | | 35.9 | 36.36 ✓ |
| 78 | | | 33.9 | 34.2 ✓ |
| 77+50 | | | 32.2 | 32.86 ✓ |
| 77 | | | 31.3 | 31.7 ✓ |

101 36.5 026 026
22.2 83.0 22.2 102
out 75

| | 40.53 | | to grade |
|--------------|-----------------|-------|--------------|
| 76+50 | | 10.6 | 29.9 30.55 |
| 76 post nail | | 11.5 | 29.0 b 29.40 |
| 75+50 | | 11.9 | 28.6 29.16 |
| 75 | | 12.1 | 28.4 28.93 |
| 74+50 | | 12.3 | 28.2 b 28.70 |
| 74 | | 12.0 | 28.5 29.0 |
| 73+41 | | | 28.61 29.25 |
| 72+91 | Fill 5 on west. | | 29.0 29.50 |
| | 1.40 | 32.34 | |
| 72+50 | | 3.3 | 29.0 29.35 |
| 72 | | 3.6 | 28.7 28.90 |
| 71+50 | | 4.0 | 28.3 28.4 |
| 71 | | 4.5 | 27.8 28.0 |
| 70+50 | | 5.0 | 27.3 27.56 |
| 70 | | 5.5 | 26.8 27.10 |
| 69+50 | | 6.0 | 26.3 26.65 |
| 69 | | 6.5 | 25.8 26.2 |
| 68+50 | | 6.9 | 25.4 25.71 |
| 68 | | 7.4 | 24.9 25.30 |
| 67+50 | | 7.9 | 24.4 24.85 |
| T.P. | 1.26 | 25.68 | 79.2 24.42 |
| 67 | | 1.8 | 23.9 24.4 |
| 66+50 | | 2.6 | 23.1 23.4 |
| 66 | | 3.8 | 21.9 21.8 |
| 65+50 | | 5.1 | 20.6 20.6 |

4568
Roosevelt Drive Grades

| | | | | | |
|-------|------|-------|-------|-------|-------|
| 65 | | | 6.8 | 18.9 | 19.2 |
| 64+50 | | | 8.2 | 17.5 | 17.9 |
| 64 | | | 9.5 | 16.2 | 16.6 |
| 63+50 | | | 10.8 | 14.9 | 15.3 |
| 63 | | | 11.6 | 14.1 | 14.49 |
| 62+50 | | | 12.1 | 13.6 | 13.95 |
| TP | 3.20 | 17.37 | 11.51 | 14.17 | |
| 62 | | | 4.25 | 13.1 | 13.1 |
| 61.50 | | | 4.5 | 12.9 | 13.1 |
| 61 | | | 4.65 | 12.7 | 13.04 |
| 60+50 | | | 4.70 | 12.6 | 12.90 |
| 60 | | | 4.95 | 12.4 | 12.90 |
| 59+50 | | | 4.5 | 12.9 | 13.25 |
| 59 | | | 4.15 | 13.2 | 13.6 |
| 58+50 | | | 4.0 | 13.4 | 13.95 |
| 58 | | | 3.65 | 13.7 | 14.30 |
| 57+50 | | | 3.05 | 14.3 | 14.65 |
| 57 | | | 2.8 | 14.6 | 15.0 |
| 56+50 | | | 2.4 | 15.0 | 15.35 |
| 56 | | | 1.23 | 15.4 | 15.75 |
| | | | 1.17 | 16.0 | 16.15 |
| 55 | | | 1.15 | 16.2 | 16.55 |
| | | | 1.06 | 17.1 | 17.45 |
| 54 | | | 9.9 | 17.8 | 18.35 |
| | | | 8.8 | 18.9 | 19.25 |
| 53 | | | 7.6 | 20.1 | 20.45 |

A is 5' West of old B

1059
713
2972

6) 870
44

27

450
15

1727
207
1470
1084
2364

| | | | | | | | |
|-------------------------------|-------|-------|-------|-------|-------|-------|------|
| 5 | | | 6.2 | 21.5 | 59.2 | 21.80 | |
| 52 | | | 4.9 | 22.8 | 42.2 | 23.45 | 4.57 |
| | | | 3.5 | 24.2 | 32.2 | 24.50 | |
| 51 TP | 12.79 | 38.99 | 1.8 | 25.9 | 15.2 | 26.20 | |
| | | | 10.40 | 27.62 | - | 27.80 | |
| 50 | | | 9.90 | 29.1 | 76.9 | 29.30 | |
| | | | 8.5 | 30.5 | 87.7 | 30.7 | |
| 49 | | | 7.1 | 31.9 | 40.1 | 32.1 | .6 |
| 48+ PC | | | 6.4 | 32.6 | 61.9 | 32.8 | .644 |
| BM concrete collar pole 60000 | | | 4.90 | 34.09 | 4 | 34.09 | 0 |
| | | | 6.21 | 40.30 | 7 | 40.30 | 0 |
| 1 | | | 6.8 | 33.5 | 33.33 | 33.93 | |
| 2 | | | 6.1 | 34.7 | 34.06 | 34.76 | |
| 3 | | | 5.3 | 35.0 | 35.0 | 35.6 | |
| 4 | | | 4.7 | 35.6 | 35.5 | 36.1 | |
| 5 | | | 4.6 | 35.7 | 35.8 | 36.25 | |
| 6-46+0931 E.C. | | | 4.3 | 36.0 | 36.1 | 36.40 | |
| 45+6627 | | | 4.1 | 36.2 | 36.4 | 36.70 | |
| 45+2348 PC | | | 3.7 | 36.6 | 36.7 | 37.0 | |
| | | | 11.60 | 45.69 | 34.09 | | |
| #1 | | | 8.6 | 37.1 | 37.0 | 37.6 | |
| #2 | | | 8.0 | 37.7 | 37.7 | 38.3 | |
| #3 | | | 7.1 | 38.6 | 38.5 | 39.1 | |
| #4 | | | 6.3 | 39.4 | 39.4 | 40.00 | |
| #5 | | | 5.4 | 40.3 | 40.3 | 40.90 | |
| #6 | | | 4.2 | 41.5 | 41.3 | 41.9 | |
| #7 | | | 3.1 | 42.6 | 42.4 | 43.0 | |

