

EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and
SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

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

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	0
1	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	1
2	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	2
3	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	3
4	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	4
5	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	5
6	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	6
7	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	7
8	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	8
9	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	9
10	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	10
11	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	11
12	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	12
13	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	13
14	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	14
15	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	15
16	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	16
17	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	17
18	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	18
19	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	19
20	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	20
21	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	21
22	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	22
23	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	23
24	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	24
25	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	25
26	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	26
27	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	27
28	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	28
29	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	29
30	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	30
31	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	31
32	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	32
33	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	33
34	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	34
35	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	35
36	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	36
37	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	37
38	46.0	46.1	46.2	46.3	46.4	46.5	46.6	46.7	46.8	46.9	38
39	47.0	47.1	47.2	47.3	47.4	47.5	47.6	47.7	47.8	47.9	39
40	48.0	48.1	48.2	48.3	48.4	48.5	48.6	48.7	48.8	48.9	40

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 30.6. For same slopes but other widths of roadbed, correct above figures by one-half difference in width of roadbed; thus in example above, for 20 ft. roadbed distance will be $30.6 + (20 - 16) \div 2$ or 2 ft. added to 30.6 = 32.6. For slopes of 1 on 1½ see inside of back cover.

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571

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

Made in U. S. A.

MICROFILMED

JAN 13 1965

Proposed 24" Water Main
on Texas St. (Sandrock Grade)

39+70.74 Δ 10°15' RT.

38+35.57 E.C.

A = 19°00' LT.

R = 1000

T = 167.34

L = 331.61

1.7188

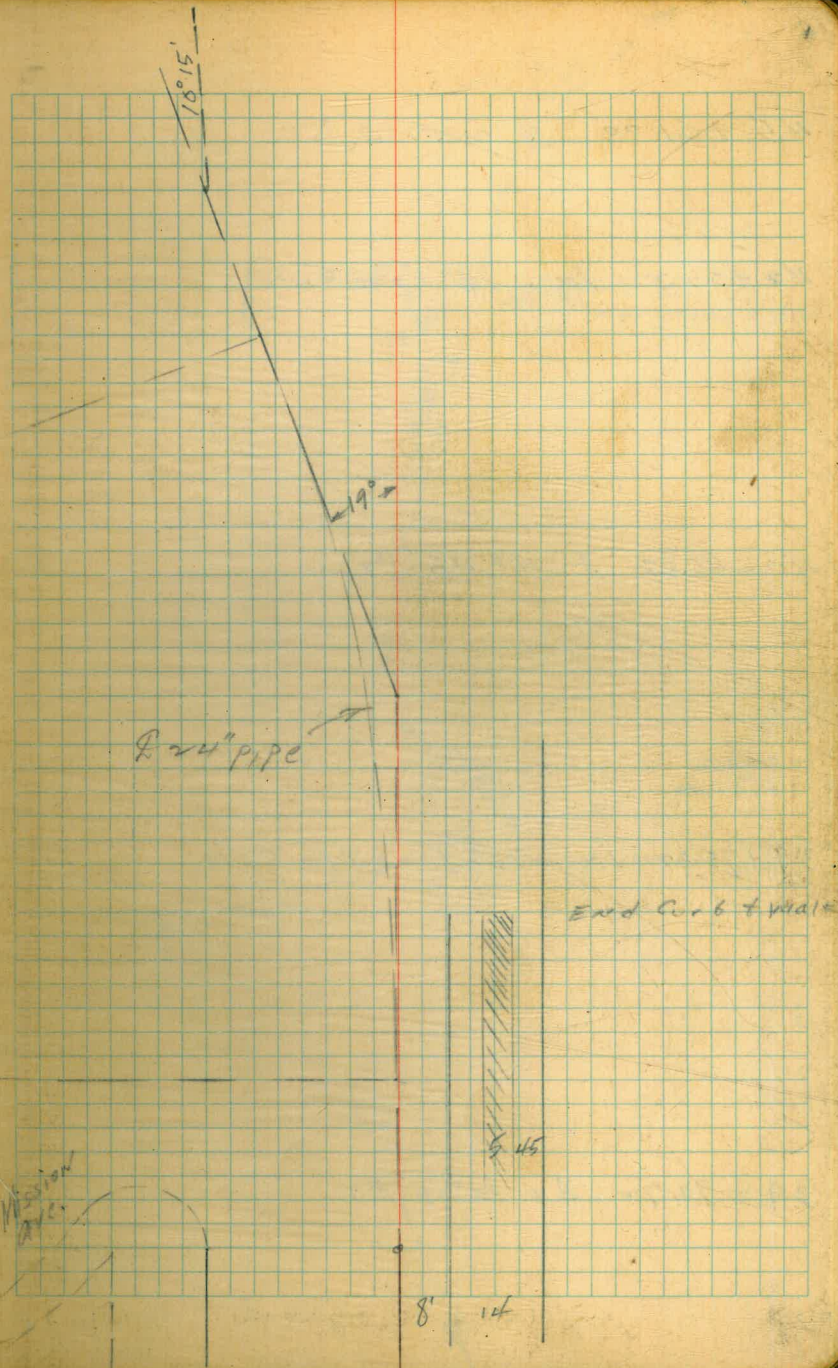
50' ?
35+65

36+65 end 6" A.C. Pav. & beg. 2" Oil Pav.

35+03.96 B.C.L.T.

34+62.15

Continued from F.B. 570/20



45 + 61.00 Δ 20° 00' RT.

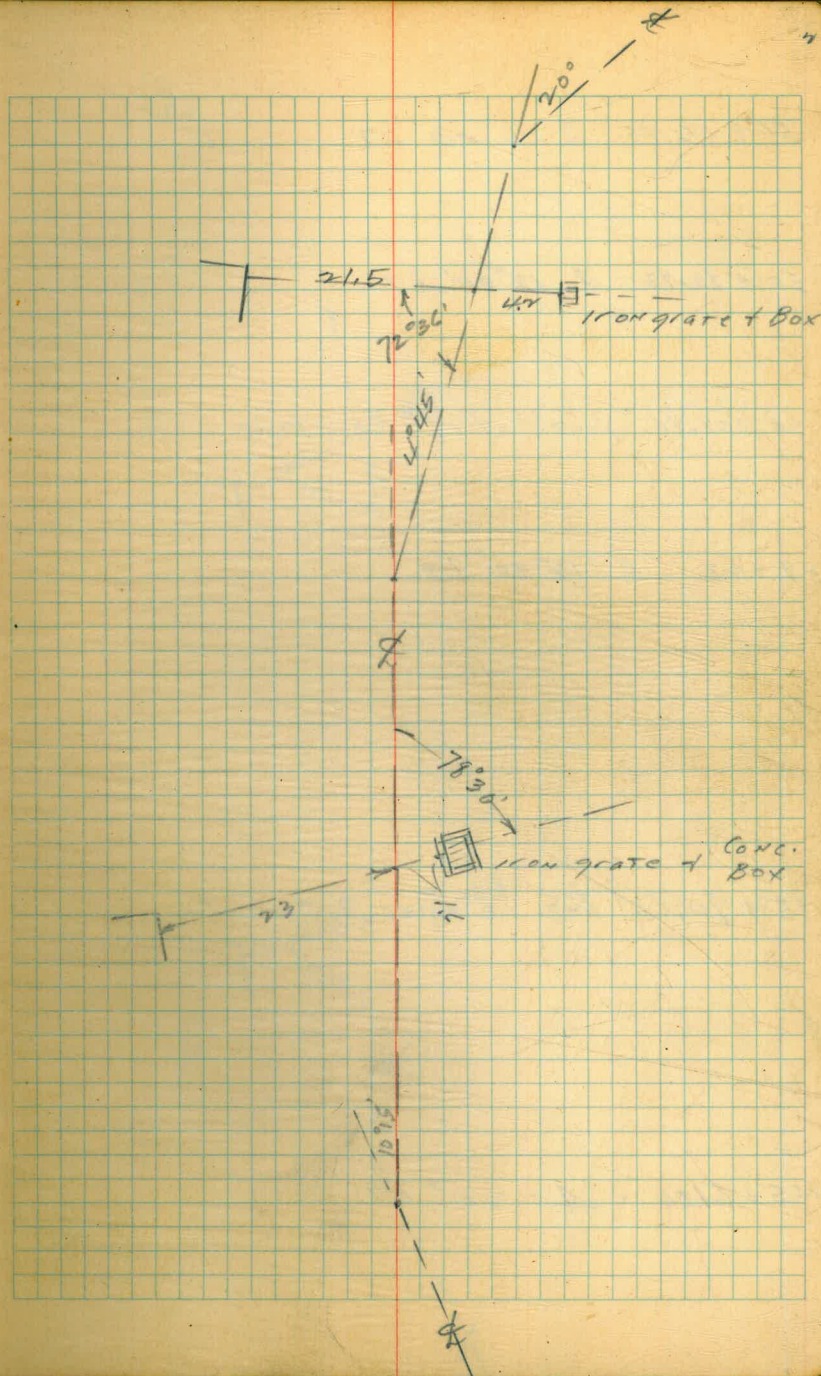
42 + 22.32 INT. 18" CONC. CULV.

40 + 46.57 Δ 4° 45' RT.

40 + 00
39 + 95.40

39 + 75.32 INT. 18" CONC. PIPE CULV.

39 + 70.72 Δ = 10° 15' RT



51+56.87 Δ 6°00' LT

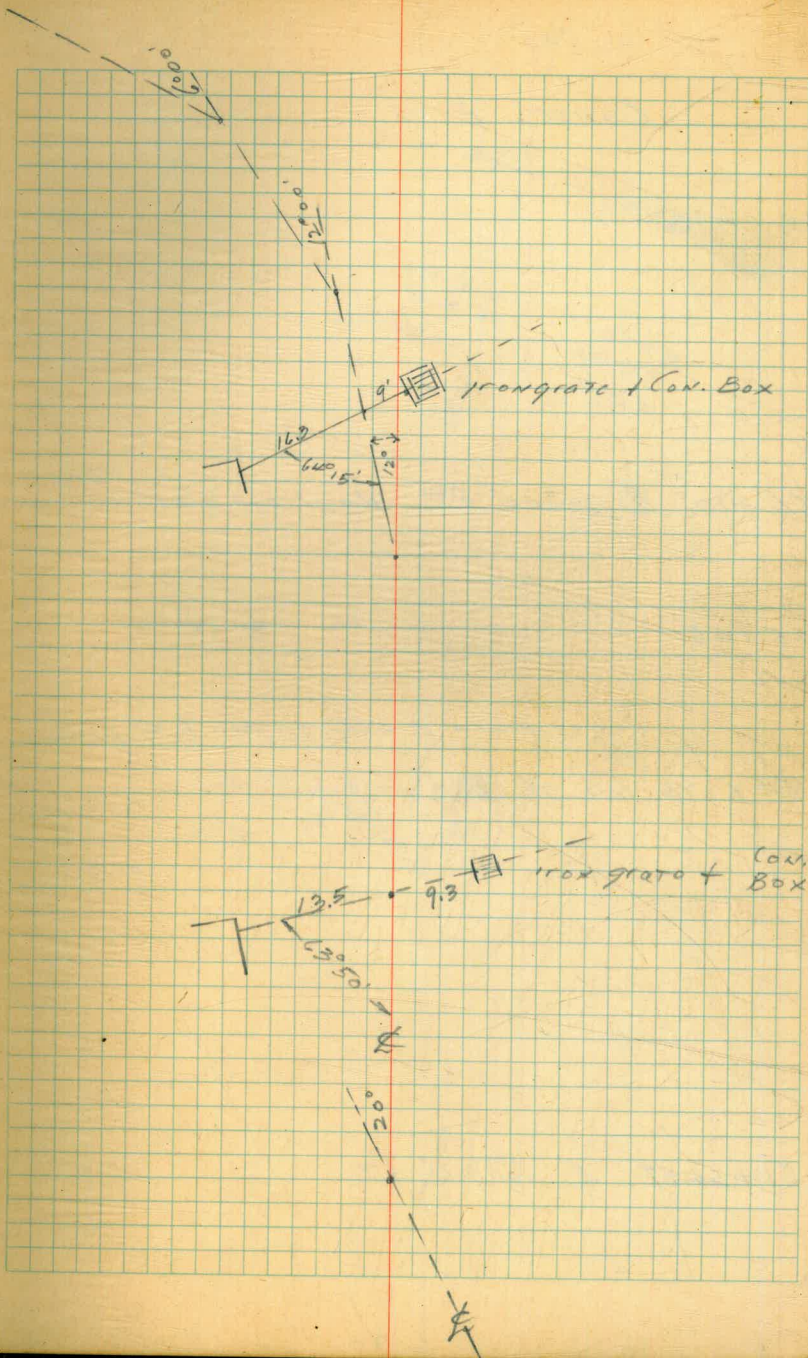
50+83.83 Δ 12°00' LT

50+01.80 Int. of 18" Conc. Pipe Culv.

49+25 Δ 12°00' LT

45+90.65 Int. 18" Conc. Pipe Culv.

45+61.00 = A = 20° RT.



Contd. P 10

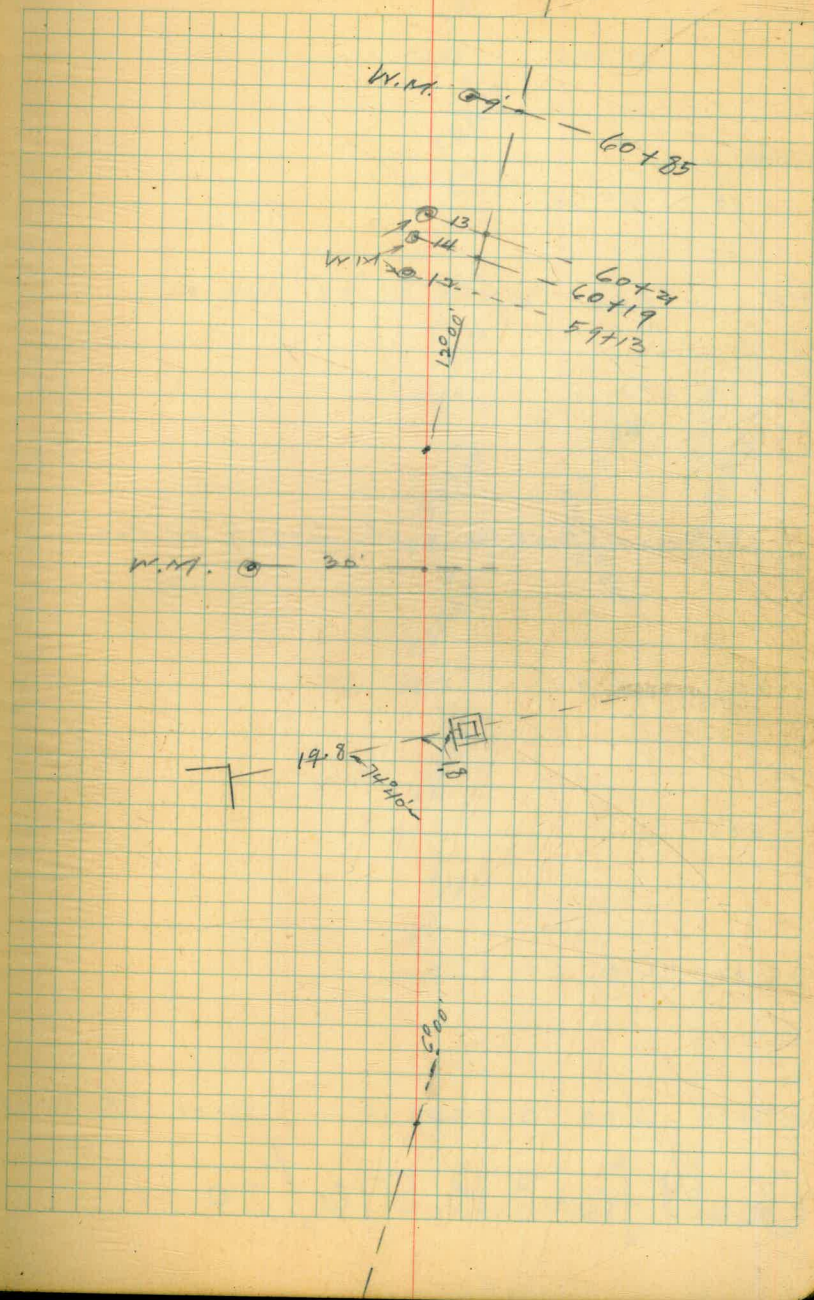
54+10 Δ 12°00' RT. Now on Westside ^{oil Pav.}

55+05

Cross from E side oil pav to W. side

54+38.5 Int. of 18" Conc. pipe Culv.

51+56.87 Δ 6°00' LT.



£ Levels for 24" Maid.

37 5° 27.0

+ 50 4° 11.0

T.P. 0.99 330.2x 12.88 330.15

36 2° 45.0

+ 65 1° 42.9
end 6" AC Pav. + 6" beg. 2" oil Pav.

+ 50 1° 19.1

+ 75

35 + 03.96 BC LT

T.P. Top 6 0.70 343.02 342.23 RT 35105

Cont'd from F.B. 570/20

LT

RT

RT

5

322.28
796
328.19
205

330.2x
333.43
9.60

337.17
586

338.69
420

340.80
2.23

341.76
1.27

336.92
6.11
9.8
9.4
Pav

337.55
548
9.85
2.05

343.03

T.P. 0.01 293.18 12.82 292.57
NE Cor. Conc.
check to B.P. Pier. Adams 8.99 296.40 296.44
ave. Bridge
1' above ground
25' LT 39+00

+50

39

T.P. 0.57 305.39 12.84 304.82

+50

38 + 35.57 F.C. 9° 30' 0"

38 9° ~ 8.8

37+50 7° 02.9

T.P. 0.26 317.66 12.84 317.40

330.24

LT

R

RT

4

292.97 ✓

12.42

299.05 ✓

632

305.39 ✓

304.57 ✓

13.02

306.15 ✓

11.51

309.93 ✓

7.73

316.16 ✓

1.50

317.66

5

40 + 22.32 117 18" Conc Pipe Culv.

