

French Dictionary

See List

23

404

W53



H. S. CROCKER COMPANY

DRAWING MATERIALS AND
SURVEYING INSTRUMENTS

SAN FRANCISCO

TABLES FOR EXCAVATIONS AND EMBANKMENTS

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING

Roadway 18 Feet Wide. Side Slopes 1 to 1.

For Single Track Excavation.

"Copyright, 1895, by Kueffel & Esser Co."

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

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JAN 6 1985

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

FROM
Loring's Book Store

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Elevations on 3 Old stakes
probably indicating crest of dam

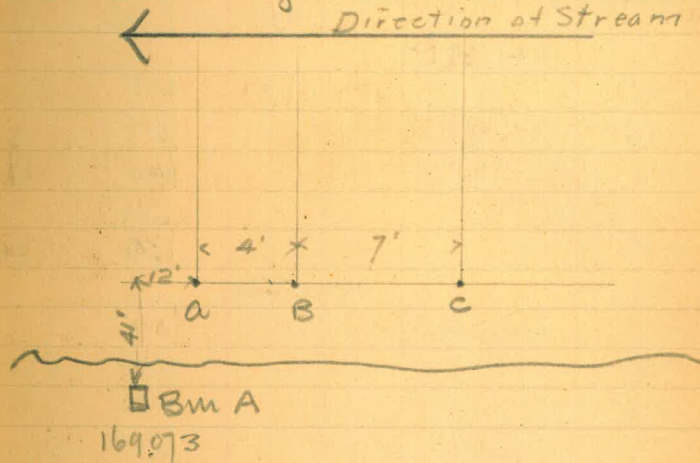
Bm A	0.75	169.82	169.07	
	0.19	158.58	11.43	158.39
C			8.40	150.18
a			8.36	150.22
B			8.42	150.16

Elevation on Old Bm and
slope of Tunnel Exit.

Bm I	8.03	34.08	26.05	
			7.48	26.60
			5.30	28.78
			5.23	28.85
			4.87	29.21
			5.23	28.85

June 21st 09
West C
Salsbury

as once surveyed on south side
← Direction of Stream



= Old Bm. with top slightly broken
marked 27.10 on same rock with on
Bm I and 75' from Tunnel Exit.

} Survey pts between angle pt & portal

near angle point.

3

Wood-tram-way Location
South Side

BMS			9721	
	649	103.69		
S + 75			613	97.56
+ 50			607	.62
+ 75			601	.68
1			594	.75
+ 75			588	.81
0				
	629	109.28	070	102.99
+ 50			1141	97.87
+ 75			1135	.93
2			1128	98.00
+ 75			1122	.06
+ 50			1116	.12
+ 75			1110	.18
3			1103	.25
+ 75			1097	.31
+ 50			1091	.37
+ 75			1085	.43
4			1078	.50
+ 75			1072	.56
+ 50			1066	.62
+ 75			1060	.68
5			1053	.75
0				
	714	102.46	896	100.32

June 21st 09Wueste
Salsbury
Driscoll

at Pauli shop

} Straddling behind big rock (cut 1.8)

	102.46			
5 + 75			365	98.81 = Road King
+ 50			359	97
+ 75			353	93
6			346	99.00
+ 55			340	86
+ 50			334	12
+ 75			328	18
7			321	25
0		372	99.24	
	439	103.63		
+ 75			432	99.31
+ 50			426	37
+ 75			420	43
8			413	50
+ 75			407	56
+ 50			401	62

848 110.52

159 102.04

499 105.53 ✓

(1055)

= make rock left on preliminary line

5 Revised Wood Tramway Location

June 22, 09

Wueste
Salsbury
Espinoza

BMS					
	7.70	104.91	97.21		
	6.03	109.83	191	103.00	
1	+25			11.22	97.81
	+50			10.72	
	+75			10.22	
2				9.72	
	+25			9.22	
	+50			8.72	
	+75			8.22	
3				7.72	
	+25			7.22	
	+50			6.72	102.31
	+75			6.22	.81
4				5.72	103.31
	+25			3.4	105.6
	+50			3.22	105.81
			366	105.37	
	9.62	114.99			
5	+75			6.93	109.06
	0			6.68	108.31
	10.22	115.76	945	105.54	
	+50			6.20	109.56
	+75			4.95	110.81
	33.57		1502		

0.520 + 0.2510

20.90

+ 104.56 + 1.0

107.06 + 1.0
+ 50.054

on rock

6

6 +100
+25
+50
0

11576

3.70 112.06
2.45 113.31
1.20 114.56

231 11345

1152 12297

9.16 115.81
7.91 117.06
6.66 118.31
5.41 119.56
4.16 120.81

7

+25
+50
+75
0

342 121.55

1131 13286

10.80 122.06
9.55 123.21
8.30 124.46
7.05 125.71

8

+25
+50
+75

960 12376

226

14/31

+50.50

= pr on rock at 9+25

7 new set of construction Bms
 on rocky point about 350' east
 of Crest of Dam

8-25-09
 Wueste
 Simons

Bm B		173.05	
	2.72	175.77	
		6.14	169.63
	5.75	175.38	
		1.33	174.05
	1.32	175.37	
		11.63	163.74
	1.27	165.01	
		11.98	153.03
Bm	3.40	156.43	
			6.43 150.00
	0.75	150.75	
		11.72	139.03
Bm	2.58	141.61	
			11.61 130.00
	0.48	130.48	
		11.52	118.96
Bm	0.16	119.12	
			9.12 110.00
	1.26	111.06	
		11.42	99.84
Bm	0.53	100.37	
			10.37 90.00
	2.37	92.37	
		11.69	80.68
Bm	0.59	81.27	
			11.27 70.00
	23.18		

West of Open cut

77.43	173.65
48.80	103.65
12.625	70.00
75.19	
103.05	

Bin

108 71.08

1204 59.04

70⁰⁰

Bin

091 59.95

9.95

50⁰⁰

Bin P.

