

Water System.

215

F.B. 215

Table showing the difference of latitude and departure in running 80 chains at any course from 1 to 60 minutes.

MINUTES	LKS.	MINUTES	LKS.	MINUTES	LKS.
1	2 1/3	21	49	41	95 2/3
2	4 2/3	22	51 1/3	42	98
3	7	23	53 2/3	43	100 1/3
4	9 1/3	24	56	44	102 2/3
5	11 2/3	25	58 1/3	45	105
6	14	26	60 2/3	46	107 1/3
7	16 1/3	27	63	47	109 2/3
8	18 2/3	28	65 1/3	48	112
9	21	29	67 2/3	49	114 1/3
10	23 1/3	30	70	50	116 2/3
11	25 2/3	31	72 1/3	51	119
12	28	32	74 2/3	52	121 1/3
13	30 1/3	33	77	53	123 2/3
14	32 2/3	34	79 1/3	54	126
15	35	35	81 2/3	55	128 1/3
16	37 1/3	36	84	56	130 2/3
17	39 2/3	37	86 1/3	57	133
18	42	38	88 2/3	58	135 1/3
19	44 1/3	39	91	59	137 2/3
20	46 2/3	40	93 1/3	60	140

Return to City Engineers Office
City Hall, San Diego, Cal.
TABLE FOR RUNNING ON SLOPES.

MICROFILMED

In the following table the first column shows the angle, the second the number of links to be added to a chain on the slopes, to make one chain, horizontal measurement.

DEC 8 1964

Angle	COR. IN LINKS	Angle	COR. IN LINKS	Angle	COR. IN LINKS	Angle	COR. IN LINKS
0		0		0		0	
4	0.24	11	1.88	18	5.14	25	10.54
5	0.38	12	2.24	19	5.76	26	11.26
6	0.55	13	2.63	20	6.42	27	12.24
7	0.76	14	3.06	21	7.11	28	13.37
8	0.98	15	3.53	22	7.85	29	14.34
9	1.24	16	4.02	23	8.64	30	15.47
10	1.55	17	4.56	24	9.47	35	22.07

Return to City Engineers Office
City Hall, San Diego, Cal.

205.18
10.99

216.17 HI

6.64

209.53 grade of Pipe

28

206.73

~~8.45~~ 8.90

9.44 ~~7.16~~

8.90

207.77

214.16 Juniper NW Spk Pale (Elec)

205.18 IVY SW "Amst" Cup post

230.75 Kalnia NE "Amst" Cup post

Columbie & Juniper

64.79 NW Cor. Spk in first Post w of Co

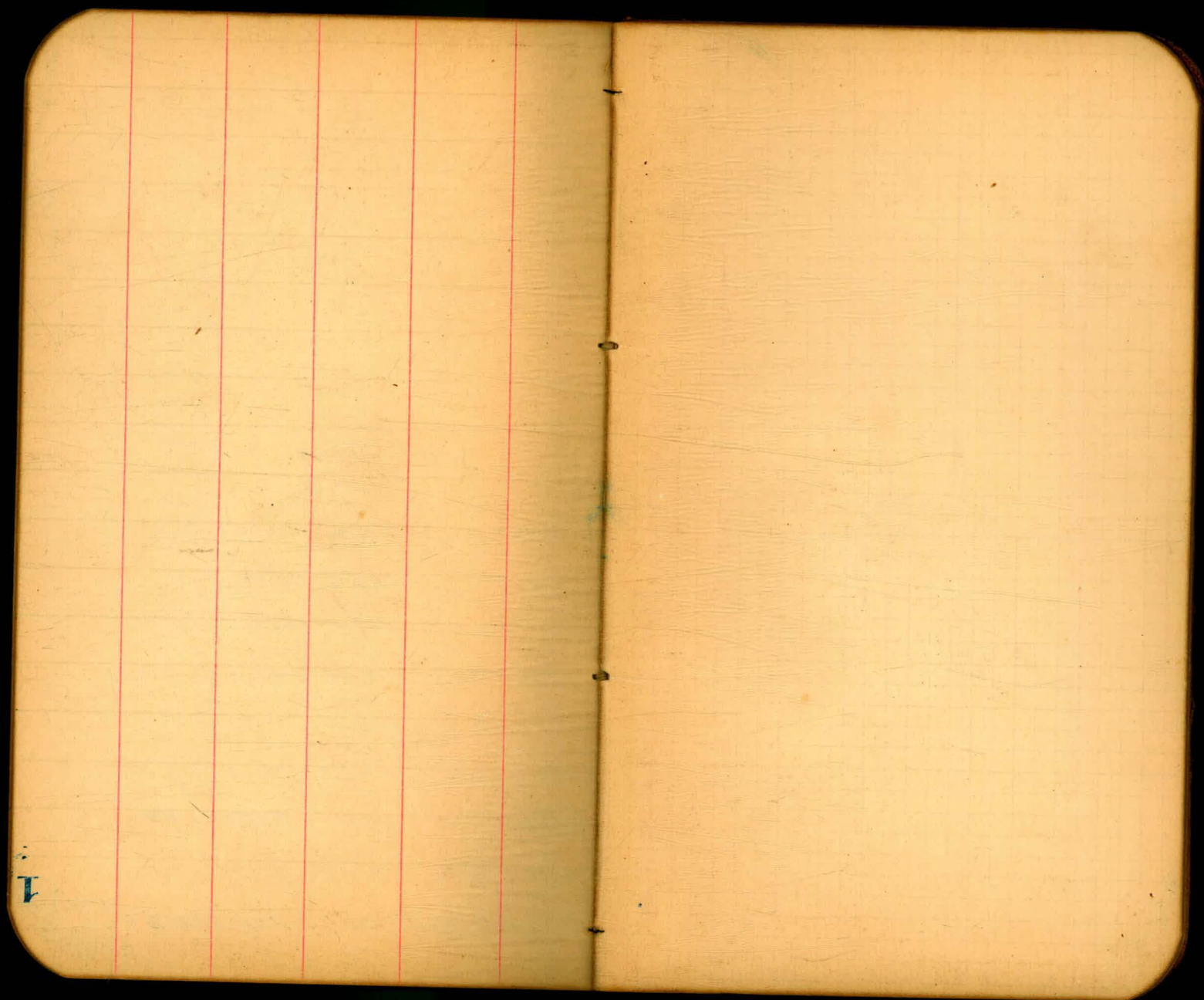
State & Juniper

79.35 SE "Amst" in ground.

"4"

232.66 270' E of 30" Fence Post

220.58 Bst SE, Spk. in Small plane Pale



3/4 Davis
 05/13
 05/13

Levels for Pipe Line in 26th St - National to Grand

2

+	0	-	Sta	Rod	Ground	Grade	±
598	521.13		51.15	00 - Saline National	3.55	48.6	45.26 + 3.3
				+50	5.9	46.2	43.72 + 2.5
				1	7.5	44.6	42.18 + 2.4
				+50	10.8	41.3	40.63 + 0.7
				2	11.1	41.0	39.09 + 1.9
				+50	11.6	40.5	37.54 + 3.0
				3 - Saline Grand	12.6	39.5	36.00 + 3.5

²/₃ Davis
 85 Levels for Pipeline in Grand
 Swops +

7.90

47.83

39.93

Ave 26th to 32nd

Sta	Rod	Ground	Grade	±
on E Line Ground	9.4	38.4	35.0	+3.4.
+50	9.0	38.8	35.62	+3.2.
1	7.9	39.9	36.25	+3.6.
+50	7.5	40.0	36.87	+3.1.
2	7.6	40.2	37.50	+2.7.
+50	6.8	42.0	38.12	+3.9.
3	3.8	44.0	39.75	+5.3.
+50	2.9	44.9	39.37	+5.5.
4	2.9	44.9	40.0	+4.9.
+50	3.1	44.7	40.62	+4.1.
5	2.9	44.9	41.25	+3.7.
+50	2.2	45.6	41.87	+3.7.
6 W Line 27	2.8	45.0	42.5	+2.5.

+
 7.47
 53.95

Grand Ave (con.)

4

Sta	Rod	Ground	Grade	±
0+0				
44.48	10.9	43.9	42.95	+1.0
+50	11.7	42.2	43.33	+1.1
1	9.9	44.0	43.71	+0.3
+50	8.9	45.0	44.09	+0.9
2	11.4	42.5	44.47	-2.0
+50	10.8	43.1	44.85	-1.1
3	7.2	46.7	45.23	+1.5
+50	4.1	49.8	45.60	+4.2
4	4.4	49.5	45.98	+3.5
+50	4.8	49.1	46.36	+2.7
5	3.7	50.2	46.74	+3.5
+50	3.0	50.9	47.12	+3.8
6=WL of 28th	3.6	50.3	47.50	+2.8

7.80 57.81

50.01

Grand Ave (Con.)

Sta	Rod	Ground	Grade	±
0-ELms28	7.4	50.4	47.50	+2.9
+50	8.7	52.1	47.75	+4.4
1	7.1	50.7	48.0	+2.7
+50	8.4	49.4	48.25	+1.2
2	10.0	47.8	48.50	-0.7
+50	9.2	48.6	48.75	-0.2
3	5.2	52.6	49.00	+3.6
+50	4.8	53.0	49.25	+3.8
4	4.4	53.4	49.50	+3.9
+50	4.2	53.6	49.75	+3.9
5	4.2	53.6	50.0	+3.6
+50	5.1	52.7	50.25	+2.5
6-W.Lms29	4.0	53.8	50.50	+3.3

Grand Ave (con)

Sta	Rod	Ground	Grade	±
55.28	0-EL 29	55.1	50.5	+4.6
	+50	55.9	50.75	+5.1
	1	55.8	51.0	+4.8
	+50	55.2	51.25	+4.0
	2	54.6	51.50	+3.1
	+50	54.0	51.75	+2.3
	3	53.8	52.0	+1.8
	+50	50.1	52.25	-2.1
	4	52.1	52.50	-0.4
	+50	53.1	52.75	+0.4
	5	49.6	53.0	-3.4
	+50	51.7	53.25	-1.5
	6-WL 30 ⁴²	54.8	53.50	+1.3

8.22 63.49

55227

Grand Ave (cont.)