40

T.P. 0.83 268.48 13.01 267.65

+50

41

T.P. 0.43 280.66 12.95 280.23

40 + 46.57 Δ 4°45' LT.

40 + 00 Ahead

39 + 95.40 Back

+75.32 18" Conc. Pipe Culv.

39 + 70.72 Δ 10°15' RT

293.8

LT 258.65
9.83

21.5

FL INLET

RT 261.22

726

263.58

4.90

268.48
269.15

11.51

275.24

5.22

280.66
281.68

11.50

287.10

6.08

287.90

3.28

FL INLET 18" PIPE

290.52

2.66

293.18

RT 256.91

11.57

4.2

FL BOX & PIPE

285.98

7.20

FL BOX & 18" PIPE

+50

115

T.P. 0.00 230.44 1294 230.44

+50

114

T.P. 0.10 243.36 1291 243.26

+50

113

T.P. 0.65 256.17 1296 255.52

42 + 50

268.48

LT

R

RT

8

589

0.5x

230.44
235.21
8.15

240.95
241

243.36
247.22
8.95

253.16
301

256.17
258.32
10.15

268.48

Cont. P. 14

T.P. 0.10 197.62 12.69 197.52

+50

47

T.P. 0.69 210.21 12.87 209.52

+50

46

Top
NE Cor.
TOP CUN.
T.P. Hd wall 0.47 222.39 8.50 221.90

45 + 90.65 Int. 18" Conc Pipe C-1v

45 + 61 Δ 20°00' RT

230.42

LT

E

RT

9

202.32

2.89

207.96

2.25

210.21

213.91

8.68

219.49

1.90

222.39

218.27

13.15
13.5

FLINT CT

220.57

7.85

223.81

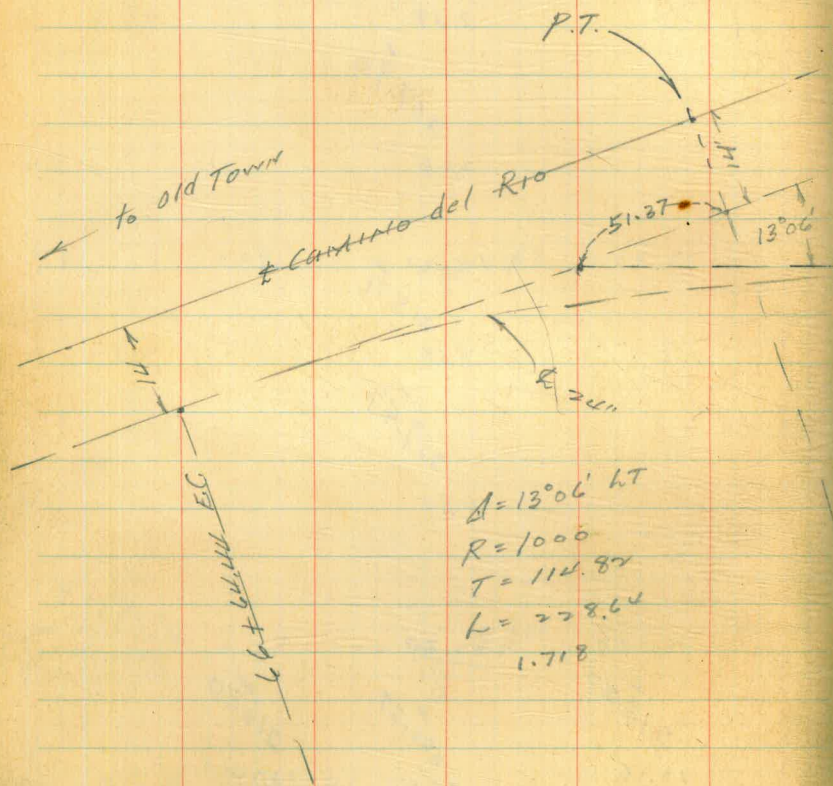
6.61

216.70

13.74
9.3

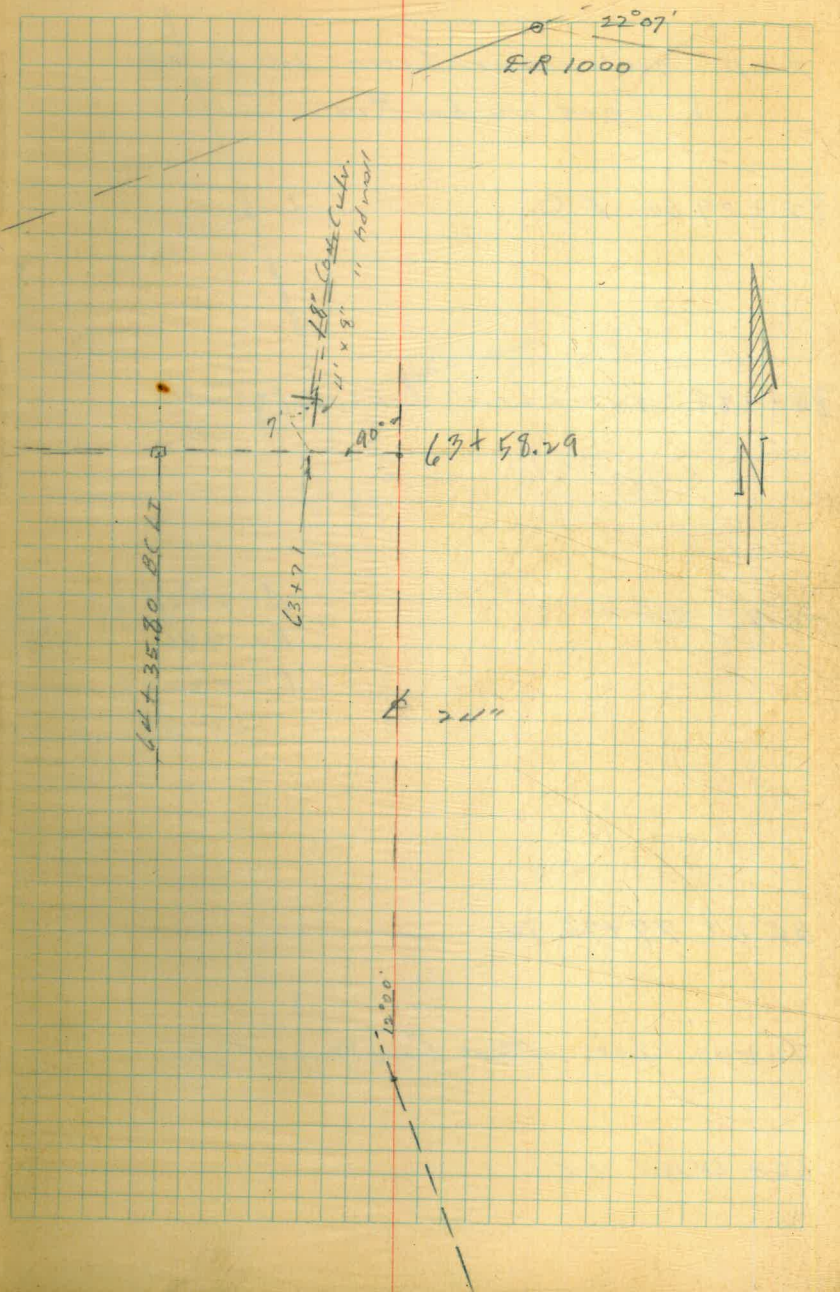
EL. BOX +
PIPE

230.42



56+10 Δ 12°00' RT from 94

Cont'd from Pg. 4, This Book.



Prop. 24" waterline 14' S. of
E. Camino del Rio

82+09.60 E.C.

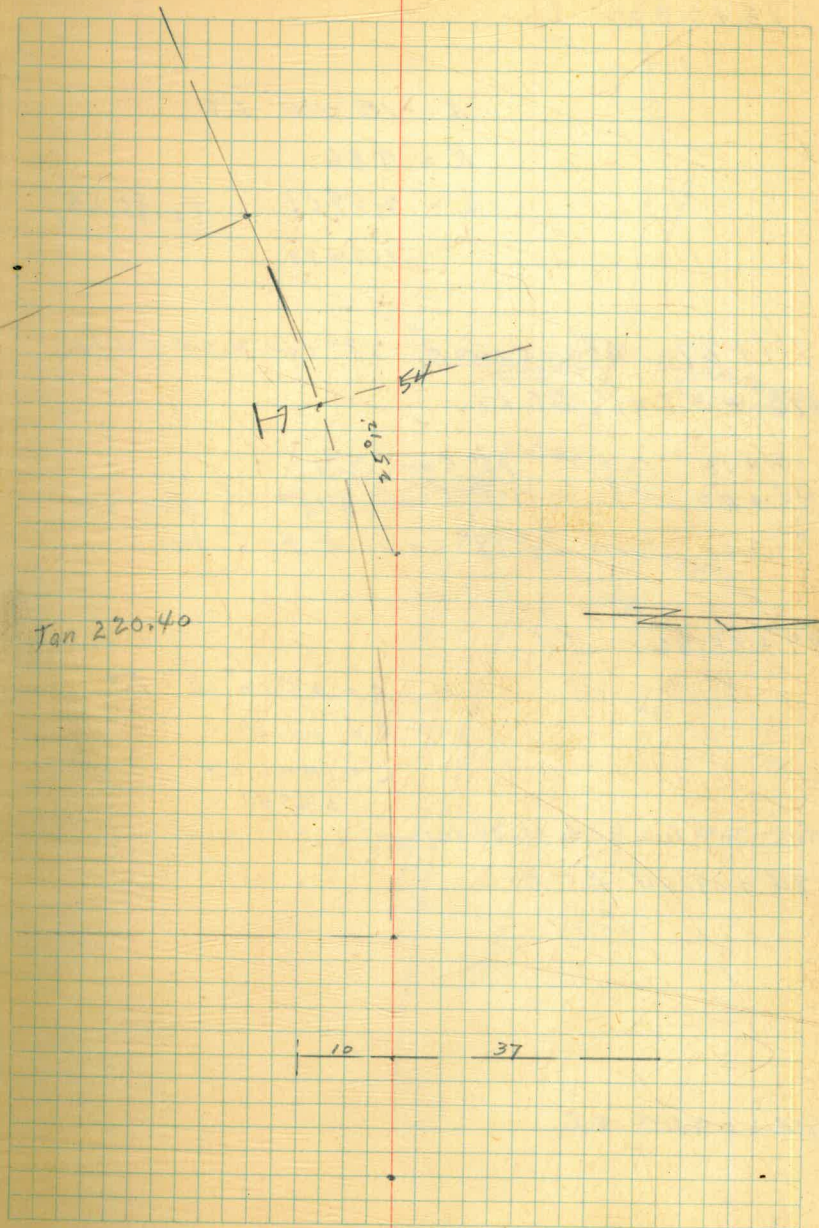
80+98.5 INT. of 24" Conc. Pipe Culv.

$\Delta = 25^{\circ}12'$ LT
R = 980
L = 433.66
1.7433

B.C. LT 77+75.94

72+47 INT. of 24" Conc. Pipe Culv.

66+64.44 E.C.



113+28.02 E.C.

$$A = 15^{\circ} 40' \text{ LT}$$

$$R = 986$$

$$L = 269.61$$

$$T = 135.65$$

$$1.7433$$

111+37 abandoned 18" Conc. pipe Culv.

110+58.41 B.C. LT.

103+15 INT. 18" Conc. pipe Culv. 11119.

94+53 INT. 12" Conc. pipe of system

90+00 INT. of 18" Conc. pipe Culv.

88+65.86 E.C.

$$A = 25^{\circ} 13' 10'' \text{ RT}$$

$$R = 1014$$

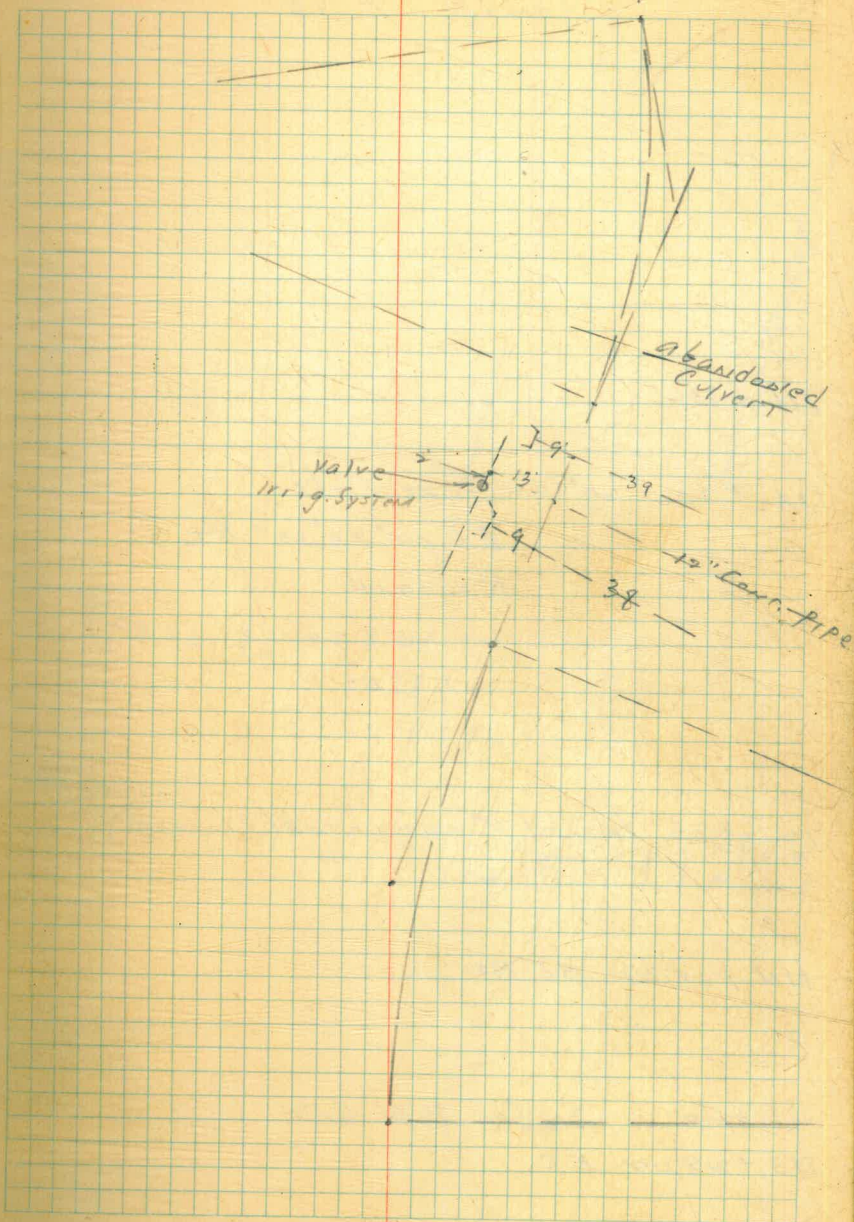
$$L = 446.32 \quad T = 226.81$$

$$1.6951$$

Note: 30° from B.C. to Sta 84+50 (Spec)

84+19.54 B.C. RT

82+09.60 E.C.



Contd. p 35

116 + 73.61

116 + 60 24" Conv. pipe Culv

$\Delta = 14^{\circ}35'30''$ RT.

R = 101.4

L = 258.24 T. 129.82

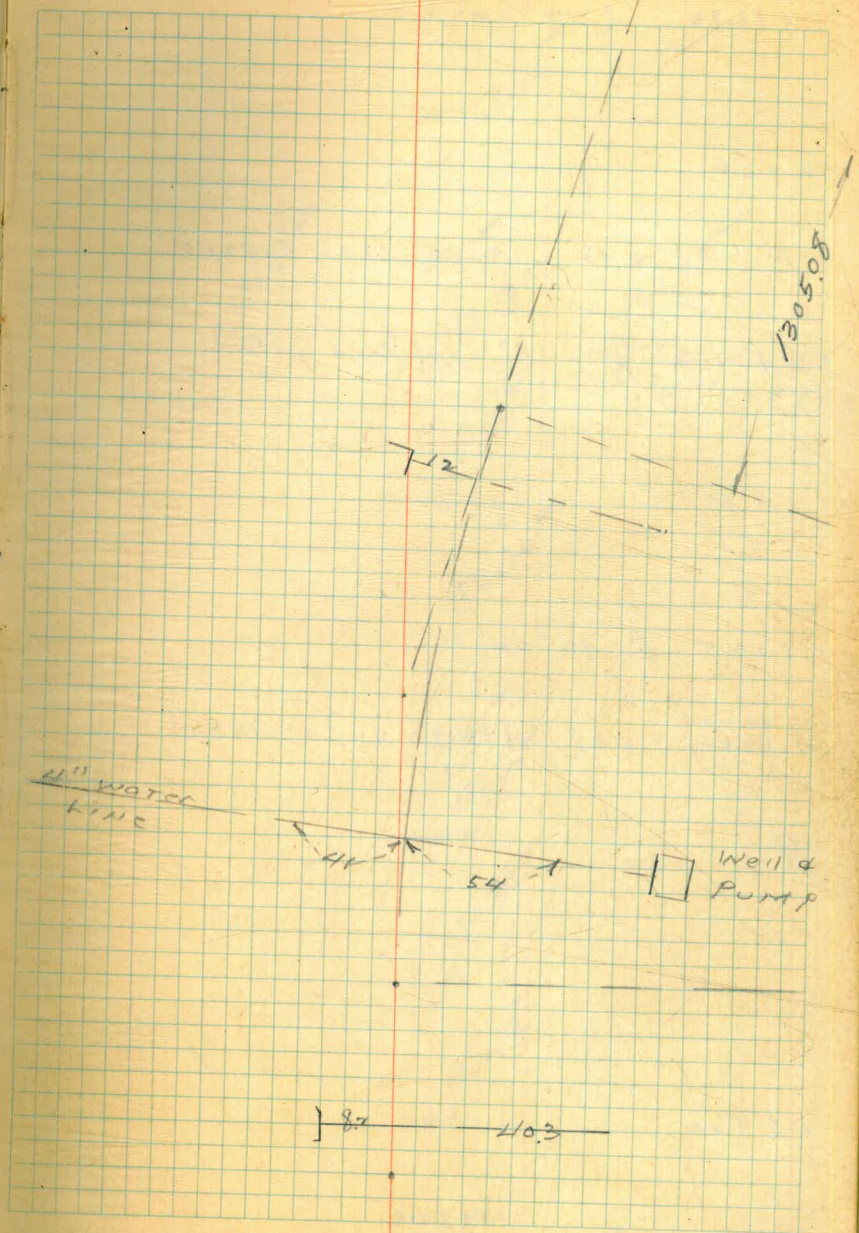
1.695'

114 + 63.5 Int. of 4" water line (Private)

114 + 15.37 BC RT.