295 52.95

950

43.45

492

21.4

995

29

349

265

750

288

43.45

43605

On Rock about 50 East of Tunnel Entrance

9 Elevations on BM's

Superceding all others

Wueste
Simonds

Bm A				169.673
	089	170.56		
			1139	159.17
Bm c	101	160.18		
	117	150.67		1068 149.50
			1209	138.59
Bm D	080	139.38		
	111	132.35		814 131.24
			1110	121.25
Bm E	209	123.34		
	037	114.73		898 114.36
			1083	103.90
Bm S'	260	106.50		
	165	101.90		675 100.75
			1162	90.28
	237	92.65		
			1103	81.62
	062	82.24		
			1193	70.31
	204	72.35		
			1202	60.33
	175	61.58		
			1102	50.56
	1797		103.03	34.06 ✓

			50.56		
Bm P.	062	51.18		7.57	43.61
	8.76	52.37			
Bm				2.37	50.00
	10.40	60.40			
			120	59.20	
Bm	11.71	70.91		0.91	70.00
	11.90	81.90			
			2.79	79.11	
Bm	11.77	90.88		0.88	90.00
	10.76	100.76			
			0.16	100.60	
Bm	10.85	111.45		1.45	110.00
	11.08	121.08			
			0.43	120.65	
Bm	11.29	131.94		1.94	130.00
	12.07	142.07			
			0.78	141.29	
Bm	9.95	151.24		1.24	150.00
	12.16		5.36	16.36	

Bm

150.2

Bm K

1041 160.41

727

153.14

1177 164.91

0.13 164.78

Bm B

1076 175.54

242

173.12

026 173.38

1170 161.68

191 163.59

1135 152.24

124 153.48

1034 143.14

027 143.41

1060 132.81

073 133.04

1702 121.02

012 121.14

1051 110.63

051 111.14

1129 99.65

127 100.92

1051 90.41

001 90.42

38.76

88.65

964

	90.42			
	092 81.12	10.22	80.20	
	013 69.23	12.02	69.10	
	071 58.22	11.72	57.51	
	175 47.26	12.21	46.01	
	003 35.00	12.39	34.97	
		12.10	22.90	
654 72.66	144 24.34			
	206 16.01	10.39	13.95	
Bm J				11.71 4.30
	1207 16.37			
		083	15.54	
Bm I	1172 27.26			073 76.53
	941 35.94			
		090	35.04	
Bm H'	1099 46.03			
	1138 57.25			016 45.87
		072	56.53	

			5653		
Bm G	931	6584		399	6195
	1150	7335			
			630	73.05	
	1179	84.34			
			732	82.02	
Bm F	1096	92.98		275	90.28
	937	99.60			
			084	98.76	
Bm S'	404	102.80		288	100.22

14 Elevations of Reference Points
on face wall of dam on 70 foot line

Bm 7000	651	7651			82	7000
			312	7339		62
RP 3	393	7732	805	6927	57	90
RP 2	246	7173	1655	70075	121	50
RP 1	151	71585	067	70915	50	50
	156	72475	5285	6719	64	110
	510.	7229	382	6847	120	40
Bm 7000	808	7655	6545	70005	10	80
					514	532
	29.15	29.145				

July 10th 1910

Wm. S. Smiley

Transfer of elevation of B.M. S' to iron pin on 70' line

B.M. S'

100.25

3.735 | 103.975

Iron pin

3.475

100.51Aug. 24th 1910

Wm. B. Barber

Copies.

Levels over Reference Points 2/3

(See page 14)

Sept 5th 1910.Wheat
Hubbard

Bm 7000

652 7652
632 70207000
From Elev

R.P. #3

357 7377
453 6924

R.P. #2

381 7305
303 7002

R.P. #3

296 7298
374 69244635 73875
368 70195

Bm 7000

6095 7627
628 6999~~27.57~~~~27.58~~

Note: No 1 has been covered by installation
of wooden concrete hoist up face of cam.

17 copied

Levels over Ref Pts 12, 13

Bm 70⁰⁰

679 7679

447 7182

70⁰⁰

RP # 3

167 7344

425 6924

6927

184 7108

Bm # 4

1014

6094

3

1008

6100

2

1035

6073

1

1026

6082

RP # 2

3065 7306

1085 6995

70075

RP # 1

458 7385

3825 69235

70915

494 7675

2055 7181

676 6999 ✓

Bm 70⁰⁰

22885

22895

See page 14

Nov 20th 1910

Wrest
Bustard.

18 copied

Height of concrete in plugs of bays 12345

163 72.55

70.92

506

67.49

599

66.56

515

67.40

483

67.72

555

67.00

Feb 18th West, Shanky

19

Levels for Piers for Bridge
Outlet Tower to Bank.March 22nd 1911

Wueste, Paul Maake

102.50 = Top of planking part of post

Bm				10025	
	455	10480			
			1142	9288	
	137	9428			
Ctr Bent #2 R+Pier			1037	<u>8388</u>	8274
S+Pier					8422
	334	8722			
			1063	7659	
	199	7858			
Ctr Bent #1 R+Pier			790	<u>7068</u>	6773
L+Pier					6938

4⁵/₂" out from Ctr4³/₂" " " "

6'4" " " "

6'1¹/₂" " " "

20

Levels for concrete of Bay #2

319 10344

10025

2.69

10075

x

349 7348

6999

2.73

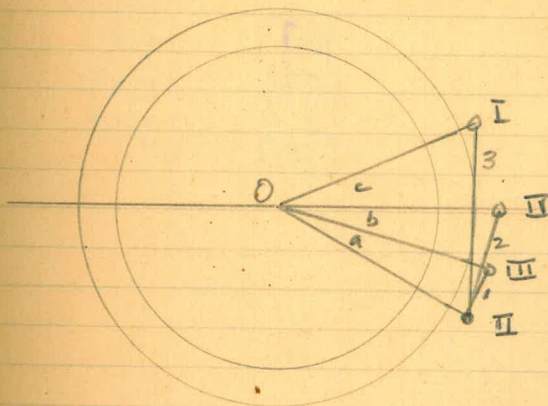
7075

Feb 23rd 1911
Wester Piche

Angular Measurements on Outlet Tower

Wuest, Paul Maik Mar 22

1911.



Distance O-I, O-II, O-III, O-IV = 896'

Distance II-III = 265'

III-IV = 5.11'

IV-I = 10.33'

Angle 1 = 17°00'

2 = 33°08'

3 = 20°24'

Angle a = 17°00'

b = 16°08'

c = 37°16'

Approx levels on RPs Mar 22 1911

		original	
#1	7087	70.915	0045
#2	6999	70.075	0085
#3	6973	69.27	004

150" and 155" levels in Lopez quarry

410 154.10

150.00

1172 155.75

1007 144.03

1027 48

1051 154.52

144.03

452

mud, Kusbant

Sevils on Reference Points on

436 104.61

415 100.46

247 102.93

461 105.24

499 100.25 ✓

100.25

410 100.51

429 100.32

540 99.21

262 100.31

238 100.55

230 100.63

100'

line

= BM

= Pin on 70' line

= RP # 1 on 100' line

= RP # 2 - - -

= RP # 3 - - -

= RP # 4 on 100' line Note: This hole is 1' west of line

= RP # 5 - - -

= RP # 8 - - -

= BM

Wm. H. Hubbard

4-22-11

Levels on bottoms of
holes for piers for Bridge to Tower

	422 10447	100.25	
	937 95.10		
	233 9743	925 88.18	
	108 8926	1016 79.10	
Rt Pier Bent #2 (Bottom hole)	439 8349	724	
Lt Pier Bent #2 (Bottom hole)		776	
Rt Pier Bent #2 (Top concrete)		094 82.55	
Lt Pier Bent #2 (Top concrete)		010 83.39	
	1047 73.02		
	072 7374		
Lt Pier Bent #1 (Bottom hole)		840 65.34	