Sta	Rod	Ground	Grade	±
0=E.L. 30 th	6.1	57.4	53.50	+3.9
+50	6.6	56.9	53.75	+3.2
1	5.8	57.7	54.0	+3.7
+50	4.5	59.0	54.25	+4.75
2	4.8	58.7	54.50	+4.2
+50	4.6	58.9	54.75	+4.2
3	5.6	57.9	55.0	+2.9
+50	6.4	57.1	55.25	+1.9
4	5.4	58.1	55.50	+2.6
+50	4.5	59.0	55.75	+3.2
5	5.0	58.5	56.0	+2.5
+50	5.8	57.7	56.25	+1.5
6=W.L. 31 st	4.8	59.7	56.50	+2.2

792 66.23

58.31

Grand Ave (con)

8

Sta	Rod	Ground	Grade	±
0+EL 312	7.2	58.9	56.5	+2.4
+50	6.2	60.0	56.5	+3.5
1	4.6	61.6	56.5	+5.1
+50	3.6	62.6	56.5	+6.1
2	3.7	62.5	56.5	+6.0
+50	3.6	62.6	56.5	+6.1
3	3.6	62.6	56.5	+6.1
+50	4.5	61.7	56.5	+5.2
+80	5.8	60.4	<u>56.5</u>	+3.9
4	6.4	59.8	55.85	+4.0
+50	7.7	58.5	54.23	+4.3
5	9.5	56.7	52.62	+4.1
5+50=WL 32	11.6	54.6	51.0	+3.6

3/ Davis
2/ Lewis
05/ Brooke

Levels for Pipe line in Julian

11.77 53.95

42.18

Ave - Beardsley to Marcey

9

Sta	Rod	Ground	Grade	±
0+51.22	7.0	46.95	42.0	+5.0
+50	7.9	46.0	42.6	+3.4
1	5.1	48.8	43.2	+5.6
+50	7.0	49.9	43.7	+6.2
2	4.2	49.7	44.3	+5.4
+50	4.4	49.5	44.9	+4.6
3	4.8	49.1	45.5	+3.6
+50	4.8	49.1	46.1	+3.0
4	4.1	49.8	46.7	+3.1
+50	3.8	50.1	47.2	+2.9
5	3.4	50.5	47.8	+2.7
+50	2.7	51.2	48.4	+2.8
6+41.23	1.9	52.0	49.0	+3.0

11.53 64.33

52.80

Julian Ave (con.)

10

Sta		Ground	Grade	±
0+54.23	11.7	52.6	49.9	+2.7
+50	12.2	52.1	50.6	+1.5
1	11.5	52.8	51.3	+1.5
+50	11.0	53.3	52.0	+1.3
2	8.9	55.4	52.7	+2.7
+50	8.2	56.1	53.5	+2.6
3	7.6	56.7	54.2	+2.5
+50	6.4	57.9	54.9	+3.0
4	5.6	58.7	55.6	+3.1
+50	4.8	59.5	56.3	+3.2
5	3.8	60.5	57.0	+3.5
+50	2.8	61.5	57.8	+3.7
6+11.24	3.1	61.2	58.5	+2.7

8.35 70.41

62.06

0-EL. 24³⁶

9.7

60.7

58.3

+2.4

+50

10.6

59.8

58.1

+1.7

+80

10.4

60.0

58.0

+2.0

1

10.3

60.1

58.5

+1.6

+50

9.1

61.3

59.9

+1.4

2

6.4

64.0

61.2

+2.8

+50

6.9

63.5

62.6

+0.9

3

3.0

67.4

63.9

+3.5

+40

1.2

69.2

65.0

+4.2

12.71

81.92

1.2

69.21

+50

11.3

70.6

65.5

+5.1

4

7.2

74.7

68.2

+6.5

+50

3.2

78.7

70.9

+7.8

5

1.4

80.5

73.6

+6.9

6.90

87.37

1.45

80.47

+50

5.2

82.2

76.3

+5.9

6-W.L. 25^{1.4}

3.3

84.1

79.0

+5.1

Julian

Ave (con)

11

Sta

Ground Grade ±

4.70 88.35

83.65

Julian Flvs (con)

12

Sta		Ground	Grade	±
0-EL-25th	4.0	84.3	80.0	+4.3
+50	4.8	83.5	79.78	+3.7
1	5.1	83.2	79.56	+3.6
+50	5.2	83.1	79.35	+3.8
2	5.2	83.1	79.14	+4.0
+50	5.5	82.8	78.93	+3.9
+80	6.0	82.3	78.8	+3.5
3	6.2	82.1	78.57	+3.5
+50	7.3	81.0	78.01	+3.0
4	9.5	78.8	77.45	+1.4
+40	10.6	77.7	77.0	+0.7
+50	10.9	77.4	77.01	+0.4
5	10.3	78.0	77.07	+0.9
+50	8.3	80.0	77.13	+2.9
6-WL-26th	8.2	80.1	77.18	+2.9

2.15 82.46

PO.31

Julian Ave (con.)

13

Sta	Rad	Ground	Grade	±
0+51.26 th	2.3	80.2	77.25	+3.0
+50	2.1	80.4	76.73	+3.7.
1	3.0	79.4	76.21	+3.2
+50	4.2	78.3	75.69	+2.6
2	3.7	78.8	75.16	+3.6.
+50	4.6	77.9	74.64	+3.3
3	5.1	77.4	74.12	+3.3
+50	6.0	76.5	73.60	+2.9
4	6.8	75.7	73.08	+2.6
+50	7.3	75.2	72.56	+2.6
5	7.6	74.9	72.04	+2.9
+50	7.4	75.1	71.52	+3.6
6+41.27 th	8.4	74.1	71.0	+3.1

Julian Ave (con)

Sta			Ground	Grade	±
82.46	0+EL27	8.7	73.8	70.25	+3.6
	+50	8.9	73.6	69.62	+4.0
	1	10.0	72.5	69.00	+3.5
	+50	11.2	71.3	68.37	+2.9
1.85	2	3.6	49.5	67.75	+1.8
73.13	+50	5.1	68.0	67.72	+0.9
11.18	+60	5.1	68.0	67.0	+1.0
71.28	3	4.9	68.2	66.68	+1.5
	+50	4.8	68.3	66.29	+2.0
	4	4.7	68.4	65.96	+2.5
	+50=WL Mar 24	5.2	67.9	65.5	+2.4

$\frac{3}{25}$ Davis
 $\frac{05}{05}$ Brooks Levels for Pipe Line in 30th St from National 1008 North
 Shaw.

15

4.62 77.26

72.64

Sta. Rod Ground Grade \pm

0. No. 100
National

12.75 64.51 61.58 +2.9

+50 11.0 66.26 62.30 +4.0

1 9.75 67.51 63.03 +4.5

+50 8.45 68.81 63.75 +5.1

2 8.20 69.06 64.47 +4.6

+50 7.58 69.68 65.20 +4.5

3rd SL Logan 7.47 69.79 65.92 +3.9

4th SL Logan 6.82 70.84 ~~66.50~~ +4.3

No Line Logan 6.31 70.95 67.06 +3.9

+50 5.40 71.86 67.76 +4.1

1 4.78 72.48 68.46 +4.0

+50 3.65 73.61 69.17 +4.4

2 2.94 74.22 69.86 +4.5

+45 1.95 75.31 70.50 +4.8

+50 1.93 75.33 70.52 +4.8

3rd SL Gravel 1.44 75.82 70.77 +5.1

30th St - from National Ave. 1008 North.

16

Sta	Rod	Ground	Grade	±
to N.L. Greely	2.35	74.91	70.66	+4.3
+50	2.43	74.83	70.24	+4.6
1	2.20	75.06	69.82	+5.2
+50	2.70	74.56	69.40	+5.2
+98	3.53	73.73	<u>69.00</u>	+4.7

Levels for Pipe Line in 30th St

"D" to "E"

17

4.14 198.81

194.67

Sta	Rod	Ground	Grade	±
0+N.L."E" St	11.46	187.35	184.0	+3.35
+50	9.54	189.27	185.82	+3.45
1	7.27	190.54	187.64	+3.90
+50	5.02	193.79	189.45	+4.34
2	3.40	195.41	191.27	+4.14
+20	2.57	196.24	192.0	+4.24
+50	2.01	196.80	191.68	+5.12
3+S.L."D" St	4.52	194.29	191.0	+3.29

Levels for Pipe Line 17

5.60 47.77 42.17

4.55 51.16 46.61

(5022nd) Beardsley ³/₁₅ { Davis
Lewin
Brooks

18

Sta	Rod	Ground	Grade	±
05° N. 110° E Log 0.2	6.25	41.6	38.5	+3.1
+50	5.7	42.1	39.25	+2.9
1	5.4	42.4	40.0	+2.4
+50	4.4	43.4	40.75	+2.7
2	3.8	44.0	41.50	+2.5
+50	3.2	44.6	42.25	+2.4
35° S. 100° W. 2.9	2.9	44.9	43.0	+1.9
0° N. 110° E 6.0	6.0	45.2	43.0	+2.2
+50	6.2	45.0	42.83	+2.2
1	6.3	44.9	42.67	+2.2
+50	6.2	45.1	42.50	+2.5
2	6.3	44.9	42.33	+2.6
+50	6.4	44.8	42.17	+2.6
35° S. 100° W. 6.5	6.5	44.7	42.0	+2.7

Levels for Pipe Line in

Marcy Ave.