This is 5' West of A

$\Delta 50^{\circ} 02' 30''$
 $r = 780$

Drive into 20 parts

| | 4569 | | Grade. |
|-----------|----------|----------|--------|
| # 8 | | | 43.7 |
| # 9 | 1726 | 57.84 | 44.9 |
| # 10 | | | 45.7 |
| # 11 | | | 46.5 |
| # 12 | | | 47.2 |
| # 13 | | | 48.0 |
| # 14 | | | 48.9 |
| # 15 | | | 49.8 |
| # 16 | | | 50.0 |
| # 17 | | | 51.2 |
| # 18 | | | 53 |
| # 19 | | | 53.5 |
| # 19 | | | 54.1 |
| # 19 | | | 55.7 |
| # 20 = PC | 11.93 | 68.93 | 55.3 |
| | about 57 | 38+31.95 | 56.8 |
| -50 | | | 58.1 |
| -100 | | | 59.5 |
| -150 | | | 60.8 |
| -200 | | | 62.9 |
| -250 | | | 65.1 |
| -300 | | | 66.8 |
| -350 | 10.93 | 74.23 | 68.9 |
| -400 | | | 69.9 |
| -450 | | | 70.5 |
| -500 | | | 71.0 |
| -550 | | | 71.6 |
| -600 | | | 72.4 |
| -650 | | | 73.7 |

| | Grade | | |
|-----------|-------|-------|-------|
| # 5 | 42 | 75.21 | 75.17 |
| # 6 | 3.3 | 76.1 | 76.27 |
| # 7 = PC | 2.1 | 77.0 | 77.39 |
| # 8 | 0.5 | 78.9 | 79.02 |
| T.P. | 13.5 | 88.54 | |
| # 9 | 8.0 | 80.5 | 80.69 |
| # 10 | 6.6 | 81.9 | 82.32 |
| # 11 | 5.9 | 82.6 | 82.9 |
| # 12 | 5.3 | 83.2 | 83.5 |
| # 13 | 4.9 | 83.6 | 84.1 |
| # 14 = PC | 4.3 | 84.2 | 84.7 |
| -69 = end | 2.6 | 85.9 | 86.25 |
| # 15 | 9.9 | 80.5 | 87.41 |
| # 16 | 9.3 | 87.1 | 87.80 |
| # 17 | 8.5 | 87.9 | 88.23 |
| # 18 | 7.6 | 88.8 | 89.09 |
| # 19 | 6.8 | 89.6 | 89.75 |
| # 20 | 5.9 | 90.5 | 90.42 |
| # 21 | 5.1 | 91.0 | 91.08 |
| # 22 | 4.9 | 91.5 | 91.45 |
| # 23 | 4.7 | 91.7 | 91.80 |
| # 24 | 4.7 | 91.7 | 91.85 |
| # 25 | 4.8 | 91.6 | 91.92 |
| # 26 | 4.8 | 91.6 | 92.00 |
| # 27 | 4.2 | 92.2 | 92.4 |

343
58
90
100
100
100
100

9644
Torrey Road Grades & Grade.

| | | | | | |
|----------------------|-------------------------|------|-------|--------|------|
| 66 | | 4.2 | 92.2 | 92.2 | 3.07 |
| +50 | 3.53 | 3.8 | 92.6 | 92.2 | 3.22 |
| 66 | 92.79 92.7 102.16 | 2.7 | 93.7 | 93.8 | 8.15 |
| +23.26 | | 1.9 | 94.5 | 94.67 | 7.50 |
| +43.26 PC. | | 1.4 | 95.0 | 95.35 | 6.31 |
| # 1 | | 6.4 | 95.8 | 96.10 | 4.06 |
| # 2 | | 5.7 | 96.5 | 96.85 | 5.31 |
| # 3 | | 5.1 | 97.1 | 97.60 | 4.66 |
| # 4 | | 4.2 | 98.0 | 98.35 | 3.61 |
| # 5 | | 3.7 | 98.5 | 99.10 | 3.06 |
| 67+61.49 EC. | | 3.3 | 98.9 | 99.45 | 2.91 |
| +81.5 | | 2.7 | 99.5 | 99.85 | 2.31 |
| 68 | | 2.5 | 99.7 | 100.05 | 2.11 |
| +50 | | 2.7 | 99.5 | 100.25 | 1.91 |
| +70 | | 3.3 | 98.9 | 99.30 | 2.89 |
| 69 | | 4.0 | 98.2 | 98.50 | 2.44 |
| +50 | X | 6.6 | 95.6 | 95.95 | 3.56 |
| 70 | | 8.6 | 93.6 | 93.40 | 6.11 |
| of end of curb, 0.71 | 99.51 | 3.36 | 98.80 | | |
| +38.6 = 17+89.52 PT. | | | | 91.44 | 7.58 |
| # 1 | | | | 89.50 | 4.52 |
| # 2 | | | | 87.56 | 1.46 |
| # 3 | 88.93 | 2.7 | 88.2 | 86.5 | 2.43 |
| # 4 | | 3.7 | 86.2 | 85.5 | 3.23 |
| # 5 | | 4.3 | 82.6 | 84.9 | 4.03 |
| # 6 | | 4.6 | 84.3 | 84.30 | 4.01 |