Apr 28th 1911

Wm. S. Swenson

	R+	L+
	102.50	102.50
	12.55	83.39
Bent #2	819.95	819.11
	2.49	2.39
	2.00	2.00
	4.49	4.39
	4'5 ⁷ / ₈ "	4'4 ⁵ / ₈ "

Bent #1

$\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

73.74

Rt Pier
Bent #1

(Top concrete)

388 69.86

Rt Pier
Bent #1

[Bottom hole (Top rock)]

590 67.84

Rt Pier
Bent #1

(Top concrete)

322 70.52

110 72.64 ✓

L
10446
6986
34.60R
10446
7052
33.9410446
8339
210710446
8255
2191

= top of gauge at tower

26

1911

May 1st ²des of Bracket on

561 10576

10025

164 10422

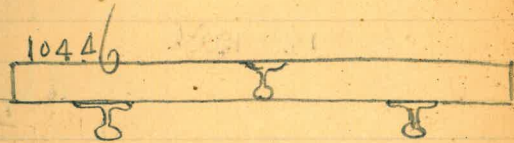


town for bridge

Hubbard
West

Bm

top of rails



Levels for Elev of top of 24" pipe

1142	111.67	10025
1016	121.05	078 110.89
		238 118.67

21.58	316
316	
18.42	

May 10th 1911

Wrestle
Swenson

127.50
8.96
118.54
118.67
0.13

cut pipe 7'0"

Levels for elev of tops of concrete piers

082 74.70

6.27 78.43

518 79.52

11.55 73.15

1.13 74.28

7.37 66.91

3.59 70.69 (7068)

1.65 72.63 ✓

67.84

on which 4" pipe posts will rest.

= Ctr hub Bent #2 see page 19.

= concrete Bent #2 R+ Pier

W Pier

concrete Bent #1, W Pier

ctr hub Bent #1

= top of water gauge = 72.64

= top of rock Bent #1 R+ Pier (page 25)

10422

78.43

25.79

10422

79.52

24.70

10422

66.91

37.31

10422

67.84

36.38

Aug 21 21 21 21 20

29

Back slope of Dam

462 100.87

100.25

0

534 99.53

611 105.64

0.64

A

6.20

99.94
67

B M

6.89 156.88

150.00

West Hubbard

= Bm

Seeds on 100' line Ref. Its

Apr 22

Bm	451	104.76		100.25
RP #1			445	100.315 100.32
RP #2			556	99.20 99.21
RP #3	236	102.81	431	100.45 100.46
RP #4			253	100.28 100.31
RP #5			228	100.53 100.55
RP #8			218	100.63 100.65
0			375	99.06
	540	104.6		
Bm			422	100.24 ✓

Disturbance
see page 23

Movement
towards
west

May 13th 1911.

Wright
Hubbard

0.005

$$\frac{3}{32}$$

0.01

$$\frac{2}{32}$$

0.01

$$\frac{5}{32}$$

0.03

$$\frac{10}{32}$$

0.02

$$\frac{8}{32}$$

0.00

$$\frac{0}{32}$$

Note: This hub is 1" west
of line

Levels on 70' line Ref Pts.

July 10th
1910total
settlement
per page 14Wm. Hubbard
May 13 1911

BM	169	7169		7000	
RP #3			245	69.295	6929
RP #2			174	69.95	7007
0			365	68.04	
RP #1	497	7301	216	70.85	7095

0.075

0.125

0.065

059 7262 (7264)

= trip gauge at tower

7303

32

May 31st 1911 West of Pikeston
 levels for Crusher Engine Foundation

#1.

#2

#3

#4

#5

#6

Top of concrete
 above bottom
 of holes

Length of pipe
 above top
 of holes

31 $\frac{1}{2}$ "23 $\frac{1}{2}$ 36 $\frac{5}{8}$ "

27

30 $\frac{3}{8}$ "23 $\frac{1}{2}$ 32 $\frac{1}{4}$ "22 $\frac{1}{8}$ 27 $\frac{5}{8}$ "

21

27 $\frac{1}{8}$ "18 $\frac{1}{2}$ 

Length of
 bolts =
 column #1
 x 4"

35 $\frac{1}{2}$ 40 $\frac{5}{8}$ 34 $\frac{7}{8}$ 36 $\frac{1}{4}$ 33 $\frac{5}{8}$ 31 $\frac{1}{8}$

Pm

587 10639

10051

061 105.77

1162 11741

082 116.59

361 12020

045

119.75

Levels a x-sections of Spillway

745 15715 150.00

Sta. 0+80

Sta
32' h+ 2.2
37' h+ 2.7
60' h+ 11.2

Sta 1+00

Sta
32' h+ 2.6
33' h+ 1.8
60' h+ 13.2

67.6 62.35 156 55.59

Sta 1+25

Sta
50' h+ 5.8
55' h+ 7.8
60' h+ 17.3

Sta 1+50

Sta
56' h+ 1.7
60' h+ 7.9
17.3

November 17th 1911.

Wright Smith
Hubbard

162.35

sta
60' L+

sta 1+75

32

10.0

sta
60' L+

sta 2+00

36

14.6

sta
60' L+

sta 2+25

40

17.3

sta
60' L+

sta 2+50

17.2

19.4

sta
76' L+

sta 2+75

162

47' L+

20.0

16.0

64' L+

20.0

0

0.37 161.98

11.64 173.62

sta

sta 3+00

39

sta
8' L+

sta 3+40

9.7

0

89.5 181.48

1.09 172.53

16.0

181.48

42' Lt

sta 3+00

12.1

11' Lt
23' Lt

sta 3+25

6.3

5.4

13' Lt
25' Lt

sta 3+40

6.3

6.9

sta

sta 3+73

2' above H.S.

