

0 1/2

500 1/2

BRIDGES

FIELD BOOK

360

F.B. 500 1/2

KEUFFEL & ESSER CO.

DRAWING MATERIALS

AND

SURVEYING INSTRUMENTS.

NEW YORK.

CHICAGO. ST. LOUIS. SAN FRANCISCO. MONTREAL.

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 Keuffel & 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

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

For Keith's Railroad Curve Tables see end of book.

RETURN TO CITY ENGINEER'S OFFICE
CITY HALL, SAN DIEGO, CAL.

Old Town Bridge

Punts are numbered starting
on south side of river

Piles are numbered from East
2500# hammer

Punt 1	Pile 1	pen.	19
"	" 2	"	19 hard driving
"	" 3	"	19 ^{2-3" to the bottom} 18' final 1/2"
" 2	" 1		25 firm 6" soft
"	" 2		25 ^{2" firm to 18' depth} firm 1"
"	" 3		25
Punt 3	" 1		25
"	" 2		25 8" soft
"	" 3		25 12"
Punt 4	" 1		25
	" 2		25
	" 3		25
Punt 5	" 1		25
	" 2		25
	" 3		25

Point 6

Pile 1

25

first 10 soft
2" to 18" drops
1 final

"

" 2

25

" 3

25

Point 7

" 1

31

" 2

31

" 3

31

Point 8

" 1

31

" 2

31

" 3

31

" 9

" 1

31

" 2

31

" 3

31

" 10

" 1

31

" 2

31

" 3

31

" 11

" 1

31

" 2

31

" 3

31

Point 12

Pile 1

31

2

" 2

31

" 3

31

" 13

" 1

31

" 2

31

" 3

31

" 14

" 1

31

" 2

31

" 3

31

" 15

" 1

31

" 2

32

" 3

33

12" soft firm bottom 16

" 1

31

2" to 18" drops

" 2

31

1 final

" 3

32

" 17

" 1

31.6

same

" 2

26

" 3

26

" 18

" 1

28

same

" 2

30

" 3

31

Bunt 18

~~1
2
3~~

same 19 1 31-6
2 30
3 31

20 1 28
2 31-6
3 32.0

12' soft 21 1 31-6 hard
1-2' to 18' soft 2 31
1/2' fine 3 32

indication
quick sand
and clay 4'
on bottom 22 1 30 hard
2 31
3 32

1 23 1 33 hard
2 31
3 32

Bunt 24

Pole 1

31

2 31

3 31

25 1 31

2 31

3 31

26 1 31

2 31

3 31

27 1 30 3/27 16

2 31

3 32

28 1 31

2 30-6

3 31.0

29 1 31

2 30

3 30-6

30	1	32
	2	31
	3	33

31	1	28
	2	30
	3	29

32	1	27
	2	26
	3	28

33		28
		29
		28

34		27
		29
		29

35		29
		30
		29

36	1	30	4
	2	30	
	3	30	

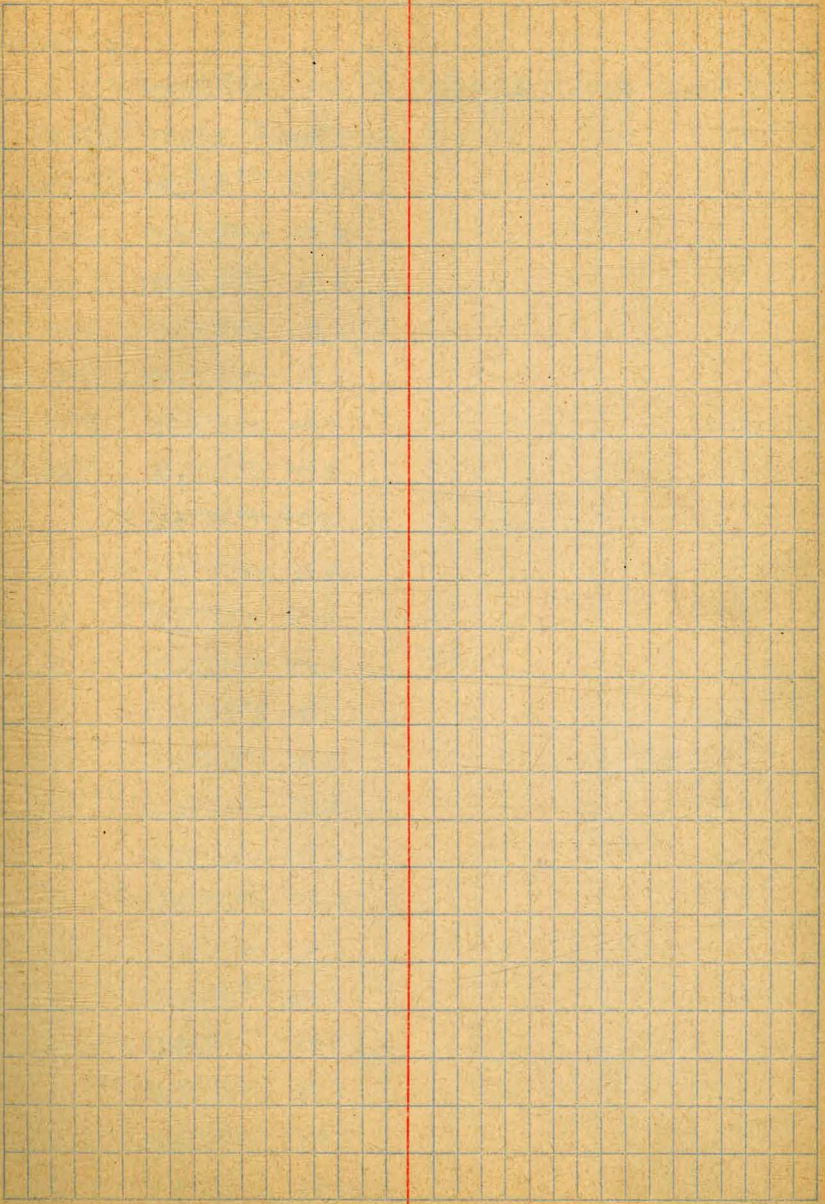
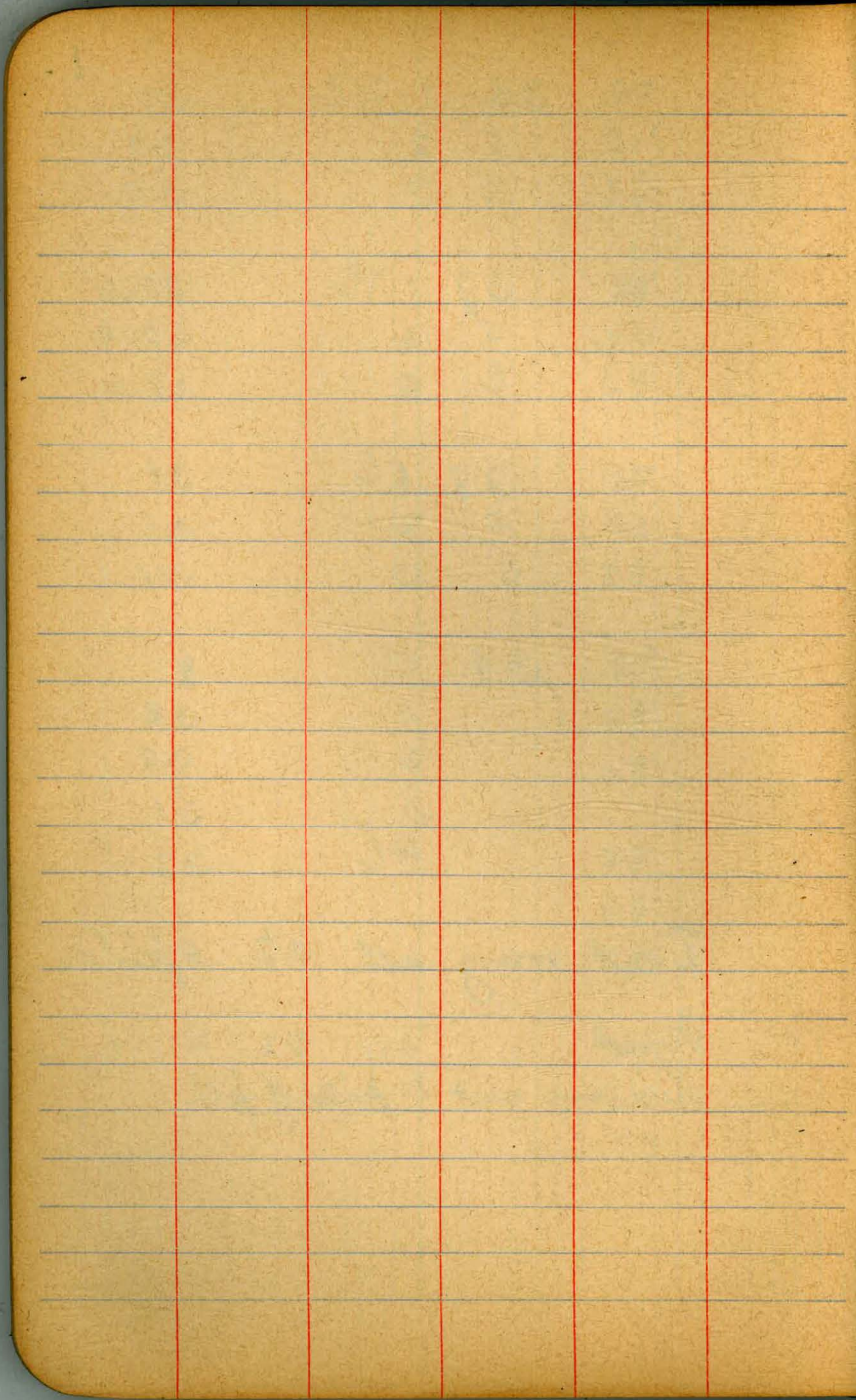
37	1	30.6
	2	30.6
	3	29.0

38	1	31
	2	31
	3	31

39		\$
	1	32
	2	30
	3	31
	4	32

East wing all 32 6 piles

West 32 6 4
these are cut to pitch of fill



30th St Bridge (West End of Gap)

Top of Rail Gr.

4.62	284.62		280.00	
5.12	285.12			
8.40		7.50	0	276.72
				279.85
		6.78	-03	277.84
				279.94
		6.72	+05	277.90
				280.03
		6.78	-02	277.84
				280.12
		6.83	-05	277.79
				280.21
		6.75	-02	277.87
				280.30
		6.40	-06	278.22
				280.39
		6.44	-05	278.18
				280.40
		6.34	+05	278.28
				"
		6.35	+07	278.27
				"
		6.75	0	277.87
				"
		6.40	+03	278.22
				"
		6.37	+03	278.25
				"
		6.35	+09	278.27
				"
		6.35	+10	278.27
				"
		6.80	+03	277.87
				"
		6.40	-04	278.22
				"
		6.40	-09	278.22
				"
		6.40	-05	278.22
				"
		6.42	-02	278.22
				"
		6.78	-03	277.84
				"
		6.40	-02	278.22
				"
		6.44	-06	278.18
				"

Sept 25 - 16

Cromwell
Hayler
Schmidt

6

End of Rail on E + S. Assumed Elev = 280.00

Concrete Abut. on South

Bant #1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

284.62

Top of Rail Gr.

6.43	⁻⁰³	278.19	280.50
6.40	⁻⁰⁷	278.22	"
6.80	⁻⁰⁵	277.82	"
6.40	⁻⁰⁸	278.22	"
6.48	⁻¹⁴	278.14	"
6.45	⁻¹²	278.17	"
6.40	⁻⁰⁵	278.22	280.40
6.80	⁻⁰⁴	277.82	280.30
6.80	⁺⁰¹	277.82	280.20
6.80	⁻⁰⁴	277.82	280.10
6.80	⁺⁰²	277.82	280.00
6.80	⁻⁰²	277.82	279.90
7.92	⁻⁰²	276.70	279.80
4.71		272.91	

Bent #23

24

25

26

27

28

29

30

31

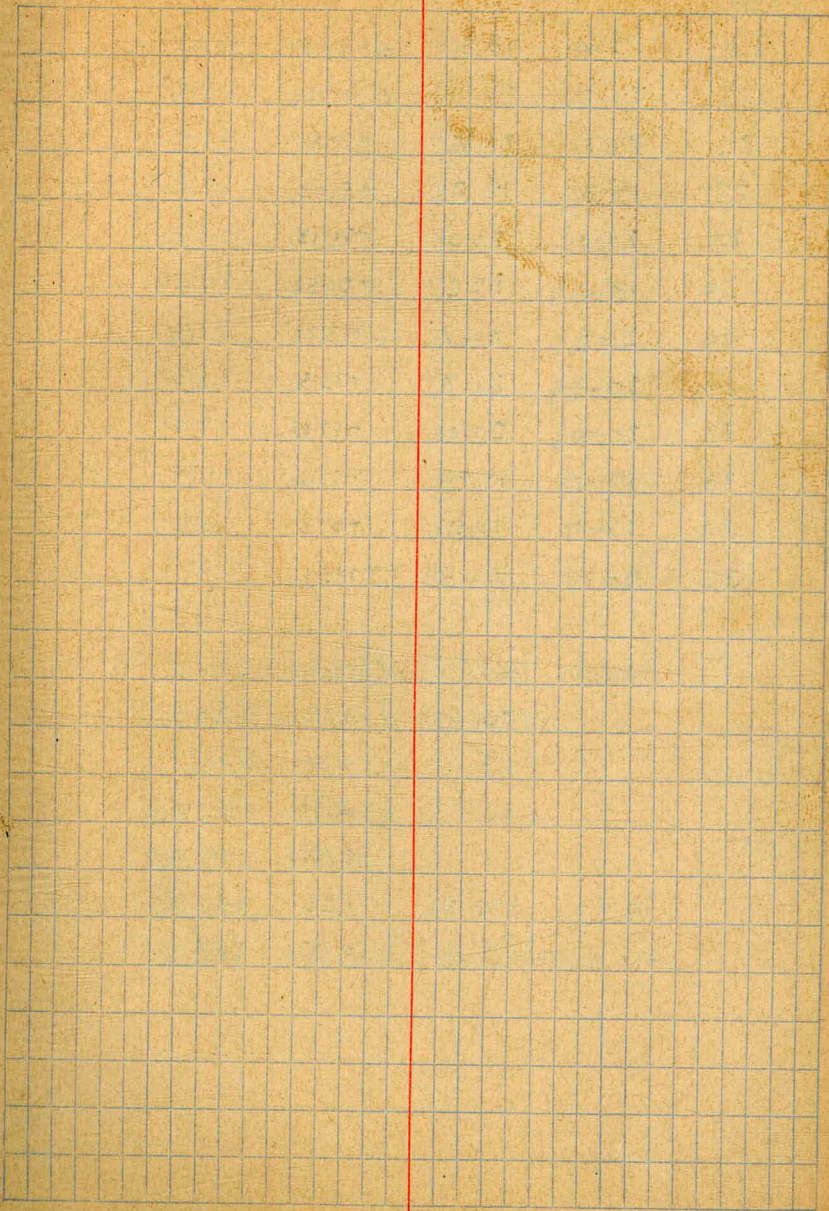
32

33

34

Concrete Abut. on North
Top of Rail 15' N. of End of Bridge

30 th Street Bridge					
Panel	Carpenters Meas.	Panel Lengths	No 1 at Sta.	South - Check Feet	Meas. Feet & Ins.
No 1	20'-5"	20.42	0+20.42	20.50	
2	20'-1 $\frac{1}{4}$ "	20.10	+40.52	20.04	
3	19'-11 $\frac{1}{2}$ "	19.96	+60.48	19.95	
4	19'-11"	19.92	+80.40	19.90	
5	20'-0 $\frac{3}{4}$ "	20.06	1+00.46	20.06	
6	21'-11"	21.92	+22.38	21.92	
7	19'-3"	19.25	+41.63	19.22	
8	20'- $\frac{1}{2}$ "	20.04	+61.67	19.99	
9	19'-3 $\frac{1}{2}$ "	19.79	+80.56	19.28	
10	21'-9"	21.75	2+02.71	21.80	
11	21'-10 $\frac{1}{4}$ "	21.85	+24.56	21.82	
12	19'-4"	19.33	+43.89	19.31	
13	20'-1"	20.08	+63.97	20.09	
14	19'-3 $\frac{3}{4}$ "	19.31	+83.28	19.26	
15	21'-9 $\frac{1}{2}$ "	21.79	3+05.07	21.84	
16	21'-10"	21.83	+26.90	21.84	
17	19'-5"	19.42	+46.32	19.33	
18	20'-0	20.00	+66.32	20.01	
19	19'-5	19.42	+85.74	19.33	
20	21'-6 $\frac{3}{4}$ "	21.56	4+07.30	21.74	
21	21'-11"	21.92	+29.22	21.87	
22	19'-5	19.42	+48.64	19.34	
23	20'-0	20.00	+68.64	20.07	
		468.64		468.61	



Panel

24	19-4"	19.33	4+87.57	19.30
25	21-11½"	21.26	5+09.93	21.94
26	21-10½"	21.87	+31.80	21.87
27	19-3½"	19.29	+51.09	19.33
28	20-0½"	20.04	+71.13	20.03
29	19-4½"	19.37	+90.50	19.29
30	21-8½"	21.71	6+12.21	21.75
31	20-4½"	20.37	+32.58	20.34
32	20-0¾"	20.06	+52.64	20.09
33	19-11½"	19.96	+72.60	19.94
34	19-11"	19.92	+92.52	19.90
35	20-7"	20.58	7+13.1	20.58

244.46

243.86

244.36

Levels 30th St Bridge Sept 26-16

	284.65	4.83	279.82
		4.88	279.77
		4.62	280.03
		4.80	279.85
10.60	273.36	1.89	282.76
		3.65	289.71

606

46864
24496
713.10

9

46861
24496
712.97

Cromwell & Hayler

Top of Rail on N. end of Bridge (1 rail)

" " " " (3 rails)

Top of Rail 12's. of S. end of Bridge

" " " at " " "

TP on rail

Brass Plug SE. Corb 30th & Kalmia Sts.

30th St. Bridge
Levels on Floor Beams W. Side against Sidewalk

	5.12	285.12	280.00
Concrete Abutment			
Panel # 1		8.40	276.72
# 2		7.25	277.87
# 3		7.27	277.85
# 4		7.26	277.86
# 5		7.28	277.84
# 6		7.23	277.89
# 7		6.84	278.28
# 8		6.89	278.23
# 9		6.89	278.23
# 10		6.89	278.20
# 11		7.25	277.87
# 12		6.93	278.19
# 13		6.90	278.22
# 14		6.94	278.18
# 15		6.95	278.17
# 16		7.33	277.79
# 17		6.86	278.26
# 18		6.81	278.31
# 19		6.85	278.27
# 20		6.88	278.24
# 21		7.25	277.87
# 22		6.88	278.24
# 23		6.88	278.24
		6.90	278.22

Hayler
Griggs Sept. 27, 1916

285.12

# 24	6.83	678.29
# 25	7.25	677.87
# 26	6.82	678.30
# 27	6.84	678.28
# 28	6.83	278.29
29	6.85	278.27
30	7.24	277.88
31	7.31	277.81
32	7.26	277.86
33	7.32	277.80
34	7.28	277.84
North Abutment on Concrete.	8.40	276.72

Levels on 30th Street Bridge Caps or Floor Beams

Bent	+	H.I.	West End		Center		East End	
			- Elev.	- Elev.	- Elev.	- Elev.		
	4.78	284.78						
S. Concrete Abt.			8.05	276.78	8.02	276.76	8.02	276.76
#1			6.92	277.86	6.92	277.86	6.94	277.84
2			6.95	277.83	6.93	277.85	6.88	277.80
3			6.94	277.84	6.91	277.87	6.93	277.85
4			6.94	277.84	6.94	277.84	6.91	277.79
5			6.91	277.87	6.91	277.87	6.90	277.88
6			6.51	278.27	6.53	278.25	6.55	278.23
7			6.54	278.24	6.57	278.21	6.58	278.20
8			6.56	278.22	6.51	278.27	6.48	278.30
9			6.55	278.23	6.54	278.24	6.51	278.27
10			6.91	277.87	6.90	277.88	6.90	277.88
11			6.57	278.21	6.54	278.24	6.53	278.25
12			6.56	278.22	6.55	278.23	6.54	278.24
13			6.59	278.19	6.58	278.23	6.48	278.30
14			6.59	278.19	6.56	278.22	6.50	278.28
15			6.98	277.80	6.97	277.81	6.95	277.83
16			6.50	278.29	6.52	278.26	6.52	278.26
17			6.48	278.30	6.48	278.30	6.52	278.26
18			6.48	278.30	6.52	278.26	6.53	278.25
19			6.52	278.26	6.54	278.24	6.56	278.22
20			6.90	277.88	6.92	277.86	6.88	277.90
21			6.52	278.26	6.52	278.26	6.54	278.24
22			6.53	278.25	6.52	278.26	6.56	278.22

Cromwell Sept 27-16
Hayler
Griggs

E. Rail Elev.	280.00 at South End of Bridge	Elev. Center	Grade Bot. Tie	12' S. of Abutment	Feet	Inches
		276.76	275.02	2.26	27 1/4	27 1/4
		277.85	279.13	+26.733	15 3/8	15 3/8
		277.85	279.24	+25.139	16 1/4	16 3/4
		277.87	279.35	+22.48	17	17 3/4
		277.84	279.46	+54.62	18 1/2	19 3/8
		277.87	279.57	+60.170	18 1/4	20 3/8
		278.25	279.69	+31.744	15 3/4	17 1/4
		278.21	"	+1.128	16 3/8	17 3/4
		278.27	"	+1.142	15 5/8	17
		278.24	"	+1.145	16	17 3/8
		277.89	"	+79.131	20 1/4	21 3/4
		278.24	"	+1.143	14.5	17 3/8
		278.23	"	+1.144	14.1	17 1/2
		278.23	"	+1.144	14.1	17 1/2
		276.22	"	+1.145	14.7	17 3/8
		277.81	"	+86.188	24 1/2	22 5/8
		278.24	"	+1.141	14.3	17 3/8
		278.30	"	+37.139	15 1/4	16 3/4
		276.26	"	+1.141	14.3	17 3/8
		278.24	"	+1.143	14.5	17 3/8
		277.86	"	+1.81	18.3	22
		276.26	"	+1.141	14.3	17 3/8
		278.26	"	+1.141	14.3	17 3/8

#	D	284.78	5.98	278.80		278.25	279.69	1.44	1.42'	+5 3/8"	17 1/4"		
				West End	Center							East End	
	5.64	284.44	Elev.	Elev.	Elev.								
# 23			6.22	278.22	6.19	278.25	6.22	278.22					
24			6.17	278.27	6.16	278.28	6.17	278.27		1.41	1.34'	15 1/2"	16 7/8"
25			6.57	277.87	6.58	277.86	6.58	277.86		1.83	1.81'	20 1/2"	22"
26			6.19	278.25	6.19	278.25	6.18	278.26		1.44	1.42'	15 3/8"	17 1/4"
27			6.15	278.29	6.20	278.24	6.25	278.19		1.45	1.43'	16"	17 3/8"
28			6.15	278.29	6.20	278.24	6.25	278.19		1.45	1.43'	16"	17 3/8"
29			6.21	278.23	6.22	278.22	6.17	278.27		1.47	1.45'	16 1/2"	17 5/8"
30			6.58	277.86	6.57	277.87	6.59	277.85		1.70	1.60'	19 3/4"	20 3/8"
31			6.55	277.89	6.55	277.89	6.61	277.83		1.57	1.48'	17 3/4"	18 7/8"
32			6.60	277.84	6.57	277.87	6.60	277.84		1.48	1.40'	16 3/4"	17 3/4"
33			6.63	277.79	6.59	277.85	6.60	277.84		1.41	1.32'	15 7/8"	16 3/8"
34			6.61	277.83	6.57	277.87	6.59	277.85		1.26	1.20	14 3/8"	15 1/8"
N Concrete Abut.			7.73	276.71	7.72	276.72	7.72	276.72		2.30	2.25'	27"	27 5/8"

279.85 279.02

279.96 279.13

280.07 279.24

280.18 279.35

280.29 279.46

280.40 279.57

280.52 279.69

Panel No	Old Stringers	New Stringers	
19	1,3,5,6,8,10,11 = 7	2,4,7,9 = 4	19-5
20	1,11 = 2	2,3,4,5,6,7,8,9,10 = 9	21-6 ³ / ₄
21	1,7,9,11 = 4	2,3,4,5,6,8,10 = 7	21-11
22	1,3,4,7,9,11 = 6	2,5,6,8,10 = 5	19-5
23	1,3,5,7,10,11 = 6	2,4,6,8,9 = 5	20-0
24	1,2,4,7,9,11 = 6	3,5,6,8,10 = 5	19-4
25	1,11 = 2	2,3,4,5,6,7,8,9,10 = 9	21-11 ¹ / ₂
26	1,11 = 2	2,3,4,5,6,7,8,9,10 = 9	21-10 ¹ / ₂
27	1,3,5,8,9,11 = 6	2,4,6,7,10 = 5	19-3 ¹ / ₂
28	1,3,5,8,10,11 = 6	2,4,6,7,9 = 5	20-0 ¹ / ₂
29	1,2,4,7,9,10 = 6	3,5,6,8,10 = 5	19-4 ¹ / ₂
30	1,2,8,10,11 = 5	3,4,5,6,7,9 = 6	21-8 ¹ / ₂
31	1,2,5,10,11 = 5	3,4,6,7,8,9 = 6	20-4 ¹ / ₂
32	1,4,8,9,11 = 5	2,3,5,6,7,10 = 6	20-3 ¹ / ₄
33	1,2,4,8,11 = 5	3,5,6,7,9,10 = 6	19-11 ¹ / ₂
34	1,2,6,10,11 = 5	3,4,5,7,8,9 = 6	19-11
35	1,3,6,10,11 = 5	2,4,5,7,8,9 = 6	20-7 ⁰

	83	104
	66	132
Total	149	236

{ 17 - 6x16x22'-0" Stringers Built up out of old 3x16" str.
 { 21 - 6x16x20'-0" " " " " " "
 22 - 6x18x22' stringers Old Material.
 89 - " " x 20' " " "
 Total 111 - 6' x 18' " " "
 38 - 6 x 16 " " "
 Total 149 " " "

No 1 & 11 Built up out of 2-3x16" pcs. spiked together	2
" " " " " " " " " "	2
" " " " " " " " " "	2
— — — — —	0
" " " " " " " " " "	2
— — — — —	0
" " " " " " " " " "	2
" " " " " " " " " "	2
No 11 " " " " " " " " " "	1
No 1 & 11 " " " " " " " " " "	2
— — — — —	0
" " " " " " " " " "	2
" " " " " " " " " "	2
No 11 " " " " " " " " " "	1
— — — — —	0
— — — — —	0

Total Ordered 249 Stringers 6' x 18"
 Ordered 146 - 6' x 18" - 20'-0"
 93 - " " - 22'-0" (Three over)

Total 236 New Stringers (Checks with orders.)
 104 - 6' x 18" x 22' stringers New Material In Bridge
 132 - 6' x 18" x 20' " " "
 Note - Some of the 20 stringer were over length enough so that they would frame short 22' lengths.

Benson Lumber Co.

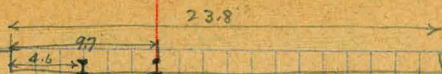
	20'	22'
First Order 6" x 18" Stringers	130	60
Second " " " "	9	33
Third " " " "	7	0
Total	146	93
less three 22 not needed		3
In Bridge	146	90

Material to be returned for credit to W.M.S. Co.

1 Box 175 - $\frac{5}{8}$ " x 13" Sq Hd Mach Bolts
 1 " 185 - $\frac{5}{8}$ " x 14" " " " "
 " " 100 - $\frac{5}{8}$ " x 17" " " " "
 " " 66 - $\frac{3}{4}$ " x 20" " " " "
 " " 100 - $\frac{5}{8}$ " x 20" " " " "
~~#1320 $\frac{5}{8}$ " C.I. Washers (?)~~
 1 Box 100 - $\frac{5}{8}$ " x 18" " " " "

To Store room. -

2 Keys 50 - $\frac{5}{8}$ " x 14" Mach Bolts with nut.
 1 " 25 - $\frac{5}{8}$ " x 14" " " " "
 1 " 20 - $\frac{5}{8}$ " x 18" " " " "
 1 Box 100 - $\frac{5}{8}$ " x 17" " " " "
 1320 - $\frac{5}{8}$ " C.I. Washers (1260 new 60 old)
 100 - $\frac{5}{8}$ " x 28" Drift Pins



West Span 17.8 from West End to Ctr of First Bent

West Frame Bent Section 76.4

Truss 139.8'

East Frame Bent Section 79.8'

Total Length 296'

Levels on Adams Ave. Bridge

	2.20	102.20		100.00
East Abutment			4.51	97.69
			3.21	98.99
			3.24	98.96
			3.32	98.88
Bent # 1			4.47	97.73
			5.64	96.56
			4.48	97.72
			4.44	97.76
			4.48	97.72
Bent # 2			5.79	96.41
			6.14	96.06
			4.83	97.37
			4.85	97.35
			4.89	97.31
Bent # 3			6.03	96.17
			6.53	95.67
			5.37	96.83
			5.26	96.94
			5.35	96.85
Bent # 4			6.60	95.60
			6.90	95.30
			5.60	96.60
			5.57	96.63
			5.67	96.53
			6.79	95.41

Hayler Level
Cromwell Rod

5-18-17

18

Assumed Elev. End S. Rail East End of Bridge.

North End Cap
N String
G "
S "
S End Cap
" " "
S String
G "
N "
N End Cap
" " "
N String
G "
S "
S End Cap
" " "
S String
G "
N "
N End Cap
" " "
N String
G "
S "
S End Cap

102.20

Bent #5	6.82	95.38	S End Cap
	5.69	96.51	S String
	5.57	96.63	G "
	5.64	96.56	N "
	6.92	95.28	N End Cap
Bent #6	6.96	95.24	" " "
	5.68	96.52	N String
	5.66	96.54	G "
	5.74	96.46	S "
	6.83	95.37	S End Cap
Bent #7	6.95	95.25	S " "
	5.82	96.38	S String
	5.76	96.44	G "
	5.78	96.42	N "
	7.04	95.16	N End Cap
Bent #8	7.18	95.02	" " "
	5.92	96.28	N String
	5.92	96.28	G "
	6.04	96.16	S "
	7.15	95.05	S End Cap
Bent #9	7.33	94.87	" " "
	6.20	96.00	S String
	6.08	96.12	G "
	6.03	96.17	N "
	7.29	94.91	N End Cap

102.20

Bent #10

7.56 94.64

6.27 95.93

6.29 95.91

6.42 95.78

7.54 94.66

Bent #11

7.78 94.42

6.65 95.55

6.56 95.64

6.57 95.63

7.88 94.32

Bent #12

7.88 94.32

6.63 95.57

6.65 95.55

6.77 95.43

7.97 94.28

Bent #13

8.03 94.17

6.96 95.24

6.85 95.35

6.83 95.37

8.00 94.20

Bent #14

8.45 93.75

7.17 95.03

7.12 95.08

7.28 94.92

8.41 93.79

N End Cap

N String

G "

S "

S End Cap

" " "

S String

G "

N "

N End Cap

" " "

Bent 12 Cap is dapped

N String

G "

S "

S End Cap

" " "

Bent 13 Cap is dapped

S String

G "

N "

N End Cap

" " "

N String

G "

S "

S End Cap

West Abutment

102.2

8.62	93.58
7.29	94.91
7.44	94.76
7.55	94.65
8.83	93.37
6.75	95.45

S End Cap

S String

G "

N "

N End Cap

Top of Rail (South)

$$\begin{array}{r}
 100 \\
 95.45 \\
 \hline
 4.55 \\
 300 \\
 \hline
 1.517 \\
 180 \\
 \hline
 1.21360 \\
 \hline
 98.79-
 \end{array}$$

Old Town Bridge		North End		N ^o Blows		
Pile N ^o	length	Butt	Tip	Last 5 blows Av. Penet. 10' Fall	Cut-off	Elev Bottom
1	30	12"	8"		0	-20.0
2	31	12	8	1 1/2"	0	-21.0
3	30	12	8	2"	0	-20.0
4	30	12	8	2 1/2"	0	-20.0
5	30	12	8	2 1/2"	0	-20.0
6	30	12	8	2"	0	-20.0
7	30	12	8	1 1/2"	1.9	-17.2
8	36	16	13	Jetted	4.9	-20.1
9	30.5	12	8	"	2.9	-16.6
10	30	12	8	1"	0	-17.5
11	30	12	8	1"	0	-18.5
12	30	12	8	1"	0	-19.5
13	30	12	8	1 1/2"	0	-19.5
14	35 1/2	12	8	2"	2.5	-23.0
15	30	12	8	2"	0	-20.0

N^o Blows

70

38

Elev Top +10^o

115 Last 1' with Lullaxer

Started work on Abutment

May 15 11 A.M.