350
58
90
100
100
100

3
102
11.96
87.06
1.87
88.93

68
51.0
3.33
403.0
14.80
7.94

51.0
3.33
3.58
2.55
2.30
1.96
3.50

27.1
96.07
78

Station

| | | | | | | | |
|---------------------|-------|------------|------|--------|-----------|--------|-------|
| # 7 | | 4.6 | 84.3 | | 84.54 | 4.40 | |
| # 8 | | 4.5 | 84.4 | | 84.36 | 4.57 | |
| 9 | | 4.6 | 84.4 | | 84.15 | 4.75 | |
| # 10 = PC. 14+39.88 | 3.66 | 87.81 | 4.9 | 84.0 | TP. 84.15 | 84.0 | 4.93 |
| 11 | | | | | | 83.8 | 4.01 |
| +50 | | | | | | 83.55 | 4.24 |
| 13 | | 83.33 | 4.02 | 83.79 | 10.04 | 83.30 | 4.51 |
| +50 | | | | | | 83.05 | |
| +25 | | | | | | 83.60 | |
| 12 | | | | | | 84.7 | 3.03 |
| +50 | | | | | | 86.7 | |
| 11 | 12.83 | 105.13 | 1.13 | 92.20 | | 88.7 | 4.55 |
| +50 | | | | | | 91.44 | 13.67 |
| 10 | | | | | | 94.92 | 10.21 |
| +50 | | | | | | 98.40 | 6.72 |
| 9+19.99 PT. | | | | | | 100.30 | 4.33 |
| # 1 | 11.71 | 114.64 | 2.00 | 102.93 | 10.415 | 102.9 | 11.54 |
| # 2 | | | | | | 104.7 | 9.24 |
| # 3 | | Δ 2.4° | | | | 106.4 | 3.24 |
| # 4 | | P = 936.88 | | | | 107.8 | 6.84 |
| # 5 | | | | | | 108.5 | 5.1 |
| # 6 = PRC = 7+22.11 | | | | | | 109.8 | |
| # 1 | | Δ 3 | | | | 110.9 | 3.74 |
| # 2 = PC = 6+54.02 | | | | | | 112.0 | |

350
58
90
100
100
100

350 book 1018 page 75 for alignment

Torrey Road Grades

| | | | | Grades | |
|------------------------|-------|--------|-----|--------|------|
| 6 | | | | 113.92 | 1042 |
| 5+66.77 PT | | | | 115.07 | 227 |
| #1 | | | | 116.11 | 823 |
| #2 | | | | 117.15 | 719 |
| #3 | | | | 118.19 | 615 |
| #4 | | | | 119.23 | 511 |
| #5 | break | | | 120.27 | 407 |
| #6 | 13.00 | 135.54 | 003 | 121.93 | 304 |
| 3+585~ 3+583.77 PG. | break | | | 123.58 | 1176 |
| 3 | | | | 127.27 | 812 |
| 2+4659 | break | | | 130.96 | 435 |
| CC | | | | 132.63 | 272 |
| 2+05.01 | 13.72 | 149.91 | 026 | 134.28 | 106 |
| 1+70 | | | | 137.08 | 1089 |
| 1+36.74 | | | | 139.88 | 909 |
| 0+97.07 | | | | 143.28 | 662 |
| 0+50 | 8.66 | 155.96 | 081 | 146.70 | 121 |
| 00 | | | | 150.70 | |

see book 1018-76 for Alignment

Levels on d. of Proposed
Culv at 103 + 49

| | 1.01 | 17.28 | 16.27 | 16.27 | 16.27 |
|---|------|-------|-------|-------|---|
| 2d' Ext to right of Culv. = end of 36" pipe | | 12.0 | 5.3 | | = low line pipe covered with mud. |
| 24' " " " " " " | | 9.6 | 7.7 | | |
| 18' " " " " " " | | 7.9 | 9.4 | | |
| 8' " " " " " " | | 9.2 | 8.1 | | |
| 7.9' " " " " " " | | 12.1 | 5.2 | | |
| 6' " " " " " " | | 11.6 | 5.7 | | |
| 25' W. of d. of Bldg. | | 12.0 | 5.3 | | |
| 56' " " " " " " | | 11.8 | 5.5 | | |
| | | 12.6 | 4.7 | | Elev. of Mud = in R.R. cut. |
| 22' SW of last. | | 15.0 | 2.3 | | = low line of R.R. cut. |

KEITH'S RAILROAD CURVE TABLES.

Published by KEUFFEL & ESSER CO., New York.

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HOW TO USE KEITH'S TABLES.

EXAMPLE.

Wanted a Curve with an Ext. of about 12 ft. Angle
of Intersection or I. P. = 23° 20' to the R. at Station
542+72.

Ext. in Tab. IV opposite 23° 20' = 120.87
120.87 + 12 = 10.07. Say a 10° Curve.

Tan. in Tab. IV opp. 23° 20' = 1183.1
1183.1 + 10 = 118.31.

