

SEWERAGE
GRADE BOOK

1st, 2nd, 3rd

WATER

9

TRANSIT.

F.B. 646

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

646

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

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Table for Running on Slopes.

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.

Angle.	Cor. in links	Angle.	Cor. in links.	Angle.	Cor. in links.	Angle.	Cor. in links
°		°		°		°	
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

SEWERAGE
OFFICE GRADE BOOK
NORTHERN DIVISION

[Faint handwritten scribbles]

MICROFILMED

DEC 14 1964

INDEX

Street	Location	Pages
1st	N of A St	3--10
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MICROFILMED

links

Angle

0

4

5

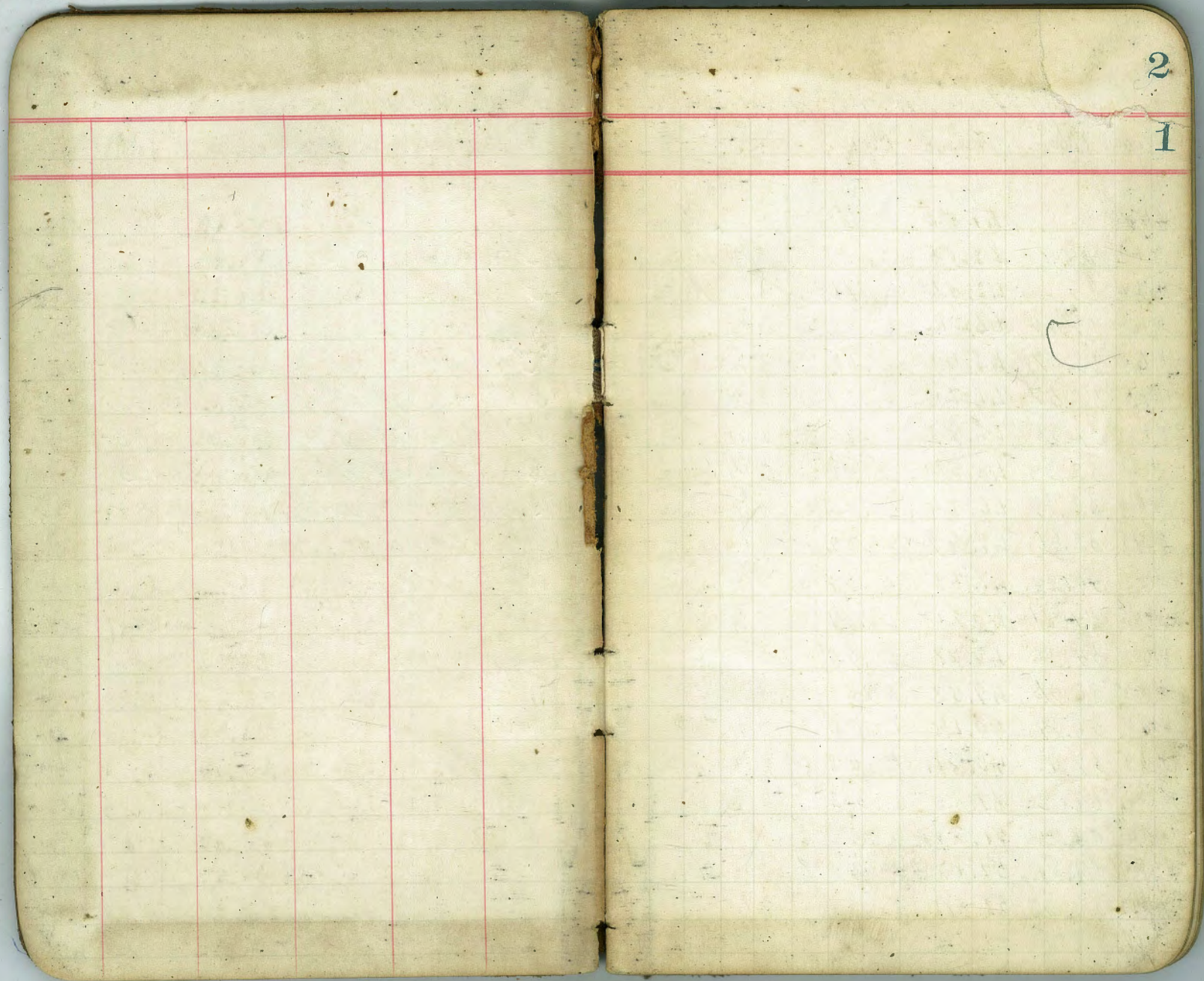
6

7

8

9

10



2

1

Sta	Elev	Grade	Cut	
30+80		41.50		SLAD
31	48.80	42.03	6.77	6 9/16
+20	49.26	42.55	6.71	6 8 1/2 A M-
+40	49.40	43.08	6.32	6 3 7/8
+60	50.07	43.60	6.47	6 5 3/4 N2 A
+85	50.57	44.24	6.31	6 3 3/4
32+10	51.38	44.92	6.46	6 5 1/2
+35	52.34	45.58	6.80	6 9 5/8
+60	52.97	46.24	6.73	6 8 3/4
+85	53.61	46.89	6.72	6 8 5/8
33+10	54.28	47.55	6.73	6 8 7/8
+35	54.81	48.21	6.61	6 7 1/4
+60	55.36	48.87	6.49	6 5 7/8
+85	56.03	49.58	6.50	6
34+10	56.79	50.14	6.56	6 6 3/4
+35	57.46	50.84	6.62	6 7 3/4
+60	58.03	51.50	6.53	6 6 3/4 S L Add.
+80	58.24	51.74	6.50	6
85	58.49	51.87	6.62	6 7 1/2 Ash
+20	58.52	52.21	6.31	6 3 3/4
+40	58.81	52.45	6.36	6 4 3/8 N L Ash

End of Johnsons contract

5
16
9
5
100

58.30

1st - North A

Sta	Elev	Grad	Cum -	
35+65	59.12	52.74	6.39	6 4 ³ / ₄
+90	59.41	53.04	6.37	6 4 ¹ / ₂
36+15	59.75	53.33	6.42	6 5
+40	60.24	53.63	6.61	6 7 ³ / ₈
+65	60.64	53.93	6.71	6 8 ³ / ₈
+90	60.85	54.22	6.63	6 7 ⁵ / ₈
37+15	61.21	54.52	6.69	6 8 ¹ / ₄
+40	61.51	54.82	6.69	6 8 ¹ / ₄
+65	61.94	55.11	6.43	6 10
+90	62.16	55.41	6.75	6 9
38+15	62.41	55.70	6.71	6 8 ¹ / ₂
+40	62.97	56.00	6.97	6 11 ³ / ₄ x
+60	63.37	56.31	7.06	7 0 ³ / ₄
+80	63.76	56.63	7.13	7 1 ⁵ / ₈
39	63.89	56.94	6.95	6 11 ³ / ₄
+20	64.10	57.26	6.44	6 10 ¹ / ₈
+45	64.62	57.65	6.97	6 11 ³ / ₄
+70	65.07	58.04	7.03	7 0 ³ / ₈
+95	65.16	58.44	6.72	6 8 ³ / ₄
40+20	65.44	58.83	6.65	6 7 ⁷ / ₈

2011
6111

S.L. Burt St - 63.00

Burt St -

N.L. Burt St -

1st - N of A -

Sta	Elev	Grad	Cut	
40+45	66.19	59.23	6.96	6 11/2
+70	66.82	59.62	7.20	7 2 3/4
+95	67.36	60.02	7.34	7 4 1/2
41+20	67.63	60.41	7.22	7 2 3/4
+45	68.07	60.81	7.26	7 3 1/4
+70	68.39	61.20	7.19	7 2 1/4
+95	68.86	61.60	7.26	7 3 1/4
42+20	69.60	62.00	7.60	7 7 1/4
+40	69.74	62.13	7.61	7 7 3/4
+60	69.73	62.25	7.48	7 5 9/4
+80	69.85	62.38	7.47	7 5 1/2
43	70.03	62.50	7.53	7 6 3/4
+25	70.33	63.75	6.58	6 7
+50	71.10	65.00	6.10	6 1 1/4
+75	72.40	66.25	6.15	6 1 3/4
44	73.73	67.50	6.23	6 2 3/4
+25	74.79	68.75	6.04	6 0 1/2
+50	75.87	70.00	5.87	5 10 1/2
+75	77.04	71.25	5.79	5 9 1/2
45	78.33	72.50	5.83	5 10

Pipe Line Feb 29, 1888

S. Cedar St - 69.50

Cedar St -

N. Cedar St -

1st N. of A

Sta	Elv	bram	cut
45+25	79.70	73.75	5.95 5 11 3/4
+50	80.94	75.00	5.94 5 11 1/4
+75	82.33	76.25	6.08 6 1
46	83.55	77.50	6.05 6 5/8
+20	84.54	78.00	6.54 6 7
+40	85.61	78.50	7.11 7 1 3/8
+60	86.26	79.00	7.26 7 3/8
+80	87.00	79.50	7.50 7 6
47+05	88.39	81.41	6.98 6 11 3/8
+30	89.74	83.33	6.45 6 5 3/4
+55	91.35	85.24	6.11 6 1 3/4
+80	93.20	87.16	6.14 6 1 3/4
48+05	95.25	89.07	6.18 6 2 1/4
+30	97.47	90.98	6.49 6 5 7/8
+55	99.11	92.90	6.21 6 2 1/2
+80	100.87	94.81	6.06 6 3/4
49+05	102.63	96.73	5.90 5 10 3/4
+30	104.53	98.64	5.89 5 10 3/4
+55	106.20	100.55	5.65 5 7 7/8
+80	107.94	102.30	5.44 5 5 3/4

x 2.5 = 100
x 7.66 = 100

91.10
83.30
7.80

S L Saw 83.80

Saw 11 -

N L Saw

S L Elm 11 - 108.50

1st No of A

No	Elev	Grad	Cut	
50	109.28	103.00	6.28	3 ³ / ₈
+20	110.72	103.50	7.22	7 2 ³ / ₈
+40	112.19	104.00	8.19	8 2 ¹ / ₄
+60	112.84	104.50	8.34	8 4 ¹ / ₄ x
+85	114.26	106.29	7.97	7 11 ³ / ₈
51+10	115.68	108.08	7.60	7 9 ³ / ₈
+35	117.34	109.67	7.67	7 5 ³ / ₈
+60	118.61	111.67	6.94	6 11 ¹ / ₄
+85	120.33	113.46	6.87	6 10 ¹ / ₂
52+10	122.02	115.25	6.77	6 9 ¹ / ₄
+35	123.57	117.04	6.53	6 6 ³ / ₄
+60	125.43	118.93	6.60	6 7 ¹ / ₄
+85	127.22	120.62	6.60	6 7 ¹ / ₄
53+10	129.16	122.41	6.75	6 9
+35	130.81	124.21	6.60	6 7 ¹ / ₄
+60	132.10	126.00	6.10	6 1 ¹ / ₄ x
+80	133.25	126.57	6.68	6 8 ¹ / ₄
54	134.09	127.14	6.95	6 11 ³ / ₈
+20	134.91	127.71	7.20	7 2 ³ / ₈
+40	135.67	128.29	7.38	7 4 ³ / ₈