Discontinued May 18, 9 A.M.

Resumed May 24, 12:30

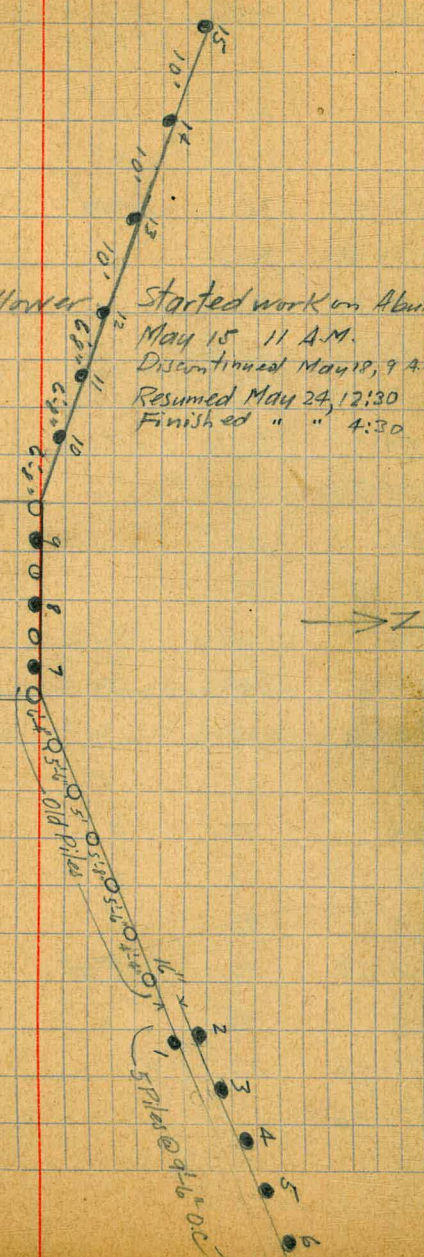
Finished " " 4:30

91

/

65 Bridge

66



Sheet Piles

Numbered from end of East wing West through
N. Abutment to end of W. wing.

No	Length	At Point last 5 blms	Filled Ham- mer, ft	cut off	Elev. Bot. of Pile
1	26 1/2	2"	4	3'	-13.5
2	28 1/2	2"	4	0	-18.5
3 to 11	32'	Jetted	—	0	-22.0
12, 13, 14	30 1/2	"	—	0	-20.3-20.2-20.5
15 to 24	32'	"	—	0	-22.0
25	30 1/2	"	—	0	20.5
26 to 43	32	"	—	0	-22.0
44	30 1/2	"	—	0	-22.0
45 to 52	32	"	—	0	-22.0
53	30 1/2	"	—	0	-20.5
54, 55	32	"	—	0	-22.0 -21.6
56	30	"	—	5'	-15.0
57	32	"	—	0	-22.0
58-62	32	"	—	0	-22.0
63	32	1"	4'	0	-22.0
64	32	1"	4'	0	-22.0
65	32	1"	10'	0	-22.0
66	32	1"	4'	1.0'	-20.4
67-69	32	Jetted	—	—	-21.7
70	32	"	—	0.5	-21.2
71-74	32	"	—	—	-21.2
75-76	32	"	—	—	-21.0
77	32	"	—	—	-20.8

All piles 4x12 T & G - about 10 1/2" face

except 27 = -21.6

Struck rocks hard driving.

net length 25'. Struck rocks - split cut off 5'.

May 5 Fetched up solid on rocks. New connection made
for additional pressure on jet & pile driven down May 11.

Pile split.

broke 10' below top.

10.7

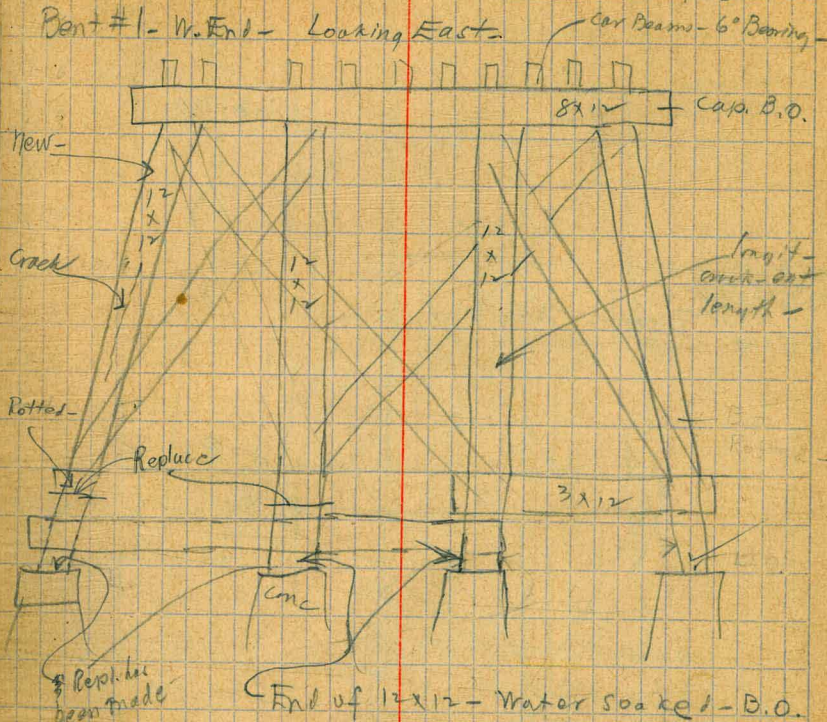
11.0

11.2

No	length	Av. Penet. Last 5 blows	Fall of Hammer	Cut-off	Elev Bot. of Pile
78	32	Settled		0	-20.6
79-80	"	"		0	-20.4
81	"	"		0	-20.2
82	"	"		0	-20.0
83	"	"		0	-19.8
84	"	"		0	-19.4
85	"	"		0	-18.8
86	"	"		0	-18.5
87	"	"		0	-18.1
88	"	"		0	-17.9
89	"	"		0	-17.6
90-91	"	"		0	-17.6
92-108	"	"		0	-18.0
109	"	"		1.2	-16.8
110	"	"		0.7	-17.3
111	"	"		1.3	-16.7
112	"	"		0	-18.0
113	"	"		0	-18.0
114	"	"		0	-18.2
115	28	"		0	-14.2
116	32	"		1.2	-17.3
117	28	"		0	-14.9
118	"	"		0	-15.3
119	"	"		0	-15.6
120	"	"		0	-16.0

No	length	Av. Post lasts blows	cut-off	Elev. Est. of File
121	28	Settled	0	-16.2
122	"	"	0	-16.4
123	"	"	0	-16.7
124	"	"	0	-16.9
125	"	"	0	-17.0
126	"	"	0	-17.1
127	"	"	0	-17.2
128	"	"	0	-17.3
129	"	"	0	-17.5
130	"	"	0	-17.6
131	"	"	0	-17.7
132	"	"	0	-17.9
133	"	"	0	-18.0
134-163	"	"	0	-18.0
164	26	"	0	-16.0

Adams Ave. Bridge N. Brance
Texas St - 4/20/1918

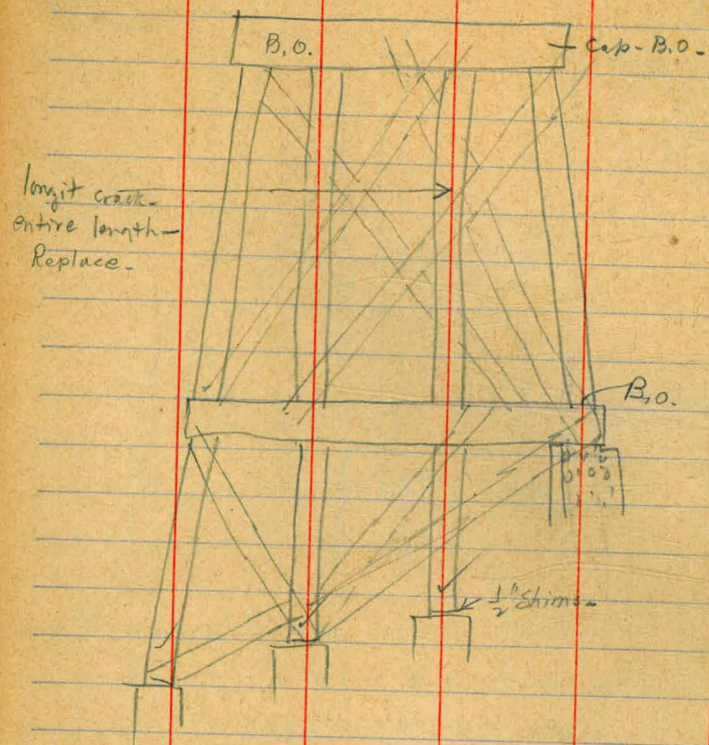


A ditch bet. bent & Ret-wall - would
drain water away from posts -

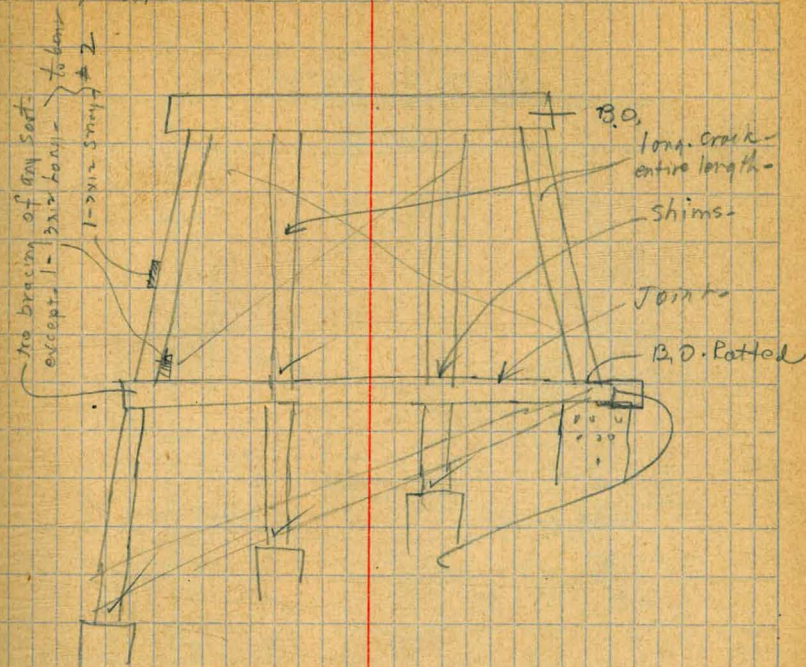
No long bracing from abut. to 1st bent -
✓ ✓ ✓ 1st bent to 2^d ✓ except
at bottom - shld have stringers -

Cap. on m. Ret wall - B.O. - Ret. wall can be carried
up to bot of stringers - do away with cap entirely -
at S.M. cap - rotted cap -

Bent No 2 -
Looking East



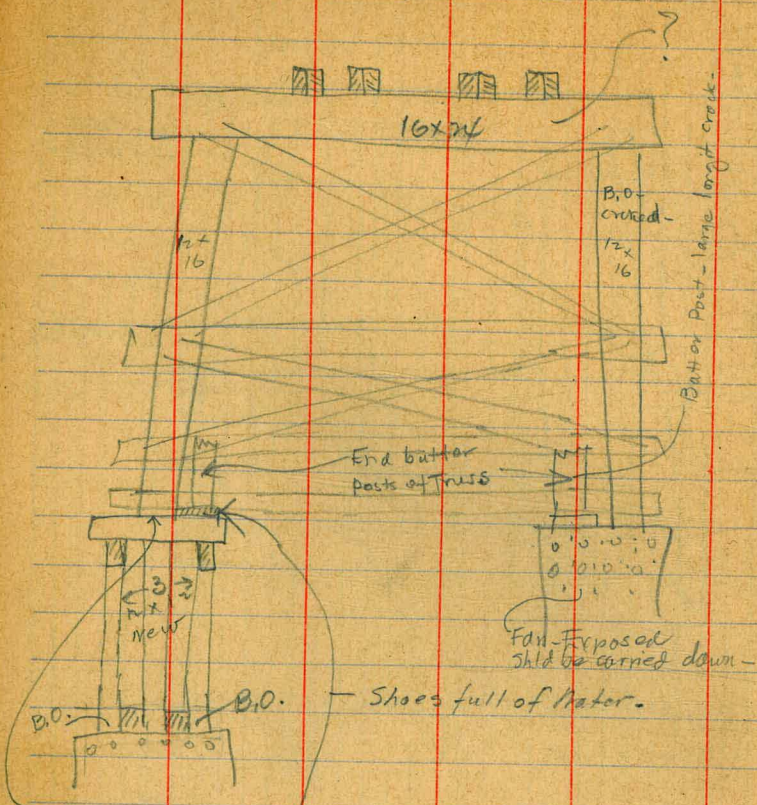
Bent No 3



from bent 2 & 3 - Spray braces outside only -
4 long - at bot - 3x12

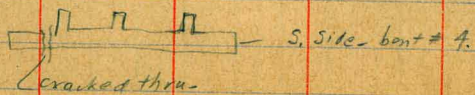
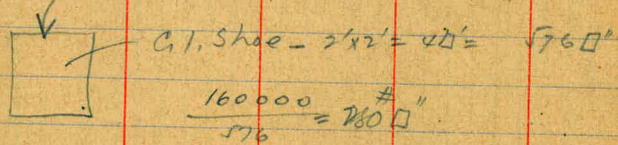
No bracing of any sort - long or spray
bet bents 2 & 4.

Bent No 4-



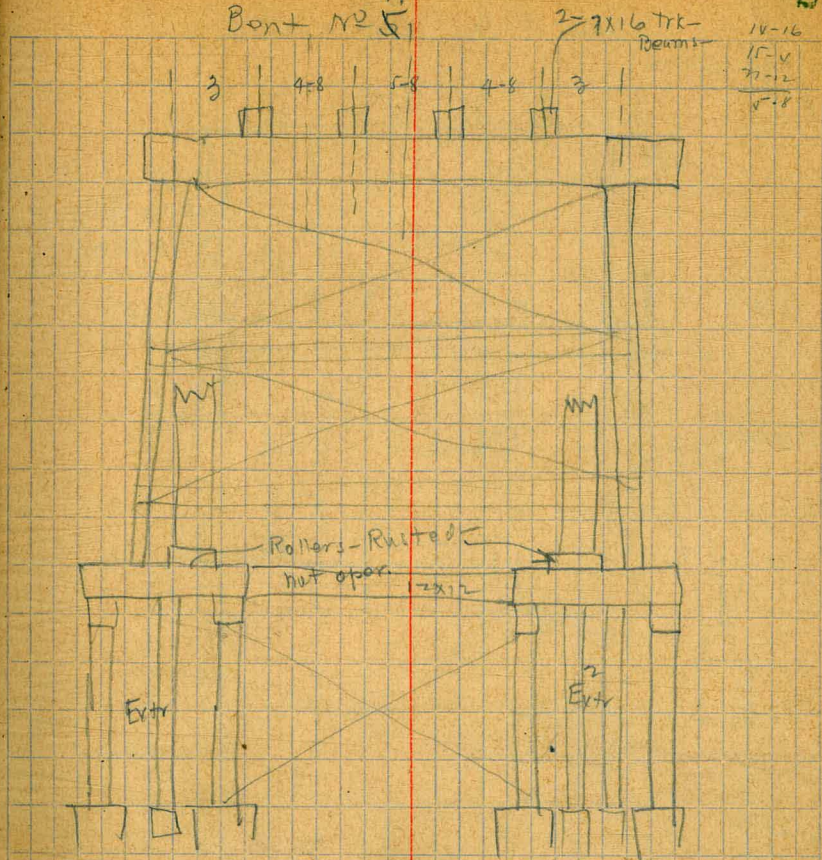
Load of 60000# on 12x16 = 192" = 31.7#"

on side of n of corner 12x12 + umb. side of 16x24 Cap -

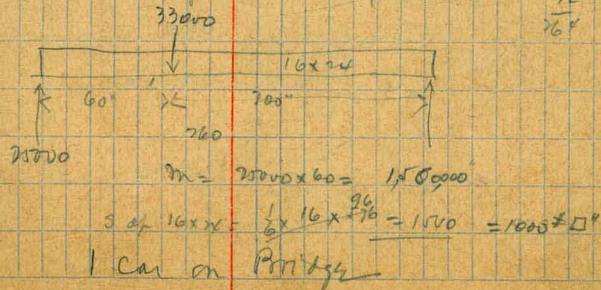


Bent No 5

27

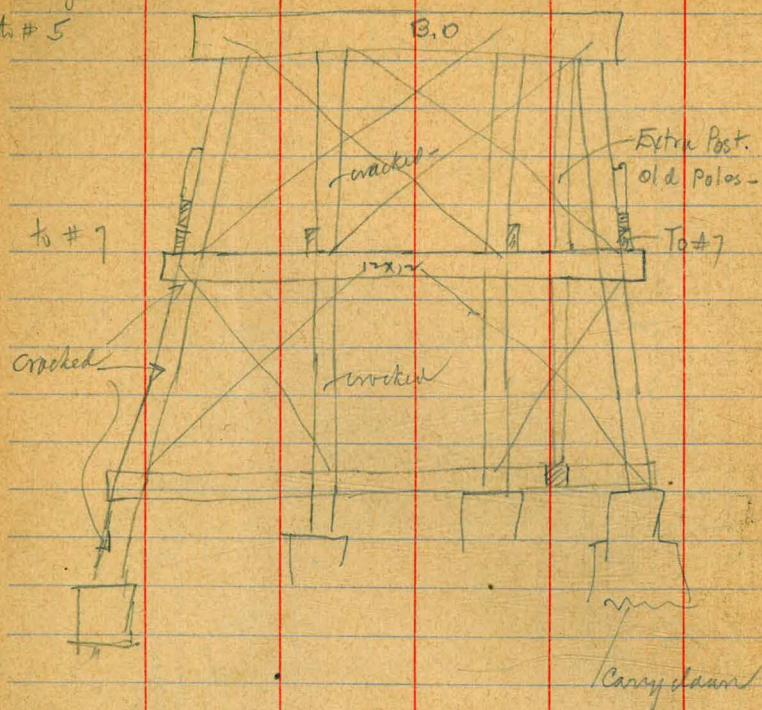


Both Truss - B.O. Repl with Conc. piers -

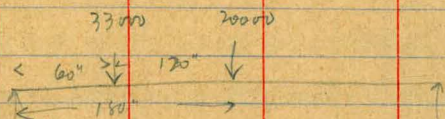


Bent No 8 Looking West

no longit. or struts
to #5



350000



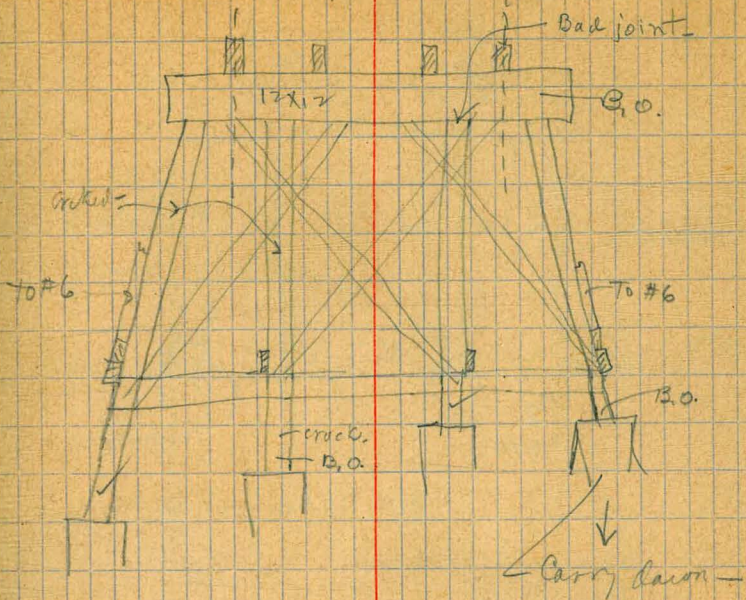
$$R = 35000$$

$$M = 35000 \times 180 - 33000 \times 120 = 630000 - 396000 = 234000$$

$$S_{12 \times 12} = \frac{234000}{1500} = 156 \# \square$$

Sup 16x24

Bent No 9 Looking West



$$Q_1 = 22 \text{ tons} = 42000$$

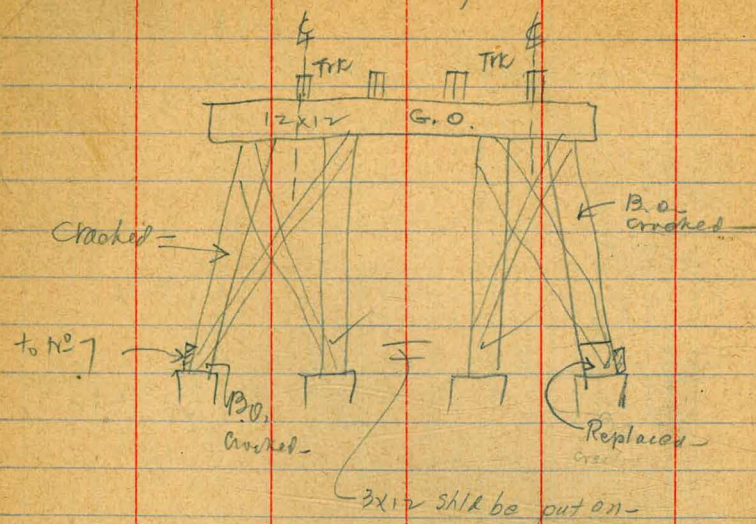
$$110000 = \frac{22}{66} \times 165000$$

$$M = \frac{1}{4} \times 30000 \times 7 = 525000 \# \square$$

$$S_{12 \times 12} = \frac{525000}{288} = 1823 \# \square$$

$$S_{12 \times 16} = \frac{525000}{512} = 1025 \# \square$$

1x
Bent No 8 - Looking West -

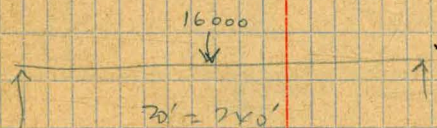


Main Truss -

Lower chord - memb & pin jt - rusted -
 Diag Tens - rusted -
 Vent + shld be painted -
 Up chd ✓ ✓ ✓ -
 Entire Truss shld be gone over thoroly -
 cleaned - painted -

Timbers in upper chd - look - old - rotten -

Track Beams - 2-7x16 = 14x16

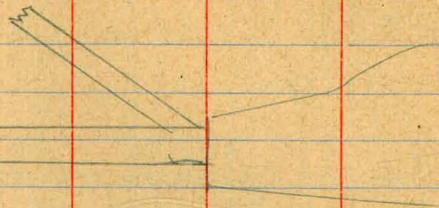


$$W = \frac{1}{2} \times 16000 \times \frac{60}{240} = 960000 \#$$

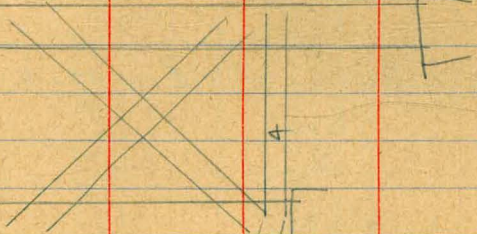
$$\text{Saf } 14 \times 16 = 600 = 1600 \# \square'' - \text{Too large -}$$

Trees -

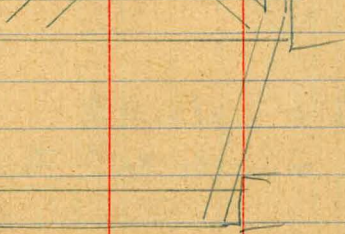
#5



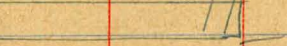
#6



#7



#8

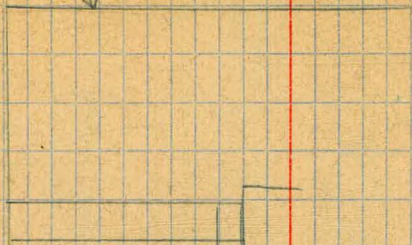


Longit & Snows -

East about

West
about

#1



#2

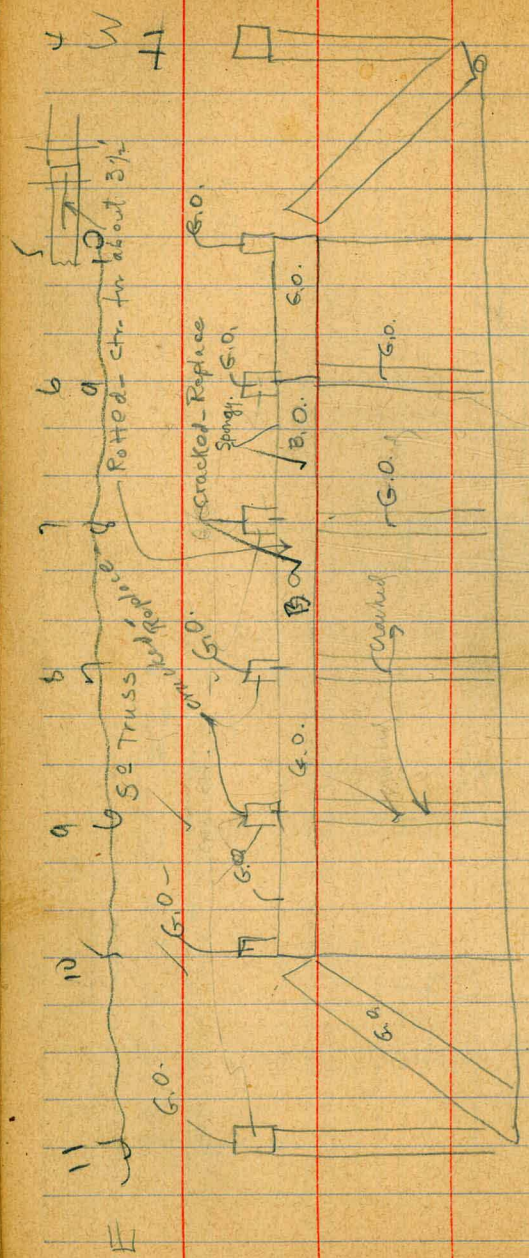


#3

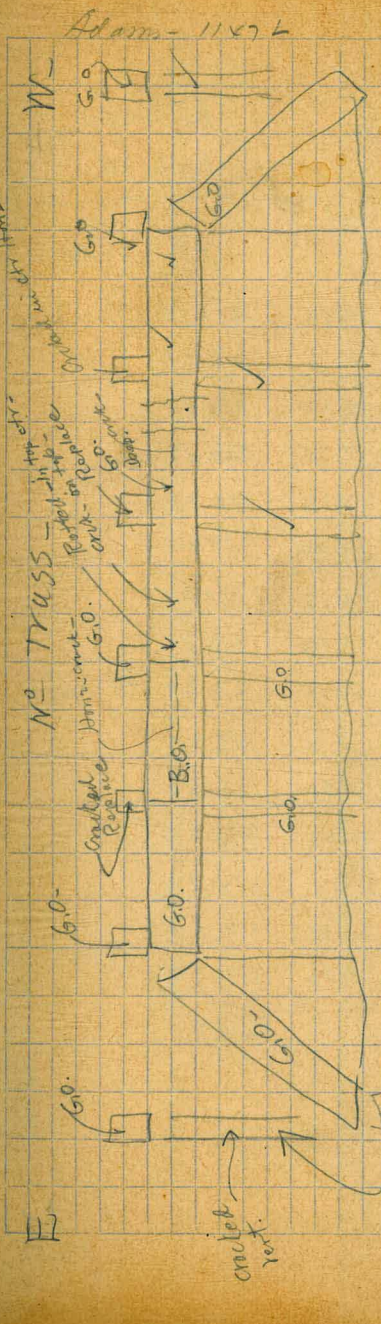


#4

From looks or floor - + Rails -
has settled - low. also - #5



Hand Rails on both sides B.O.



Marked all about 3"
all over post - are out of Plumb abt 3"

From looks of
back towers in B.O.
E.T.R. ones have 2x4's

M. E. Cor - Prtgr - Spk Pole -			355 41	
La. S. Mer. Br. Pl. Conc. Mon -			351 07 ←	
Griz - S. M. R. R. Sp. Pole grd			366 80	
	(+)	H. I.	(-)	
	3.44	354.51	351 07 ←	
N. End. Prtgr	S. R. I.	4.41	350.10	
	N ✓	4.40	350.11	
Bent #1	S ✓	4.37	350.19	
	N ✓	4.37	350.17	
✓ #2	S ✓	4.23	350.28	
	N ✓	4.26	350.25	
✓ #3	S ✓	4.13	350.38	
	N ✓	4.16	350.35	
#4	S ✓	4.15	350.37	-4" = 346.31
	N ✓	4.19	350.32	
#5	S ✓	3.90	350.61	
	N ✓	3.91	350.60	
#6	S ✓	3.69	350.82	
	N ✓	3.66	350.82	
#7	S ✓	3.53	350.98	
	N ✓	3.55	350.96	

	+	350.51 H ₁	-	E ₁	
#8	S.R.		3.33	351.18	
	NV		3.41	351.10	
#9	S✓		3.25	351.26	
	N✓		3.33	351.18	
#10	S✓		3.17	351.24	
	N✓		3.25	351.26	
#11	S✓		3.12	351.27	-4 = 347 ²
	N✓		3.17	351.24	
#12	S✓		2.87	351.70	
	N✓		2.89	351.62	
#13	S✓		2.30	352.21	
	N✓		2.38	352.13	
#14	S✓		1.46	353.05	
	N✓		1.52	352.97	
E-End	S✓		0.72	353.78	
	N✓		0.70	352.81	
			10.42	344.08	T.P.
	1.02	345.10			
			12.69	332.41	T.P.
	+2.22	334.63			

	+		-	
		324.63		
			12.21	322.42 T.P.
Top. conc. S.P. Pier.	822	330.64	11.35	319.29
N.W. Top. Tower:	140' Span -		11.34	319.32
S.E. Tower -			10.68	319.96
N.E. ✓			10.74	319.90
	11.04	330.33		319.29 S.P. Pier
			5.28	325.05 S. Pier Bent # 3
			1.09	329.20 T.P.
329.74 ←			2.25	328.08
+ 8.67			2.65	327.68
337.91 = H.I.				
- 5.05				

Bent #1

332.86	329.24	328.08	327.68
□	□	□	□

	+	H.I.	-	
				326.00
	11.54	337.54		326.00
			11.50	
			13.05	
		324.49 #7		
	□	□	□	□
			326.00	
			3.66	333.88
			2.51	335.03
			2.00	335.50
			1.13	336.41
		Bent #8		
	333.88	336.09	335.54	336.41
	□	□	□	□

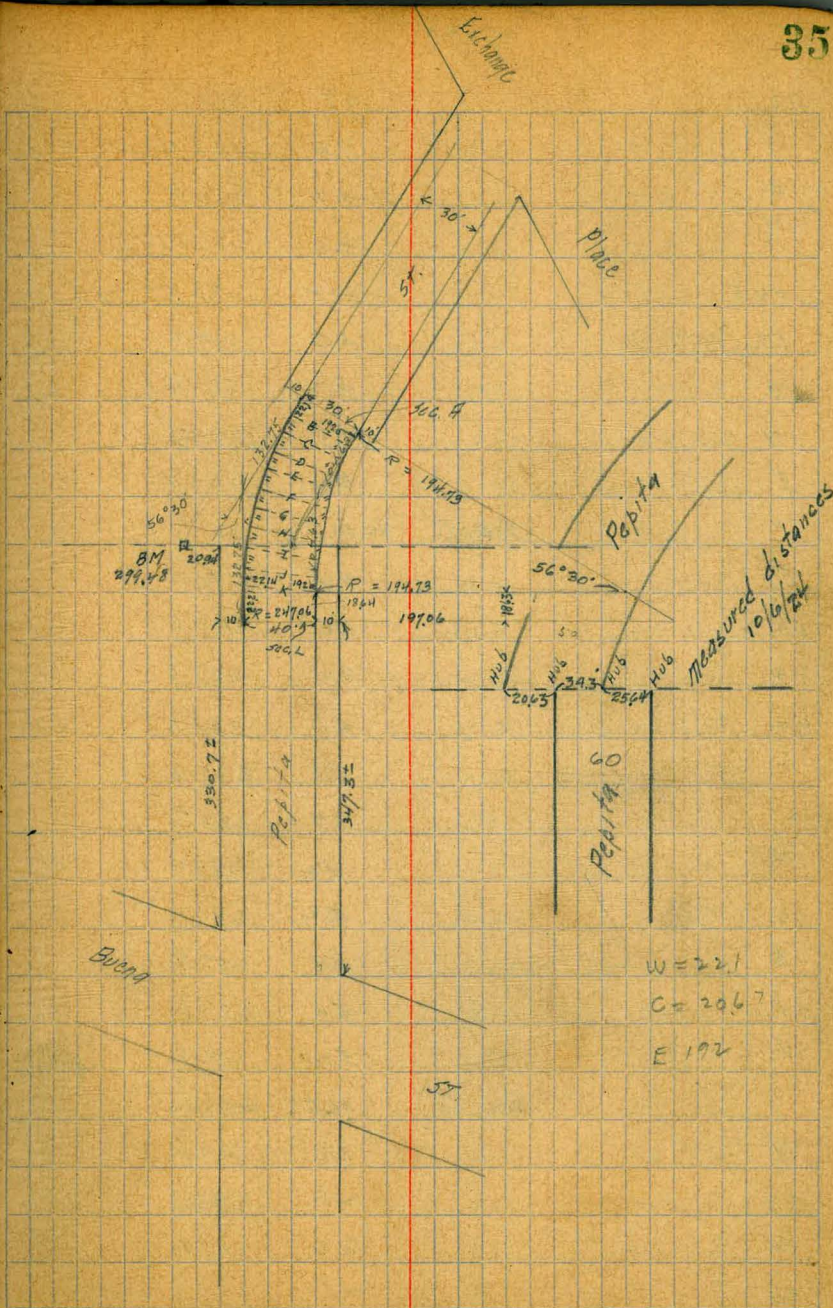
MA
 11/20/20
 by himself.