113 + 216 30" Conv. pipe Culv.

113 + 28.02 E.C.



+83.83 Δ 12°00' LT.

50 + 50

T.P. 0.54 172.69 13.04 172.5

50 + 01.8 Int. 18" Conc. Pipe Culv.

+ 50

49 + 25 Δ 12°00'

on wall
T.P. 49 + 00 0.09 185.19 12.52 185.10

49

+ 50

48 + 00

197.62
Cont'd from Pg. 9

LT.

RT. 14

7.92

164.77 ✓
168.40 ✓

4.29

171.50 ✓

18.69

16.3

F.L. outlet

172.69 ✓

173.59 ✓

11.60

15.42 ✓

9

FL. Piped Box

169.77 ✓

179.51 ✓

5.68

182.20 ✓

2.99

185.19 ✓

185.10 ✓

12.52 ✓

190.82 ✓

6.80

196.53 ✓

1.99

197.62

Σ

54

+50

T.P. 0.19 135.11 1273 134.92

53

+50

T.P. 0.37 147.65 1297 147.28

52

51 + 56.87 Δ 4°00' LT.

T.P. 0.32 160.25 12.76 159.93

51

172.69

LT

R

RT

15

128.70 ✓

6.41

133.70 ✓

1.41

135.11 ✓

138.98 ✓

8.67 ✓

144.73 ✓

2.92

147.65 ✓

151.01 ✓

150.91 ✓

9.34

156.12 ✓

4.13

160.25 ✓

162.92 ✓

9.77

172.69 ✓

T.P. 0.46 110.00 13.01 109.54

56 + 10 Δ 14°00' RT.

56

+ 50

55

T.P. 0.34 122.55 12.88 122.21

+ 50

Set B.M.

9.11

127.00 NE Cor. Top
Hd. Wall

54 + 38.5 Int. 18" Conc Pipe Culv.

135.11

LT

R

R

16

110.84 ✓

11.71

111.71 ✓

10.84

115.79 ✓

6.70

119.70 ✓

2.85

✓
122.55

✓
124.13 ✓

10.98

123.44 ✓

11.67

19.8

FL. INLET

125.26 ✓

9.85

122.58 ✓

12.53

1.8 FL Pipe +
Box

135.11 ✓

60

+50

T.P. 0.11 84.00 13.04 83.89

59

+50

58

T.P. 0.00 96.93 13.07 96.93

+50

57

56 + 50

110.00

75.69 ✓

8.31

80.50 ✓

2.50

84.00 ✓

2

85.13 ✓

11.80

89.58 ✓

7.35

94.05 ✓

2.88

96.93 ✓

98.72 ✓

11.28

103.04 ✓

6.96

107.33 ✓

2.67

110.00

3

63+58.29 Δ 90°00' LT

+50

63

+50

62

T.P. 0.77 59.34 1305 58.57

+50

61

60+50

T.P. 0.31 71.62 1269 71.31
80.00

~~2854~~

1080

10.46
48.68

51.29
8.05

44.81
54.53

12.1
58.13

59.34
62.08
95X

5.27
66.35

70.86
0.70

71.62
80

64

+76

+71 Inlet 18" Culv. 7' RT.

+67 Top Shoulder

+64 Top Shoulder

63 + 61 w/ edge of oil pav. on Texas St

B.M. Cop. disc			
4d well	670	49.71	43.01

check to 3 nails in Cypress tree				
B.M. Cop. disc		5.29	47.58	47.69 =
City 2 markers	98.6	52.87	94.0	43.01
T.P.	3.23	52.41	10.6	49.18
		59.34		

0.11 dif from UH

LT

RT

19

45.3

45.11

4.6

47.21

2.5

49.01

49.01

49.41

49.71

43.96
5.75
7 F.H. inlet

from old town
Top N. end do. Box Culv. Camino del Rio + Texas

4° 4' 11" 30
66 S edge of pav. Camino del Rio

+75

+50 inside shoulder

+50 3° 16.2

+25 outside shoulder Camino del Rio

65 1° 50.3

+50 0° 24.4 LT

64 + 35.80 BC LT

49.71

44.67
5.04
45.0
4.7
46.4
3.3
46.5
3.2
46.6
3.1
44.3
5.4
44.2
5.5
44.4
5.3
49.71

+50

69

+50

68

+50

67

66 + 64.44 E.C. 6° 33'

66 + 50 6° 08.0

49.71

21

2

40.14 ✓

9.57

40.70 ✓

9.01

41.36 ✓

8.35

42.31 ✓

7.46

43.15 ✓

6.56

43.71 ✓

6.0

44.25 ✓

5.46

44.45 ✓

5.26

49.71

?

+50

73

+117 Int. of 24" Conc. pipe culv.

74

+50

71

+50

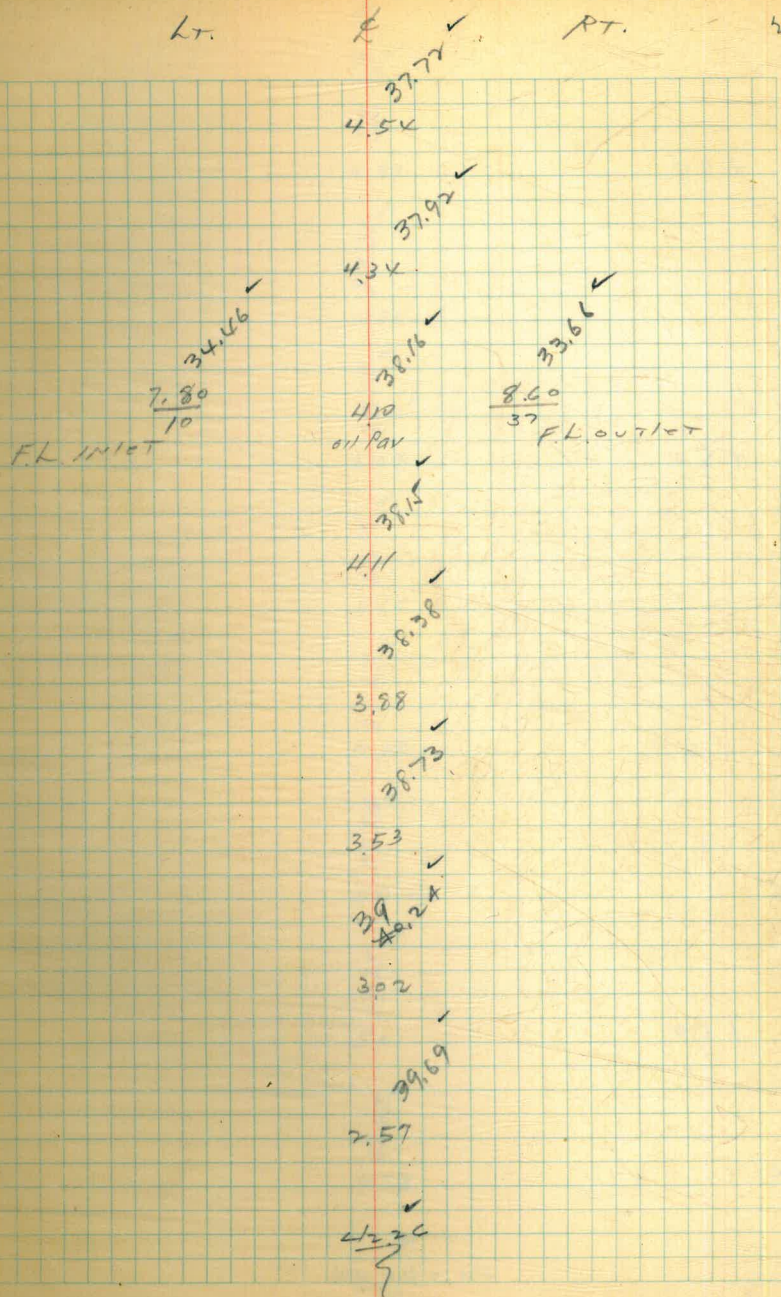
70

T.P. on Nail	2.57	47.26	10.02	39.49
70 + $\frac{0}{0}$		49.71		

Lt.

Rt.

22



+50

77

+50

76

+50

75

+50

74

Nov. 26

23

~~37.29~~ ✓

4.97

~~37.31~~ ✓

4.95

~~37.18~~ ✓

5.08

~~37.16~~ ✓

5.10

~~37.27~~ ✓

4.99

~~37.28~~ ✓

5.02

~~37.25~~ ✓

5.01

~~37.47~~ ✓

4.79

~~42.26~~ ✓
7

81 9° 24.9
 80+98.5 Int. 24" Conc. Pipe Culu.

+50 7° 57.7

80 6° 30.4

+50 5° 03.4

79 3° 36.3

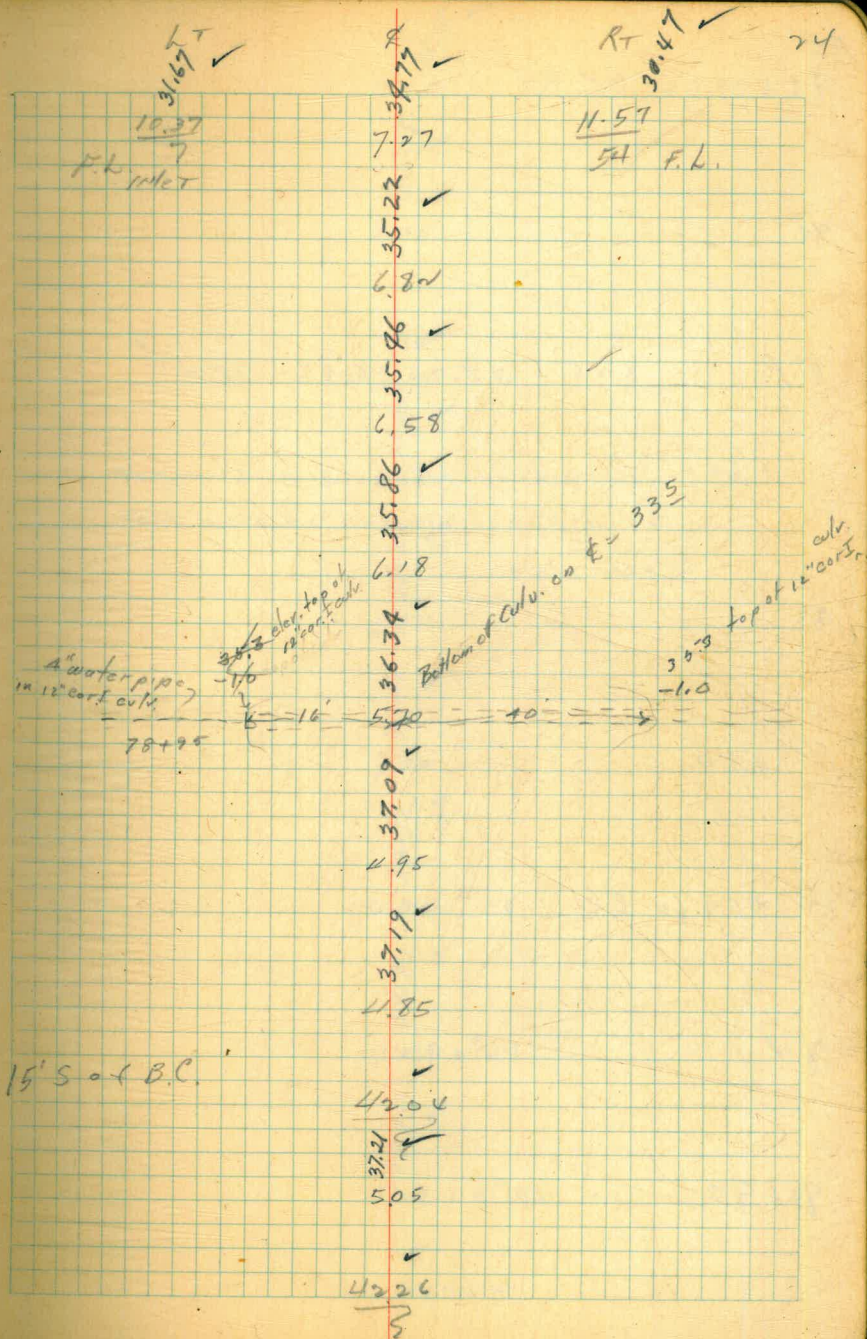
+50 2° 09.1

78 0° 41.9

4 Nails P.P. T.P. # P 791 32 3.05 42.04 3.27 38.99 Nails on N. Side Pole

77+75.94 B.C. LT

42.26



84 + 19.54 BCRT

84

T.P. 3.25 38.70 6.59 35.45

+50 Somewhere here is a 6" water
line crossing but is now not
in use.

83

+50

82 + 09.60 E.C. 12° 36.0

81 ✓ 12° 19.2

80 + 50 10° 52.1

42.04

25

35.65 ✓

35.55 ✓

35.45 ✓

35.35 ✓

35.25 ✓

35.15 ✓

35.05 ✓

34.95 ✓

34.85 ✓

34.75 ✓

34.65 ✓

34.55 ✓

34.45 ✓

34.35 ✓

34.25 ✓

34.15 ✓

34.05 ✓

33.95 ✓

33.85 ✓

33.75 ✓

33.65 ✓

33.55 ✓

33.45 ✓

33.35 ✓

33.25 ✓

33.15 ✓

33.05 ✓

32.95 ✓

32.85 ✓

32.75 ✓

32.65 ✓

32.55 ✓

32.45 ✓

32.35 ✓

32.25 ✓

32.15 ✓

32.05 ✓

31.95 ✓

31.85 ✓

31.75 ✓

31.65 ✓

31.55 ✓

31.45 ✓

31.35 ✓

31.25 ✓

31.15 ✓

31.05 ✓

31.00 ✓

88 10°44.9

+50 9°20.1

87 7°55.4

+50 6°30.6

86 5°05.9

+50 3°41.1

85 2°16.4

84 +50 0°51.6

38.70

34.49 ✓
42 ✓

34.79 ✓
41 ✓

35.29 ✓
41 ✓

35.59 ✓
41 ✓

35.82 ✓
48 ✓

35.78 ✓
42 ✓

35.70 ✓
40 ✓

35.72 ✓
48 ✓

38.70 ✓
✓

+50

TP. 366 37.29 507 33.63

91

+50

90 (NT. 18" Conc. pipe CULV

+50

89

88 + 65.86 E.C. 17° 36' 35"

+50

17° 09.6

38.70

LT.

33.49

33.80

37.29

33.61

509

33.77

4.93

33.85

4.85

Pav.

33.76

4.94

33.86

4.84

34.07

4.63

34.21

4.19

38.70

2

30.93

7.77

9

FL into T

RT.

29.

30.17

8.53

38

FL

+50

95+05 .18" conc. pipe culv.

95

+53 INT. of 12" CONC. PIPE ILLIG. SYSTEM

94

+50

93

+50

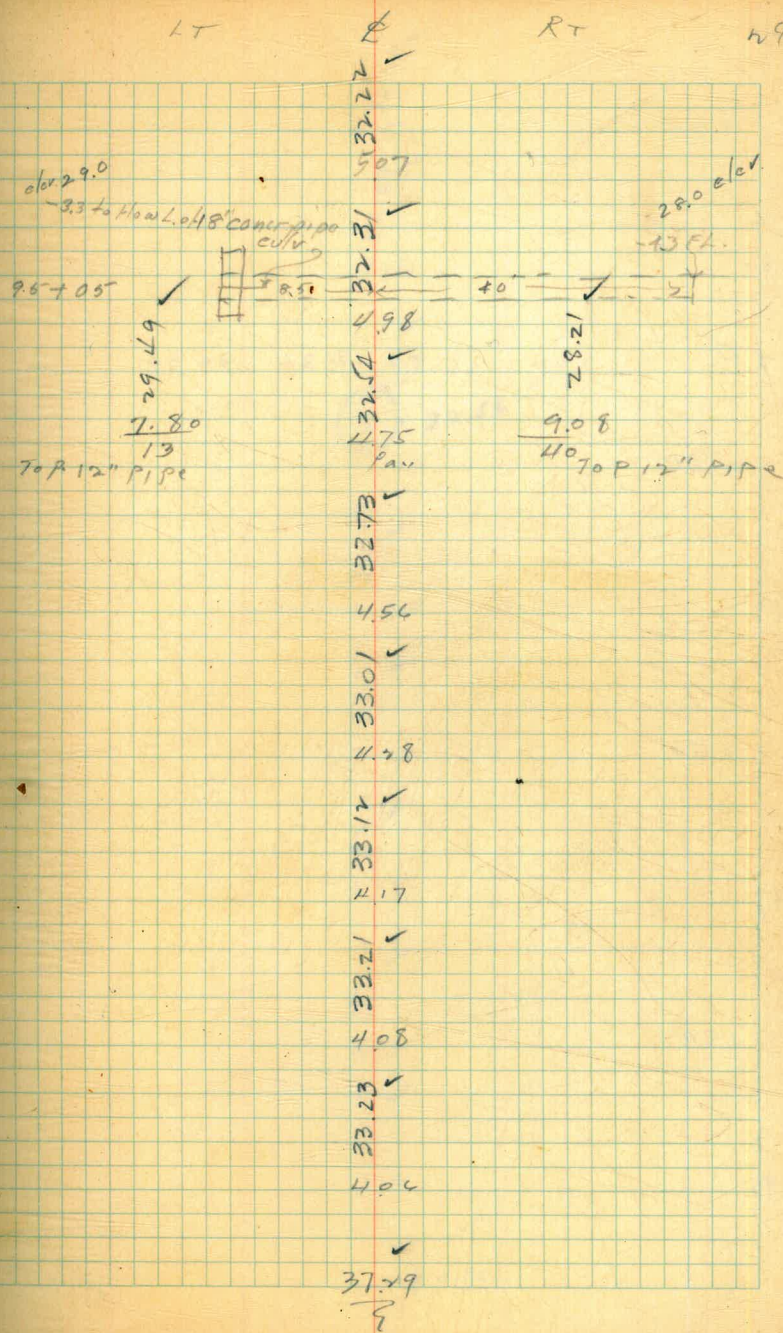
92

37.79

LT

RT

29



+50

99

T.P. 396 36.89 436 32.93

+50

98

+50

97

+50

96.

