

EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and
SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

Distances from Center of Roadway for Cross-Sectioning
Roadway 16 feet wide. Side Slopes 1 on 1.
For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	0
1	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	1
2	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	2
3	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	3
4	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	4
5	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	5
6	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	6
7	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	7
8	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	8
9	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	9
10	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	10
11	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	11
12	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	12
13	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	13
14	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	14
15	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	15
16	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	16
17	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	17
18	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	18
19	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	19
20	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	20
21	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	21
22	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	22
23	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	23
24	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	24
25	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	25
26	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	26
27	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	27
28	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	28
29	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	29
30	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	30
31	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	31
32	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	32
33	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	33
34	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	34
35	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	35
36	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	36
37	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	37
38	46.0	46.1	46.2	46.3	46.4	46.5	46.6	46.7	46.8	46.9	38
39	47.0	47.1	47.2	47.3	47.4	47.5	47.6	47.7	47.8	47.9	39
40	48.0	48.1	48.2	48.3	48.4	48.5	48.6	48.7	48.8	48.9	40

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 30.6. For same slopes but other widths of roadbed, correct above figures by one-half difference in width of roadbed; thus in example above, for 20 ft. roadbed distance will be $30.6 + (20 - 16) \times 2$ or 2 ft. added to $30.6 = 32.6$. For slopes of 1 on 1½ see inside of back cover.

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ward Road

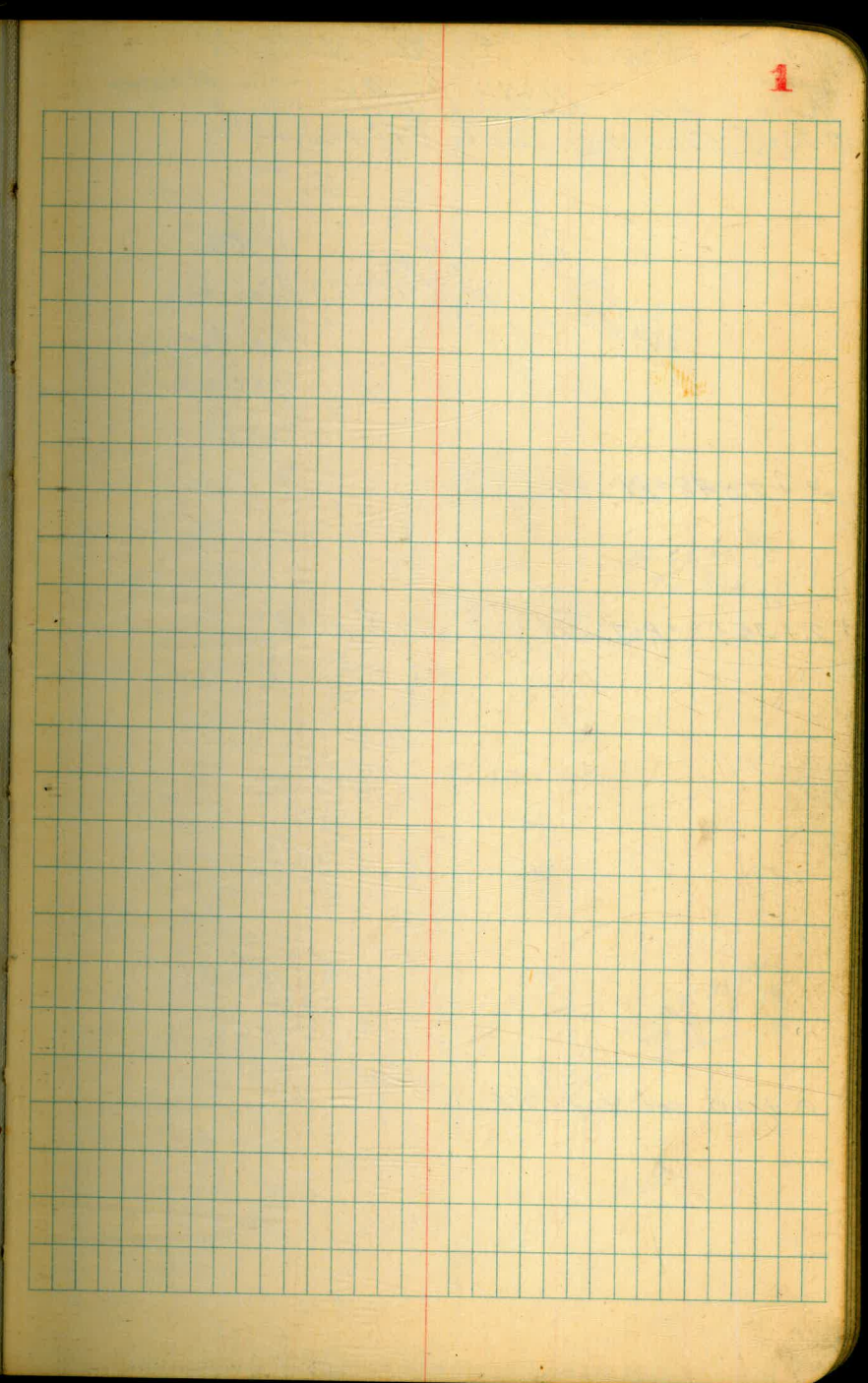
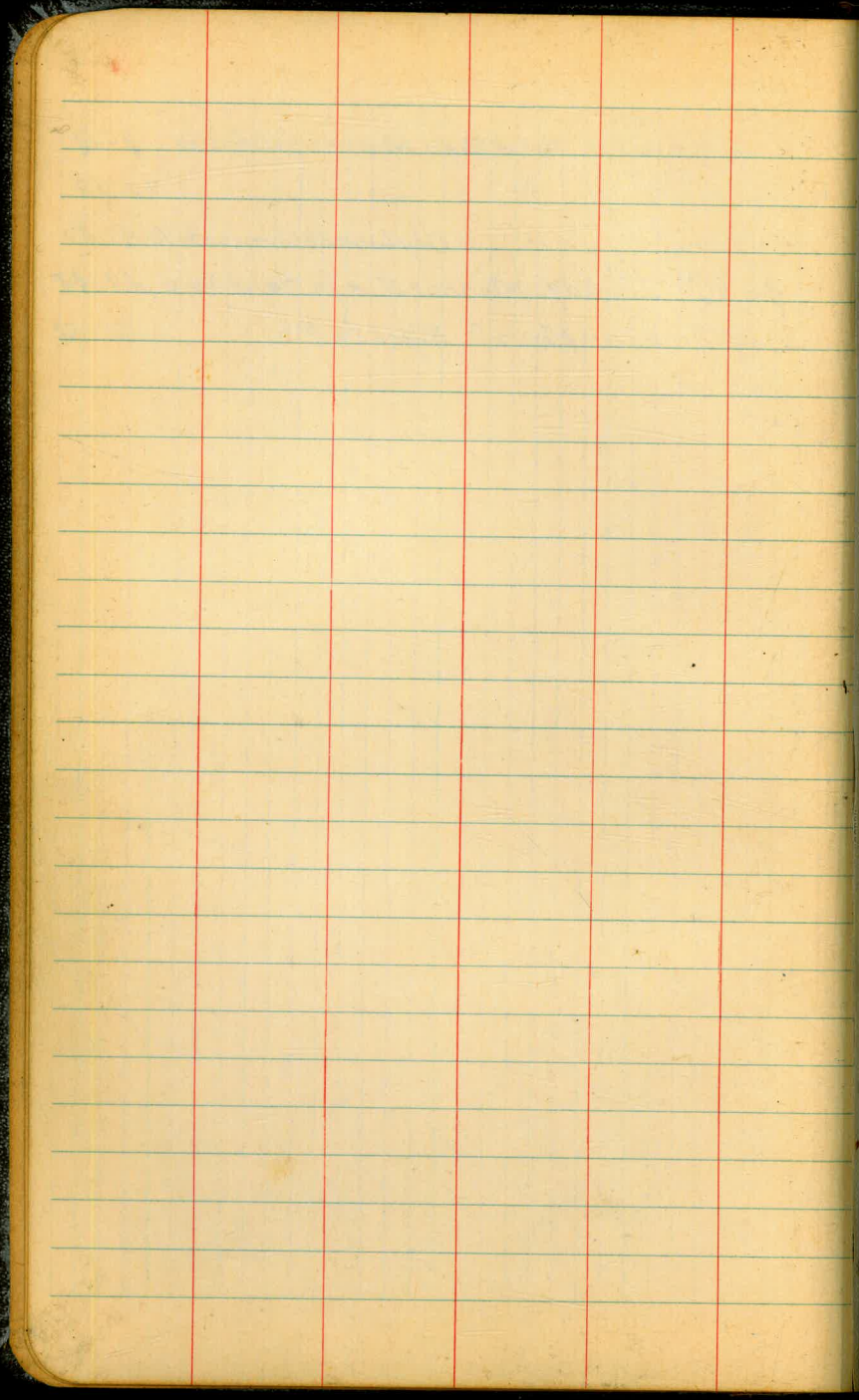
1688

CITY ENGINEER'S OFFICE

This Field Book is manufactured of a High Grade 50% Rag Paper having a WATER RESISTING SURFACE, and is sewed with Bing Special Enamel Waterproof thread.