19

	H.I.	Rod	Ground Elevat	Grade	Cut	
2+21 of 28 ¹ / ₂ St Lvs = 0 of Marcy	8.60		65.17			
0	72.77	4.68	69.1	66.70	2.4	
+50		3.30	70.5	66.42	4.1	
1	2.73	72.04	4.46	69.31	66.14	3.2
+50			4.81	67.2	65.85	1.4
2			5.04	67.0	65.57	1.4
+50			4.91	67.1	65.28	1.7
3 End			4.84	67.2	65.00	2.2

Levels for Pipeline in 28th St - Logan to Webster

20

7.92 73.09

65.17

Sta	Rod	Ground	Grade	±
0-10's of Ch of Logan	7.65	65.44	62.30	3.14
+50	7.10	65.99	63.28	2.71
1	6.24	66.85	64.26	2.59
+50	5.33	67.76	65.24	2.52
2	4.62	68.47	66.22	2.25

Continued on
Page 41

- Levels for Water Pipe on -

- 28th St Irving Ave. to N. St -

B.M. 3.98 79.82 75.84

30' W of line on 28. 4.94 79.88

70 5.30 79.52

130 4.89 79.93

180 4.52 75.30

230 4.26 75.56

280 4.98 74.84

330 4.80 75.02

380 3.71 76.11

430 3.75 76.07

480 3.60 76.22

530 4.04 75.78

E. line 27th 4.96 74.86

580 4.74 75.08

W. line 27th 4.74 75.08

50' W. of 27 10.86 86.97 3.71 76.11

100 9.82 77.15

150. 7.66 79.31

3/27/55 Hatet
Lambert
Metmore

28th St Irving: N.W. Spk in Pole -

71.63 3.3

71.85 2.7

72.06 2.9

72.28 3.0

72.49 3.1

72.70 2.2

72.92 2.1

73.14 3.0

73.35 2.7

73.57 2.7

73.78 2.0

74.00 0.9

74.00 1.1

74.83 1.3

75.67 1.5

76.50 2.8

0.43 27

Irving Ave

86.97

200	6.03	80.94
250	5.37	81.60
300	4.75	82.22
350	3.77	83.20
400	3.34	83.63
450	2.05	84.92
500	1.30	85.67
550	0.33	86.64
E line 26 ⁴	4.86	87.07
600	4.12	87.51
White 26 ⁴	4.10	87.83
50' W. of 26 ⁴	5.52	86.41
100	5.83	86.10
150	4.62	87.31
200	3.62	88.31
250	3.82	88.11
300	4.05	87.88
350		

166.71

0.50

3/27/05

77.33	3.6
78.17	3.5
79.00	3.2
79.83	3.4
80.66	3.0
81.50	3.4
82.33	3.4
83.16	3.5
84.00	3.1
84.00	3.5
83.75	4.1
83.50	2.9
83.25	2.9
83.00	4.3
82.75	5.6
82.50	5.6
82.25	5.6

91.93
7.75
84.18 chuk
84.19

Irving Ave.

400

450

500

550

E line 25th

600

W. line 25th

0.50

8200

8175

8150

8125

8100

7900

IRVING HVO

24

2.58 54.01

51.43

Sta	Rod	Ground	Grade	±
0.15.44.44N	7.1	46.9	45.2	+1.7
150	5.5	48.5	45.38	+3.1
1	4.33	49.67	45.55	+4.1
+07	4.33	49.67		
+12	8.0	46.0		
+30	7.85	46.15		
+38	4.10	49.95		
+50	4.12	49.88	45.73	+4.15
2	4.67	49.33	45.91	+3.4
+2.4		47.0	46.0	+1.0
+50	10.8	43.2	42.82	+0.4
3	7.5	38.34	36.71	+1.6
+14		37.54	35.00	+2.5
+40	11.04	34.80	35.00	-0.2
+50	9.37	36.47	35.00	+1.5
+54		36.60	35.00	+1.6
4	7.15	38.69	38.22	+0.5
+50	7.60	44.24	41.72	+2.5
5	9.33	48.41	45.22	+3.2

4.22

45.84

12.39

41.62

12.41

57.74

0.51

45.33

Irving Ave

25

57.74

11.21

66.16

2.81

54.95 157W
54.93

12.93

78.13

0.96

65.20

Sta	Rod	Ground	Grade	±
5+50	6.63	51.11	48.72	+2.4
+54		51.42	49.2	+2.4
6	5.35	52.39	49.69	+2.7
+50	4.03	53.71	50.44	+3.3
7	2.98	54.76	51.19	+3.6
(+34-WL +231)	2.43	55.31	51.70	+3.6
0+EL. 230	10.90	55.26	52.60	+2.7
+50	10.80	55.36	53.35	+2.0
1	10.72	55.44	54.10	+1.3
+50	9.78	56.38	54.85	+1.5
+60		56.43	55.0	+1.4
2	8.33	57.83	56.4	+1.4
+50	7.77	58.39	58.15	+0.24
3	4.36	61.80	59.90	+1.9
+50	0.96	65.20	61.65	+3.6
+60		65.6	62.0	+3.6
4	9.68	68.45	63.0	+5.5
+50	5.07	73.06	64.25	+8.8

Irving Ave

26

				Sta	Rod	Ground	Grade	±
	78.13			5+00	0.64	77.49	65.50	+12.0
3.41	80.90	0.64	77.49	+50	3.09	77.81	64.75	+11.1
				6+00	5.22	75.68	68.0	+7.7
				7+00	7.55	73.35	68.5	+4.9
				+50	8.48	72.42	67.62	+4.8
10.34	78.95	12.29	68.61	1	10.61	70.3	66.75	+3.6
				+50	12.37	66.58	65.87	+0.71
				2	12.88	66.07	65.0	+1.1
				+50	12.04	66.91	66.25	+0.66
				3	10.80	68.15	67.50	+0.65
				+50	8.72	70.23	68.75	+1.50
				4	8.14	70.81	70.0	+0.81
				+50	6.61	72.34	72.25	+0.10
				5	3.68	75.27	74.50	+0.8
12.97	correct Cl 91.19 (91.26)	0.66	78.29	+50	0.66	78.29	76.75	+1.5
		9.34	81.85 81.92	6+00	10.95	80.24	79.0	+1.2

IRVING AVE

91.19

27

Sta	Rod	Ground	Grade	±
0+EL. 25	7.85	83.34	<u>81.0</u>	+2.3
+50	5.97	85.22	81.25	+4.0
1	4.45	86.74	81.50	+5.2
+50	4.23	86.96	81.75	+5.2
2	3.91	87.28	82.0	+5.3
+50	3.30	87.89	82.25	+5.6
3	3.07	88.12	82.50	+5.6
+50	2.85	88.34	82.75	+5.6
4	3.85	87.34	83.0	+4.3
+50	5.05	86.14	83.25	+2.9

Levels for Pipeline N° 51

16th to 25th

28

11.40 25.40

14.00

Sta	Rod	Ground	Grade	±
0-EL 16 th	14.0	11.4	8.50	+2.9
+50	12.0	13.4	10.37	+3.0
1	10.4	15.0	12.25	+2.8
+50	8.87	16.53	14.12	+2.4
2-WL 17 th	6.86	18.54	16.0	+2.5
0-EL 17 th	4.02	21.38	17.0	+4.4
+50	4.17	21.23	17.83	+3.4
1	3.34	22.06	18.67	+3.4
+50	2.30	23.10	19.50	+3.6
2-WL 18 th	0.99	24.41	20.33	+4.1
0-EL 18 th	9.97	26.14	21.67	+4.5
+50	9.55	26.56	22.50	+4.1
1	8.91	27.20	23.33	+4.9
+50	7.80	28.31	24.17	+4.1
2-WL 19 th	7.03	29.08	25.0	+4.1

11.70 36.11

20.99

24.41

N St.