37.29

29

~~32.39~~
32.39 ✓
+50 ✓

32.89 ✓
440 ✓

36.89 ✓

32.82 ✓

32.52 ✓

4.77 ✓

32.47 ✓

32.47 ✓

4.82 ✓

32.27 ✓

5.02 ✓

32.11 ✓

5.18 ✓

32.12 ✓

32.12 ✓

5.17 ✓

32.17 ✓

5.12 ✓

37.29 ✓
37.29 ✓

+15 Int. 18" Conc. Pipe Culv.

103

+50

102

+50

101

+50

100

36.89

2807 LT
3.82
9
FL. INLET

31.54
5.95
31.65
5.24
31.95
4.94
32.08
4.81
32.29
4.60
32.30
4.59
32.59
4.30
32.66
4.23
36.89

RT
3756
9.22
39 FL.

30

107

+50

106

TP. 253 35.34 408 32.81

+50

105

+50

104

103 +50

36.89

TP

4.47

4.35

4.10

3.5

5.5

5.2

5.2

5.2

5.2

5.2

5.39

36.89

2

111 1° 12.5 LT

110 + 58.41 B.C. LT

110

+ 50

109

+ 50

108

107 + 50

35.34

29.50 ✓

584

29.73 ✓

561

30.06 ✓

528

30.31 ✓

503

30.45 ✓

489

30.34 ✓

510

30.48 ✓

486

30.63 ✓

471

35.24 ✓

35.24 ✓

+1.537 BC RT

114

+50

+40 30" Con. Pipe Culv.

T.P. 4.55 35.45 4.44 30.90

113 +28.07 EC. 7°50.0

113 7°01.1

+50 5°34.0

114 4°06.8

111 +50 4°39.4

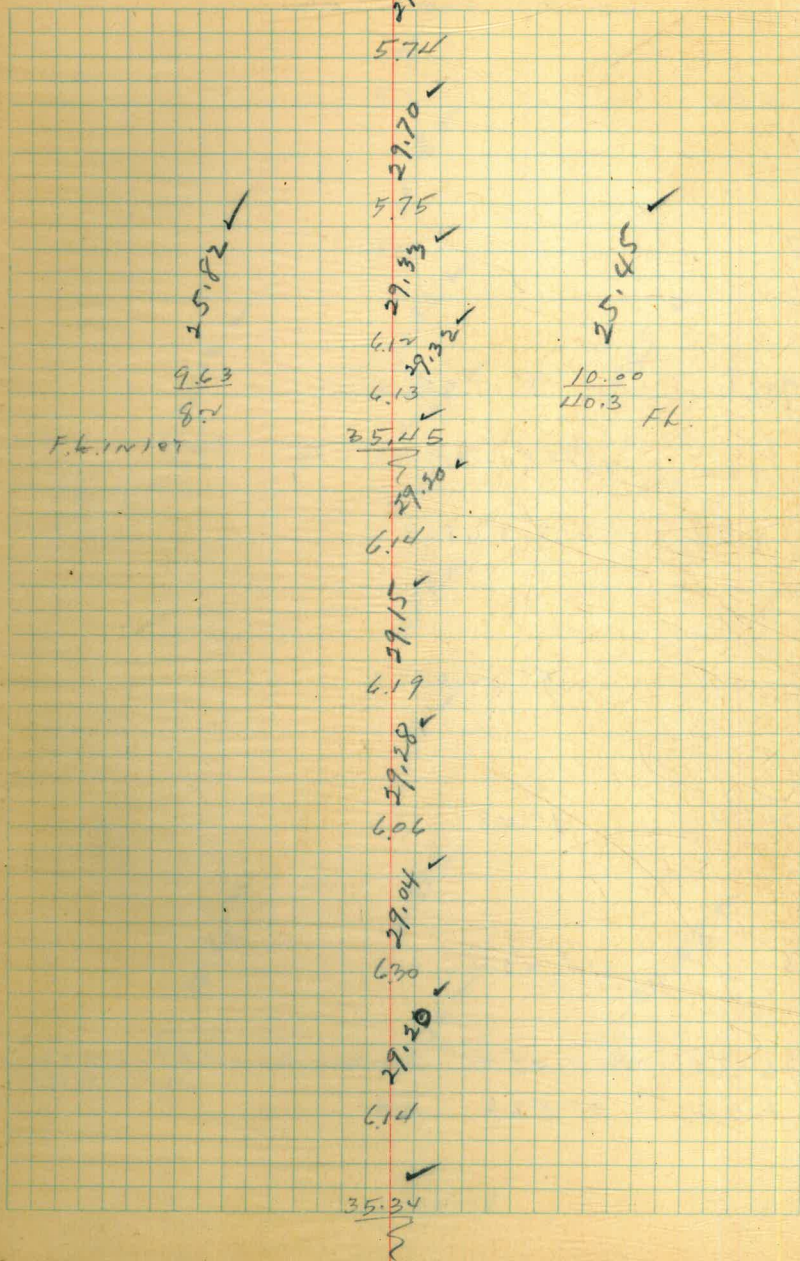
35.34

LT

Rt

Rt

33



Contd on P 42

+50

117

116+7361 E.C. 7° 17.75

+60 24" Con. Pipe Culv

+50 6' 37.7

116

5° 12.19

+50 3° 48.1

115

2° 23.4

114+63.5 = INT. of 4" WATER LINE (PRIVATE)

114+50 0° 58.6 RT

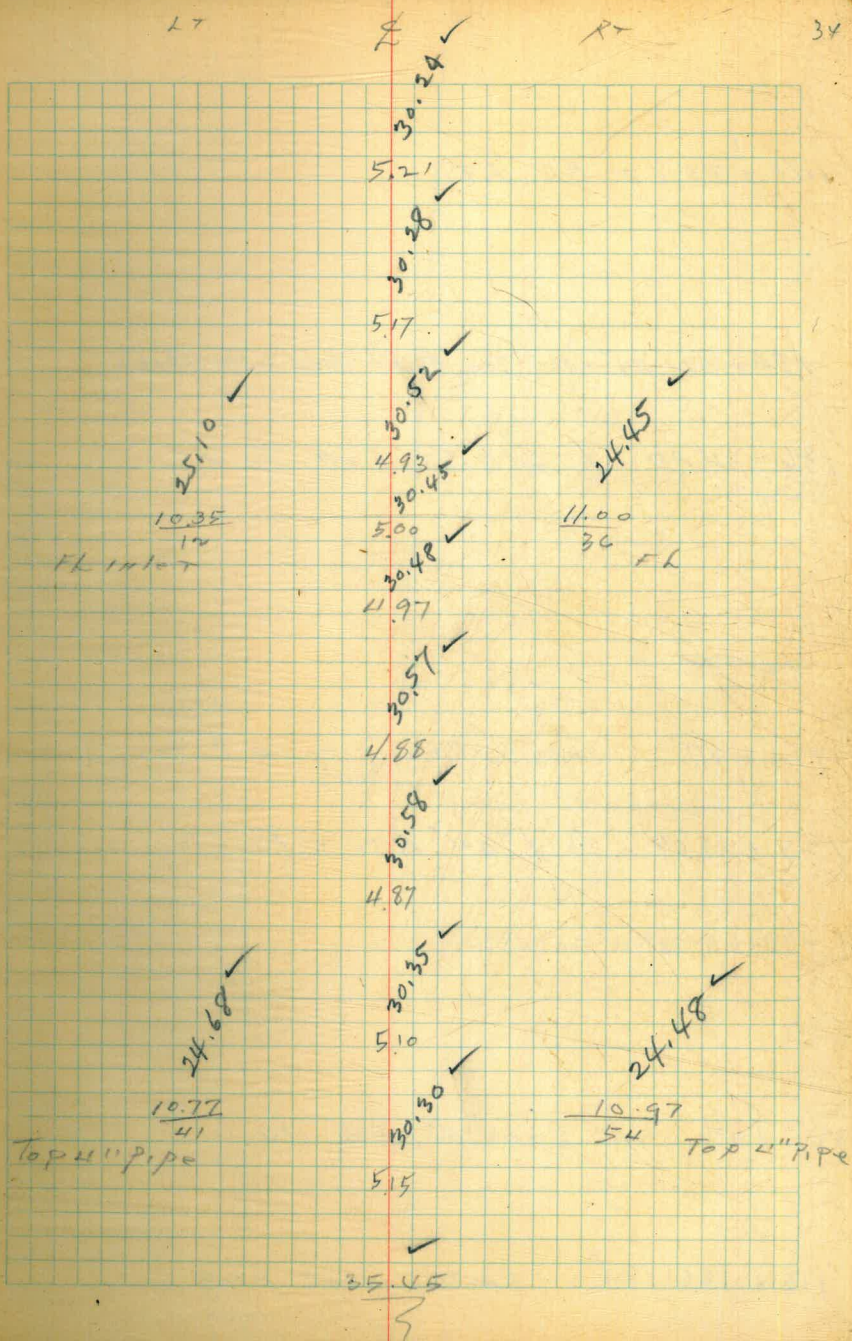
35.45

LT

RT

RT

34



141 + 36.65 B.C. LT.

+36+51- 24" x 16" Tee to Rt. Moved to Sta 129+63

136 + 34.00 E 6th St. Ext. to N.

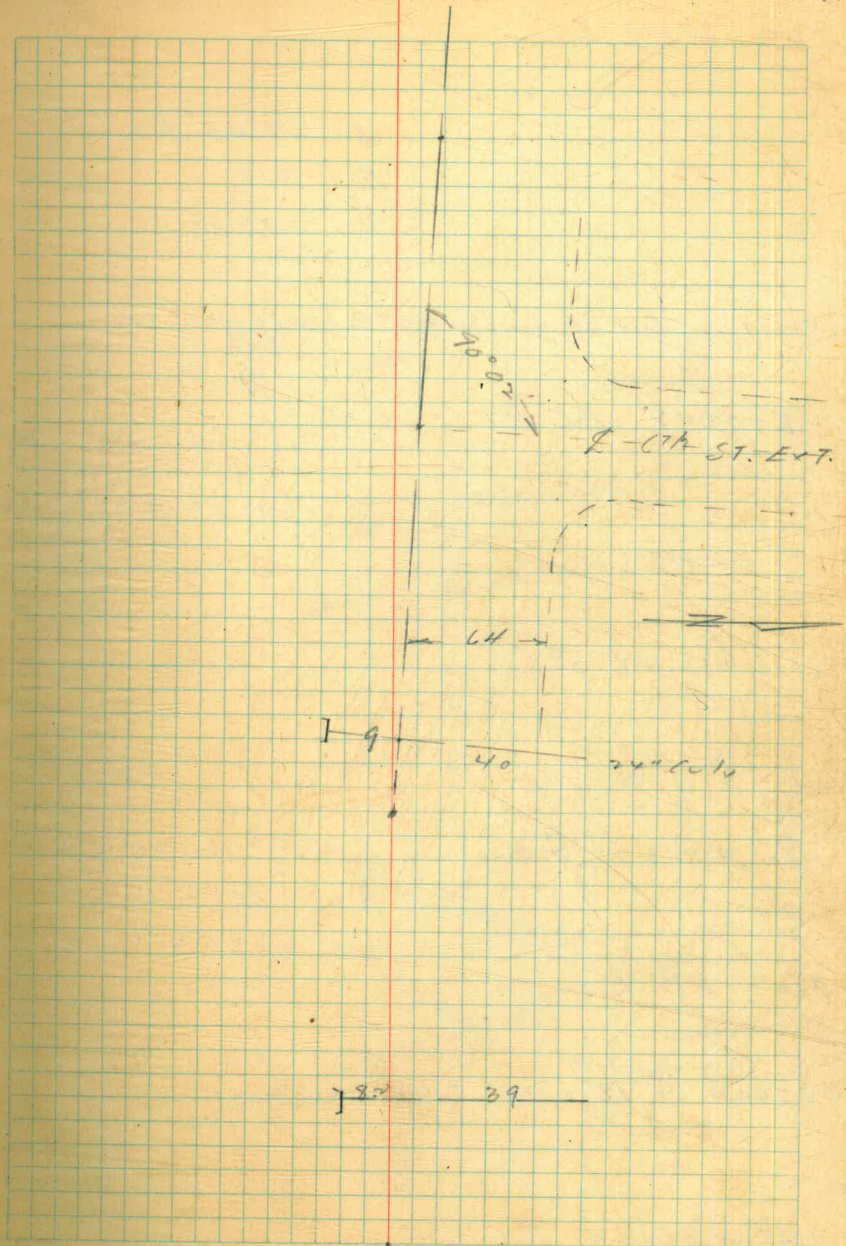
149 + 87 Int. 24" Conc. pipe & Culv.

129 + 78.69 Δ 1° 04' RT. = Pueblo Line

129+63- 24" x 16" Tee to Rt.

121 + 37 24" Con. pipe Culv.

116 + 73.61 E.C. Contd. from P 13



153+77.49 E.C.

$\Delta = 28^{\circ}05' RT$
 $R = 1014$
 $L = 497.01$
1.695

150+12 In. of double 24" Con. pipe Culv.

148+80.48 B.C.RT

146+13.48 E.C.

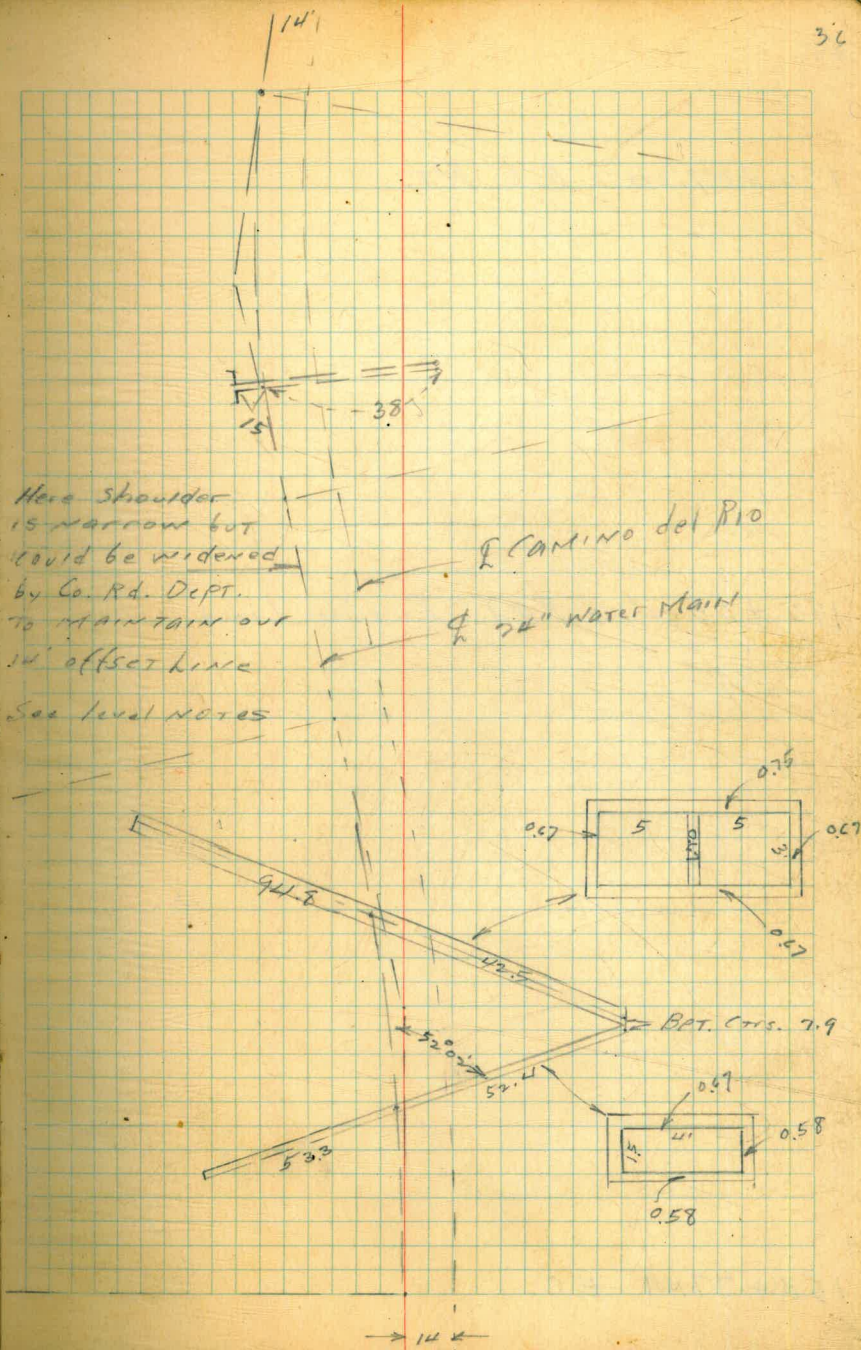
143+12.8 ^{Con.} ~~Con.~~ Box Culv. $\Delta = 27^{\circ}42'30" LT$
 $R = 986$
 $L = 476.83$
1.7433

INTERSECTION OF
Camino del Rio +
GTA ST EXT. TO SOUTH

142+64.4 Φ 18" x 48" Con. Box Culv.