Made in U. S. A.

Alignment Ward Road Madison to Cityline	1-12
Cross Sec. " " " "	14-33
Alignment " " Cityline to Camino del Rio	37-40
4th St. To pop. Marroc Ave to Ward Road	43-45
Cross Section Main St Rigel to Plato	46-53



Walker
Hazard
Hardin
7-23-45

PROPOSED RE-ALIGNMENT
— WARD ROAD —
from Madison Ave
To N.W. Line City Limits

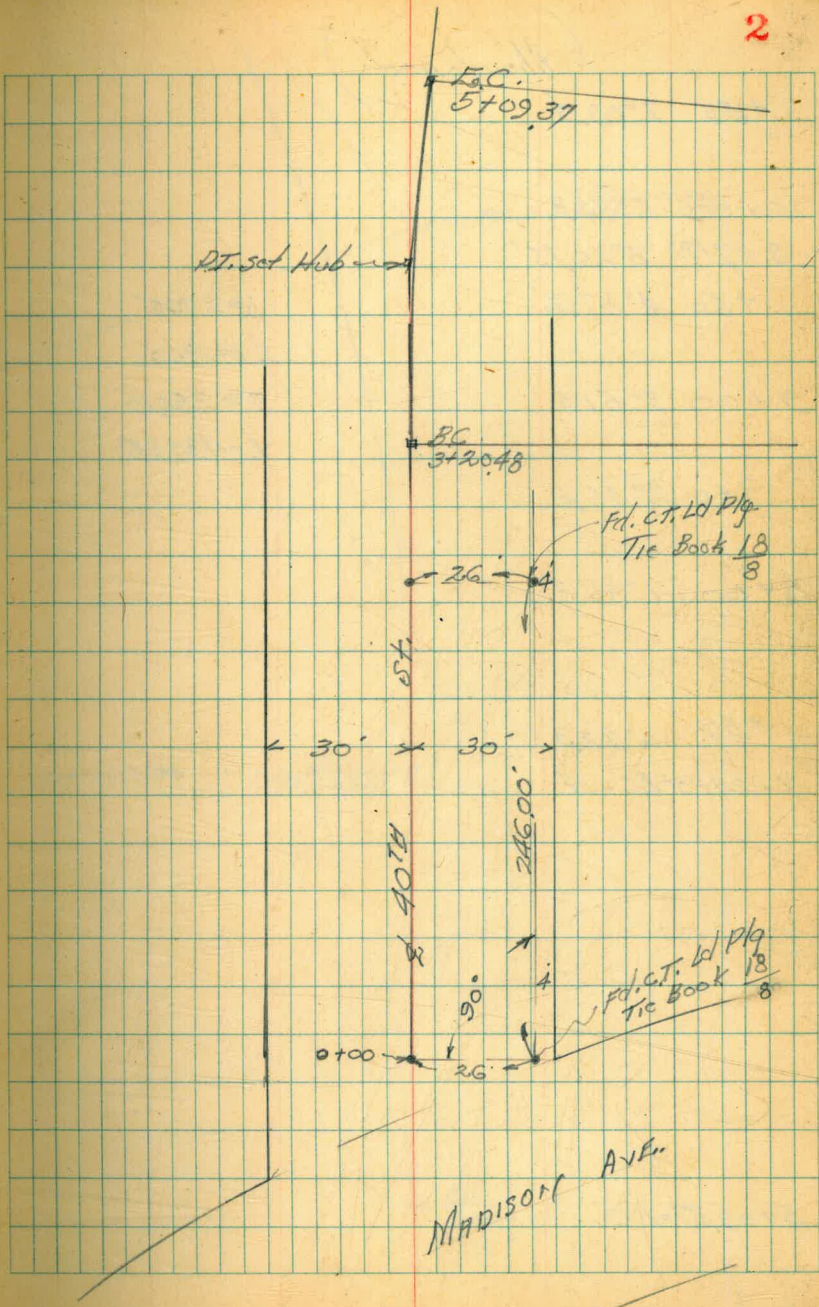
~~Abandoned~~
(see page 6
for New Line)

$\Delta = 5940'$
 $R = 1909.86$
 $Tan = 94.52$
 $L = 188.89$
 $D_c = 3'$

3 + 20.48 = B.C. RT.

2 + 46.00 = P.O.T. set Roof Nail in Paving.

0 + 00 set Roof Nail in Paving.



(Abandoned)

+50 7°09.3'

10+00 6°03.8

9+71.92 5°26.75'

+50 4°57.66'

9+00 3°51.5

+50 2°45.4'

8+00 1°32.3

+50 0°33.3

7+24.80 = B.C. Lt.

5+09.37 = E.C.

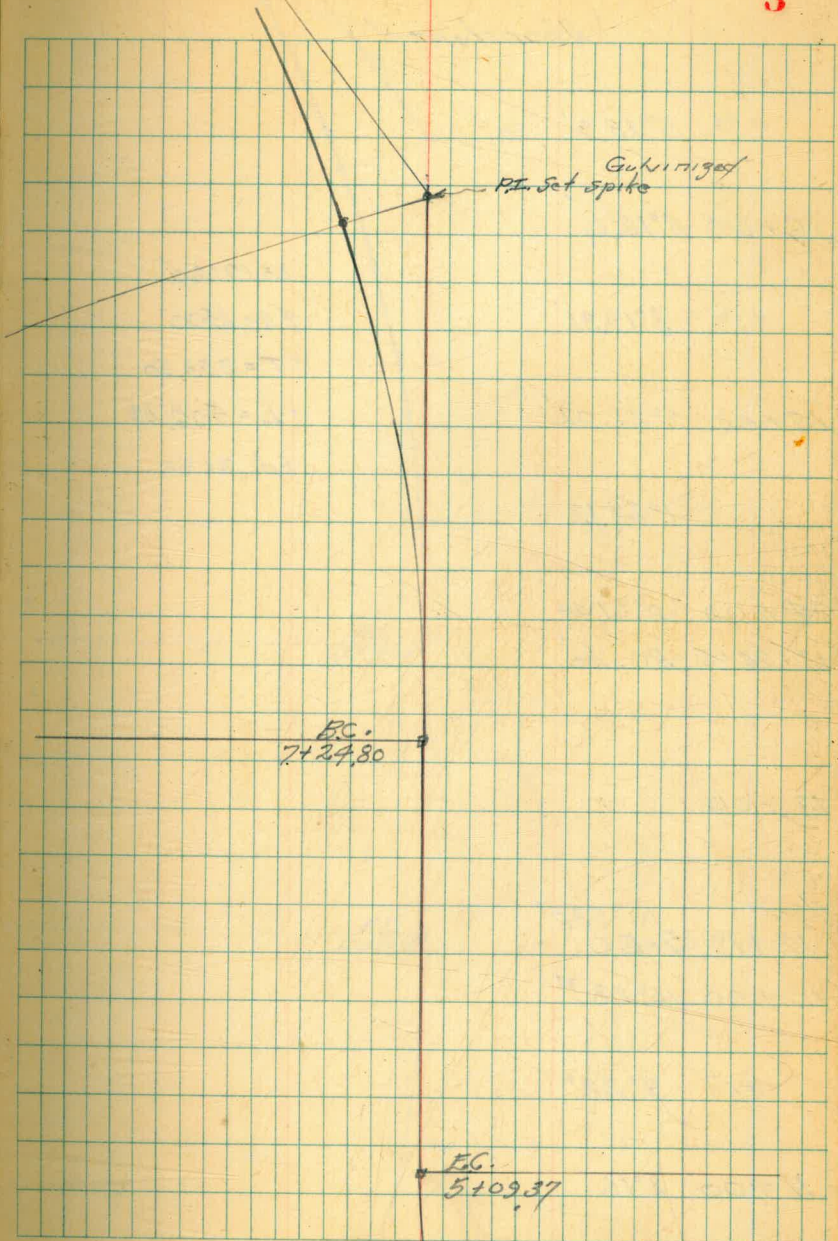
$$\Delta = 21.47'$$

$$R = 1300'$$

$$T = 259.15$$

$$L = 494.25$$

3



(Abandoned)

+50 5°13.9'

16+00 4°16.6'

+50 3°19.31'

15+00 2°22.02'

+50 1°24.73'

14+00 0°27.44'

13+76.05 = B.C. Lt.