Tab. V. correction for A. 23° 20' for a 10° Cur. = 0.16
118.31 + 0.16 = 118.47 = corrected Tangent.

(If corrected Ext. is required find in same way)
Ang. 23° 20' = 23.33° + 10 = 2.3333 = L. C.

| | |
|-----------------------------|------------------------|
| 2° 19½' = def. for sta. 542 | I. P. = sta. 542+72 |
| 4° 49½' = " " " +50 | Tan. = 1.18.47 |
| 7° 19½' = " " " 543 | B. C. = sta. 541+53.53 |
| 9° 49½' = " " " +50 | L. C. = 2.33.33 |
| 11° 40' = " " " 543+ | E. C. = sta. 543+86.86 |
| | 86.86 |

100 - 53.53 = 46.47 × 3' (def. for 1 ft. of 10° Cur.) = 139.41' =
2° 19½' = def. for sta. 542.

Def. for 50 ft. = 2° 30' for a 10° Curve.

Def. for 36.86 ft. = 1° 50½' for a 10° Curve

(These tables are published in Field Books of
KEUFFEL & ESSER Co., New York, N. Y.)

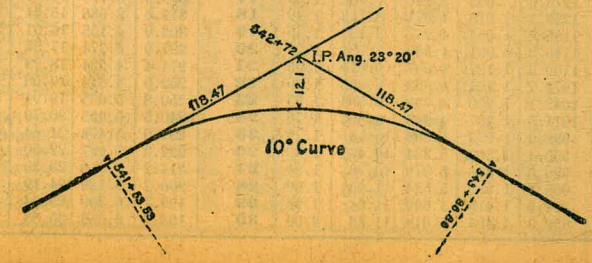


Table VI. Deflections for Sub Chords for Short Radius Curves.

| Degree of Curve | Radius 50 sin. def. ang. | 1/2 sub chord R = sin of def. angle | | | | Length of arc for 100 ft. |
|-----------------|-----------------------------|--|--------|--------|--------|---------------------------|
| | | 12.5 Ft. | 15 Ft. | 20 Ft. | 25 Ft. | |
| | | 30° | 193.18 | 1° 51' | 2° 17' | |
| 32° | 181.39 | 1° 59' | 2° 25' | 3° 10' | 3° 58' | 101.33 |
| 34° | 171.01 | 2° 06' | 2° 33' | 3° 21' | 4° 12' | 101.48 |
| 36° | 161.80 | 2° 13' | 2° 41' | 3° 33' | 4° 26' | 101.66 |
| 38° | 153.58 | 2° 20' | 2° 49' | 3° 44' | 4° 40' | 101.85 |
| 40° | 146.19 | 2° 27' | 2° 57' | 3° 55' | 4° 54' | 102.06 |
| 42° | 139.52 | 2° 34' | 3° 05' | 4° 07' | 5° 08' | 102.29 |
| 44° | 133.47 | 2° 41' | 3° 13' | 4° 18' | 5° 22' | 102.53 |
| 46° | 127.97 | 2° 48' | 3° 21' | 4° 29' | 5° 36' | 102.76 |
| 48° | 122.92 | 2° 55' | 3° 29' | 4° 40' | 5° 50' | 103.00 |
| 50° | 118.31 | 3° 02' | 3° 38' | 4° 51' | 6° 04' | 103.24 |
| 52° | 114.06 | 3° 09' | 3° 46' | 5° 02' | 6° 17' | 103.54 |
| 54° | 110.11 | 3° 16' | 3° 54' | 5° 13' | 6° 31' | 103.84 |
| 56° | 106.50 | 3° 22' | 4° 02' | 5° 23' | 6° 44' | 104.14 |
| 58° | 103.14 | 3° 29' | 4° 10' | 5° 34' | 6° 57' | 104.43 |
| 60° | 100.00 | 3° 35' | 4° 18' | 5° 44' | 7° 11' | 104.72 |

CURVE FORMULAS.

| | | |
|--|---|---|
| $T = R \tan \frac{1}{2} I$ | $R = T \cot. \frac{1}{2} I$ | Chord def. = $\frac{\text{chord}^2}{R}$ |
| $T = \frac{50 \tan. \frac{1}{2} I}{\text{Sin. D}}$ | $R = 50$ | |
| $\text{Sin. D} = \frac{50}{R}$ | $\frac{\text{Sin. D}}{R}$ | No. chords = $\frac{1}{2} \frac{I}{D}$ |
| $\text{Sin. D} = \frac{50 \tan. \frac{1}{2} I}{T}$ | $E = R \text{ ex. sec. } \frac{1}{2} I$ | Tan. def. = $\frac{1}{2}$ chord def. |
| | $E = T \tan \frac{1}{2} I$ | |

The square of any distance, divided by twice the radius, will equal the distance from tangent to curve, very nearly.

Table IV. contains Tangents and External to a 1° curve. Tan. and Ext. to any other radius may be found, nearly enough, by dividing the Tan. or Ext. opposite the given Central Angle by the given degree of curve.

To find Deg. of Curve, having the Central Angle and Tangent: Divide Tan. opposite the given Central Angle by the given Tangent.

To find Deg. of Curve, having the Central Angle and Tangent: Divide Ext. opposite the given Central Angle by the given External.

To find Nat. Tan. and Nat. Ex. Sec. for any angle by Table IV.: Tan. or Ext. of twice the given angle divided by the radius of a 1° curve will be the Nat. Tan. or Nat. Ex. Sec.