36.11

12.50

47.09

1.52

34.59

7.32

52.71

1.70

45.39

29

Sta	Rod	Ground	Grade	±
0-EL 19 th	4.50	31.61	25.0	+6.6
+50	4.74	31.37	26.50	+4.9
1	5.31	20.80	28.00	+2.8
+50	4.96	31.15	29.50	+1.7
2-WL 20 th	13.03	34.06	31.0	+3.1
0-EL 20 th	11.45	35.64	31.0	+4.6
+50	9.82	37.27	33.0	+4.3
1	9.17	37.92	35.0	+2.9
+50	8.52	38.57	37.0	+1.6
2-WL 21 st	7.62	39.47	39.0	+0.5
0-EL 21 st	5.20	41.89	41.0	+0.9
+50	3.70	43.39	41.87	+1.5
1	3.10	43.99	42.75	+1.2
+50	1.75	45.34	43.62	+1.7
2-WL 22 nd	1.70	45.39	44.50	+0.9

"N" St

52.71

7.18

55.45

4.44

48.27

30

Sta	Rod	Ground	Grade	±
0=E.L. 22 nd	6.23	46.48	45.50	+1.0
+50	5.27	47.44	45.44	+2.0
1	5.35	47.36	45.37	+2.0
+50	5.23	47.48	45.31	+2.2
2	5.18	47.53	45.25	+2.3
+50	5.14	47.57	45.19	+2.4
3	4.82	47.89	45.12	+2.8
+50	4.95	47.76	45.06	+2.7
4=W.L. 24 th	4.45	48.26	45.0	+3.3
0=E.L. 24 th	6.67	48.78	45.0	+3.8
+50	8.04	47.41	45.50	+1.9
1	7.84	47.61	46.0	+1.6
+50	5.95	49.50	46.50	+3.0
2	6.98	48.47	47.0	+1.5
+50	6.60	48.85	47.50	+1.4

N 54

55.45

31

Sta	Rod	Ground	Grade	±
3	5.90	49.55	48.0	+1.6
+50	5.30	50.15	48.50	+1.6
4	3.70	51.75	49.0	+2.7
+50	3.2	52.25	49.50	+2.75
5	3.1	52.35	50.0	+2.4
+50	3.0	52.45	50.50	+2.0
6+11.25 ³	2.6	52.85	51.0	+2.25

Levels for Pipeline 17 25th St to Grant Ave - thence in Grant Ave to 30th St

32

				Sta	Rod	Ground	Grade	±
12.03	99.10		87.07	4+60.50	12.96	86.14	86.0	+0.14
				4+70 W.L.	9.76	89.34	87.33	+2.0
				6			87.98	
				+50	5.78	93.32	89.64	+3.7
				5	3.90	95.20	91.30	+3.9
				+64	3.78	95.32	92.50	+2.8
				+50	3.35	95.75	92.47	+3.3
				4	2.85	96.35	92.38	+4.0
				+50	3.60	95.50	92.30	+3.2
6.60	102.56	3.14	95.96	3	3.14	95.70	92.22	+3.5
				+50	6.45	96.11	92.13	+4.0
				2	7.15	95.41	92.05	+3.4
				+64	7.54	95.02	92.00	+3.0
				+50	7.70	94.81	92.14	+2.7
				1	6.80	95.71	92.64	+3.1
				+50	5.78	96.78	93.18	+3.6
				00-EL29	4.75	97.81	93.71	+4.1

Grant Ave

33

Sta.	Pod	Ground	Grade	±
12+56.4) -00 E.L. 29+4				
11+96.4	4.25	98.31	94.33	+4.0
11+80	4.55	98.01	<u>94.50</u>	+3.5
+50	4.71	97.85	95.08	+2.8
11	4.00	98.56	96.05	+2.5
+50	1.84	100.72	97.03	+3.7
1.63 103.14	1.05 101.51	10	1.05 101.51	<u>98.00</u> +3.5
+50	1.90	101.24	96.22	+5.0
9	3.92	99.22	94.45	+4.8
+50	6.50	96.64	92.69	+4.0
8	7.30	95.84	90.92	+4.9
+50	9.92	93.22	<u>89.50</u>	+3.7
+50	10.10	92.99	89.42	+3.6
7	11.72	91.42	88.96	+2.5
+50	11.38	91.76	88.49	+3.3
6	10.70	92.44	88.02	+4.4
19.62	11.05	92.09	88.0	+4.0

Grant

HVG

34

4.56 95.18

12.52 90.62

Sta	Rod	Ground	Grade	±
5136 W. 120°	11.80	91.34	87.44	+3.9
5	3.94	91.24	87.11	+4.1
+50	3.80	91.38	86.65	+4.7
4	4.55	90.63	86.18	+4.4
+80	5.20	89.98	<u>86.00</u>	+4.0
+50	6.00	89.18	86.22	+3.0
3	6.50	88.68	86.59	+2.1
+50	6.50	88.68	86.95	+1.7
2	6.56	88.62	87.32	+1.3
+50	6.45	88.73	87.69	+1.0
1	5.60	89.58	88.06	+1.5
+50	6.55	91.74	88.42	+3.3
+40	6.20	92.09	<u>88.50</u>	+3.6
02 E. 152°	6.70	91.59	88.38	+3.2

Grant Ave

35

6
98.29

7.96

104.17

2.08

96.21

Sta	Rod	Ground	Grade	±
600+WL26	6.0	92.29	88.20	+4.1
+50	6.1	92.19	88.05	+4.1
5	6.29	92.00	87.90	+4.1
+50	6.84	91.45	87.75	+3.7
4	7.04	91.25	87.60	+3.7
+50	6.45	91.84	87.45	+4.4
3	5.50	92.79	87.30	+5.5
+50	6.06	92.23	87.15	+5.1
2	8.77	89.52	<u>87.00</u>	+2.5
+50	5.75	92.54	89.50	+3.0
1	2.08	96.21	92.00	+4.2
+50	5.13	99.04	94.50	+4.5
0+EL.25	3.50	100.67	<u>97.0</u>	+3.7

Grady Ave

36

				Sta	Rod	Ground	Grade	±
	104.17			600-WL25	3.10	101.07	96.16	4.91
				150	4.30	99.87	95.47	+4.4
				5	5.80	98.37	94.78	+3.6
				+80	6.45	97.72	94.50	+3.2
				+150	7.82	96.35	92.39	+4.0
042	92.05	12.54	91.63	4	11.45	92.72	88.86	+3.9
				150	3.00	89.05	85.34	+3.7
				3	7.52	84.53	81.82	+2.7
				+60	10.17	81.88	<u>79.0</u>	+2.9
				+150	9.97	82.08	79.39	+2.7
				2	8.24	83.81	81.33	+2.5
				+150	4.80	87.25	83.28	+4.0
				1	3.80	88.25	85.22	+3.0
				+80	3.42	88.63	<u>86.00</u>	+2.6
				+150	2.37	89.68	86.00	+3.7
				0.EL 2nd	2.25	89.80	86.00	+3.8

Grapt Ave

37

				Sta	Rod	Ground	Grade	±
0.72	89.12	3.65	88.40	444W, L. 24	3.65	88.40	86.0	+2.4
				4400	3.6	86.06		
0.67	78.07	11.72	77.40	+50	11.72	77.40		
				3	8.80	69.27		
0.90	66.53	12.44	65.63	+50	3.60	62.93		
				2	6.24	60.29		
2.51	56.55	12.49	54.04	+50	12.49	54.04		
				1	4.10	52.45		
				+50	6.42	50.13		
				+42 S.L. 11	6.25	50.30		
		3.42	53.12	00	3.35	53.20		

4 Davis
10 Brooks
05 Shaw

Franklin Ave Pipe Line "N" to 28th

38

Sta	Rod	Ground	Grade	±
0+EL. 5124 th	14.67	61.18	57.0	+4.2
+50	14.35	61.50	57.89	+3.6
1	14.23	61.62	58.78	+2.8
+50	14.35	61.50	59.68	+1.8
2	12.62	63.23	60.57	+2.7
+50	8.63	67.22	61.46	+5.8
3	7.90	67.95	62.05	+5.6
+50	6.25	69.60	63.25	+6.4
4	5.27	70.58	64.14	+4.4
+50	4.13	71.72	65.03	+6.7
5	3.35	72.50	65.93	+6.6
+50	3.3	72.55	66.82	+5.7
6+EL. 5125 th	2.9	72.95	67.71	+5.2

0.47

75.85

75.38

FRANKLIN AVE.

39

5.11 80.49

75.38

Sta Rod Ground Grade ±

0. EL. 26th 8.02 72.47 68.78 +3.7

+50 6.88 73.61 69.67 +3.9

1 5.79 74.70 70.56 +4.1

+50 5.00 75.49 71.46 +4.0

2 4.78 75.71 72.35 +3.4

+50 4.04 76.45 73.24 +3.2

3 2.76 77.74 74.13 +3.6

+50 2.45 78.04 75.03 +3.0

8.32 87.89

0.92

79.57

4 0.92 79.57 75.92 +3.7

+50 6.82 81.07 76.81 +4.3

5 5.15 82.74 77.70 +5.0

+50 4.05 83.84 78.60 +5.2

6. W. L. 26th 3.62 84.27 79.50 +4.8

Franklin Ave

(87.89)

40

Sta	Rod	Ground	Grade	±
0+EL. 26 th	4.14	83.75	79.50	+4.3
+50	5.14	82.75	79.50	+3.3
1	6.50	81.39	79.50	+1.9
+50	6.06	81.83	79.50	+2.3
2	4.67	83.22	79.50	+3.7
+50	4.27	83.62	79.50	+4.1

Levels for Pipeline in 28th

Logan to Webster

41

Not levels Full
Profile
Cits made from

Levels for Pipe Line 1022nd St.

- G to N

$\frac{4}{17}$ Davis
 $\frac{05}{17}$ Brooks
Shaw.

42

8.74 60.17

51.43

Sta	Rod	Ground	Grade	±
00+X6 Line N	10.2	50.0	45.50	+4.5
150	8.6	51.6	46.71	+4.9
1	6.2	54.0	47.92	+6.1
150	5.0	55.2	49.12	+6.1
2	4.8	55.4	50.33	+5.1
150	5.3	54.9	51.54	+3.4
3+5 L. "M"	3.6	56.6	52.75	+3.9

Graded from N. St North.

Levels for Pipe Line in "L" St. 25th to 32nd.