4/18/24 Gregory. RE CROSS SECTION OF A
PORTION OF PEPITH ST.
LA JOLLA

E and W are always 10' from cb	1.13	300.61	299.48
	4.56	292.63	287.97
for sections from here to Exchange see back 1097.		Sec. A.	regular 50' ST 10' cbs
W.		12.6	280.0
+9		11.9	280.7
cb		12.3	280.3
1/2		11.9	280.7
C		11.2	281.4
1/4		10.7	281.9
+6.5		11.0	281.6
cb		9.8	282.8
E		9.1	283.5
22.14' S on W } measured on cb lines 19.20' on E } Sec. B		30' bet cbs	
E		5.9	286.9
+1		6.9	285.7
cb		7.5	285.1
+2		8.6	284.0
1/2		8.4	284.2
C		8.8	283.8
1/4		9.2	283.4
cb		9.9	282.7
W		10.1	282.5
		Sec. C	30.32' bet cbs
W		7.7	284.9
+8		7.4	285.2

Plotted
Oct 1924
H.R.B.
See 1437

WB sec
book 1097-47



cb	7.7	284.9
1/4	7.0	285.6
c	6.2	286.4
1/4	6.0	286.6
+4.5	6.2	286.4
+6	5.3	287.3
cb	5.2	287.4
+9	4.8	287.8
E	3.2	289.4

Sec. D 30.80' bet cbs

E	2.4	290.2
cb	3.0	289.6
+3	3.2	289.4
+4	4.0	288.6
1/4	4.0	288.6
c	3.9	288.7
1/4	4.2	288.4
cb	5.2	287.4
+3	5.1	287.2
+4	5.0	287.6
W	5.1	287.5

Sec. E 31.52' bet cbs

W	2.8	289.8
+3	2.9	289.8
+4	3.2	289.4
cb	2.8	289.8

1/4	2.1	290.5
c	1.8	290.8
1/4	2.0	290.6
+2.5	1.2	291.4
cb	0.9	291.7
E	0.3	292.3
T.P.	11.74 304.26	0.11 292.52

Sec. F 32.37' bet. curbs

E	9.4	294.9
cb	10.3	294.0
1/4	10.3	294.0
+2	10.5	293.8
+3	11.3	293.0
c	11.2	293.1
1/4	11.4	292.9
cb	11.8	292.5
W	12.3	292.0

Sec. G 33.39' bet. curbs

W	9.8	294.5
cb	8.9	295.4
1/4	8.7	295.6
c	9.1	295.2
+3	8.0	296.3
1/4	8.0	296.3
cb + 4	8.0	296.3

304.26

+6.5			6.1	298.2
cb			6.1	298.4
E			6.5	297.8
		Sec. H.	34.60	bet curbs
E			4.4	299.9
cb			4.8	299.5
1/2			5.4	298.9
C			5.6	298.7
+2			5.7	298.6
+4			6.5	297.8
1/2			6.4	297.9
cb			6.4	297.9
W			7.1	297.2
		Sec. I	36.02	bet. curbs
W			4.3	300.0
cb			4.1	300.2
1/2			3.9	300.4
C			3.4	300.9
1/4			2.4	301.9
cb			1.8	302.5
E			1.6	302.7
		Sec. J	37.51	bet. curbs
T.P.	4.97	30877	0.46	303.30
E			3.9	304.9
cb			4.4	304.4
1/2			4.6	304.2

PEPITA

37

30877

C			5.0	303.8
1/2			5.5	303.3
cb			5.8	303.0
W			6.5	302.3
		Sec. K = EC on E	39.18	bet. curbs
W			4.8	304.0
cb			3.7	305.1
+6			3.5	305.3
+7			4.0	304.8
1/2			4.0	304.8
C			3.8	305.0
1/4			3.7	305.1
cb			3.2	305.6
E			2.1	306.7
		1 st section on regular 10's Sec L	EC on W	4.0 bet curbs
E			1.1	307.7
cb			2.2	306.6
+9			2.5	306.3
1/2			3.0	305.8
C			3.1	305.7
1/2			3.6	305.2
cb			4.2	304.6
W			5.0	303.8
+5			5.3	303.5

E 4450⁶⁴ 308.77
 C = 4477¹²
 W = 4483⁶¹
 15' S

-S	5.4	303.4
W	5.1	303.7
cb	4.0	304.6
+8	2.4	306.4
1/4	2.9	305.9
c	2.6	306.2
1/4	2.2	306.6
+W	1.5	307.3
cb	1.8	307.0
E	1.5	307.3

E 4475⁶⁴ 40' S

E	1.9	306.9
cb	2.1	306.8
1/4	2.5	306.3
c	2.6	306.2
1/4	3.2	305.6
cb	3.1	305.8
W	3.2	305.4

E 5400⁶⁴ 65' S
 C = 5427¹²
 W = 5433⁶¹

W	4.6	304.2
cb	3.7	305.0
1/4	3.0	305.8
c	2.4	306.4
1/4	2.5	306.3
cb	2.2	306.6
E	2.0	306.8

308.77 PEPITA 38

E 5435⁶⁴ 100' S
 C = 5462¹²
 W = 5468⁶¹

E	2.2	306.6
cb	1.8	307.0
1/4	1.7	307.1
+1	2.4	306.4
c	2.3	306.5
+8	2.7	306.1
1/4	3.1	305.6
cb	3.6	305.3
W	4.1	304.7

E 5475⁶⁴ 140' S
 C = 5402¹²
 W = 6408⁶¹

W	4.1	304.7
cb	3.8	305.0
1/4	3.4	305.0
c	3.0	305.8
1/4	3.0	305.8
cb	2.9	305.9
E	2.7	306.1

E 5490⁶⁴ 155' S
 C = 6417¹²
 W = 6423⁶¹

E	3.1	305.7
cb	2.6	306.2
+9	2.2	306.6
1/4	3.1	305.7
c	3.2	305.6
1/4	4.0	304.8
cb	4.8	304.5
W	4.4	304.4

E 6+15 64 308.77
 C 6+42 1/2
 W 6+48 61 180'S

W	47	304.1
cb	47	304.1
1/4	44	304.4
C	3.8	305.0
1/4	3.5	305.3
cb	3.6	305.2
E	3.5	305.3

E 6+65 64
 C 6+92 1/2 230'S
 W 6+98 61

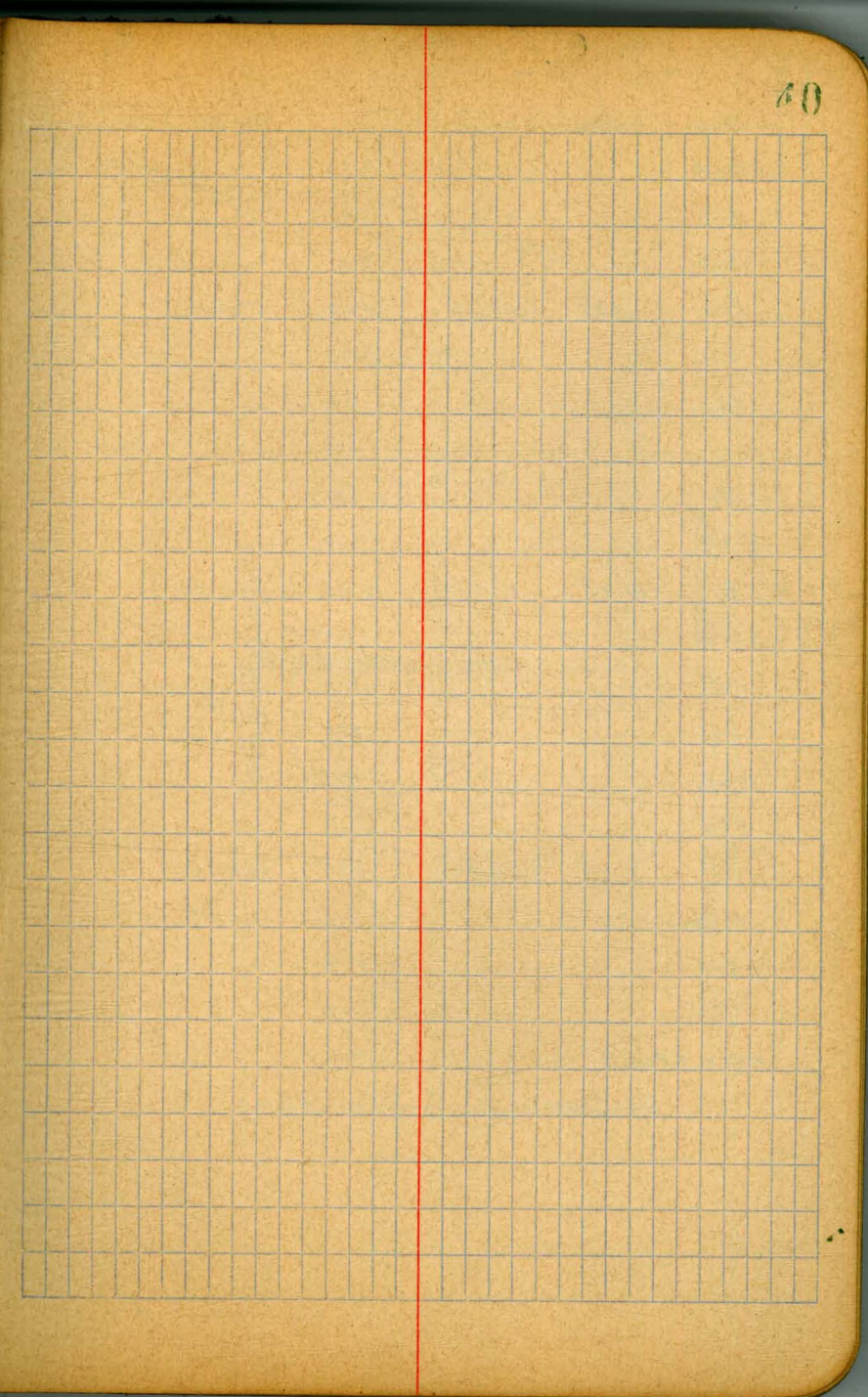
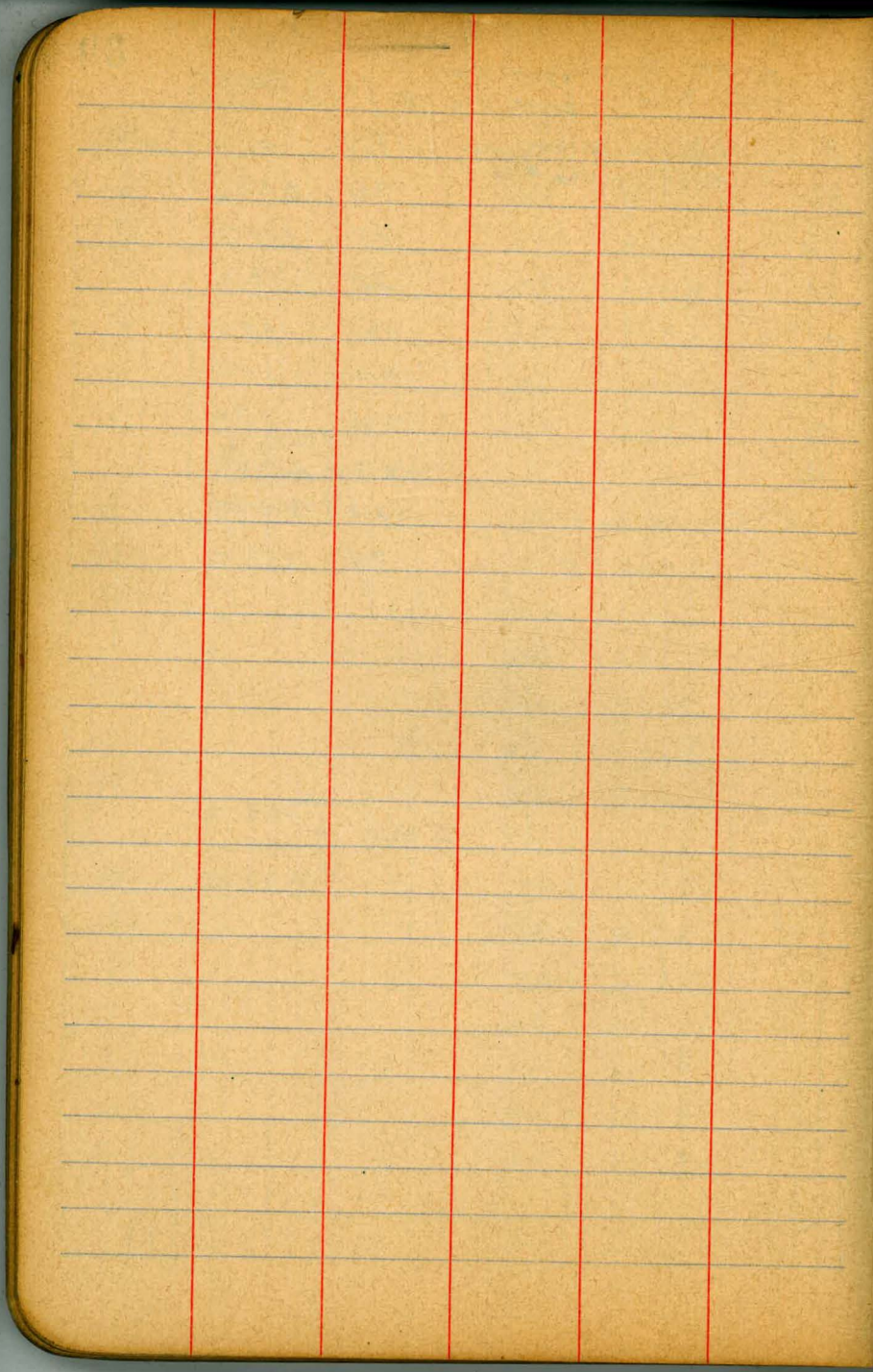
E	48	304.0
cb	51	303.7
1/4	53	303.5
C	53	303.5
1/4	6.0	302.8
cb	6.0	302.8
W	6.3	302.5

E 7+15 64
 C 7+42 1/2 280'S
 W 7+48 61

W	77	301.1
cb	7.0	301.8
1/4	7.3	301.5
C	6.8	302.0
1/4	7.0	301.8
cb	7.0	301.8
E	6.4	302.4

E 7+82 94 308.77 PEPITA 39
 C 7+01 1/2 330.7 5 on W
 W 7+79 31 347.3 - E } = NL Buang

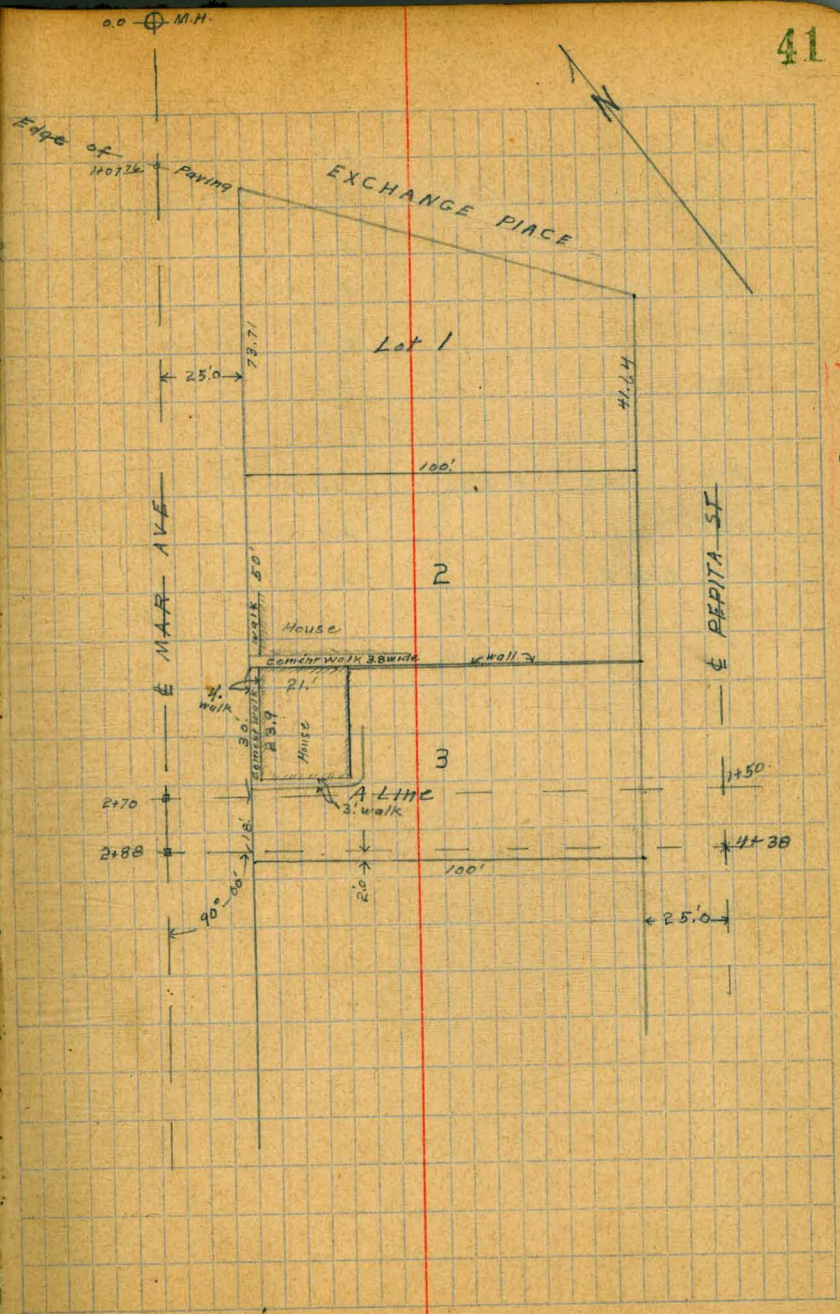
E	Make grade @ this corner	866	300.11	on hub
cb	299.5 if possible RMA	9.2	299.6	
1/4		9.1	299.7	
+1		9.5	299.3	
C		9.6	299.2	
1/4		10.0	295.8	
cb		10.4	298.4	
W		10.2	298.6	
	10' 5.0x NL on W	10.9	297.9	
	- - - - - E	8.9	299.9	



10/21/24 Sewer Levels on & MAR Ave and through Lot 3 to & PEPITA ST.

B.M.	11.80	234.67	222.87	Hydrant Exchange Soledad
+107 1/2		12.83		on edge paving
+150		7.4		
+200		0.9		
T.P.	12.71	247.18	0.20	234.77
+25		10.4		
+50		7.0		
+270		4.16		on stub
+288		1.85		" "
+304		2.0		
T.P.	12.83	259.97	0.04	247.14
+312		10.6		
+22		9.2		
+36		5.0		
+60		4.2		
+85		0.5		
T.P.	6.25	265.03	1.19	258.78
+400		3.4		
+15		1.9		
+30		0.4		
+438 & Pepita		+0.6		

See Page 42 for Levels on A Line



274.18

2770 Page 41 = 00. A Line

4.16

on stub

+16

4.2

T.P.

12.43

259.97

0.04

247.14

+30

12.6

+55

9.1

+82

4.5

+100

3.4

+05

1.9

T.P.

6.25

265.03

1.19

258.78

+25

4.5

+50 & Petite

2.5

10/21/24

Sewer Levels from M.H. @ Center Bet Ends
+ Fay to a line 15' E. of Fay thence S. to N. Line Westbourne
Full
Shan
Wall

B.M.	9.29	141.89 ✓	141.9	132.60	100 Westbourne Top Wall S.E. Cor Fads @ Center
00 = M.H. Bet Ends + Fay			10.04	131.85 ✓	inflow line
00			3.1	138.8 ✓	on ground
+50			1.2	140.7 ✓	
T.P.	8.62	150.40 ✓	0.11	141.78 ✓	
+100			7.8	144.6 ✓	
+150			6.1	142.3 ✓	
+65			6.4	144.0 ✓	
+80			5.4	145.0 ✓	
2+05 = 15' E. of Fay O.P. Fay			5.1	145.3 ✓	5.9 E. of E. Rail
+50			4.9	145.5 ✓	
+300			4.7	145.7 ✓	
+50			4.5	145.9 ✓	
+400			4.0	146.4 ✓	
+50			3.7	146.7 ✓	
+500			3.5	146.9 ✓	
+50			3.2	147.4 ✓	
+600			3.1	147.3 ✓	
+50			2.5	147.9 ✓	
+700			2.3	148.1 ✓	
+50			1.7	148.7 ✓	
7+94 @ 5' x 5' cement box iron cover			1.0	149.2 ✓	Line is 1' E. of Wedge
T.P.	5.25	154.77 ✓	0.88	149.52 ✓	
+50			4.3	150.5 ✓	
+900			3.5	151.3 ✓	
+50			2.6	154.4 ✓	beginning of side track from here N.

154.77

154.8

43

9+90	2.0	154.8 ✓
10+00	2.3	154.5 ✓
+10	3.5	151.3 ✓
+50	2.5	154.3 ✓
11+00	4.0	150.8 ✓
+50	3.0	151.8 ✓
+50	3.9	150.9 ✓
+50	2.3	154.5 ✓
12+00	2.4	154.2 ✓
+20	2.8	154.0 ✓
+50	4.8	150.0 ✓
13+00	5.0	149.8 ✓
+14	5.1	149.7 ✓
+40	7.2	147.6 ✓
+50	8.8	146.0 ✓
13+68.04 = N. Line Westbourne	8.8	146.0 ✓

30th St Bridge

South Abutment

3 S.W. Stringers on West to be replaced and supported.

S.W. Bridging along West side not nailed (entire bridge)

Diagonals are loose. Need tightening and clamping where they cross.
Whole bridge needs painting.

Gregory
Hayler

4-1-25

44

Check Levels on
Linda Vista Sewer outfall
Beg. 97 S Fe RR + Tecolote creek
STA. 99+50 to 74+84.0

B.M.O.P.

USC+G

15.845

9.01

4.675 11.51

6.835 CITY

T.P. 4.08 11.64 3.95 7.56

T.P. 6.43 12.21 5.66 5.98

T.P. 1.985 8.075 6.12 6.09

T.P. 3.05 5.895 5.23 2.945

check to B.M. #6 Pacific Highway 4.09 - 0.195 - 0.20

T.P. 5.15 6.58 11.465 1.43

T.P. 4.76 7.50 3.83 2.74

T.P. 2.18 ~~3.68~~ 1.00 6.50

on top E Rail 1.71 6.97

F.L. 24" pipe 5.74 2.96

on ground at M.H. 2.7 6.0

" sand in Creek 5.6 3.1

9.12 -0.44

9.24 -0.58

T.P. 6.40 9.85 5.23 3.45

F.L. 10.70 -0.35

" 11.72 -1.87 ✓

" 11.46 -1.61

" 10.17 -0.32

T.P. 4.13 9.57 4.11 5.04

24" support under Marano Blvd

Indexed
C.S.K.

C. Moore
G. Farrow
8-1-41

45

Top w. hd. wall S Fe RR Cdv. # M-263
approx. 900' N of Kennedy Road House

Sec. R.R. Rail (Top of Rail Ball) 150' Ft. 122+60 about 1" above ground

of S. Fe R.R. 12' N of N end of R.R. Trestle
99+55 inlet to M.H.

"
20' S of M.H. 99+55 Center of Tecolote Creek
F.L. inlet to M.H. 95+32.80

" outlet " " "

outlet to M.H. 92+91

inlet " " " "

outlet " " 92+26

inlet " " " "

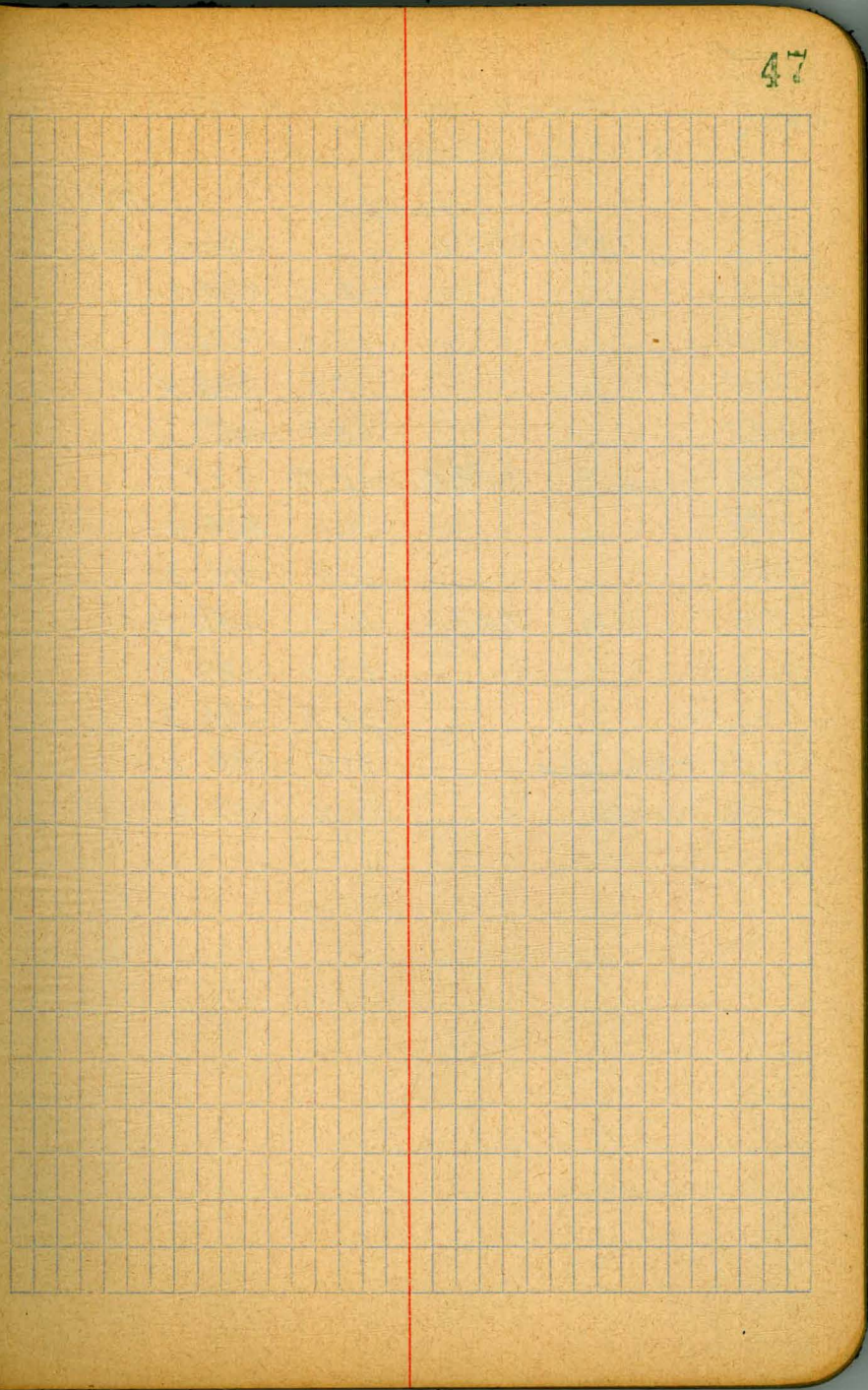
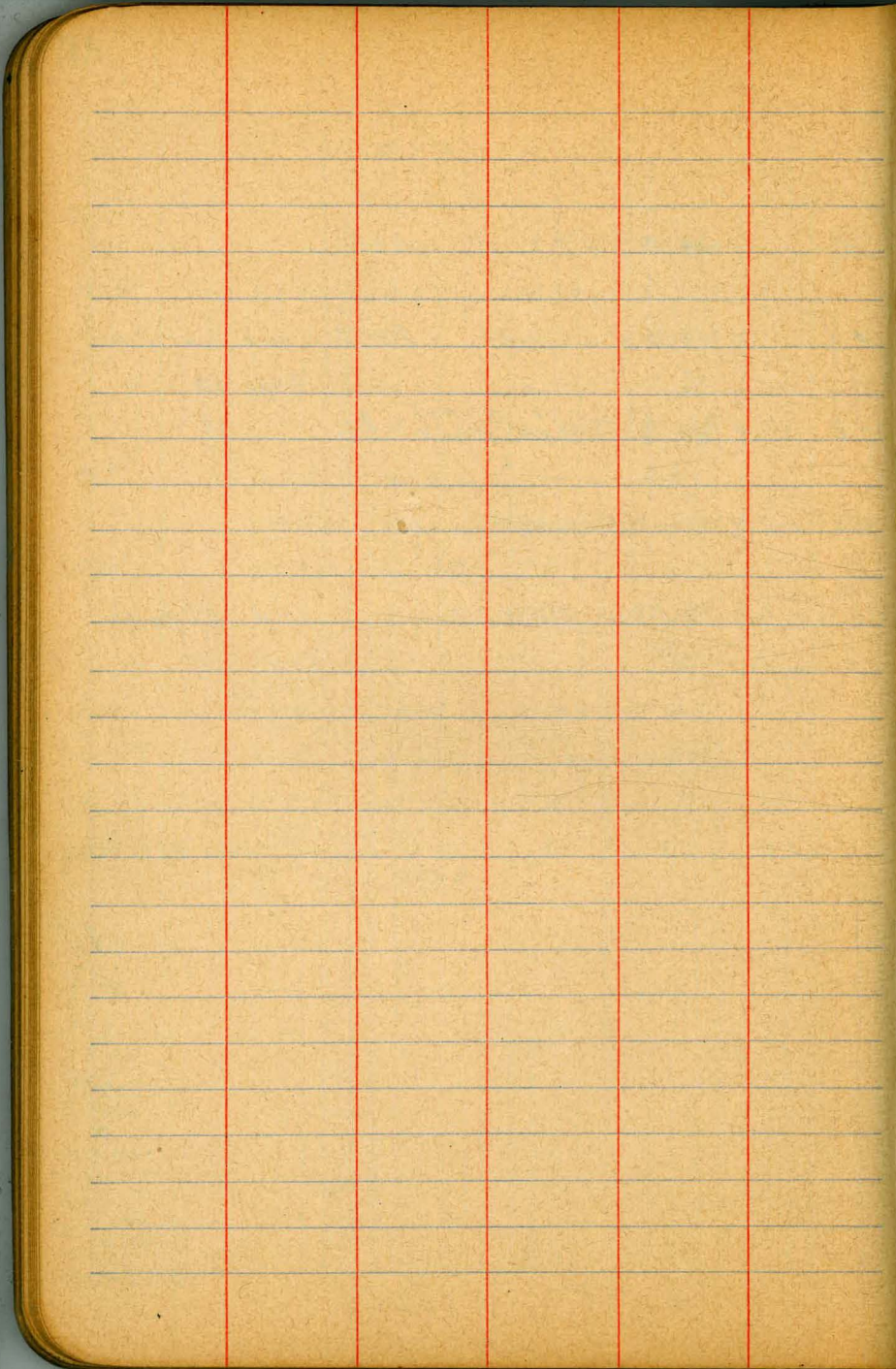
See 1670-76

