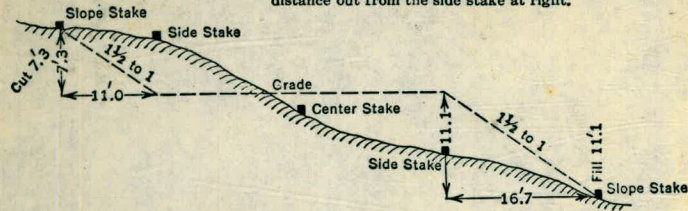


W

599

**DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING
Roadway of any Width. Side Slopes 1/2 to 1.**

In the figure below: opposite 7 under "Cut or Fill" and under .3 read 11.0, the distance out from the side stake at left. Also, opposite 11 under "Cut or Fill" and under .1 read 16.7, the distance out from the side stake at right.



Cut or Fill	Distance out from Side or Shoulder Stake										Cut or Fill
	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0.0	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.2	1.4	0
1	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.9	1
2	3.0	3.2	3.3	3.5	3.6	3.8	3.9	4.1	4.2	4.4	2
3	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.9	3
4	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.1	7.2	7.4	4
5	7.5	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.9	5
6	9.0	9.2	9.3	9.5	9.6	9.8	9.9	10.1	10.2	10.4	6
7	10.5	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9	7
8	12.0	12.2	12.3	12.5	12.6	12.8	12.9	13.1	13.2	13.4	8
9	13.5	13.7	13.8	14.0	14.1	14.3	14.4	14.6	14.7	14.9	9
10	15.0	15.2	15.3	15.5	15.6	15.8	15.9	16.1	16.2	16.4	10
11	16.5	16.7	16.8	17.0	17.1	17.3	17.4	17.6	17.7	17.9	11
12	18.0	18.2	18.3	18.5	18.6	18.8	18.9	19.1	19.2	19.4	12
13	19.5	19.7	19.8	20.0	20.1	20.3	20.4	20.6	20.7	20.9	13
14	21.0	21.2	21.3	21.5	21.6	21.8	21.9	22.1	22.2	22.4	14
15	22.5	22.7	22.8	23.0	23.1	23.3	23.4	23.6	23.7	23.9	15
16	24.0	24.2	24.3	24.5	24.6	24.8	24.9	25.1	25.2	25.4	16
17	25.5	25.7	25.8	26.0	26.1	26.3	26.4	26.6	26.7	26.9	17
18	27.0	27.2	27.3	27.5	27.6	27.8	27.9	28.1	28.2	28.4	18
19	28.5	28.7	28.8	29.0	29.1	29.3	29.4	29.6	29.7	29.9	19
20	30.0	30.2	30.3	30.5	30.6	30.8	30.9	31.1	31.2	31.4	20
21	31.5	31.7	31.8	32.0	32.1	32.3	32.4	32.6	32.7	32.9	21
22	33.0	33.2	33.3	33.5	33.6	33.8	33.9	34.1	34.2	34.4	22
23	34.5	34.7	34.8	35.0	35.1	35.3	35.4	35.6	35.7	35.9	23
24	36.0	36.2	36.3	36.5	36.6	36.8	36.9	37.1	37.2	37.4	24
25	37.5	37.7	37.8	38.0	38.1	38.3	38.4	38.6	38.7	38.9	25
26	39.0	39.2	39.3	39.5	39.6	39.8	39.9	40.1	40.2	40.4	26
27	40.5	40.7	40.8	41.0	41.1	41.3	41.4	41.6	41.7	41.9	27
28	42.0	42.2	42.3	42.5	42.6	42.8	42.9	43.1	43.2	43.4	28
29	43.5	43.7	43.8	44.0	44.1	44.3	44.4	44.6	44.7	44.9	29
30	45.0	45.2	45.3	45.5	45.6	45.8	45.9	46.1	46.2	46.4	30
31	46.5	46.7	46.8	47.0	47.1	47.3	47.4	47.6	47.7	47.9	31
32	48.0	48.2	48.3	48.5	48.6	48.8	48.9	49.1	49.2	49.4	32
33	49.5	49.7	49.8	50.0	50.1	50.3	50.4	50.6	50.7	50.9	33
34	51.0	51.2	51.3	51.5	51.6	51.8	51.9	52.1	52.2	52.4	34
35	52.5	52.7	52.8	53.0	53.1	53.3	53.4	53.6	53.7	53.9	35
36	54.0	54.2	54.3	54.5	54.6	54.8	54.9	55.1	55.2	55.4	36
37	55.5	55.7	55.8	56.0	56.1	56.3	56.4	56.6	56.7	56.9	37
38	57.0	57.2	57.3	57.5	57.6	57.8	57.9	58.1	58.2	58.4	38
39	58.5	58.7	58.8	59.0	59.1	59.3	59.4	59.6	59.7	59.9	39
40	60.0	60.2	60.3	60.5	60.6	60.8	60.9	61.1	61.2	61.4	40

KEUFFEL & ESSER CO., N. Y.
For Curve Tables see end of book.

599

MICROFILMED

JAN 13 1965

The paper in this book No. 2362A

is made of 50% high grade rag stock
with a WATER RESISTING surface sizing.

10,939. ca. ck. ys. cM.

In fr
C
Cut or
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MICROFILMED
JAN 13 1965

INDEX

Page -

ALVARADO P.L.

Line Chg - 42+14.36 to
82+54.65 = 82+58.37

1-4

Profile of Above Change - 5-18

Line Change - 22+99.87 to 52+96.59 19-26

Profile E of 10' O&E sets 102+00 to 176+12

Line change 152+77 to 175+38 28-42
42-46

Profile #14 Varado P.L. at Farmmont R 76

Alignment & Profile - From 12" S.O. From
#14 Varado P.L. Southward R 77

Moore
Hazard
Hoopes

5-C-42. Line change on Alvarado Cañon

36" water line. 4x+21.96 to Ward St.

P.P. = Power Pole

5x+79.63 E.C.

4x+50 0° 24.77 50+50 13° 10.79

43 1° 14.54 51 13° 52.54

+50 2° 02.27 +50 14° 46.29

44 2° 50.04 52 15° 34.04

+50 3° 37.79 +50 16° 21.79

$\Delta = 33^{\circ} 40' \text{ RT.}$ 45 4° 25.54 53+79.63 16° 50.04

$R = 1800$ P.O.C. +50 5° 13.29

$T = 544.59'$ 46 6° 01.04

$L = 1057.57'$ +50 6° 48.79

0.9549 = 1' 47 7° 36.54

0° 47.75 = 50' +50 8° 24.29

48 9° 12.04

$E = 8059$ +50 9° 59.79

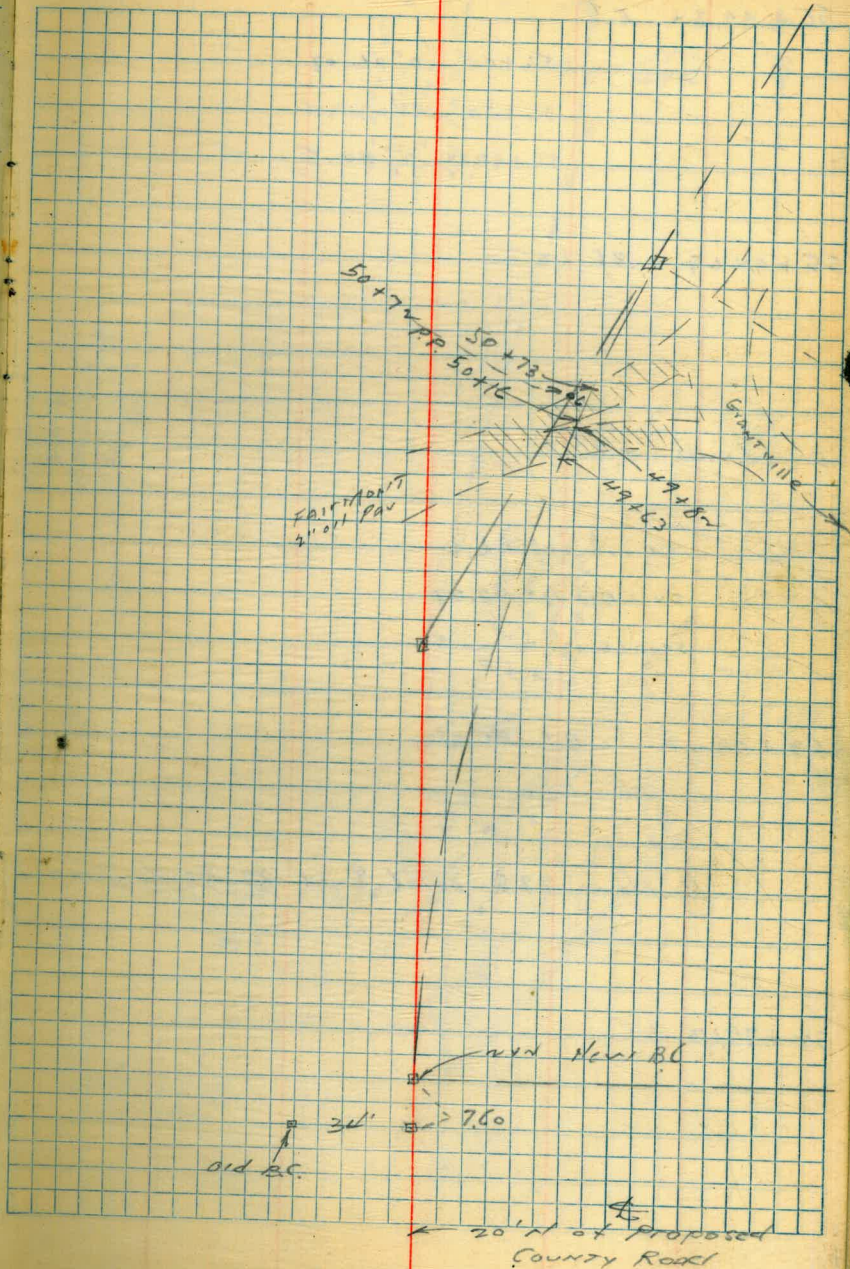
49 10° 47.54

+50 11° 35.29

50 12° 23.04

4x+21.96 New B.C.

4x+12.36 Old B.C. "M"



Now 21' So. of E 80' Row

56+99.84 E.C.

56+00 0° 06.07

56+50 1° 03.30

56+99.84 2° 00.5

55+94.69 B.C. LT

54+64.63 E.C.

54+00 0° 46.6

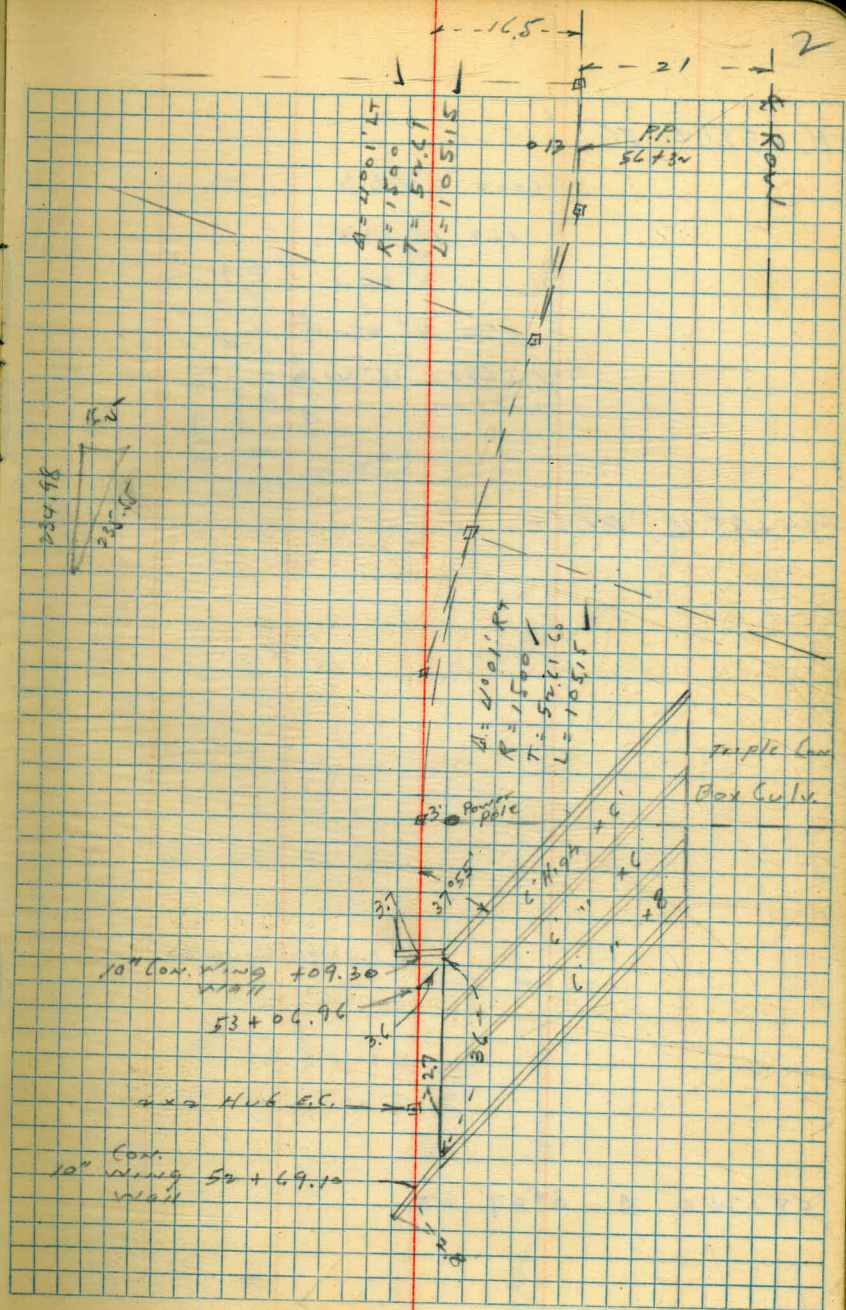
54+50 1° 43.87

54+64.63 2° 00.5

53+59.28 B.C. Rt

Now 37.5 So. of E of 80' Row. STATE

52+79.63 E.C.



76+58.4 EC.

75+00 0°08.3

+50 1°34.7

76 3°00.1

+50 4°26.0

76+58.4 4°41.0

74+95.16 B.C.T.

58+74.0 $\Delta = 0°07'$ LT.

3

$\Delta = 9^{\circ}22' \text{ LT}$
 $R = 1000$
 $L = 163.48$
 $75+76 \text{ PP}$
 $76+39.57$

PP 74+39 011

PP 69+03 012

PP 65+68 012

PP 62+66 013

PP 59+64 014

57+48 TOL 014

Pole

Eqo. $82 + 58.37 = \text{old STA. J}$
 $82 + 54.65 = \text{New EC,}$

80+39.98 BC LT.