141+36.65 B.C.LT.

36



182 + 07.30 = BC RT.

190 + 05.27 = P.O.T. Pueblo Line

153 + 77.49 E.C.

193+00.20 B.C. LT

187+45.92 EC

$\Delta = 21^{\circ} 49' 30''$ RT

R = 1414

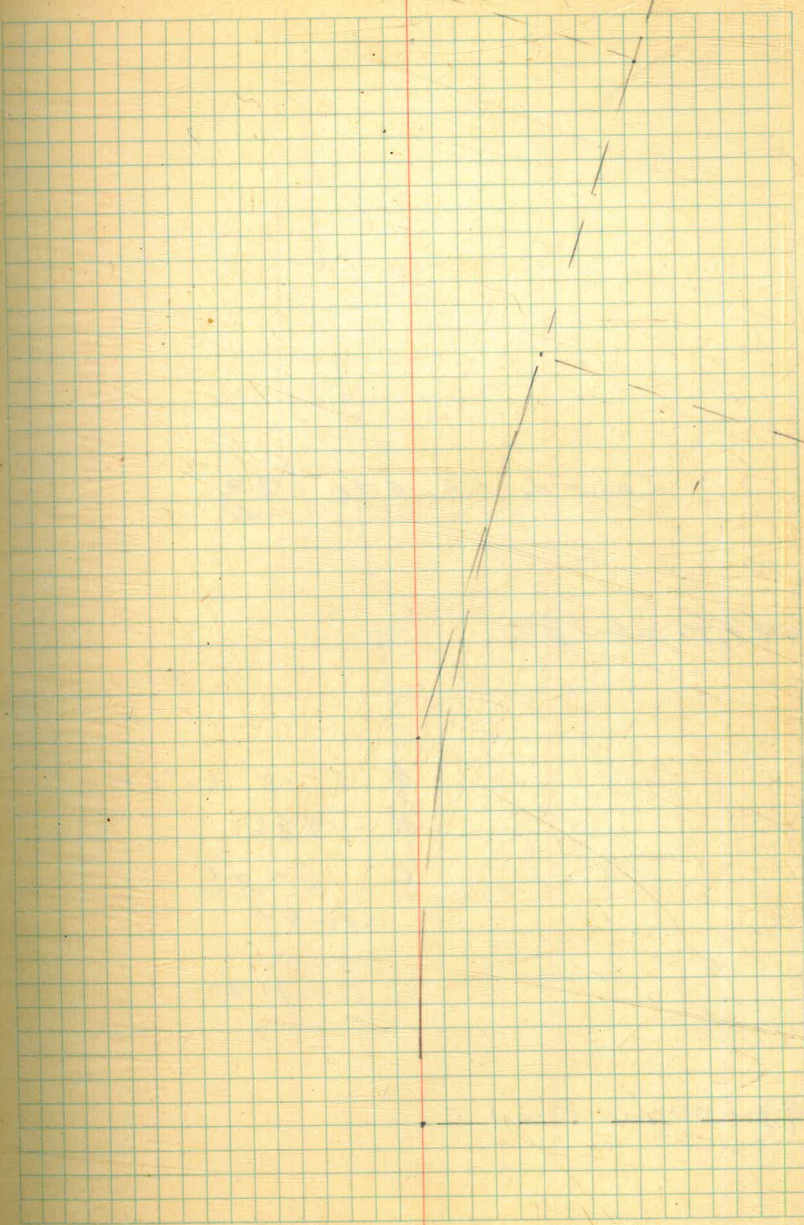
L = 538.62

1.2156

T. = 272.60

182+07.30 BC RT.

182+06.6 ~~182~~



Cont'd. F.B. 570/23

194+82.46 E.C.

d 5°15'30"LT

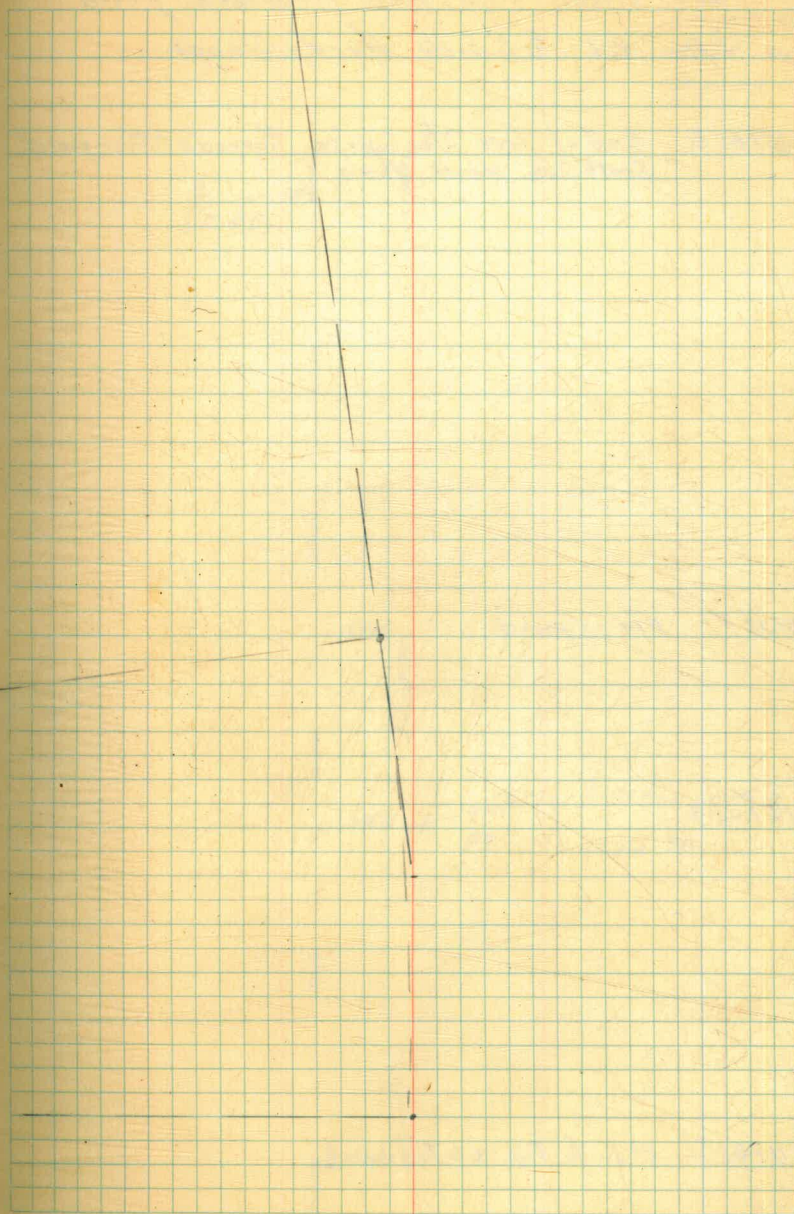
R 1986

L 18226

0.8654

T_i = 91.20

193+00.20 B.C.L.T.



Ex. Steel Pipe Line Alignment from
Dyke P.L. to S. Side Hardy Slough

25+85.2 End of live steel pipe. Popped at this point
South Side Hardy Slough

15+98 Pipe exposed

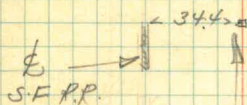
14+45.3

11+45.31 R.L. to P.I. on Track &

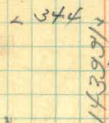
Continued from page 78

Bliss T + Notes
Leonard H.C.
Fady R.C.
Sept 4-5-1947

S.F.P.P.



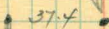
34.4

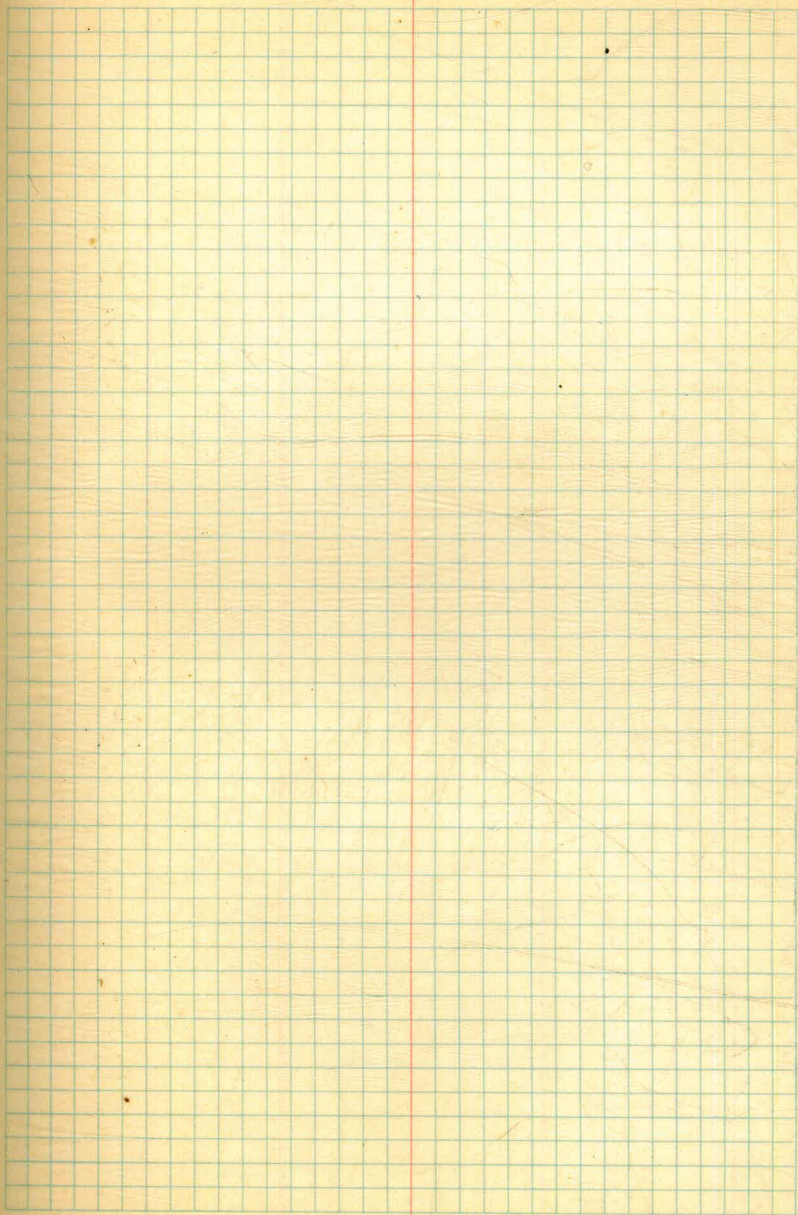
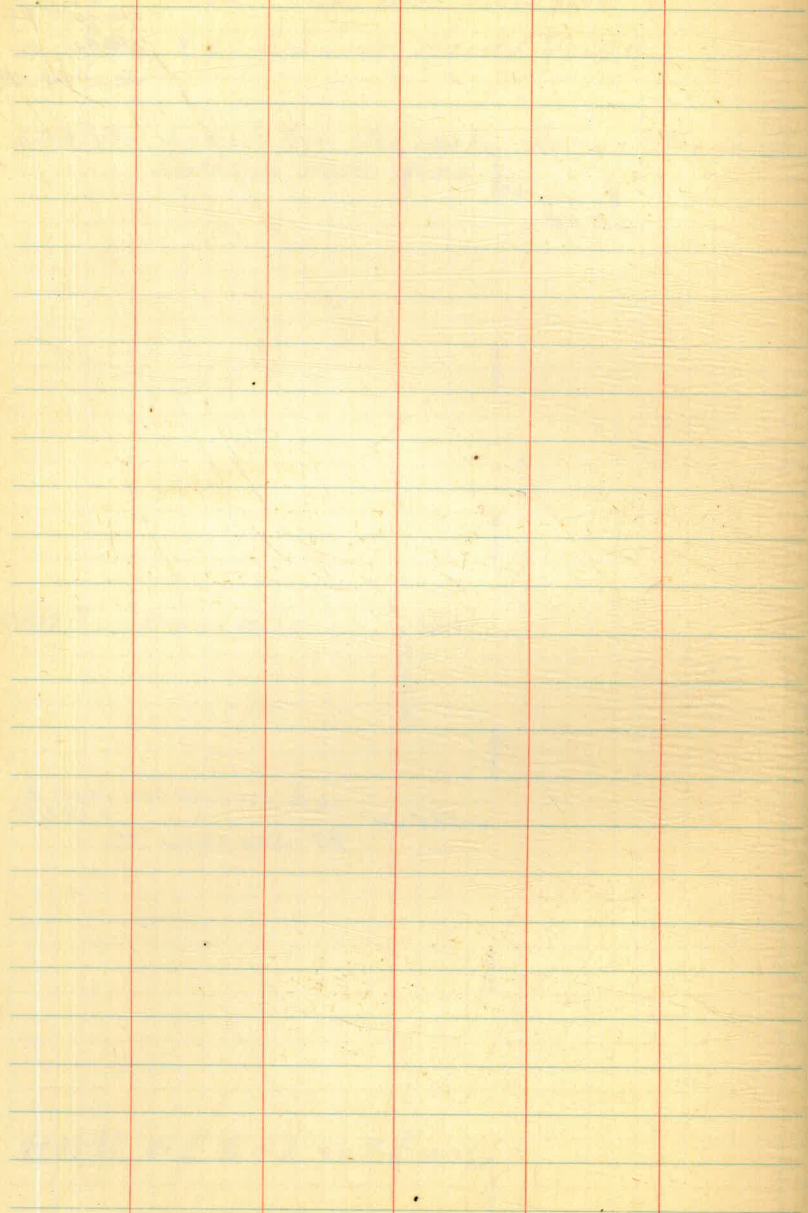


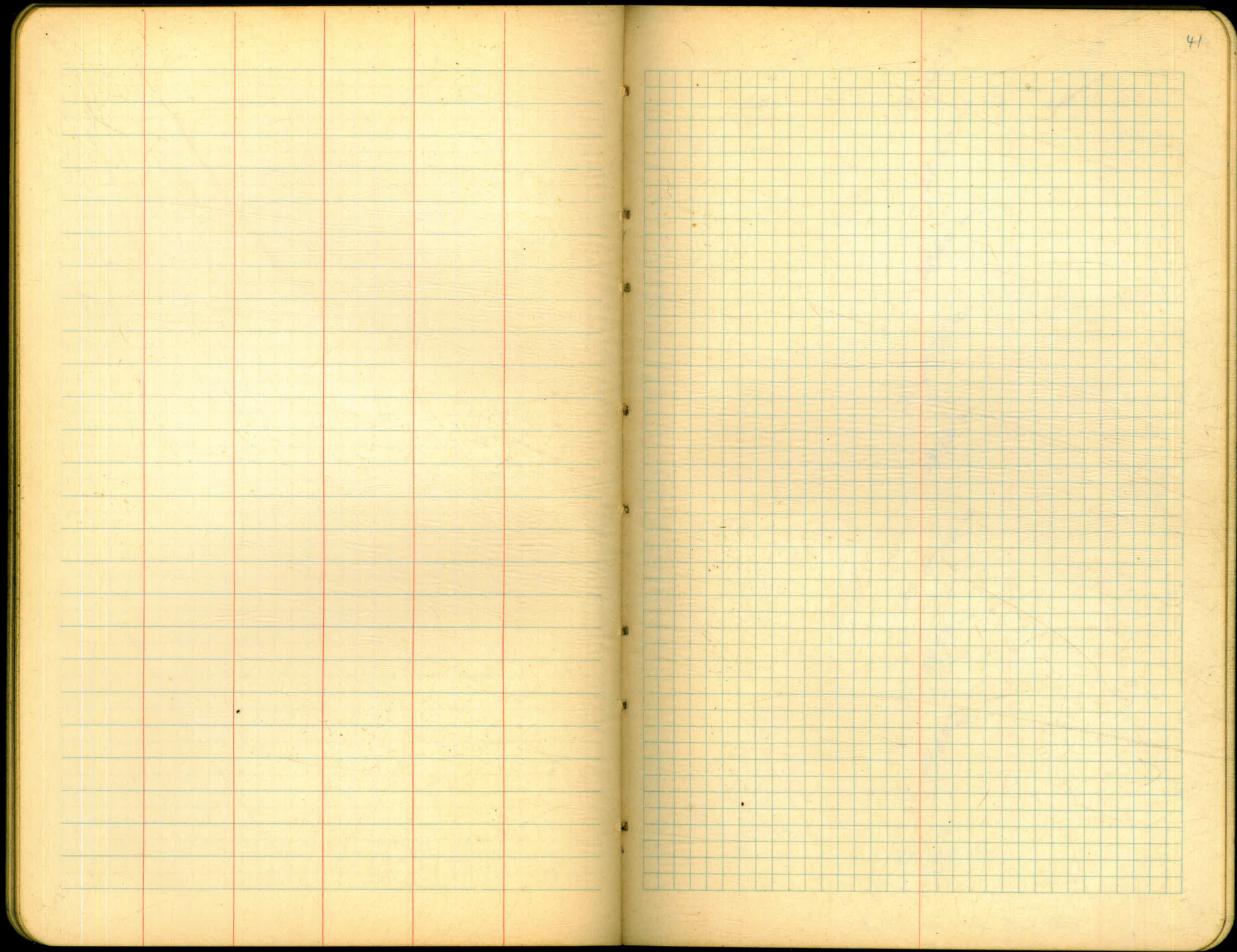
34.4

Note for location South to
P.I. See page 78

37.4







+37 24" Con. Pipe Culv.

121

+50

120

+50

119

+50

118

35.45

Contd. from P 34

L.T. 24.55 ✓

$\frac{10.90}{20}$

F.L. Inlet

* 28.62 ✓

6.83

28.62 ✓

6.83

28.60 ✓

6.85

28.95 ✓

6.50

29.18 ✓

6.07

29.20 ✓

6.25

29.57 ✓

5.88

29.88 ✓

5.57

35.45 ✓

P: 23.60 ✓

$\frac{11.85}{29}$

F.L.