9.57

			9.03	-0.06	
T.P.	7.61	13.08	4.10	5.47	
			12.88	0.20	
			17.37	0.71	
			10.99	2.09	
T.P.	6.35	14.30	5.07	8.01	
			M.H. cover sealed up.		
T.P.	5.80	16.85	3.31	11.05	
			7.50	9.35	
			7.45	9.40	
T.P.	3.13	14.18	5.90	11.05	
T.P.	4.77	11.61	3.34	8.84	
T.P.	4.57	11.43	4.75	6.86	
check to BM	Tecalote Bridge + Moreno Blvd		1.39	10.04	10.04

FL.	90+6.547	Δ	M.H.	
FL.	88+35	M.H.	POT	end 24" Pipe
FL.	"	"	"	beg. 18" "
FL. M.H. Δ	86+10.14	ahead = Eq.		18" "
	87+28.80	BACK = Eq.		
FL. M.H. Δ	78+28.40			
FL. outlet to M.H.	74+84			end 18" pipe
" inlet "	"	"		beg. 24" "

9.85
 3.72
 6.13
 6.20
 12.33
 2.28
 10.05
 ↑
 BM BP
 Tecalote
 Bridge
 Moreno
 Blvd.
 El. 10.04



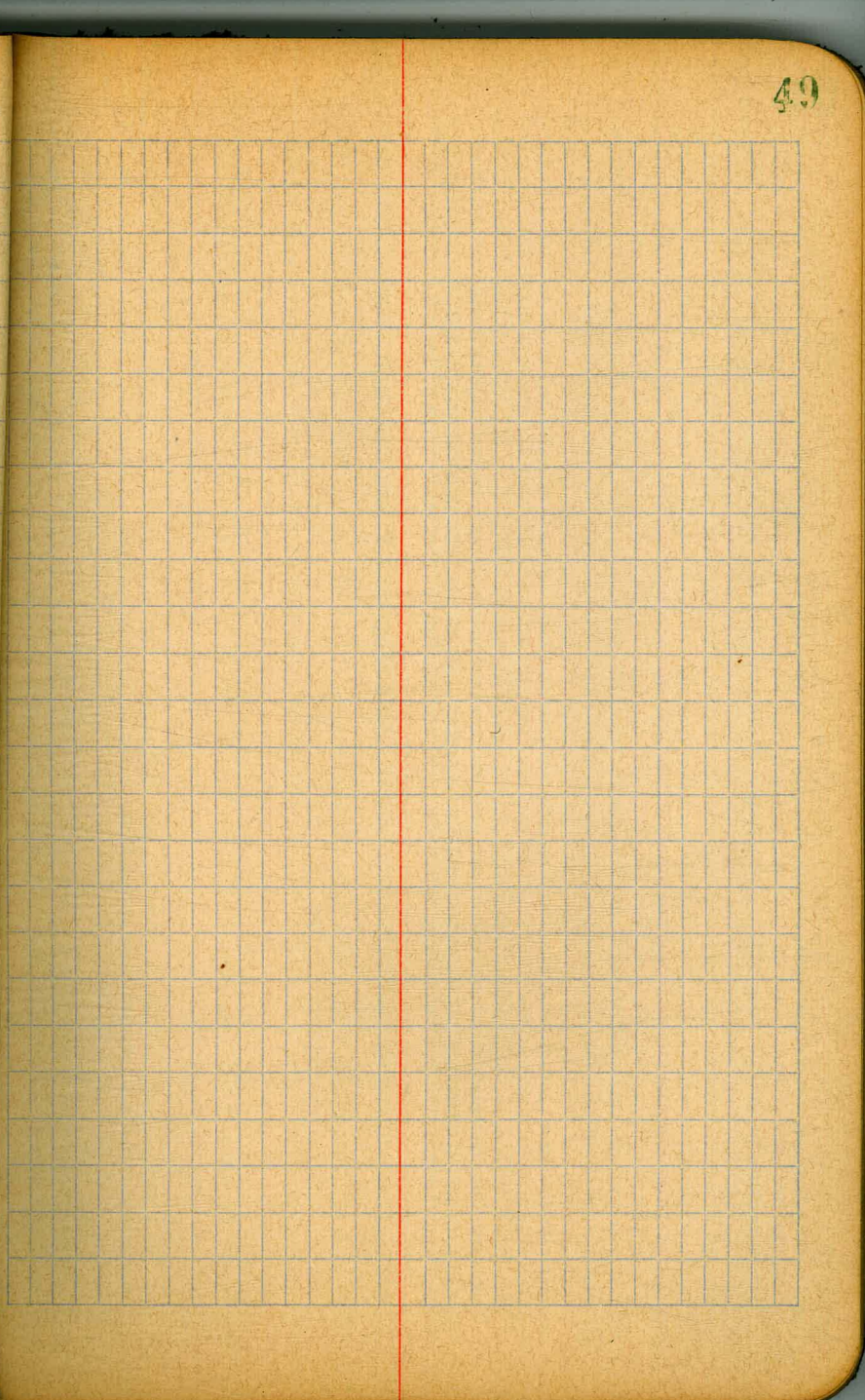
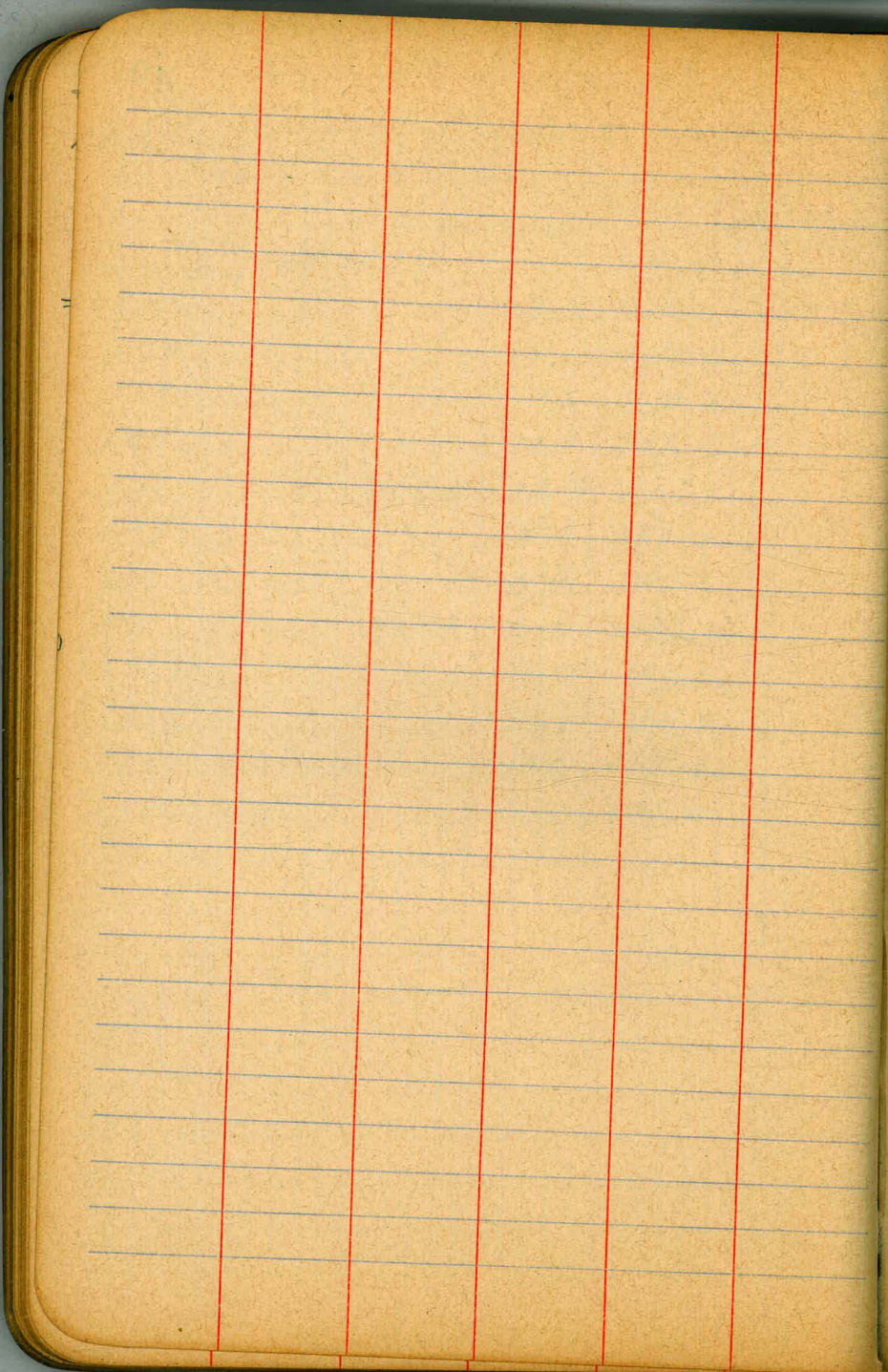
Walker
& Party
1-4-46

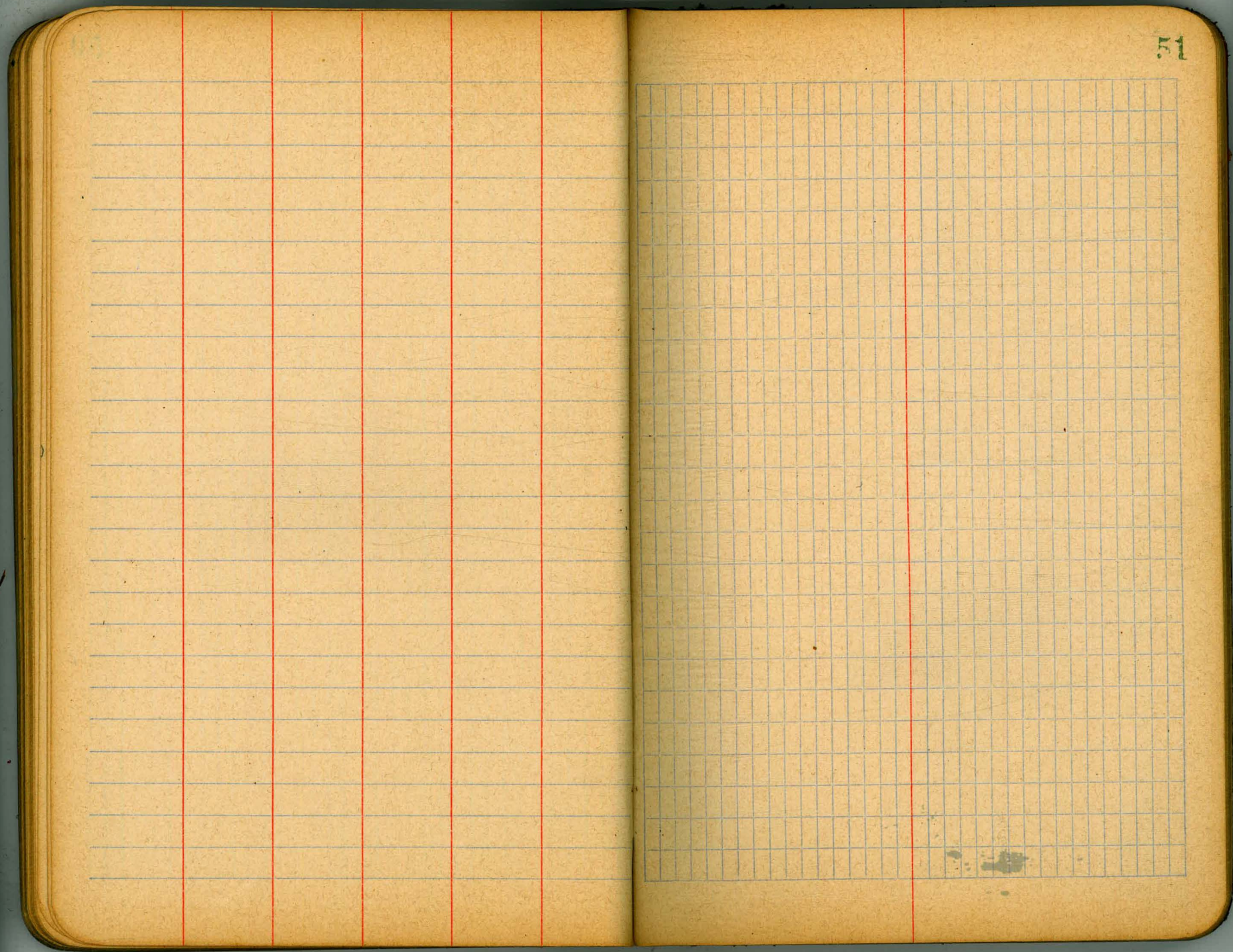
30th St. Bridge
Ground Profile of Wash
N.W. Cor Bridge

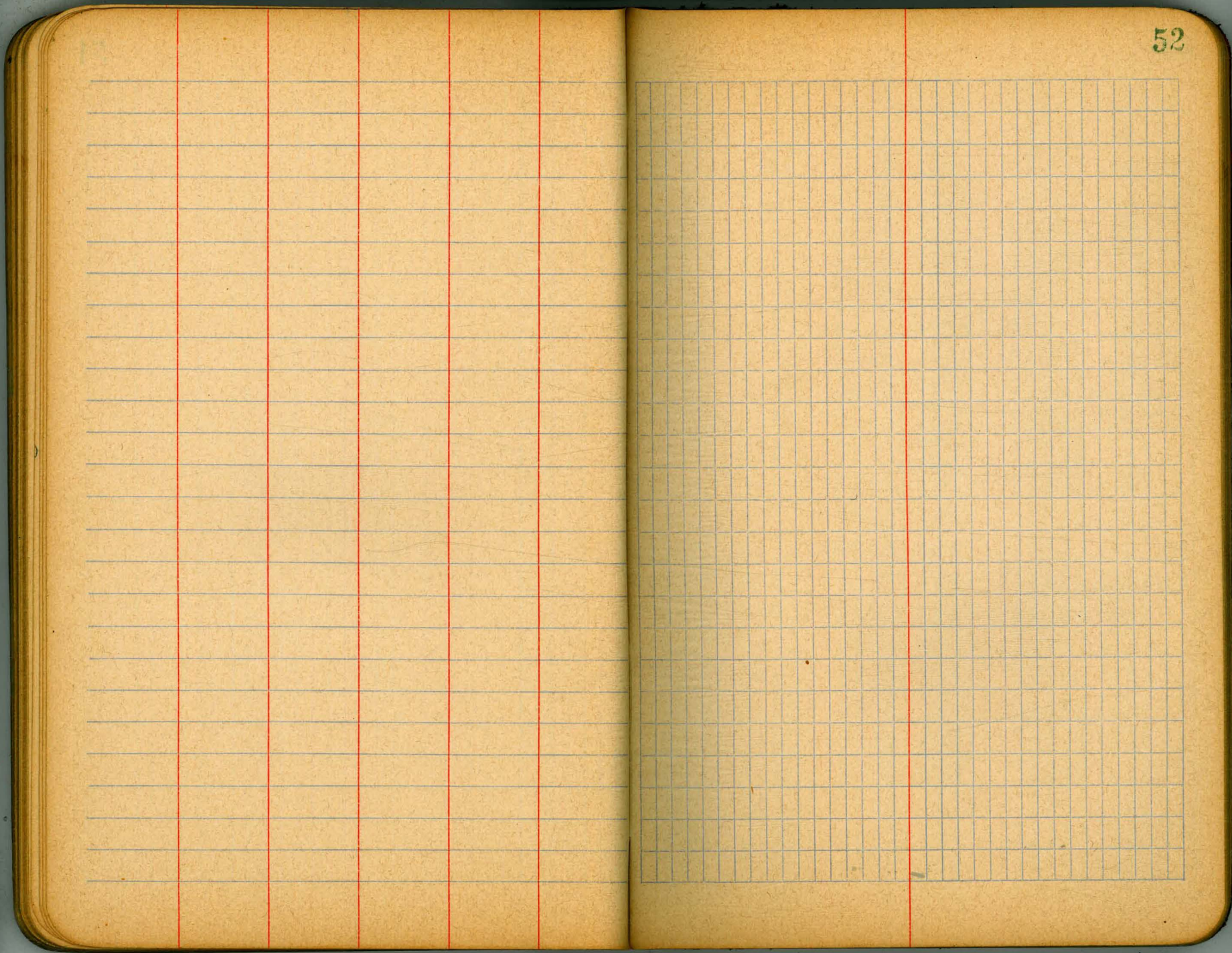
Indexed
as is.

48

		* Hand Level	BM Top Corner N.W. Cor Bridge
N.W. Cor Conc.	-9.0	271.0	280.0
= 0+00		-2.0	269.0
+03		1.0	270.0
+13		7.6	263.4
+23		12.3	257.7
TP	0.3	258.0	13.3 257.7
+35		6.0	252.0
+47		11.8	246.2
TP	1.0	247.0	11.8 246.0
0+60		10.1	236.9
+65		12.1	234.9
+80 - Bank creek		13.6	233.4
+82 - creek		16.6	229.4

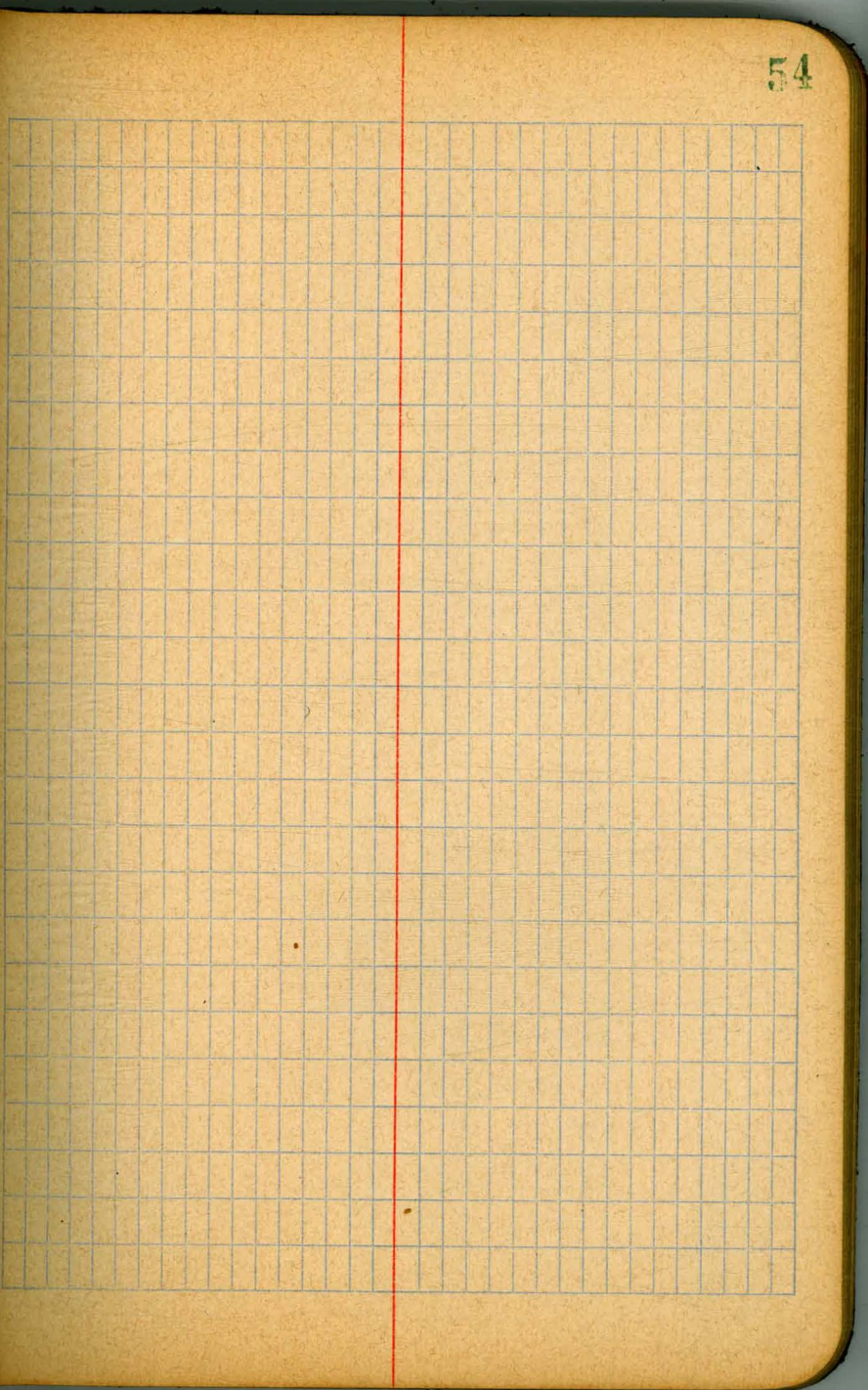
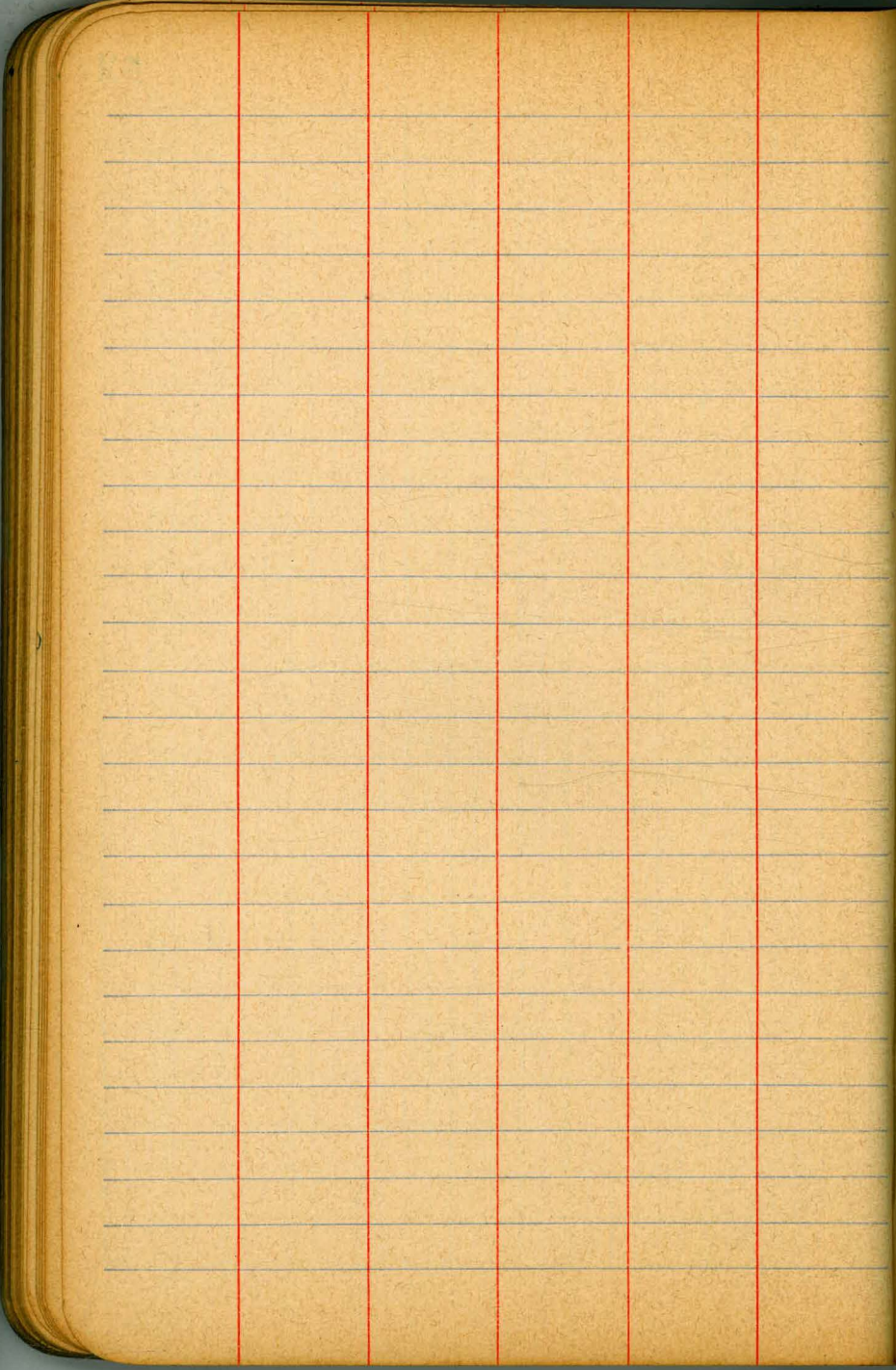


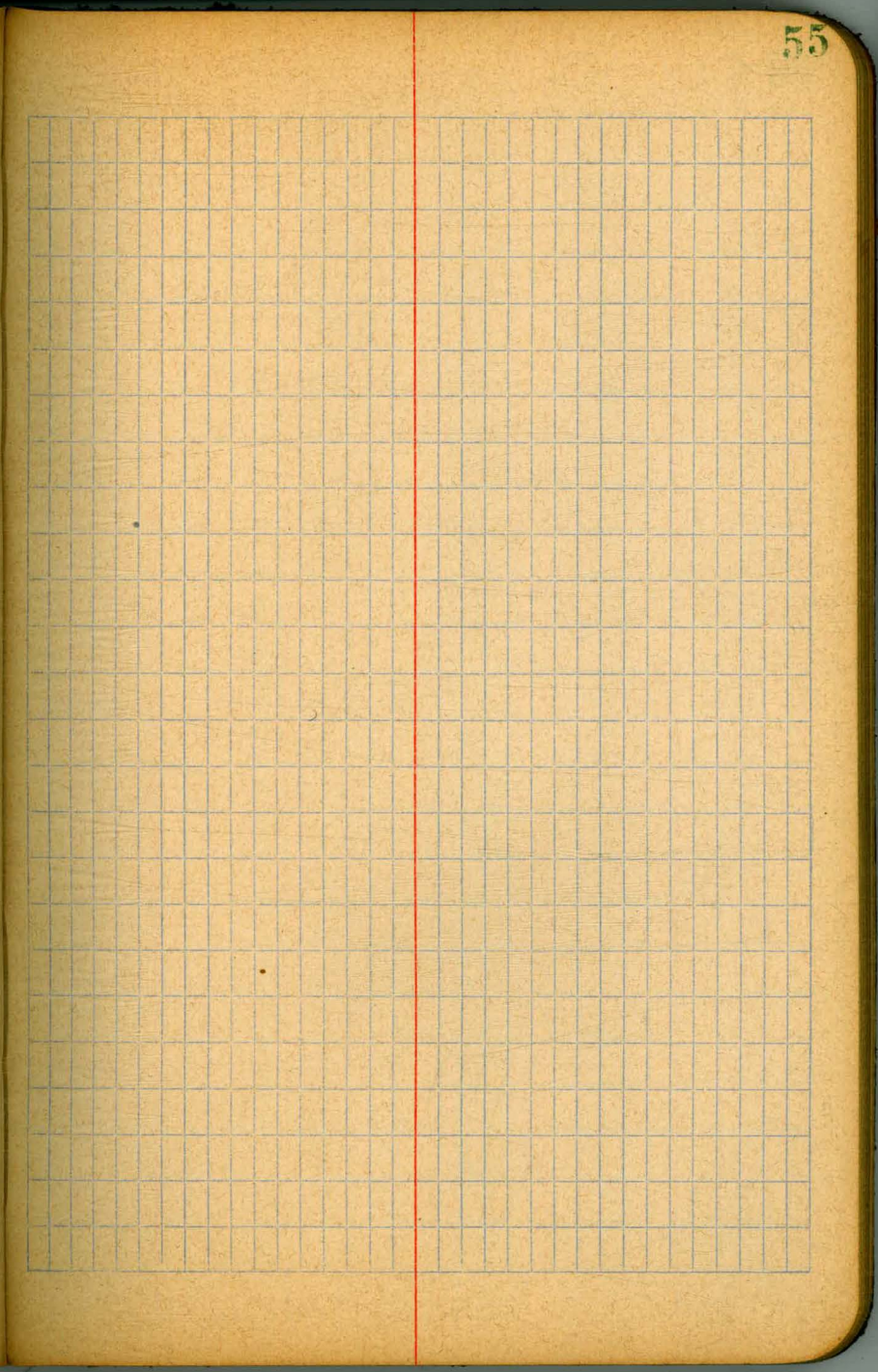
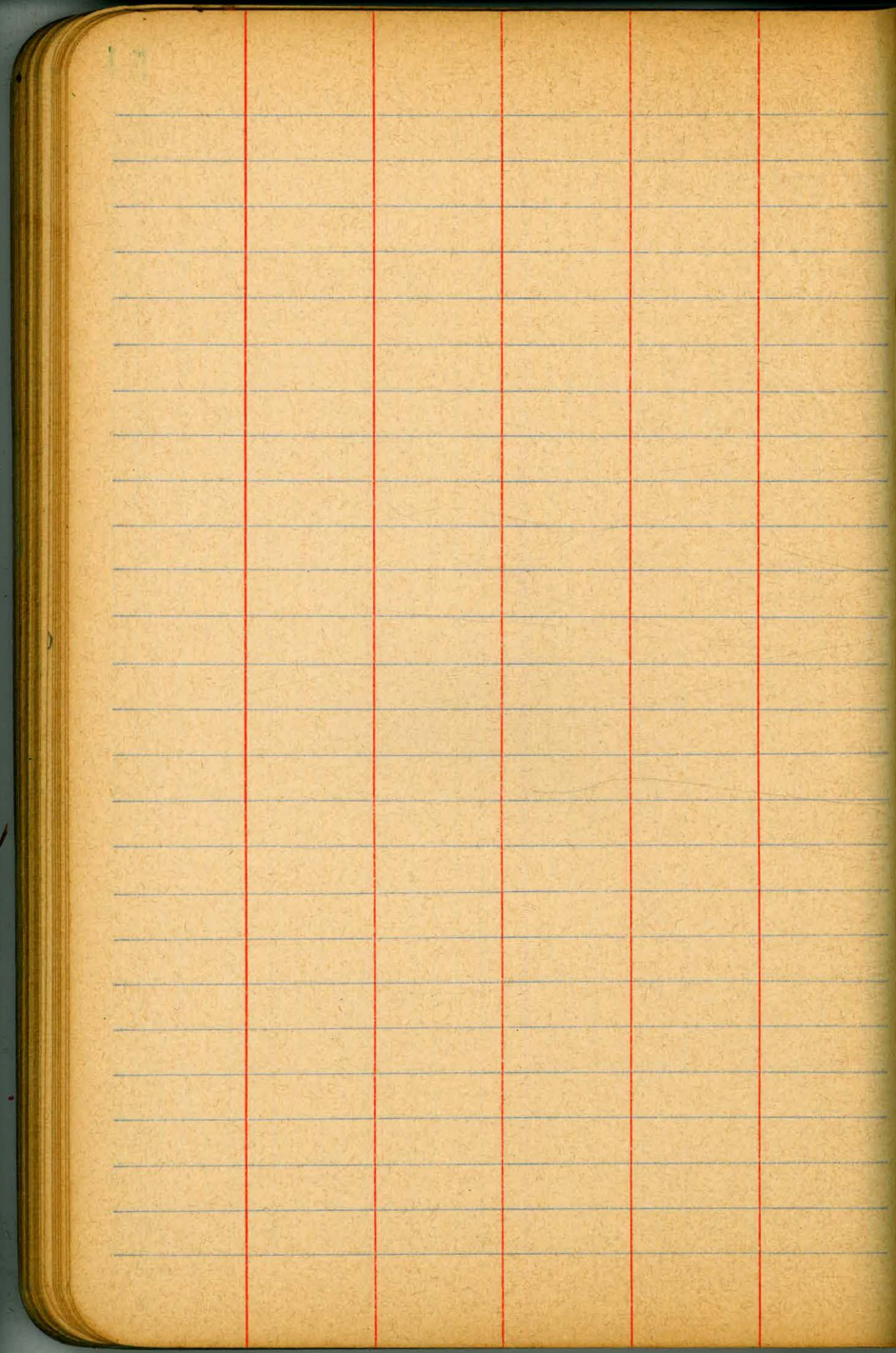