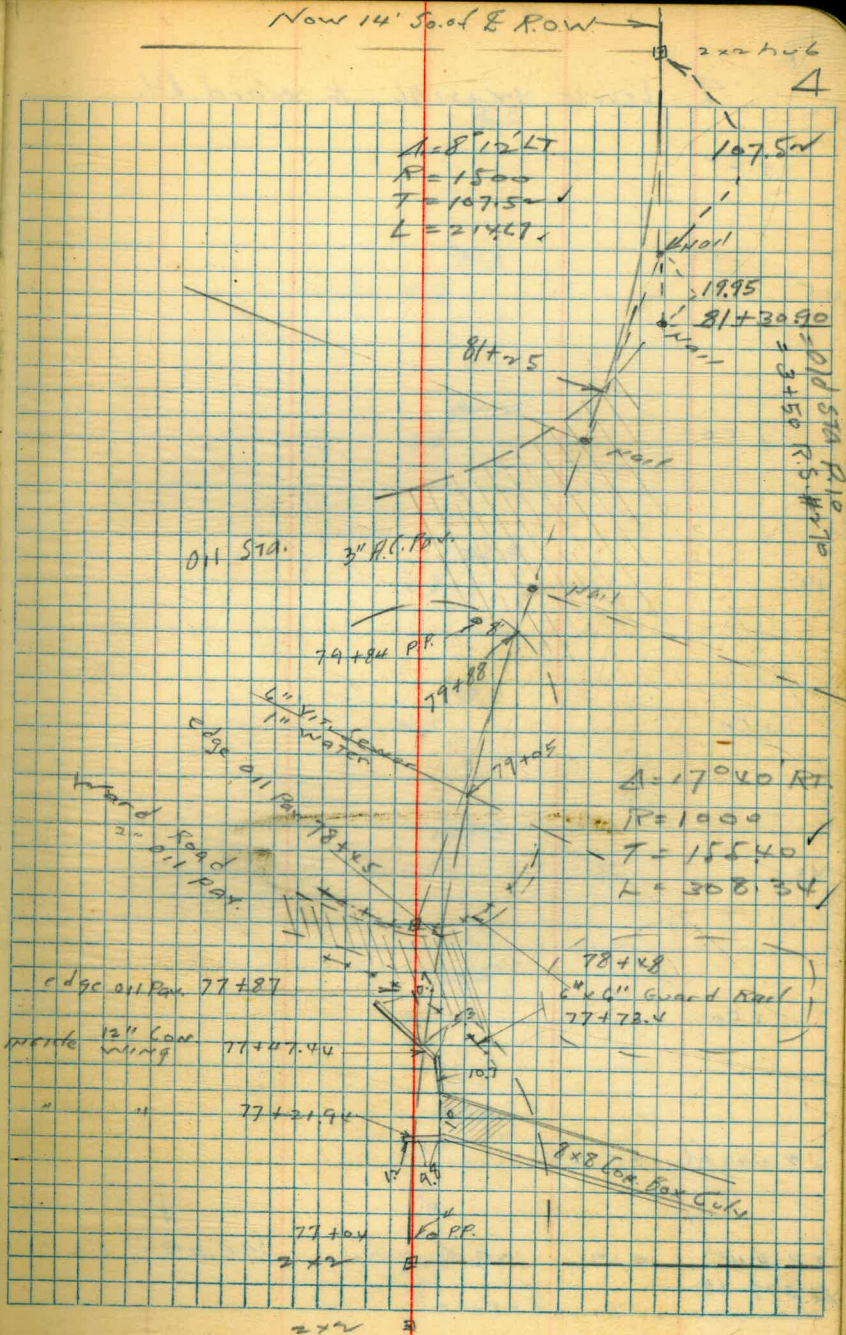
80+05.18 EC

0° 43.5 77+21.94 inside wingwall Con. Box Culv.
 1° 26.9 77+47.44 " " " " "
 2° 34.6 77+86.8 edge pav. Wood Rd.
 4° 14.4 78+45.0 " " " " "
 5° 57.5 79+05 Int. of 6" Sewer & 1" water
 7° 14.8 79+50
 79+88 Ely edge 3" H.C. Pav. Oil Sta.
 8° 50.0 80+65.18 on 3" A.C. Pav " "

76+96.84 = B.C. Pt.

76+58.64 = EC

Now 14' So. of E.P.O.W.



2 levels 44+2196 to 44ard Rd.

+50

45

+50

44

+50

43

+50

44+2196 B.C. RT

I.P. #14 17.67 109.16
Bk. 579-38
Now 20' RT. at 45+60

76.49 1" x 1"

4

5

12.6 96.5

9.9 98.3

8.0 101.2

6.8 102.8

4.7 107.0

0.6 108.6

0.7 108.5

1.3 107.9

109.16
3

+50

+30

+18

+07

47

TP #15 1.59 85.74 12.47 84.15 ✓

+50

46

TP #14 0.33 96.82 12.47 96.49 ✓
109.16

£

6

50 80.7

48 80.9

1.8 83.9

1.4 89.5

4.3 88.4

85.74
2

85.8
11.0

92.9
3.9

96.82
2

+ 50

+ 16 edge oil par

50

+ 8W edge oil par

+ 63 edge oil par

+ 50

49

+ 50

48

85.74

2 76.5
10.2

7

9.1 76.6

8.8 76.9

8.8 76.9

9.2 76.5

9.0 76.7

8.5 77.2

6.5 79.2

5.9 79.8

85.74 ✓
2

+70 creek

+69.1 Top Wing well

+65

+50

50

+50

T.P. #16

Spine P.P.

0.45

77.97

80

77.74

Fairway
Comline
R10

51

50+73 edge of Pav

85.74

LT

R

RT

8

65.0

13.0 creek

69.33

8.65

69.3	69.4	73.0	72.7
13.0	8.8	5.0	5.3
creek	11	6	6

71.7	72.0	72.6	73.0
6.5	11.0	5.4	5.0
10	5		5

71.8	71.3	71.6	73.3
6.4	6.7	6.4	4.7
10		6	9

69.8	69.0	71.6	72.6	73.5
7.6	6.8	6.4	5.4	3.5
15	7	6		6

77.97

72.7	72.8	75.2	75.2
13.0	12.9	10.5	10.5
10	5	2	2

72.7

11.0

85.74

+50

55

+64.43 E.C.

+50

54

+59.28 BCRT

53+09.3 Top wing wall

53+09.4

52+79.03 E.C.

77.97 ✓

LT RT 9

79.6 79.6 76.7 76.7

$\frac{+1.6}{6}$ $\frac{+1.6}{4}$ $\frac{1.3}{1}$ 1.3

78.6 78.6 76.0 76.0

$\frac{+0.6}{6}$ $\frac{+0.6}{6}$ $\frac{2.0}{2}$ $\frac{2.0}{6}$

77.5 77.5 77.3 79.5

$\frac{0.5}{6}$ 0.5 $\frac{0.7}{4}$ $\frac{3.5}{6}$

77.1 77.2 76.9 78.3

$\frac{0.9}{6}$ 0.8 $\frac{1.1}{5}$ $\frac{3.7}{7}$

74.9 74.9 74.3 73.3

$\frac{3.1}{6}$ 3.1 $\frac{3.7}{6}$ $\frac{4.7}{7}$

72.8

5.4

69.93

8.4

69.8 69.29

13.6 $\frac{13.58}{2.7}$ E.C. Culvert

69.8 69.72

13.4 $\frac{13.25}{2.7}$ "

13.4

77.97

7

59

58+70 A 0°07' Lt.

+50

58

57+50

56+99.84 E.C.

+50

56

55+94.69 BCLT

T.R #17 12.81 90.57 0.21 77.76
 77.97 ✓

92.0 LT 86.5 87.0
 + 2.4 4.0 3.6
 12 3

92.8 86.0 86.8
 + 1.8 4.2 4.2
 12 3

91.8 85.6 86.0
 + 1.2 5.0 4.1
 11 3

91.2 84.7 85.1
 + 0.6 5.9 5.5
 11 3

89.7 83.1 83.7
 0.9 7.5 6.9
 13 4

88.4 81.8 82.2
 2.2 8.8 8.4
 13 4

86.8 80.2 80.5
 3.2 10.4 10.1
 10 5

83.2 78.4 78.8
 7.4 12.2 11.8
 8 4

82.6 78.3 78.6
 8.0 12.3 12.0
 7 3

90.57
 3

10

+50

+48

+23

+13

- Drive

+109

✓

T.P. 5.04 93.38 223 88.24

61

+50

60

59 + 50

90.57

L7

889

11

45

932
0.4
10

885
4.8
4

887
4.7

885
4.9
6

887
4.7

88.9
4.5
6

887
4.7

932
0.2
10

888
4.6
4

886
4.8

93.38

932
+ 3.1
12

889
2.2
4

88.9
2.2

932
+ 3.3
12

878
2.8
4

889
2.8

93.7
+ 3.1
12

87.6
3.0
4

87.7
2.9

932
+ 2.8
12

872
3.4
4

87.5
3.1

90.57

3

+110 R drive

L5

+50

L4

+50

+05 R 14 Drive

L3

+50

L2

93.38

87.5

12

87.8
5.6

88.4
5.0

89.2
4.2

89.2
4.0

89.3
4.1

89.3
4.1

89.2
4.2

89.1
4.3

93.38
3

69

+50

68

J.P.

0.88 83.77 10.49 82.89

+50

67

+50

66

65+50

✓
93.38

8

13

3.4 80.9

2.5 81.3

1.4 82.2

83.77

10.4 82.2

9.0 82.2

8.4 85.2

7.4 86.2

6.3 87.1
6.3
93.38
2

+50

7d

+50

+37 I drive

71

+50

+40 E drive

70

+50

83.77

€

14

6.4 772

6.7 775

5.9 779

5.8 780

5.4 784

4.9 789

4.8 790

4.4 794

3.9 79.9

83.77

4

76

+50

75

74 + 95 in BCLT

+50

+18 I drive

74

T.P. 5.32 ✓ 81.26 76.3 76.14

+50

73

83.77 ✓

8

15

7.5 74.0

$\frac{774}{\frac{41}{7}}$

$\frac{740}{4}$

7.5 74.0

7.0 74.6

6.9 72.6

6.4 75.1

6.1 75.4

5.9 75.6

$\frac{81.26}{2}$

7.5 76.3

6.8 77.0

$\frac{83.77}{2}$

77+87 edge oil Pav.

77+47.44 Top wing wall

77+47.4 creek ft. of wall

77+22 creek ft. of wall

77+21.94 Top wing wall

77+20

76+96.84 BC RT.

76+58.64 EC.

76+50

81.46

LT

RT
735
8.0

RT

16

72.56
890

631
184

651
16.4
628
18.7
98 FL BC RT
604
604

7009
1137

715	659	658	667	728
10.0	15.4	15.7	14.8	8.7
15	4	2		50

719	685	679	723	732
10.1	13.0	13.5	9.4	8.3
15	7	5		7

713	709	731	739
10.2	10.6	8.2	7.6
16	5		6

732
7.8
81.46
3

81 on Pay

+ 50 on Pay

80 + 39.98 BCLT on Pay

80 + 05.18 E.C. on Pay

79 + 28 edge AC Pav

+ 50

79 + 05 Int. 6" vit. oil sig. Sewer

78 + 45 edge oil Pav

78 + 17 ex oil Pav

\$1.46

80°

17

1.5

2.9 78.6

3.1 78.4

3.9 77.6

4.3 77.2

4.1 77.4

75.5

71.2

ground → 76.0

9.8

Int. Top 6" vit. pipe

8.1 73.8

74.1

7.4

81.46 ✓

5

check to B.M. chisel x
Top terminal on
second CULV.

9.00 72.46 72.47

87 + 54.65 E.C.

+ 50

87

+ 50

81 + 75 edge A.C. Pav

81.46

Notes - Reduced 5-12-92 ~~PH~~

2

18

at Int. Ward & Cantina Rd

+ 1.0 87.5

+ 1.0 82.5

0.0 81.5

0.8 80.7

1.0 80.5

81.46

2

Revision Alvarado P.L. Sta 22+94.87 to 52+96.59

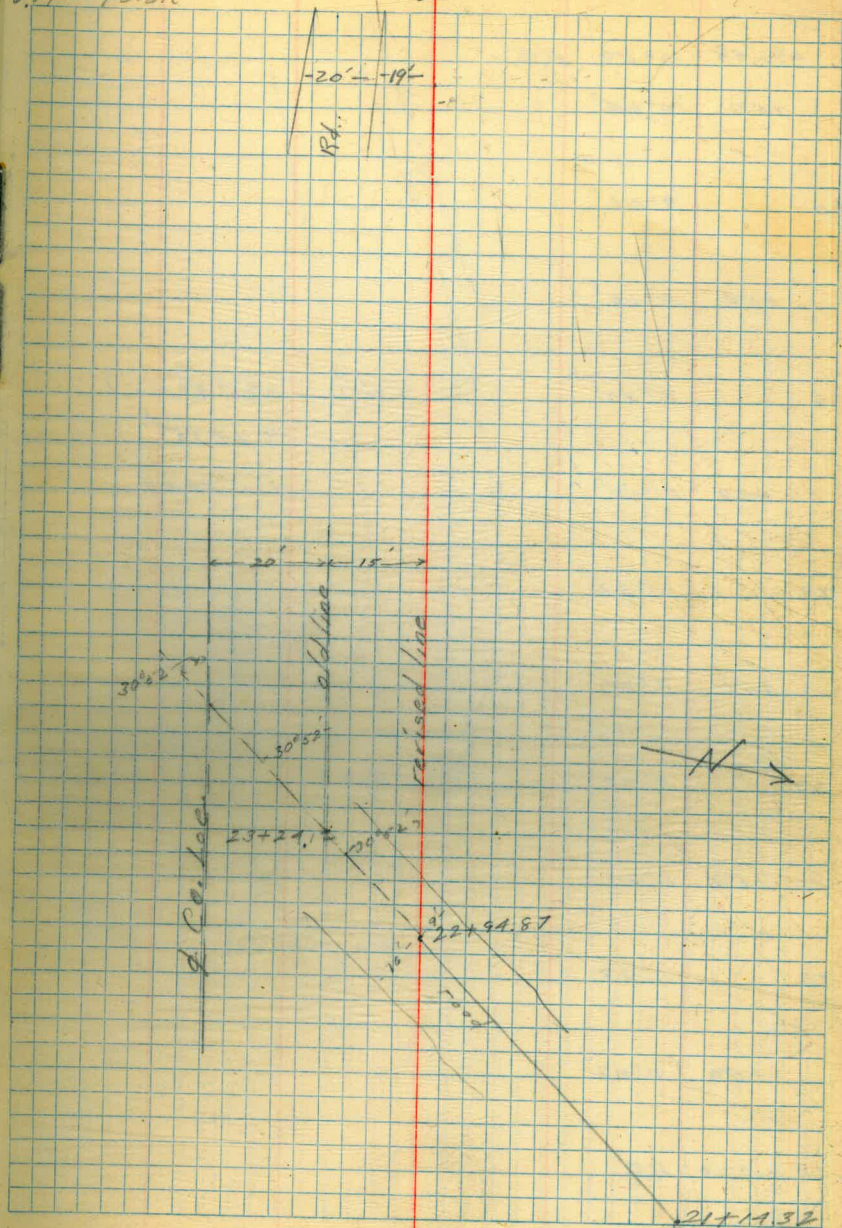
Hill
King
O'Han
Polak

4/19/43

19

35+12.20 B.C.

22+94.87 $\Delta 30^{\circ}52'R$



+92.98 10°50' F.C.

+50 10°02'

40 9°06'

+50 8°10'

39 7°14'

$\Delta 21^{\circ}39'35''$

R. 1535'

+50 6°18'

L. 58028

38 5°22'

+50 4°26'

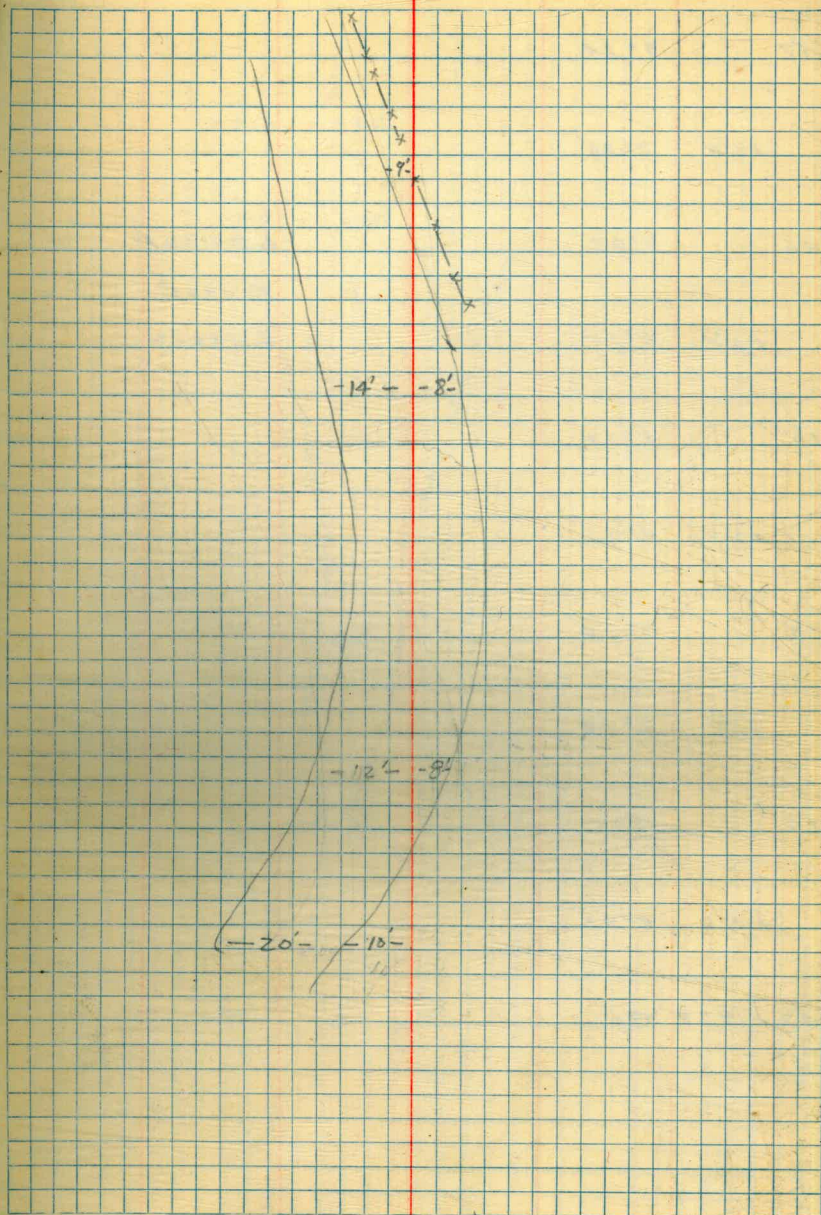
37 3°30'

P.O.C. +50 2°34'

36 1°38'

+50 0°42'

35 +1220 B.C.