43

			Sta	Rod	Ground	Grade	±
8.90	82.88	73.98	37+00.11 L 32 nd	5.6	77.3	<u>74.00</u>	+3.3
			+50	5.6	77.3	74.2	+3.1
			38	5.4	77.5	74.4	+3.1
			+50	4.3	78.6	74.5	+4.1
			37	4.7	78.2	74.7	+3.5
			+50	5.3	77.6	74.9	+2.7
			+30	5.1	77.8	<u>75.0</u>	+2.8
			36	5.2	77.7	74.8	+2.9
			+50	4.7	78.2	74.5	+3.7
			35	4.5	78.4	74.2	+4.2
			+50	4.8	78.1	74.0	+4.1
			34	5.1	77.8	73.7	+4.1
			+50	5.5	77.4	73.4	+4.0
			33+EL. 31 st	5.7	77.2	73.1	+4.1

P288

Sta	Rod	Ground	Grade	±
32+42.141 [±]	6.3	76.6	72.8	+3.8
32	5.0	77.9	72.5	+5.4
+50	6.8	76.1	72.2	+3.9
31	6.9	76.0	72.0	+4.0
+50	6.7	76.2	71.7	+4.5
30	7.3	75.6	71.4	+4.2
+50	7.1	75.8	71.1	+4.7
29	7.0	75.9	70.8	+5.1
+50	7.8	75.1	70.5	+4.6
28	9.0	73.9	70.2	+3.7
+50	8.9	74.0	70.0	+4.0
27	9.6	73.3	69.7	+3.6
26 +50	9.6	73.3	69.4	+3.9
(E 26+42) E.L. 30 [±]	9.6	73.3	69.3	+4.0

				Sta	Rod	Ground	Grade	±
3.34	77.32		73.98	251.822 W.L. 3012	4.5	72.8	69.0	+3.8
				+50	4.7	72.6	68.8	+3.8
				25	4.9	72.4	68.5	+3.9
				+50	5.1	72.2	68.2	+4.0
				+10	5.6	71.7	68.0	+3.7
				24	5.6	71.7	68.1	+3.6
				+50	6.1	71.2	68.9	+2.3
				23	6.5	70.8	69.6	+1.2
				+50	6.1	71.2	70.3	+0.9
				22	5.4	71.9	71.0	+0.9
				+50	4.8	72.5	71.8	+0.7
				21	4.1	73.2	72.5	+0.7
				+50	3.4	73.9	73.2	+0.7
				20	2.7	74.6	74.0	+0.6
8.99	84.71	1.60	75.72	+50	1.6	75.7	74.7	+1.0

84.71

Sta	Pod	Ground	Grade	±
19+30	8.6	76.1	<u>75.0</u>	+1.1
19	8.2	76.5	75.3	+1.2
+50	7.4	77.3	75.8	+1.5
18	6.6	78.1	76.3	+1.8
+50	5.9	78.8	76.8	+2.0
+30	5.6	79.1	<u>77.0</u>	+2.1
17	5.3	79.4	76.85	+2.6
+50	4.7	80.0	76.60	+3.4
16	5.3	79.4	76.35	+3.1
+50	5.4	79.3	76.1	+3.2
+30	5.4	79.3	<u>76.0</u>	+3.3
15	5.5	79.2	75.5	+3.7
+50	4.7	80.0	74.7	+5.3
14	5.1	79.6	73.9	+5.7
+50	5.4	79.3	73.1	+6.2
13	6.0	78.7	72.5	+6.2

4.85

B.M. 2842
77.8613 +13
W.L. 2846

Sta	Rod	Ground	Grade	±
12+50	4.8	77.4	<u>76.50</u>	+5.9
12	6.6	75.6	71.5	+4.1
+50	6.8	75.4	71.5	+3.9
11	5.2	77.0	71.5	+5.5
+50	4.5	77.7	71.5	+6.2
+30	4.5	77.7	<u>71.50</u>	+6.2
10	5.1	77.1	71.6	+5.5
+50	7.2	75.0	71.9	+3.1
9	8.4	73.8	72.1	+1.7
+50	7.5	74.7	72.3	+2.4
8	7.1	75.1	72.5	+2.6
+50	6.5	75.7	72.8	+2.9
7	6.9	76.3	73.0	+3.3
+50	5.4	76.8	73.3	+3.5
6 W.L. 27 th	5.5	76.7	<u>73.50</u>	+3.2

5.60

82.16

1.74

76.56

78.30

6.64

78.30

71.66

Sta	Rod	Ground	Grade	±
5+50	1.7	76.6	72.8	+3.8
5	2.0	76.3	72.15	+4.1
+50	2.6	75.7	71.51	+4.2
4	4.3	74.0	70.9	+3.1
+50	5.1	73.2	70.25	+3.0
+50	5.0	73.3	<u>70.0</u>	+3.3
3	4.4	73.9	69.45	+4.5
+50	5.3	73.0	68.54	+4.5
2	5.7	72.6	67.64	+5.0
+50	6.8	71.5	66.73	+4.8
+10	8.1	70.2	<u>66.0</u>	+4.2
1	8.4	69.9	66.17	+3.7
+50	8.7	69.6	67.00	+2.6
0.C. 26	8.4	69.9	<u>67.83</u>	+2.1

Water Pipe in 19th St C to N.

Sta	Rod	Ground	Grade	I
S.L.C	12.50	66.51	63.0	+3.5
2+50	5.40	73.61	66.92	+6.7
2	10.77	80.09	70.83	+9.3
+50	5.60	85.26	74.75	+10.5
1	2.96	87.90	78.67	+9.2
+50	1.50	88.36	82.58	+5.8
M.L.D	0.60	90.26	86.50	+3.8

Graded from D South.

5/ Davis
10/ Brooks
05/ Shaw

12.23	79.01		66.78
12.15	90.86	0.30	78.71

Levels for 10" Pipe 117

0.33	48.53	
2.70	40.11	11.12
9.81	49.37	0.55
13.01	61.21	
10.48	71.44	0.25
12.81	82.58	1.67

Juniper St - Arctic to 5th

50

Sta	Pod	Ground	Grade	±
48.20	0° E.L. Arctic 11.4	28.7	<u>25.0</u>	+3.7
37.41	+50 9.3	30.8	29.62	+1.2
1	5.7	34.4	34.25	+0.15
39.56	+50 0.50	39.6	38.87	+0.7
2° W.L. India 2.8	44.6	<u>43.50</u>	+3.1	
48.20				
	0° E.L. " 10.6	50.6	<u>45.50</u>	+5.1
+50	7.9	53.3	48.87	+4.4
1	6.1	55.1	52.25	+2.9
60.96	+50 4.7	56.5	55.62	+0.9
2° W.L. Col. 5.7	62.7	<u>59.0</u>	+3.7	
67.77	0° E.L. " 5.8	65.6	<u>61.64</u>	+4.0
+50			63.40	
1			65.16	
+50			66.92	
2° W.L. State			68.68	
+45° Ctr " 7.2	75.4	<u>70.0</u>	+5.4	

Juniper St.

	4		
	82.58		
12.60	93.84	1.34	
TP Stakes			
WL Union	12.49	105.88	0.45
12.65	117.48	1.05	
12.83	129.63	0.68	
14.63	141.13	0.14	

	6 8 00	{ Davis Brooks Hastings			
Sta	Pod	Ground	Grade	±	
0-EL. Stakes	4.3	78.2	<u>73.38</u>	+4.9	
+50	10.7	83.1	77.89	+5.2	
1	7.8	86.0	82.39	+3.6	
+40	5.0	88.8	<u>86.00</u>	+2.8	
+50	4.0	89.8	86.69	+3.1	
2-W.L. Union	0.4	93.4	<u>90.14</u>	+3.3	
+50	8.7	97.2	93.59	+3.6	
3	4.9	101.0	97.04	+4.0	
0-EL. Curlew	1.0	104.8	<u>100.0</u>	+4.9	
+29	10.6	106.9	103.44	+3.5	
+50	9.0	108.5	105.93	+2.6	
1	2.2	115.2	111.88	+3.3	
+50	9.8	118.8	117.82	+1.0	
4-W.L. Brent	2.2	127.4	<u>124.0</u>	+3.4	