13+00

12+19.05 = E.C. ^{10°53.5'}

12+00 10°28.3'

+50 9°22'

11+00 8°16'

$\Delta = 19^{\circ}20'$

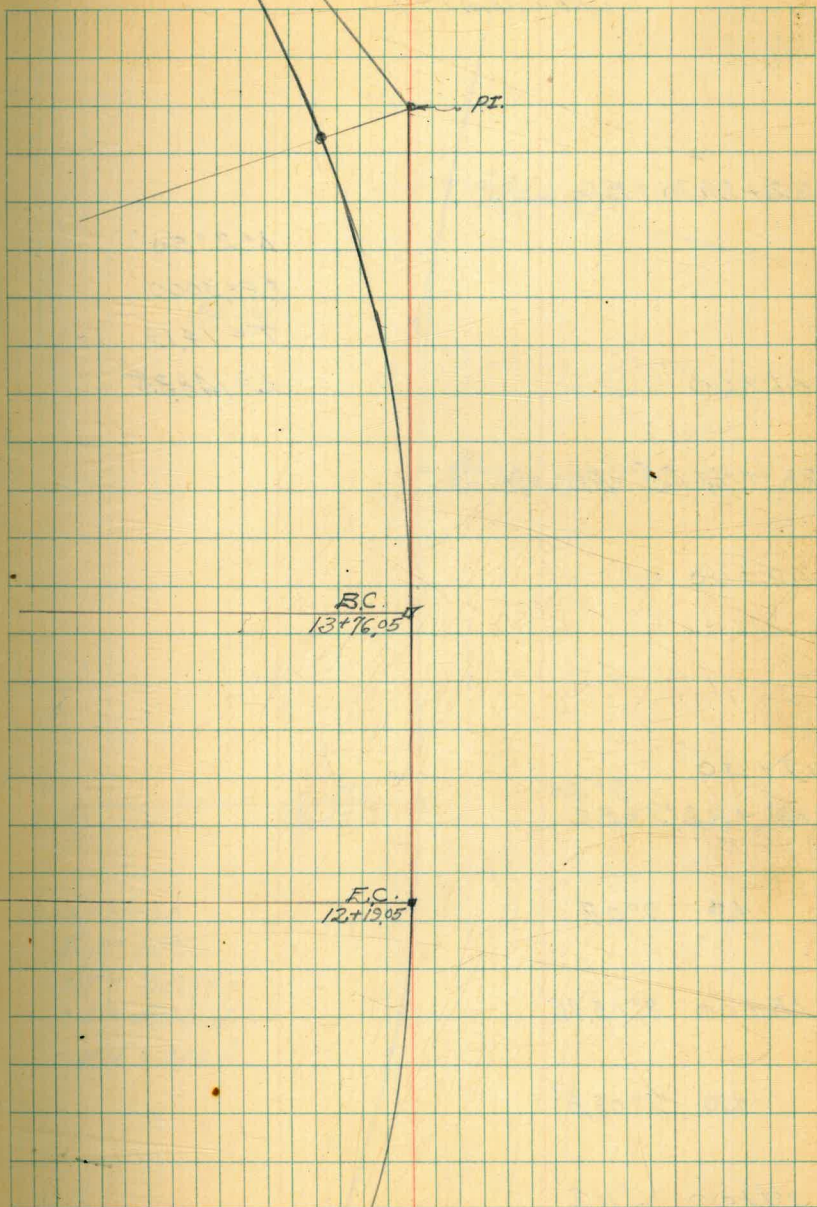
$R = 1500'$

$T = 255.50'$

$L = 506.14'$

$E.A. = 21.60'$

4



(Abandoned)

22+22.70 = E.C.

$\Delta = 2^{\circ} 50'$

$R = 3000'$

$T = 74.19$

$L = 148.35'$

21+00

20+74.35 = B.C. Pt.

20+00

19+00

$9^{\circ} 40'$
18+82.19 = E.C.

150 $9^{\circ} 03'$

18+00 $8^{\circ} 05.76'$

150 $7^{\circ} 08.5'$

17+00 $6^{\circ} 11.2'$

5

P.L. set

22+22.70
E.C.

B.C.
20+74.35

E.C.
18+82.19

$\Delta = 19^{\circ} 20'$

$R = 1500'$

$T = 255.50$

$L = 506.14'$

$EA = 21.60'$

Walker
Hogard
Hardin

WARD ROAD "A" Line
Proposed Re-alignment

7.27.45 from Madison Ave
to Nix Line City Limits

+50 0°39.2'

+25 0°11.6'

3+12.25 = B.C.P. set 2" x 2" Redwood Hub

P.B. Hub top knocked off

2+46.0 = P.O.T. Ed Roofing nail 1/16" under new paving

2+45 25' man

in old paving.

set point on it @ 90° to lot and 26' off

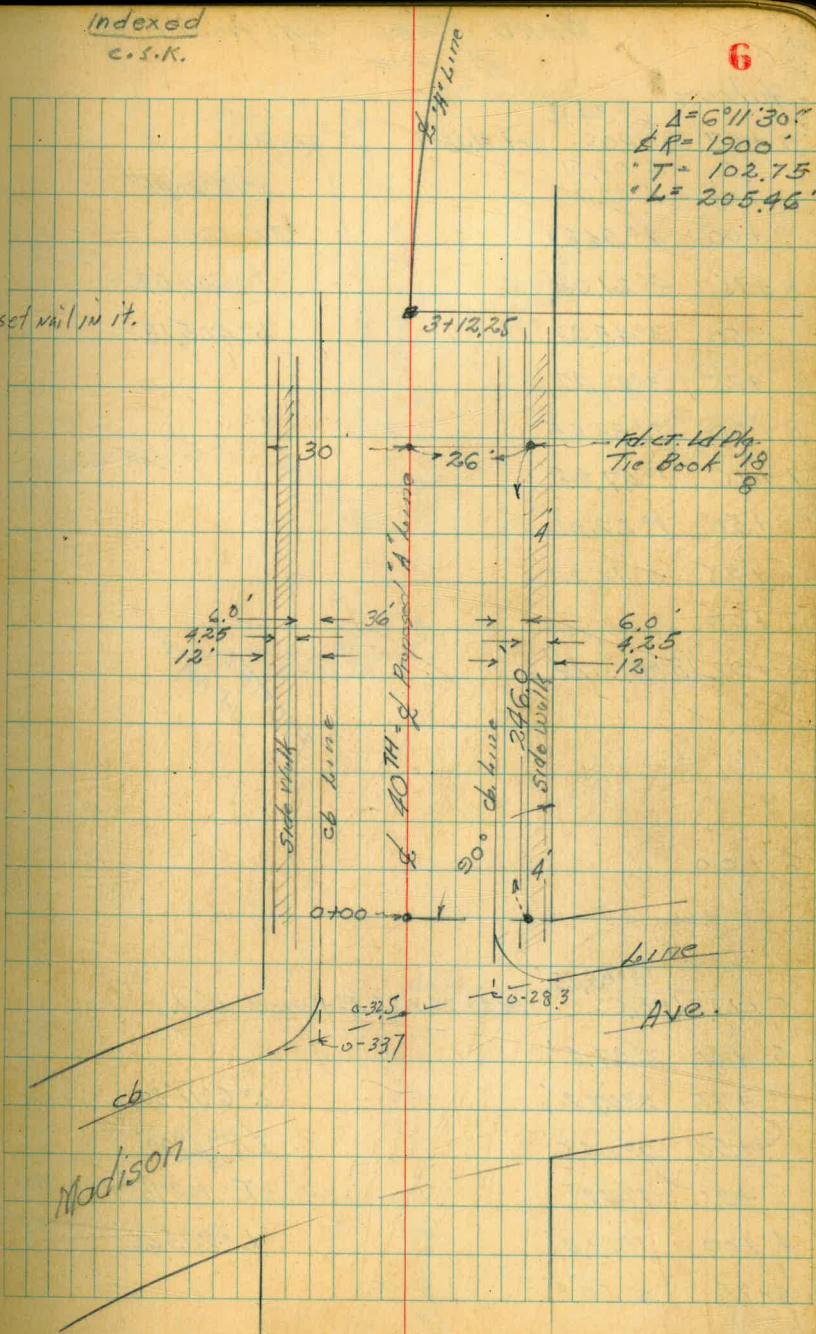
0+00 = set Roof Nail in Paving. Ed 0°05' below new paving in old Pointed

Indexed
C.S.K.

6

$\Delta = 6^{\circ}11'30''$
 $R = 1900'$
 $T = 102.75'$
 $L = 205.46'$

set nail in it.