17 9°24'

+50 8°25'

46 7°27'

+50 6°28'

16 5°29'

+50 4°31'

44 3°32'

+50 2°33'

13 1°35'

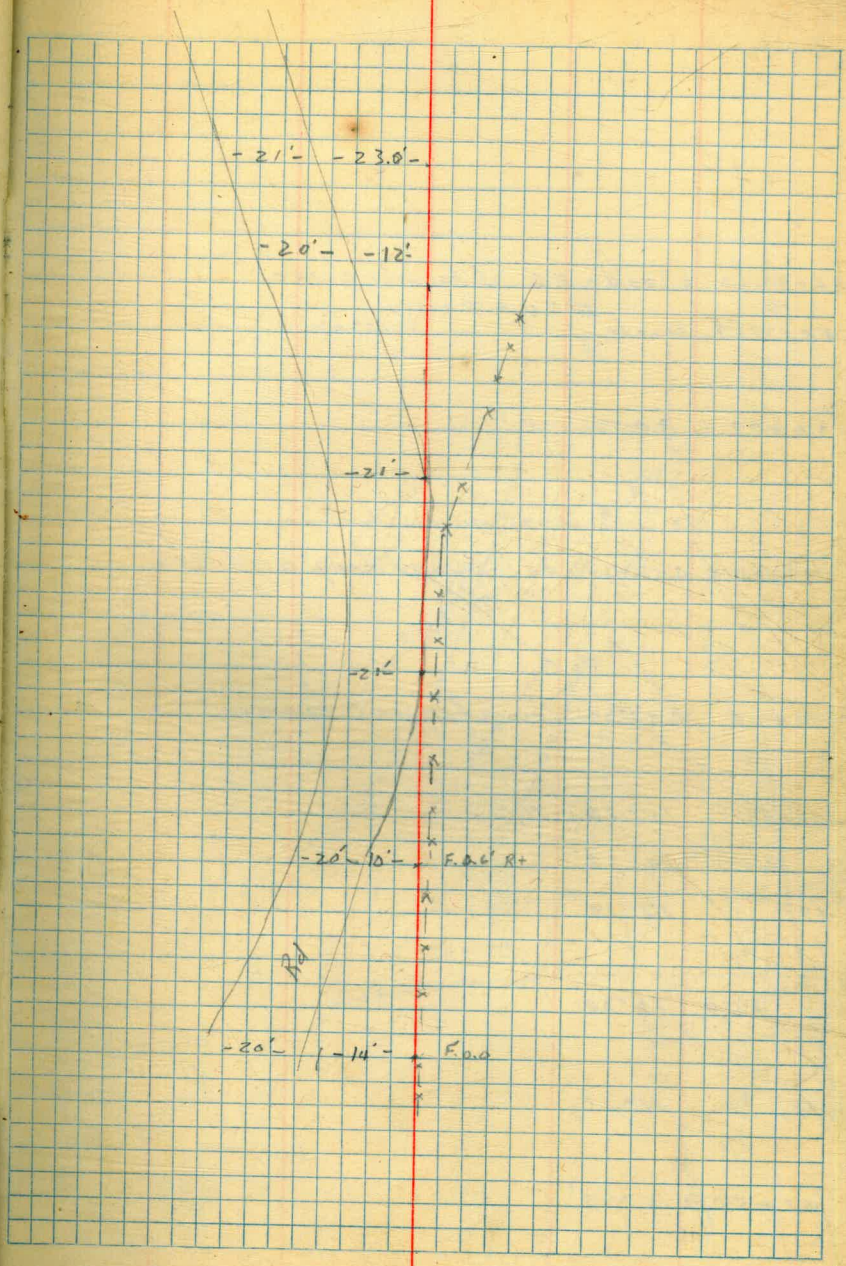
+50 0°36'

42 + 19.38 BC.

$\Delta 30^{\circ}32' R$

R. 1465'

L. 780.62



52+79.63 ahead = E.C. of former curve
= EQUATION
52+96.59 back

52+79 P.O.T.

51+92.73 $\Delta 46^{\circ} 52'$ to forward tang. produced

50+00 $\Delta 43^{\circ} 30'$ from tangent to curve

50+00 $15^{\circ} 16'$ E.C.

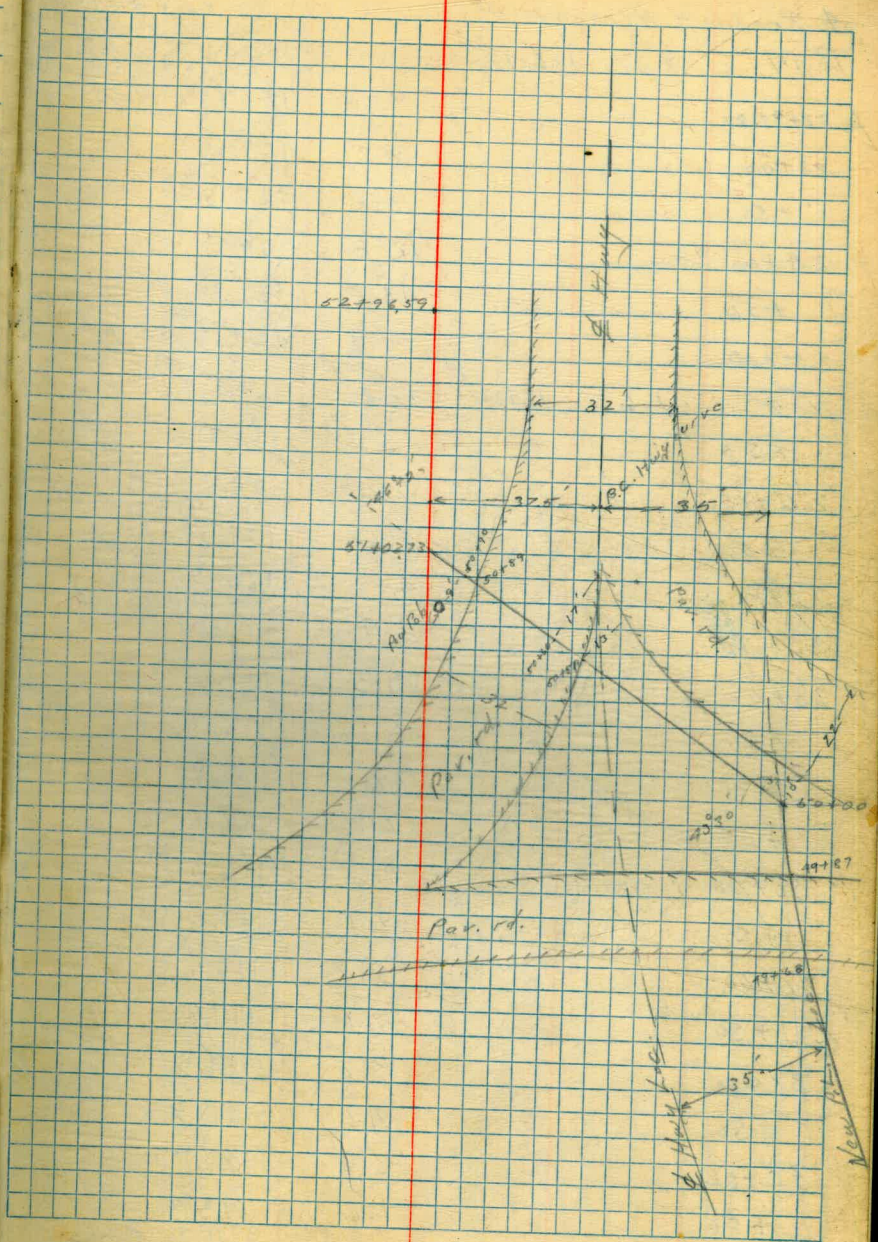
+50 $14^{\circ} 17'$

49 $13^{\circ} 19'$

+50 $12^{\circ} 20'$

48 $11^{\circ} 21'$

47+50 $10^{\circ} 23'$



4 Profile - Alvarado P.L. - Sta 23 - 52

4-21-93

B.M.	9.67	136.11		126.44 ⁺
A 22+94.87			8.3	127.8
23+00			8.5	127.6
+50			10.8	125.3
24+00			12.8	123.3
+50			13.5	122.6
25+00			13.6	122.5
T.P.	1.65	124.90	12.86	123.25 ⁺
+50			3.7	121.2
26+00			3.2	121.7
+50			3.6	121.3
27+00			4.2	120.7
+50			4.9	120.0
28+00			5.3	119.6
+50			6.1	118.8
29+00			7.0	117.9
+50			7.8	117.1
30+00			8.6	116.3
+50			8.9	116.0
31+00			8.3	116.6
+50			7.1	117.8
32+00			5.6	119.3
+50			4.6	120.3
33+00			3.2	121.7
+50			1.6	123.3

IRON P.W. Pt. Sta. 22+95 - 12'

24+58 - Fence

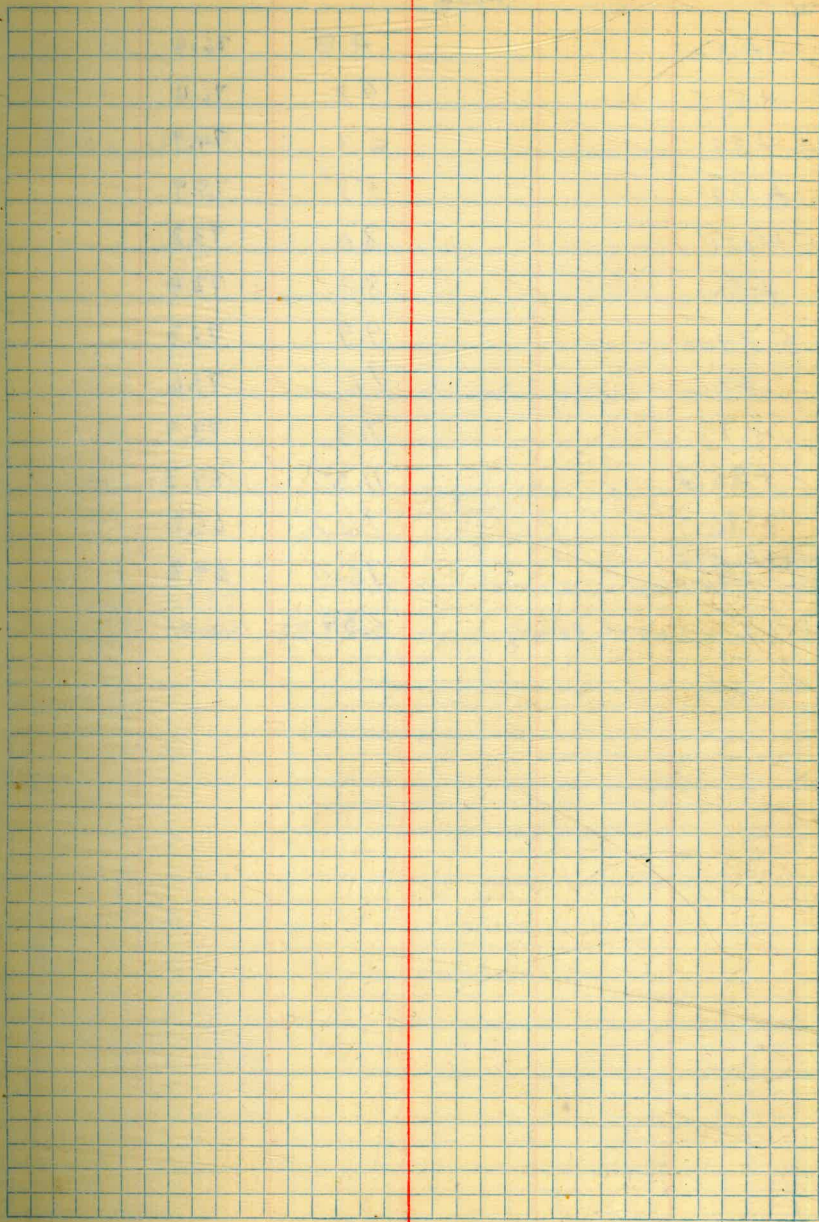
		124.90		
T.P.	9.29	130.81 ✓	3.38	121.52 ✓
34+00			7.4	123.4
+50			7.1	123.7
35+00			4.2	126.6
B.C. 35+12.20			3.33	127.48 ✓
+50			1.4	129.4
T.P.	3.54	134.28 ✓	0.07	130.74 ✓
36+00			5.5	128.8
+50			5.5	128.8
37+00			9.4	124.9
T.P.	+0.30	121.63 ✓	12.95	121.33 ✓
+50			2.8	118.8
38+00			7.5	114.1
+50			9.6	112.0
39+00			11.1	110.5
+50			11.9	109.7
40+00			11.1	110.5
+50			11.6	110.0
EC 40+92.48			13.2	108.4
41+00			13.3	108.3
T.P.	0.95	114.68 ✓	10.90	110.73 ✓
+50			5.4	106.3
42+00			5.6	106.1
B.C. 42+19.38			5.8	105.9
+50			5.7	106.0

DN hub

Shan. Ver. Rd

111.68

93+00			5.2	106.5
+50			6.8	104.9
44+00			9.2	102.5
+50			11.3	100.4
45+00			12.2	99.5
T.P.	0.09	98.83	12.94	98.74 98.72
+50			0.8	98.0
46+00			4.7	94.1
+19			3.0	95.8
T.P.	2.07	90.31 90.27	10.59	88.24 88.22
+31			5.0	85.3
+50			6.6	83.7
+61			8.1	82.2
47+00			8.3	82.0
+23			2.5	87.8
+50			7.9	82.4
+63			10.2	80.1
48+00			10.5	79.8
T.P.	2.08	81.18 81.14	11.21	79.10 79.06
+50			2.5	78.7
49+00			3.6	77.6
+50			4.8	76.4
			5.2	76.0
			9.8	76.4
50+00			4.8	76.4



81.18
~~81.14~~

+50	4.8	76.4
+51.5	4.8	76.4
+89	6.3	74.9
+94	5.3	75.9
Δ 514027 ³	8.0	73.2
+50	8.8	72.4
52+00	9.9	71.3
+50	9.6	71.6
+79	7.3	73.9
+85.8	11.5	69.7
+86.0	16.0	65.2
52+96.59 =	16.4	64.8
52+79.65 #head		77.72
B.M. P.16 - 1 + sta. 50 + 89	3.34	72.84

26

Edge of pav.

Top of wall

Recorded elev. 72.72

CK Levels - Sta 52-23 - Alvarado P.h.