Elm St-

N^W Elm St-

134.44
 132.
 6.84

S^W Fir 132.50

Fir St-

N^W Fir St-

1¹¹ N of A
Sta Elev Grad Cont

54+65	136.96	129.40	7.96	7	11 1/2
+90	138.36	129.71	8.65	8	7 7/8
55+15	139.92	130.43	9.49	9	5 7/8
+40	141.09	131.14	9.95	9	11 3/8
+65	142.29	131.86	10.43	10	5 1/8
+90	143.27	132.57	10.70	10	8 3/8
56+15	143.98	133.29	10.69	10	8 1/4
+40	144.22	134.00	10.22	10	2 5/8
+65	144.26	134.14	10.12	10	1 1/2
+90	143.69	134.28	9.41	9	4 7/8
57+15	143.08	134.42	8.66	8	7 7/8
+40	142.05	134.56	7.49	7	5 7/8
+60	141.53	134.67	6.86	6	10 3/8
+80	140.82	134.78	6.04	6	1/2
58	140.09	134.89	5.20	5	2 7/8
+20	139.03	136.00	4.03	4	3/8
+45	140.89	136.79	4.10	4	1 1/4
+70	142.54	138.58	3.76	3	9/8
+95	144.09	140.37	3.72	3	8 3/8
59+20	146.19	142.17	4.02	4	1/4

15.5 x 2
101

S. L. Grape 142.50

Grape 11-

N. L. Grape 11-

9
7 5 7/8
6 1/4

1st St North A

8

Sta	Elev	Grad	Dist		
59+45	148.72	143.96	4.764	9/16	
+70	150.92	145.75	5.175	2	
+95	152.87	147.54	5.335	4	
60+20	154.85	149.33	5.525	6/16	
+45	156.97	151.12	5.855	10/16	
+70	158.89	152.92	5.975	11/16	
+95	161.04	154.71	6.346	4/16	
61+20	162.63	156.50	6.136	1/16	X
+40	163.92	157.38	6.546	6/16	
+60	164.77	158.25	6.526	6/16	
+80	165.44	159.13	6.316	3/16	
62	166.45	160.00	6.496	5/16	
+25	167.82	161.75	6.076	7/16	
+50	169.95	163.50	5.955	11/16	
+75	170.96	165.25	5.715	4/16	
63	172.61	167.00	5.615	7/16	
+25	174.41	168.25	5.665	7/16	
+50	176.16	170.50	5.665	7/16	
+75	178.06	172.25	5.815	9/16	
64	179.94	174.00	5.945	11/16	

X
 5653
 453
 101
 X
 101 = 100
 A

SZ Hawthorne St - 163.00

61+38 6+6 X for Hawthorne

Hawthorne St

NZ Hawthorne St

1st N.A.A

Sta	Elev	Grade	cut	
64+25	181.94	175.75	6.19	6 2 1/4
+50	184.00	177.50	6.50	6 6
+75	185.67	179.25	6.32	6 3 7/8
65	187.16	181.00	6.16	6 1 7/8
+20	188.34	181.69	6.65	6 7 7/8
+40	188.84	182.37	6.47	6 5 7/8
+60	189.35	183.05	6.30	6 3 7/8
+80	189.69	183.74	5.95	5 11 7/8
66+45	190.96	184.60	5.86	5 10 3/4
+30	191.26	185.46	5.80	5 9 7/8
+55	191.98	186.31	5.67	5 8
+80	193.09	187.17	5.92	5 11
67+05	193.90	188.03	5.87	5 10 1/2
+30	194.72	188.89	5.83	5 10
+55	195.34	189.74	5.60	5 7 1/4
+80	196.39	190.60	5.79	5 9 1/2
68+05	197.35	191.46	5.89	5 10 3/4
+30	198.70	192.31	6.39	6 4 3/4
+55	199.29	193.17	6.12	4 5 7/8
+80	199.00			
Total length of pipe 68+30				

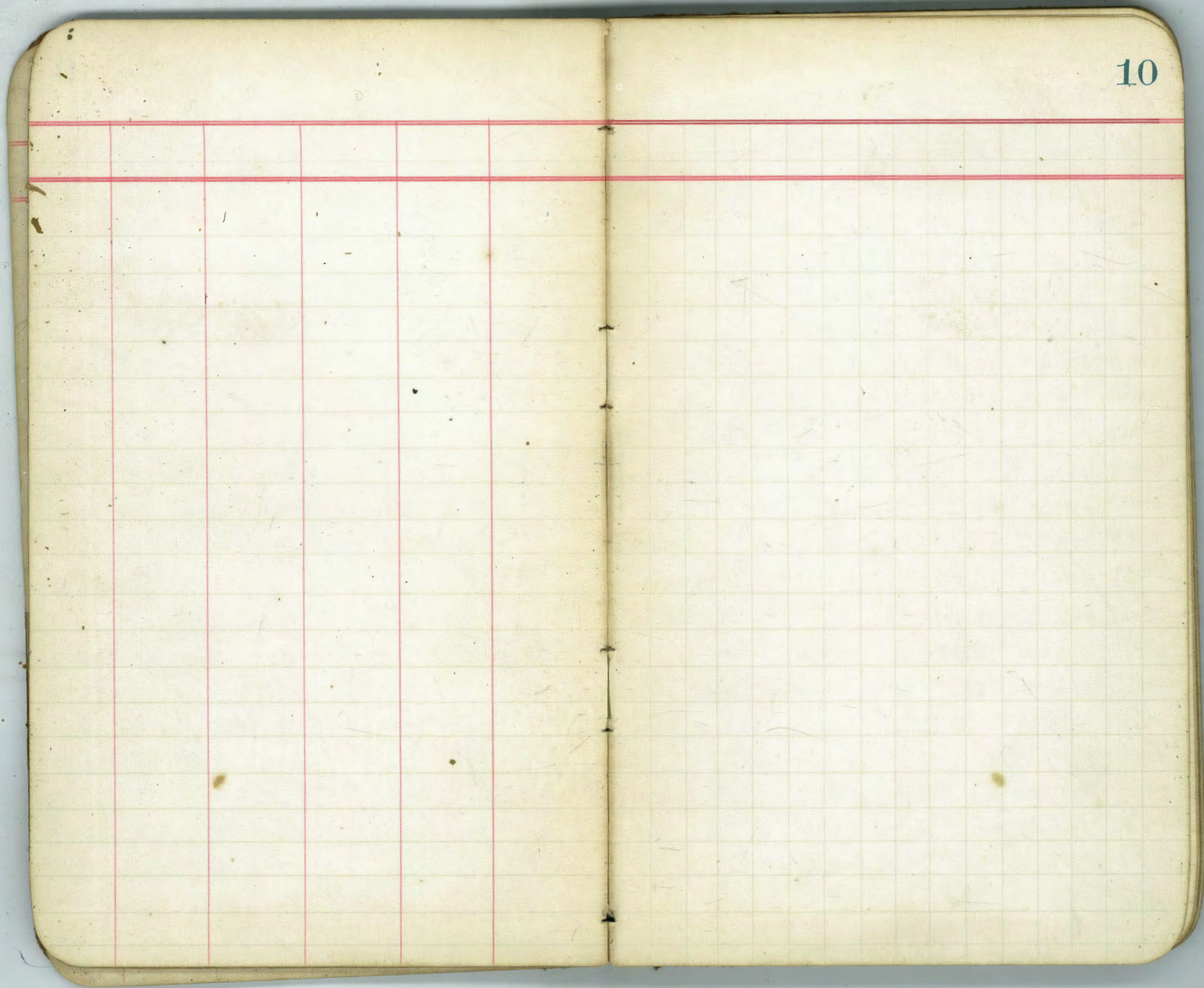
S.L. Dry M - 187.50

Dry M -

N.L. Dry.