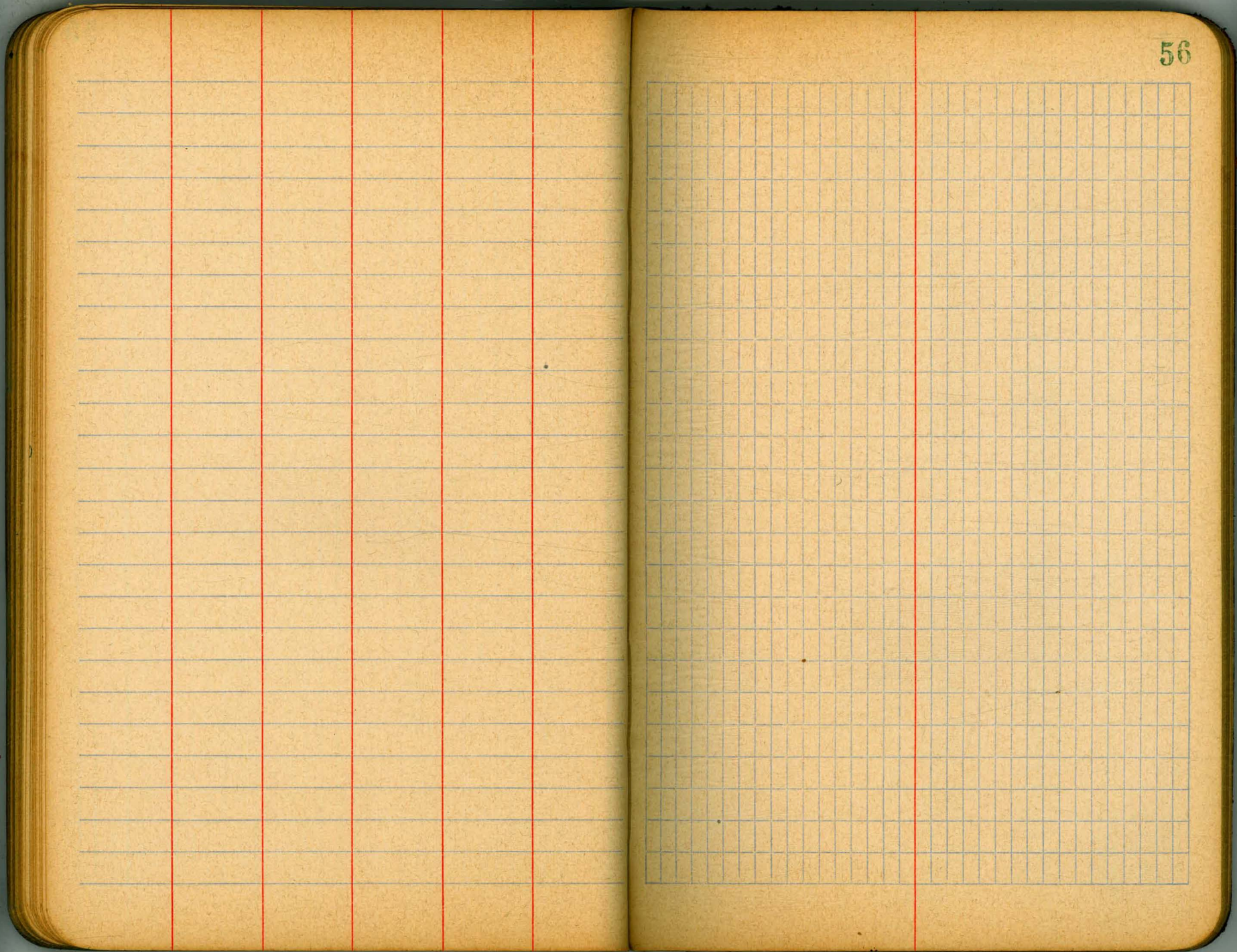


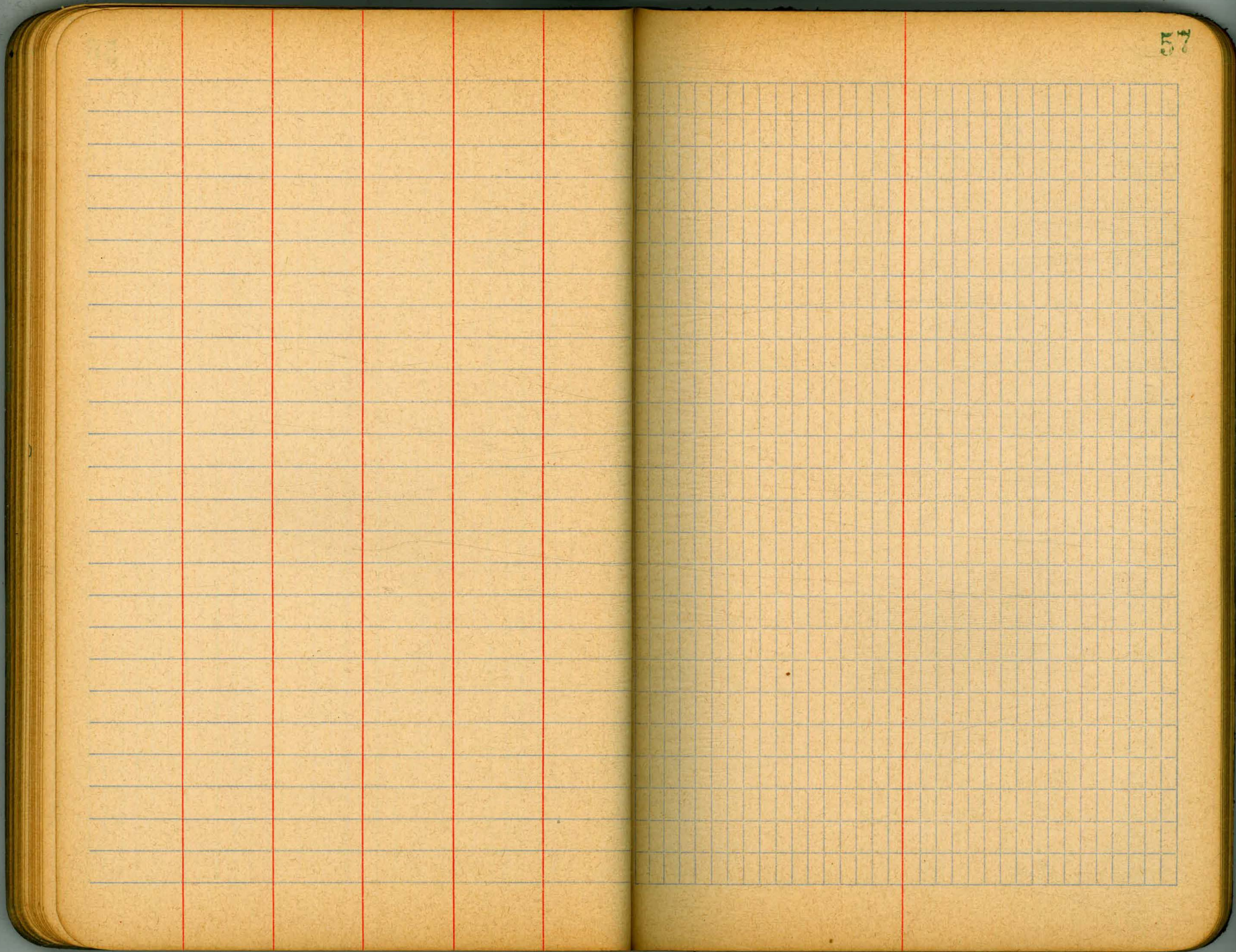
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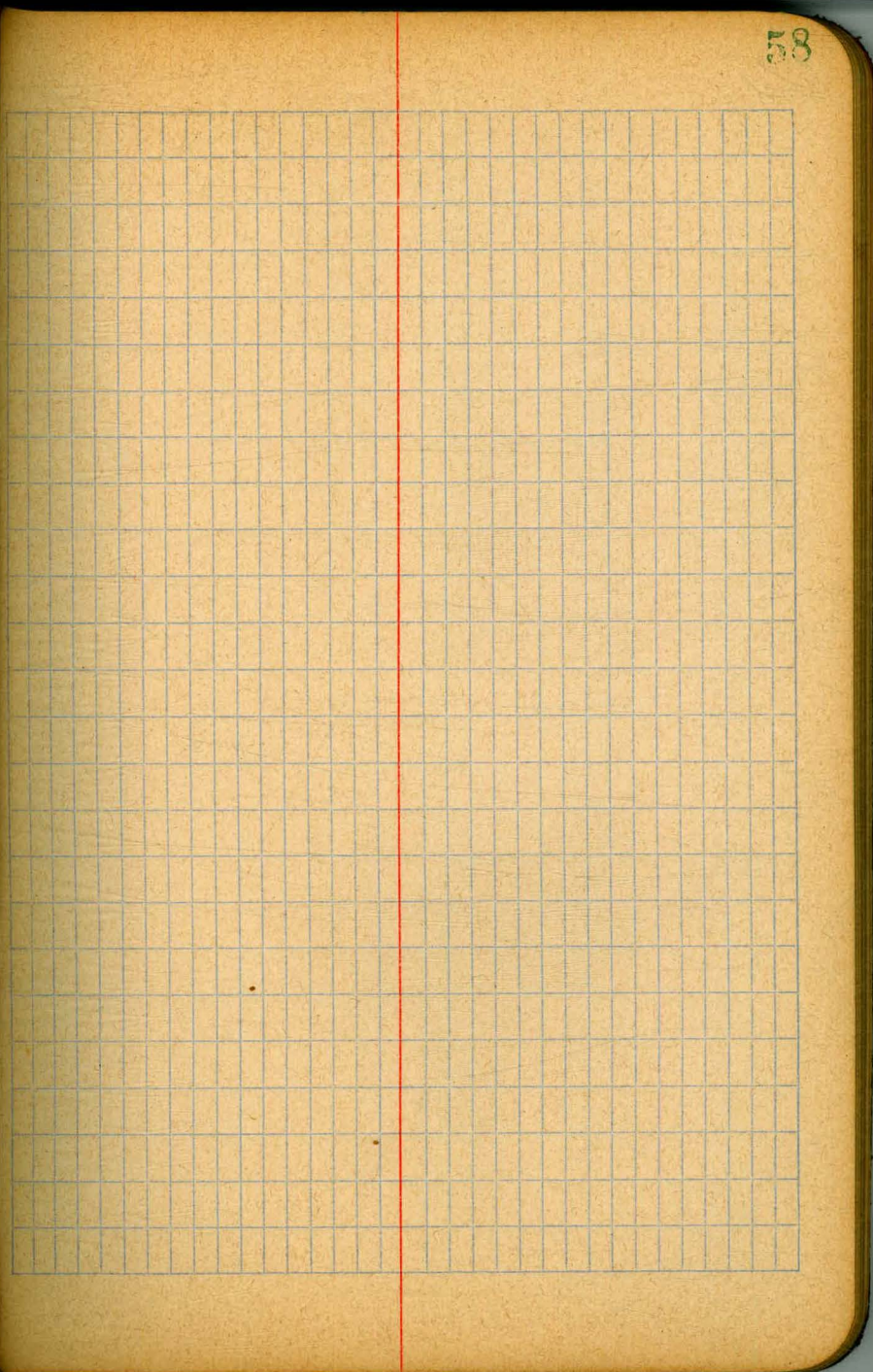
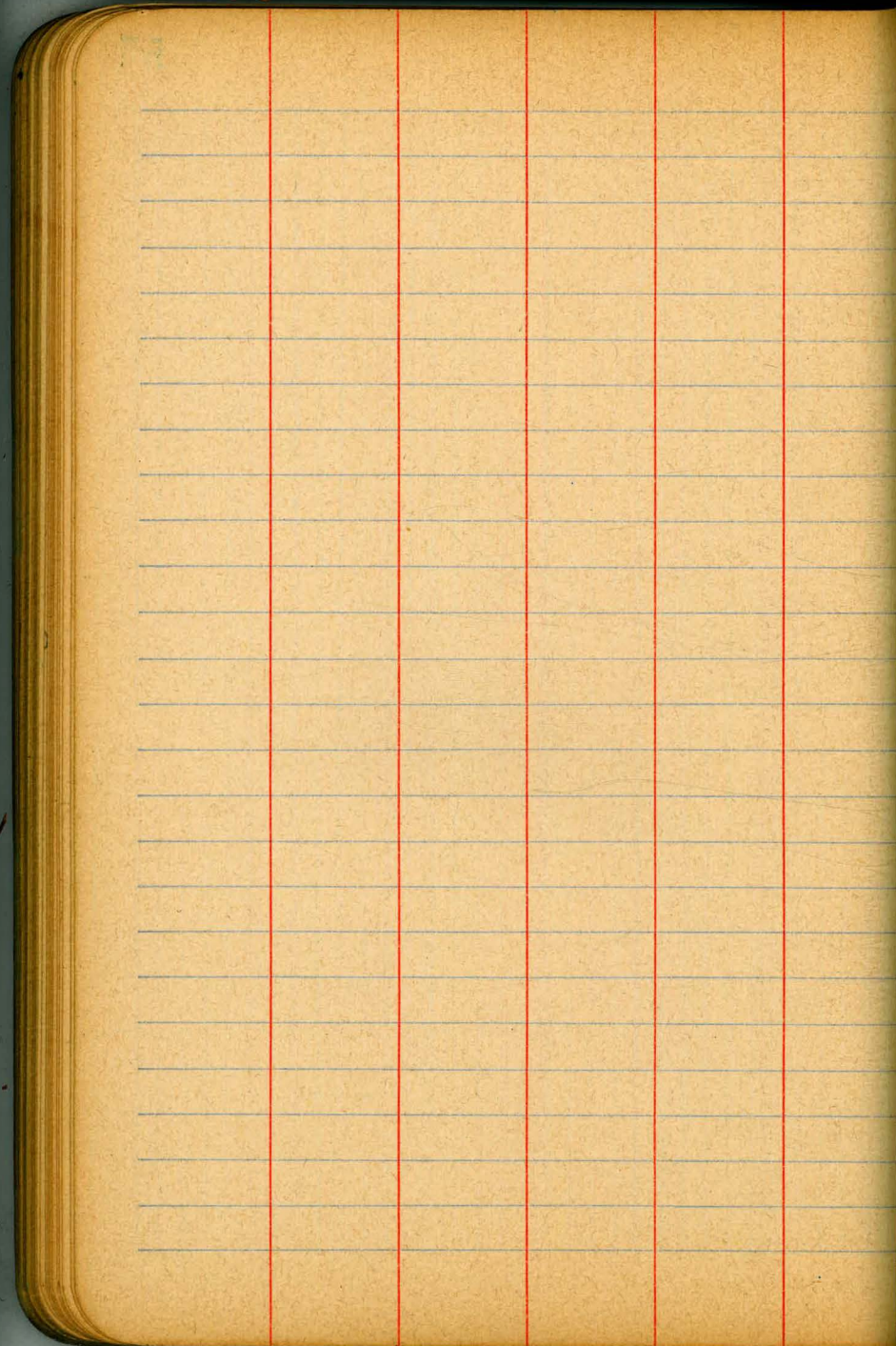
Blank ledger page with horizontal blue lines, vertical red lines, and a grid of small squares.

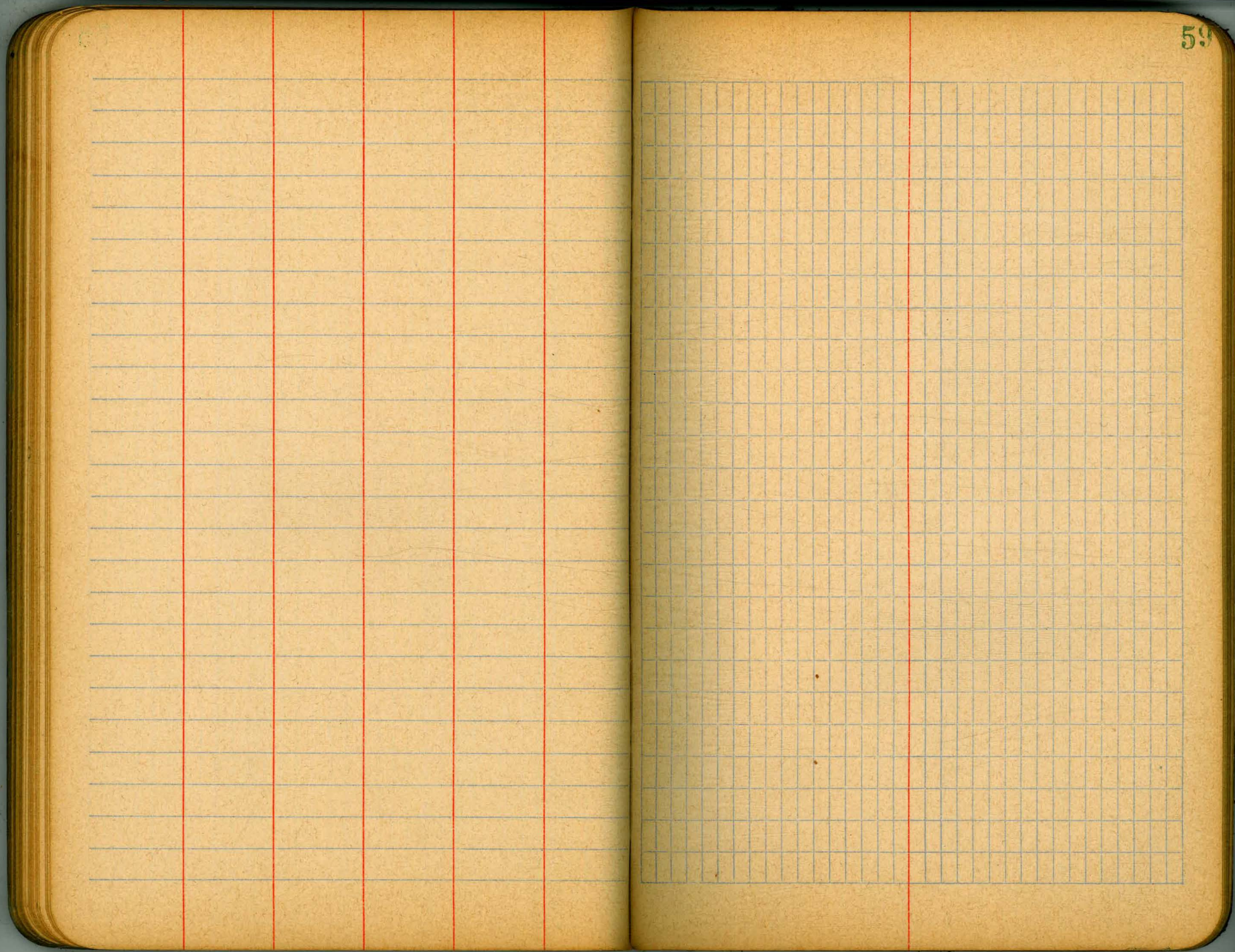


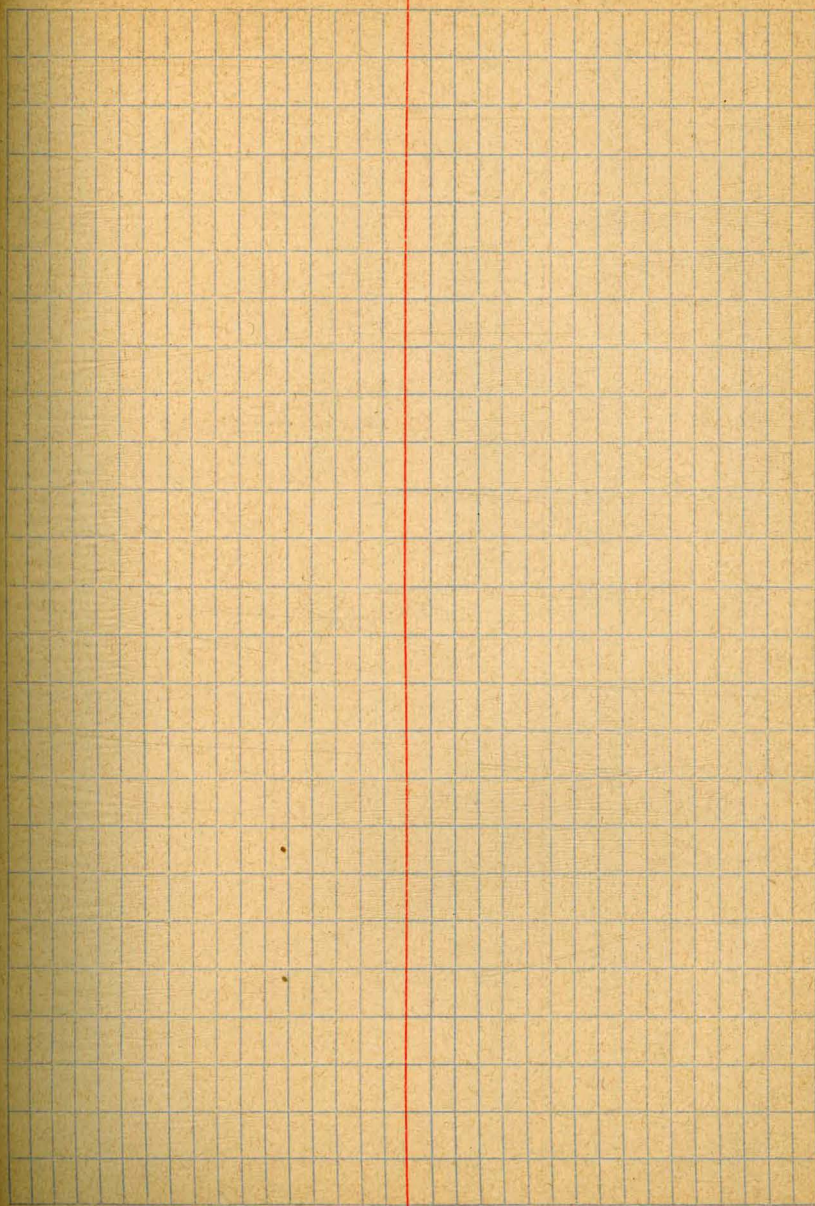
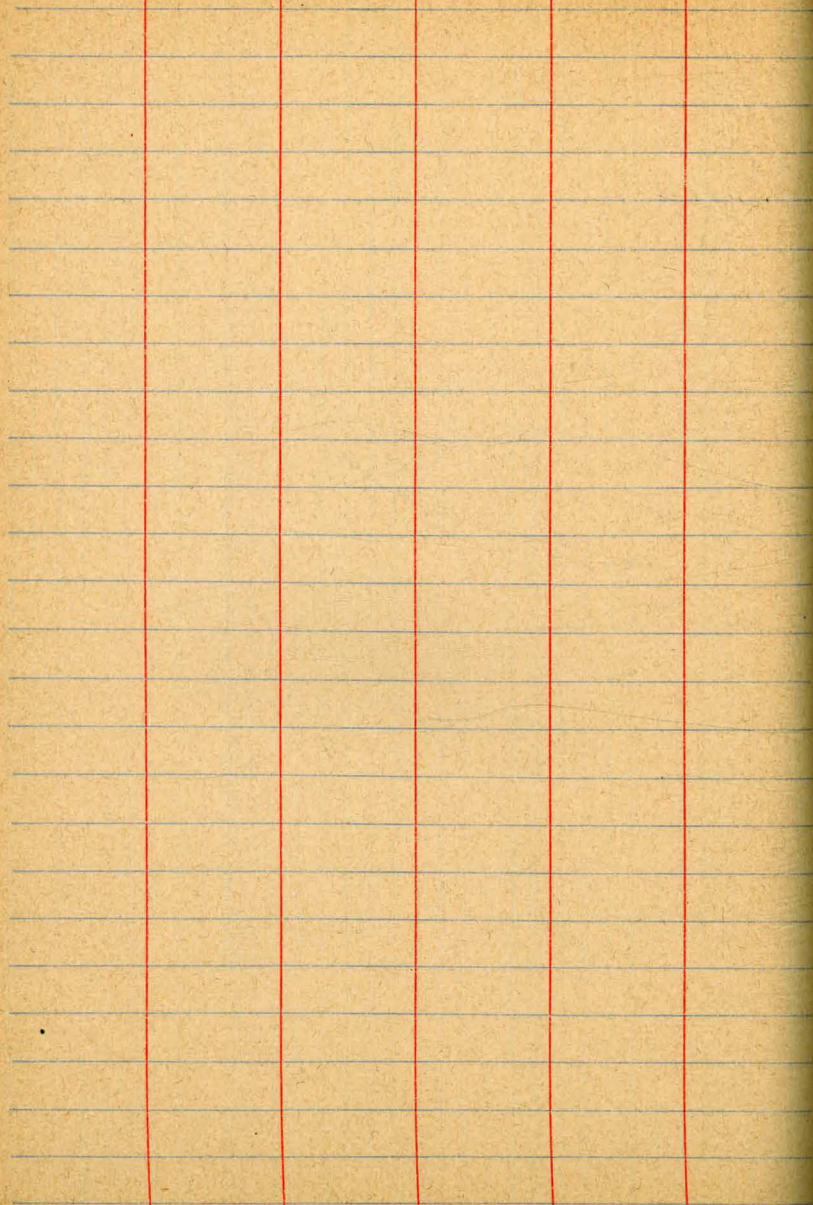






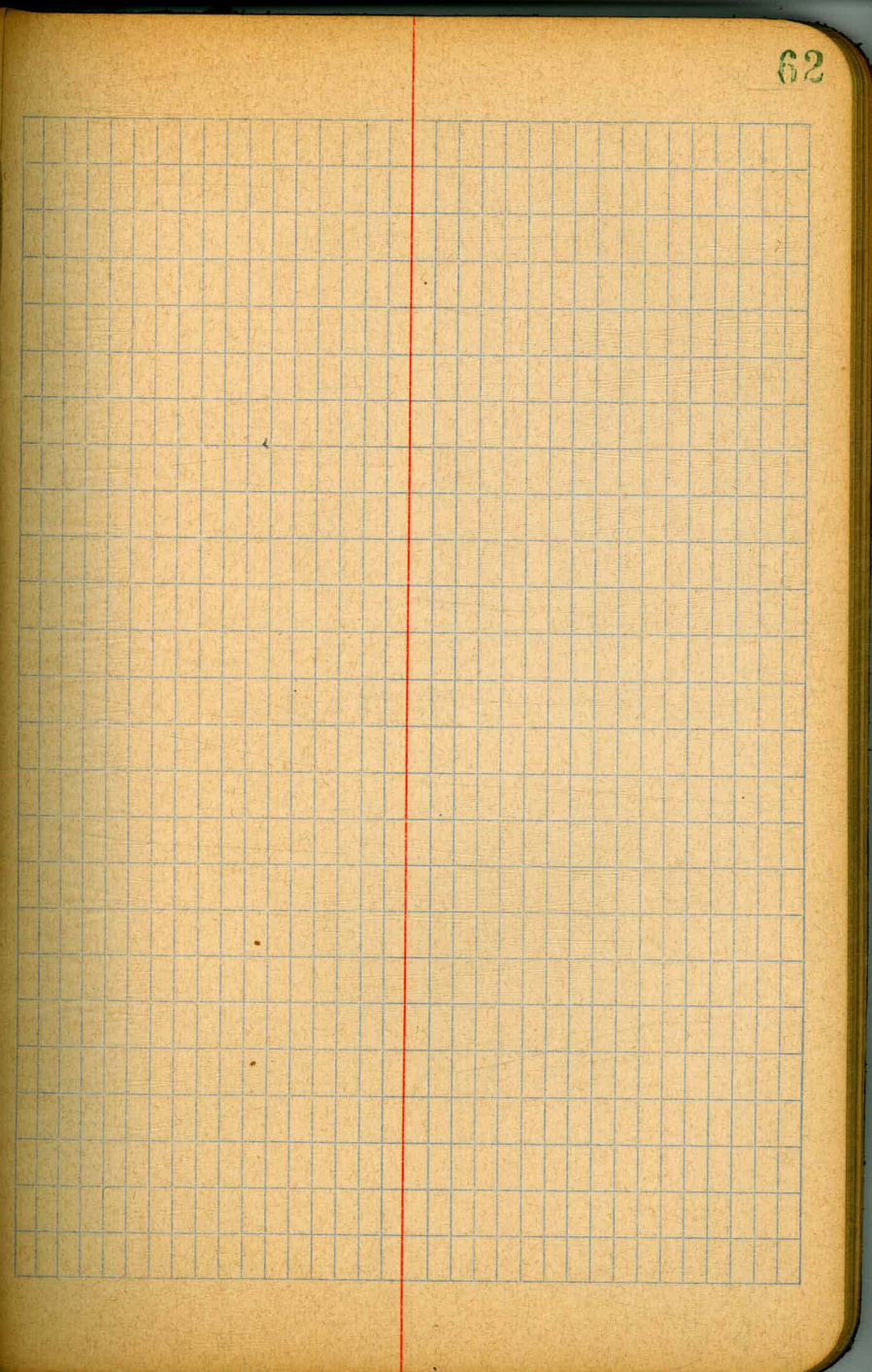
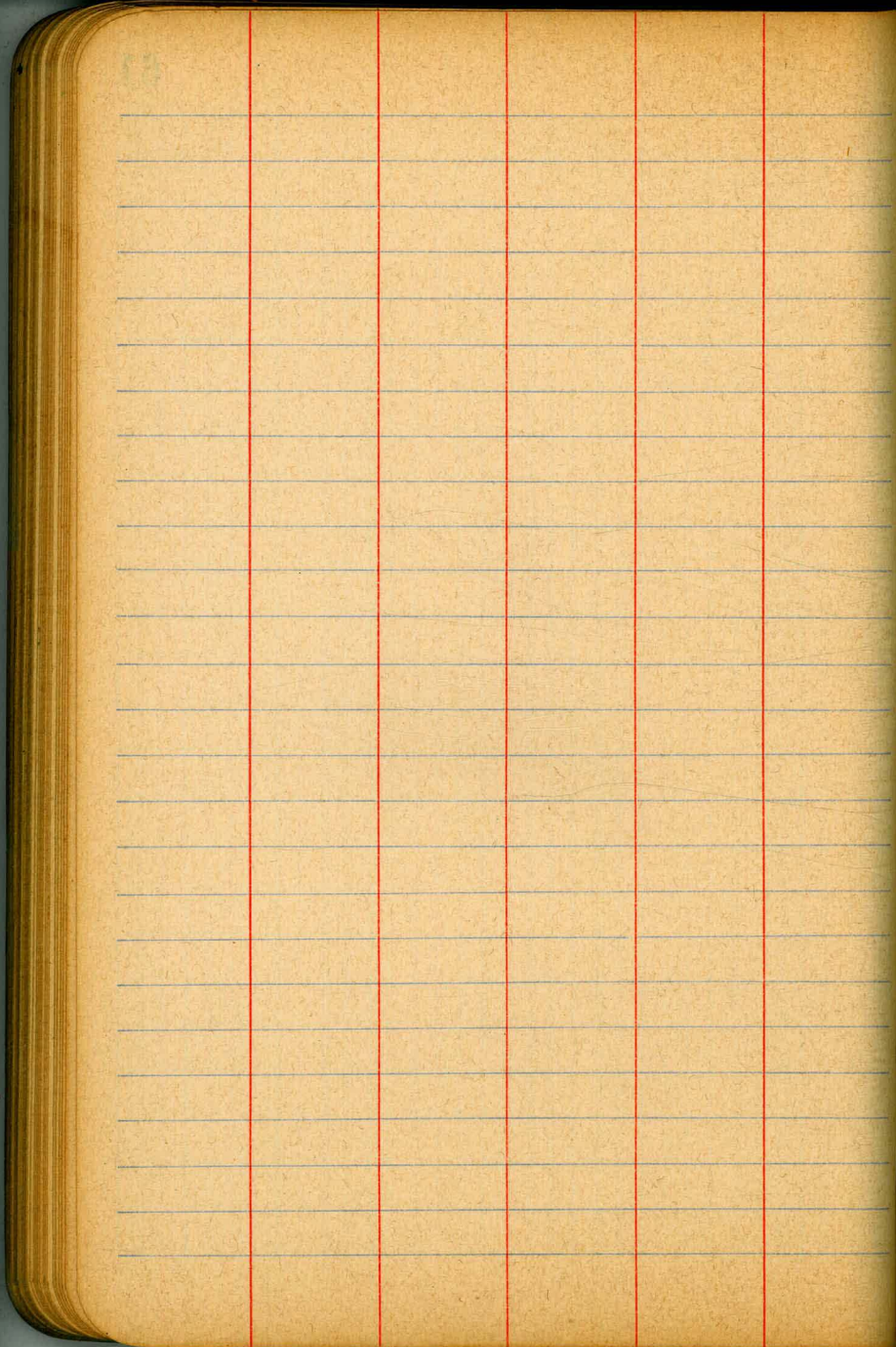