B.m. 5.88 83.60 ✓ 77.72

T.P. 11.65 94.83 ✓ 0.42 83.18 ✓

T.P. 12.16 106.44 ✓
106.94 0.55 94.28 ✓
94.78

T.P. 11.76 115.86 ✓
116.36 2.34 104.10 ✓
104.60

T.P. 12.26 127.42 ✓
127.92 0.70 115.16 ✓
115.66

T.P. 9.93 131.88 ✓
132.38 5.47 121.95 ✓
122.45

T.P. 4.43 126.82 ✓
127.32 9.49 122.79 ✓
122.89

T.P. 5.30 130.57 ✓
131.07 1.55 125.27 ✓
125.77

4.30 126.27 ✓

Profile - ϕ + 10' offsets

KING
POLAR
5-17-43

B. 191	5.46	72.96	67.00	
132+10			4.2	68.3
ϕ			3.8	68.7
+50			4.8	67.7
ϕ			5.0	67.5
+60			4.8	67.7
ϕ			5.0	67.5
+90			5.1	67.4
ϕ			5.2	67.3
133			5.2	67.3
ϕ			5.4	67.1
+50			5.7	66.8
ϕ			6.0	66.5
134			5.9	66.6
ϕ			6.3	66.2
+50			6.1	66.4
ϕ			6.3	66.0
135			6.1	66.4
ϕ			6.6	65.9
135+35 ^B			5.9	66.6
ϕ			6.4	66.1
+50			5.8	66.7
ϕ			6.3	66.2
136			5.6	66.9
ϕ			6.2	66.3

Top Hill #24 Sta 132+90

7.8				
				132+41.5
				E 68.0
				G 57.7
				C 10.3
				67.9
12.0				
13.0				
12.5				
9.9				
7.6				
	$\frac{+36}{72}$	$\frac{+45}{70}$	$\frac{-23}{25}$	
7.2				
	$\frac{+8.5}{17}$	$\frac{+9.9}{7}$	$\frac{-0.1}{45}$	
7.0				
	$\frac{+13.4}{21}$	$\frac{+8.6}{11.5}$	$\frac{0.0}{5}$	
	$\frac{+17.9}{22.5}$	$\frac{+14.2}{11.5}$	$\frac{0.0}{3}$	
7.1				
	$\frac{+5.7}{10}$	$\frac{+18.2}{22}$	$\frac{+12.3}{12.5}$	$\frac{0.0}{3}$
7.1				
	$\frac{+22.4}{26}$	$\frac{16.0}{16}$	$\frac{0.0}{3}$	

72.46

+50			5.4	67.1	60.2
Q			5.8	66.7	
137			5.0	67.5	60.6
Q			5.4	67.1	
+50			4.5	68.0	61.0
Q			5.3	67.5	
+75 ⁷⁷			4.3	68.2	
Q			4.7	67.8	
138			4.0	68.5	61.4
Q			4.2	68.3	
+50			3.4	69.1	61.5
Q			3.3	69.2	
139			3.0	69.5	61.6
Q			2.9	69.6	
+96 ²¹			2.7	69.8	
Q			2.4	70.1	
+50			2.7	69.8	61.8
Q			2.4	70.1	
140			2.4	70.1	61.9
Q			2.0	70.5	
+50			2.4	70.1	62.6
Q			2.0	70.5	
T.P	3.14	7358	2.02	70.44	
141			3.7	69.9	63.4
Q			3.4	70.2	

29

6.9

$$\begin{array}{r} +30 \\ 5.7 \\ \hline \end{array} \quad \begin{array}{r} +22.7 \\ 27 \\ \hline \end{array} \quad \begin{array}{r} +18.2 \\ 16.3 \\ \hline \end{array} \quad \begin{array}{r} 1.00 \\ 7 \\ \hline \end{array}$$

6.9

$$\begin{array}{r} +24.4 \\ 26 \\ \hline \end{array} \quad \begin{array}{r} +19.2 \\ 16.5 \\ \hline \end{array} \quad \begin{array}{r} 0.0 \\ 4 \\ \hline \end{array}$$

7.0

$$\begin{array}{r} +11.2 \\ 26 \\ \hline \end{array} \quad \begin{array}{r} +16.2 \\ 15.5 \\ \hline \end{array} \quad \begin{array}{r} +0.2 \\ 7 \\ \hline \end{array}$$

7.1

$$\begin{array}{r} 3.5 \\ 5.7 \\ \hline \end{array} \quad \begin{array}{r} +22.5 \\ 29 \\ \hline \end{array} \quad \begin{array}{r} +22.0 \\ 18.2 \\ \hline \end{array} \quad \begin{array}{r} 0.0 \\ 4 \\ \hline \end{array}$$

7.6

$$\begin{array}{r} 3.3 \\ 4.6 \\ \hline \end{array} \quad \begin{array}{r} +26.4 \\ 27 \\ \hline \end{array} \quad \begin{array}{r} +21.5 \\ 16.5 \\ \hline \end{array} \quad \begin{array}{r} 0.0 \\ 3 \\ \hline \end{array}$$

7.9

$$\begin{array}{r} +24.9 \\ 27 \\ \hline \end{array} \quad \begin{array}{r} +19.7 \\ 17.6 \\ \hline \end{array} \quad \begin{array}{r} 0.0 \\ 3 \\ \hline \end{array}$$

8.0

$$\begin{array}{r} +30.1 \\ 30 \\ \hline \end{array} \quad \begin{array}{r} +24.8 \\ 20.5 \\ \hline \end{array} \quad \begin{array}{r} +0.5 \\ 3 \\ \hline \end{array}$$

8.0

$$\begin{array}{r} +21.3 \\ 26 \\ \hline \end{array} \quad \begin{array}{r} +16.4 \\ 16 \\ \hline \end{array} \quad \begin{array}{r} 0.0 \\ 4 \\ \hline \end{array}$$

8.2

$$\begin{array}{r} 15.9 \\ 27 \\ \hline \end{array} \quad \begin{array}{r} +12.5 \\ 16 \\ \hline \end{array} \quad \begin{array}{r} 0.0 \\ 4 \\ \hline \end{array} \quad \begin{array}{r} +5.8 \\ 9 \\ \hline \end{array} \quad \begin{array}{r} 1.0 \\ 3.7 \\ \hline \end{array}$$

7.5

6.5

73.58

+56	4.0	69.6	63.3
k	3.9	69.7	
+73.52	4.1	69.5	
k	4.2	69.4	
142	4.1	69.5	63.1
Q	4.1	69.5	
+50	4.3	69.3	62.9
P	4.1	69.5	
143	4.6	69.0	62.8
Q	4.4	69.2	
+50	4.8	68.8	62.7
Q	4.5	69.1	
-104	5.0	68.6	61.9
Q	4.7	68.9	
+16 ³⁾	5.1	68.5	
k	4.8	68.8	
+50	5.3	68.3	60.9
Q	5.0	68.6	
145	5.5	68.1	60.8
Q	5.3	68.3	
+50	6.0	67.6	60.8
Q	5.6	68.0	
146	6.3	67.3	60.7
Q	5.8	67.8	
+25	6.4	67.2	60.7
Q	6.0	67.6	

6.3
6.4
6.4
6.2
6.1
6.7
7.4
7.3
6.8
6.6
6.5

73.58

+50			6.5	67.1	60.2
0			6.2	67.4	
147			6.9	66.7	59.1
8			6.6	67.0	
250			7.3	66.3	58.1
8			7.2	66.4	
148			7.2	65.8	57.1
0			7.8	65.8	
+50			8.1	65.5	56.0
0			8.1	65.5	
149			8.5	65.1	55.0
0			8.3	65.3	
+50			8.9	64.7	53.9
0			8.8	64.8	
T.P.	0.62	65.45	8.75	64.83	
+75			1.1	64.4	53.6
0			1.0	64.5	
150			1.5	64.0	53.4
0			1.4	64.1	
+50			2.5	63.0	53.4
0			2.5	63.0	
+78 ³⁵			3.1	62.4	
0			3.1	62.4	
151			3.6	61.9	53.4
0			3.5	62.0	

6.9

7.6

8.2

8.7

9.5

10.1

10.8

10.2

10.6

9.6

8.5

65.45

+50			4.6	60.9	53.1
⊖			4.6	60.9	
152			6.0	59.5	52.8
⊖			6.0	59.5	
+50			7.5	58.0	51.5
⊖			7.6	57.9	
153			8.7	56.8	50.2
⊖			8.7	56.8	
+50			10.0	55.5	48.9
⊖			9.2	55.7	
92.0			11.2	54.3	
⊖			11.3	54.2	
154			11.6	53.9	47.6
⊖			11.3	54.2	
+50			13.0	52.5	46.3
⊖			13.0	52.5	
T.P.	141	53.94	12.92	52.53	
		7.8			
155			2.6	51.3	45.0
⊖			2.7	51.2	
+50			3.8	50.1	43.7
⊖			3.9	50.0	42.7
+67.94			4.1	49.8	
⊖			4.3	49.6	
156			4.6	49.3	42.0
⊖			4.7	49.2	

10/10

10/10

7.8					
6.7					
6.5					
6.6					
6.6					
6.3					
6.2					
6.3					
6.4					
7.1					
6.9					
6.8					

53.94

+53			5.1	48.8	41.4
0			5.4	48.5	
157			5.6	48.3	40.4
9			5.8	48.1	
+50			5.9	48.0	40.4
0			6.0	47.9	
158			6.1	47.8	40.4
0			6.4	47.5	
+50			6.5	47.4	40.4
0			6.8	47.1	
159			6.8	47.1	40.4
0			7.1	46.8	
+50			7.0	46.9	40.2
0			7.2	46.7	
160			7.3	46.6	39.9
0			7.4	46.5	
+50			7.5	46.4	39.7
0			7.5	46.4	
J.P.	2.31	4896	7.79	46.15	
161			2.8	46.2	39.4
0			2.8	46.2	
+50			3.0	46.0	39.1
0			3.1	45.9	
162			3.3	45.7	38.9
0			3.3	45.7	

33

7.4
7.1
7.9
7.7
7.6
7.5
7.4
7.1
7.0
6.7
6.7
6.4
6.7
6.5
6.7
6.6
6.7
6.7
6.8
6.8
6.9
6.8
6.8
6.8

18.96

+50	3.7	45.3	38.7
Q	3.8	45.2	
163	4.0	45.0	38.4
Q	4.1	44.9	
+56	4.3	44.7	38.1
Q	4.1	44.9	
164	4.6	44.4	37.9
Q	4.5	44.5	
+50	5.0	44.0	37.7
Q	4.9	44.1	
165	5.3	43.7	37.4
Q	5.0	44.0	
+50	5.4	43.6	37.2
Q	5.2	43.8	
166	5.6	43.4	37.1
Q	5.6	43.4	
+50	5.7	43.3	37.0
Q	5.6	43.4	
167	5.9	43.1	36.8
Q	5.7	43.3	
+50	6.8	42.2	36.7
Q	6.2	42.8	
+62 ⁹³	6.3	42.7	
Q	6.0	43.0	
168	6.5	42.5	36.5
Q	6.1	42.9	

4.4

6.5

4.6

6.5

4.5

6.8

6.5

6.6

6.7

6.4

6.3

6.6

6.4

6.6

6.3

6.3

6.3

6.4

6.3

6.5

5.5

6.1

6.0

6.4

48.96

+50			6.9	42.1	36.3
Φ			6.2	42.8	
169			7.1	41.9	36.1
Φ			6.5	42.5	
T.P.	4.87	47.60	6.23	42.73	
+50			5.9	41.7	36.0
Φ			5.2 5.7	42.4	
170			5.2	41.8	35.8
Φ			5.2	42.4	
+20			5.8	41.8	35.8
Φ			5.1	42.5	
+50			5.8	41.8	
Φ			5.2	42.4	
165			5.9	41.7	33.8
Φ			5.2	42.4	
171			5.8	41.8	
Φ			5.1	42.5	
+50			5.3	42.1	36.0
Φ			4.9	42.7	
171473 ²²			5.3	42.3	
Φ			4.5	43.1	
172			5.0	42.6	36.3
Φ			4.4	43.2	
+50			4.4	43.2	36.7
Φ			4.1	43.5	

75

5.9					
6.5					
5.2					
6.4					
5.7					
6.4					
6.0					
6.6					
6.0					
6.7					
7.9					
8.6					
171+25	El.				
	41.9	Gr 35.8	6.1		
	6		6.6		
6.1					
6.7					
6.7					
6.9					
6.5					
6.8					

47.60

173			3.8	43.8	37.0
Q			3.9	43.7	
+50			3.3	44.3	37.9
P			3.6	44.0	
488 ²¹			2.8	44.8	
Q			3.1	44.5	
174			2.6	45.0	37.7
R			3.0	44.6	
T.P.	7.82	52.93	2.99	44.61	
+50			6.6	45.8	38.1
Q			7.0	45.4	
+80			6.3	46.1	
Q			6.6	45.8	
175			6.0	46.4	38.4
Q			6.5	45.9	
175			5.8	46.6	38.7
Q			5.9	46.5	
+50			5.2	48.1	37.7
Q			5.3	47.1	
+82.5			4.2	48.1	35.4
Q			4.1	48.3	
+76+125			3.9	49.5	39.90
T.P.			9.65	42.78	

36

6.8					
6.7					
6.9					
6.6					
7.3					
6.9					
7.7					
7.3					
8.0					
7.5					
7.9					
9.4					
12.7					
9.4					
B.M. Top culvert headwall out let					
El 42.84					

		H.I.	
B.M. 997	52.75	42.78	
175+30.6	38.1	3.5	46.6
Q			46.9
175+46.3	37.6	9.5	47.1
Q			47.1
175+62.2	35.6	12.0	47.6
Q			47.7
175+78.2	35.1	12.9	48.0
Q			48.3
175+82.5	35.4	12.7	48.1
Q			48.4
175+91.2	35.9	12.4	48.3
Q			48.6
176+10	38.2	10.1	48.3
Q			48.7
176+22	39.6	8.6	48.2
Q			48.0

King
Polak
5-19-43

Profile 8410' offsets

B.M.	8.68	75.68		67.00
172			7.3	68.4
ℓ			6.9	68.8
+80			7.0	68.7 62.2
ℓ			6.7	69.0
+50			6.7	69.0 62.9
ℓ			6.4	69.3
131			6.0	69.7 63.6
ℓ			5.6	70.1
130450			5.3	70.4 64.1
ℓ			4.9	70.8
+25			4.9	70.8 64.7
ℓ			4.6	71.1
130			4.5	71.2 65.1
ℓ			4.2	71.5
+50			3.7	72.0 65.8
ℓ			3.2	72.5
129			3.0	72.7 66.4
ℓ			2.5	73.2
+50			2.4	73.3 67.1
ℓ			1.9	73.8
128			1.9	73.8 67.7
ℓ			1.4	74.3
+50			1.4	74.3 68.1
ℓ			0.9	74.8

Top of well 9' at Sta 132+90

	131+93.7	68.6	61.5	7.1
ℓ		68.8		
		6.5		
		6.1		
		6.1		
		6.0		
		6.1		
		6.2		
		6.3		
		6.2		
		6.1		
	+20.6	+15.3	+0.2	
	26	16	4	
6.2	+22.7	+17.1	0.0	
	32	22.5	5	

7568

127			0.9	74.8	68.4
⊕			0.3	75.4	
T.P.	9.93	85.31	0.30	75.30	
+50			10.1	75.2	68.4
⊕			9.5	75.8	
126			9.6	75.7	68.4
⊕			9.1	76.2	
+50			9.3	76.0	68.4
⊕			8.7	76.6	
EC. 124+9995			8.2	76.5	68.4
⊕			8.5	76.8	
+50			8.3	77.0	68.4
⊕			8.1	77.2	
129			7.8	77.5	68.4
⊕			8.0	77.3	
+75			7.4		
⊕			7.6	77.7	
+50			6.8		
⊕			7.2	78.1	
123			5.8	79.5	72.4
⊕			6.3	79.0	
122+50			4.9	80.4	73.3
⊕			5.4	79.9	
122			4.1	81.2	74.0
⊕			4.7	80.6	