F. Lusk Tank
199.60

S.L. Empire M



2nd St N of B St

Sta	Elev	Grade	Cut		
31	41.40	33.95	7.46	7	3 ³ / ₄
31+20	41.61	34.04	6.53	7	6 ³ / ₄ X
+40	41.57	34.29	7.08	7	1
+60	41.76	34.50	7.26	7	3 ¹ / ₄ X
+85	42.44	35.46	6.98	6	11 ³ / ₄
32+10	43.17	36.41	6.76	6	9 ¹ / ₄
+35	44.01	37.37	6.64	6	7 ³ / ₄
+60	45.05	38.32	6.73	6	8 ³ / ₄ S
+85	46.22	39.28	6.94	6	11 ¹ / ₄ \
33+10	47.47	40.23	7.24	7	2 ⁷ / ₈
+35	48.47	41.19	7.28	7	3 ³ / ₄ S
+60	49.37	42.14	7.23	7	2 ³ / ₄ X
+85	50.33	43.10	7.23	7	2 ³ / ₄ \
34+10	50.86	44.07	6.78	6	9 ³ / ₄
+35	52.17	45.03	7.14	7	1 ³ / ₄
+60	53.30	46.00	7.30	7	3 ⁵ / ₈ X
+80	53.52	46.63	7.29	7	3 ⁵ / ₈
35-	54.80	47.26	7.54	7	6 ¹ / ₂
+20	55.15	47.89	7.26	7	3 ¹ / ₄
+40	55.66	48.52	7.14	7	1 ³ / ₄
+65	56.36	49.32	7.04	7	0 ¹ / ₂

I S B St 5582

Center B St -

N2 B St -

S2 A Grade 5.351 Mar 31

A St -

N2 St

2nd St. N of B

Sta	Elev.	Grade	Cut-	
35+90	57.04	50.11	6.93	6 11/8
36+15	57.76	50.89	6.87	6 10/8
+40	58.54	51.68	6.86	6 10 3/4
+65	59.43	52.47	6.96	6 11 1/2
+90	60.07	53.26	6.81	6 9 3/4
37+15	60.81	54.05	6.76	6 9 1/4
+40	61.48	54.84	6.64	6 7 3/4
+65	62.31	55.63	6.68	6 8 1/8
+90	62.85	56.42	6.43	6 5 1/8
38+15	63.53	57.21	6.32	6 1 1/2
+40	63.86	58.00	5.86	5 10 3/4
+60	64.45	58.52	5.93	5 11/4
+80	64.74	59.04	5.70	5 8 7/8
39	64.94	59.56	5.38	5 5
+20	65.58	60.09	5.49	5 5 7/8
+45	66.44	60.74	5.70	5 8 7/8
+70	67.50	61.39	6.11	6 1 3/8
+95	68.34	62.04	6.30	6 3 5/8
40+20	69.22	62.69	6.53	6 6 3/8
+45	69.90	63.35	6.55	6 6 5/8

S 2 Ash St - Grade 64.60

Ash St -

N 2 Ash St -

2nd
11 St - N of B.

Sta	Elev	Inade	Cur		
40+70	70.81	64.00	6.81	6	9 3/4
+95	71.89	64.65	7.24	7	2 7/8
41+20	72.57	65.30	7.27	7	3 1/4
+45	73.28	65.95	7.43	7	5 1/8
+70	73.96	66.61	7.35	7	4 1/2
+95	74.76	67.26	7.50	7	6
42+20	75.55	67.91	7.64	7	7 3/4
+40	76.16	68.43	7.73	7	8 3/4
+60	76.60	68.95	7.65	7	7 7/8
+80	76.42	69.48	6.94	6	11 1/4
43	76.80	70.00	6.80	6	9 1/2
+25	77.16	70.82	6.34	6	4 1/4
+50	77.59	71.65	5.94	5	8 7/8
+75	77.63	72.47	5.16	5	1 7/8
44	77.90	73.29	4.61	4	7 3/4
+25	78.70	74.12	4.58	4	7
+50	79.59	74.94	4.65	4	7 7/8
+75	80.53	75.76	4.77	4	6 7/8
45	81.36	76.58	4.78	4	9 3/4
+25	82.66	77.40	5.26	5	3 1/4

21.60

58.25

S.L. Buck St - Grade 76.00

Buck St -

N.L. Buck St -

2nd St. N of B. N.

Sta	Elev	Grade	Cut	
45+50	85.72	78.23	5.49	5' 5 ³ / ₄
+75	85.07	79.05	6.02	6' 1/4
46	86.28	79.87	6.41	6' 4 ³ / ₄
+20	87.62	80.53	7.09	7' 1/4
+40	88.43	81.18	7.25	7' 3
+60	89.02	81.84	7.18	7' 2 ¹ / ₄
+80	89.49	82.50	6.99	6' 11 ³ / ₄
47+05	90.29	83.22	7.07	7' 7/8
+30	90.95	83.95	7.00	7' 0
+55	91.70	84.67	7.03	7' 3/8
+80	92.09	85.39	6.70	6' 8 ³ / ₈
48+05	92.73	86.12	6.61	6' 7 ³ / ₈
+30	93.26	86.84	6.42	6' 5
+55	93.70	87.56	6.14	6' 1 ³ / ₄
+80	94.46	88.28	6.18	6' 2 ¹ / ₄
49+05	95.08	89.01	6.07	6' 7/8
+30	95.81	89.73	6.08	6' 1
+55	96.56	90.45	5.91	5' 10 ³ / ₄
+80	97.39	91.18	6.21	6' 2 ¹ / ₂
50	97.86	91.75	6.11	6' 1 ³ / ₄

LZ Cedar St Grade 86.50

Cedar St.

N2 Cedar St.

S. I. Saw Grade 97.60

2-11-11 N-N of A

Sta	Elev	Grade	Cur		
54+20	99.15	92.33	6.82	6	9 3/4
+40	100.00	92.91	7.12	7	1 1/2
+60	100.63	98.60	7.13	7	1 5/8
+85	101.90	95.04	6.86	6	10 3/8
51+10	103.29	96.58	6.71	6	8 3/8
+35	105.60	98.12	6.48	6	10 3/4
+60	106.33	99.66	6.67	6	8
+85	107.50	101.21	6.29	6	3 1/2
52+10	109.19	102.75	6.44	6	5 1/4
+35	110.55	104.29	6.36	6	4 3/8
+60	112.15	105.83	6.32	6	3 7/8
+85	113.45	107.37	6.08	6	1
53+10	114.70	108.91	5.79	5	9 1/2
+85	116.06	110.46	5.60	5	7 1/4
+60	117.25	112.00	5.25	5	3
+80	118.21	112.50	5.71	5	8 1/2
54	119.02	113.00	6.02	6	1 1/4
+20	119.93	113.50	6.43	6	5 1/8
+40	120.60	114.00	6.60	6	7 1/4
+65	122.24	116.17	6.07	6	7 1/8

6.1666

2.50

Saw 21-

N2 Gate

S2 Elm Grade 118.50

Elm 21-

N2 Elm

2nd ft N of B.M.

Sta	Elev	Grade	Dist			
54+90	124.36	118.35	6.03	6	$\frac{9}{8}$	
55+15	126.93	120.50	6.43	6	$\frac{5}{8}$	9995
+40	128.97	122.66	6.31	8	$3\frac{3}{4}$	
+65	131.01	124.80	6.21	6	$2\frac{1}{2}$	
+90	133.45	127.00	6.46	6	$5\frac{1}{2}$	
56+15	136.57	130.50	6.07	8	$\frac{7}{8}$	x
+40	140.05	134.00	6.05	6	$\frac{5}{8}$	25.41
+65	143.71	137.50	6.21	6	$2\frac{1}{2}$	
+90	147.60	141.00	6.60	6	$7\frac{1}{4}$	
57+15	151.21	144.50	6.71	6	$8\frac{1}{2}$	
+40	154.34	148.00	6.34	6	$4\frac{1}{8}$	x
+60	155.60	148.89	6.71	6	$8\frac{1}{2}$	
+80	156.09	149.79	6.30	6	$3\frac{3}{4}$	
58	156.70	150.68	6.02	6	$\frac{1}{4}$	
+20	157.42	151.58	5.84	5	$10\frac{1}{8}$	
+45	158.44	152.69	5.75	5	9	
+70	159.58	153.80	5.78	5	$9\frac{3}{8}$	
+95	160.70	154.92	5.78	5	$9\frac{3}{8}$	
59+20	161.56	156.04	5.52	5	$6\frac{1}{4}$	
+45	162.59	157.16	5.43	5	$5\frac{1}{4}$	

S. R. St - Grade 154.00

S. R. St

N. R. St

2nd St N. of B.

17

Sta	Elev	Grade	Cut	
59+70	163.47	158.27	5.20	5 2 9/8 x
+95	164.29	159.39	4.90	4 11 7/8
60+20	165.59	160.51	5.08	5 1
+45	166.67	161.63	5.04	5 1/2
+70	167.87	162.74	5.13	5 1 5/8
+95	168.57	163.85	4.72	4 8 5/8
61+20	165.00			x
Total length of pipe 60+44				

12.7, 00

St Grape 170.00

W. J. W. of (B. & C.)

6400					
6410					
6420					
6430					
6440					
6450					
6460					
6470					
6480					
6490					
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6690					
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6910					
6920					
6930					
6940					
6950					
6960					
6970					
6980					
6990					
7000					

3^d St N of Sta 50+60
 NZ Date 11-

Sta	Elev	Grade	cut-		
57+60	110.95	105.00	5.95-		
+85	112.24	107.17	5.07	5	7/8
51+10	114.53	109.88	5.20	5	2 5/8
+35	116.81	111.50	5.31	5	3 3/4
+60	119.41	113.67	5.74	5	8 7/8
+85	121.93	115.83	6.10	6	1 1/4
52+10	124.56	118.00	6.56	6	4 3/8
+35	126.62	120.16	6.46	6	5 1/2
+60	128.78	122.33	6.45	6	5 7/8
+85	130.92	124.50	6.42	6	5
53+10	133.14	126.66	6.48	6	5 3/4
+35	135.22	128.83	6.39	6	4 3/4
+60	137.51	131.00	6.51	6	6 1/4
+85	138.65	131.57	7.15	7	1 3/4
54	139.34	132.00	7.34	7	4 1/4
+20	139.81	132.50	7.31	7	3 3/4
+40	140.55	133.00	7.55	7	4 1/4
+65	141.72	134.96	6.76	6	9 1/8
+90	143.44	136.92	6.52	6	6 1/4