WARD ROAD Cont. from P-6
"A" line

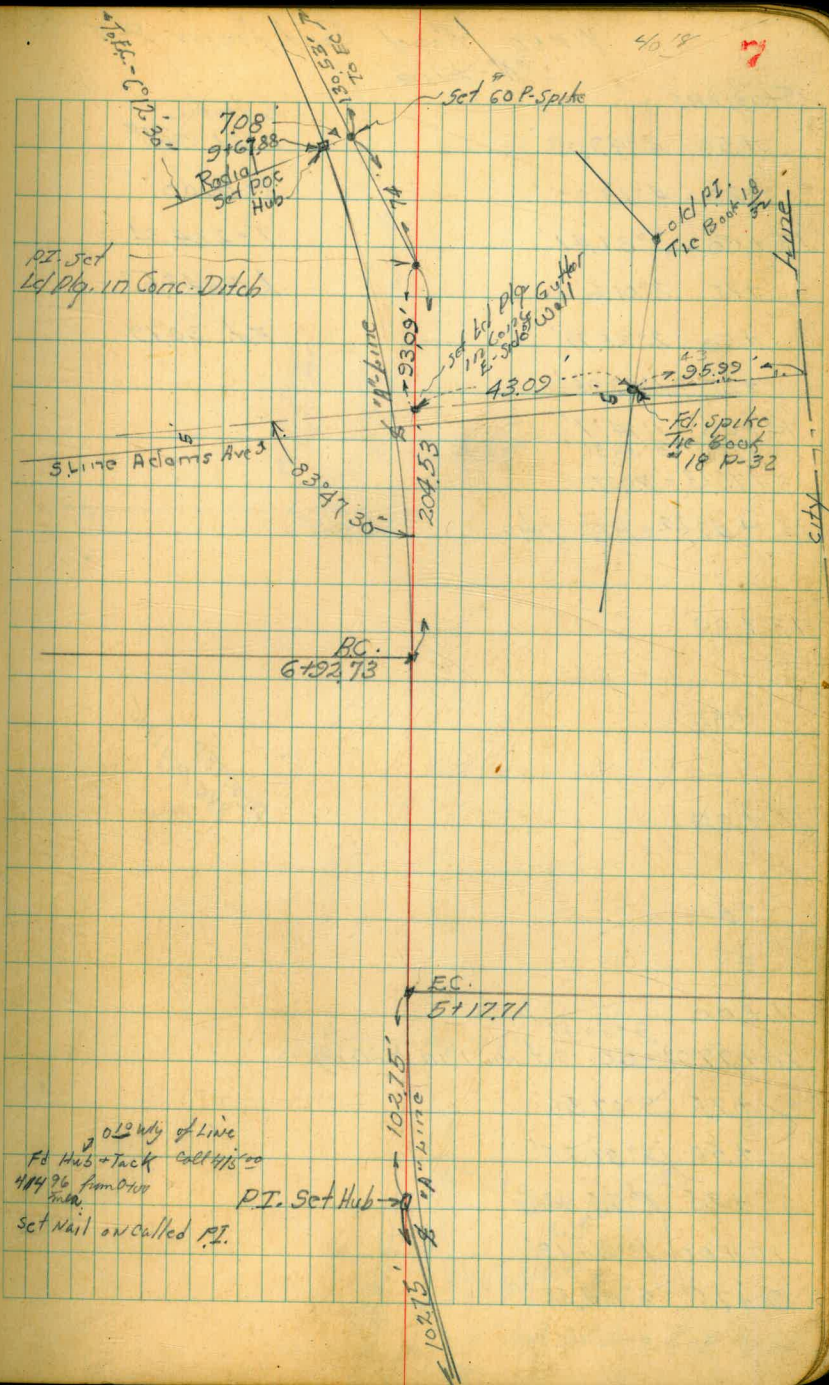
Stations

9+67.88 = P.O.C. set Hub +	6°34.12	
+50 = 6°08.51		
+25 = 5°32.7		$\Delta = 19°26'45''$
9+00 4°56.89		$R = 1200'$
8+75 4°21.08'		$T = 204.53$
+50 3°45.27		$L = 405.18$
+25 3°09.46		
8+00 2°33.65'		
7+75 1°57.84'		
+50 1°22.03		
+25 0°46.22'		
7+00		
6+92.73 = B.C. Lt.		

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JHX, Aug 1945

6+00

5+17.71 = E.C.	3°05.75'	set 2" x 2" Redwood Hub
5+00 2°27.2'		
+75 2°27.2'		$\Delta = 6°11'30''$
+50 2°04.6'		$R = 1900'$
+25 1°42'		$T = 102.75'$
4+00 1°19.4'		$L = 205.46'$
3+75 0°56.8'		



WARD Road Cont. from p 7
"A" Line

Stations

Stations	Angle	Distance	Notes
+50	4°49.03'		$\Delta 21^{\circ}10'45''$
+25	4°13.22'		R=1200'
15+00	3°37.41'		T=224.34'
+75	3°01.6'		L=443.58'
+50	2°25.79'		Ext. 20.79'
+25	1°49.98'		
14+00	1°14.17'		
13+75	= 0°38.36'		
13+75.13			= P.Q.S.T.
13+48.22			= B.C. Lt.

13+00

+50

12+00

+50

11+00

10+97.91 = E.C. Set Nail in Paving.

+75 9°07.56'

+50 8°31.75'

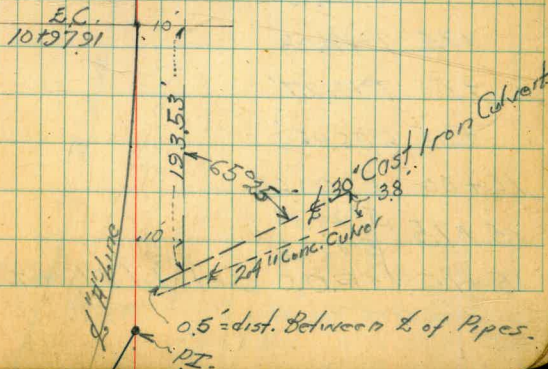
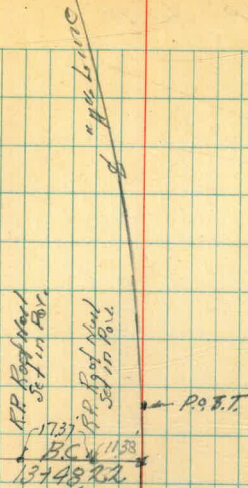
+25 7°55.94'

10+00 7°20.13'

9+75 6°44.32'

PLOTTED
JMK AUG 1945

8



Ward Road
"A" Line

Stations

21+00

20+00

19+00

18+00

10°35.38'
17+91.80 = E.C. set Hub

+75 10°11.3'

+50 9°35.5'

+25 8°59.7'

17+00 8°23.89'

+75 7°48.08'

+50 7°12.27'

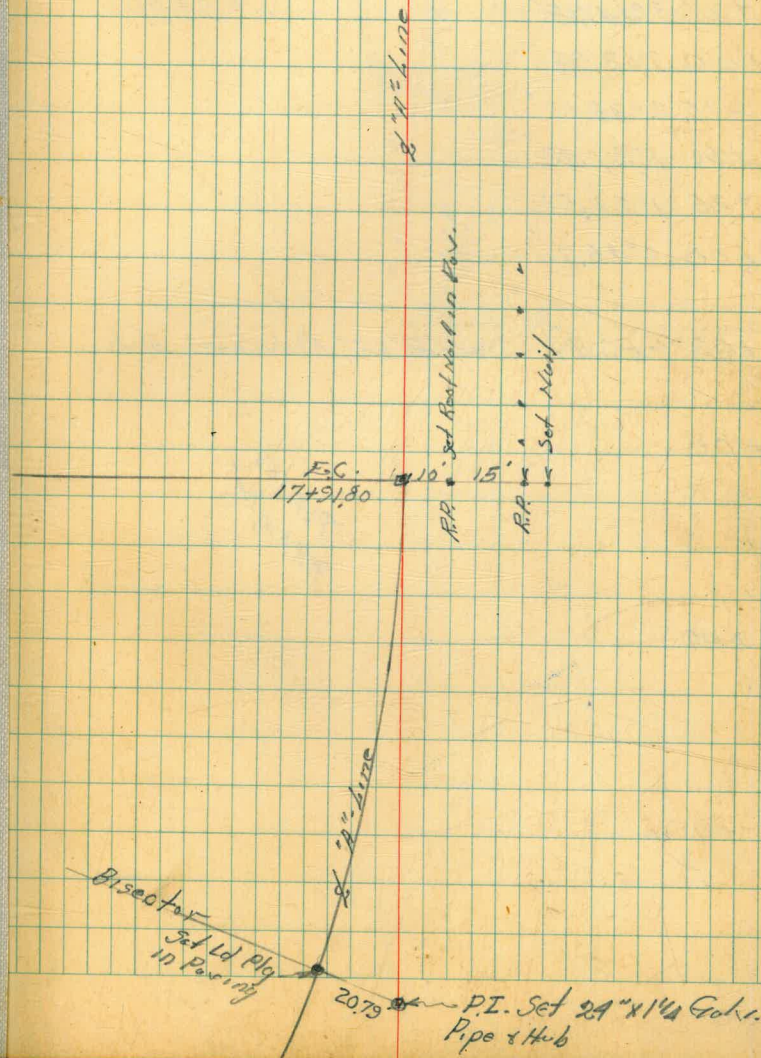
+25 6°36.46'

16+00 6°00.65'

15+75 5°24.84'

15+70.01 = P.O.C. set Id Plg C.T. in Paving

PLOTTED Aug 1945
JHK



Ward Road
"A" Line

Station		E. Data
+25	6°07.99'	
27+00	5°32.18'	$\Delta 26^{\circ}27'$
+75	4°56.37'	$R=1200'$
+50	4°20.56'	$T=282.01$
+25	3°44.75'	$L=553.97$
26+00	3°08.94'	
+75	2°33.13'	
+50	1°57.32'	
+25	1°21.51'	
25+00	0°45.7'	

24+68.09 = B.C. Pt. Set 2" x 2" Redwood Hub.