79

0.4
+24.1 +188 +13.1 +2.5
74 241 14 3

6.8

7.3

7.6

8.1

8.6

9.1

	E1	E	C
123+937	77.6	68.4	9.2
⊕	77.4		

123+776	78.0	68.7	9.3
⊕	77.7		

123+61.6	78.2	69.2	9.0
⊕	77.9		

123+295	78.9	70.9	8.0
⊕	78.4		

7.1

7.1

7.2

8531

+50			3.5	81.8	74.7
Q			4.0	81.3	
121			2.8	82.5	75.4
Q			7.4	81.9	
+50			2.1	83.2	76.1
Q			2.7	82.6	
122			1.5	83.8	76.8
Q			2.0	83.3	
+50			1.1	84.2	77.1
Q			1.6	83.7	
119			0.6	84.7	77.4
Q			1.1	84.2	
T.P	6.21	90.39	1.3	84.18	
+50			5.5	84.9	77.8
Q			5.9	84.5	
118			5.4	85.0	78.1
Q			5.7	84.7	
+50			5.4	85.0	77.4
Q			5.8	84.6	
117+25			5.4	85.0	77.1
Q			5.8	84.6	
117			5.4	85.0	77.1
Q			5.8	84.6	
+50			5.3	85.1	77.1
Q			5.8	84.6	

39

					7.1
					7.1
					7.1
					7.0
					7.1
					7.3
					7.1
					6.9
					7.6
					7.9
					7.9
					8.0

90.39

116			5.5	84.9	771
±			5.9	84.5	
+50			5.7	84.7	771
±			6.2	83.2	
115			5.8	84.6	770
±			6.2	84.2	
+50			5.9	84.5	770
±			6.5	83.9	
114			6.0	84.4	77.0
±			6.4	84.0	
+50			6.1	84.3	77.0
±			6.5	83.9	
113			6.4	84.0	77.0
±			6.8	83.6	
+50			6.7	83.7	76.5
±			7.3	83.1	
112			7.2	83.2	76.0
±			7.6	82.8	
T.P.	3.63	86.38	7.64	82.75	
+50			3.7	82.7	75.6
±			4.1	82.3	
111			4.2	82.2	75.1
±			4.7	81.7	
+50			4.6	81.8	74.9
±			5.1	81.3	

10

					7.8
					7.6
					7.6
					7.5
					7.4
					7.3
					7.0
					7.2
					7.2
					7.1
					7.1
					6.9

8638

110	4.8	81.6	74.8	6.8
Q	5.3	81.1		
+50	5.1	81.3	74.6	6.7
Q	5.4	81.0		
+25	5.1	81.3	74.5	6.8
Q	5.2	80.8		
109	5.1	81.3	74.2	7.1
Q	5.5	80.9		
+75	5.1	81.3	73.9	7.4
Q	5.5	80.9		
+50	5.1	81.3	73.9	7.4
Q	5.6	80.8		
108+00	5.2	81.2	73.8	7.4
Q	5.8	80.6		
+50	5.4	81.0	73.7	7.3
Q	6.2	80.2		
107	5.7	80.7	73.6	7.1
Q	6.3	80.1		
+50	5.8	80.6	73.5	7.1
Q	6.3	80.1		
106	6.1	80.3	73.4	6.9
Q	6.6	79.8		
+50	6.3	80.1	73.2	6.9
Q	7.0	79.9		
105	6.4	80.0	73.0	7.0
Q	7.0	79.9		

41

8638

T.P.	6.77	6.98	79.40
+50		6.3	80.1 72.8
E		7.0	79.4
104		6.7	79.7 72.6
S		7.2	79.2
+50		6.5	79.9 72.4
E		7.2	79.2
103		6.5	79.9 72.4
E		7.2	79.2
+50		6.3	80.1 72.4
Q		7.0	79.4
102		6.1	80.3 72.4
E		6.9	79.5
T.P.		6.81	79.57

LINE REVISION Sta 152+77.58 to 175+38.01

B.M.	6.94	49.72	42.78
175+39.96 Bdot			
175+38.01 Ahead		3.1	46.6
174+98.76		5.4	44.3
+78.75		6.8	42.9
+69		5.1	44.6
+50		5.2	44.5
+38		9.6	40.1
174+00		10.4	39.3
+84.37		10.2	39.5

7.3	
7.1	
7.5	
7.5	
7.7	
7.9	
Tap 4-1-11 10/7-85 LT-S.W. Cor	
H.N 6/1-2-3/53	
Blk Open	
10' off	29 El 46.8

49.72

+50			10.0	39.7
+18			9.9	39.8
173+00			6.6	43.1
+87			6.8	42.9
+78			10.2	39.5
+50			9.8	39.9
172+00			8.9	40.8
171+73.22			9.4	40.3
B.M	613	48.91		42.78
T.P			7.00	41.91
	573	47.64		
171+50			5.7	41.9
+35			9.0	38.6
+25			9.3	38.3
171+00			8.7	38.9
+65			8.2	39.4
+50			8.2	39.4
+20			8.3	39.3
170+00			8.1	39.5
+92			7.3	40.3
+86			5.5	42.1
+50			4.7	42.9
+43			7.5	40.1
169+00			8.1	39.5
+50			6.8	40.8

	47.64			
168+00			6.5	41.1
+57.58 B.C.			6.2	41.4
T.P.		3.74		43.90
	10.38	54.28		
167+50			13.2	41.1
167+00			12.9	41.4
+50			12.9	41.4
166+00			12.5	41.8
+50			10.2	44.1
165+00			9.6	44.7
+50			9.5	44.8
164+00			8.9	45.4
+50			8.8	45.5
163+00			6.8	47.5
+50			6.1	48.2
162+00			5.2	49.1
T.P.		2.77		51.51
	2.50	54.01		
161+50			4.7	49.3
161+00			4.3	49.7
+50			4.0	49.2
160+00			5.3	48.7
+50			5.1	48.9
159+00			4.8	49.2
+50			4.4	49.6

P.P. 160-75 40'ht.

54.01

158+00		5.1	48.9
485		6.3	47.7
+50		6.1	47.9
157+00		6.6	47.4
+88		6.0	48.0
+65		5.7	48.3
+50		6.5	47.5
156+00		6.1	47.9
		4.91	49.10

9.76 58.86

155+85		9.9	49.0
+72		9.9	49.0
+62 ⁵⁰ EC old curve		9.6	49.3
\$		10.2	48.7
+50		9.2	49.7
\$		10.1	48.8
155+00		7.9	51.0
\$		8.1	50.8
+50		6.6	52.3
\$		6.2	52.7
+47 ²⁷ E.C.		6.6	52.3
\$		6.2	52.7
154+00		5.1	53.8
\$		4.9	54.0

45

Grade	Cut
42.7	7.0
45.0	6.0
46.3	6.0
47.6	6.2

Sta	+	H.I.	-	I.S	EI
		58.86			
+50				3.6	55.3
⊕				3.4	55.5
153+00				2.3	56.6
⊕				2.3	56.6
152+72.00 ^{Head}				1.7	57.2
152+77.58 ^{BC}				1.7	57.2
⊕					54.37
B.M.	449				

Profile and Grades		Sta	101+50 to	83+00
B.M.	1042	91.80		81.38
+50			11.3	82.5
⊕			12.0	79.8
101+00			11.0	80.8
⊕			11.5	80.3
+50			10.6	81.2
⊕			11.2	80.6
+25			10.4	81.4
⊕			11.0	80.8
100+00			10.2	81.6
⊕			10.8	81.0
+75			10.0	81.8
⊕			10.5	81.3
+50			9.8	82.0
⊕			10.3	81.5
99+00			9.2	82.6
⊕			10.0	81.8

Grade	Cut
48.9	6.4
	Intersection with pavement.
50.2	6.4
B.M.	Hub 40' Rt 153+42.03
B.M. Headwall 101+85	60.5 79.57
	85.62
	4.24 81.38
72.4	8.1
	Moore called this 81.24 Headwall 99+75 (See pg. 53 F.B. 579)
72.4	8.4
72.4	8.8
72.4	9.0
71.4	10.2
70.4	11.4
71.6	10.4
71.0	8.6

91.80

+75		9.0	82.8
⊕		9.7	82.1
+50		8.8	83.0
⊕		9.5	82.3
98+00		8.1	83.7
⊕		8.9	82.9
+50		7.9	84.4
⊕		8.0	83.8
97+00		6.5	85.3
⊕		7.1	84.7
+75		6.1	85.7
⊕		6.5	85.3
+50		5.6	86.2
⊕		6.1	85.7
96+00		4.9	86.9
⊕		5.2	86.6
+50		3.9	87.9
⊕		4.0	87.8
95+00		3.3	88.5
⊕		3.4	88.4
+50		2.7	89.1
⊕		3.1	88.7
94+00		2.2	89.6
⊕		2.5	89.3
+50		1.7	90.1
⊕		2.0	89.8

47

75.2	7.6
75.5	7.5
76.2	7.5
76.8	7.6
77.2	8.1
77.4	8.3
78.0	8.2
79.3	7.7
80.3	7.6
81.5	7.0
82.0	7.1
82.5	7.1
82.9	7.2

	91.80			
93+00			1.5	90.3
¢			1.6	90.2
+50			1.5	90.3
¢			1.7	90.1
92+00			1.7	90.1
¢			1.9	89.9
+50			1.9	89.9
¢			2.1	89.7
<u>P</u>		2.05		89.75

	2.08	91.83		
91+00			2.2	89.6
¢			2.5	89.3
+50			2.6	89.2
¢			2.9	88.9
90+00			2.9	88.9
¢			3.1	88.7
+50			3.3	88.5
¢			3.5	88.3
89+00			3.7	88.1
¢			3.9	87.9
+50			4.3	87.5
¢			4.5	87.3
88+00			4.9	86.9
¢			5.2	86.6
+50			5.5	86.3
¢			5.8	86.0

83.9 6.9

83.2 7.1

83.0 7.1

82.8 7.1

82.6 7.0

82.2 7.0

81.8 7.1

81.4 7.1

81.0 7.1

80.5 7.0

79.9 7.0

79.4 6.9

91.83

87+00			5.9	85.9
±			6.3	85.5
+50			6.3	85.5
±			6.5	85.3
86+00			6.8	85.0
±			6.9	84.9
+50			7.2	84.6
±			7.3	84.5
85+00			7.6	84.2
±			7.8	84.0
+50			7.8	84.0
±			8.1	83.7
84+00			8.0	83.8
±			8.2	83.6
+50			8.2	83.6
±			8.4	83.4
83+00			8.5	83.3
±			8.8	83.0
TP		8.85		82.98
	0.10	83.08		
		10.37		72.71

49

78.8	7.1
78.4	7.1
77.9	7.1
77.5	7.1
77.0	7.2
76.6	7.4
75.6	8.2
74.6	9.0
74.6	8.7
BM: 72.47 Cross head wall of box culvert P. 20	

Check levels Fairmont to Ward Rd.

Sta	+	H.I.	-	EI
B.M.	0.02	77.86		77.84
T.P.			3.97	73.89
	8.97	82.86		
T.P.			0.35	82.51
	9.52	92.03		
T.P.			3.57	88.46
	5.72	94.18		
T.P.			5.81	88.37
	1.74	90.11		
T.P.			8.87	81.24
	3.13	84.37		
T.P.			6.34	78.03
	3.22	81.25		
T.P.			6.64	74.61
	4.22	78.33		
B.M.			6.14	72.19

Hill
Polak
Otten

6/8/43

57

P. Pole on Fairmont & River Road

BM = 72.47 Recorded elev. (Cross on box on vert.)

King
Polak
0+ + 20
6-11-43

Profile	E 410 OFF sets - Sta.	to Sta.		
B.M.	1.90	79.74	77.84	
B.C. 53+59.20		6.6	73.1	63.1
E		6.8	72.9	
59		6.2	73.5	67.2
E		4.7	75.0	
+50		4.9	74.8	68.5
E		2.4	77	
EC		4.4	75	
57+64.43				
E		2.1	77.6	
55		3.3	76.4	69.8
E		1.0	78.7	
55+03 E		3.2	76.5	
55+50		1.9	77.6	71.2
E		2.9	76.8	
B.C. 55+94.07		0.4	79.3	
56+00		0.2	79.5	72.5
E		1.2	78.5	
T.P.	11.06	90.06	0.74	79.00
56+50		8.8	81.3	73.8
E		9.4	81.7	
EC		7.2	82.9	75.1
56+99.84				
E		7.9	82.2	
57+50		5.6	84.5	76.4
E		6.5	84.6	
58		4.2	85.9	77.8
E		4.9	85.2	

P. Pole - Fairman + River Rd Lt sta 50 + 49				
10.0		0.0	-0.4	-1.5
		10'	5.5'	6.5'
6.3				-1.5
				10'
6.3				
		0.0	-0.1	-1.2
		10'	3'	5'
				-2.5
				6' 10'
		0.0	-0.1	-2.4
		10'	4'	5'
6.6				-2.4
				10'
		10.2	-2.4	-2.4
		10'	2'	10'
Break - view BANK		+0.3	-2.5	
		10'	10'	
6.4				
		+3.9	+3.3	0.0
		10'	2'	10'
7.0				
		+4.4	+4.4	-0.1
		10'	7'	5'
7.5				
		+6.2	-0.4	
		9'	5'	
7.8				
		+6.2	+0.1	
		12'	4.5'	
8.1				
		+5.9	+0.6	
		13'	6'	
8.1				
		6.0	0.0	
		12'	4'	

		90.06			
+50			3.2	86.9	79.1
E			4.1	86.0	
458+74			2.7	87.4	79.8
1			3.7	86.4	
59			2.3	87.8	80.4
E			3.1	87.0	
+50			2.1	88.0	80.7
E			2.5	87.6	
60			1.8	88.3	81.1
E			2.2	87.9	
+50			1.6	88.5	81.4
E			2.0	87.1	
61			1.2	88.9	81.7
E			1.6	88.5	
T.P.	4.01	9297	1.60	88.46	
+50			3.1	89.4	82.1
E			3.5	89.0	
62			3.0	89.5	82.4
E			3.3	89.2	
+50			2.8	89.7	82.4
E			3.1	89.4	
63			2.7	89.8	82.4
E			3.1	89.4	
+50			2.7	89.8	82.4
E			3.0	89.5	

		90.06			
7.8					
					$\frac{+57}{12}$ $\frac{+0.5}{6}$
7.6					
7.4					
7.3					
7.2					
7.1					
7.2					
7.3					
7.1					
7.3					
7.4					
7.4					

	92.47				
64			2.9	89.6	82.4
⊖			3.2	89.3	
+50			3.6	88.9	81.9
⊖			4.0	88.5	
65			4.2	88.3	81.4
⊖			4.5	88.0	
+50			4.7	87.8	80.4
⊖			5.2	87.3	
66			5.5	87.0	79.4
⊖			6.3	86.2	
+50			6.8	86.2	78.4
⊖			7.1	85.9	
67			7.3	85.2	77.4
⊖			8.0	84.5	
+50			8.6	83.9	76.4
⊖			9.2	83.3	
68			9.7	82.8	75.4
⊖			10.2	82.3	
+50			10.5	82.0	74.7
⊖			11.1	81.4	
69			11.4	81.1	74.1
⊖			12.0	80.5	
+50			12.0	80.5	73.4
⊖			12.5	80.0	
T.P.	0.44	80.35	12.55	79.92	

72	
70	
69	
74	
76	
78	
78	
75	
74	
73	
70	
71	

80.26

70	0.4	80.0	72.7
£	0.9	79.5	
+50	0.9	79.5	72.1
£	1.5	78.9	
71	1.3	79.1	71.4
£	1.9	78.5	
+50	1.8	78.4	70.9
£	2.5	77.9	
72	2.1	78.3	70.4
£	2.6	77.8	
+50	2.3	78.1	69.9
£	2.8	77.6	
73	2.7	77.7	69.4
£	3.3	77.1	
+50	3.4	77.0	68.9
£	4.0	76.4	
74	4.2	76.2	68.4
£	4.7	75.7	
+50	4.8	75.6	67.9
£	5.4	75.0	
B.C. 74+95.16	5.2	75.2	
75	5.2	75.2	67.4
£	5.8	74.6	
+50	5.8	74.6	66.9
76	6.3	74.1	