8.166
 1.001
 2.50
 1.30

NZ Date 11-

Sta 51 End of Johnson's contract -

St Elm Grade 138.00

Elm

NZ Elm

3^d St W of Sawt

21

Sta	Elev	Grade	Cut	
53+15	145.57	138.87	6.70	6 8/8
+40	147.87	140.83	7.04	7 1/2
+65	149.79	142.79	7.00	7 00
+90	151.69	144.75	6.94	6 10/8
56+15	153.65	146.71	6.94	6 11/8
+40	155.81	148.66	7.15	7 13/8
+65	157.61	150.62	6.99	6 11/8
+90	159.54	152.58	7.00	7 00
57+15	161.65	154.54	7.11	7 13/8
+40	163.15	156.50	6.65	6 7/8 X
+60	164.10	156.73	7.37	7 4/8
+80	164.51	157.00	7.51	7 6/8
58	164.65	157.25	7.40	7 4/8
+20	164.65	157.50	7.15	7 13/8 X
+45	165.30	158.80	6.50	6
+70	166.09	160.10	5.99	5 11/8
+95	166.92	161.40	5.52	5 6/8
59+20	167.95	162.70	5.25	5 3
+45	169.26	164.00	5.26	5 3/8
+70	170.55	165.30	5.25	5 3

7.689
1.00

1.92
1.00

S.L. Fin St - Grade 163.8

Fin St

N.L. Fin St

30 St. W. of Lake

22

Sta	Elev	Grade	Cut	
59+95	171.90	166.60	5.30	3 ⁵ / ₈
60+20	173.29	167.90	5.39	4 ³ / ₄
+45	174.67	169.26	5.47	5 ⁵ / ₈
+70	176.28	170.50	5.78	9 ³ / ₈
+95	177.82	171.80	6.02	6 ¹ / ₆
61+20	178.91	174.60	4.41	4 ⁷ / ₁₆
+110	Total length of pipe 39 x 85			
	100 feet deducted for wooden			
	box			

St. Grapes St. First Tank 179.50

3rd St Not Lat

Sta Elev Grad Cur

69+40

+60

+85

70+10

+35

+60

+85

71+10

+35

+60

+85

72+10

+35

+60

N2 Long

S2 Jumper

Hawthorne St - East off 1st

Sta	Elev	Grade	cut
0	164.13	157.90	
+10	164.92	157.86	
+20	165.51	157.92	
+30	165.70	157.94	
+40	166.39	158.04	
+50	167.65	158.10	
+56	168.16	158.13	
+67	169.08	158.19	
+92		158.34	
+117		158.49	
+142		158.64	
+167		158.78	
+192		158.93	
+217		159.08	
+42	157.91	159.23	- 1.32
+62		159.35	
+82		159.46	
+102		159.58	
+122		159.70	
+147	161.83	159.83	1.98

505.50

+42 @ line 1 3/4 St -

PT

M.L. 2⁰⁰ St - 171.0

2+60 + 2+62 6' IS X + south

2⁰⁰ St -CL 2⁰⁰ St -

Hawthorn East of 1st

Sta	Elev.	Grade	cut
3+72		160.00	
+97		160.14	
4+22		160.29	
+47		160.44	
+72		160.58	
+97		160.73	
5+22		160.88	
+40		160.99	
+42		161.00	

x + 0.5904

New 28³⁰ 142.0

5+40 6+6 Y N

5+42 6+6 Y S

20 = 11808

H. Anthony M. Cash of

21 St

Sta Elev Grade Cut

0	164.14	157.80	6.34	6	4/8
+10	164.93	157.86	7.07	7	7/8
+20	165.51	157.92	7.59	7	4 3/4
+30	165.70	157.98	7.72	7	8 5/8
+40	166.40	158.04	8.36	8	4 3/8
+50	167.65	158.10	9.55	9	6 5/8
+60	168.16	158.13	10.03	10	3/8
+67	169.08	158.19	10.89	10	10 7/8
+92	178.02	158.54	19.68	19	4 1/8
+117	177.37	158.49	18.88	18	10 5/8
+42	176.96	158.64	18.32	18	3 7/8
+67	177.45	158.78	18.67	18	8
+92	175.69	158.93	16.76	16	9 1/8
2+17	169.74	159.08	10.66	10	7 7/8
+58.4	160.19	159.20	0.99	0	11 7/8
+58.4	151.56	159.32	-7.76		
+78.4	147.65	159.44	-11.79		
+98.4	153.23	159.55	-6.32		
3+19.4	158.41	159.67	-1.26		
+28.4	160.08	159.73	0.35		

23.5' 3 Center

X Section Sta 2+78

72	b	R
11.20		13.00
3.55	11.23	4.00

BT

2+42 W. of 2nd St +40.4 YN
BT 5' W. of 2nd St YS

Bent 1

" 2

2+83 2nd St " 3

" 4

3+22.4 C. of 2nd St " ET

Hawthorn East of
Sta Old Gravel Cut

3748.4	160.57	159.81	0.36
+58.4	159.27	159.96	-0.59
+78.4	157.34	160.11	-2.77
+98.4	152.77	160.26	-7.49
4118.4	150.10	160.41	-10.31
+34.4	141.97	160.56	-18.59
+38.4	138.64	160.71	-22.07
+78.4	134.87	160.86	-25.99
+96.7=0	140.42	161.00	-20.58
+10	143.61	161.10	-17.49
+20	147.31	161.20	-13.89
+30	148.84	161.30	-12.46
+40	151.07	161.40	-10.33
+50	154.98	161.50	-6.52
+60	155.60	161.60	-6.00
+70	154.41	161.70	-7.29
+80	153.50	161.80	-8.30
+90	152.37	161.90	-9.53
11	151.67	162.00	-10.33
+10	150.35	162.10	-11.75
+96.7=0	Beginning of 3rd St. Sewer		

4797
HT 907
X

I St St

277
156
2.21

25' E of 2nd St
B.T. 35' E.E.L. 2nd St
Menthol X system
" 2
" 3
" 4
" 5

End of pipe on Hawthorn St
" F.C. 27.9 W.W. 3rd St
57.23 PL x
Y 6x6 S for 3rd St
" 3
" 4
" 5
" 6

0+78' W of Hawthorn

HT 311.6 N Hawthorn St

Third Street North of Hawthorn

Sta Elev. Grade. Lat

1+30	152.56	162.30	-9.74				
+50	153.37	162.50	-9.13				
+70	151.15	162.70	-11.55				
+90	147.46	162.90	-15.44				
2+10	143.80	163.10	-19.30				
+30	147.25	163.30	-16.05				
+50	150.89	163.50	-12.61				
+70	154.43	163.70	-9.27				
+90	155.74	163.90	-8.16				
3+10	158.25	164.10	-5.81				
+30	162.14	164.30	-2.16				
+50	167.86	164.50	3.36	3	4 3/4		
+77.7	170.82	167.07	3.75	3	9		
+92.7	174.65	168.90	5.75	5	9		
4+17.7	177.57	170.74	6.83	6	10		
+37.7	182.44	172.57	9.87	9	10 1/2		
+57.7	181.03	174.40	6.63	6	7 3/4		
+82.7	180.52	176.70	3.82	3	9 7/8		
5+07.7	184.89	179.90	5.89	5	10 3/4		
+32.7	189.89	183.50	6.39	6	4 3/4		

1001 - - 1001

X

111.6
1001
1001

12
13
14
15
16
17
18
19
20
21
22

E.T.
S. S. Long St 198.50
Long St
N. S. Long St

Third Street North of Hawthorn
 Sta Blue Grade Cut

+37.7	195.42	188.00	7.42	7 5	x
+82.7	197.81	190.50	7.31	7 3 3/4	
6+07.7	200.22	193.00	7.22	7 2 3/4	
+22.7	202.11	195.50	6.61	6 7 3/8	0
+57.7	205.02	198.00	7.02	7 1/4	1
+82.7	207.83	200.50	7.33	7 4	1
7+07.7	209.19	203.00	6.19	6 2 1/4	0
+32.7	210.75	215.50	5.25	5 3	x
+57.7	211.83	216.50	5.33	5 4	
Total length of pipe			7+62		

S. S. Jennifer 211.50

211 50
 35
 30

3rd St. South of
Sta. Elev. Grade Cut

0	147.32	161.20				
+10.6	151.20	161.30	-10.10			
+20.6	155.90	161.40	-5.50			
+30.6	160.71	161.50	-0.79			
+40.6	163.17	161.60	1.57	1	5/8	
+50.6	165.53	162.58	2.95	2	11/8	
+60.6	166.00	163.57	2.43	2	5/8	
+70.6	168.10	164.56	3.54	3	5/2	
+80.6	171.46	165.53	5.93	5	11/8	
+88.	173.07	166.17	6.90	6	10/4	
+120	178.41	168.63	10.14	10	2 1/4	
+57.	182.52	171.09	11.43	11	5/8	
+62.	185.52	173.50	12.02	12	1/4	
+87	186.54	173.75	12.79	12	9/2	
2+12	187.72	174.00	13.72	13	5/8	
+37	187.62	174.25	13.37	13	4/2	
+62	186.89	174.50	12.39	12	4/4	
+87	185.39	174.75	10.84	10	10/8	
3+12	184.24	175.00	9.24	9	2 1/4	
+57	182.96	175.25	7.71	7	8/2	
+83.4	181.58	175.50	6.08	6	1	

Hawthorn

= 57+16.7 Curve of Hawthorn
FC

did not set X section stakes
ET

+62
D L Hawk 6 10 3/4
3 1 1/4

+87
FT 25.4 S Hawthorn St.
30' S Hawthorn

Total length of pipe 3+68
180.50
K's Grate I wish I could

Second Street South of Hawthorn
Sta Elev Grade Cut

0	160.46	159.25	1.21
+10	156.64	159.35	-2.67
+20	154.66	159.95	-4.79
+30	157.30	159.55	-8.25
+40	149.14	159.65	-11.47
+50	146.12	159.75	-13.63
+60	144.25	159.85	-15.60
+70	143.62	159.95	-16.33
+80	143.22	160.05	-16.83
+90	143.42	160.15	-16.73
1	142.45	160.25	-17.80
+10	140.64	160.35	-19.71
+20	138.47	160.45	-21.98
+40	133.52	160.65	-27.13
+60	128.09	160.85	-32.76
+80	125.20	161.05	-35.85
2	126.11	161.25	-35.14
+20	134.25	161.45	-27.20
+40	141.22	161.65	-20.43