Juniper St

12.65 153.68 5.09

12.61 166.20 0.09

12.29 177.52 0.97

12.22 189.02 0.72

6 { Davis
8 { Brooke
05 { Haslam

Sto Rod Ground Grade ±

141.80 0 E.L. Brent 8.6 132.5 126.00 +6.5

+50 7.0 (553.18) 146.7 133.73 +13.0

153.59 1 3.0 150.7 141.45 +9.3

+50 12.0 (146.2) 154.2 149.18 +5.0

2 W.L. A16 7.1 159.1 156.91 +2.2

165.23 +20 5.4 160.8 160.0 +0.8

176.80 0 E.L. A16 8.3 169.2 164.5 +4.7

+50 11.3 177.7 169.0 +8.7

1 5.7 183.3 173.5 +9.8

+50 3.5 185.5 178.0 +7.5

2 W.L. Front 3.3 185.1 182.50 +3.2

0 E.L. Front 184.00

+50 187.12

1 190.25

+50 193.37

2 W.L. 1st 196.50

Graded

Juniper St

Sta

10.12 212.69

11.12 223.71 0.10

Sta Rod Ground Grade \pm

202.57 0-E.L. 1st 10.6 202.1 198.50 +3.6

+50 8.9 203.8 200.12 +3.7

1 7.9 204.8 201.75 +3.1

+50 6.6 206.1 203.37 +2.7

2-W.L. 2nd 4.7 208.0 205.0 +3.0

212.57 0-E.L. 2nd 3.9 208.8 205.0 +3.8

+50 1.2 211.5 205.75 +5.8

1 7.8 215.9 206.50 +9.4

+50 4.0 219.7 207.25 +12.5

2-W.L. 3rd 7.3 216.4 208.0 +8.4

Juniper St

1.19 241.14

2.65 232.49 11.20

1.57 222.45 11.61

239.95

229.84

220.88

Sta Rod (222.45) Ground Grade ±

0 E.L. 4th 9.4 213.1 210.0 +3.1

+50 5.2 217.3 213.87 +3.4

1 (231.49) 8.1 224.1 217.75 +6.7

+50 3.6 228.9 221.62 +7.3

2 W.L. 5th 2.65 229.8 225.50 +4.3

Levels for Pipeline in
A 5+ - 24th to 30th

4.31 184.10

11.96 195.41 0.65

10.11 204.90 0.62

179.79

183.45

194.79

4/ { Dams
14 { Bridges
55 { Haslam

55

Sta Rod Ground Grade ±

0=E.L. 24th 7.1 177.0 175.18 +1.8

+50 3.9 180.2 177.98 +2.2

1 11.7 183.7 180.78 +2.9

+50 8.7 186.7 183.58 +3.1

2 5.8 189.6 186.39 +3.2

+50 3.0 - 192.4 189.20 +3.2

3 9.4 195.5 192.00 +3.5

+50 6.7 198.2 194.80 +3.4

+80 5.5 199.4 196.50 +2.9

4 4.8 200.1 196.7 +3.4

+50 4.8 200.1 197.3 +2.8

5 4.5 200.4 197.8 +2.6

+50 4.4 200.5 198.4 +2.1

6=E.L. 25th 3.8 201.1 199.0 +2.1

A" 54

9.444 213.37

3.62 216.0 4 0.95

56

Sta	Red.	Ground	Grade	±
203.93	0-EL. 254	11.4	202.0	199.0 +3.0
	+50	9.5	203.9	200.3 +3.6
	1	7.9	205.5	201.6 +3.9
	+50	5.6	207.8	203.0 +4.8
	2	4.1	209.3	204.3 +5.0
	+50	2.9	210.5	205.6 +4.9
212.42	3	1.1	212.3	207.0 +5.3
	+20	2.5	213.5	<u>207.5</u> +6.0
	+50	2.0	214.0	206.8 +7.2
	4	6.5	209.5	205.6 +3.9
	+50	9.8	206.2	204.5 +1.7
	5	12.2	203.8	203.3 +0.5
	+60-ML. 26	13.1	202.9	202.0 +0.9

"A" 5+

8.70 212.79 11.95

6.58 218.22 1.15

B.M. Rly 13.54 W. 100' 27
6.98 211.24

204.09 02 E.L. 26th

211.64

Sta	Red	Ground	Grade	±
	8.7	204.1	202.0	+2.1
+50	8.8	204.0	202.6	+1.4
1	7.5	205.3	203.2	+2.1
+50	7.2	205.6	203.9	+1.7
2	5.5	207.3	204.5	+2.8
+50	4.4	208.4	205.1	+3.3
3	4.4	208.4	205.7	+2.7
+50	3.2	209.6	206.4	+3.2
4	2.1	210.7	207.0	+3.7
+50	5.7	212.5	207.6	+4.9
5	4.7	213.5	208.2	+5.3
+50	4.9	213.3	208.9	+4.4
6 N.L. 27 th	6.3	211.9	209.5	+2.4

A 5+ ⁹/₂ Dams
Brooks
Hadam

Sta	Rod	Ground	Grade	±
T.P.	1.34	212.58		
0=E.L. 27 th	3.0	209.6	<u>207.0</u>	+2.6
+50	10.0	202.6	200.2	+2.4
T.P.	1.97	202.39	12.16	
1	8.0	194.4	193.5	+1.0
T.P.	0.65	189.81	13.23	
+50	1.0	188.8	186.7	+2.1
2	6.5	183.3	<u>180.0</u>	+3.3
Trestle				
3+20	10.5	179.3	<u>180.0</u>	-0.7
+50	7.1	182.7	182.8	0.0
4	1.2	188.6	187.6	+1.0
T.P.	13.00	201.60	1.21	
+50	7.2	194.4	192.4	+2.0
5	2.4	199.2	197.2	+2.0
T.P.	11.71	212.19	1.12	
5+40	9.5	202.7	<u>201.0</u>	+1.7

211.24

200.42

189.16

188.60

200.48

A 5+

Sta	Rod	Ground	Grade	±
5+50	9.0	203.2	201.4	+1.8
6+WL 28 th	6.7	205.5	203.5	+2.0
10+2W of EL.	4.5	207.7	<u>207.0</u>	+0.7
0=E.L. 28 th	3.7	208.5	207.0	+1.5
+50	3.1	209.1	207.0	+2.1
1	4.1	208.1	207.0	+1.1
1+40	4.5	207.7	<u>207.0</u>	+0.7
+50	4.4	207.8	206.75	+1.1
2	4.6	207.6	205.50	+2.1
T.P.	0.89	208.48	4.60	
2+50	1.8	206.7	204.25	+2.5
3	2.8	205.7	<u>203.0</u>	+2.7
+50	6.0	202.5	200.5	+2.0
+80	9.7	198.8	<u>199.0</u>	-0.2
T.P.	0.95	197.26	12.17	
4	3.8	193.5	191.4	+2.1
T.P.	7.48	193.49	11.25	

Sp. in fence opp Sta 3+50

196.31

186.01

A 54

Sta	Rod	Ground 193.09	Grade	±
4+30	10.3	183.2	<u>180.0</u>	+3.2
Trestle				
4+95	16.8	176.7	<u>180.0</u>	-3.3
5+50	5.9	187.6	186.2	+1.4
5+60 W.L. 29	4.9	188.6	187.3	+1.3
6+20 W of EL	0.4	193.1	<u>194.0</u>	-0.9
0+ E.L. 29 th	0.1	193.4	193.8	-0.4
+50	4.2	189.3	193.4	-4.1
1+00	5.8	187.7	<u>193.0</u>	-5.3
T.P.	10.58	202.64	1.43	192.06
1+50	13.9	188.7	194.0	-5.3
T.P.	10.35	211.45	1.54	201.10
2	12.3	199.2	<u>195.0</u>	+4.2
+50	0.9	210.6	204.2	+6.4
T.P.	12.97	224.25	0.17	211.28
2+80	9.0	215.3	<u>210.0</u>	+5.3
3	7.0	217.3	211.7	+5.6

59

Sta	Rod	Ground	Grade	±
3+50	5.1	219.2	215.8	+3.4
4	2.7	221.6	<u>220.0</u>	+1.6
+50	0.6	223.7	221.2	+2.5
T.P.	9.90	233.70	0.45	223.80
5	9.0	224.7	222.5	+2.2
+50	7.4	226.3	223.7	+2.6
6 W.L. 30 th	7.2	226.5	<u>225.0</u>	+1.5
E.L. 30 th	6.5	227.2	<u>226.0</u>	+1.2
			0.95	232.75

10th St. 4" main.

NE Rod Ground Grade.

B.M. 4.62 126.60 121.98

Sh. Cedar 3.7 122.9 121.0

50 121.25

100 121.50

150 117.88

200 114.25

250 110.63

N. h. Beech 107.0

160

107

6.23 285.62
9.73 291.49 3.86

124 Lane
279.39 Sta Rod Ground Grade \pm
281.71 9.7 281.8 279.9 +2.0
+50 11.5 280.0 280.7 +0.7
1 11.0 280.5 281.5 -1.0
+50 6.6 284.9 282.3 +2.6
2 3.5 288.0 283.1 +4.9
12.1 2.7 288.8 283.5 +5.3

6th St No. of 124 Lane
281.71 2.7 288.8 283.5 +5.3
+50 5.0 286.5 281.8 +4.7
1 9.5 283.0 280.1 +3.0
+50 10.0 281.5 278.5 +3.0
+88 10.5 281.0 277.2 +3.8

Brooks St.

269.5

7 { Oars
26 { Brooks
65 { Haslam
61

6th St So of 104 Lane 3/2 Dams
2/1 Brooks
05 Haslam

62
162

Sta	Rod	Ground	Grade	±
0+10 St E. 104	2.7	286.8	283.5	+5.3
+50	2.1	289.4	283.8	+5.6
1	2.2	289.3	284.2	+5.1
+50	2.9	288.6	284.5	+4.1
2	3.2	288.3	284.9	+3.4
+19	3.4	288.1	285.0	+3.1

Up 45 St

286.5

13th Street. 4th Main.

Stat 0 = 10' S. of Center of H St.

0+60 No. Line of H.

3+60 So. Line of G.

4+40 W. Line of G.

7+40.2 So. Line of F.

8+20.2 N. " " "

11+20.2 S. Line of E.

12+00.2 W. " " "

15+00.7 So. Line of D.

15+80.7 W. Line of D.

18+81 So. Line of C.

19+61 W. Line of C.