7.3

7.4

7.7

7.7

7.9

8.2

8.3

8.1

7.8

7.7

7.8

7.7

80.36

76			6.3	74.1	66.0
£			6.3	74.1	
+25			6.4	74.0	65.3
♀			6.2	74.2	
+50			6.4	73.8	63.5
♀			5.5	74.9	
76+58 ECD			7.3	73.1	
B.C 76+96.84 ♀			8.0	72.4	
77+00			4.3	76.1	58.5
♀			7.6	72.8	
T.P	10.50	83.10	7.76	72.60	B.M. 72.69
77+9 ♀			11.5	71.6	
77+11 £			15.3	67.8	
77+20			12.4	70.7	56.4
♀			15.4	67.7	
77+32 ♀			20.2	62.9	
77+48 ♀			18.8	64.3	
77+50			9.7	73.4	56.4
♀			11.0	72.1	
78			9.1	74.0	60.6
♀			9.1	74.0	
+25			9.2	73.9	62.6
♀			9.0	74.1	
+50			9.6	73.5	64.4
♀			9.4	73.7	

8.1

8.7

10.3

17.6

14.3

17.0

13.8

11.3

9.1

+75		8.8	74.3	65.6
♀		8.6	74.5	
79		7.8	75.3	66.5
♀		7.9	75.7	
+50		6.0	77.1	68.3
♀		5.6	77.5	
+80+10		5.9	77.2	70.1
♀		5.6	77.5	
EC 80+0018 ♀		5.5	77.6	
B.C. 80+0900 ♀		4.6	78.5	
+50		4.6	78.5	74.9
♀		4.5	78.6	
81		3.1	80.0	72.8
♀		3.1	80.0	
+50		2.0	81.1	73.7
♀		2.1	81.0	
82		1.1	82.0	74.6
♀		1.5	81.6	
+50		0.3	82.8	74.6
♀		0.6	81.5	
EC 82+04.65 ♀		0.6	81.5	
T.P.		0.2	82.9	Est. 83.0

8.7			
8.5		5.4	
8.2		7.2	
		7.1	
8.8		7.5	
		7.1	
		6.6	
		7.2	
		7.4	
		7.4	
		8.2	

KING
POLAR
STATION
6-19

57

B.M.	0.70	78.54	77.84	
53+50		5.3	73.2	62.2
±		5.6	72.9	
+10		5.7	72.8	58.7
±		8.5	70.0	
53+08 ±		13.3	65.2	58.7
52+92.55 =		13.7	64.8	58.7
52+77.62		13.7	64.8	
±		13.7	64.8	
+86 ±		13.7	64.8	58.7
+85.8 ±		8.8	69.7	58.7
+79		5.6	72.9	58.7
+75		5.8	72.7	58.7
±		4.8	73.7	
+50		5.5	73.0	60.6
±		6.5	72.0	
52		5.9	73.1	64.4
±		7.3	71.2	
+50		4.1	74.3	65.9
±		6.2	72.3	
Δ 51+02.73		3.1	75.4	67.4
±		5.4	73.1	67.4
+94 ±		3.2	75.3	67.5
+50		2.5	76.0	68.4
±		2.2	76.3	
Δ 50+60		2.4	76.1	69.4
±		2.1	76.4	

10-8

Sta 50+89 - P. Pole

11.0

14.1

6.1

6.1

14.0

12.4

8.7

8.4

8.0

7.8

7.6

7.7

78.54

+50			1.9	76.6	78.4
⊕			2.2	76.3	
T.P.	8.46	84.83	2.17	76.37	
49			6.5	78.3	71.4
⊕			7.2	77.6	
+50			5.9	78.9	72.4
⊕			6.1	78.7	
48			5.3	79.5	74.4
⊕			4.9	79.9	
+60 ⊕			4.8	80.0	76.0
+50			3.0	81.8	76.4
⊕			2.4	82.4	
T.P.	10.47	93.00	2.30	82.53	
+23 ⊕			6.0	87.0	77.4
47			9.5	83.5	78.4
⊕			11.1	81.9	
+61 ⊕			10.8	82.2	80.5
+50			6.7	86.3	81.0
⊕			9.0	84.0	
+31 ⊕			7.7	85.3	82.0
T.P.	13.11	104.86	1.25	91.75	
+19			9.1	95.8	82.6
46			10.9	94.0	83.6
⊕			9.7	95.2	
+50			8.2	96.7	86.2
⊕			8.5	96.4	

10-10

6.2
6.9
6.5
5.1
4.0
5.4
9.6
5.1
1.7
5.3
3.2
13.2
10.4
10.5

	115.38				
+50			3.2	12.2	06.0 09.7 12.0 06.7
⊕			5.7	09.7	
39			3.6	11.8	+0.7 06.6 13.2 07.1
⊕			5.0	10.4	
+50			2.9	12.5	08.1 12.8 14.4 08.8
⊕			3.4	12.0	
38			1.1	14.3	+3.0 11.0 15.6 11.4
⊕			1.3	14.1	
T.P.	12.59	126.82	1.15	114.23	
+50			8.4	18.4	+5.9 11.0 16.8 11.1
⊕			2.2	18.6	
37			1.7	25.1	+17.4 18.2 11.0
⊕			1.9	24.9	
T.P.	7.65	134.15	0.32	126.50	
+50			3.6	30.6	11.0 19.2
⊕			5.4	28.8	
36			2.8	31.4	20.4
⊕			5.4	28.8	
+50			2.9	31.3	20.6
⊕			4.8	29.4	
35			6.7	27.5	20.2
⊕			7.6	26.6	
+50			8.5	25.7	19.8
⊕			10.5	23.7	
34			9.2	25.0	19.4
⊕			10.8	23.4	

6.2					
2.5	+1.35	+5.5	12.7	4.5	+0.5
E 0.2	11.0	16	7.5	7.1	4.1
					-4.1
					2.0
4.1					
F 1.4	+1.4	+4.4	4.6	4.6	
	4.5	2.3	2.1	3	
					-4.0
					2.1
0.5					
E 1.9	+11.7	+3.0	+0.2		0.0
	4.7	2.0	4		-1.8
					-5.0
4.3					5
F 1.3	+1.8	+2.8	0.0		-1.6
	5.2	1.7	1.8		-3.1
					2.5
ginnery sta 38					
5.6					
2.5	+2.1	+1.3	+0.5		-0.4
C 1.6	4.7	5	1.5		-1.6
					-3.0
					2.5
9.1					
7.1	+8.0	+3.1	+0.3		-0.4
	3.0	2.3	2.1		-1.6
					-4.6
					2.5
11.9					
H 1.4	+8.5	+4.5	+1.3	+1.4	0.0
	5.0	2.3	2.5	2	
					-5.0
					2.5
11.0	+1.1	+5.9	+3.9	+2.7	+1.2
	0.5	3.4	3.2	1.0	6
					-4.1
					2.5
10.7	+11.7	+6.5	+5.2	+3.2	+2.0
	0	3.1	3.5	1.0	1.1
					-4.8
					2.5
7.3					
	+17.4	+8.4	+6.0	+5.0	+2.0
	6.0	4.7	4.5	2.9	1.7
					-4.3
					2.5
5.9					
	+1.8	+2.2	+2.4	+2.8	+3.3
	0.0	5.6	5.4	3.2	5.0
					-4.0
					2.5
5.6	+14.1	10.2	10.9	6.9	+4.0
	14.2	7.2	6.5	4.4	3.1
					3.2
					8.9

134.15

+50			9.3	24.9	18.2 19.1
8			10.8	23.4	
33			11.3	22.9	17.1 18.7
4			12.6	21.6	
T.P.	4.03	125.62	12.56	121.59	
+50			4.0	21.6	15.9 18.3
4			5.4	20.2	
32			5.7	19.9	14.7 17.4
4			6.4	19.2	13.6 16.4
+50			7.1	18.5	17.5
4			8.0	17.6	12.4 15.4
31			8.4	17.2	17.7
4			9.1	16.5	
+50			8.8	16.8	12.4 15.4 16.8
4			9.6	16.0	
30			8.8	16.8	12.3 15.3 16.4
4			9.4	16.2	
+50			8.2	17.4	12.3 15.3 16.3
4			8.7	16.9	
29			7.0	18.6	12.2 15.2 16.2
4			7.8	17.8	
+50			6.1	19.5	12.2 15.2 16.0
4			7.0	18.6	
28			5.7	19.9	12.1 15.1 15.9
4			6.0	19.6	

6.7
~~5.8~~5.8
~~4.2~~5.7
~~4.3~~5.2
~~2.0~~
2.04.9
~~2.7~~
4.04.8
~~1.8~~

0.0

4.4
~~1.4~~
0.04.5
~~1.5~~
0.45.1
~~2.1~~
4.16.1
~~3.1~~
2.47.3
~~4.3~~
3.57.8
~~4.8~~
4.0

		125.62			12.1 15.1 15.8
+50			4.8	20.8	
⊕			5.7	19.9	12.0 15.0
27			4.3	21.3	15.6
⊕			4.9	20.7	12.0 15.0 15.5
+50			3.8	21.8	
⊕			4.4	21.2	
T.P.	8.45	129.65	4.46	121.22	11.9 14.9 15.4
26			7.1	22.6	
⊕			7.8	21.9	11.9 14.9 15.1
+50			6.7	23.0	
⊕			7.5	22.2	
25			6.2	23.5	11.8 14.8
⊕			7.1	22.6	
+50			6.1	23.6	11.8 14.5 ?
⊕			7.0	22.7	
24			5.5	24.2	11.7 14.2
⊕			6.4	23.3	
E.G. + 52.51			5.0	24.7	11.7 13.9
⊕			4.4	25.3	
+36.49			4.6	25.1	11.6 13.8
⊕			3.9	25.8	
+20.61			3.6	26.1	11.6 13.6
⊕			2.7	27.0	
+04.75			3.1	26.6	11.6 13.6
⊕			2.3	27.4	

62

					9.7 5.7 5.0
					9.3
					5.7
					9.8 15.0 6.3
					10.7 7.7 7.2
					11.7 8.7 7.9
					11.7 8.7
					11.8 7.1 ?
					12.5 10.0
					13.0 10.8
					13.5 11.3
					14.5 12.5
					15.0 13.0

129.65

22+88.89			3.1	26.1	11.6 13.5
⊕			2.2	27.5	
+73.03			3.1	26.6	11.6 13.4
⊕			2.2	27.5	
+57.17			2.3	27.4	11.6 13.7
⊕			2.5	27.2	
+38.85			2.7	27.0	11.6 13.3
⊕			2.9	26.8	
22+00			4.1	25.6	11.6 13.0
⊕			4.7	25.0	
EC. 21+74			6.2	23.5	11.5
⊕			6.7	23.0	
+58.92			8.1	21.6	11.1
⊕			8.1	21.6	
+43.08			9.7	20.0	10.1
⊕			9.7	20.0	
+27.22			11.7	18.0	09.4
⊕			11.5	18.2	
T.R.	0.71	118.21	12.15	117.50	
+11.43			2.2	16.0	08.3
20+⊕			2.1	16.1	
20+95.66			3.9	14.3	06.5
⊕			4.3	13.9	
+79.93			7.1	11.1	05.0
⊕			6.8	11.4	

63

14.5
12.615.0
13.215.8
14.115.5
13.714.1
12.6

12.0

10.5

9.9

8.6

7.7

7.8

6.1

118.21

+6425 9.7 08.5 02.8

E

9.4 08.8

+50

11.4 06.8 00.1

E

11.0 07.2

+42E

12.5 05.7 98.3

T.P.

0.19

105.34

13.06 105.15

20+35E

3.6 01.7 97.4

20+134E

4.3 01.0 94.1

E

6.4 92.9

20

6.8 92.5 92.9

E

7.3 92.0

+50

9.7 95.6 88.4

E

9.0 96.3

+30E

9.2 96 87.6

+150

7.7 97.6 87.5

19

8.7 96.6 86.9

E

7.5 97.8

+50

10.5 94.8 80.4
81.4

E

13.5 91.8

T.P.

0.67

93.18

12.83 92.51

+254

5.7 87.5 75.9
77.5

18+05E

11.4 81.8 72.4
74.4

T.P.

3.24

84.62

11.80 81.38

18+050

15.0 79.6 72.4
74.4

17+90E

5.8 78.8 71.6
73.6

5.7

6.7

7.4

4.3

6.9

5.6

7.2

8.5

9.7

14.2
13.211.6
10.2

7.4

7.7

5.2

7.8
7.2

(07.2)

84.62

17 + 746			6.3	78.3	69.6 71.6
♀			6.2	78.4	
+ 50			7.2	77.4	69.3 71.3
♀			7.6	77.6	
17			6.6	78.0	69.4 71.4
♀			6.7	77.9	
+ 50			6.2	78.4	69.5 71.5
♀			6.6	78.0	
16			6.5	78.1	69.6 71.6
♀			6.3	78.3	
+ 50			5.4	79.2	69.7 71.7
♀			6.9	78.7	
15			5.5	79.1	69.8 71.8
♀			9.0	75.6	
+ 50			4.8	79.8	70.0 72.0
♀			8.3	76.3	
+ 45 ♀			5.6	79.0	70.0 72.0
+ 15 ♀			4.2	80.4	70.1 72.1
14			3.8	80.8	70.1 72.1
♀			3.1	81.5	
+ 50			4.9	79.7	70.2 72.2
♀			3.6	81.6	
T.P.	12.05	91.55	5.12	79.50	
13 ♀			11.1	80.5	70.9 72.4
♀			11.1	80.5	

65

8.7					
6.7					
	17+65				69.2 87
8.1	♀			77.8	71.2 67
6.4				77.6	
8.6					
6.6					
8.8					
6.9					
8.5					
6.5					
9.5					
7.5					
9.3					
7.3					9.8
9.8					
7.8					
7.0					
8.3					
10.7					
8.7					
9.5					
7.5					
9.6					
7.7					

91.55

+50			12.5	79.1	72.5 73.8
⊕			12.6	79.0	
12+10 ⊕			12.3	79.3	73.5 74.0
12			10.6	81.0	73.7 74.2
⊕			10.8	80.8	
TC +9596			10.8	80.8	73.8 74.3
+50			10.4	81.2	74.8
⊕			10.7	80.9	
11			9.7	81.9	75.4
⊕			9.6	82.0	
+50			8.4	83.2	76.7
⊕			8.6	83.0	
10			7.2	84.4	78.1
⊕			6.9	84.7	
+50			4.4	87.2	80.6
⊕			4.6	87.0	
T.P	12.76	10361	0.70	90.85	
9			10.1	93.5	84.8
⊕			10.6	93.0	
+50			4.9	98.7	89.9
⊕			4.7	98.9	
+25			4.6	99.0	92.4
⊕			4.5	99.1	
BC +06.42			4.1	99.5	92.7
8			4.1	99.5	93.0
⊕			4.0	99.6	

6.8					
5.8					
5.3					
7.3					
6.8					
7.0					
6.5					
6.4					
6.5					
6.5					
6.3					
6.6					
8.7					
8.8					
6.6					
6.8					
6.5					

		103.6			
+50			3.0	06.6	94.2
⊕			2.7	00.9	
7			1.5	02.1	95.3
⊕			1.8	01.8	
+50			0.2	03.4	95.4
⊕			0.2	03.4	
T.P	2.64	105.99	0.26	103.35	
G+25E			2.8	03.2	94.5
6			3.3	02.7	93.6
⊕			4.4	01.6	
+50			8.0	98.0	91.0
⊕			9.3	96.7	
5			9.6	96.4	89.4
⊕			10.1	95.9	
+50			9.2	96.8	89.4
⊕			8.3	97.7	
4			8.4	97.6	89.4
⊕			9.3	96.7	
+70 ⊕			9.3	96.7	90.0
+50			7.3	98.7	90.4
⊕			8.9	97.1	
T.P	11.16	111.29	5.86	100.13	
3			11.2	00.1	92.1
⊕			12.0	99.3	
+50			9.9	01.4	93.8
⊕			10.5	00.8	

6.4

6.8

8.6

8.7

9.1

7.0

7.0

7.4

8.2

6.7

8.7

8.0

7.6

111.29

Z + 00

8.7

02.6

93.9

♀

9.0

02.3

ETV

B. 111

3.53

107.76

107.78

B.M.