BT

0+53 S L Hawthorn

End of South of
Sta. also Grade cut

+60	147.31	161.85	-14.54	
+80	153.40	162.05	-8.65	
3	160.77	162.25	-1.48	
+20	166.07	162.45	3.62	3. 7/8
+28	168.66	163.07	5.59	5 7/8
+53.2	172.30	165.00	7.30	7 3/4
Total length of pipe			3+59	

on 101

X

Hawthorne

ET

N.S. Grape St 170.00

Second Street North of Hawthorn
Sta Elev Grade bat

0	159.18	159.20	-0.02	-0.01/4	x
+10	155.93	159.30	-3.37		
+20	152.56	159.40	-6.84		
+30	152.56	159.50	-6.94		
+40	158.46	159.60	-1.14		
+50	162.91	159.70	3.21	3 2/2	x
+51.6	166.70	160.70	6.00	6 00	
+70	172.63	161.71	10.92	10 1/4	
+80	177.34	162.71	14.63	14 7 3/8	
+90	181.06	163.71	17.35	17 4/4	
/	184.25	164.72	19.53	19 6 3/4	
+139	187.24	166.72	20.52	20 1 1/2	
+26.5	187.82	167.39	20.43	20 5 1/4	
+57.6	188.84	169.90	18.94	18 11 1/4	
+76.6	189.34	172.40	16.94	16 11 1/4	
+201.6	189.79	174.91	14.88	14 10 3/4	
+26.6	190.81	177.42	13.39	13 4 3/4	
+51.6	191.08	179.93	11.15	11 1 1/4	

over

BT

ET 4' affect to West of 51st Han

BT

75' N of Hawthorn

10.0321

2nd St North of
Sta Elev Grade but

2476.8	192.91	182.95	10.46	10	5 1/2	
3401.6	193.46	184.96	8.50	8	6	
+26.6	195.09	187.48	7.61	7	7 3/8	
+51.6	195.53	190.00	5.53	5	8 3/8	x
+71.6	196.47	190.25	6.22	6	8 5/8	
+91.6	197.19	190.50	6.69	6	8 1/4	125
4411.6	198.07	190.75	7.32	7	8 7/8	100
+71.6	199.33	191.00	8.23	8	8 3/4	x
+56.6	199.57	191.91	7.66	7	7 7/8	
+81.6	199.70	192.82	6.88	6	10 5/8	
5406.6	200.99	193.73	7.25	7	8	
+51.6	201.65	194.64	7.01	7	11/8	100
+56.6	201.82	195.55	6.27	6	8 1/4	100
+81.6	202.42	196.45	5.97	5	11 3/8	100
6406.6	203.16	197.36	5.80	5	9 5/8	100
+51.6	203.47	198.27	5.20	5	8 3/8	100
+56.6	203.91	199.18	4.73	4	8 3/4	100
+81.6	205.01	200.09	4.92	4	11	
7406.6	205.91	201.00	4.91	4	10 7/8	
7432.3	206.89	203.50	3.38	3	4 5/8 out.	
Total length of pipe						7437

Hawthorn

S D Long St 196.00

Long St

N D Long

S D Juniper 204.50

Truttle 5, 2nd St. S. of Hawthorn

Sta	Elev	Sub Grade			
0	160.46	158.69	1.77		
+10	156.68	158.79	-2.11	B	1
+20	154.66	158.89	-4.23	B	2
+30	151.30	158.99	-7.69	B	3
+40	148.18	159.09	-10.91	B	4
+50	146.12	159.19	-13.07	B	5
+60	144.25	159.29	-15.04	B	6
+70	143.52	159.39	-15.87	B	7
+80	143.22	159.49	-16.27	B	8
+90	143.42	159.59	-16.17	B	9
1	142.45	159.69	-17.24	B	10
+10	140.64	159.79	-19.15	B	11
+20	138.47	159.89	-21.42	B	12
+40	133.52	160.09	-26.57	B	13
+60	128.09	160.29	-32.20	B	14
+80	125.20	160.49	-35.29	B	15
2	126.11	160.69	-34.58	B	16
+20	134.25	160.89	-26.64	B	17
+40	141.22	161.09	-19.87	B	18