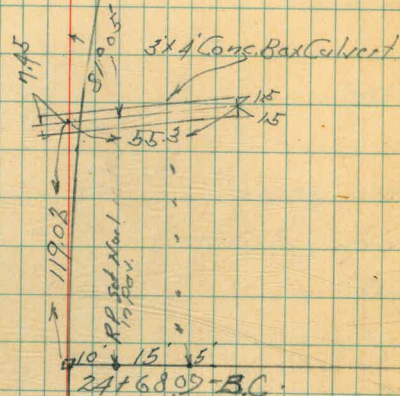
24+00

PLOTTED
JMK Aug 1945

23+00

22+00

10



"A" Line

station

Ward Road ~
"A" line

33+00

32+00

31+00

PLOTTED
AUG 1945 JMK

13° 13.5'
30+22.96 = E.C. Set Reef Nail

30+00 12° 41.2'

+75 12° 06.09'

+50 11° 30.28'

+25 10° 54.47'

29+00 10° 18.66'

+75 9° 42.85'

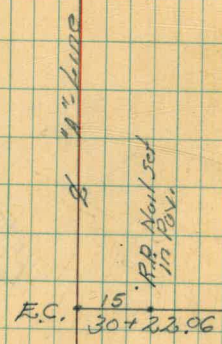
+50 9° 07.04'

+25 8° 31.23'

28+00 7° 55.42'

+75 7° 19.61'

27+50 6° 43.8'



Walker
Hogood
Harden
7-30-45

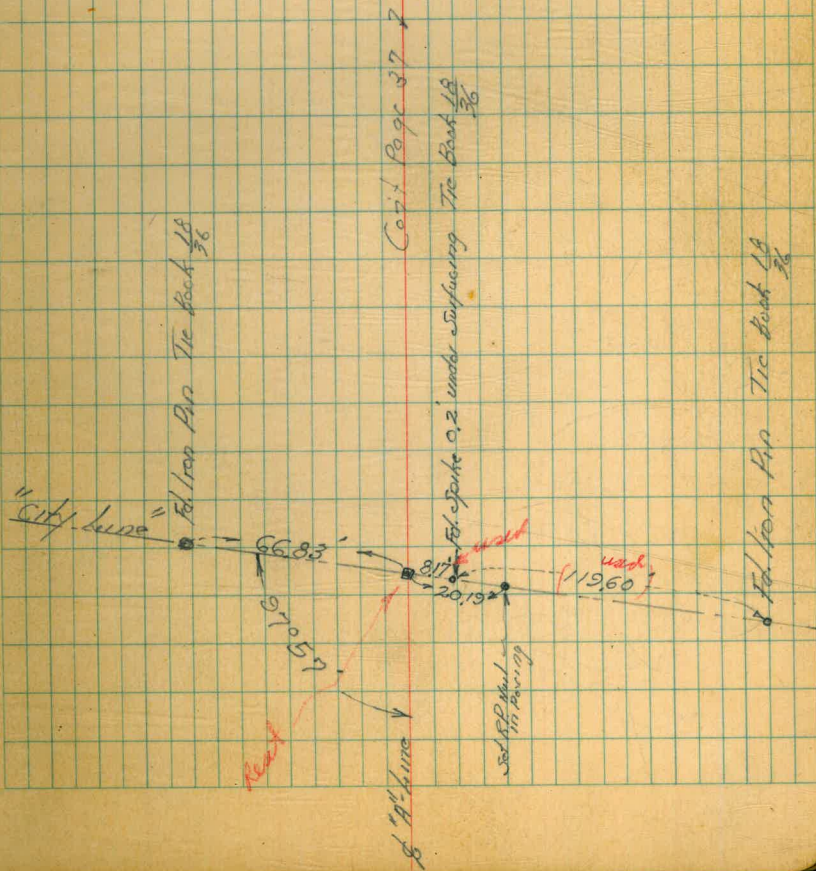
Ward Road
"A"-Line

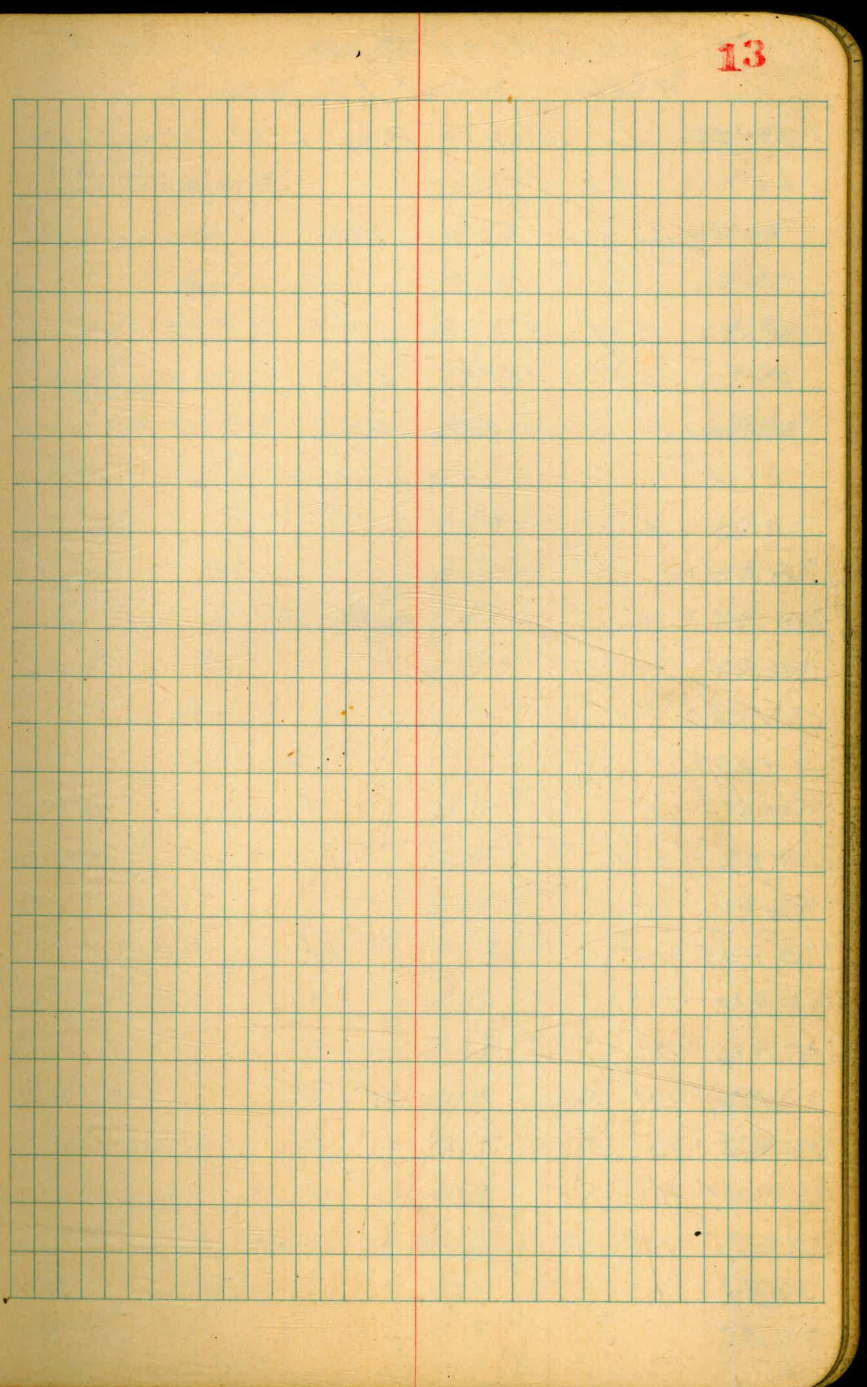
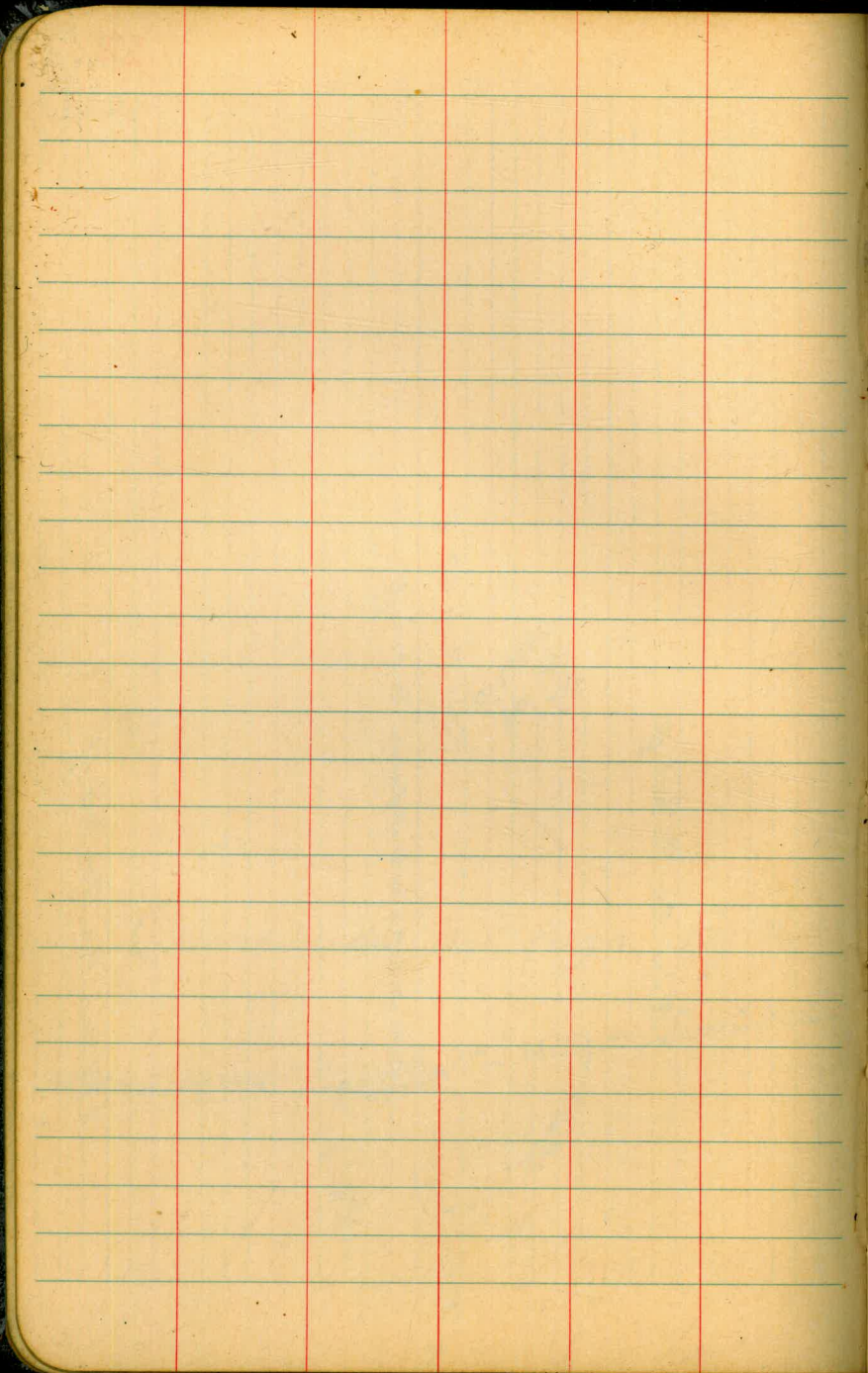
PLOTTED
Aug. 1945
JMK