Hutchinson
Evans
7/27/05 - Thomas

63

62

Levels for 4' Pipe in "A" Sta. 15th to 18th

64

12.59	86.31		73.72	Sta	Rod	Ground	Grade	±
11.51	97.68	0.14	86.17	0 th E.L. 15 th	1.1	85.2	<u>83.00</u>	+2.2
				+60	9.1	88.6	<u>87.00</u>	+1.6
12.73	110.26	0.15	97.03	1	2.1	95.6	<u>93.00</u>	+2.6
12.23	122.10	0.39	109.87	+50	2.9	107.4	<u>100.00</u>	+7.0
				2 nd W.L. 16 th	9.6	112.5	<u>108.0</u>	+4.5
				10 th E.L. 16 th	7.3	114.8	<u>111.0</u>	+3.8
				+50	0.4	121.7	<u>109.4</u>	+12.3
				1	2.2	119.9	<u>107.7</u>	+12.2
				+50	6.1	116.0	<u>106.1</u>	+9.9
0.55	111.87	10.78	111.32	2 nd W.L. 17 th	10.8	111.3	<u>104.50</u>	+6.8
0.52	99.58	12.81	99.06	10 th E.L. 17 th	11.7	100.2	<u>97.00</u>	+3.2
				+50	6.0	93.6	<u>93.9</u>	-0.3
				1	8.3	91.3	<u>90.7</u>	+0.6
				+50	10.9	86.7	<u>87.6</u>	+1.1
				2 nd W.L. 18 th	15.0	84.6	<u>84.50</u>	

209.53 Grade at East
207.77 " " West.

			(216.17) El.	207.77	
1	HI	13.0	203.17	207.87	4.7
T.P. 0.32	203.60	12.89	203.25		
2		7.00	196.60	207.97	11.4
3		12.75	190.85	208.07	17.2
T.P. 0.98	192.23	12.35	191.25		
4		5.90	186.33	208.17	21.9
5		10.45	181.78	208.27	26.5
T.P. 4.23	184.64	11.81	180.41		
6		7.20	177.44	208.37	31.0
7		10.60	174.04	208.47	34.5
8		10.65	174.00	208.57	34.6
9		10.65	174.00	208.67	34.7
10		9.10	175.54	208.77	33.3
11		8.30	176.34	208.87	32.6
12		8.0	176.64	208.97	32.4
13		4.45	180.20	209.08	28.9
T.P. 10.72	194.96	0.40	184.24		
14		8.4	186.56	209.18	22.6

65

	194.96	R.	
15	0.7	194.26	209.29 15.9
T.P. 11.69	201.61	0.04	194.92
16	5.7	202.90	209.40 6.5
			299.53

205.18 BM by 4th
 12.6
 213.44
 0.76
 212.68 BM. Spk - the Pole at E. end
 0.3.6 of tunnel.
 213.04 HI
 3.50
 209.53

Trestle #2 3 rd - 4 th on Juniper						Bent	Elev.	Grade	66
9	Stake	209.53	Grade East end			1) 5.59	212.15	0.25	
14	Stake	207.77	" West "				9.41	207.74	207.77
(Bent)						club	209.49	last	
Station	+	213.04	Rod	Elev	Grade	-Diff-	207.83		{ note - Bent = 1 } is on West end
					209.50				
16			10.89	202.15	209.43	7.28			
	0.21	201.26	11.99	201.05					
15			7.73	193.53	209.33	15.80			
	0.17	192.61	10.82	190.44					
14			4.92	185.69	209.22	23.53			
	Stake about 1' high								
13	4.44	184.66	10.39	181.22	209.12	28.90			
12			7.70	176.96	209.02	32.06			
11			8.19	176.47	208.91	32.44			
10			9.13	175.53	208.81	33.28			
9			10.52	174.14	208.71	34.57			
8			10.47	174.19	208.60	34.91			
7			10.39	174.27	208.50	34.23			
6			7.01	177.65	208.40	30.75			
5	11.03	193.04	2.65	188.01	208.29	26.28			
4			6.44	186.60	208.19	21.59			
3	12.76	203.81	1.99	191.05	208.09	17.04			
2			6.79	197.02	207.99	10.97			

7/13 Hatch
Melrose
Thomas

Tie-out Pts. on T. #2 (water)

Bent.	<u>N.</u>	<u>S.</u>
16	295'	20'
15	35'	289'
14	475'	32'
13	52'	368'
12	203'	20'
11	101'	20'
10	99'	201'
9	10'	299'
8	15'	20'
7	20'	101'
6	15'	10'
5	15'	10
4	149'	151'
3	15'	13'
2	10'	10'
1	101'	10'

6783
6269
5.14

7' Bent over

68

	4.46	69.25	64.79	
Bottom of Rife West	6.56	62.69	62.69	
1	7.9	61.4	62.91	1.5 ^v
2	9.5	59.8	63.24	3.4 ^v
3	10.6	58.7	63.57	4.9 ^v
4	11.5	57.8	63.90	6.1 ^v
5	12.7	56.6	64.22	7.6 ^v
6	12.7	56.6	64.55	8.0 ^v
7	13.2	56.1	64.88	8.8 ^v
8	13.6	55.7	65.21	9.5 ^v
9	12.6	56.7	65.54	8.8 ^v
10	11.5	57.8	65.86	8.1 ^v
11	10.2	59.1	66.19	7.1 ^v
12	8.9	60.4	66.52	6.1 ^v
13	7.4	61.9	66.85	5.0 ^v
14	5.5	63.8	67.18	3.4
15	3.0	66.3	67.51	1.2 ^v
Bottom of Rife East	1.42	67.83		

Trestle #1 Water. Juniper St.

Tie out Pts.

{ Bent 1 is
at West end }

	N	S
15	10'	10'
14	10'	10'
13	10'	10'
12	10'	10'
11	10'	10'
10	Tack	10'
9	"	10'
8	"	10'
7	"	10'
6	"	10'
5	10'	10'
4	10'	10'
3	10'	10'
2	10'	10'
1	10'	10'

8/5/05

{ Hatch
Wetmore
Evans
Thomas }

Trestle #1 (Water) Juniper St.

8/1 { H&L
1/31 { Melrose
1/30 { Evans
Thames.

	3.25	68.04	64.79	
W. End of Pipe (Bottom)			62.69	62.69
1		6.78	61.26	
2		5.26	59.78	
3		9.22	58.82	
4		10.25	57.79	
5		11.50	56.54	
6		11.41	56.63	
7		12.00	56.04	
8		12.29	55.75	
9		11.41	56.63	
10		10.30	57.74	
11		9.02	59.02	
12		7.75	60.29	
13		6.22	61.82	
14		4.28	63.76	
15		1.88	66.16	

Bottom of pipe at East end.

67.83

9/7/63 { Trestle #5 (Water) A^o St.
Watch
Frame
Planes.

B.M.	719	179.23	172.04	180.0
1		2.34	176.89	180.0
2		5.56	174.67	180.0
3		11.31	167.92	180.0
4		11.32	167.91	180.0
5		9.48	169.75	180.0
6		6.60	172.63	180.0
7		3.35	175.88	180.0

- Bent #1 is East end -

Spt. in Top of Fence Post (Cor.)		
(2-6)	N 10'	(Tie-out pts) S 10'
(5-6)	10'	10'
(12)	10'	10'
(12)	10'	10'
(1-6)	10'	10'
(8)	10'	10'
(6)	10	10

8/7/55 { Hatch Trastle #6 (Water)
Evans
Thomas

Bm.	2.31	204.17	201.82	
	0.42	191.91	12.68	191.99
B.M.		2.27	189.64	
	3.59	183.86	11.64	180.27
1		8.41	175.45	180-
2		10.79	173.07	
3		12.25	171.61	
4		11.57	172.29	
5		6.82	177.04	180-

Bent #1 is at E. end

72

Sigs - Cev Fence Post

	N (Tie-out pts)	S
①	10'	10'
②	10'	10'
③	10'	10'
④	10'	10'
⑤	10'	10'
⑥	10'	10'

Sept. 16, 1905

Vermont Street

Sta.	Grade H.I.	Rod	Elev.	cut
So. line U. ave.	286.79	293.80	4.2	289.6 2.8
50' So.	286.66		4.0	289.8 3.1
100' So.	286.53		3.9	289.9 3.4
150' So.	286.39		4.5	289.3 2.9
200' So.	286.26		5.2	288.6 2.3
260' So. (N. line Essex)	286.10		5.2	288.6 2.5
Cross 10' So. center	285.97		5.7	288.1 2.1
So. line Essex	285.89		5.0	288.8 2.9
50' So.	285.76		5.1	288.7 2.9
100' So.	285.63		5.5	288.3 2.7
150' "	285.50		4.9	288.9 3.4
200' "	285.07		5.0	288.8 3.7
250' "	284.63		4.4	289.4 4.8
300' " (N. line Rod)	284.19		4.6	289.2 5.0

Childs
Brooks
Hawkins 73

Sept. 17. 1905

74

Sta.	Grade	Ht.	Rod	Elev	cut	
Cross 10' So. Center	283.75	293.80	6.1	287.7	4.0	
So. line Robinson	283.49		6.6	287.2	3.7	
50' So.	283.06		7.2	286.6	3.5	
100' So.	282.62		8.3	285.5	2.9	
150' "	282.29		8.4	285.7	3.4	
200' "	281.75		8.7	285.1	3.4	
250' "	281.31		8.7	285.1	3.8	
300' " N. line Thor	280.87		9.13	284.7	3.8	
Cross 10' So. Center	280.44	287.79	4.0	283.8	3.4	B.M. N.E. cor. sp. in pole 287.02
So. line Thornton	280.17		4.0	283.8	3.6	
20' So.	280.0			284.0	4.3	
50' So.	279.7		3.8	284.3	5.1	
100' "	279.2		3.5	284.1	5.4	
150' "	278.7		3.7	283.4	5.2	
200' "	278.2		4.4	282.8	4.8	
220' "	278.0		5.0	281.3		
250' "			6.5	280.2		
300' " (N. line app)	280.17	10.0		263.6		
Cross 10' So. Center	273.79	10.1				

Rope Lane in Riley St. Old Town
no clock run.