BT

Trenton 5² rd St S of

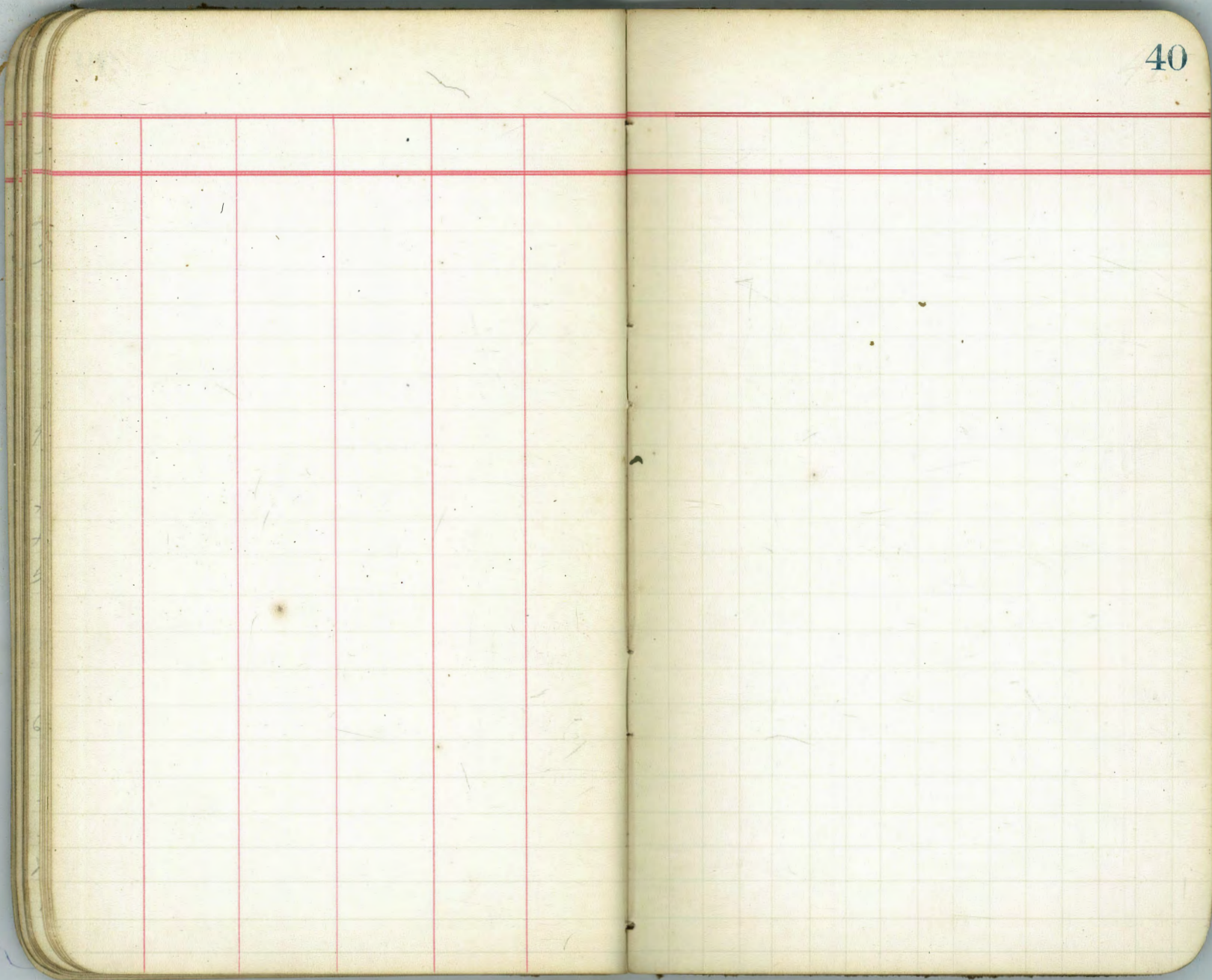
Hawthorn

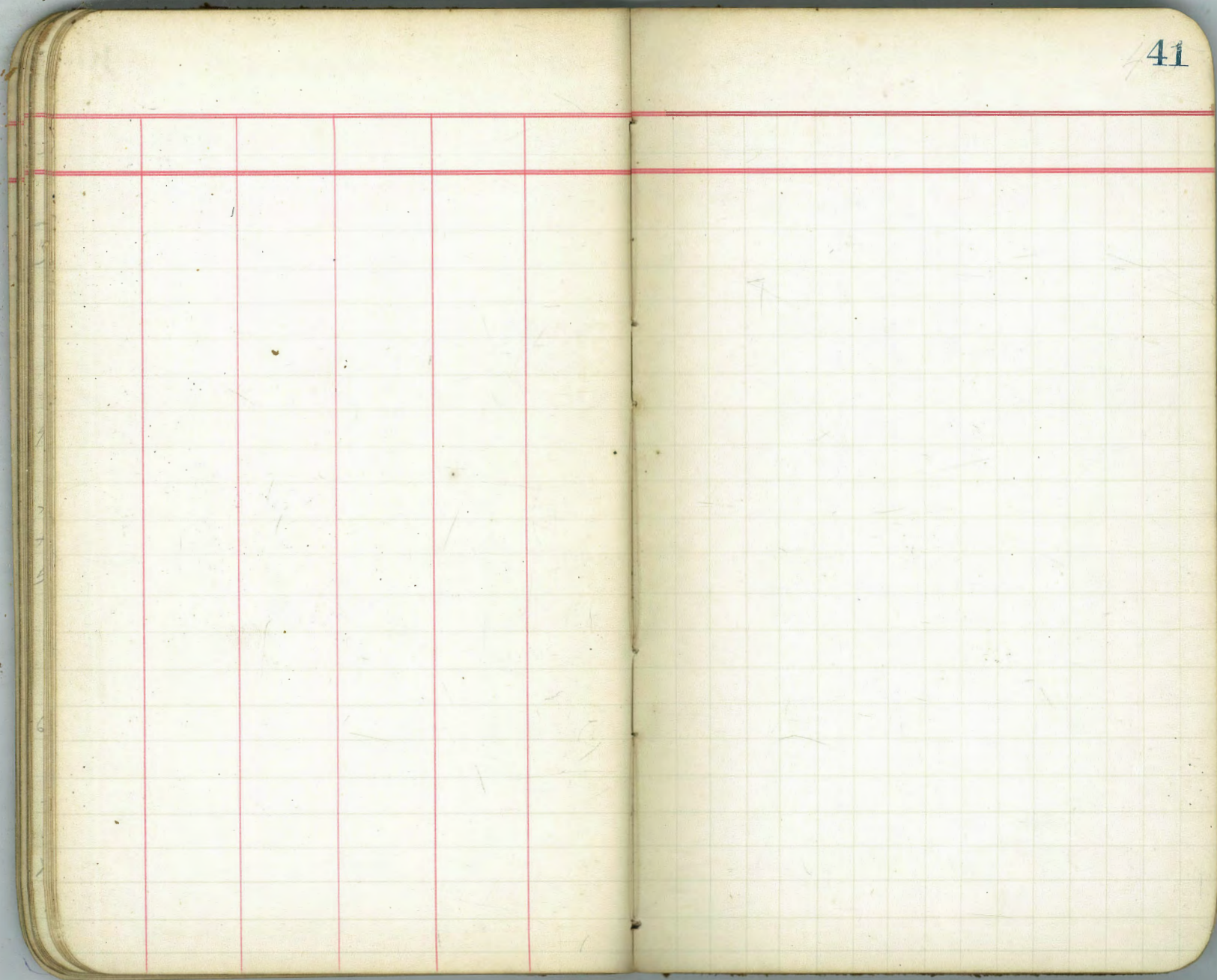
Sta. Elev. ^{Top} Grade

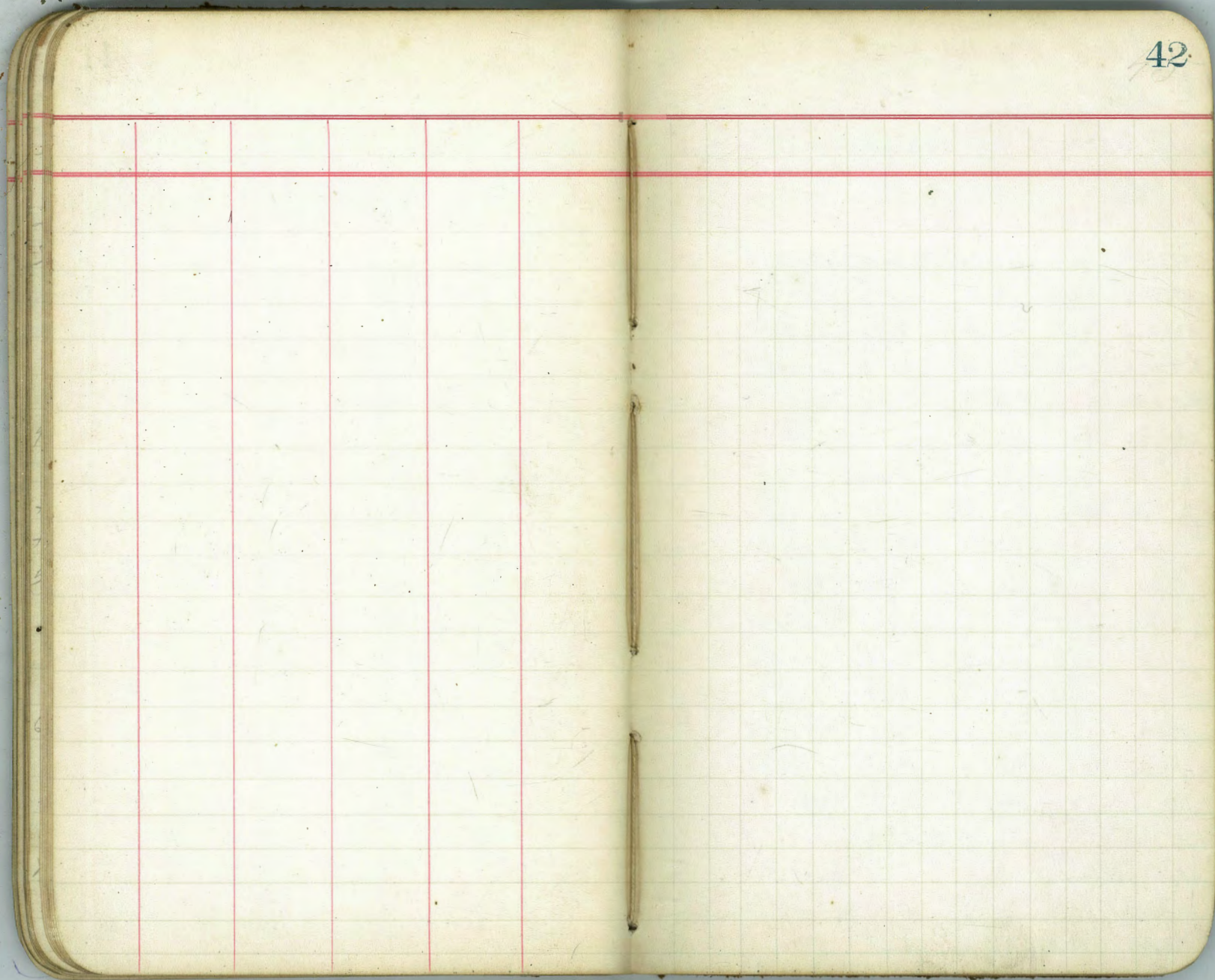
+60	147.31	161.29	-13.98	B 19
+80	153.40	161.49	-8.09	B 20
31	160.77	161.69	-0.92	B 21
+20	166.07	161.89	4.18	

ET

The image shows an open notebook with two pages. The pages are cream-colored and feature a grid pattern. The left page has a vertical red margin line on the left side, creating a narrow left margin. The rest of the left page and the entire right page are filled with a grid of red lines. The number '39' is printed in the top right corner of the right page. The notebook is bound in the center, and the pages are slightly aged.







Elv. on 2nd St Sewer N of

Juniper St

H. of. Invt 6.0'

Sta	+	H ₂	-	Elv	
B ₀	6.49	216.99		210.50	
7+32			10.10	206.89	
+52			9.74	207.21	
+72			8.92	208.07	
+92			8.50	208.49	
8+12			7.42	209.57	207.4
+37			6.04	210.95	
+62			5.41	211.58	
+87			4.65	212.34	
9+12			3.98	213.01	210.1
+37			3.34	213.65	
+62			2.98	214.01	
+87			2.54	214.45	
10+12			1.88	215.11	212.2
+37			1.41	215.58	
+62 #	7.56	223.84	0.71	216.24	
+87			6.66	217.14	
11+12			5.72	218.12	215.0
+32			5.46	218.38	
+52			5.27	218.57	
+72			4.51	219.33	

Elv. at back of lot off lot to 100' station and West side.

Grade of Inspection 208.0	Out inches	Cut	Grade
Juniper & 2nd St			
S Line of Juniper St	4' 10 3/4"	4.89	202.0
	4' 9"	4.75	202.46
Juniper St	5' 1 1/4"	5.15	202.92
	5' 1 1/2"	5.12	203.37
N Line of Juniper	5' 9"	5.74	203.83
	6' 6 7/8"	6.55	204.40
	6' 2 3/8"	6.61	204.97
	6' 9 7/8"	6.80	205.54
	6' 10 3/8"	6.90	206.11
	6' 11 7/8"	6.97	206.68
	6' 9"	6.76	207.25
	6' 7 1/2"	6.63	207.82
	6' 8 3/8"	6.72	208.39
	6' 7 1/2"	6.62	208.96
	6' 9"	6.75	209.53
St grade 217.50	6" 10"	7' 1"	7.08
S Line of Kalmia St	7' 5 1/2"	7.45	210.67
	7' 3"	7.25	211.13
Kalmia St	6' 11 3/4"	6.98	211.59
	7' 3 1/2"	7.29	212.04

Elev. on 2nd St Sewer

North of Juniper

Sta	+	HO	-	Elev	
		223.84			
11+92			4.11	219.73	219.74
B.M.			2.38	221.46	
12+17			3.66	220.18	
+42			3.19	220.65	
+67			2.05	221.79	
+92#	10.50	233.30	1.04	222.80	222.3
13+17			9.25	224.05	
+42			4.03	225.27	
+67			6.11	227.19	
+92			4.57	228.73	224.0
14+17			3.54	229.76	
+42			3.98	229.32	
+67			4.04	229.26	
+92			3.51	229.79	225.6
15+13			3.24	230.06	
+32			2.88	230.42	
B.M.			2.80	230.50	

Elev. at back of lots on W side at 1st St

	Cut	Grade
N Line of Kalmia	7' 2 1/4	7.23
		212.5
		213.46
	6' 8 3/4	6.78
		214.42
	6' 2 3/4	6.23
		215.37
	6' 5"	6.42
		216.33
	6' 5 3/4	6.47
		217.29
	6' 9 1/4	6.76
		218.25
	7' 1/4	7.07
		219.21
	7' 11 1/4	7.98
		220.17
	8' 6 3/4	8.56
		221.13
	8' 7 1/2	8.63
		222.08
	5' 6"	7.24
		223.04
St grade	229.50	6' 2 1/4
		6.22
S Line of Laurel St	5' 9 1/2	5.79
		224.0
Laurel St		
Laurel & 2nd St		