(Continued on Page 37) (M)

$34 + 0.48 = \text{Int. "City Line"}$

12





Walker Hazard Hardin Cross Sections - Proposed Alignment "A" Line Ward Road

7-31-45 Location - Page 6-12

0.22 371.09

370.87

BM. 87
S.F. 39+6
+ Adams

on Bridge Rail 2.84

T.P. 2.07 372.19 7.97 363.12

T.P. 4.56 374.55 2.20 369.99

Grid Book 173-61

chkb NW 1/4 BP Madison & 4th 4.52 370.03 369.90

0-14' 16" Cocos Plumosa 21' Lt. of 2

0+47 14" " " " " "

0+23.6 " " " " " "

0+42.3 16" " " " " "

0+79 " " " " " "

1+05.8 " " " " " "

+29.3 " " " " " "

+53.6 12" " " " " "

+93.5 " " " " " "

2+09 10" " " " " "

0-45' 10" " " 21' Rt. " "

0+12 18" " " " " " "

+29 12" " " " " " "

+68.1 12" Pepper Tree 22' Rt. " "

0+88 16" Accacia " 21' Rt. " "

1+09.4 10" " " 21' Rt. " "

2+37.5 12" Plumosa Palm 21' Rt. " "

+58 " " " " " "

374.55

14

0-32.5

40' Lt. on cb.	4.58	369.97
" " " Gutter Pav.	5.27	369.28
30' Lt. on cb.	4.53	79.02
" " " Curb on Pav.	5.13	69.42
18' Lt. " " "	4.91	69.64
9' Lt. on Pav.	4.69	69.86
2' " " "	4.60	69.95
9' Rt. " " "		
18' Rt. " " "	4.90	69.65
30' Rt. " " "	5.28	69.27
" " on cb. P.R.C. Return	4.81	69.74
40' Rt. " " "	4.97	69.58
" " " Curb.	5.38	69.17
0+00		
40' Rt. on Lawn	4.0	70.55
30' Rt. " " "	4.5	70.05
18' " on cb.	4.67	69.88
" " " Curb.	5.13	69.42
9' " " Pav.	4.89	69.66
2' " " "	4.85	69.70
9' Lt. " " "	4.94	69.61
18' Lt. Curb Pav	5.35	69.30
" Lt. on cb.	4.82	69.73
28' Lt. on W edge Walk	4.54	70.01
30' on Lawn	3.9	70.65
40' Lt. " " "	2.3	72.25

374.55

0+50

40' Lt.	3.1	371.45
30' Lt.	4.1	70.45
28' Lt. on Walk	5.26	69.29
18' Lt. " cb.	5.51	69.04
" " " Gutf.	5.91	68.64
9' " on Pav.	5.67	68.88
9' " " "	5.55	69.00
9' Rt. " " "	5.57	68.98
18' Rt. " Gutf. Pav.	5.79	68.76
" " " cb. in Driveway	5.74	68.81
30' Rt. on Conc. Drive	4.87	69.68
40' " " Drive of Garage	3.67	70.88
T.D.	3.44	371.91
	6.08	368.47

1+00

40' Rt. on Conc. Walk	2.33	369.58
30' " " " "	3.02	68.89
18' Rt. on cb.	3.50	68.41
" " Gutf. Paving	3.93	67.98
9' " on " "	3.68	68.23
9' " " "	3.65	68.26
9' Lt. " " "	3.73	68.18
18' Lt. " Gutf. "	3.95	67.96
" " " cb.	3.55	68.36
30' Lt. on Lawn	3.0	68.91
40' " " " "	2.3	69.61

371.91

1+50

40' Lt. on Lawn	3.8	368.11
30' Lt. " " "	3.9	68.01
18' Lt. on cb.	4.29	67.62
" " " Gutf.	4.75	67.16
9' Lt. on Pav.	4.58	67.39
9' " " "	4.44	67.47
9' Rt. " " "	4.47	67.44
18' Rt. on Gutf. Pav.	4.64	67.27
" " " cb.	4.23	67.68
30' Rt. on Lawn	4.0	67.91
40' Rt. " " "	3.7	68.21
	2.700	
40' Rt. on Lawn	5.1	66.81
30' " " " "	5.4	66.51
18' Rt. " cb.	5.65	66.26
" " Gutf. Pav.	6.05	65.86
9' Rt. on " "	5.99	65.92
9' " " "	5.96	65.95
9' Lt. " " "	5.98	65.93
18' Lt. on " "	6.07	65.84
" " on cb.	5.63	66.28
30' Lt. on Conc. Walk	5.37	66.54
40' Lt. " " " "	4.98	66.93

15

371.91

2+50

40' H	Natural Ground	7.9	364.01
30' H	" "	7.9	364.01
18' H	on cb	8.47	63.44
" "	" Gut.	8.91	63.00
9' H	on Paving	8.67	63.24
9'	" "	8.61	63.30
9' Rt.	" "	8.62	63.22
18' Rt.	on Gut.	8.94	62.97
" "	" cb	8.45	63.44
30' Rt.	on Lawn	7.9	64.01
40 "	" "	7.0	64.91

2166.9 = End Existing Paving

40 Rt	Nat. Ground	8.8	63.11
30 Rt	" "	9.3	62.61
18' Rt.	on cb	9.54	62.37
18' Rt.	" Gut. Pav	9.90	62.01
9' Rt.	" "	9.67	62.24
9'	" "	9.63	62.28
9' H	" "	9.79	62.12
18' H.	on Gut.	10.11	61.80
18' H.	on cb.	9.65	62.26
30' H.		9.3	62.61
40' H.		9.1	62.81
T.P.		12.41	359.50

16

Hard Road "H" Line

Aug 1-45
Walker Lt. W
Sutton
Hazard
Road

Rt = F 17

+75 318
-111
122
TP 0.17 347.11 12.85 346.94

16.7 24.0 24.0 24.6 35.5 42.9 53.7 57.0 59.2 361.5
-26.2 -18.9 -18.9 -18.9 -7.4 7.2 +10.8 +14.1 +16.2 +18.6
81 58 45 19 13 22 36 70 90
2-2 1/2" Channel
347.11

+50 28.9
326.5
-17.9
122
+20 For Profile 10.5

17.0 28.5 25.5 25.9 36.2 46.2 54.7 58.1 61.6
14.7 25.7 22.2 22.7 33.7 43.7 52.4 55.8 59.5
-29.2 -18.7 -20.7 -20.2 -19.0 19.6 +8.5 +11.9 +15.8
89 61 52 26 20 18 32 100
2-2 1/2" Channel

+40 19.2 19.2 21.5
14.8 14.8 14.8
-56.0 -36.0 -33.7
116-111 Wash 106-EMDASH 105

29.3 27.2 27.8 30.2 35.2 57.8 60.2
32.7 24.9 25.5 32.7 35.2 35.5 35.5
-25.2 -28.0 -27.4 -25.0 4.6 12.6 +5.0
89 73 49 70 40 40 100
116-111 Wash

PLOTTED
JHK 8-14-45

+66
EXTENDED AND PLOTTED
Aug. 1945 JHK

28.9 28.7 36.7 54.2 53.7 55.0 56.2 58.0 61.3
26.6 26.4 34.4 47.7 54.4 52.7 53.9 55.7 59.0
-26.1 -26.3 -18.3 -9.8 -1.8 4.8 +11.2 +5.8 +6.3
89 83 58 28 18 18 40 40 100
116-111 Wash