To find angle for a given distance and deflection.

Rule 1. Multiply the given distance by .01745 (def. for 1° for 1 ft.), and divide given deflection by the product.

Rule 2. Multiply given deflection by 57.3, and divide the product by the given distance.

To find deflection for a given angle and distance: Multiply the angle by .01745, and the product by the distance.

RIGHT ANGLE TRIANGLES. - Square the altitude, divide by twice the base. Add quotient to base for hypotenuse.

Given Base 100, Alt 10. $10^2 \div 200 = .5$. $100 + .5 = 100.5$ hyp.

Given Hyp. 100, Alt. 25. $25^2 \div 200 = 3.125$. $100 - 3.125 = 96.875 =$ Base.

Error in first example, .002; in last, .045.

To find Tons of Rail in one mile of track: multiply weight per yard by 11, and divide by 7.

Natural Sines

| deg. | 0' | 10' | 20' | 30' | 40' | 50' | deg. | 0' | 10' | 20' | 30' | 40' | 50' | deg. | |
|------|------|------|------|------|------|------|------|----|------|------|------|------|------|------|----|
| 0 | 0000 | 0029 | 0058 | 0087 | 0116 | 0145 | 89 | 40 | 6428 | 6450 | 6472 | 6494 | 6517 | 6539 | 49 |
| 1 | 0175 | 0204 | 0233 | 0262 | 0291 | 0320 | 88 | 41 | 6561 | 6583 | 6604 | 6626 | 6648 | 6670 | 48 |
| 2 | 0349 | 0378 | 0407 | 0436 | 0465 | 0494 | 87 | 42 | 6661 | 6713 | 6734 | 6756 | 6777 | 6799 | 47 |
| 3 | 0523 | 0552 | 0581 | 0610 | 0640 | 0669 | 86 | 43 | 6820 | 6841 | 6862 | 6884 | 6905 | 6926 | 46 |
| 4 | 0698 | 0727 | 0756 | 0785 | 0814 | 0843 | 85 | 44 | 6947 | 6967 | 6988 | 7009 | 7030 | 7051 | 45 |
| 5 | 0872 | 0901 | 0929 | 0958 | 0987 | 1016 | 84 | 45 | 7071 | 7092 | 7112 | 7133 | 7153 | 7173 | 44 |
| 6 | 1045 | 1074 | 1103 | 1132 | 1161 | 1190 | 83 | 46 | 7193 | 7214 | 7234 | 7254 | 7274 | 7294 | 43 |
| 7 | 1219 | 1248 | 1279 | 1305 | 1334 | 1363 | 82 | 47 | 7314 | 7333 | 7353 | 7373 | 7392 | 7412 | 42 |
| 8 | 1392 | 1421 | 1449 | 1478 | 1507 | 1536 | 81 | 48 | 7431 | 7451 | 7470 | 7490 | 7509 | 7528 | 41 |
| 9 | 1564 | 1593 | 1622 | 1650 | 1679 | 1708 | 80 | 49 | 7547 | 7566 | 7585 | 7604 | 7623 | 7642 | 40 |
| 10 | 1736 | 1765 | 1794 | 1822 | 1851 | 1880 | 79 | 50 | 7660 | 7679 | 7698 | 7716 | 7735 | 7753 | 39 |
| 11 | 1908 | 1937 | 1965 | 1994 | 2022 | 2051 | 78 | 51 | 7771 | 7790 | 7808 | 7826 | 7844 | 7862 | 38 |
| 12 | 2079 | 2108 | 2136 | 2164 | 2193 | 2221 | 77 | 52 | 7880 | 7898 | 7916 | 7934 | 7951 | 7969 | 37 |
| 13 | 2250 | 2278 | 2306 | 2334 | 2363 | 2391 | 76 | 53 | 7986 | 8004 | 8021 | 8039 | 8056 | 8073 | 36 |
| 14 | 2419 | 2447 | 2476 | 2504 | 2532 | 2560 | 75 | 54 | 8090 | 8107 | 8124 | 8141 | 8158 | 8175 | 35 |
| 15 | 2588 | 2616 | 2644 | 2672 | 2700 | 2728 | 74 | 55 | 8192 | 8208 | 8225 | 8241 | 8258 | 8274 | 34 |
| 16 | 2756 | 2784 | 2812 | 2840 | 2868 | 2896 | 73 | 56 | 8290 | 8307 | 8323 | 8339 | 8355 | 8371 | 33 |
| 17 | 2924 | 2952 | 2979 | 3007 | 3035 | 3062 | 72 | 57 | 8387 | 8403 | 8418 | 8434 | 8450 | 8465 | 32 |
| 18 | 3090 | 3118 | 3145 | 3173 | 3201 | 3228 | 71 | 58 | 8480 | 8496 | 8511 | 8526 | 8542 | 8557 | 31 |
| 19 | 3256 | 3283 | 3311 | 3338 | 3365 | 3393 | 70 | 59 | 8572 | 8587 | 8601 | 8616 | 8631 | 8646 | 30 |
| 20 | 3420 | 3448 | 3475 | 3502 | 3529 | 3557 | 69 | 60 | 8660 | 8675 | 8689 | 8704 | 8718 | 8732 | 29 |
| 21 | 3584 | 3611 | 3638 | 3665 | 3692 | 3719 | 68 | 61 | 8746 | 8760 | 8774 | 8788 | 8802 | 8816 | 28 |
| 22 | 3746 | 3773 | 3800 | 3827 | 3854 | 3881 | 67 | 62 | 8829 | 8843 | 8857 | 8870 | 8884 | 8897 | 27 |
| 23 | 3907 | 3934 | 3961 | 3987 | 4014 | 4041 | 66 | 63 | 8910 | 8923 | 8936 | 8949 | 8962 | 8975 | 26 |
| 24 | 4067 | 4094 | 4120 | 4147 | 4173 | 4200 | 65 | 64 | 8988 | 9001 | 9013 | 9026 | 9038 | 9051 | 25 |
| 25 | 4226 | 4253 | 4279 | 4305 | 4331 | 4358 | 64 | 65 | 9063 | 9075 | 9088 | 9100 | 9112 | 9124 | 24 |
| 26 | 4384 | 4410 | 4436 | 4462 | 4488 | 4514 | 63 | 66 | 9135 | 9147 | 9159 | 9171 | 9182 | 9194 | 23 |
| 27 | 4540 | 4566 | 4592 | 4617 | 4643 | 4669 | 62 | 67 | 9205 | 9216 | 9228 | 9239 | 9250 | 9261 | 22 |
| 28 | 4695 | 4720 | 4746 | 4772 | 4797 | 4823 | 61 | 68 | 9272 | 9283 | 9293 | 9304 | 9315 | 9325 | 21 |
| 29 | 4848 | 4874 | 4899 | 4924 | 4950 | 4975 | 60 | 69 | 9336 | 9346 | 9356 | 9367 | 9377 | 9387 | 20 |
| 30 | 5000 | 5025 | 5050 | 5075 | 5100 | 5125 | 59 | 70 | 9397 | 9407 | 9417 | 9426 | 9436 | 9446 | 19 |
| 31 | 5150 | 5175 | 5200 | 5225 | 5250 | 5275 | 58 | 71 | 9455 | 9465 | 9474 | 9483 | 9492 | 9502 | 18 |
| 32 | 5299 | 5324 | 5348 | 5373 | 5398 | 5422 | 57 | 72 | 9511 | 9520 | 9528 | 9537 | 9546 | 9555 | 17 |
| 33 | 5446 | 5471 | 5495 | 5519 | 5544 | 5568 | 56 | 73 | 9563 | 9572 | 9580 | 9588 | 9596 | 9605 | 16 |
| 34 | 5592 | 5616 | 5640 | 5664 | 5688 | 5712 | 55 | 74 | 9613 | 9621 | 9628 | 9636 | 9644 | 9652 | 15 |
| 35 | 5736 | 5760 | 5783 | 5807 | 5831 | 5854 | 54 | 75 | 9659 | 9667 | 9674 | 9681 | 9689 | 9696 | 14 |
| 36 | 5878 | 5901 | 5925 | 5948 | 5972 | 5995 | 53 | 76 | 9703 | 9710 | 9717 | 9724 | 9730 | 9737 | 13 |
| 37 | 6018 | 6041 | 6065 | 6088 | 6111 | 6134 | 52 | 77 | 9744 | 9750 | 9757 | 9763 | 9769 | 9775 | 12 |
| 38 | 6157 | 6180 | 6202 | 6225 | 6248 | 6271 | 51 | 78 | 9781 | 9787 | 9793 | 9799 | 9805 | 9811 | 11 |
| 39 | 6293 | 6316 | 6338 | 6361 | 6383 | 6406 | 50 | 79 | 9816 | 9822 | 9827 | 9833 | 9838 | 9843 | 10 |