→

3.90	163.49	9.6	153.83	159.99
0.17	154.00			

67' Lt

sta 3+00

6.6

67' Lt

sta 3+25

6.7

70' Lt

sta 3+40

7.6

67' Lt

sta 3+73

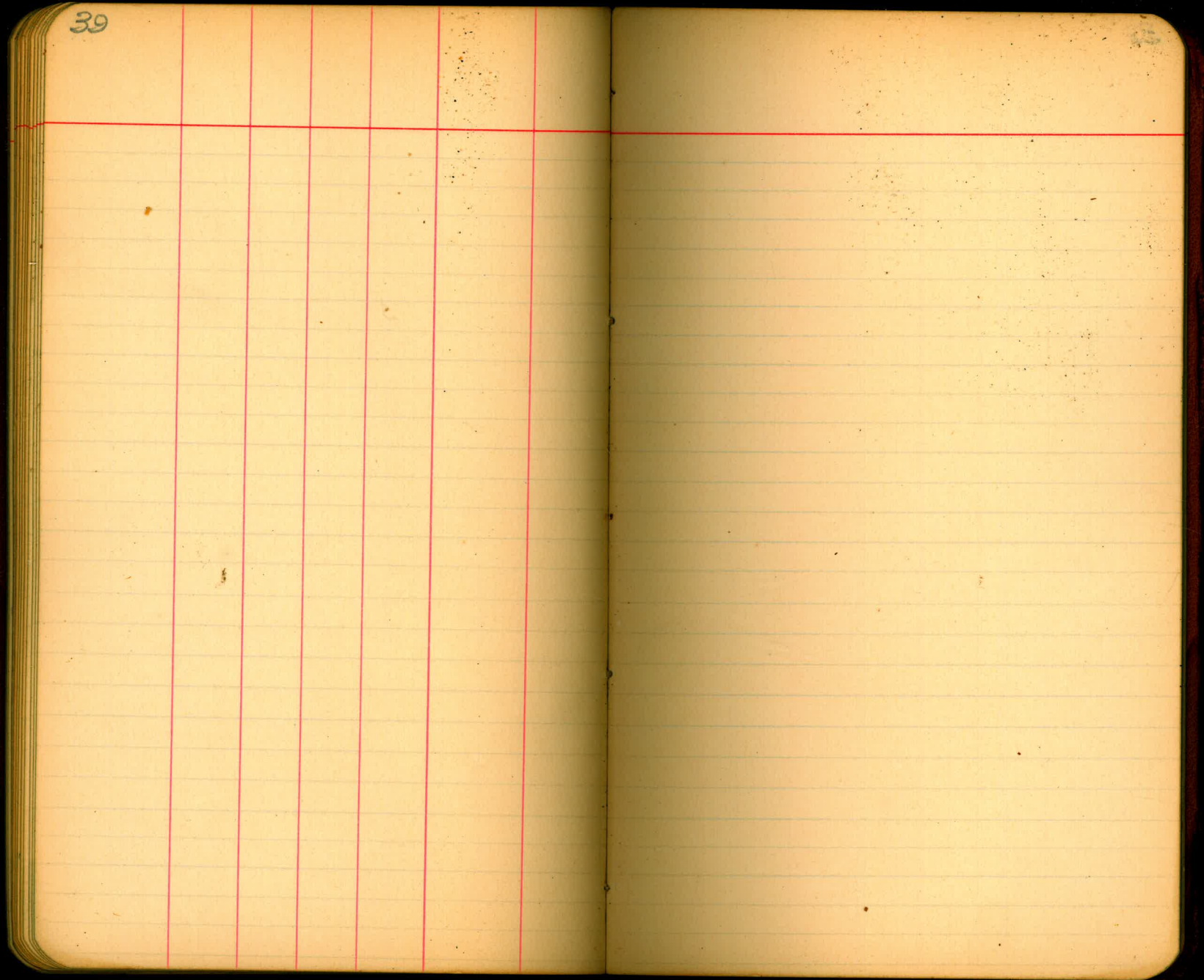
12.0

sta

sta 4+53

12.0

38



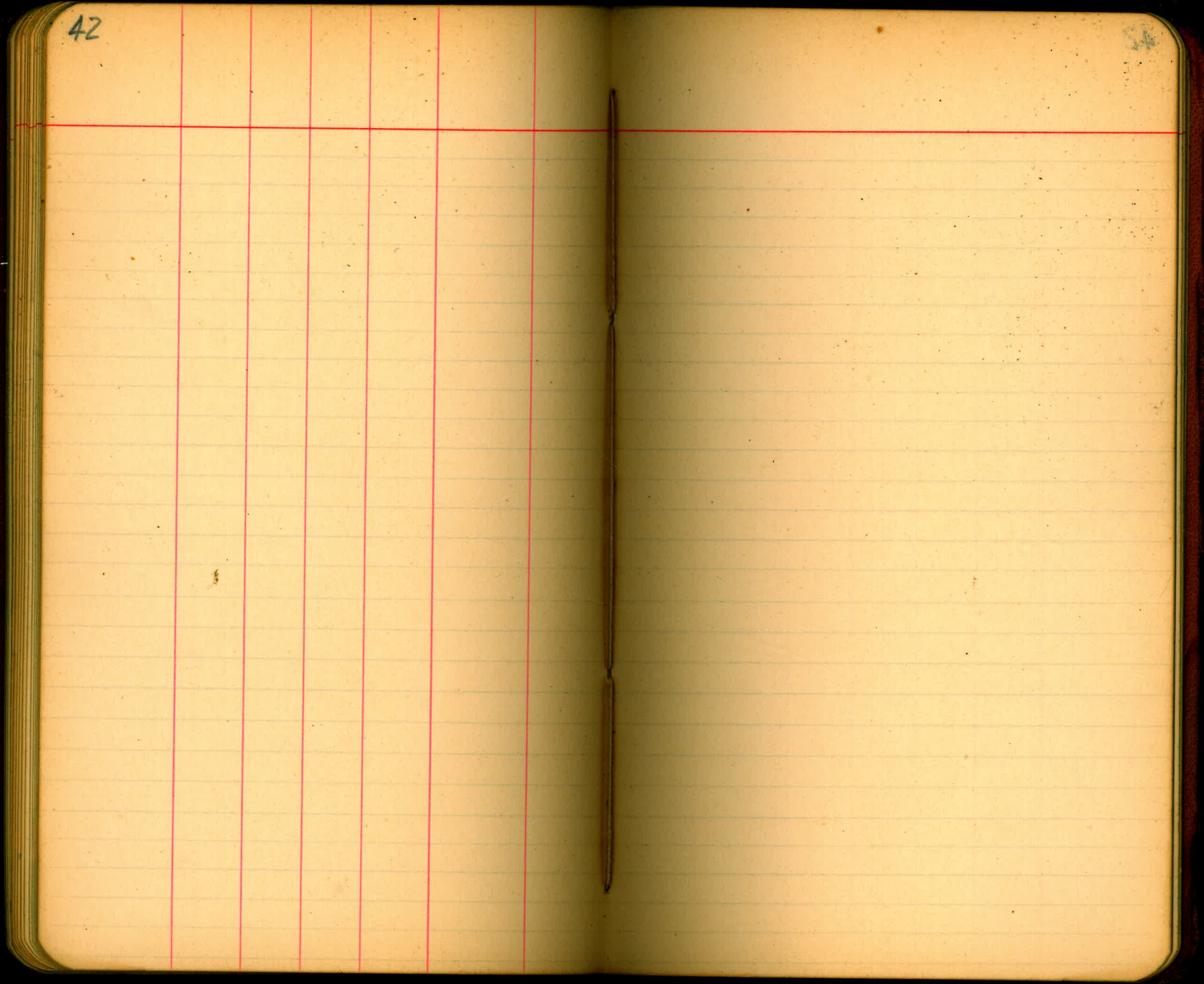
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41