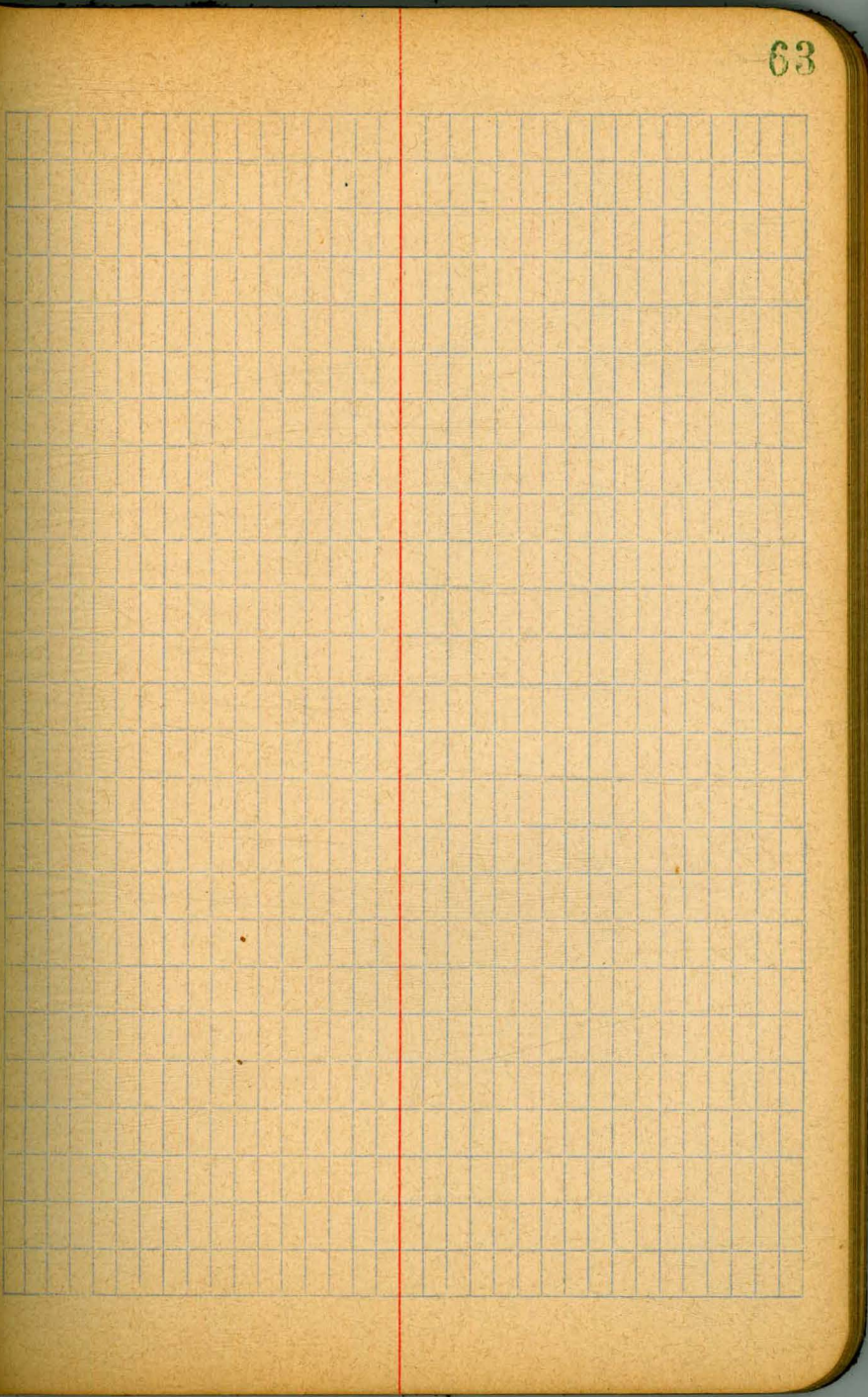
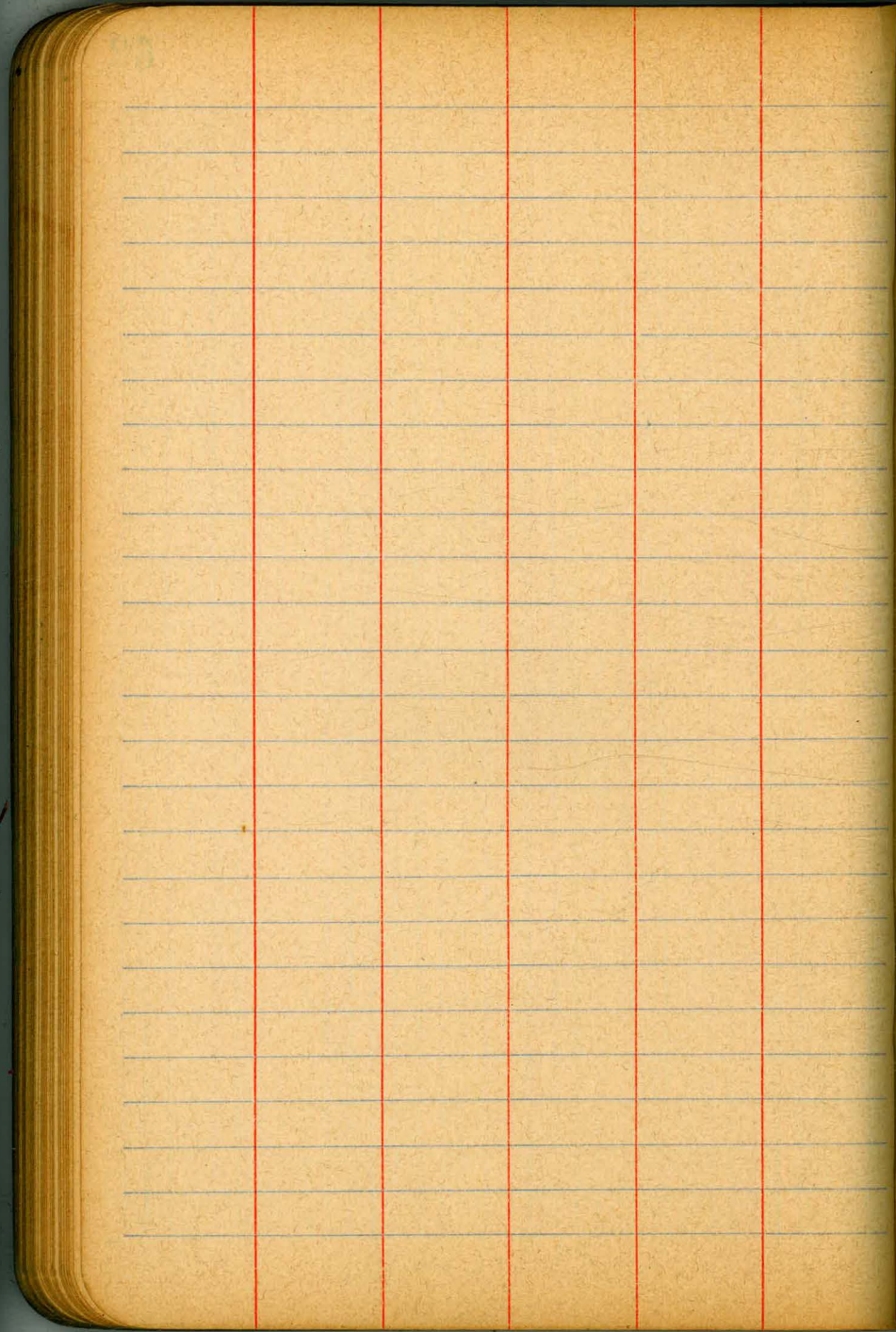


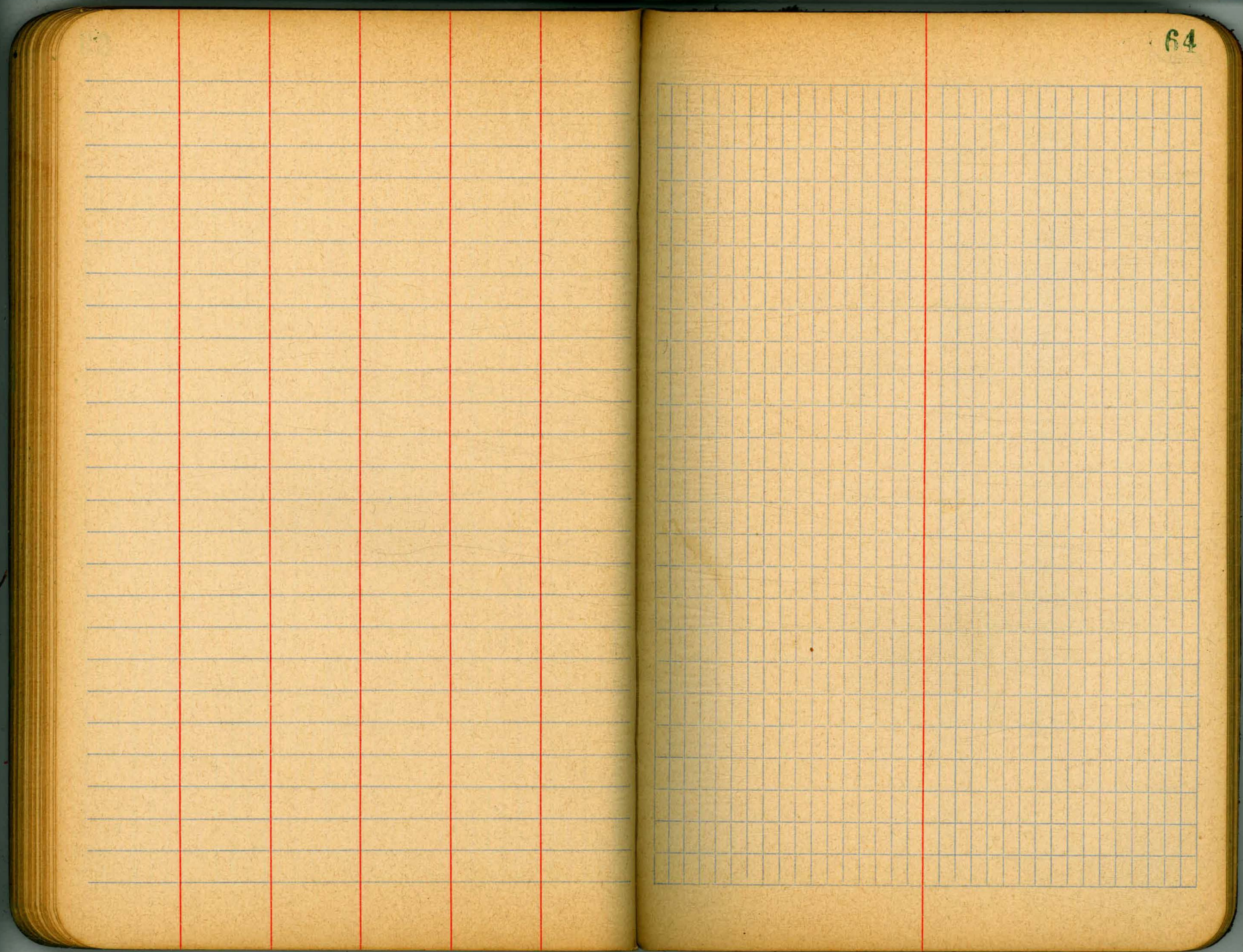


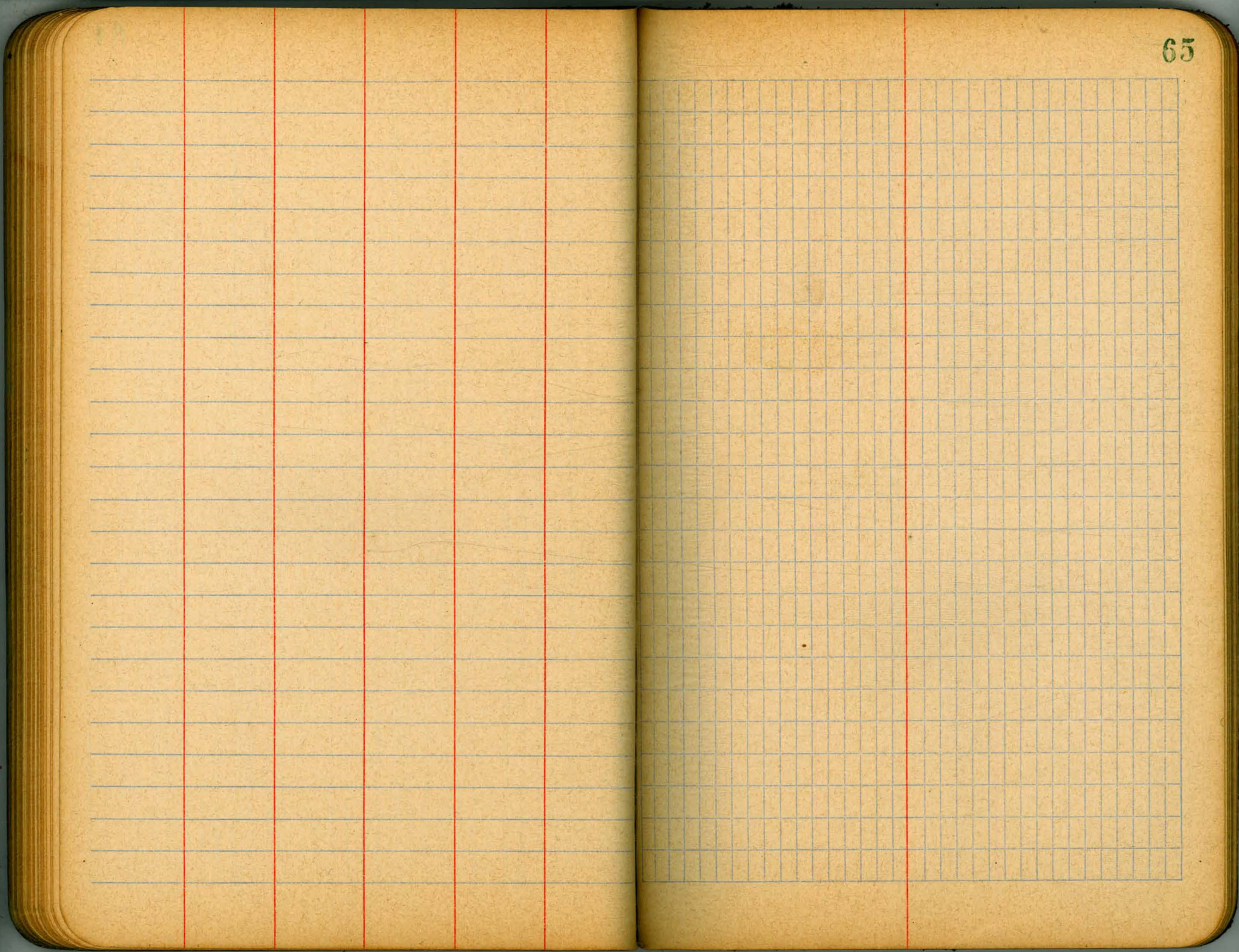
This page features a grid of blue horizontal lines spaced evenly down the page. Five vertical red lines are drawn across the page, creating six columns of varying widths. The columns are roughly in the following proportions from left to right: 1/4, 1/4, 1/4, 1/4, 1/4, and 1/2.

This page features a grid of blue horizontal lines spaced evenly down the page. A single vertical red line is drawn near the left edge, creating two columns: a narrow column on the left and a wide column on the right.

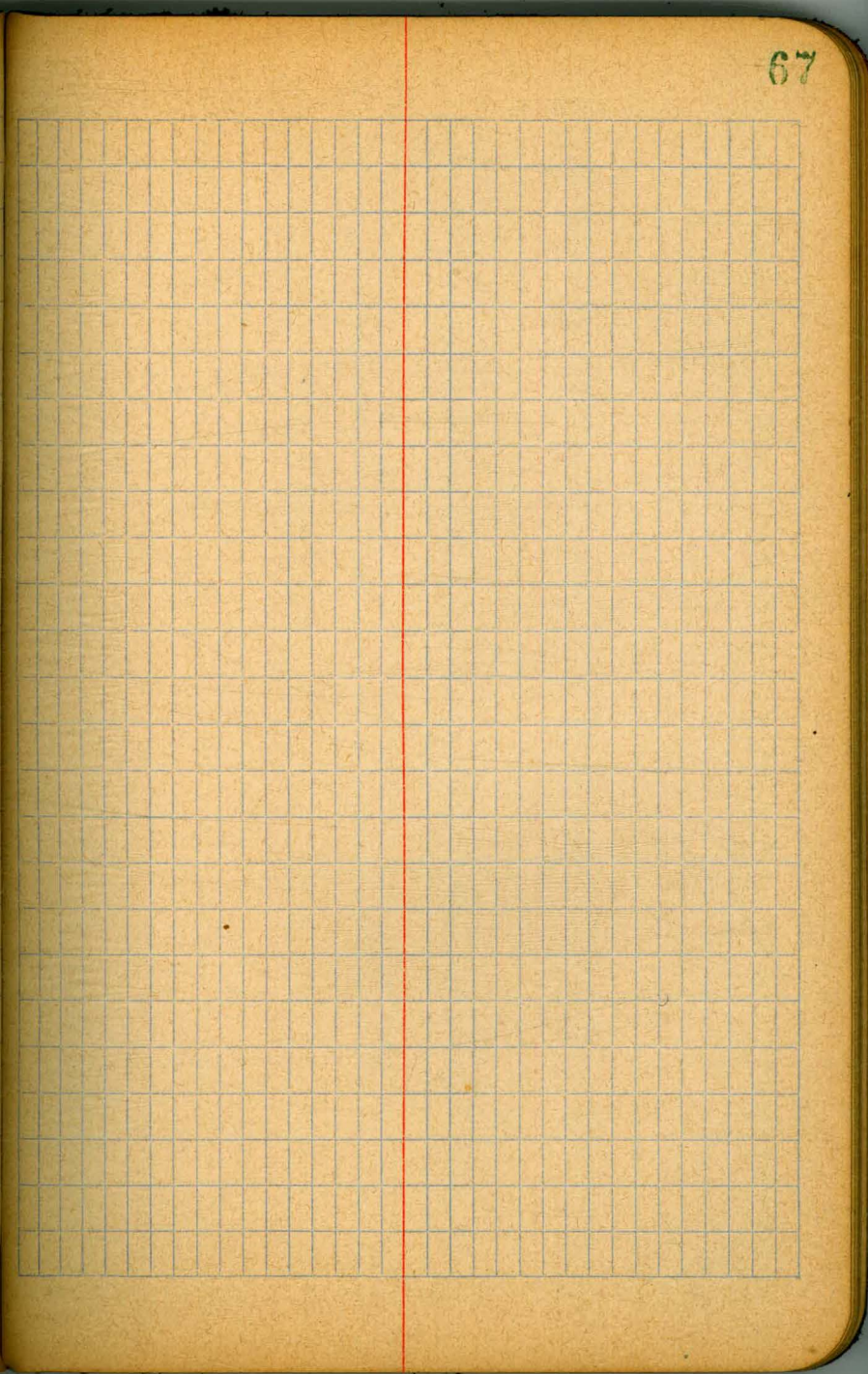
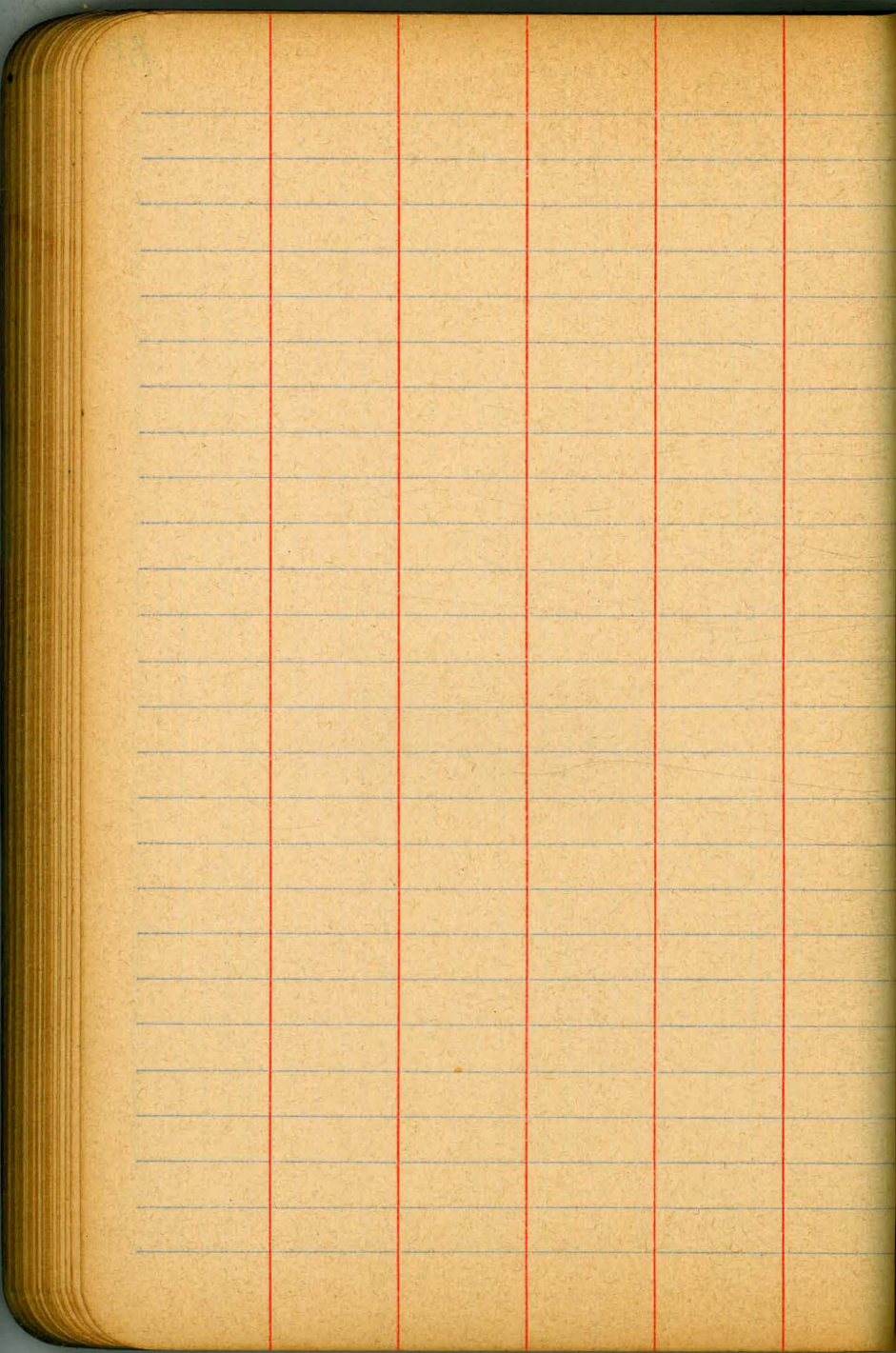


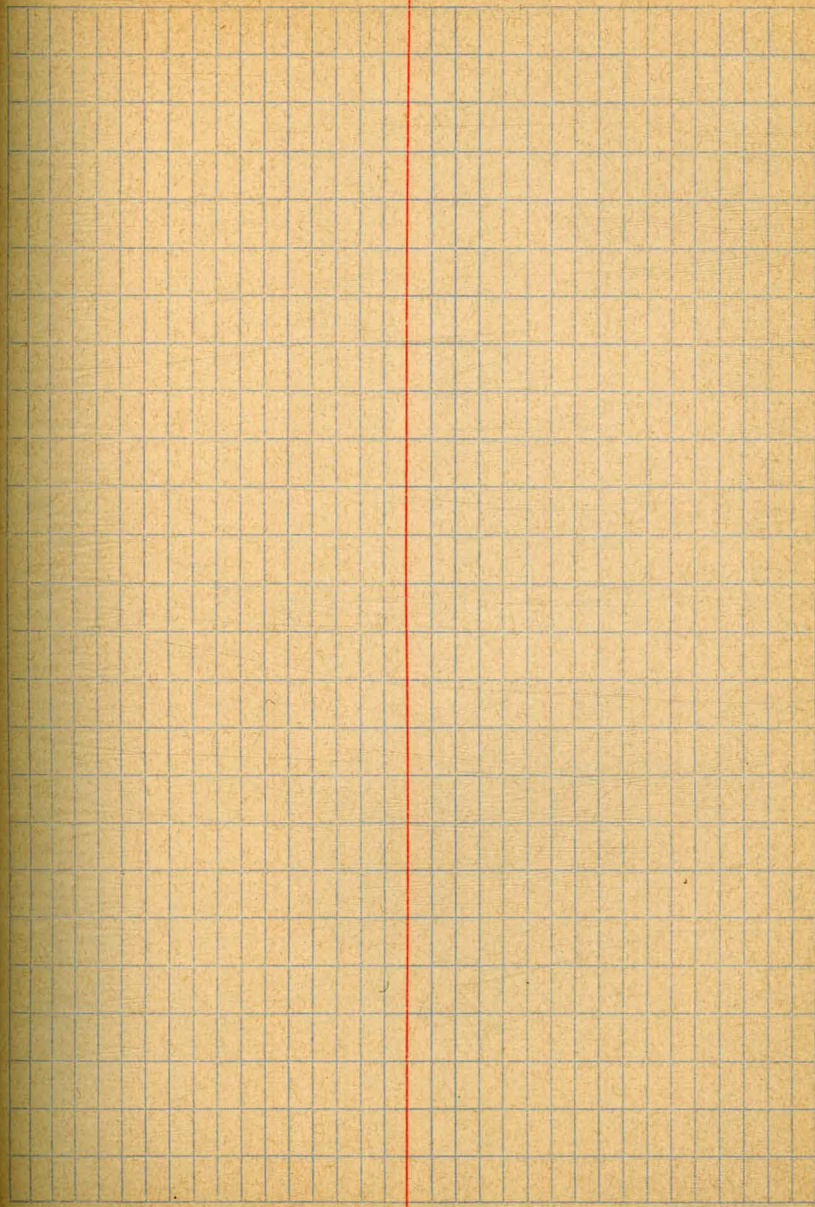
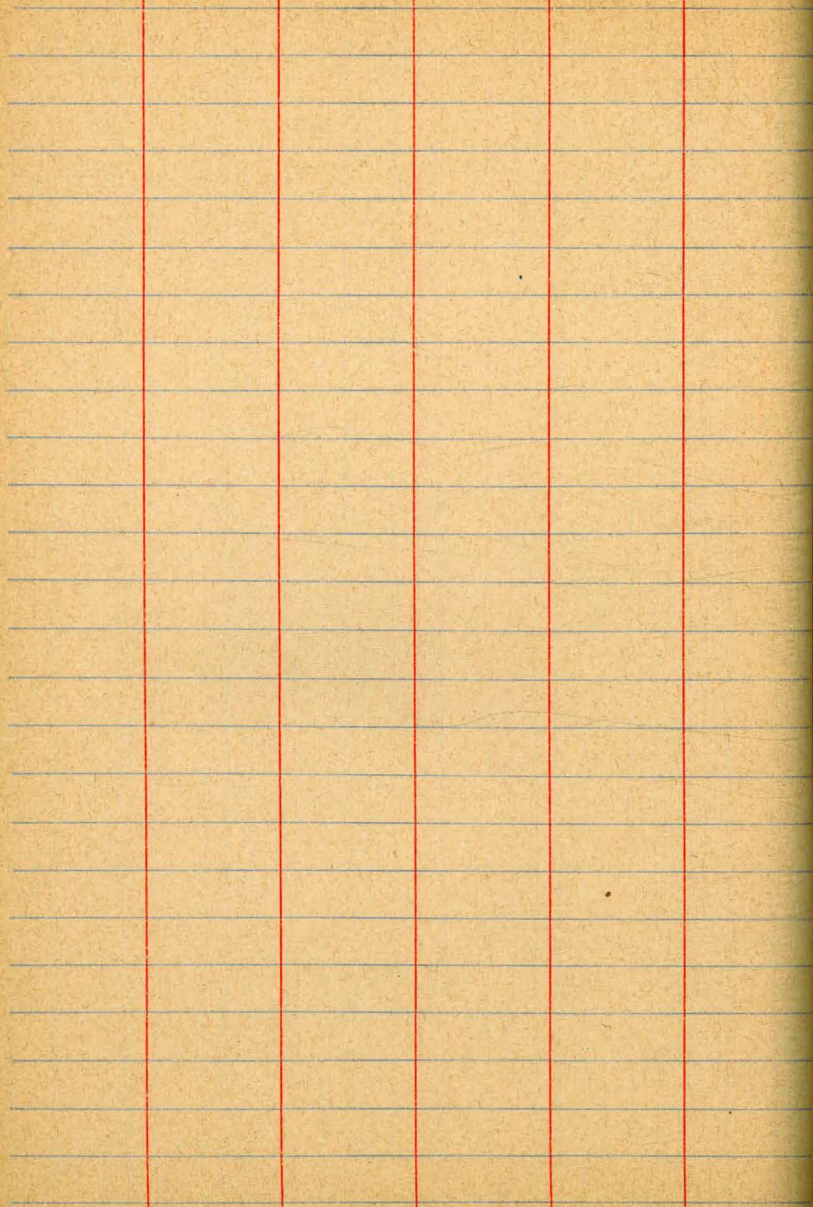