125

+50

124

+50

TP 361 3223 683 7862

123

+50

122

121 + 50

35.45

27.71

4.52

27.77

4.46

27.96

4.27

28.07

4.16

32.23

27.93

7.52

28.15

7.30

28.91

7.04

29.62

6.83

35.45

129

+50

128

+50

127

+50

126

125+50

32.23

44

27.08 ✓

5.15

27.13 ✓

5.1

27.43 ✓

4.8

27.50 ✓

4.73

27.53 ✓

4.70

27.50 ✓

4.73

27.44 ✓

4.79

27.93 ✓

4.30

32.23

✓

132

+50

131

+50

130

129 + 47 1/2" 4" Conc. pipe cutv.

129 + 78.69 Δ 1'04" RT

129 + 50

3223

LT.

23.13
9.1
15

23.23
9.0
15

23.06
9.7
9

FL inlet

RT.

H5

26.63
5.6

26.73
5.5

26.83
5.4

26.83
5.4

26.73
5.5

26.83
5.4

26.83
5.4

27.03
5.2

32.23

22.43
9.80
40 FL

+ H.I. - E

134

+50

135

134+99.2

+50

134

+50

133

132+50

T.P.

491

32.09

5.05

27.18

32.23

L7
22.39
27
15

9.3
15

9.0
15

8.9
15

Rx
46
27.09

5.0

4.9

5.0

5.2

5.2

5.3

5.5

5.7

32.09

22.79

23.09

23.19

27.19

27.09

26.89

26.89

26.79

26.59

26.39

32.09

+50

139

+50

138

+50

137

+50

136 +34 E 6th St EXT. to North

3209

LT.

E

RT.

47

22.59
9.5
15

22.79
9.3
15

22.59
9.5
20

5.7

5.6

5.8

5.8

5.7

5.6

5.2

5.3

32.09

26.39

26.39

26.39

26.39

26.39

26.49

26.89

26.79

26.49

32.09

+64.4 3°42.7 Int. 18" x 8" Con. Box Culv.

+50° 3°17.6

142 10 50.4

+50 0°23.3 LT

T.P 3.92 32.01 4.00 22.09

141 +36.65 BC LT.

141

+50

140

32.09

FL INLET

LT
21.14
10.87
53.3

25.11
5.9
15
22.41
9.5
15

21.79
10.3
20

22.29
9.8
20

RT
25.81
6.2
25.91

6.1
26.01
6.0
26.29
5.72

32.01
26.29

5.8
26.39
5.7

26.49
5.6
26.39
5.7

32.09

PT
19.90
12.11
52.4

FL OUTLET

49

146 13° 27.7

+50 12° 00.5

145 10° 32.4

+50 9° 06.2

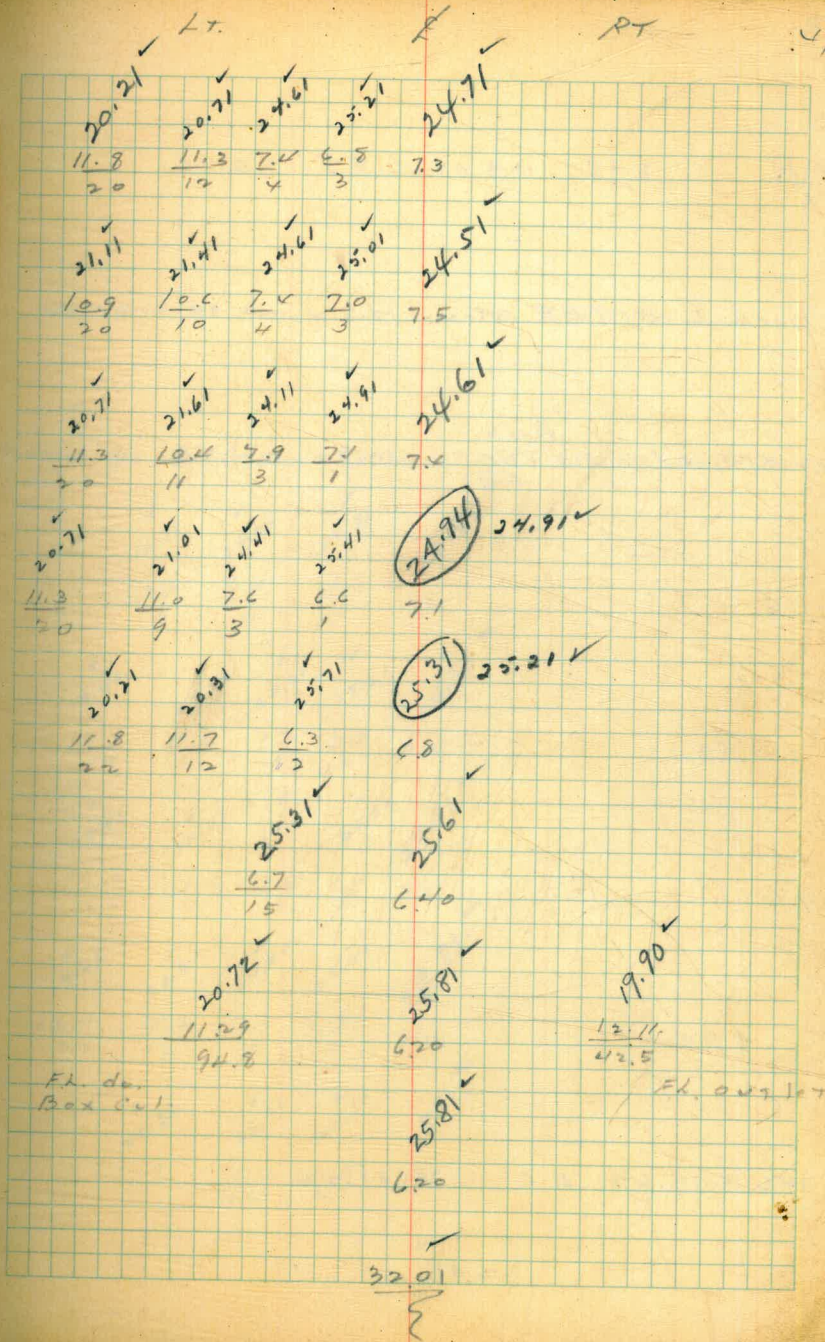
144 7° 39.1

+50 6° 11.9

+12.8 5° 07.0

143 4° 44.7

32.01



T.R. 3.98 29.44 6.55 25.46

check to B.M. B.P. Mon. 10.71 41.30 21.34

Set B.M. Ld. C.T. LINE R.R. Pueblo 7.30 24.71 N. end

148

+50

147

+50

146 + 13.48 EC 13° 51.25

72.01

LT

R

R

50

EL. C.T. ST EXT. + W. OLD RD TO OLD TOWN

TOP OF DO. BOX CURB, Rd. MAIL, 3' FROM EAST END

✓ 19.41	✓ 19.61	✓ 24.51	✓ 24.71	✓ 24.41
12.0 20	12.8 10	7.5 5	7.3 3	7.6

✓ 19.41	✓ 20.21	✓ 24.71	✓ 25.21	✓ 24.71
12.0 20	11.8 10	7.3 3	6.8 2	7.3

✓ 19.41	✓ 20.41	✓ 24.51	✓ 25.01	✓ 24.71
12.0 20	11.6 10	7.5 3	7.0 2	7.3

✓ 19.61	✓ 20.21	✓ 24.41	✓ 25.21	✓ 24.91
12.0 20	11.8 12	7.6 4	6.8 3	7.2

✓ 20.31	✓ 20.71	✓ 25.11	✓ 25.01	✓ 25.01
11.7 20	11.2 12	6.9 4	7.0	7.0

✓
32.01
Σ

151 6° 12.0

+50 11° 47.3

+10 Int. double^{24"} Con. Pipe Culv.

150 3° 44.5 Shoulder good w/ly
front here

+50 1° 57.8

149 0° 33.0 Rt.

148 + 80.48 BC RT

148 + 50

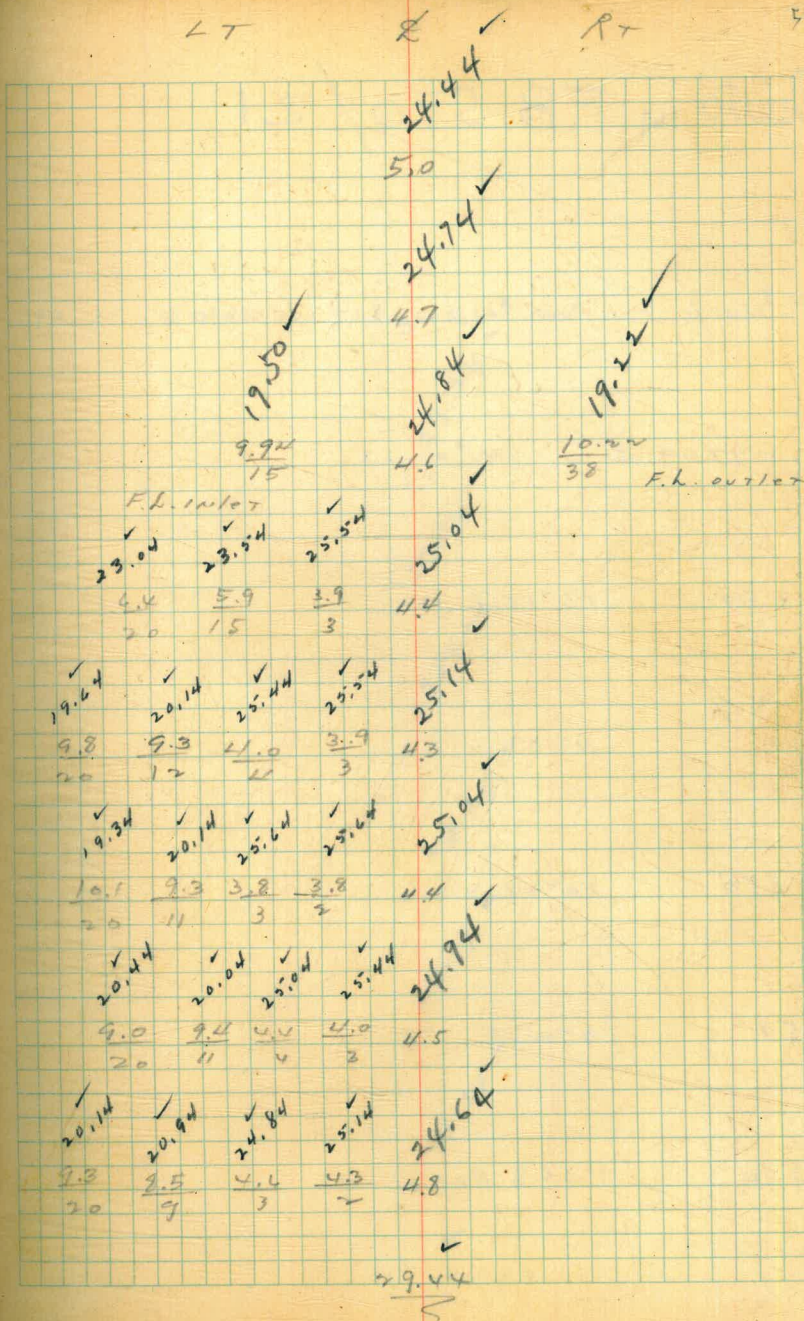
29.44

LT

R

PT

51



Cont'd in F.B. 570/21

T.P. ³ Nails Tel. Pole #41832349.19 20.25

153 + 77.49 E.C. 14° 02.3

+50 13° 15.2

153 11° 51.0

+50 10° 26.3

152 9° 01.5

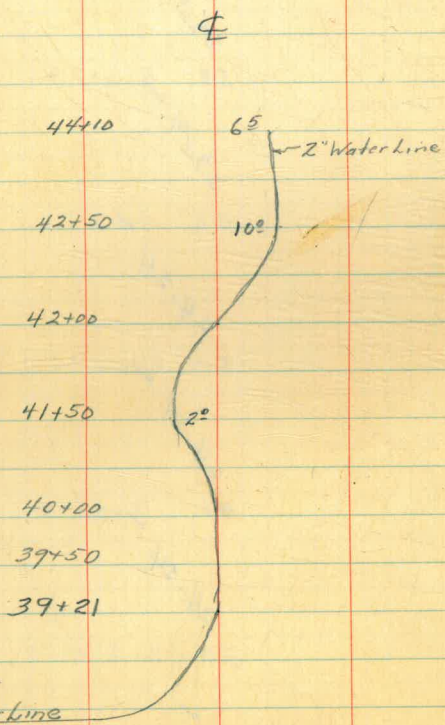
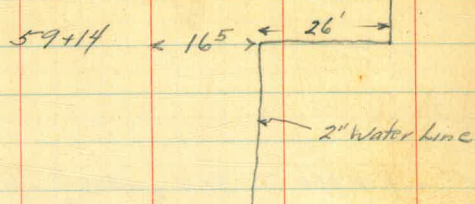
+50 7° 36.8 RT.

29.44

50' N of approx. Sta 155+00

23.24
23.54
23.84
5.0
24.24
5.2
24.34
5.1
24.24
5.2
29.44

Location of 2" Water line - Sandrock Grade



Adams Ave Bridge
2" Water Line

Located by Pipefinder

Distance from Φ to 2" line

57+50	-	15°	RT
56+00	-	18°	"
55+00	-	6°	"
53+50	-	18°	"
52+50	-	14°	"
51+95	-	11°	"
50+83 ⁸	-	2°	"
50+00	-	7°	"
49+25	-	37	"
49+00	-	16	"
48+15	-	43	"
47+40	-	24	"
46+75	-	5°	"
46+20	-	7°	"
45+00	-	7°	"

4/5/41 53

Super
Brooks
Hodgson
4/8/41
Super
Brooks
Hodgson

Profile, 6' offsets

B.M.	7.86	21.71	13.85	9.3
234+90x			5.4	16.3
234+35x			5.2	16.5
234+15x			5.3	16.4
234+00			5.4	16.3
233+50			5.5	16.2
233+00			5.7	16.0
232+50			5.9	15.8
TP	5.46	21.28	5.89	15.82
232+00			5.5	15.8
231+50			5.6	15.7
231			5.7	15.6
230+50			5.6	15.7
230			5.5	15.8
229+50			5.5	15.8
229			5.3	16.0
228+74°			5.3	16.0
+50			5.3	16.0
228			5.2	16.1
227+50			5.2	16.1
227			5.3	16.0
226+50			5.1	16.2
226			4.8	16.5
225+50			4.6	16.9

16.3
9.3

8/2/41 . 57
Super
Erickson
Hodgson

Conc. med. near culv. inlet

9.1 - 7.0
6.4 - 6.0
5.8
5.7
5.6
5.3
5.1
5.1
5.0
4.8
4.9
5.0
5.0
5.1
5.1
5.1
5.2
5.2
5.0
5.2
5.5
5.7

21.28

225			4.6	16.7	11.1
TP	4.80	21.42	4.66	16.62	
224			4.9	16.5	11.1
223			5.0	16.4	11.1
222			5.1	16.3	11.1
221			5.2	16.2	11.2
220			5.1	16.3	11.2
219			5.1	16.3	11.2
218			4.8	16.6	11.3
217			4.6	16.8	11.3
216			4.6	16.8	11.3
215			4.5	16.9	11.3
214			4.5	16.9	11.4
213			4.4	17.0	11.4
212			4.7	16.7	10.6
ck on 218			4.8	16.6	Rec. 16.6
Set B.M.			1.68	19.74	

5.6
5.4
5.3
5.2
5.0
5.1
5.1
5.1
5.3
5.5
5.5
5.6
5.5
5.6
6.1
Top roadmarker Rt 217+50

Alignment notes Mission Valley Ext.

244+67 - approx. sta of existing 16" main

Relocated - see page 60

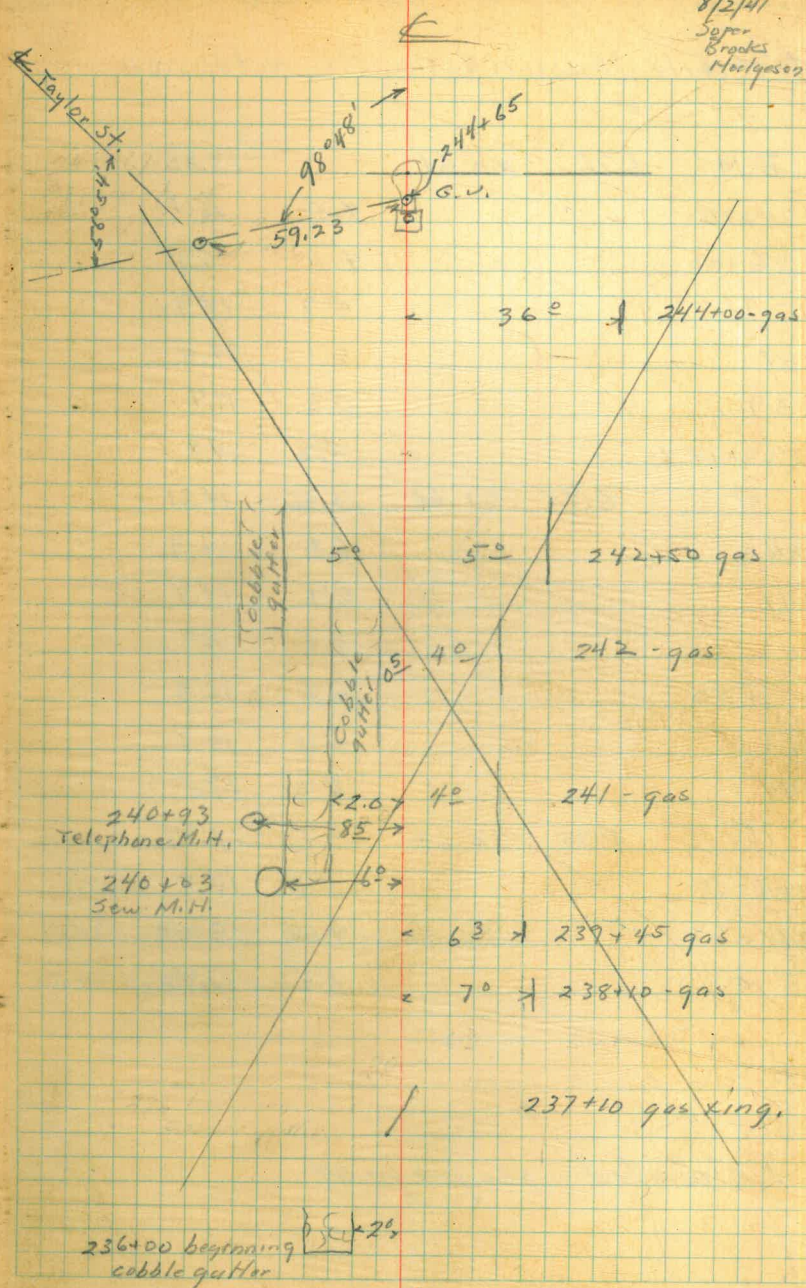
242+50 12°53' Lt

241+00 3°00' Lt

239+75 4°00' Lt

235+70 P.O.T.