+31 = 11/2" ^{good} Curb Rt x Lt
30.79
-26.4
120

30.69 30.69 57.29 57.49 57.59 56.99 57.99 57.99 59.09 60.79
24.8 18.2 0.2 0.0 +0.1 -0.5 2.3 9.0 +0.5 +1.6 +3.4
89 83 47 40 18-cb 18-cb 18-cb 18-cb 40 40
116-111 Wash

3+12.25 B.C. Rt
46.19 57.43 58.79 58.73 58.29 58.79 59.40 60.29 61.49

-12.6 -1.3 0.0 -0.6 -0.5 1.0 0.0 +0.6 +1.5 +2.7
76 58 40 18-cb 18-cb 18-cb 18-cb 40 40
116-111 Wash

116-111 Wash

TP 0.29 359.79 359.50 Page 16

359.79
Notes - Rods + Above 7
- Below 2

+ 89 1/2 = Fly Profile 9.20 13.77

+ 50 41.9 + 27.0 136

6 + 0 46.3 + 28.6 174

+ 83 1/2 = Fly Profile 4.48 318.5

+ 55 For Profile 3.2 319.8

+ 50 32.6 + 14.3 145

TP 0.71 322.97 12.68 322.26

TP 0.48 324.94 12.65 324.46

+ 25 For Profile 9.5

+ 17.71 FC. 31.2 25.6 31.7
- 6.9 - 12.5 - 21.0
131 110 89

5 + 0 31.3 18.3
- 8.4 - 21.4
128 93

34711

314.89
24.7 22.7 9.1 309.6 14.9
+ 1.8 + 2.8 - 5.9 - 5.3 2.0
104 91 86 50 25
8.08 - 0.5 32.5 34.9 46.1 47.5
22 34 40 70 100

317.66
37.2 25.5 24.1 09.9 11.0 17.3
+ 19.5 17.8 + 6.4 - 7.8 - 6.9 + 0.4
131 107 97 74 51 37
5.31 + 0.2 17.9 41.6 48.3 53.2 58.6
10 32 40 51 100

321.3
26.2 13.7 13.4 19.9 19.9
+ 4.9 - 7.6 - 7.9 - 1.4 - 1.4
103 74 55 43 2
40.5 54.8 60.5 62.6
+ 19.2 + 35.5 + 39.9 + 41.0
27 39 82 100

322.97

325.5
14.6 16.6 21.0 22.0 22.3 37.7
22.5 21.5 - 19.1 - 16.1 - 16.8 - 0.4
77 59 49 38 8 3
8.97 50.4 56.1 60.1 62.4
26 31 53 70
10/100

326.5
14.7 22.0 22.0 22.5 35.9 39.7
25.0 - 17.7 - 17.7 - 17.8 - 8.8 7.4
76 54 46 14 7
53.2 56.3 59.1 62.5
27 40 100 100

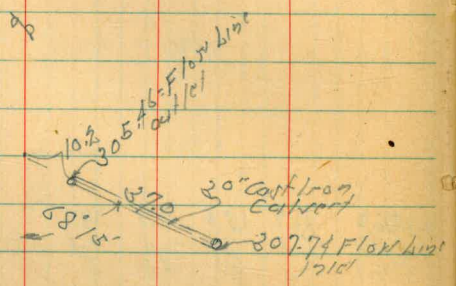
34711

+0.01 311.96 Fortery up.

870 40.2 +390 139

+75

+577



+50

TP 1.81 311.95 12.83 310.14

7+25 56.1 +45.6 149

6+92.73 BF Lt. 51.9 +39.5 162

322.97

36.9	16.9	0.9	0.37	301.2	0.3.9	07.8	088	139	250
+35.7	+15.7	+8.6	+2.5	10.8	+2.7	+6.6	+7.6	+12.7	+23.8
94	58	38	3	10.8	3	23	48	86	65
								42.7	48.2
								+41.5	+47.0
								102	124

544	32.9	20.5	20.4	06.4	05.4	065	097	096	205	34.9	409
+490	+27.5	+15.1	+15.0	+1.0	6.6	+1.1	+3.8	+4.2	+15.1	+29.5	+35.7
137	85	71	59	34		11	17	49	52	80	108

52.6	37.0	21.0	06.4	07.1	10.3	107	15.9	24.5	33.6
+45.6	+39.9	+14.0	-0.7	4.9	+3.2	+3.6	+8.8	+17.5	+26.5
137	93	61	33	19	13	47	55	86	71

311.95

36.9	23.0	23.0	07.9	05.4	10.5	11.0	11.8	12.3	10.9	11.5
+25.5	+12.5	+12.5	-2.6	-5.1	12.5	+0.5	+1.3	7.8	-0.5	+1.0
96	80	68	39	15	15	1	38	61	84	73
								13.6	13.6	23.8
								+3.1	+3.1	+15.2
								77	94	125

38.7	23.7	23.7	06.2	08.1	12.6	12.72	18.4	24.0	24.0	22.9
+26.3	+11.3	+11.3	-6.2	-4.3	+0.7	10.55	+0.3	+6.0	+14.5	+10.5
110	84	73	70	78	8	33	39	86	100	127

322.97

Aug 3-45
Malkert Sisson Hotel
Hazard Blvd Lt.
Harden Osborne

Z P 21

12+10

404	326	1161	967	76.1	961	847	841	861	871	995	
+138	+233	+355	+120	+0.6	3.3	90	-119	-120	-100	-90	+34
148	128	93	52	43		7	21	29	30	65	82

098	429
+137	+468
105	152

11+60

529	488	373	13.7	298.1	97.4	974	829	829	859	910
+535	+514	+399	+163	+07	2.0	0.0	-115	-145	-115	-64
148	123	99	53	32		13	29	39	40	57

299.42	927	278	449	527
+48	+304	+475	+548	+528
92	135	167	200	250

11+15

585	535	340	17.2	992	99.50	998	847	847	867	882
+590	+540	+345	+177	-0.1	12.45	-0.3	-148	-148	-128	-113
140	124	76	39	27		21	41	49	58	72

97.7	215	510
-18	+220	+315
94	135	190

+75

62.6	57.0	395	253	06.0	021	01.05	00.7	882	862	883	909
+67.5	+560	+384	+213	+47	0.0	10.90	-0.3	-128	-148	-127	-110
116	91	64	37	22	16		33	39	60	190	87

20.2	49.1	530
+192	+480	+520
140	188	207

+50

60.5	56.1	472	280	020	01.64	01.5	90.7	90.9	891
+58.9	+545	+466	+263	-0.3	10.31	-0.1	-10.3	-10.5	-125
116	91	71	30	12		37	33	65	28

89.6	15.6	35.8	49.2
-120	+140	+342	+472
86	138	172	172

10+25

59.5	55.0	472	290	3023	01.95	023	90.0	290.5	89.7	89.5
+595	+530	+472	+271	-0.3	10.0	+0.3	-114	-115	-123	-125
108	76	54	25	7		42	81	73	74	84

90.7	94.7	15.0	40.0
-112	-73	+121	+380
85	96	131	182

31195

31195

14+0

47.6
+6.05
1.57

41.9	27.1	04.3	09.8	89.2	88.7	87.1	76.7	76.7	84.9	88.7	98.7
+5.18	+1.60	+1.92	+4.7	+2.1	+1.8	12.3	-10.4	-10.4	-3.2	+1.6	+1.6
117	87	97	59	44	5		14	20	23	48	74

29.2
+1.21
19450.2
+4.62
173

+7.5

+55.0
168

44.5	39.2	20.8	30.0A	91.4	90.0	89.8	74.2	74.2	85.2	88.0	96.1
+5.28	+4.04	+3.10	+1.06	+1.6	-0.2	9.6	-15.8	-15.8	-4.8	-1.8	+6.0
143	123	82	77	53	38		15	25	27	42	80

20.6
+3.18
11831.1
+4.13
14850.0
+6.12
17020.0
+3.00
200

+48.22 BC Lt.

33.5	28.5	19.0	06.2	93.7	90.6	91.0	91.0	76.3	76.3	85.3	85.3
+4.25	+3.75	+2.80	+1.52	+2.7	-0.4	8.44	0.9	-14.7	-14.7	-5.7	-5.3
161	131	93	87	54	11	10/105	4	18	31	37	57

29.7
+8.7
7914.1
+3.51
11449.7
+5.35
70

13+0

202.7	96.4	92.1	92.4	92.1	82.0	82.0	71.0	79.0	82.0
+1.81	+4.3	3.0	+0.3	7.3	-10.1	-10.0	-3.1	-1.31	-10.1
177	127	97	53		19	28	28	38	70

83.8
-8.5
5027.5
+3.54
11233.5
+4.64
14848.1
+5.60
188

+7.5

05.5	00.5	97.3	92.1	93.7	93.8	83.1	81.8	78.6	78.6	81.8
+1.17	+6.7	+3.5	-0.7	-0.5	5.6	-10.7	-1.0	-1.52	-1.52	-1.0
190	140	104	52	5		19	32	36	44	46

13.3
+1.95
10639.9
+4.61
134+5.62
192

12+50

16.3	12.8	10.9	02.8	94.6	94.6	94.6	84.1	84.1	80.2	80.2
+2.17	+1.82	+1.54	+8.2	0.0	4.8	0.0	-10.5	-10.5	-1.44	-1.44
142	112	81	53	45		4	21	34	40	48

296.6
+2.0
3026.7
+3.21
12744.4
+4.78
13652.3
+5.97
188+6.67
218

299.42

299.42

Hard Road "H" Line

+ H.L. — El.