2.15

109.93

107.78

Δ 1 + 43⁸⁰

5.2

04.7

94.1

#2 1 + 43⁸⁰

5.1

04.8

94.1

♀

5.7

04.2

Δ 1 + 14¹¹

5.2

04.7

94.1

♀

5.2

04.7

0 + 86

3.2

06.7

100.26

4.3

05.6

8.7

Cor. M.H. Box

10.6

10.6

10.6

6.4

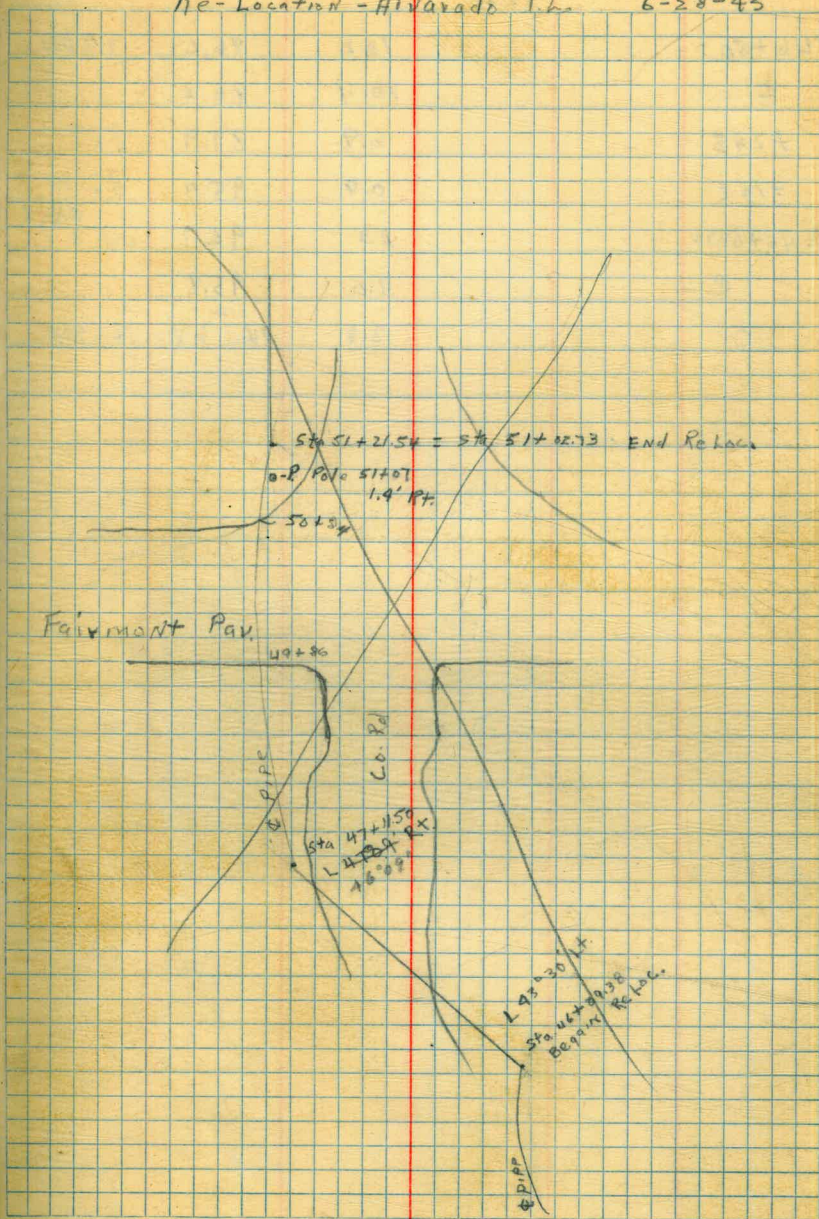
5.3

King
Orton
Pell
6-28-43

P.P.	Profile	offsets + E	Sta. +1 - 51+21	
B.M. Fairmont	7.79	25.63	77.84	
51+02.73 ahead			10.3	75.3
= 51+21.54 Back			12.6	73.0
Φ			10.6	75.0
51			10.5	75.1
E			8.8	76.8
50+84.0			9.0	76.6
50+50			7.5	78.1
Φ			7.3	78.3
49+86.0			8.5	77.1
+50			7.7	77.9
Φ			7.6	78.0
49			7.2	78.4
Φ			7.1	78.5
+50			6.5	79.1
Φ			5.9	79.7
48			5.3	80.3
Φ			4.6	81.0
+50			4.2	81.4
Φ			2.6	83.0
T.P	11.96	96.83	0.76	84.87
Δ 47+11.5			12.2	84.6
Φ			13.0	83.8
47			13.5	83.3
Φ			12.5	84.3

VOID

Re-Location - Alvarado Pk. 6-28-43

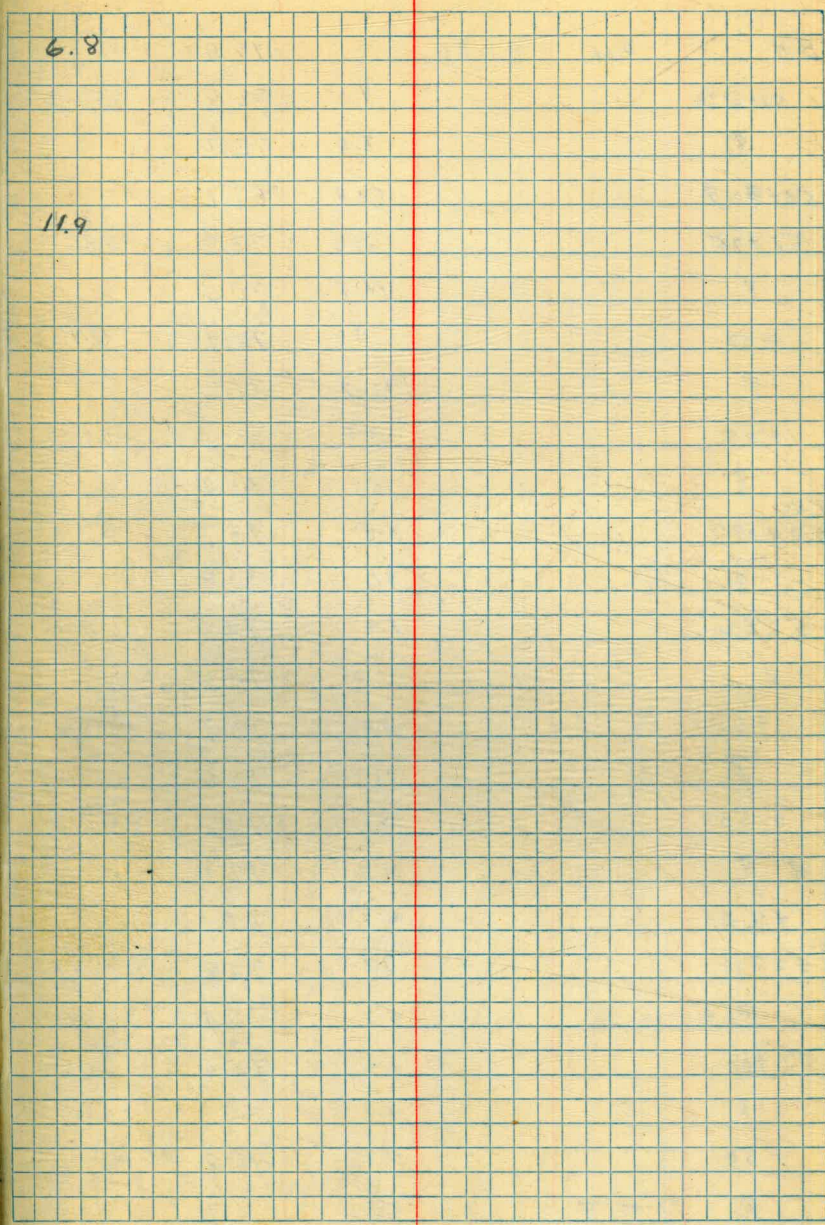


96.83

46+50	10.2	86.6	79.8
£	10.4	86.4	
+24£	6.9	89.9	81.8
+18£	0.9	95.9	82.2
Δ 46+09.78	2.1	94.7	22.6 ^{82.8}
0	1.0	95.8	
	2.8	94.0	6.50 46-96.0

6.8

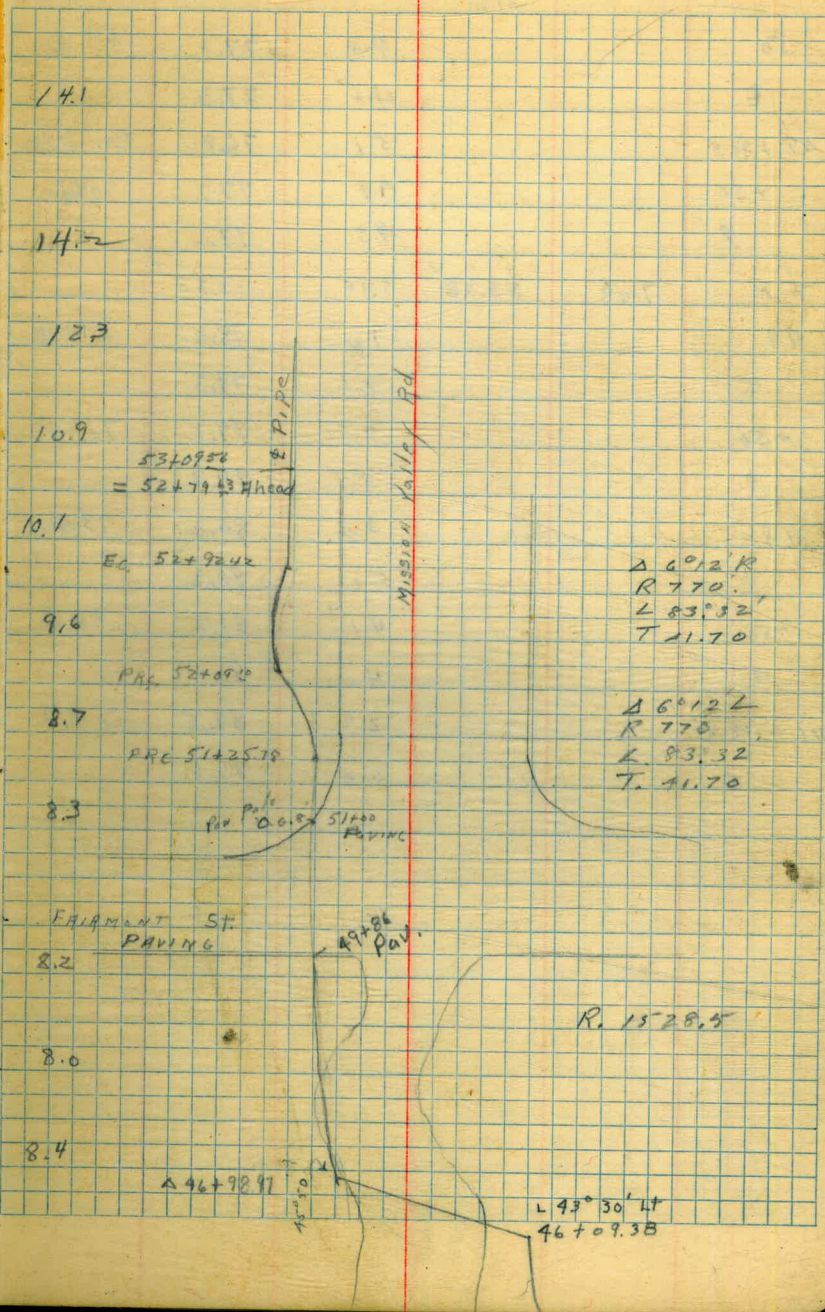
11.9



Profile & offsets
Alvarado P.H. Relocation

King
07-100
Polo
7-2-95

B.M.	4.06	81.90	77.84	
EC 52+92.42			9.1	72.8 58.7
⊕			8.8	73.1
52+90.9			14.8	67.1
52+75			9.0	72.9 58.7
⊕			11.4	70.5
+50			9.0	72.9 60.6
⊕			10.7	71.2
+25			8.5	73.4 62.5
⊕			10.9	71.0
PRC 52+09.10			8.2	73.7 63.6
⊕			11.1	70.8
52+00			7.9	74.0 64.4
⊕			11.3	70.6
+75			8.0	73.9 65.2
⊕			11.3	70.6
+50			7.7	74.2 65.9
⊕			9.9	72.0
+36.4			6.8	75.1
PRC +25.78			7.1	74.8 66.6
⊕			6.5	75.4
51+00			6.5	75.4 Pav. 67.4
⊕			7.1	74.8
+50			5.1	76.8 68.4
⊕			5.2	76.7



		81.90				
50			4.8	77.1	69.4	7.7
E			4.6	77.3		
49 + 36.8			5.1	76.8	Par. Ed	
+50			4.7	77.2	70.4	6.8
E			4.3	77.6		
T.P.	7.43	85.38 [✓]	3.95	77.95 [✓]		
49			7.4	78.0	71.4	6.6
E			7.1	78.3		
+50			6.3	79.1	72.4	6.7
E			5.7	79.7		
48			5.4	80.0	73.6	6.4
E			5.2	80.2		
+50			4.1	81.3	74.8	6.5
E			4.0	81.4		
$\Delta 46 + 98.97$			2.9	82.5	77.3	5.2
E			0.4	85.0		

Elev. & cuts for valve chamber

BM.	4.79	112.57	107.78	Grade	Cut
0+00 6' offset		110	111.47	105.98	5.5
0+00 #		1.8	110.8		
0+18 #		2.6	110.0		
#		13.43	99.14	100.66	1.52
#		13.44	99.13	100.66	1.53
6' offset		4.36	108.21	102.00	6.21
#		5.4	107.2	102.00	5.2
#		5.5	107.1	102.00	5.1
6' offset		4.64	107.93	102.00	5.93
6' offset		5.9	106.7	100.72	5.98
#		6.3	106.3	100.72	5.58
#		6.6	106.0	100.72	5.28
		5.76	106.21		
6' offset		4.28	107.79	100.72	6.07
6' offset		5.3	107.30	100.08	7.22
					6.2
		5.5	107.10	100.08	7.02
					7.0
		5.0	107.60	100.08	7.5
		4.21	105.36	100.08	8.28
		4.88	107.69	92.95	9.74
		6.9	105.7	92.95	7.75
		7.0	105.6	92.95	7.65
		6.34	106.23	92.95	8.28

7/13/45 Hill
O'Brien
Remmen

Pipes at Alvarado Pump Plant

N. W. cor. concr. box at pump plant
Top of offset hub opp. joint new line with El Cap
#

Wall of N. side of chamber

S. " " "

June pipe 1' & 3.5' pipe N. E. cor. on 6' offset hub

" " " " " " " " #

" " " " " N. W. #

" " " " " " " " on 6' offset hub

" " " " " S. E. " " " "

" " " " " " " " #

" " " " " S. W. #

" " " " " " " " 6' offset

N. E. cor. concr. chamber 6' offset (bat slab)

" " " " " " "

N. W. " " " "

" " " " " " 6' offset

S. W. " " " " 6' "

" " " " " " "

S. E. " " " "

S. E. " " " " 6' offset

chlorine house
10' offset

Grades to
bottom Floor

7-22-92

7F

B.M.	6.75	114.53		107.78
S.E. #1		9.44	105.09	106.71
S.E. #2		9.49	105.04	106.71
S.W. #3		5.18	109.35	109.71
S.W. #4		4.79	109.74	109.71
N.W. #5		4.35	110.18	109.71
N.W. #6		4.52	110.01	109.71
N.E. #7		5.34	108.19	106.71
N.E. #8		8.60	105.97	106.71
North	7.24	15.02		107.78
West sidewalk		5.5	109.52	109.71
South		7.1	107.85	109.71
West " " "				