Blv on 2nd St Sewer

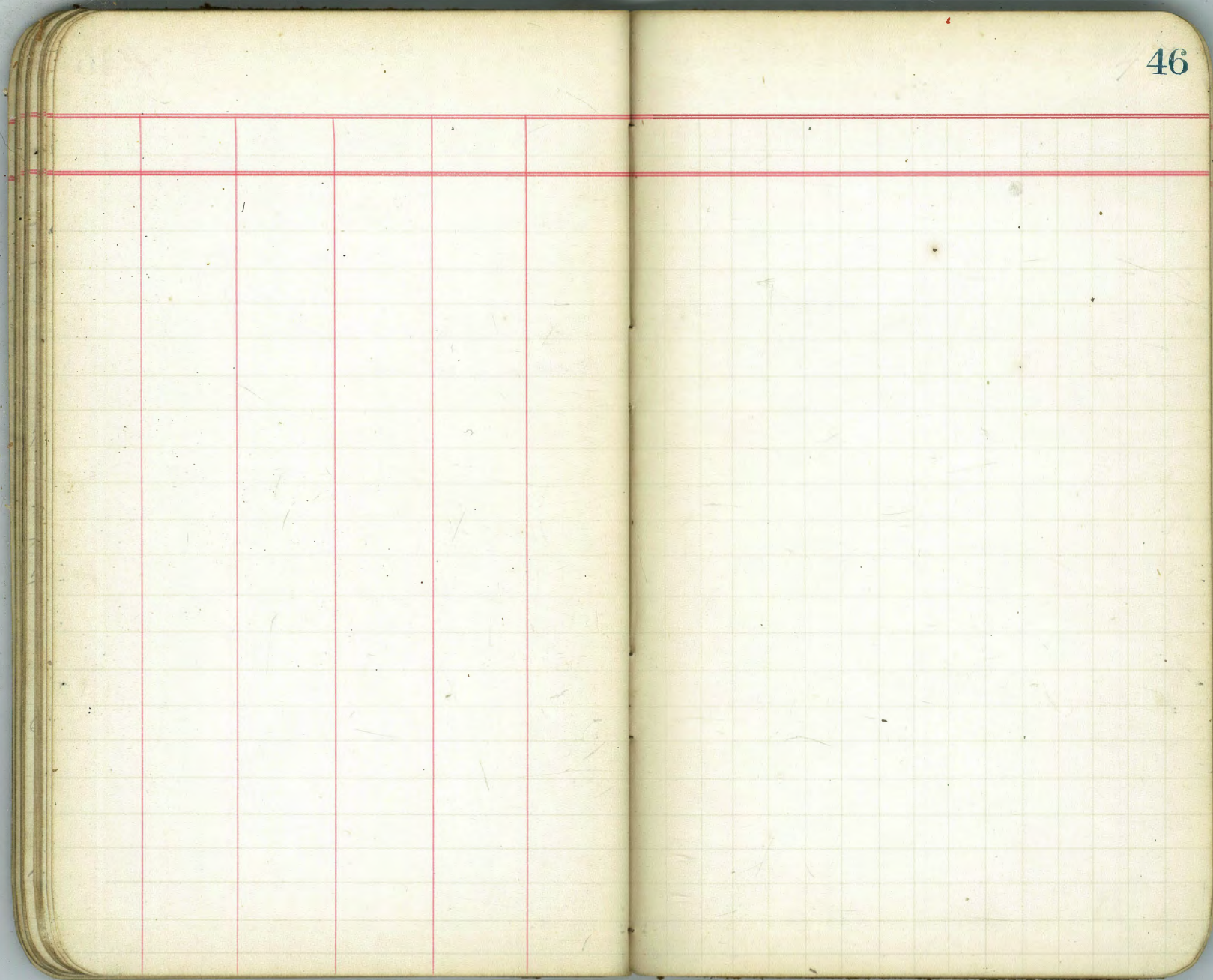
North of Juniper

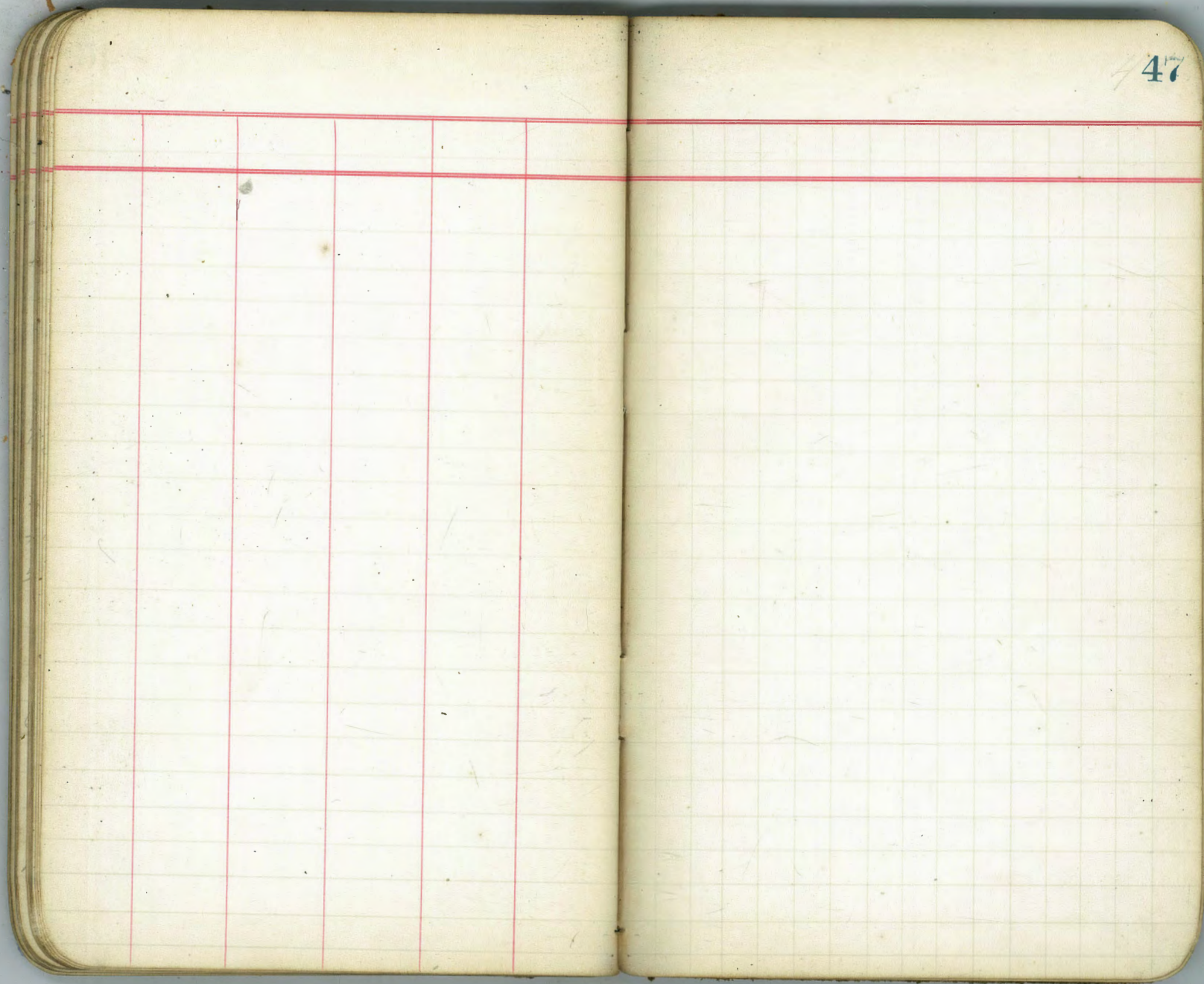
45

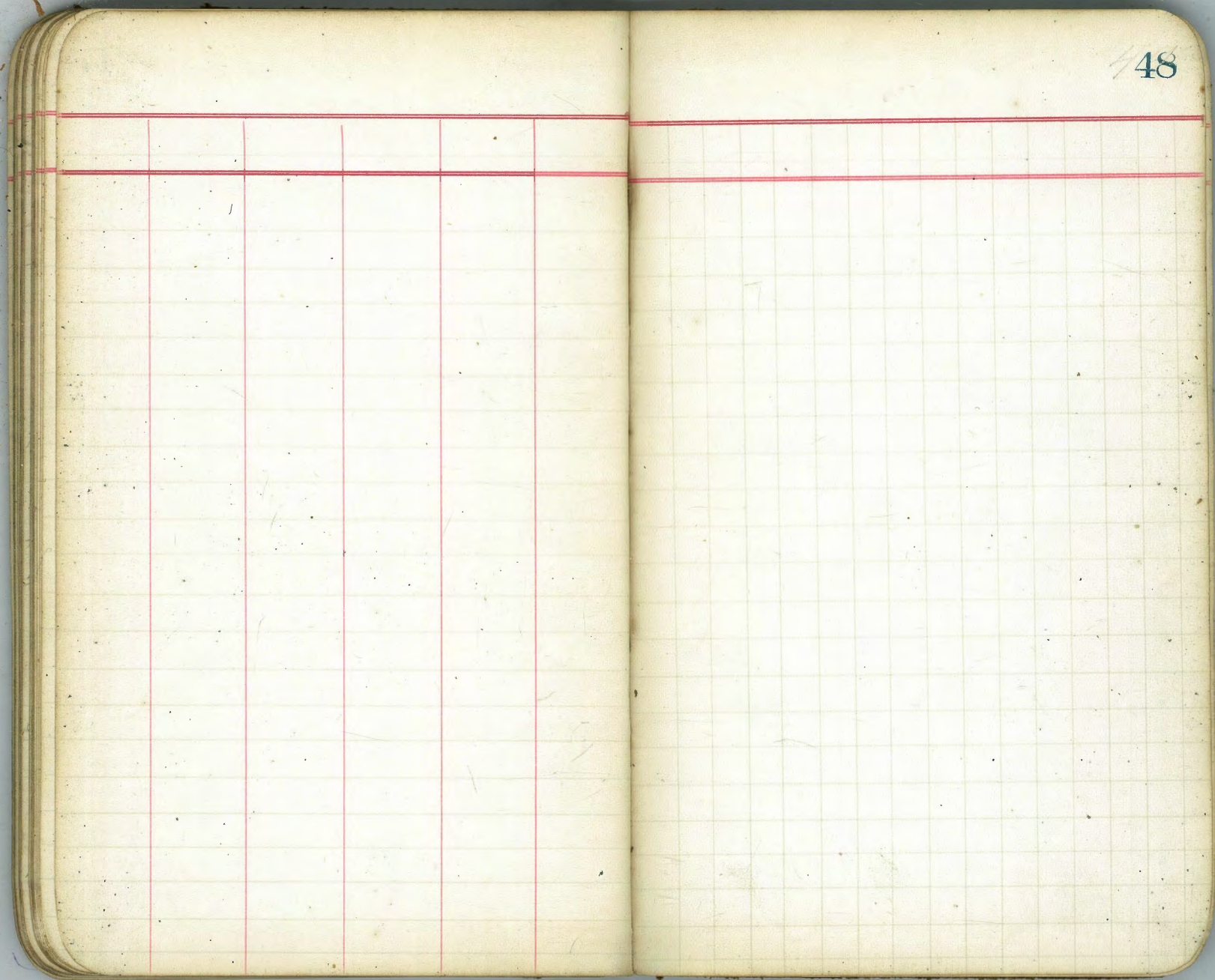
Sta	+	H ₀	Grade	rod	
B.M.	3.76	225.21			221.45
	3.76		217.50	7.71	
#	10.18	234.56	0.75	224.46	
			229.50	5.06	
B.M.			4.06	230.50	230.495

Kalvinia & 2nd St
 Inspection end & Kalvinia

Fresh tank series of Sewer
 2nd and Sewer







220.18

215.46

8.72

220.18

215.46

8.72

Trestle on Hawthorn

St. East of 1st St.