41

42

42



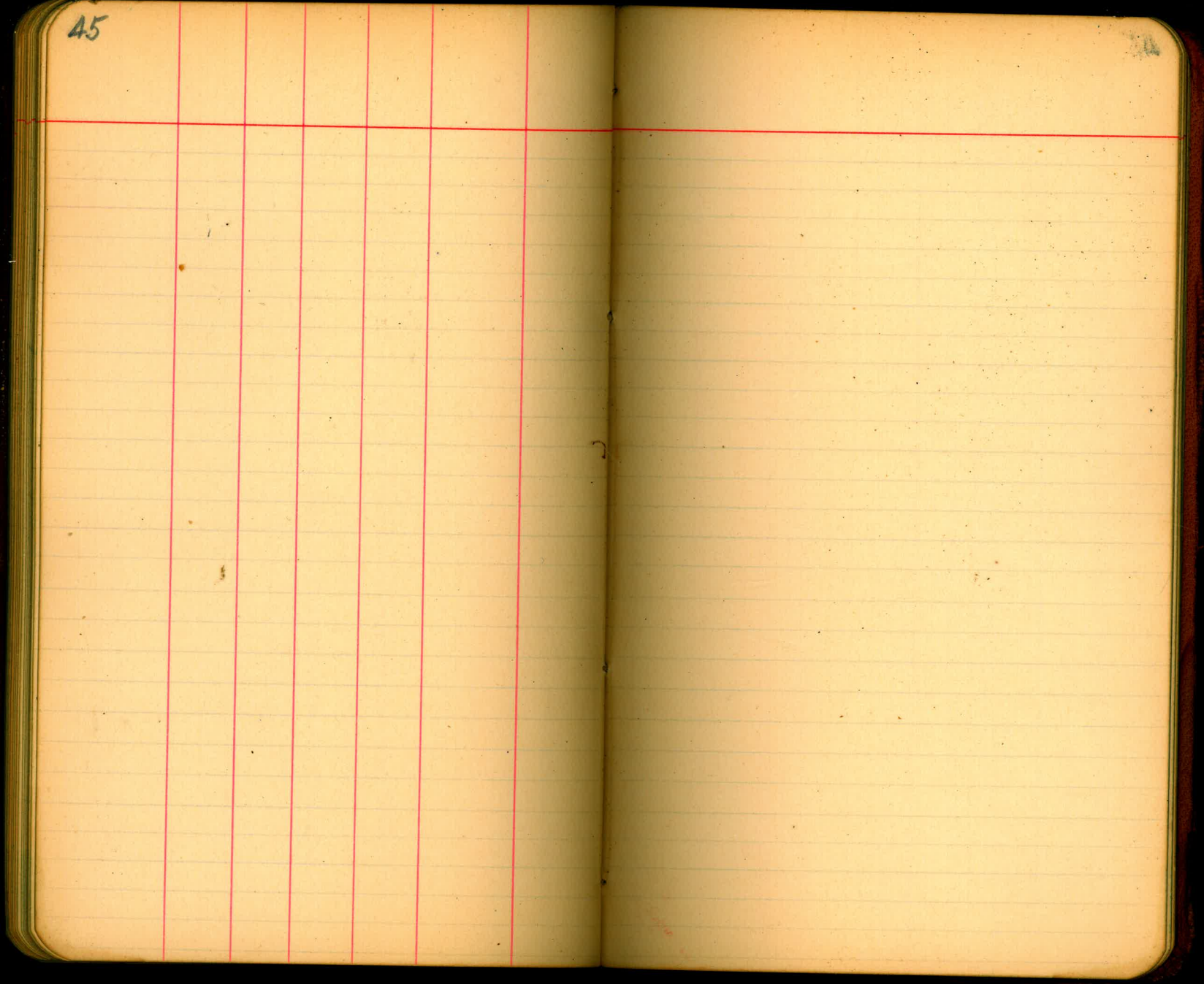
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84

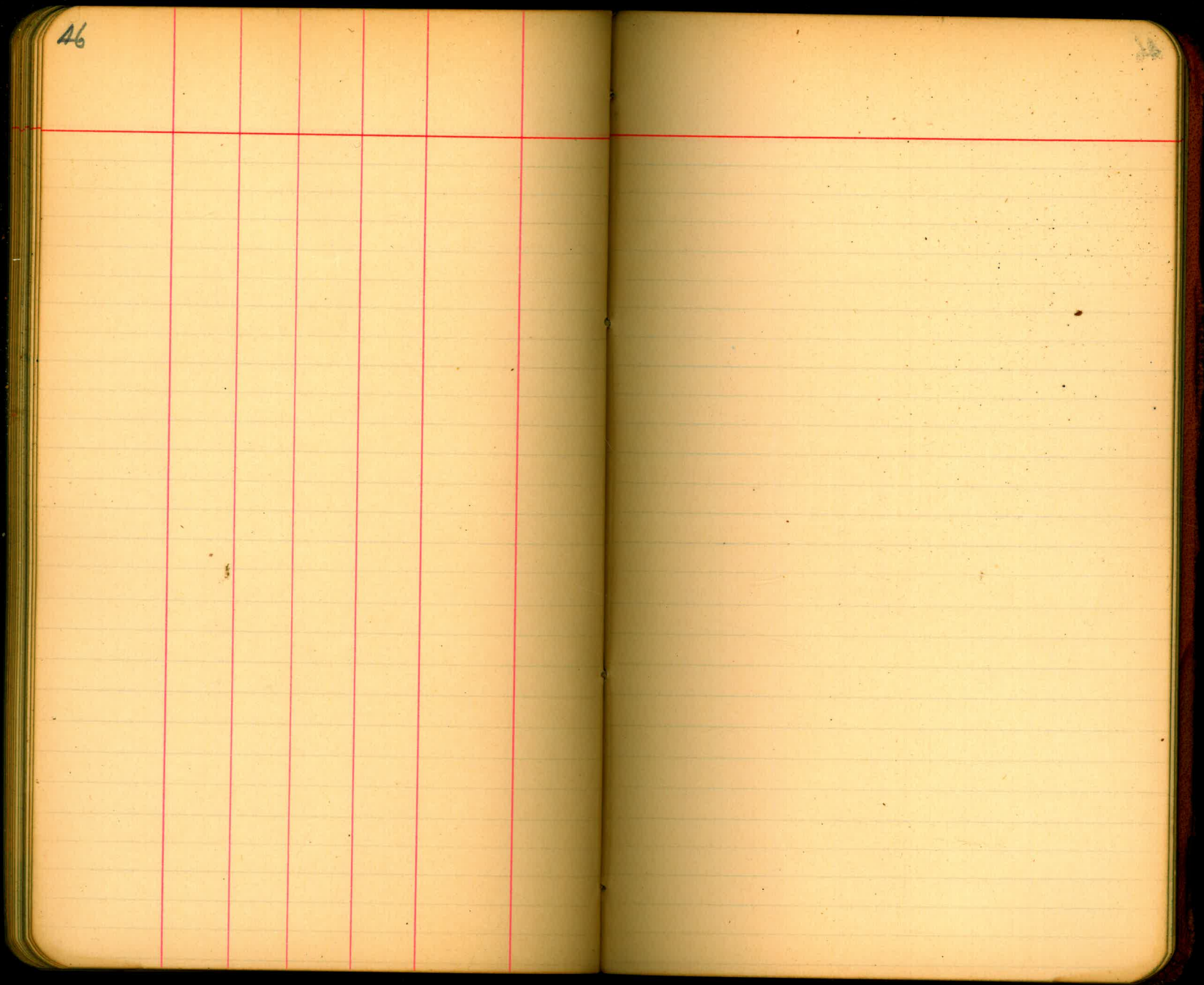
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44