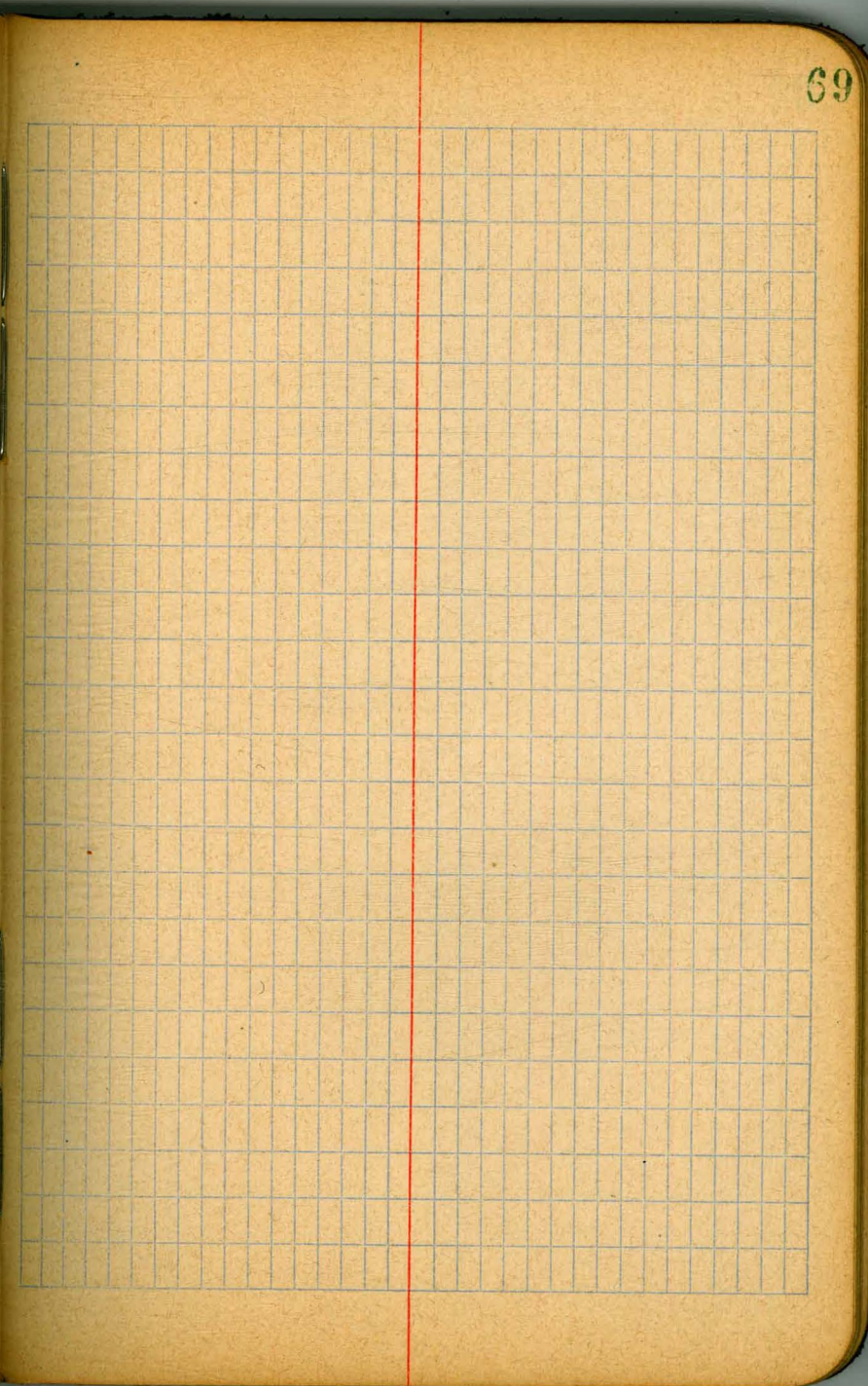
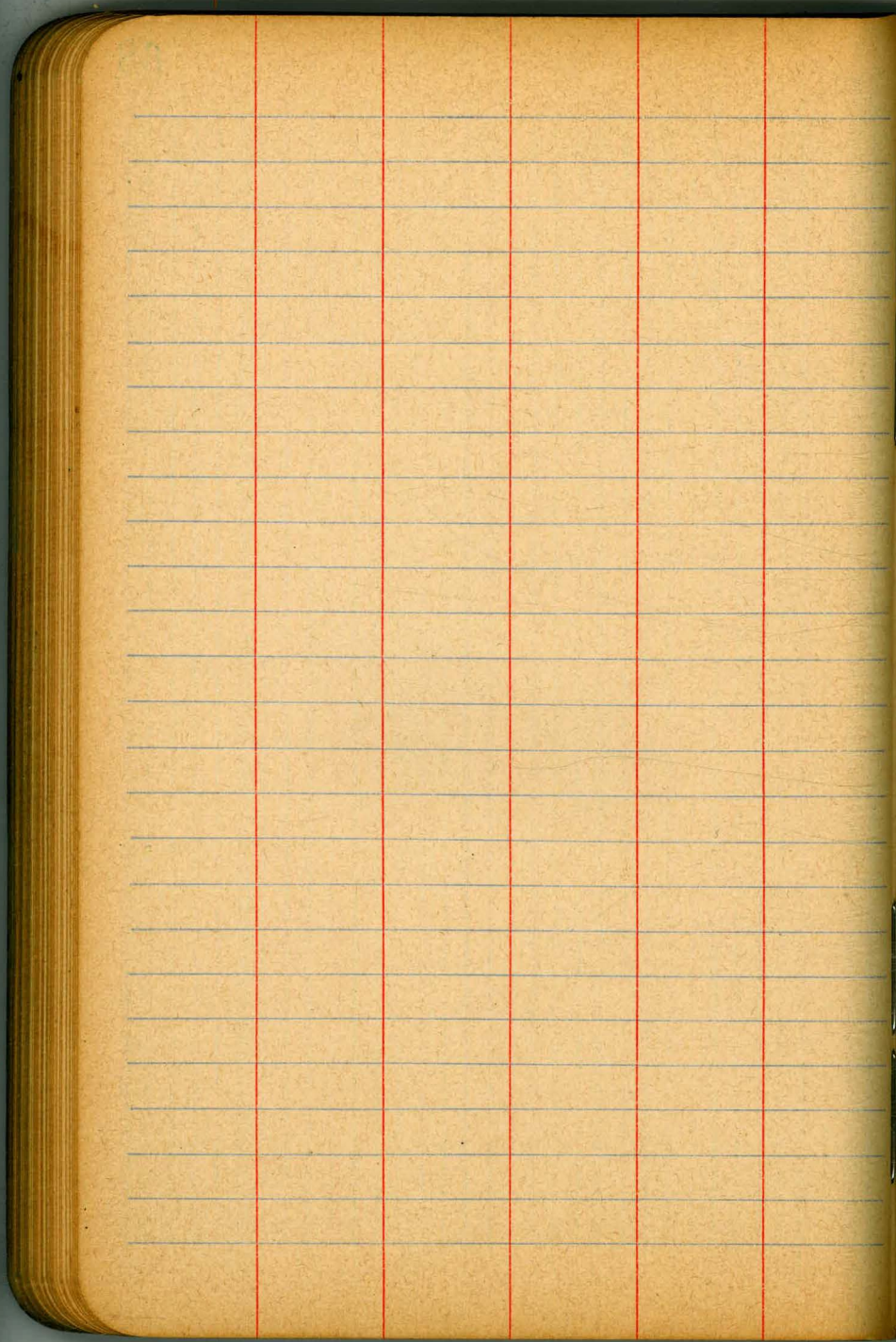




The image shows a blank ledger page with a grid of horizontal and vertical lines. The page is divided into columns by vertical red lines and rows by horizontal blue lines. The grid covers most of the page area. The page number '66' is printed in the top right corner.

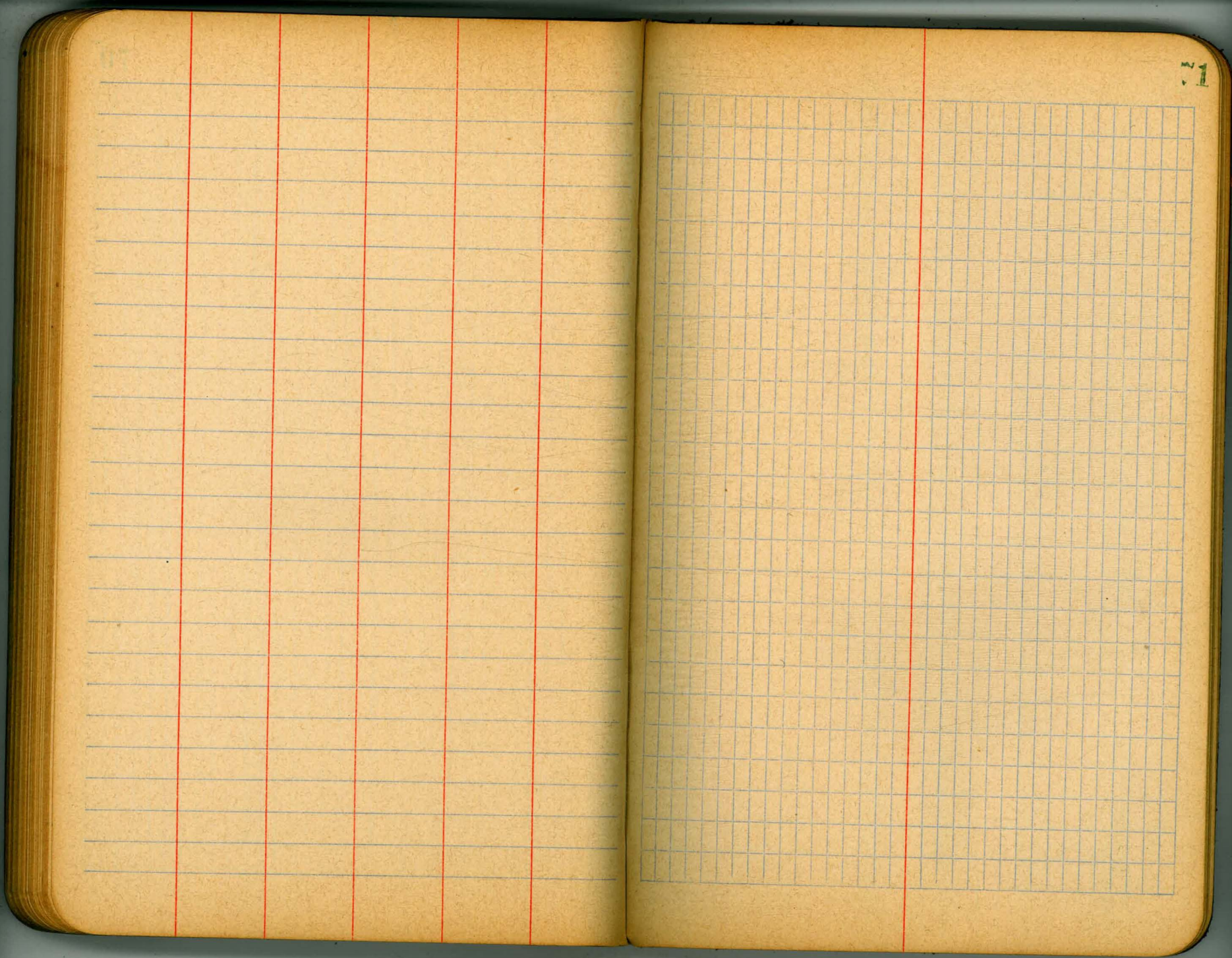


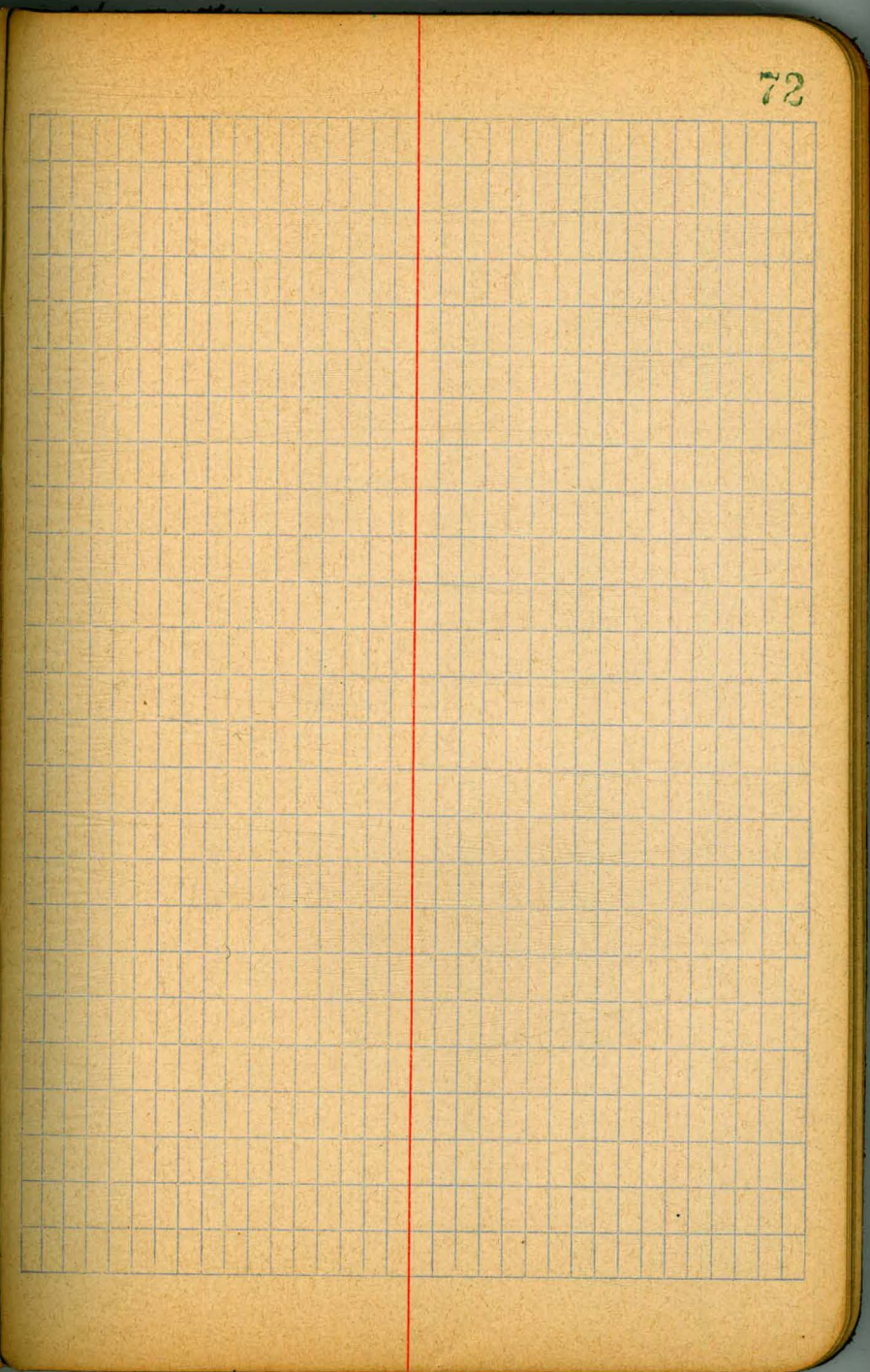
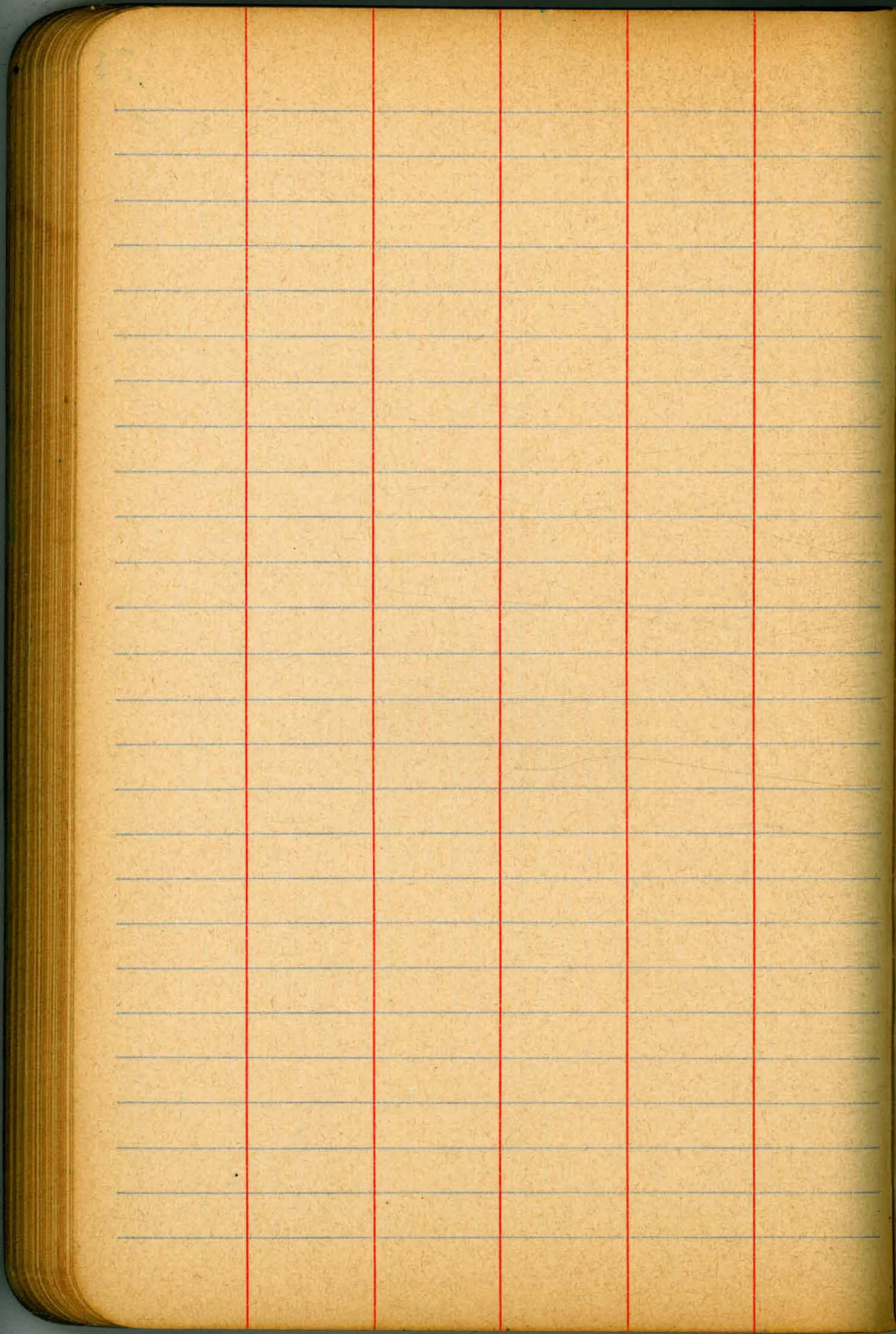


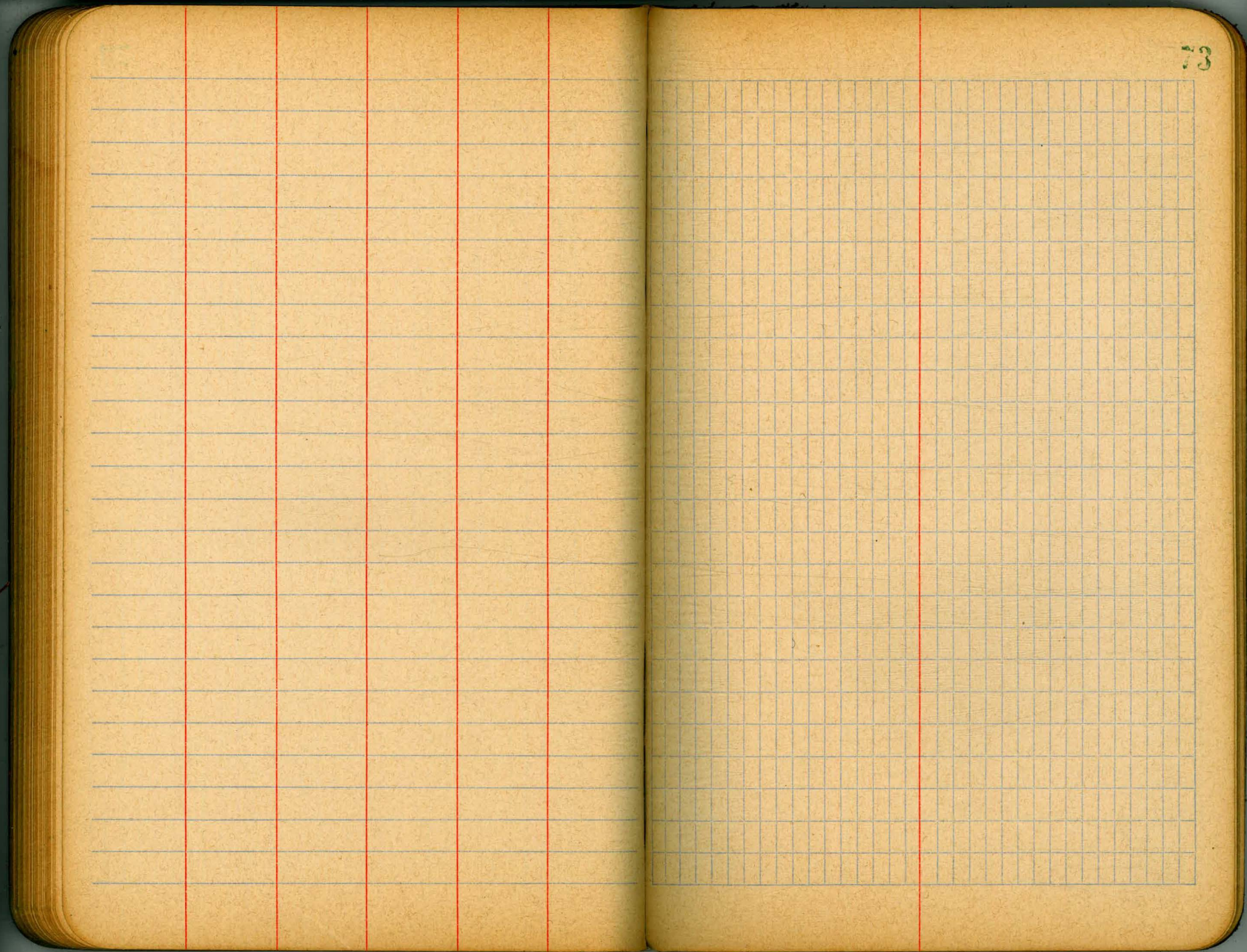


This page is a ledger-style page with four vertical red lines that divide the page into five columns. The columns are of varying widths, with the two inner columns being the widest. The page is filled with horizontal blue lines, creating a grid for data entry. There are approximately 25 horizontal lines across the page.

This page is a ledger-style page with one vertical red line on the left side, creating two columns. The right column is significantly wider than the left one. The page is filled with a grid of horizontal and vertical blue lines, forming a grid of approximately 25 rows and 20 columns. There is a small gap between the red line and the start of the grid.

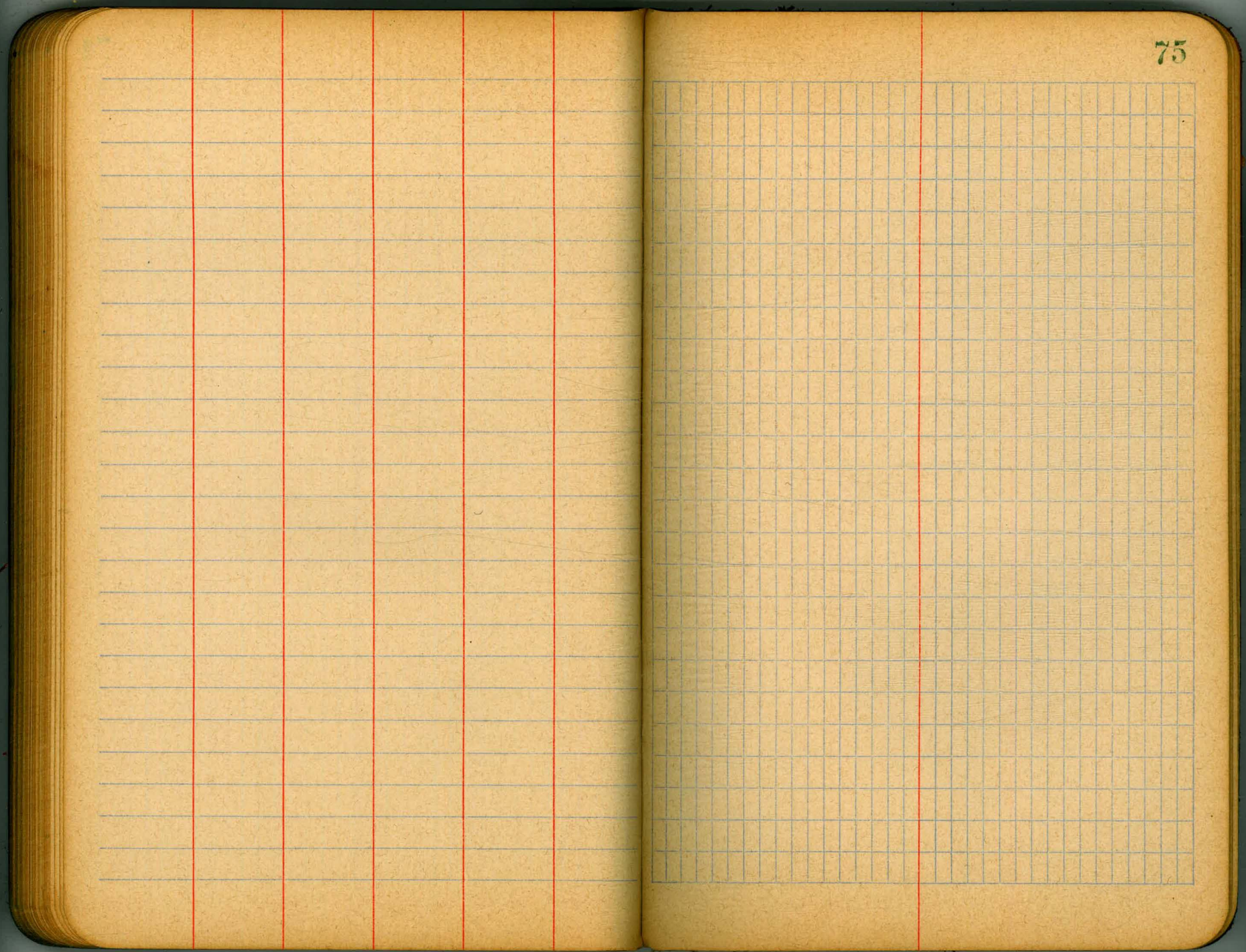


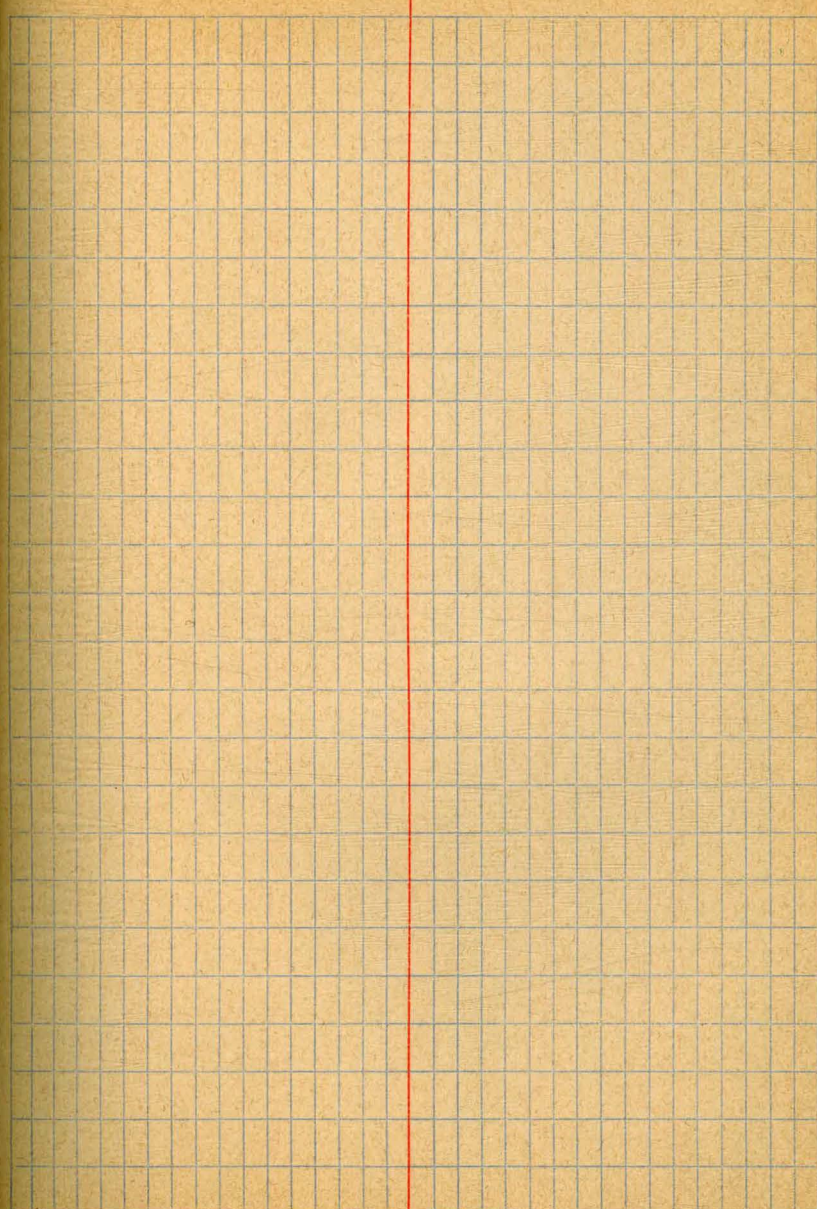
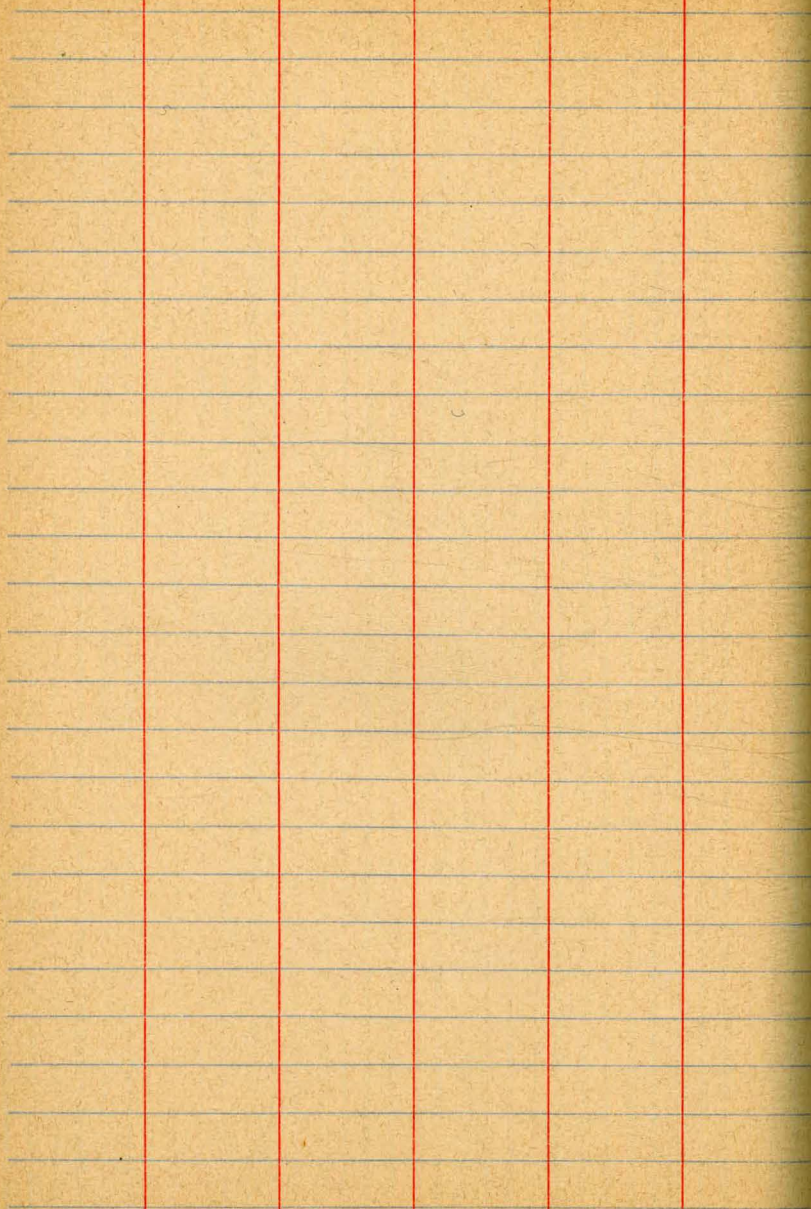