Sta Elev Grade Lat

Sta	Elev	Grade	Lat
2 + 34		159.20	
+ 54		159.32	
+ 74		159.44	
+ 94		159.55	
3 + 14	158.42	159.67	1.25
+ 24		159.73	

B. T.

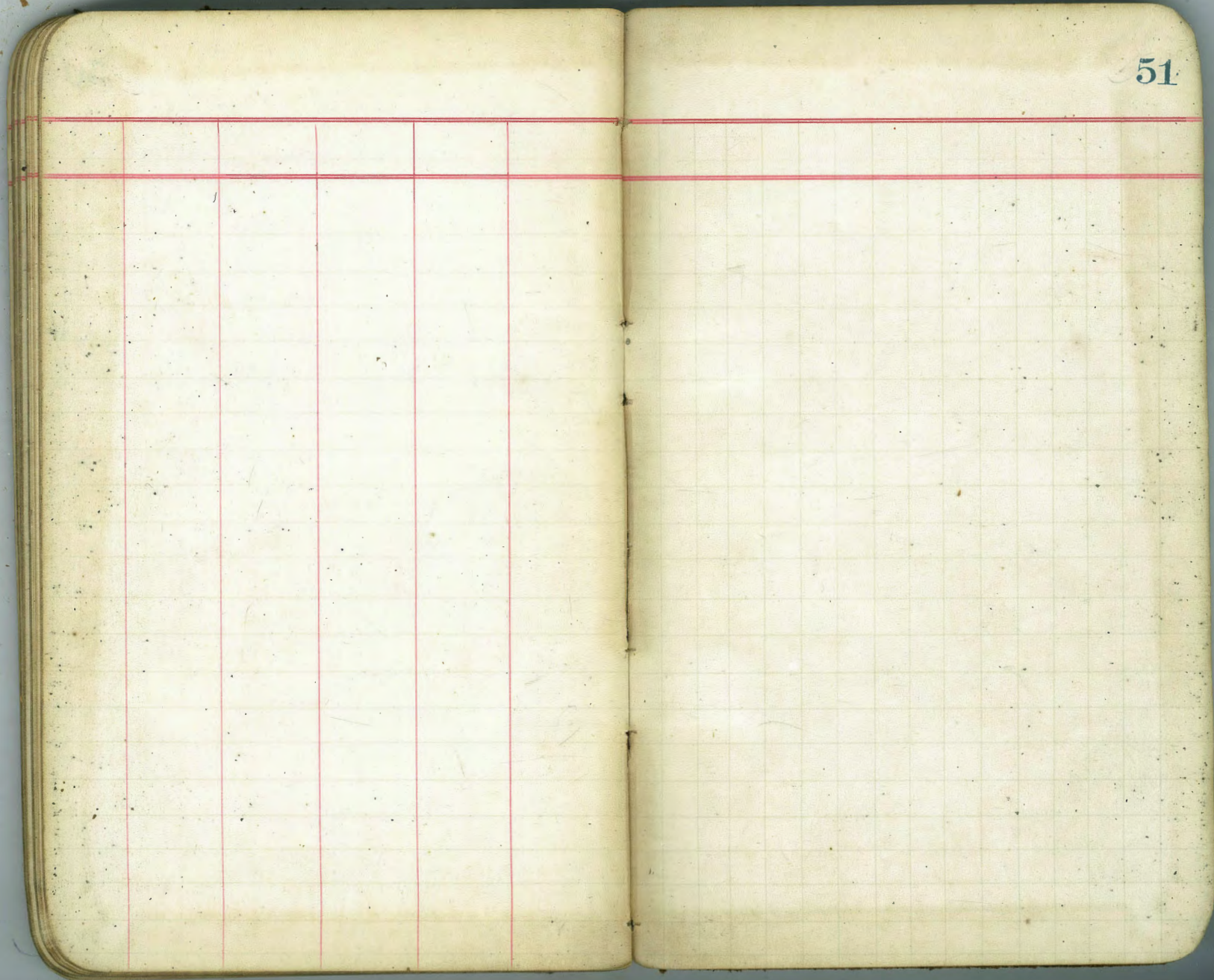
Bent 1

" 2

" 3

" 4

8 7



State	No 1	3.00
"	" 23	20.50
	26+75	99.00
	30+50	30.50

Diary

84
83
82
81
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12.8105
 11.92
 .895

 217.0
 9.6
 207.4

 16.025
 4.967
 0.5

 223.4
 1.5
 222.3

 223.4
 6.4
 217.0

 233.3
 7.7
 225.6

 233.0
 9.3
 224.0

 225.21
 4.10
 218.11

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	89
2	99.94	3.49	99.92	3.93	99.91	4.36	99.88	4.80	89
3	99.86	5.23	99.84	5.67	99.81	6.10	99.79	6.54	89
4	99.76	6.98	99.73	7.41	99.69	7.85	99.66	8.28	89
5	99.62	8.72	99.58	9.15	99.54	9.58	99.50	10.02	89
6	99.45	10.45	99.41	10.89	99.36	11.32	99.31	11.75	89
7	99.25	12.19	99.20	12.62	99.14	13.05	99.09	13.49	89
8	99.03	13.92	98.97	14.35	98.90	14.78	98.84	15.21	89
9	98.77	15.64	98.70	16.07	98.63	16.50	98.56	16.93	89
10	98.48	17.36	98.40	17.79	98.33	18.22	98.25	18.65	89
11	98.16	19.08	98.08	19.51	97.99	19.94	97.90	20.36	89
12	97.81	20.79	97.72	21.23	97.63	21.64	97.53	22.07	89
13	97.44	22.50	97.34	22.93	97.24	23.34	97.13	23.77	89
14	97.05	24.19	96.92	24.62	96.81	25.04	96.70	25.46	89
15	96.59	25.88	96.48	26.30	96.36	26.72	96.25	27.14	89
16	96.13	27.06	96.00	27.98	95.88	28.40	95.76	28.82	89
17	95.63	28.24	95.50	29.65	95.37	30.07	95.24	30.49	89
18	95.11	30.90	94.97	31.32	94.83	31.73	94.69	32.14	89
19	94.55	32.56	94.41	32.97	94.26	33.38	94.12	33.79	89
20	93.97	34.20	93.82	34.61	93.67	35.02	93.51	35.43	89
21	93.36	35.84	93.20	36.24	93.04	36.65	92.88	37.06	89
22	92.72	37.46	92.55	37.86	92.39	38.27	92.22	38.67	89
23	92.05	39.07	91.88	39.47	91.71	39.87	91.53	40.27	89
24	91.35	40.67	91.18	41.07	91.00	41.47	90.81	41.87	89
25	90.63	42.26	90.45	42.66	90.26	43.05	90.07	43.44	89
26	89.88	43.84	89.69	44.23	89.49	44.62	89.30	45.01	89
27	89.10	45.40	88.90	45.79	88.70	46.17	88.50	46.56	89
28	88.29	46.95	88.09	47.33	87.88	47.72	87.67	48.10	89
29	87.46	48.48	87.25	48.86	87.04	49.24	86.82	49.62	89
30	86.60	50.00	86.38	50.38	86.16	50.75	85.94	51.13	89
31	85.72	51.50	85.49	51.88	85.26	52.25	85.04	52.62	89
32	84.80	52.99	84.57	53.36	84.34	53.73	84.10	54.10	89
33	83.87	54.46	83.63	54.83	83.39	55.19	83.15	55.56	89
34	82.90	55.92	82.66	56.28	82.41	56.64	82.16	57.00	89
35	81.92	57.36	81.66	57.71	81.41	58.07	81.16	58.42	89
36	80.90	58.78	80.64	59.13	80.39	59.48	80.13	59.83	89
37	79.86	60.18	79.60	60.55	79.34	60.88	79.07	61.22	89
38	78.80	61.57	78.53	61.91	78.26	62.25	77.99	62.59	89
39	77.71	62.93	77.44	63.27	77.16	63.61	76.88	63.94	89
40	76.60	64.28	76.32	64.61	76.04	64.94	75.76	65.28	89
41	75.47	65.61	75.18	65.93	74.90	66.26	74.61	66.59	89
42	74.31	66.91	74.02	67.24	73.73	67.56	73.43	67.88	89
43	73.14	68.20	72.84	68.52	72.54	68.84	72.24	69.15	89
44	71.93	69.47	71.63	69.78	71.33	70.09	71.02	70.40	89
45	70.71	70.71							89
Degrees.	DEGREES.		¼ DEGREE.		¼ DEGREE.		¼ DEGREE.		Degrees.
	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	

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