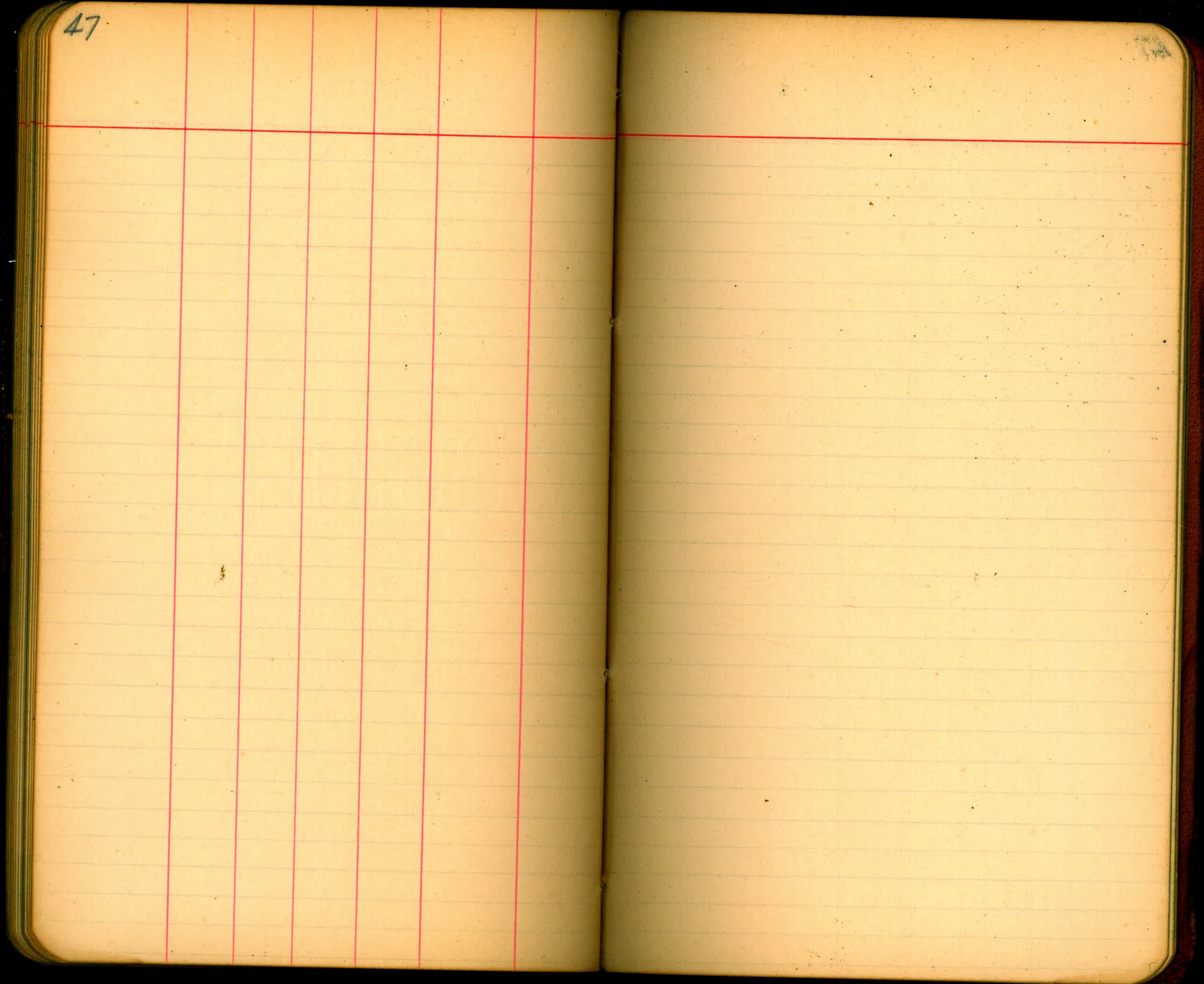
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46