| deg. | 0' | 10' | 20' | 30' | 40' | 50' | deg. |
|------|------|------|------|------|--------|--------|------|
| 80 | 9848 | 9853 | 9858 | 9863 | 9868 | 9872 | 9 |
| 81 | 9877 | 9881 | 9886 | 9890 | 9894 | 9898 | 8 |
| 82 | 9903 | 9907 | 9911 | 9914 | 9918 | 9922 | 7 |
| 83 | 9925 | 9929 | 9932 | 9936 | 9939 | 9942 | 6 |
| 84 | 9945 | 9948 | 9951 | 9954 | 9957 | 9959 | 5 |
| 85 | 9962 | 9964 | 9967 | 9969 | 9971 | 9974 | 4 |
| 86 | 9976 | 9978 | 9980 | 9981 | 9983 | 9985 | 3 |
| 87 | 9986 | 9988 | 9989 | 9990 | 9992 | 9993 | 2 |
| 88 | 9994 | 9995 | 9996 | 9997 | 9997 | 9998 | 1 |
| 89 | 9998 | 9999 | 9999 | 9999 | 1.0000 | 1.0000 | 0 |

Natural Cosines

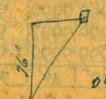
Natural Tangents

| sec. | 0' | 10' | 20' | 30' | 40' | 50' | sec. | 0' | 10' | 20' | 30' | 40' | 50' | sec. | |
|------|------|------|------|------|------|------|------|----|--------|--------|--------|--------|--------|--------|----|
| 0 | 0000 | 0020 | 0058 | 0087 | 0116 | 0145 | 89 | 40 | 8391 | 8441 | 8491 | 8541 | 8591 | 8642 | 49 |
| 1 | 0175 | 0204 | 0233 | 0262 | 0291 | 0320 | 88 | 41 | 8693 | 8744 | 8796 | 8847 | 8899 | 8952 | 48 |
| 2 | 0349 | 0378 | 0407 | 0437 | 0466 | 0495 | 87 | 42 | 9004 | 9057 | 9110 | 9163 | 9217 | 9271 | 47 |
| 3 | 0524 | 0553 | 0582 | 0612 | 0641 | 0670 | 86 | 43 | 9325 | 9380 | 9435 | 9490 | 9545 | 9601 | 46 |
| 4 | 0699 | 0729 | 0758 | 0787 | 0816 | 0846 | 85 | 44 | 9657 | 9713 | 9770 | 9827 | 9884 | 9942 | 45 |
| 5 | 0875 | 0904 | 0934 | 0963 | 0992 | 1022 | 84 | 45 | 1.0000 | 1.0058 | 1.0117 | 1.0176 | 1.0235 | 1.0295 | 44 |
| 6 | 1051 | 1080 | 1110 | 1139 | 1169 | 1198 | 83 | 46 | 1.0355 | 1.0416 | 1.0477 | 1.0533 | 1.0599 | 1.0661 | 43 |
| 7 | 1228 | 1257 | 1287 | 1317 | 1346 | 1376 | 82 | 47 | 1.0724 | 1.0786 | 1.0850 | 1.0913 | 1.0977 | 1.1041 | 42 |
| 8 | 1405 | 1435 | 1465 | 1495 | 1524 | 1554 | 81 | 48 | 1.1106 | 1.1171 | 1.1237 | 1.1303 | 1.1369 | 1.1436 | 41 |
| 9 | 1584 | 1614 | 1644 | 1673 | 1703 | 1733 | 80 | 49 | 1.1504 | 1.1571 | 1.1640 | 1.1708 | 1.1778 | 1.1847 | 40 |
| 10 | 1763 | 1793 | 1823 | 1853 | 1883 | 1914 | 79 | 50 | 1.1918 | 1.1988 | 1.2059 | 1.2131 | 1.2203 | 1.2276 | 39 |
| 11 | 1944 | 1974 | 2004 | 2035 | 2065 | 2095 | 78 | 51 | 1.2349 | 1.2423 | 1.2497 | 1.2572 | 1.2647 | 1.2723 | 38 |
| 12 | 2126 | 2156 | 2186 | 2217 | 2247 | 2278 | 77 | 52 | 1.2799 | 1.2876 | 1.2954 | 1.3032 | 1.3111 | 1.3190 | 37 |
| 13 | 2300 | 2330 | 2370 | 2401 | 2432 | 2462 | 76 | 53 | 1.3270 | 1.3351 | 1.3432 | 1.3514 | 1.3597 | 1.3680 | 36 |
| 14 | 2493 | 2524 | 2555 | 2586 | 2617 | 2648 | 75 | 54 | 1.3764 | 1.3848 | 1.3934 | 1.4019 | 1.4106 | 1.4193 | 35 |
| 15 | 2679 | 2711 | 2742 | 2773 | 2805 | 2836 | 74 | 55 | 1.4281 | 1.4370 | 1.4460 | 1.4550 | 1.4641 | 1.4733 | 34 |