4.00 14.1
2/21/16

208.16

Levels for 4" C.I. Pipe in A St

Dot 28th & Beqn
Pipes below St Grade

76 f
76 f

76

Sta

Rod

Ground

Grade

±

0+ EL 28th

212.16

6.20

205.96

202.10

+ 3.86

+50

3.64

208.52

201.67

+ 6.85

1

4.44

207.72

201.24

+ 6.48

+50

4.63

207.53

200.81

+ 6.72

+74- W.L. Beqn

4.63

207.53

200.60

+ 6.93

+40

5.06

207.10

200.60

+ 6.50

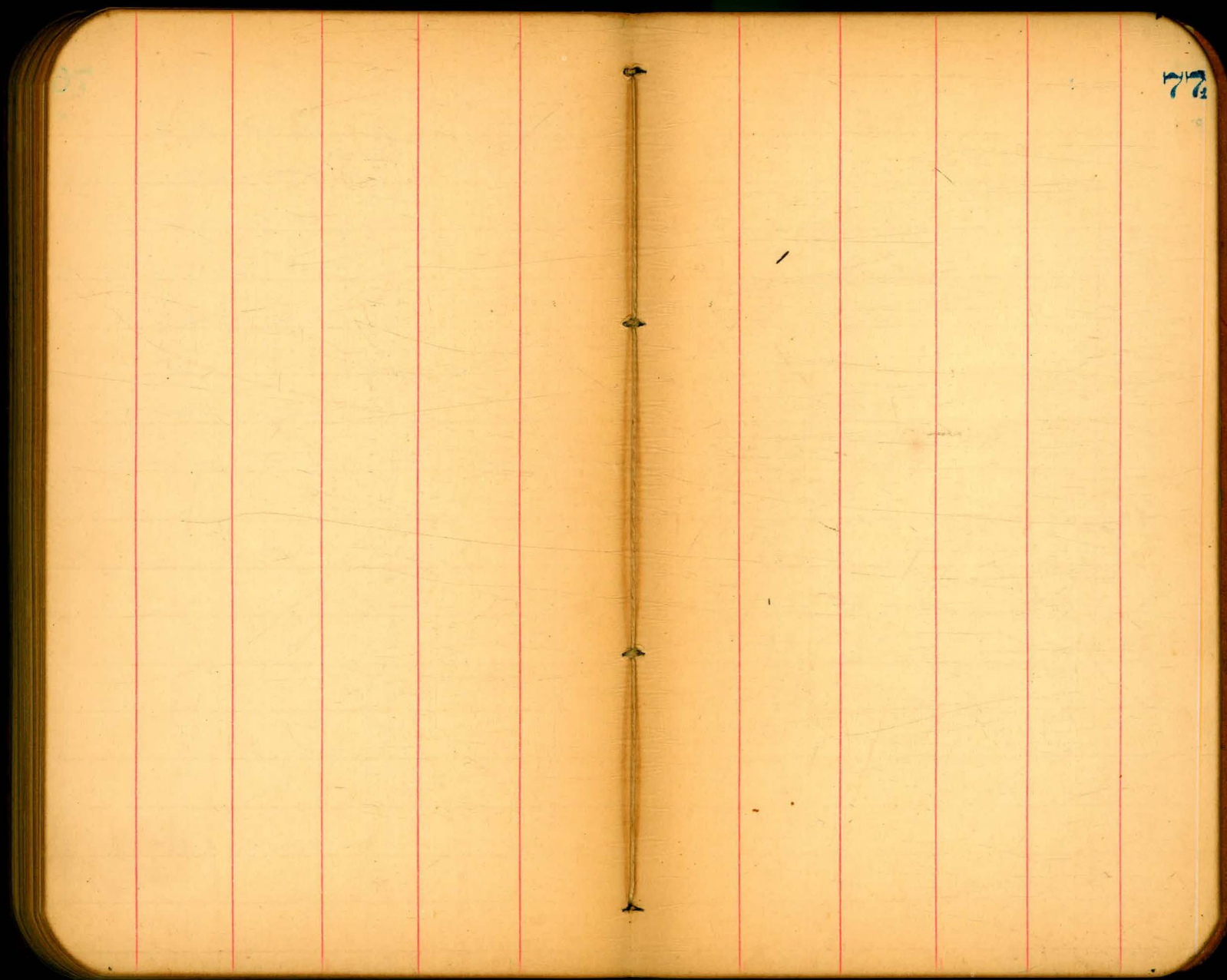
+80- E.L. Beqn

5.70

206.46

200.60

+ 5.86



208.16

80

58 Ivy lane 282.4

64 " 286.0

64 Uppe 289.0

64 Brooks 272.0

279.39 - B.M. N.E. SpKin phine

2.80 233.29

0.235 221.94 11.585

5.68 217.85 9.77

4.94

230.49

221.705

212.17

212.89

28th St Line

26+31.6 = S.L Webster

22+51.5 = S.L Clay

73.98 - IV.E 30 PL - Phone Pole

71.66 - NE. 26 PL - SpK in 1814

- BM S.E. Lamp post 4th

290.71 Vermont N.E. Sp.E.P.

45.88

215

73.98

82.02

73.98

5.30

73.98

1.60

73.98

4.75

73.98

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73.98

1.60

Return to City Engineers Office
City Hall, San Diego, Cal.

TRAVERSE TABLE FOR TRANSIT BOOK.

From 1° to 90° for a distance of 100.

Degrees.	DEGREES.		¼ DEGREE.		¼ DEGREE.		¼ DEGREE.		Degrees.
	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	
0			100.00	0.44	100.00	0.87	99.99	1.31	89
1	99.98	1.75	99.98	2.18	99.97	2.62	99.95	3.05	88
2	99.94	3.49	99.92	3.93	99.91	4.36	99.88	4.80	87
3	99.86	5.23	99.84	5.67	99.81	6.10	99.79	6.54	86
4	99.76	6.98	99.73	7.41	99.69	7.85	99.66	8.28	85
5	99.62	8.72	99.58	9.15	99.54	9.58	99.50	10.02	84
6	99.45	10.45	99.41	10.89	99.36	11.32	99.31	11.75	83
7	99.25	12.19	99.20	12.62	99.14	13.05	99.09	13.49	82
8	99.03	13.92	98.97	14.35	98.90	14.78	98.84	15.21	81
9	98.77	15.64	98.70	16.07	98.63	16.50	98.56	16.93	80
10	98.48	17.36	98.40	17.79	98.33	18.22	98.25	18.65	79
11	98.16	19.08	98.08	19.51	97.99	19.94	97.90	20.36	78
12	97.81	20.79	97.72	21.22	97.63	21.64	97.53	22.07	77
13	97.44	22.50	97.34	22.92	97.24	23.34	97.13	23.77	76
14	97.03	24.19	96.92	24.62	96.81	25.04	96.70	25.46	75
15	96.59	25.88	96.48	26.30	96.36	26.72	96.25	27.14	74
16	96.13	27.56	96.00	27.98	95.88	28.40	95.76	28.82	73
17	95.63	29.24	95.50	29.65	95.37	30.07	95.24	30.49	72
18	95.11	30.90	94.97	31.32	94.83	31.73	94.69	32.14	71
19	94.55	32.56	94.41	32.97	94.26	33.38	94.12	33.79	70
20	93.97	34.20	93.82	34.61	93.67	35.02	93.51	35.43	69
21	93.36	35.84	93.20	36.24	93.04	36.65	92.88	37.06	68
22	92.72	37.46	92.55	37.86	92.39	38.27	92.22	38.67	67
23	92.05	39.07	91.88	39.47	91.71	39.87	91.53	40.27	66
24	91.35	40.67	91.18	41.07	91.00	41.47	90.81	41.87	65
25	90.63	42.26	90.45	42.66	90.26	43.05	90.07	43.44	64
26	89.88	43.84	89.69	44.23	89.49	44.62	89.30	45.01	63
27	89.10	45.40	88.90	45.79	88.70	46.17	88.50	46.56	62
28	88.29	46.95	88.09	47.33	87.88	47.72	87.67	48.10	61
29	87.46	48.48	87.25	48.86	87.04	49.24	86.82	49.62	60
30	86.60	50.00	86.38	50.38	86.16	50.75	85.94	51.13	59
31	85.72	51.50	85.49	51.88	85.26	52.25	85.04	52.62	58
32	84.80	52.99	84.57	53.36	84.34	53.73	84.10	54.10	57
33	83.87	54.46	83.63	54.83	83.39	55.19	83.15	55.56	56
34	82.90	55.92	82.66	56.28	82.41	56.64	82.16	57.00	55
35	81.92	57.36	81.66	57.71	81.41	58.07	81.16	58.42	54
36	80.90	58.78	80.64	59.13	80.39	59.48	80.13	59.83	53
37	79.86	60.18	79.60	61.91	79.34	60.88	79.07	61.22	52
38	78.80	61.57	78.53	63.27	77.76	62.25	77.49	62.59	51
39	77.71	62.93	77.44	64.61	76.70	63.61	76.43	63.94	50
40	76.60	64.28	76.32	65.93	75.64	64.94	75.36	65.28	49
41	75.47	65.61	75.18	67.24	74.58	66.26	74.31	66.59	48
42	74.31	66.91	74.02	68.52	73.52	67.56	73.25	67.88	47
43	73.14	68.20	72.84	69.78	72.46	68.84	72.20	69.15	46
44	71.93	69.47	71.63	71.04	71.40	70.09	71.14	70.40	45
45	70.71	70.71							
Degrees.	DEGREES.		¼ DEGREE.		¼ DEGREE.		¼ DEGREE.		Degrees.
	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	

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