8/2/41
Sper
Brooks
Hedgcock



Levels checked + plotted 8/2/41 - C.M.A.

Profile Mission Valley P.L. extension

B.M.	6.76	20.61	13.85
235+70			4.5 16.1
236+00			4.7 15.9
237			5.7 14.9
238			6.1 14.5
239			6.2 14.4
239+75 L			5.8 14.8
TP	6.85	21.66	5.80 14.81
240			6.8 14.9
241			6.9 14.8
242			6.8 14.9
+50			6.4 15.3
243			6.0 15.7
244			4.2 17.5
TP	4.95	22.84	3.77 17.89
244+50			5.0 17.8
244+63			9.44 13.40
B.M.			5.42 17.42

Relocated - see page 64

8/2/41
Soper
Brooks
Hodgson

57

center of horiz. gate valve stem
17.41 by Moore.

From Page 55

7/4/41 58
Singer
Brooks
Hedgeman

B.M.	3.86	23.60	19.74
217+50 x			7.2 16.4 9.1
217+25 x			7.2 16.4 8.8
216+90 x			7.3 16.3 8.8
+74 x			7.3 16.3 9.1
+58 x			7.3 16.3 9.7
+42 x			7.2 16.4 10.3
+26			7.2 16.4 10.9
216+00			7.1 16.5 11.5
215+50			6.8 16.8 11.8
215 x			6.4 17.2 12.1
214+50			5.8 17.8 12.75
214 x			5.1 18.5 13.4
213+50			4.1 19.5 14.5
213 x			2.9 20.7 15.6
212+50			1.5 22.1 16.95
212 x			0.3 23.3 18.3
II	12.98	36.44	0.14 23.46
211+50			11.6 24.9 19.95
211 x			9.9 26.6 21.60
210+50			8.5 28.0 23.0
210			7.1 29.4 24.4
209+50 x			5.5 31.0 25.8
209			4.2 32.3 26.67
208+70 x			3.4 33.1 27.2

7.3
7.6
7.5
7.2
6.6
6.1
5.5
5.0
5.0
5.1
5.0
5.1
5.0
5.1
5.1
5.0
4.9
5.0
5.0
5.0
5.2
5.6
5.7

36.44⁵

208+40x	2.5	34.0	27.8
208+00x	1.4	35.1	28.2
207+78x	0.7	35.8	29.2
TP	8.38	44.51	30.6
207+50x	8.0	36.5	31.6
207	6.9	37.6	32.5
206+50	6.1	38.4	33.4
206x	5.2	39.3	33.53
205+50	4.4	40.1	34.30
205x	3.8	40.7	33.66
204+50x	3.7	40.8	34.77
204	3.8	40.7	33.8
203+50	4.1	40.4	35.23
203	4.3	40.2	34.8
202+50x	4.8	39.7	35.70
202	5.5	39.0	34.7
201+50	6.2	38.3	35.37
201	6.9	37.6	34.6
200+50x	7.7	36.8	35.05
200+10	8.4	36.1	34.5
199+94	8.7	35.8	34.72
TP	9.66	34.85	

5.8 6.2

5.9

5.2

4.9

5.1

5.0

5.0 5.8

5.5 6.4

5.5 6.9

5.1 6.0

5.3 6.0

5.3 5.8

5.5 5.7

5.3

5.3

5.3

5.2

5.1

5.1

5.1

S-L B.M. P.O.R. 50' Rt 199+80

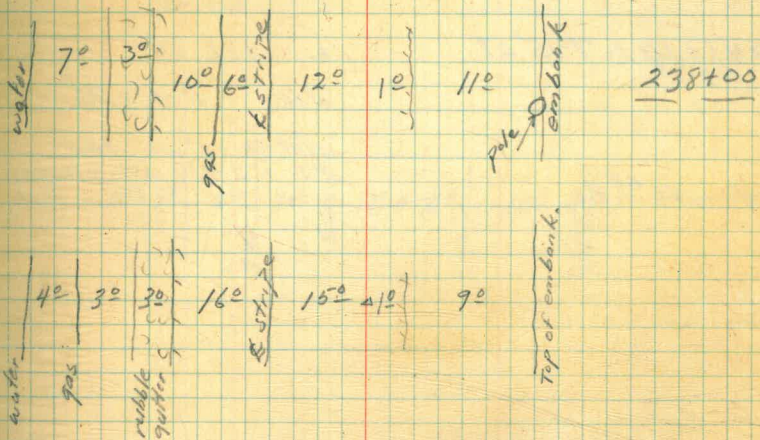
Relocation of Mission Valley Extension

(9/2/44) 237+00 (due to change
236+98⁵ by Am Conc Pipe Co.)

236+53L 21° 10' LT

235+70L 20° 00' RT

8/8/44 60
Saper
Bredes
Hodgeson



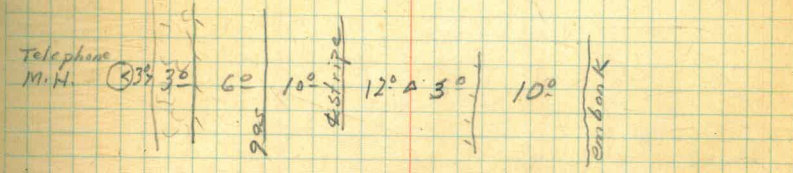
236+09 E stripe - pave.

20' A
ditto paving

$L = 7^{\circ} 15' 14''$
 $R = 1000'$
 $T = 63.35$
 $L = 126.54$
 $def 1' = 0^{\circ} 01' 7188$
 $def 50' = 1^{\circ} 25' 940$
 $P.I. = 241+10.00$

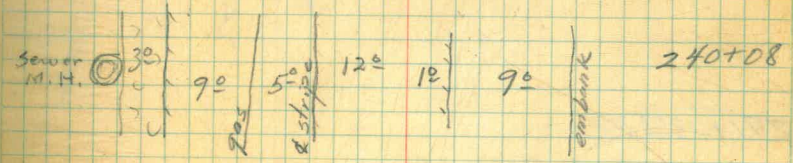
241+10 L 7°15' 14"

240+46 ⁶⁵ BC

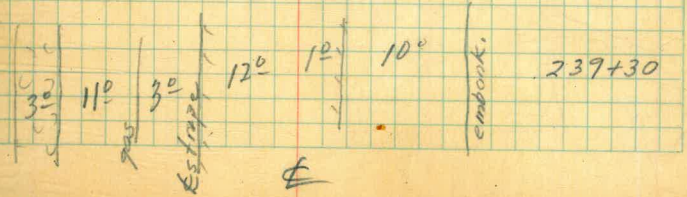


241+00

110° OPole 240+20
 110° OPole 240+15



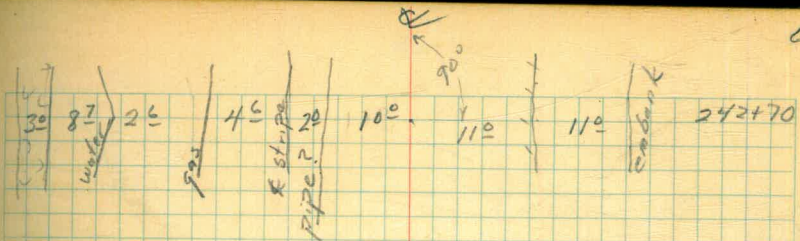
240+08



239+30

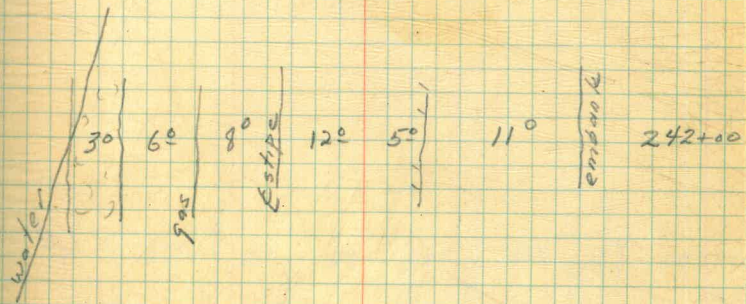
242+59⁸⁶ L. 21'46" LT

241+73¹⁹ E.C.



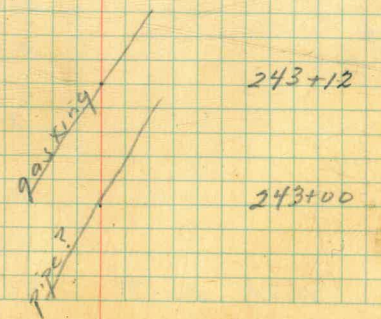
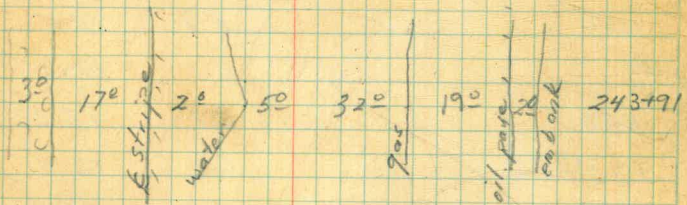
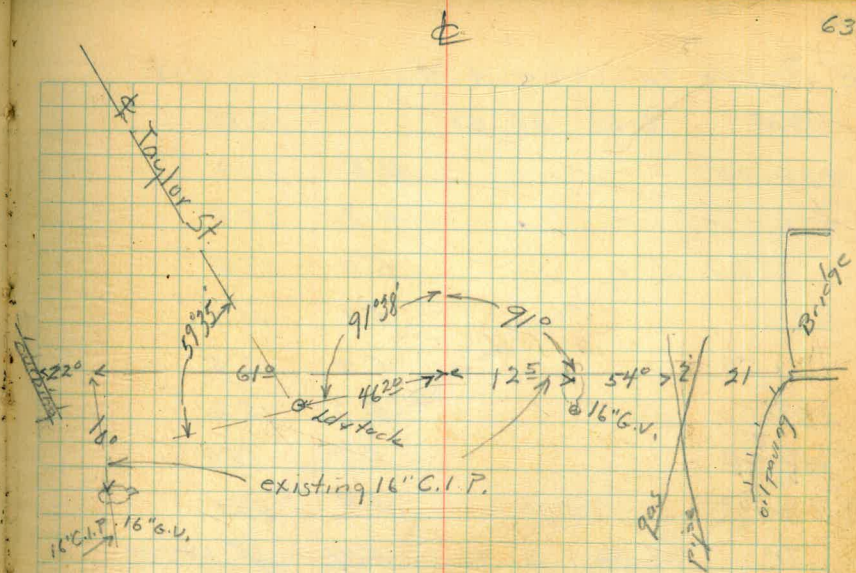
242+23

100 pole 110



⊕

244+82¹³ 4 16" C.I.P.



⊕

Profile, relocation of Mission Valley Ext.

BM.	6.66	20.51		13.85
235770			4.4	16.1
236			4.7	15.8
+53 L			5.0	15.5
237			5.1	15.4
+50			5.0	15.5
238			5.3	15.2
+50			5.5	15.0
239			5.4	15.1
TP	6.32	21.42	5.41	15.10
+50			5.9	15.5
240			5.9	15.5
+46 ⁵ E.C.			5.9	15.5
+50			5.9	15.5
241			6.1	15.3
+50			6.1	15.3
+73 ¹⁹ E.C.			6.1	15.3
242			6.0	15.4
+50			5.6	15.8
+59 ⁸⁶ L.			5.4	16.0
+91				13.9
243			5.5	15.9
+12			3.5	12.9
+50			5.1	16.3
244			4.3	17.1
+50			3.5	17.9
TP	4.78	22.71	3.49	17.93

8/9/41

Soper
1300 ft/s
Hodgson

67

6.5 Fl. line elev. (check elev. if possible)

3/4" pipe in catch basin

295

232

Catch basin

4.0 = Fl. line 24"
Cone. Culv.

Top of 4" pipe

Top of 4" Gas line

22-71

244482-

5.5 17.2

9.30 13.41

9.76 12.95

B.M.

5.27 17.44

center of horiz. gate valve stem - 12.5 RT

" " " " " 61' LT

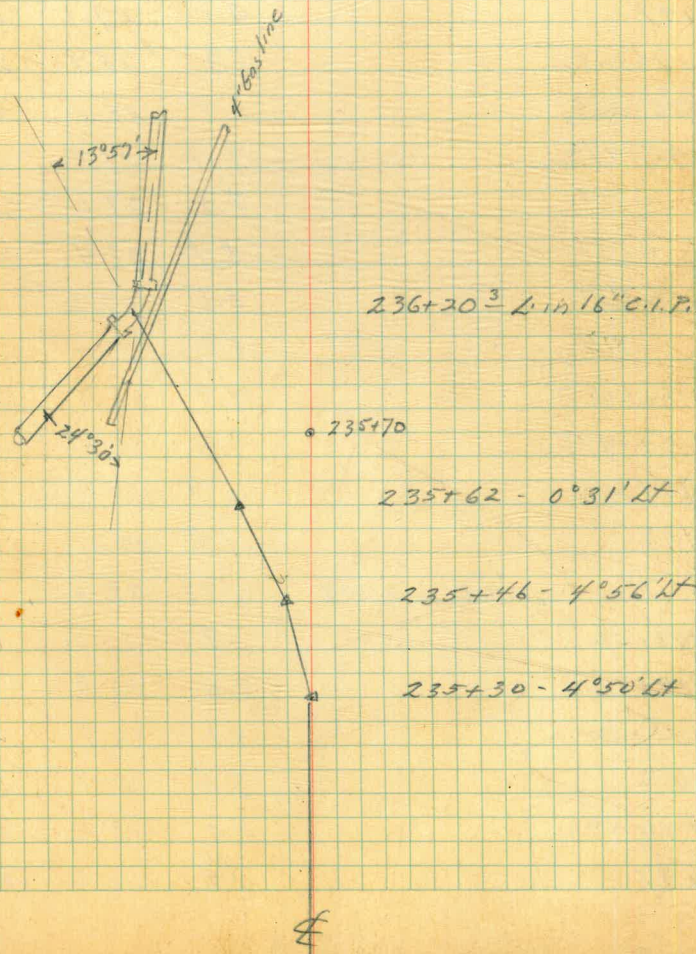
Rec. 17.41 by Moore

Profile of 6' offsets

B.M.	7.22	21.07	13.85	Grade Cut	
235+14		4.9	16.2	6.46	9.7
+30		4.9	16.2	6.5	9.7
+46		4.9	16.2		
+62		4.9	16.2		
236		5.2	15.9		
+20 ³		3.8	17.3		
+20 ³ Top 16" C.I.P.		10.7	10.4	8.3	

8/4/41
Soper
Braker
Hodgeson
66

Location of 16" C.I.P. + gas line near old pumping plant (copied from pad)



Continued to 59

B.M.	0.93	35.78	34.85			
199+50			0.8	35.0	29.83	5.2
199 x			1.8	34.0	28.90	5.1
198+50			2.8	33.0	27.73	5.3
198			4.0	31.8	26.56	5.2
197+50 x			5.1	30.7	25.40	5.3
197			6.1	29.7	24.47	5.2
196+58 x			6.9	28.9	23.69	5.2
196+26.2 x			7.4	28.1	20.55	7.8
195+94.5 x			7.9	27.9	14.99	12.9
+78.2 x			8.2	27.6	13.60	14.0
+62.2 x			8.4	27.4	13.60	13.8
+46.8 x			8.6	27.2	14.99	12.2
+31.0 x			8.8	27.0	17.69	9.3
195+15.2 x			9.1	26.7	20.01	6.7
194+99.2 x			9.3	26.5	20.98	5.5
194+50			10.4	25.4	19.80	5.6
194 x			11.6	24.2	18.60	5.6
TR	1.43	25.44	11.77	24.01		
193+50			1.9	23.5	18.10	5.4
193			2.6	22.8	17.60	5.2
192+50			3.1	22.3	17.10	5.2
192 x			3.6	21.8	16.60	5.2
191+50			4.1	21.3	16.00	5.3
191			4.8	20.6	15.40	5.2

8/11/41

Super
Brook's
Hedgeson

67

25.44

190+50 x	5.5	19.9	14.80
190	5.8	19.6	14.37
189+80 x	5.9	19.5	14.20
+60 x	6.0	19.4	13.70
+23 ² x	6.2	19.2	11.74
189+10 x	6.2	19.2	11.60
188+90 x	6.2	19.2	11.60
+59 ² x	6.2	19.2	12.16
+43 ³ x	6.2	19.2	13.44
+20 x	6.2	19.2	14.20
188+00	6.2	19.2	14.21
187+50	6.2	19.2	14.26
187	6.1	19.3	14.30
TP	6.55	26.09	5.90
186+50	6.8	19.3	14.33
186+00	6.7	19.4	14.38
185+75 x	6.7	19.4	14.40
+46 ³ x	6.7	19.4	13.73
185+14 ⁴ x	6.6	19.5	11.60
184+98 ⁴ x	6.6	19.5	11.60
+50 x	6.4	19.7	14.26
+25	6.3	19.8	14.90
184+00	6.1	20.0	14.97
183+50	5.9	20.2	15.11
183	5.7	20.4	15.26