47

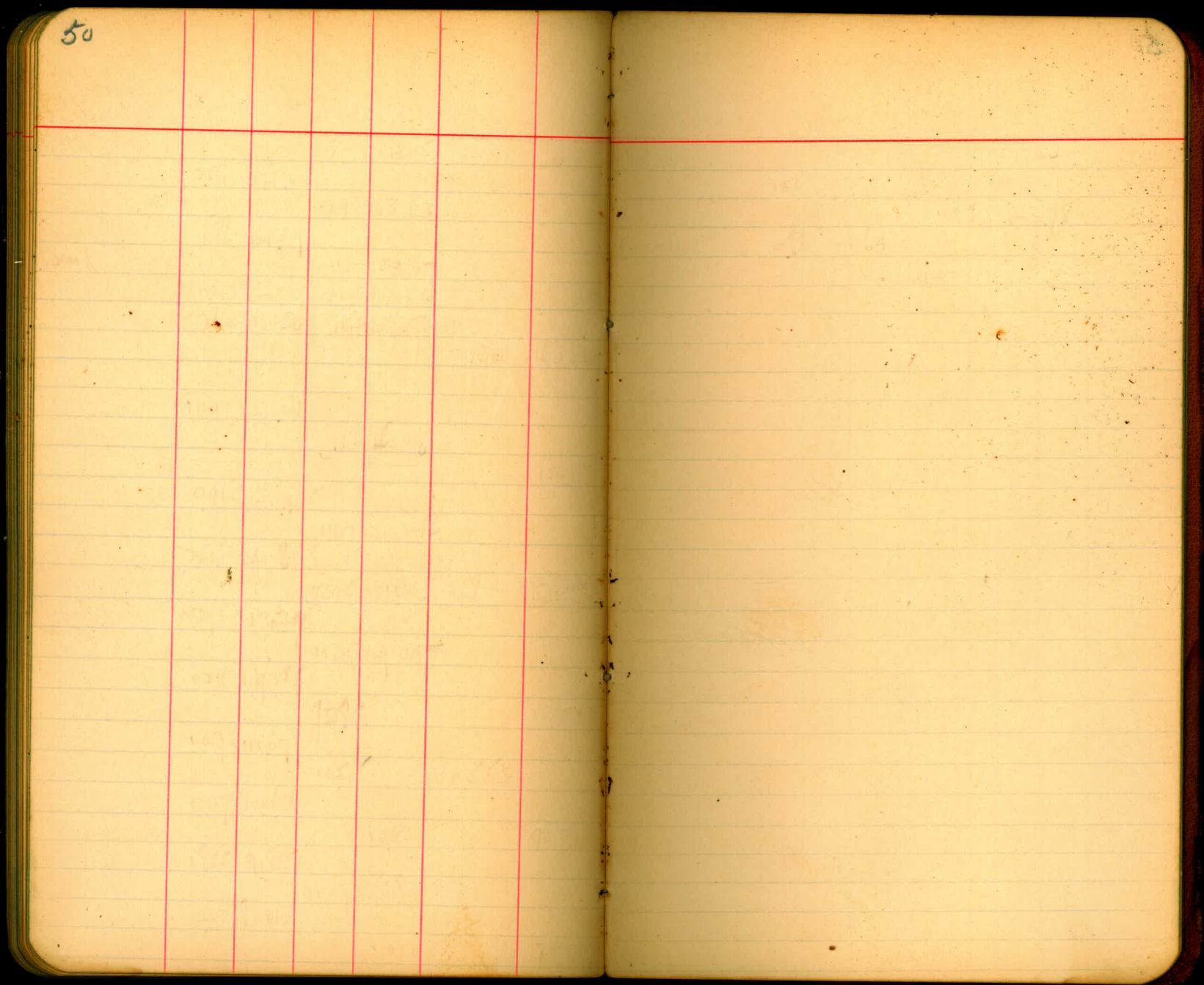


48

48

49

50



10/15 7/10

21

28

35

42

49

56

63

70

77

84

91

98

105

112

119

126

133

140

147

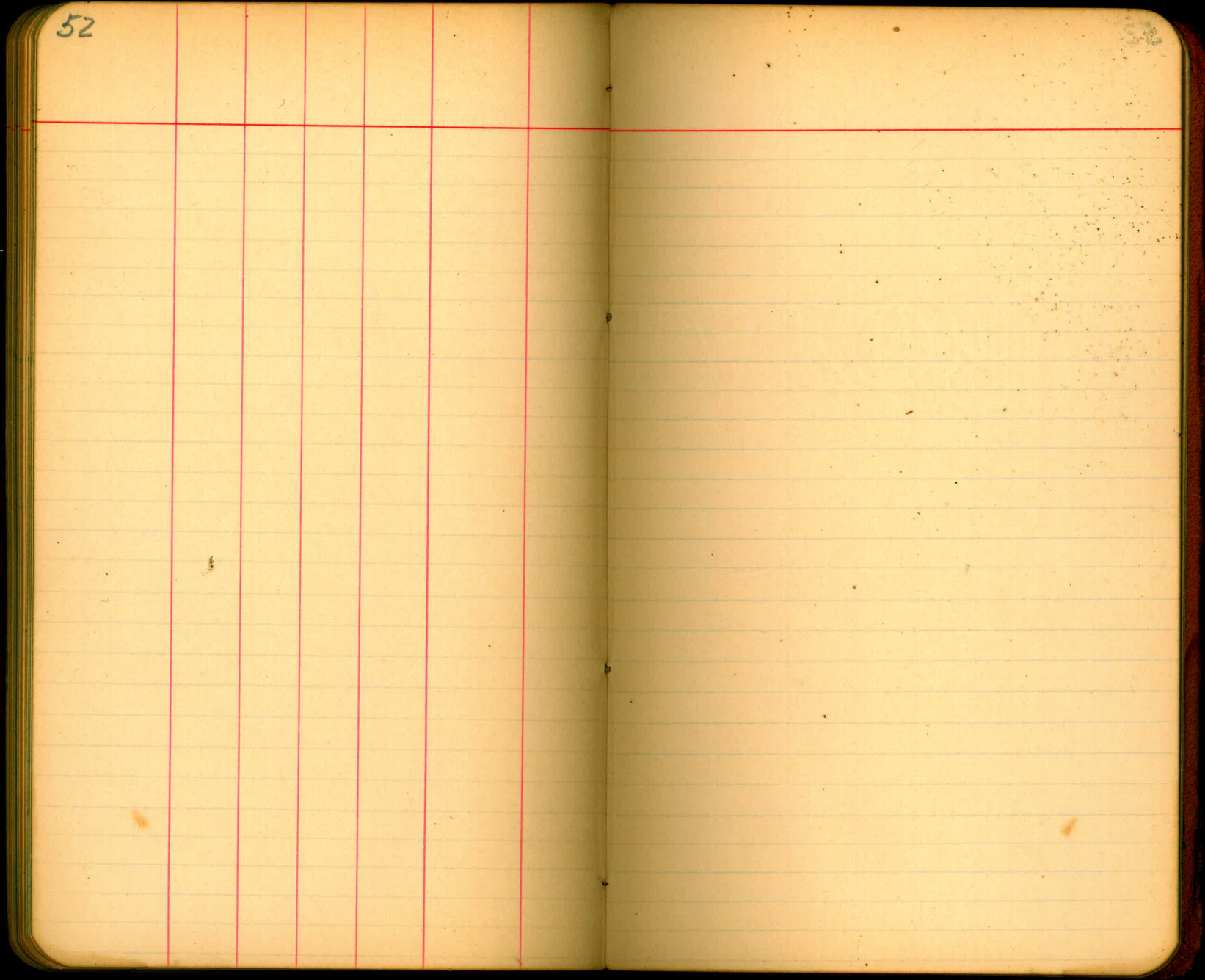
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161