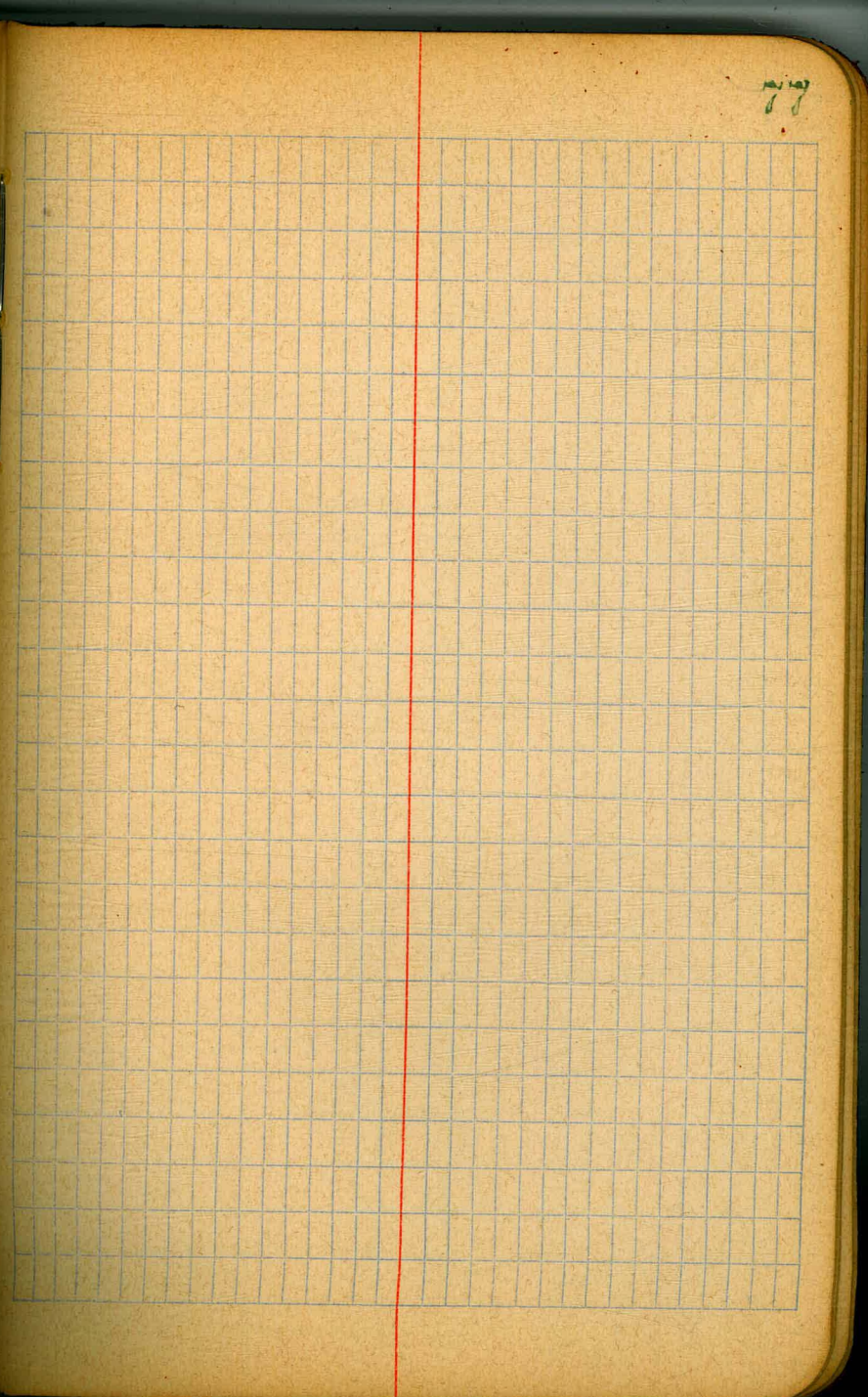
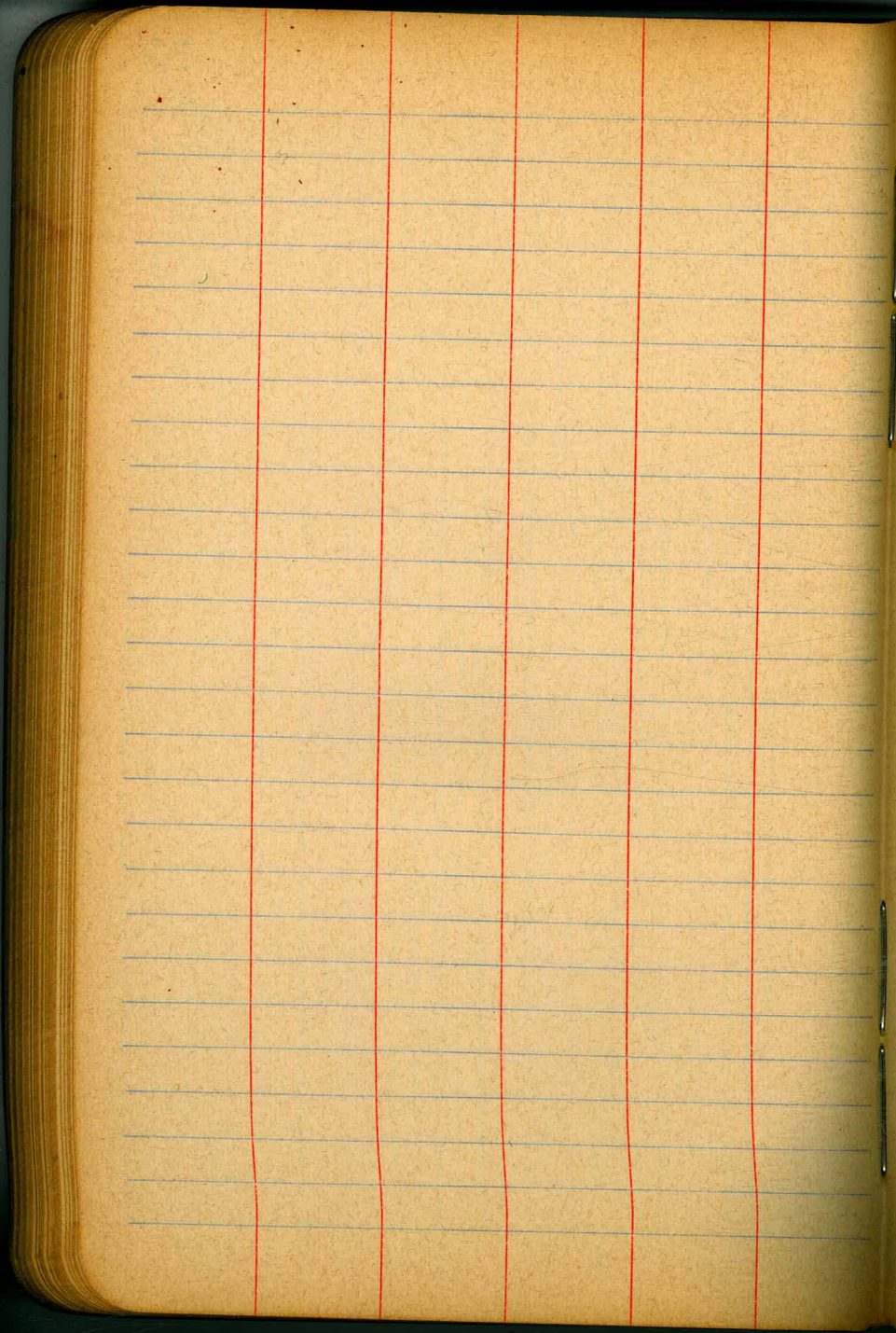
A ledger page with 18 horizontal blue lines and 5 vertical red lines, creating 6 columns. The columns are of varying widths, with the first column being the widest and the last being the narrowest.

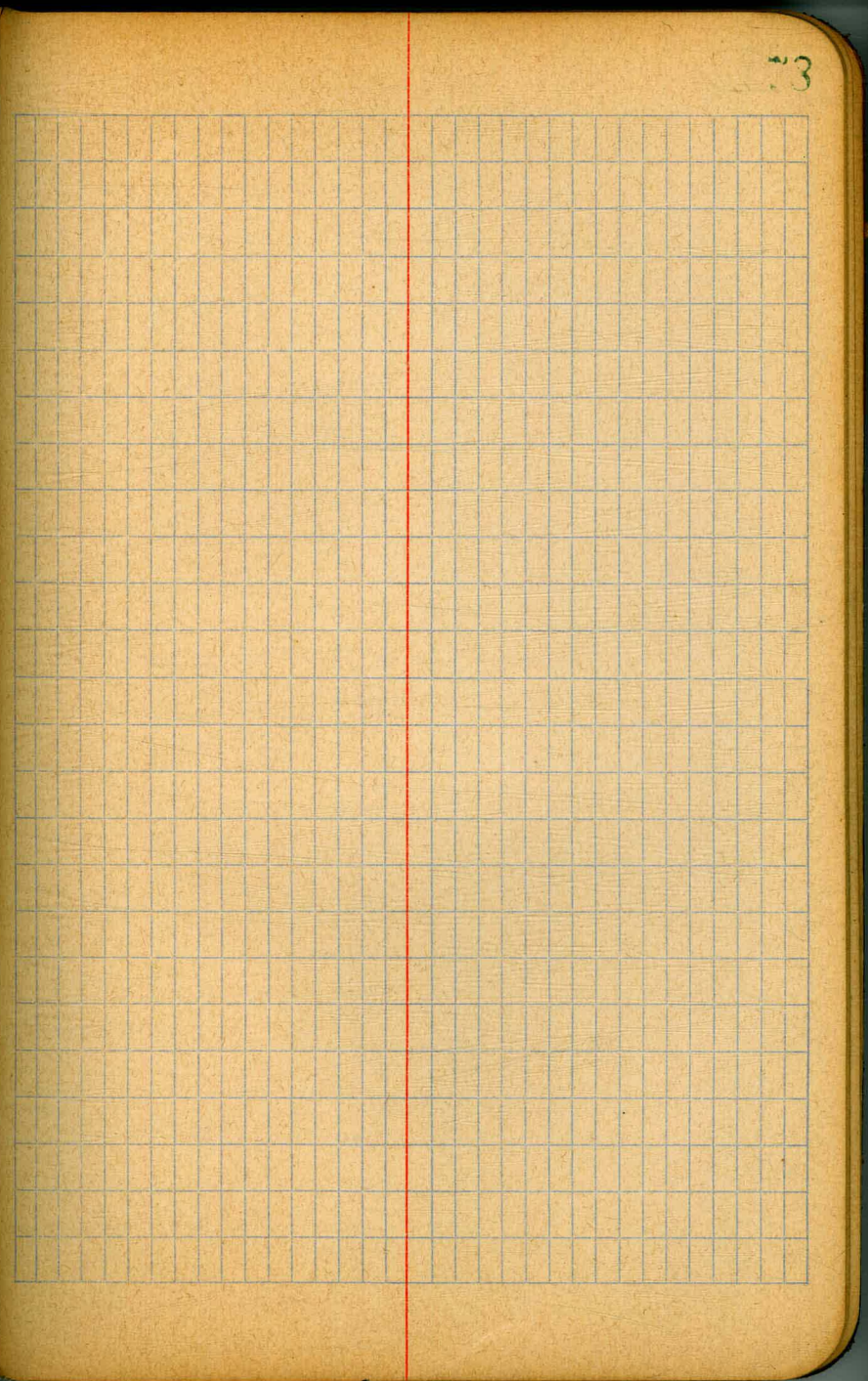
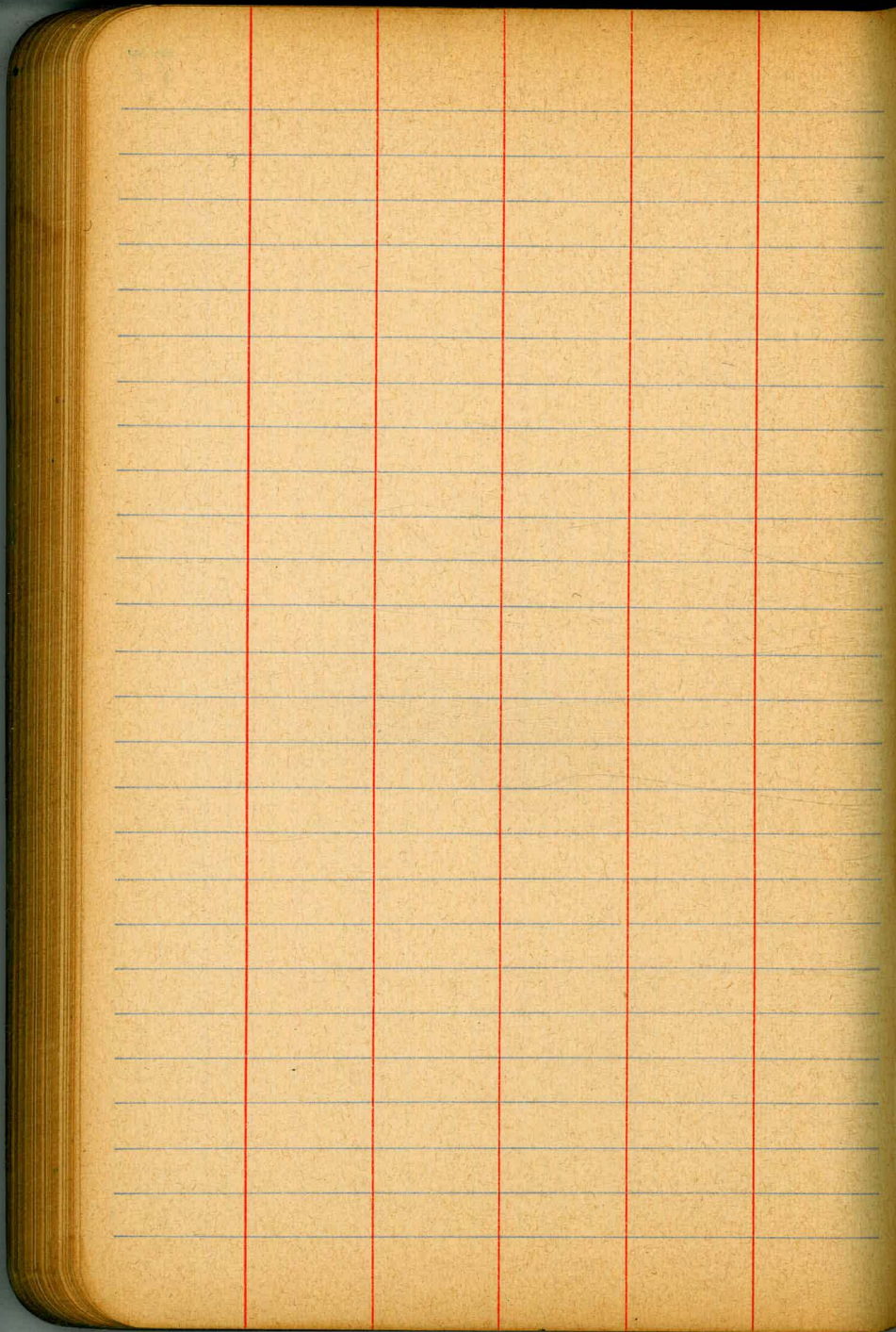
A ledger page with 18 horizontal blue lines and 20 vertical blue lines, creating 21 columns. The columns are of varying widths, with the first column being the widest and the last being the narrowest.

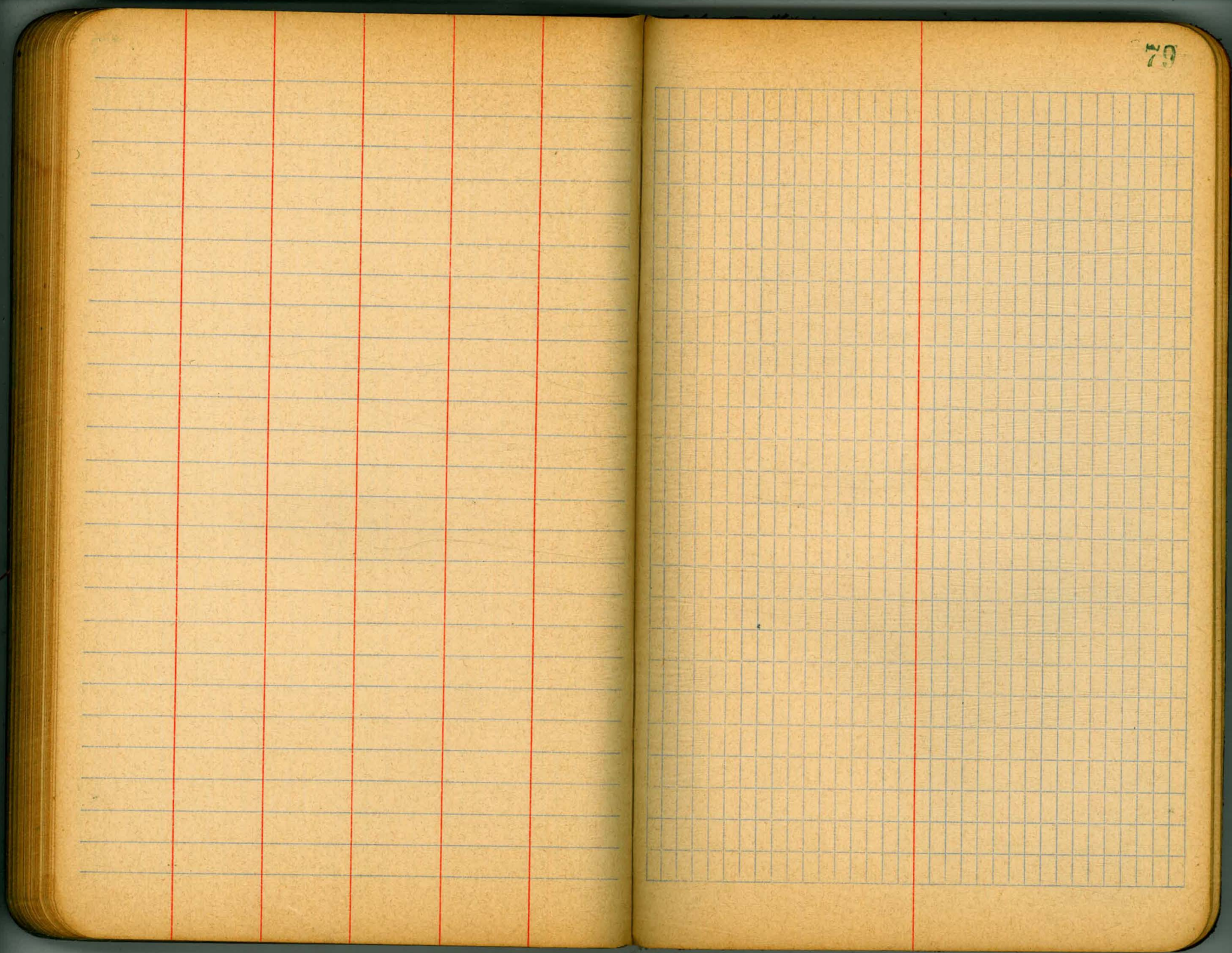


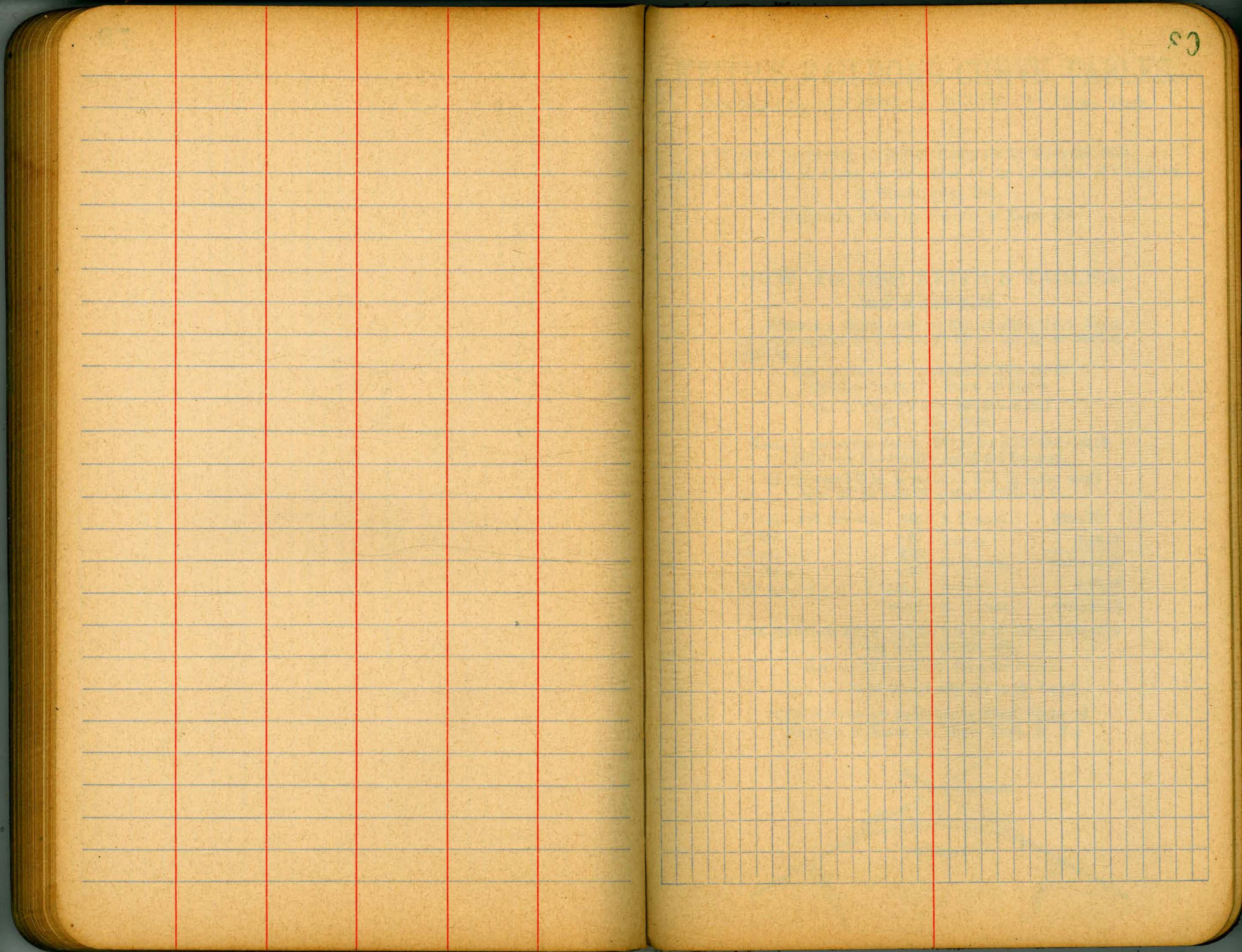


77









X

Natural Tangents

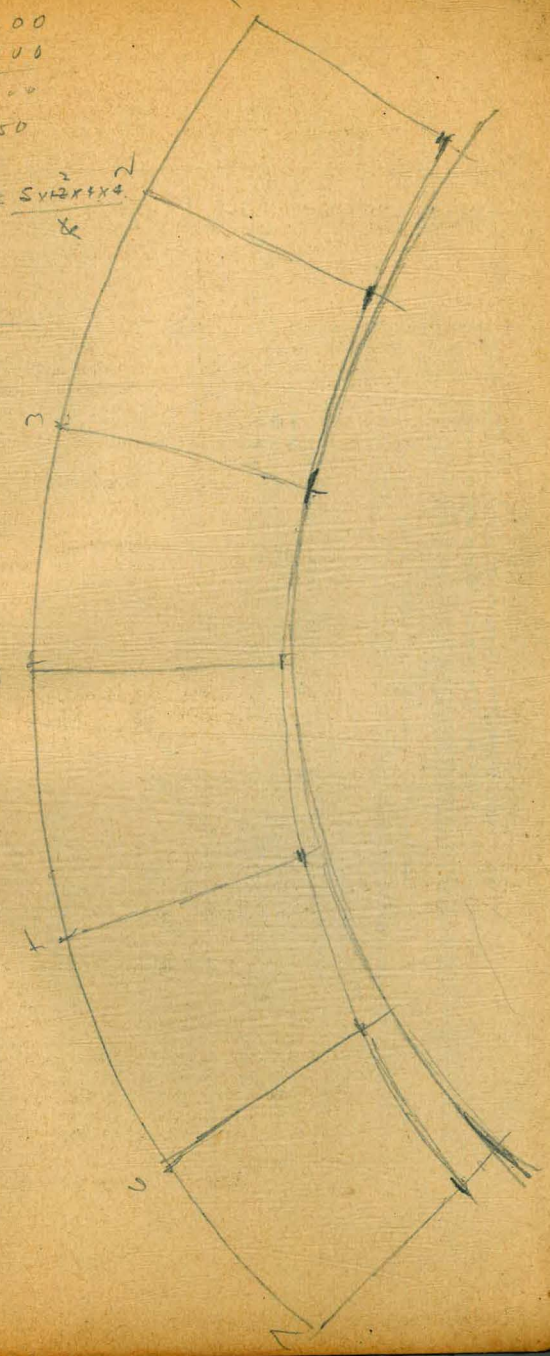
deg.	0'	10'	20'	30'	40'	50'	deg.	0'	10'	20'	30'	40'	50'
0	0000	0020	0058	0087	0116	0145	89	40	8391	8441	8491	8541	8591
1	0175	0204	0233	0262	0291	0320	88	41	8693	8744	8796	8847	8899
2	0349	0378	0407	0437	0466	0495	87	42	9004	9057	9110	9163	9217
3	0524	0553	0582	0612	0641	0670	86	43	9325	9380	9435	9490	9545
4	0699	0729	0758	0787	0816	0846	85	44	9657	9713	9770	9827	9884
5	0875	0904	0934	0963	0992	1022	84	45	1.0000	1.0058	1.0117	1.0176	1.0235
6	1051	1080	1110	1139	1169	1198	83	46	1.0355	1.0416	1.0477	1.0533	1.0599
7	1228	1257	1287	1317	1346	1376	82	47	1.0724	1.0786	1.0850	1.0913	1.0977
8	1405	1435	1465	1495	1524	1554	81	48	1.1106	1.1171	1.1237	1.1303	1.1369
9	1584	1614	1644	1673	1703	1733	80	49	1.1504	1.1571	1.1640	1.1708	1.1778
10	1763	1793	1823	1853	1883	1914	79	50	1.1918	1.1988	1.2059	1.2131	1.2203
11	1944	1974	2004	2035	2065	2095	78	51	1.2349	1.2423	1.2497	1.2572	1.2647
12	2126	2156	2186	2217	2247	2278	77	52	1.2799	1.2876	1.2954	1.3032	1.3111
13	2309	2339	2370	2401	2432	2462	76	53	1.3270	1.3351	1.3432	1.3514	1.3597
14	2493	2524	2555	2586	2617	2648	75	54	1.3764	1.3848	1.3934	1.4019	1.4106
15	2679	2711	2742	2773	2805	2836	74	55	1.4281	1.4370	1.4460	1.4550	1.4641
16	2807	2899	2931	2962	2994	3026	73	56	1.4826	1.4919	1.5013	1.5108	1.5204
17	3057	3089	3121	3153	3185	3217	72	57	1.5399	1.5497	1.5597	1.5697	1.5798
18	3249	3281	3314	3346	3378	3411	71	58	1.6003	1.6107	1.6212	1.6319	1.6426
19	3443	3476	3508	3541	3574	3607	70	59	1.6643	1.6753	1.6864	1.6977	1.7090
20	3640	3673	3706	3739	3772	3805	69	60	1.7321	1.7437	1.7556	1.7675	1.7797
21	3839	3872	3906	3939	3973	4006	68	61	1.8040	1.8165	1.8291	1.8418	1.8546
22	4040	4074	4108	4142	4176	4210	67	62	1.8807	1.8940	1.9074	1.9210	1.9347
23	4245	4279	4314	4348	4383	4417	66	63	1.9626	1.9768	1.9912	2.0057	2.0204
24	4452	4487	4522	4557	4592	4628	65	64	2.0503	2.0655	2.0809	2.0965	2.1123
25	4663	4699	4734	4770	4806	4841	64	65	2.1445	2.1609	2.1775	2.1943	2.2113
26	4877	4913	4950	4986	5022	5059	63	66	2.2460	2.2637	2.2817	2.2998	2.3183
27	5095	5132	5169	5206	5243	5280	62	67	2.3559	2.3750	2.3945	2.4142	2.4342
28	5317	5354	5392	5430	5467	5505	61	68	2.4751	2.4960	2.5172	2.5386	2.5605
29	5543	5581	5619	5658	5696	5735	60	69	2.6051	2.6279	2.6511	2.6746	2.6985
30	5774	5812	5851	5890	5930	5969	59	70	2.7475	2.7725	2.7980	2.8239	2.8502
31	6009	6048	6088	6128	6168	6208	58	71	2.9042	2.9310	2.9600	2.9887	3.0178
32	6249	6289	6330	6371	6412	6453	57	72	3.0777	3.1084	3.1397	3.1716	3.2041
33	6494	6536	6577	6619	6661	6703	56	73	3.2709	3.3052	3.3402	3.3759	3.4124
34	6745	6787	6830	6873	6916	6959	55	74	3.4874	3.5261	3.5656	3.6059	3.6470
35	7002	7046	7089	7133	7177	7221	54	75	3.7321	3.7760	3.8208	3.8657	3.9136
36	7265	7310	7355	7400	7445	7490	53	76	4.0108	4.0611	4.1126	4.1653	4.2193
37	7536	7581	7627	7673	7720	7766	52	77	4.3315	4.3897	4.4494	4.5107	4.5736
38	7813	7860	7907	7954	8002	8050	51	78	4.7046	4.7729	4.8430	4.9152	4.9894
39	8098	8146	8195	8243	8292	8342	50	79	5.1446	5.2257	5.3093	5.3955	5.4845

deg.	0'	10'	20'	30'	40'	50'
80	5.6713	5.7694	5.8708	5.9758	6.0844	6.1970
81	6.3138	6.4348	6.5606	6.6912	6.8269	6.9682
82	7.1154	7.2687	7.4287	7.5958	7.7704	7.9530
83	8.1443	8.3450	8.5555	8.7769	9.0098	9.2553
84	9.5144	9.7882	10.078	10.385	10.7111	11.0595
85	11.430	11.826	12.250	12.706	13.197	13.724
86	14.300	14.924	15.605	16.350	17.160	18.075
87	19.081	20.206	21.470	22.903	24.542	26.432
88	28.036	31.242	34.368	38.189	42.964	49.104
89	57.290	68.750	85.940	114.588	171.885	343.770

Natural Cotangents

1004 200
700
900
450

225
450 x 5 x 2 = 5 x 2 x 1 x 4
X2
3375 132



35
40
1400 Waste
3600 Used
Top of hole 103 above water.

800
5

4000.

10.3
7.5
2.8
9

111 117 114

4.84
5.2
10.04

4750.

1800

3" x 16" Stringers -

10.3
9

35 x 40 = 1400 Lin. Ft. Waste
5 x 720 = 3600 Used as Floor
20 x 54 = 680 Bridging
30 x 2 x 21 = 1596 Stringers

7276. ✓

9.40
9

9.5 @ 360
9

7200. ✓

7.63

76
21
76
152
1596

270
150
0

284
150
428

32' - 4"

47' 8"

9 @ 5' 4"

RETURN TO CITY ENGINEER'S OFFICE
CITY HALL, SAN DIEGO, CAL.

2 - 4 x 4 - 12
3 - 2 x 6 - 16 545.
4 - 1/2" x 10" bolts.

60
59

26500
13.25
251.78
0.20
251.98
6.10
245.84

39
23
33
Mrs. Gearing
7655 - Main
(Direct)

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.
ROADWAY 14 FEET WIDE. SIDE SLOPES 1 1/2 TO 1.
FOR SINGLE TRACK EMBANKMENT.

	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.

MADE IN GERMANY.