| 16 | 2867 | 2899 | 2931 | 2962 | 2994 | 3026 | 73 | 56 | 1.4826 | 1.4919 | 1.5013 | 1.5108 | 1.5204 | 1.5301 | 33 |
| 17 | 3057 | 3089 | 3121 | 3153 | 3185 | 3217 | 72 | 57 | 1.5399 | 1.5497 | 1.5597 | 1.5697 | 1.5798 | 1.5900 | 32 |
| 18 | 3249 | 3281 | 3314 | 3346 | 3378 | 3411 | 71 | 58 | 1.6003 | 1.6107 | 1.6212 | 1.6319 | 1.6426 | 1.6534 | 31 |
| 19 | 3443 | 3476 | 3508 | 3541 | 3574 | 3607 | 70 | 59 | 1.6643 | 1.6753 | 1.6864 | 1.6977 | 1.7090 | 1.7205 | 30 |
| 20 | 3640 | 3673 | 3706 | 3739 | 3772 | 3805 | 69 | 60 | 1.7321 | 1.7437 | 1.7556 | 1.7675 | 1.7797 | 1.7917 | 29 |
| 21 | 3839 | 3872 | 3906 | 3939 | 3973 | 4006 | 68 | 61 | 1.8040 | 1.8165 | 1.8291 | 1.8418 | 1.8546 | 1.8676 | 28 |
| 22 | 4040 | 4074 | 4108 | 4142 | 4176 | 4210 | 67 | 62 | 1.8807 | 1.8940 | 1.9074 | 1.9210 | 1.9347 | 1.9486 | 27 |
| 23 | 4245 | 4279 | 4314 | 4348 | 4383 | 4417 | 66 | 63 | 1.9626 | 1.9768 | 1.9912 | 2.0057 | 2.0204 | 2.0353 | 26 |
| 24 | 4452 | 4487 | 4522 | 4557 | 4592 | 4628 | 65 | 64 | 2.0503 | 2.0655 | 2.0809 | 2.0965 | 2.1123 | 2.1283 | 25 |
| 25 | 4663 | 4699 | 4734 | 4770 | 4806 | 4841 | 64 | 65 | 2.1445 | 2.1609 | 2.1775 | 2.1943 | 2.2113 | 2.2286 | 24 |
| 26 | 4877 | 4913 | 4950 | 4986 | 5022 | 5059 | 63 | 66 | 2.2460 | 2.2637 | 2.2817 | 2.2998 | 2.3183 | 2.3369 | 23 |
| 27 | 5095 | 5132 | 5169 | 5206 | 5243 | 5280 | 62 | 67 | 2.3559 | 2.3750 | 2.3945 | 2.4142 | 2.4342 | 2.4545 | 22 |
| 28 | 5317 | 5354 | 5392 | 5430 | 5467 | 5505 | 61 | 68 | 2.4751 | 2.4960 | 2.5172 | 2.5386 | 2.5605 | 2.5826 | 21 |
| 29 | 5543 | 5581 | 5619 | 5658 | 5696 | 5735 | 60 | 69 | 2.6051 | 2.6279 | 2.6511 | 2.6746 | 2.6985 | 2.7228 | 20 |
| 30 | 5774 | 5812 | 5851 | 5890 | 5930 | 5969 | 59 | 70 | 2.7475 | 2.7725 | 2.7980 | 2.8239 | 2.8502 | 2.8770 | 19 |
| 31 | 6009 | 6048 | 6088 | 6128 | 6168 | 6208 | 58 | 71 | 2.9042 | 2.9310 | 2.9600 | 2.9887 | 3.0178 | 3.0475 | 18 |
| 32 | 6249 | 6289 | 6330 | 6371 | 6412 | 6453 | 57 | 72 | 3.0777 | 3.1084 | 3.1397 | 3.1716 | 3.2041 | 3.2371 | 17 |
| 33 | 6494 | 6536 | 6577 | 6619 | 6661 | 6703 | 56 | 73 | 3.2709 | 3.3052 | 3.3403 | 3.3759 | 3.4124 | 3.4495 | 16 |
| 34 | 6745 | 6787 | 6830 | 6873 | 6916 | 6959 | 55 | 74 | 3.4874 | 3.5261 | 3.5656 | 3.6059 | 3.6470 | 3.6891 | 15 |
| 35 | 7002 | 7046 | 7089 | 7133 | 7177 | 7221 | 54 | 75 | 3.7321 | 3.7760 | 3.8208 | 3.8657 | 3.9136 | 3.9617 | 14 |
| 36 | 7265 | 7310 | 7355 | 7400 | 7445 | 7490 | 53 | 76 | 4.0108 | 4.0611 | 4.1126 | 4.1653 | 4.2193 | 4.2747 | 13 |
| 37 | 7536 | 7581 | 7627 | 7673 | 7720 | 7766 | 52 | 77 | 4.3315 | 4.3897 | 4.4494 | 4.5107 | 4.5736 | 4.6382 | 12 |
| 38 | 7813 | 7860 | 7907 | 7954 | 8002 | 8050 | 51 | 78 | 4.7046 | 4.7729 | 4.8430 | 4.9152 | 4.9894 | 5.0658 | 11 |
| 39 | 8098 | 8146 | 8195 | 8243 | 8292 | 8342 | 50 | 79 | 5.1446 | 5.2257 | 5.3093 | 5.3955 | 5.4845 | 5.5764 | 10 |