168

175

52



53

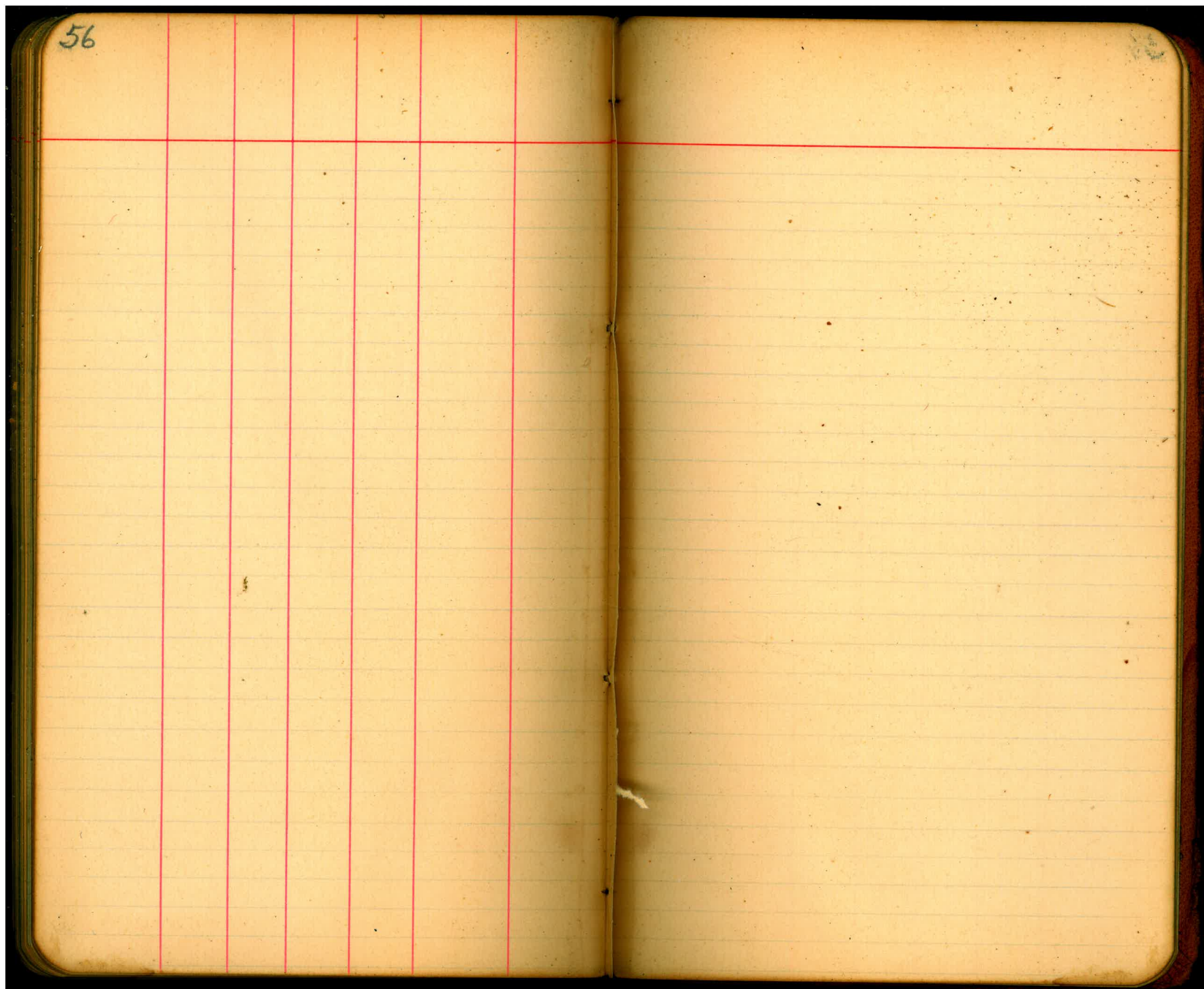
54

53

55

56

56



58

59

Bm

A
C
D
E
F
G
H
I
J
K
S

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

B
K
L
M
N
O
P
Q

25
26
27
28
29
30
31

45.3

29.5

16.8

31°14'

32

37.7

55°45' W

156

24
37.3

346

w

336

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

FOR SINGLE TRACK EMBANKMENT.

ROADWAY 14 FEET WIDE. SIDE SLOPES 1 1/2 TO 1.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	7.0	7.2	7.3	7.5	7.6	7.8	7.9	8.1	8.2	8.4	0
1	8.5	8.7	8.8	9.0	9.1	9.3	9.4	9.6	9.7	9.9	1
2	10.0	10.2	10.3	10.5	10.6	10.8	10.9	11.1	11.2	11.4	2
3	11.5	11.7	11.8	12.0	12.1	12.3	12.4	12.6	12.7	12.9	3
4	13.0	13.2	13.3	13.5	13.6	13.8	13.9	14.1	14.2	14.4	4
5	14.5	14.7	14.8	15.0	15.1	15.3	15.4	15.6	15.7	15.9	5
6	16.0	16.2	16.3	16.5	16.6	16.8	16.9	17.1	17.2	17.4	6
7	17.5	17.7	17.8	18.0	18.1	18.3	18.4	18.6	18.7	18.9	7
8	19.0	19.2	19.3	19.5	19.6	19.8	19.9	20.1	20.2	20.4	8
9	20.5	20.7	20.8	21.0	21.1	21.3	21.4	21.6	21.7	21.9	9
10	22.0	22.2	22.3	22.5	22.6	22.8	22.9	23.1	23.2	23.4	10
11	23.5	23.7	23.8	24.0	24.1	24.3	24.4	24.6	24.7	24.9	11
12	25.0	25.2	25.3	25.5	25.6	25.8	25.9	26.1	26.2	26.4	12
13	26.5	26.7	26.8	27.0	27.1	27.3	27.4	27.6	27.7	27.9	13
14	28.0	28.2	28.3	28.5	28.6	28.8	28.9	29.1	29.2	29.4	14
15	29.5	29.7	29.8	30.0	30.1	30.3	30.4	30.6	30.7	30.9	15
16	31.0	31.2	31.3	31.5	31.6	31.8	31.9	32.1	32.2	32.4	16
17	32.5	32.7	32.8	33.0	33.1	33.3	33.4	33.6	33.7	33.9	17
18	34.0	34.2	34.3	34.5	34.6	34.8	34.9	35.1	35.2	35.4	18
19	35.5	35.7	35.8	36.0	36.1	36.3	36.4	36.6	36.7	36.9	19
20	37.0	37.2	37.3	37.5	37.6	37.8	37.9	38.1	38.2	38.4	20
21	38.5	38.7	38.8	39.0	39.1	39.3	39.4	39.6	39.7	39.9	21
22	40.0	40.2	40.3	40.5	40.6	40.8	40.9	41.1	41.2	41.4	22
23	41.5	41.7	41.8	42.0	42.1	42.3	42.4	42.6	42.7	42.9	23
24	43.0	43.2	43.3	43.5	43.6	43.8	43.9	44.1	44.2	44.4	24
25	44.5	44.7	44.8	45.0	45.1	45.3	45.4	45.6	45.7	45.9	25
26	46.0	46.2	46.3	46.5	46.6	46.8	46.9	47.1	47.2	47.4	26
27	47.5	47.7	47.8	48.0	48.1	48.3	48.4	48.6	48.7	48.9	27
28	49.0	49.2	49.3	49.5	49.6	49.8	49.9	50.1	50.2	50.4	28
29	50.5	50.7	50.8	51.0	51.1	51.3	51.4	51.6	51.7	51.9	29
30	52.0	52.2	52.3	52.5	52.6	52.8	52.9	53.1	53.2	53.4	30
31	53.5	53.7	53.8	54.0	54.1	54.3	54.4	54.6	54.7	54.9	31
32	55.0	55.2	55.3	55.5	55.6	55.8	55.9	56.1	56.2	56.4	32
33	56.5	56.7	56.8	57.0	57.1	57.3	57.4	57.6	57.7	57.9	33
34	58.0	58.2	58.3	58.5	58.6	58.8	58.9	59.1	59.2	59.4	34
35	59.5	59.7	59.8	60.0	60.1	60.3	60.4	60.6	60.7	60.9	35
36	61.0	61.2	61.3	61.5	61.6	61.8	61.9	62.1	62.2	62.4	36

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