5.1
5.2
5.3
5.7
7.5
7.6
7.6
7.0
5.8
5.6
5.0
4.9
5.0
5.0
5.0
5.0
5.7
7.9
7.9
5.5
4.9
5.0
5.1
5.1

26.09

192+50 x	5.4	20.7	15.40
182+00	5.1	21.0	15.47
181+50	5.1	21.0	15.53
181 x	5.2	20.9	15.60
180+50	5.1	21.0	15.71
180	4.9	21.2	15.93
179+50 x	4.9	21.2	16.18
TP	6.04	27.42	4.71 21.38
ST	6.32	27.42	6.32 21.10
179+25 x	6.3	21.1	16.00
179 x	6.4	21.0	15.30
178+42 ^E x	6.4	21.0	12.03
+25	6.4	21.0	12.00
178	6.4	21.0	12.00
¹⁹⁰ ¹⁶⁴ 177+50 x	6.1	21.3 21.3	12.00 10.60
⁺⁴⁰		21.4	12.00
176+78 ^E x	5.8	21.6	12.02
176+50 ^Z x	5.6	21.8	16.62
176	5.4	22.0	16.75
175+50	5.3	22.1	16.90
175	5.3	22.1	17.05
174+50 x	5.1	22.3	17.20
174	5.2	22.2	17.03
173+50	5.4	22.0	16.87
173	5.7	21.7	16.71
172+50	5.8	21.6	16.54

8/13/41
Super
Brents
Hudgson

69

5.3

5.5

5.5

5.3

5.2

5.3

5.1

5.1

5.7

9.0

9.0

9.0

9.0

9.0

9.0

9.0

9.4

9.6

5.2

5.2

5.2

5.0

5.1

5.2

5.1

5.0

5.1

27.42

172			5.8	21.6	16.38
171+50			6.0	21.4	16.22
TP	4.67	26.09	6.00	21.42	
171			4.7	21.4	16.05
170+50			4.8	21.3	15.89
170			5.0	21.1	15.73
169+50			5.1	21.0	15.56
169	x		5.2	20.9	15.40
168+50			5.2	20.9	15.40
168			5.2	20.9	15.40
167+50			5.3	20.8	15.40
167			5.2	20.9	15.40
166+50			5.3	20.8	15.40
166			5.3	20.8	15.40
165+50			5.3	20.8	15.40
165	x		5.1	21.0	15.40
164+50			4.8	21.3	14.65
+20	x		4.7	21.4	14.20
164+00			4.8	21.3	14.16
163+50			5.0	21.1	14.04
163			5.0	21.1	13.93
TP	6.56	27.54	5.11	20.98	
162+50			6.3	21.2	13.82
162			6.2	21.3	13.71
161+50	x		6.1	21.4	13.60

5.2
5.2
5.3
5.4
5.4
5.4
5.5
5.5
5.5
5.4
5.5
5.4
5.4
5.4
5.6
6.6
7.2
7.1
7.1
7.2
7.4
7.6
7.8

166+80. gas xing marked 45 = elev. 16# Grade = 15.4

27.54

161+25 x			6.0	21.5	13.70
161 x			5.9	21.6	14.40
160+80 x			5.9	21.6	15.50
+50 x			5.8	21.7	16.30
160			5.6	21.9	16.40
159+50			5.4	22.1	16.50
159			5.3	22.2	16.60
158+50			5.1	22.4	16.70
158 x			5.0	22.5	16.80
157+50			5.0	22.5	16.85
			4.9	22.6	—
157+00			4.9	22.6	16.90
156+50			5.0	22.5	16.95
156 x			5.1	22.4	17.00
155+50 x			5.1	22.4	16.60
155 x			4.9	22.6	15.50
154+75 x			4.7	22.8	15.20
+50 x			4.6	22.9	15.30
154 x			4.4	23.1	16.10
TP	7.32	30.34	4.52	23.02	
153+50 x			4.1	23.2	17.40
			6.6	23.7	
153 x			6.7	23.6	18.60
152+50 x			6.5	23.6	19.00
152			6.3	24.0	19.07

71

7.8'

7.2'

6.1'

5.4'

5.5'

5.6'

5.6'

5.7'

5.7'

5.6'

157+25 gas xing marked 50 = elev. 17⁴

5.7'

5.5'

5.4'

5.8'

7.0'

7.6'

7.7'

7.0'

5.8'

153+11 gas xing marked 50 = elev. 18⁷ (actual elev. 17³)

5.0'

4.8'

4.9'

30.34

151+50	6.3	24.0	19.13	
151 x	6.2	24.1	19.20	
+50	5.9	24.4	18.20	
150+102 x	5.7	24.6	16.63	
149+65 x	5.4	24.9	18.90	
+40 x	5.4	24.9	19.60	
149+00	5.4	24.9	19.63	
148+50	5.7	24.6	19.67	
148	5.7	24.6	19.71	
147+50	5.5	24.8	19.75	
147	5.3	25.0	19.78	
146+50	5.2	25.1	19.82	
146+13 ⁵ EC.	5.2	25.1	19.82	
146	5.2	25.1	19.86	
145+50 x	5.3	25.0	19.90	
TP	5.98	32.12	4.20	26.14
145	7.1	25.0	20.04	
144+50	6.8	25.3	20.18	
144	6.4	25.7	20.32	
143+70 ² x	6.3	25.8	20.41	
+22 ⁹ x	6.1	26.6	16.60	
143+00	6.1	26.0	16.76	
142+58 ⁹ x	6.0	26.1	17.07	
	5.9	26.2		
+27 ² x	5.8	26.3	19.87	

72

151+21 gas ring

4.9
4.9
6.2
8.0
6.0
5.3
5.3
4.9
4.9
5.0
5.2
5.3
5.3
5.2
5.1
5.0
5.1
5.4
5.4
9.4
9.2
9.0
6.4

	Elev.	Grade	cut
143+15	26.0	16.6	9.4
142+90	26.0	14.8	11.2
142+65	26.0	17.0	9.0

142+0 gas ring marked 3⁰

32.12

142+11 x	5.7	26.4	20.64
142+100	5.7	26.4	20.69
B.M.	7.32	24.80	
141+50 x	5.7	26.4	20.90
141	5.5	26.6	20.98
140+50	5.4	26.7	21.07
140	5.5	26.6	21.15
139+50	5.5	26.6	21.23
139	5.5	26.6	21.32
138+50	5.6	26.5	21.40
138	5.6	26.5	21.48
137+50	5.5	26.6	21.57
137	5.3	26.8	21.65
ck offset 136+63	5.2	26.9	

Continuing
from
Page 73
Book 570

73

5.8'

5.7'

5.5'

5.6'

5.6'

5.4'

5.4'

5.3'

5.1'

5.0'

5.0'

5.1'

Rec elev: 26.8

26.8
~~26.8~~

Profile of 7' offsets - Extension

9/2/41

74

B.M.	6.58	20.43	13.85	Grade
235+30			4.3	16.1 - 6.5
+46			4.3	16.1 - 6.8
+62			4.4	16.0 - 7.4
+78			4.4	16.0 - 8.1
+94			4.4	16.0 - 8.9
236+10			4.6	15.8 - 9.5
+26			4.8	15.6 - 9.5
+42			4.9	15.5 - 9.5
+58			4.9	15.5 - 9.5
+74			5.0	15.4 - 9.5
+80			5.0	15.4 - 9.5
+96			5.0	15.4 - 9.5
237+00			5.0	15.4 - 9.5
+50			5.2	15.2 - 9.5
238			5.5	14.9 - 9.5
238+20x				14.8 - 9.54
+50			5.7	14.7 - 9.6
+60				14.7 - 9.7
+90			5.5	14.9 - 9.7
239			5.2	15.2 - 9.6
+50			5.2	15.2 - 9.6
↑	5.96	21.47	4.92	15.51
240			6.2	15.3 - 9.6
+50			6.3	15.2 - 9.6
+96			6.3	15.2 - 9.6
241+12			6.4	15.1 - 9.6
+28			6.4	15.1 - 9.6

9.6	
9.3	
8.6	
7.9	
7.1	
6.3	
6.1	
6.0	
6.8	
5.9	
5.9	
5.9	
5.9	
5.7	
5.4	238+20
5.3	
5.7	8.0 - 238+60
5.3	8.2 - 238+90
5.6	239+50
5.7	
5.6	
5.6	
5.5	
5.5	

21.47

241+50	6.4	15.1	9.7
242+00	6.3	15.2	9.7
+24	6.1	15.4	9.7
+40	6.0	15.5	9.7
+56	5.9	15.6	9.7
+72	5.8	15.7	9.7
+88	5.8	15.7	9.7
243+04	5.7	15.8	9.7
+50	5.3	16.2	10.3
244	4.4	17.1	10.9
+50	3.6	17.9	11.5
+70	3.8	17.7	11.7 12.0
	4.3	17.2	ok. on 8 244+82=17.2

4.85 22.29

17.44

75

5.4
5.5
5.7
5.8
5.9
6.0
6.0
6.1
5.9
6.2
6.4
6.0 5.7

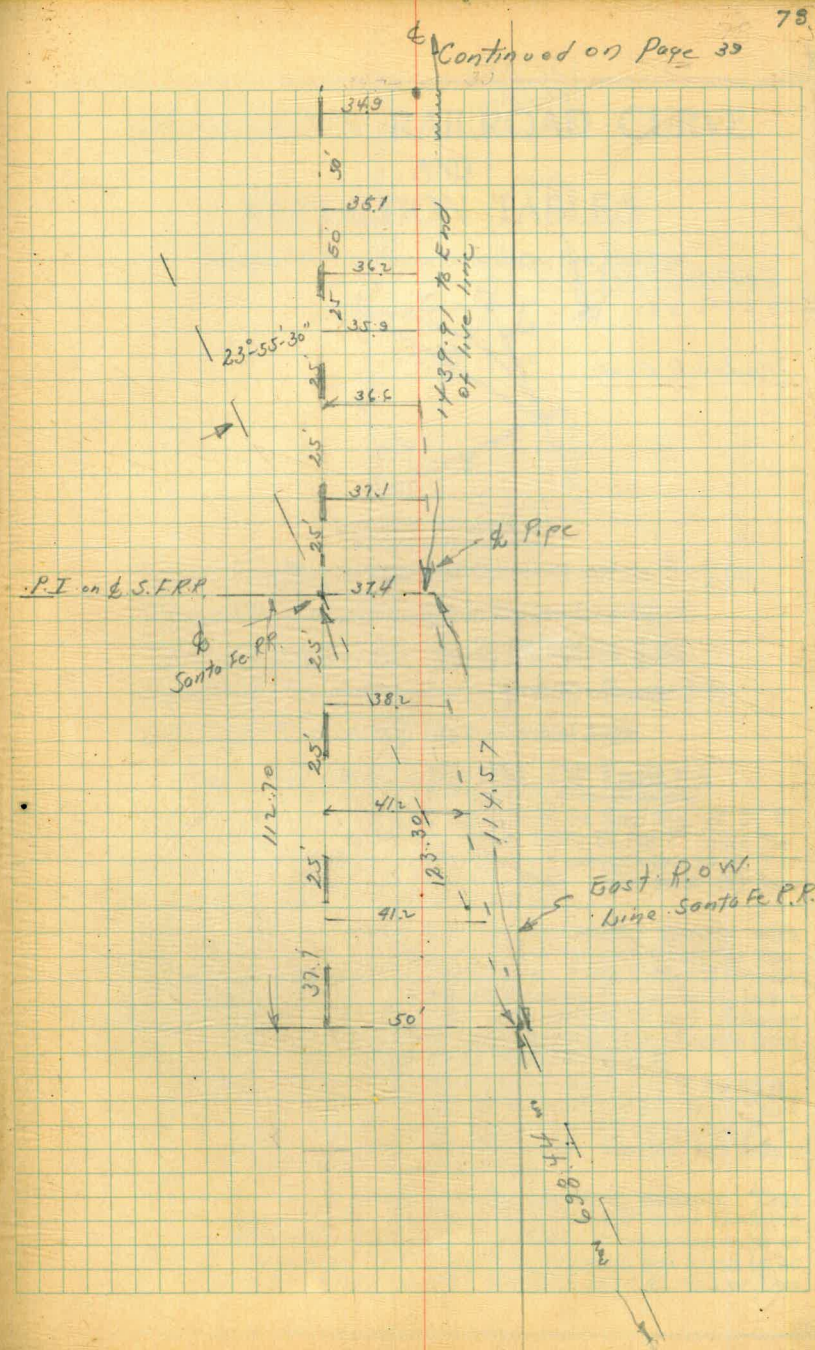
Appurtenances - Mission Valley Line

0+06	2" P.V.	129+70	24" G.V.
10+90	6" B.O.	129+73	2" P.V.
33+17	2" P.V.	130+03	6" B.O.
33+20	24" G.V.	143+70	2" P.V.
33+23	2" P.V.	151+05	2" P.V.
56+10	6" S.O.	157+19	8" S.O.
63+51 ⁵	12" S.O.	170+42	6" S.O.
63+84	6" B.O.	174+47	2" P.V.
63+93	24" G.V.	179+42	2" P.V.
63+96	2" P.V.	183+86	8" S.O.
73+22	2" P.V.	184+93	6" B.O.
77+52	6" S.O.	185+69	2" P.V.
86+08	2" P.V.	185+72	24" G.V.
90+58	8" S.O.	185+75	2" P.V.
90+65	2" P.V.	195+01	2" P.V.
99+97	2" P.V.	204+48	2" P.V.
104+00	2" P.V.	205+63	8" S.O.
105+48	6" S.O.	233+97	6" S.O.
115+42	2" P.V.	235+26	6" B.O.
115+52	8" S.O.	236+75	16" S.O.
117+49	2" P.V.	244+67	2" P.V.
122+18	2" P.V.	244+70	24" G.V.
129+55	24" G.V.	244+82	24" G.V.
129+63	24x24"x16" Tee and 16" G.V.		

A²
135+44 2" P.V.

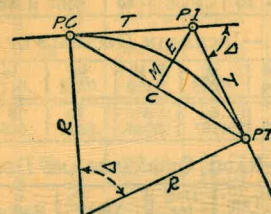
11745 31 Pt. Angles
to P.I. on S.F. RR.

10730 24 int East R. of W
Santa Fe RR.



DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES

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



CURVE FORMULAS

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

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

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

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

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

EXPLANATION AND USE OF TABLES

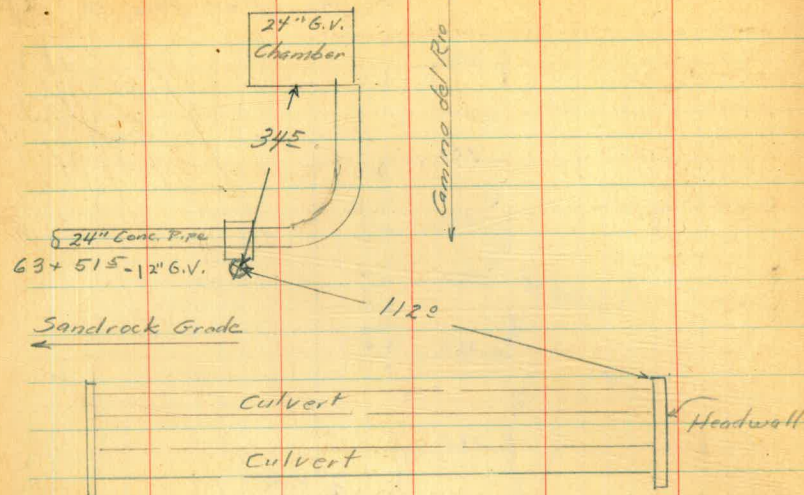
Stations.—Given P. I.—Sta. 161+60.35 to find Sta. of P. C. and P. T. $\Delta = 62^\circ 10'$ $D = 8^\circ 20'$. From Table IV for 1° curve $T = 3454.1$ and $\div 8\frac{1}{3} = 414.49$ ft. From Table V correction = .36 or $T = 414.85$ ft. P. C.—Sta. P.I.— $T = 157 + 45.50$. Also from (4) $L = 746.00$ and P. T.—Sta. P. C. + $L = 164 + 91.50$.

Offsets.—Tangent offsets vary (approximately) directly with D and with square of the distance. Thus tangent offset for Sta. 158 on above curve is 2.16 ft. found as follows. From Table III tangent offset for 100 ft. = 7.27 ft. Distance = $158 - \text{Sta. P. C.} = 54.50$, hence offset = $7.27 \frac{(54.50 \div 100)^2}{1} = 2.16$ ft. Also square of any distance divided by twice the radius equals (approximately) the distance from tangent to curve. Thus $(54.50)^2 \div (2 \times 688.26) = 2.16$ ft.

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

Externals.—May be found in similar manner to tangents. Thus E for curve above is 91.37. For from Table IV for 1° curve $E = 960.6$ for $8^\circ 20' = 960.6 \div 8\frac{1}{3} = 91.27$ and from Table V correction = .10 or $E = 91.37$ ft. Or suppose $\Delta = 32^\circ$ and E is measured and found to be 42 ft. What is D ? From Table IV $E = 230.9$ and $\div 42 = 5.5$ or $D = 5^\circ 30'$.

Location of 12" G.V.



Sta 39+70⁷² to Sta 40+00
 Chained Dist = 2468

39+7072
 2468
 39+95.40

H. 1.50

21.3
 44
 16.9
 30
 13.3
 27
 10.6

DISTANCES FROM CENTER OF ROADWAY FOR
 CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1½
 For Single Track Embankment.

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

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 41.9. For same slopes but other widths of roadbed correct above figures by one-half difference in width of roadbed; thus in example above for 20 ft. roadbed distance will be 41.9 + (20 - 16) ÷ 2 or 2 ft. added to 41.9 = 43.9. For slopes of 1 on 1 see inside of front cover.

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