| sec. | 0' | 10' | 20' | 30' | 40' | 50' | sec. |
|------|--------|--------|--------|---------|---------|---------|------|
| 80 | 5.6713 | 5.7694 | 5.8708 | 5.9758 | 6.0844 | 6.1970 | 9 |
| 81 | 6.3138 | 6.4348 | 6.5606 | 6.6912 | 6.8269 | 6.9682 | 8 |
| 82 | 7.1154 | 7.2687 | 7.4287 | 7.5958 | 7.7704 | 7.9530 | 7 |
| 83 | 8.1443 | 8.3450 | 8.5555 | 8.7769 | 9.0098 | 9.2553 | 6 |
| 84 | 9.5144 | 9.7882 | 10.078 | 10.385 | 10.7111 | 11.059 | 5 |
| 85 | 11.430 | 11.826 | 12.250 | 12.700 | 13.197 | 13.727 | 4 |
| 86 | 14.300 | 14.924 | 15.605 | 16.350 | 17.169 | 18.075 | 3 |
| 87 | 19.081 | 20.206 | 21.470 | 22.903 | 24.542 | 26.432 | 2 |
| 88 | 28.636 | 31.242 | 34.368 | 38.189 | 42.964 | 49.104 | 1 |
| 89 | 57.290 | 68.750 | 85.940 | 114.588 | 171.885 | 343.770 | 0 |

Natural Cotangents

0699
36
4194
4893
53124



0729
76
4374

100.00
1717
8253

706
3709
7818
2453
21040
10520

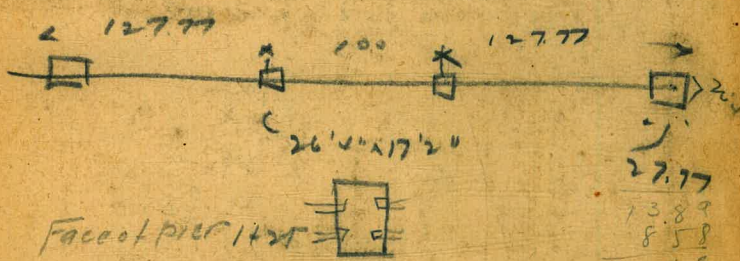
from tan = 18.72
17.11
1.6



160
21
1056
900
808
1000

9223
110+88
1118
1717
8.58
127.27
512
119.19
1717
13.636

26'4" X 17'2" - Piers - C to E - 100
to S end of deck to C pier = 127.77



CH 100

100
100
100

7753
27.77
105.30
77.53
13.89
27.77
119.19
85.8
127.77

27.77
13.89
8.58
27.77
77.53
36.35
27.77
91.42
77.53
13.89