F1.62
F1.67
F0.36
C0.03
C0.47
C0.30
C2.48
F0.78
E0.19
F1.86

Grades for top of slab at chlorine house 7/30/43 Hill

T.M.	287	110.65	107.78
N.W. & S.W. cor		110.00	0.65
N.E. & S.E. cor		107.00	3.65

of gages & Chambers

12-20-43

75

Elevations - # Ivarado P. Plant + Mission Valley

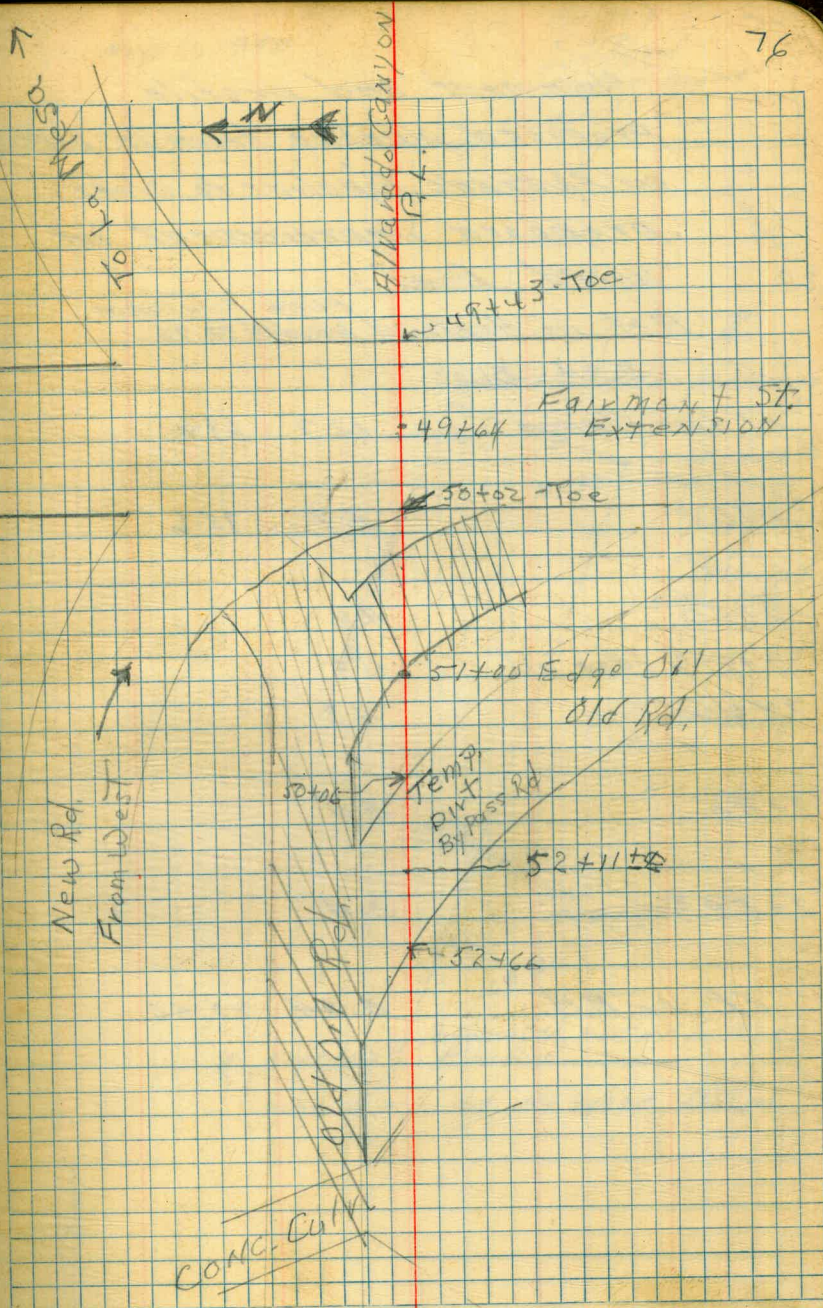
		Elev.
Elev.	Top Dial Marking Meter	98.39
Elev.	Top Conc. Chamber - M. Meter	105.09
Elev.	Top S.W. Cor. Press. Reg. Chamber	108.47
Elev.	" N.E. " " " "	108.53
Elev.	" N.W. Cor. Murray Gate Chamber	112.43
Elev.	& Pressure Gauge P. House	118.33
Elev.	& " " Chlorine House	114.96
Elev.	Top Gate Chamber ^E Texas St	46.10
Elev.	" " v. " ^W Texas St	46.08

City Datum.

8-23-49
 Profile Alvarado Pk. at
 Fairmont

B.M.	9.16	88.52	79.36	ON 41W11
49400		4.4		old gr.
49438		5.2		
49443		7.1		
49464		6.5		
58402		7.6		
58406		4.9		
57448		8.3		
57465		6.5		
52411 & 801		7.7		
52466		8.7		
52471		10.6		

9.14 79.36



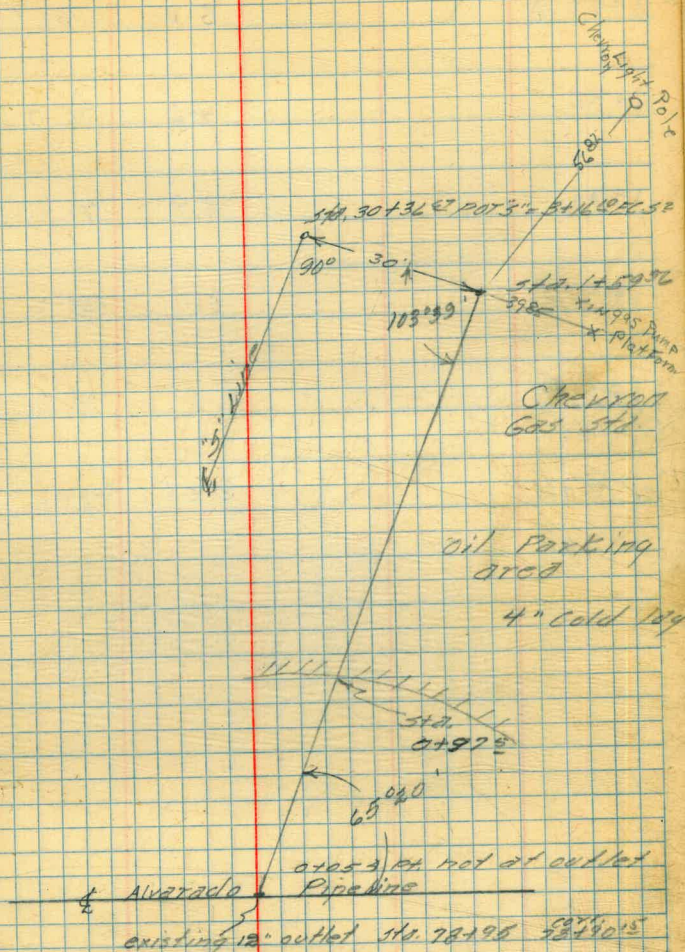
Alignment and profile
 proposed pipeline from 12" outlet
 on Alvarado Pipeline to clear
 proposed improvement on
 Ward Road

B.M. in Headwall ward Rd. ^{Esido City Datum} 73.96

	8.34	81.30	
cl. top flange	12.7	68.6	
0+05	5.7	75.6	
0+50	4.8		
0+97 1/2 edge oil	4.3		
1+00	4.3		
1+50	3.5		
1+59 1/2	3.4		7
ck. to B.M.	8.34	72.96	

Aug. 11, 1950

Rainey 77
 King
 Leonard
 Baker Brains
 West C



Profile - Offsets
 Ward Rd. - From side outlet Alvarado Pk.
 South 159'

B.M	8.35	81.31			72.96
0905 A			5.1	75.7	67.3
0950			4.6	76.7	68.5
1100			3.9	77.4	70.0
1750			3.1	78.2	71.5
1759 1/2			3.1	78.2	71.8
ck. B.M.			8.35	72.96	

King 8-15-50
 heoward
 West

2100-2001

78

B.P. Top So. Hill. Wait Rd + Mission Valley Rd

84

82

74

67

64

Natural Trigonometrical Functions

Angle.	Sin.	Tan.	Sec.	Cosec.	Cotg.	Cosin.	Angle.	Sin.	Tan.	Sec.	Cosec.	Cotg.	Cosin.
32	.5209	.6249	1.1792	1.887	1.600	.84805	58	.6293	.8098	1.2868	1.589	1.235	.77715
10	.5324	.6289	1.1813	1.878	1.590	.84650	50	10	.6316	.8146	1.2898	1.583	1.228
20	.5348	.6330	1.1835	1.870	1.580	.84495	40	20	.6338	.8195	1.2929	1.578	1.220
30	.5373	.6371	1.1857	1.861	1.570	.84339	30	30	.6361	.8243	1.2959	1.572	1.213
40	.5398	.6412	1.1879	1.853	1.560	.84182	20	40	.6383	.8292	1.2991	1.567	1.206
50	.5422	.6453	1.1901	1.844	1.550	.84025	10	50	.6406	.8342	1.3022	1.561	1.199
33	.5446	.6494	1.1924	1.836	1.540	.83867	57	40	.6428	.8391	1.3054	1.556	1.192
10	.5471	.6536	1.1946	1.828	1.530	.83708	50	10	.6450	.8441	1.3086	1.550	1.185
20	.5495	.6577	1.1969	1.820	1.520	.83549	40	20	.6472	.8491	1.3118	1.545	1.178
30	.5519	.6619	1.1992	1.812	1.511	.83389	30	30	.6494	.8541	1.3151	1.540	1.171
40	.5544	.6661	1.2015	1.804	1.501	.83228	20	40	.6517	.8591	1.3184	1.535	1.164
50	.5568	.6703	1.2039	1.796	1.492	.83066	10	50	.6539	.8642	1.3217	1.529	1.157
34	.5592	.6745	1.2062	1.788	1.483	.82904	56	41	.6561	.8693	1.3251	1.524	1.150
10	.5616	.6787	1.2086	1.781	1.473	.82741	50	10	.6583	.8744	1.3284	1.519	1.144
20	.5640	.6830	1.2110	1.773	1.464	.82577	40	20	.6604	.8796	1.3318	1.514	1.137
30	.5664	.6873	1.2134	1.766	1.455	.82413	30	30	.6626	.8847	1.3352	1.509	1.130
40	.5688	.6916	1.2158	1.758	1.446	.82248	20	40	.6648	.8899	1.3386	1.504	1.124
50	.5712	.6959	1.2183	1.751	1.437	.82082	10	50	.6670	.8952	1.3421	1.499	1.117
35	.5736	.7002	1.2208	1.743	1.428	.81915	55	42	.6691	.9004	1.3456	1.494	1.111
10	.5760	.7046	1.2233	1.736	1.419	.81748	50	10	.6713	.9057	1.3492	1.490	1.104
20	.5783	.7089	1.2258	1.729	1.411	.81580	40	20	.6734	.9110	1.3527	1.485	1.098
30	.5807	.7133	1.2283	1.722	1.402	.81412	30	30	.6756	.9163	1.3563	1.480	1.091
40	.5831	.7177	1.2309	1.715	1.393	.81242	20	40	.6777	.9217	1.3600	1.476	1.085
50	.5854	.7221	1.2335	1.708	1.385	.81072	10	50	.6799	.9271	1.3636	1.471	1.079
36	.5878	.7265	1.2361	1.701	1.376	.80902	54	43	.6820	.9325	1.3673	1.466	1.072
10	.5901	.7310	1.2387	1.695	1.368	.80730	50	10	.6841	.9380	1.3711	1.462	1.066
20	.5925	.7355	1.2413	1.688	1.360	.80558	40	20	.6862	.9435	1.3748	1.457	1.060
30	.5948	.7400	1.2440	1.681	1.351	.80386	30	30	.6884	.9490	1.3786	1.453	1.054
40	.5972	.7445	1.2466	1.675	1.343	.80212	20	40	.6905	.9545	1.3824	1.448	1.048
50	.5995	.7490	1.2494	1.668	1.335	.80038	10	50	.6926	.9601	1.3863	1.444	1.042
37	.6018	.7536	1.2521	1.662	1.327	.79864	53	44	.6947	.9657	1.3902	1.440	1.036
10	.6041	.7581	1.2549	1.655	1.319	.79688	50	10	.6967	.9713	1.3941	1.435	1.030
20	.6065	.7627	1.2577	1.649	1.311	.79512	40	20	.6988	.9770	1.3980	1.431	1.024
30	.6088	.7673	1.2605	1.643	1.303	.79335	30	30	.7009	.9827	1.4020	1.427	1.018
40	.6111	.7720	1.2633	1.636	1.295	.79158	20	40	.7030	.9884	1.4061	1.422	1.012
50	.6134	.7766	1.2661	1.630	1.288	.78980	10	50	.7050	.9942	1.4101	1.418	1.006
38	.6157	.7813	1.2690	1.624	1.280	.78801	52		.7071	1.0000	1.4141	1.414	1.000
10	.6180	.7860	1.2719	1.618	1.272	.78622	50						
20	.6202	.7907	1.2748	1.612	1.265	.78442	40						
30	.6225	.7954	1.2778	1.606	1.257	.78261	30						
40	.6248	.8002	1.2808	1.601	1.250	.78079	20						
50	.6271	.8050	1.2838	1.595	1.242	.77897	10						

78 x 90.15

107.78
21
110.48
106.7

42.84
+ 10.67

M.H.
-4.44
-4.52
-4.85

-13.05

127.5
2.4
129.9
3.1

126.8
19.8
7.0

126.8
1.8
128.6
3.7

124.8
19.4
5.4

249
5.7
28.6
3.9
127.7

46.29

13.05
44
8.65
8.69

06.7
05.04
F.1.67

86.71
5.93
0.78

10.18
71
47

71
35
36

09.19
6.71
02.48
3.12
3.0

07.78
2.15
09.93
3.12
06.81

09.71
07.85
1.86

57.05
56.75
29.86
10.75
100.00
10.75
12.57
06.81
100.00
10.75
10.75

107.78
1.17
108.95
98.62
14.83

108.95
5.80
1.47
7.47

08.05
5.00
0.00
8.2
10.00
18.

100.00
10.75
10.75
10.75
10.75

77.72

102.20
154
100.66
15 16
134

103.50
154
101.96

47.60
299
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1.5
107.8

47.60
299
103.80

42.43
299
102.34

102.15
102.34
11.4
103
342

145
165
200
195
530

0.6
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4500
12300
12000

50+00.00
12+19.38
780.62

10821
9913
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7996
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12.121.49

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103.80

52709.10
81+2578
83.32

3.5

190
191
103.80
102.14

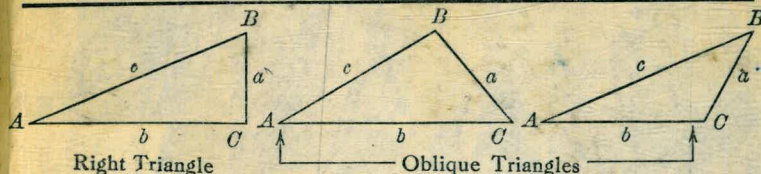
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102.14
1.64
60.6
62.5

53709.5
5296.29
12.97
54.4
76
63.64

103.65
1.5
102.15

19.8
72.3
5
19.5
119.38

TRIGONOMETRIC FORMULÆ



Right Triangle
Oblique Triangles
Solution of Right Triangles
For Angle A. $\sin = \frac{a}{c}$, $\cos = \frac{b}{c}$, $\tan = \frac{a}{b}$, $\cot = \frac{b}{a}$, $\sec = \frac{c}{b}$, $\text{cosec} = \frac{c}{a}$

Table with 3 columns: Given (a,b, a,c, A,a, A,b, A,c), Required (A,B,c, A,B,b, B,b,c, B,a,c, B,a,b), and formulas for solving triangles.

Solution of Oblique Triangles

Table with 3 columns: Given (A,B,a, A,a,b, a,b,C, a,b,c, a,b,c, A,b,c, A,b,c, A,B,C,a), Required (b,c,C, B,c,C, A,B,c, A,B,C, Area, Area, Area), and formulas for solving oblique triangles and area.

REDUCTION TO HORIZONTAL

Horizontal distance = Slope distance multiplied by the cosine of the vertical angle. Thus: slope distance = 319.4 ft. Vert. angle = 5° 10'. From Table, Page IX. cos 5° 10' = .9959. Horizontal distance = 319.4 x .9959 = 318.09 ft. Horizontal distance also = Slope distance minus slope distance times (1 - cosine of vertical angle). With the same figures as in the preceding example, the following result is obtained. Cosine 5° 10' = .9959. 1 - .9959 = .0041. 319.4 x .0041 = 1.31. 319.4 - 1.31 = 318.09 ft. When the rise is known, the horizontal distance is approximately: -the slope distance less the square of the rise divided by twice the slope distance. Thus: rise = 14 ft., slope distance = 302.6 ft. Horizontal distance = 302.6 - (14 x 14) / (2 x 302.6) = 302.6 - 0.32 = 302.28 ft.