+50

+25

15+0

573
+684
145

+75

TP

0.46

287.43

-12.45

286.97 ✓

+50

50.5
+63.9
135

14+25

49.8
+61.2
145

299.42 ✓

Lt.

L

Rt.

23

48.0	32.9	96.7	81.4	81.9	81.9	67.2	66.1	73.5
+66.1	+51.0	+148	-0.5	5.54	0.0	-14.7	-15.8	-8.1
115	87	30	19		22	43	58	114

009 32.5 41.2
+19.1 +51.6 +60.3
158 203 225

58.5	42.5	29.3	98.5	83.2	83.7	73.9	66.2	69.2	71.0
+65.3	+59.3	+37.1	+15.7	0.0	12.5	+0.5	-9.2	-17.0	-14.2
128	163	85	31	23	22	37	55	71	100

305.1 44.8 52.0
+31.9 +61.6 +68.8
122 185 215

41.4	22.4	11.1	96.6	83.9	84.4	72.6	69.0	68.8	72.5
+57.3	+38.5	+27.2	+13.7	0.0	3.03	+0.5	-11.3	-14.9	-11.2
103	72	50	38	26	19	38	51	68	102

10.6 44.1
+26.7 +60.2 +70.3
187 210 247

48.2	40.6	20.8	04.2	85.7	85.8	86.0	70.2	70.2	72.1	72.5
+62.6	+55.9	+35.2	+18.6	+0.1	1.84	+0.4	-1.54	-1.54	-1.35	-1.31
103	100	79	43	29		11	30	53	85	97

287.43

11.9 52.4
+26.3 +61.8
149 238

44.0	21.3	97.5	88.5	86.9	86.6	87.1	72.1	72.1	77.0	77.4
+57.4	+34.7	+10.9	+1.9	0.0	12.8	+0.5	-14.5	-14.5	-9.6	-9.2
110	79	58	40	31		6	18	39	87	94

86.2 86.2 17.7 51.9
-0.4 -0.4 +3.11 +85.8
85 109 153 225

42.6	27.6	00.4	91.6	87.8	87.6	74.2	74.2	79.7	85.2
+53.0	+40.0	+13.0	+4.0	+0.2	11.8	-13.4	-13.4	-7.9	-3.4
112	88	70	56	35		3	16	25	50

91.2 19.3 47.4
+53.6 +31.7 +61.8 +62.8
86 148 195 225

299.42

17+0

+75

TP 0.38 274.92 12.89 274.54

+50

+25

16+0

15+70.01 '07 LxT

287.43

Lt.

z

Rt.

24

53.9	50.7	34.5	45.6	95.4	80.5	72.5	73.3	73.6	59.0	58.3	60.3	60.3	66.7
+18.1	+15.8	+13.6	+30.7	+22.9	+18.0	2	10.8	11	13.4	-14.2	-12.2	-12.2	-3.8
12.8	10.2	8.0	4.7	2.2	3.0		3.0	4.4	6.1	10.8	10.3	11.9	13.3
17.3	27.5	25.1											

72.5 79.5
0.0 +0.7
182 220

51.9	51.4	38.7	23.5	31.9	73.9	74.5	74.9	63.9	56.5	61.5	78.7	84.9	81.5
+18.0	+17.5	+14.8	+22.6	+1.0	0.0	+0.6	+0.9	-1.9	-1.4	-1.4	+5.0	+11.0	+1.6
18.5	12.0	9.0	3.9	5	4	3.0	4.0	5.6	10.5	11.5	15.0	19.3	22.8
21.1		26.1											

274.97

54.8	35.6	07.6	82.9	75.6	75.6	75.6	63.3	61.4	58.4	58.4
+19.3	+6.0	+3.0	+1.0	0.0	11.8	0.0	-1.3	-1.4	-1.2	-1.2
12.9	8.8	4.8	7.9	6	11.8	3.3	5.8	9.3	9.6	10.3
24.4	28.4	24.4								

60.4 75.4 90.0 97.6
-15.2 -0.6 +1.4 +1.0
10.8 13.4 15.8 20.7

55.5	14.8	95.2	84.9	77.5	77.5	77.5	67.2	60.9	60.9	63.9
+18.0	+17.5	+19.7	+1.0	0.0	9.9	0.0	-10.3	-6.6	-6.6	-6.6
13.5	8.5	2.7	1.1	8	9.9	3.0	4.8	8.4	9.6	9.8

68.8 30.2.4 -07.1
-8.7 +24.9 +29.1
2.3 15.8 20.1

53.9	28.8	07.6	92.7	83.1	79.1	79.09	79.1	71.1	65.8	63.0	62.0
+14.8	+19.7	+22.5	+13.6	+10.0	8.34	0.0	-8.0	-13.3	-16.1	-17.1	
13.4	9.3	2.7	3.0	13.78	8.34	2.8	3.9	5.3	8.7	8.2	

66.0 78.1 301.4 21.3
-13.1 -1.0 +22.3 +1.2
10.0 13.5 16.3 19.7

46.7	13.2	93.3	80.1	80.84	79.7	66.7	64.6	70.0
+65.9	+32.2	+12.5	-0.7	6.59	-1.1	-14.1	-16.3	-10.8
11.7	8.5	2.8	1.5	2.5	4.1	5.0	6.0	10.8

93.6 30.3 36.6
+42.8 +49.4 +53.7
15.0 19.8 22.0

287.43

Aug. 6-45

Lt

2

Rt.

23

+50

357
+86.8 +71.0
181 136

165 038 928 788 761 647 64.7 65.1 65.1 53.5 50.0 54.5
+518 +391 +281 +141 +114 0.0 10.2 10.4 +0.4 +0.4 -11.2 -14.7 -10.2
103 75 48 37 14 11 10.2 10.4 30 52 86 136

88.1
+234
175

18.3
+53.6
390

+80

+88.4
142

47.7 345 09.1 96.6 89.7 66.7 67.7 67.9 56.5 52.0 65.5 90.9
+81.0 +67.8 +42.4 +29.9 +23.0 0.0 8.2 +1.0 +1.2 -10.2 -14.7 -1.2 +24.2
132 75 55 38 12 4 30 40 64 92 136 184

16.1
+49.4
217

17+91.80 = EC

67.26
7.75
out
00144

+75

49.8 328 120 94.6 68.0 69.2 68.8 54.5 52.5 52.5 54.5
+81.8 +64.8 +41.4 +26.6 0.0 6.9 +1.2 +0.8 -13.5 -15.5 -15.5 -13.5
125 90 52 13 3 30 47 77 78 86 90

58.2 82.4 06.0
-9.8 +14.4 +38.0
114 173 226

+50

52.2 34.4 31.0 95.8 79.2 69.2 70.6 71.4 55.2 55.2 56.2 57.8
+83.0 +65.2 +41.4 +26.6 +11.0 0.0 5.7 +1.4 +2.2 -14.0 -14.0 -13.0 -11.4
128 84 48 19 12 2 30 48 72 82 88 102

69.5 88.5 09.8
+2.2 +19.2 +40.6
150 208 266

17+25

+80.3
182

47.9 33.3 10.7 97.6 88.1 75.1 70.8 71.8 72.8 58.8 55.0 56.3 58.5
+77.1 +62.5 +39.9 +26.8 +17.3 +4.2 4.1 +1.0 +2.0 -14.0 -15.2 -14.5 -13.5
119 81 47 36 13 12 30 30 72 87 90 102

67.2 81.9 96.5
-8.6 +11.1 +25.7
137 220 287

274.92

274.92

TP 0.77 249.99 1310 249.22

+50

+99.4 24.7 91.4 59.5 50.7 51.24 51.0 50.5 41.0 36.0 36.0 43.7
 178 139 78 18 12 11.08 -0.2 -0.7 -10.2 -15.2 -15.2 -7.5
 178 139 78 18 12

64.6 80.4 06.5 305
 +13.4 +22.2 +55.3 +79.3 +101.1
 138 137 179 223 281

21+0

47.5 16.8 97.7 66.7 53.3 53.9 53.5 53.1 41.8 46.3 49.6 61.2
 +93.6 +63.0 +13.8 +12.8 -0.6 3.71 -0.2 -0.8 -12.1 -7.6 -4.3 +7.3
 178 128 84 26 17 15 28 41 87 68 101

+63. See Page 33 66.4

83.4 01.3 23.9 48.9
 +21.5 +17.4 +7.0 +9.5
 140 168 205 247

+37

53.5 07.0 86.0 68.4 56.3 56.96 53.5 53.1 41.8 46.3 49.6 61.2
 +96.4 +50.0 +29.0 +11.4 -0.7 5.86 -0.1 -0.6 -1.8 -11.7 -0.8 +8.5
 192 109 88 27 15 14 24 40 83 84 112

78.5 95.5 11.1
 +21.5 +38.6 +5.4
 150 180 229

20+0

51.3 12.0 90.3 75.5 67.7 58.1 58.54 58.3 57.5 46.6 44.5 50.1 79.6
 +92.8 +53.5 +3.2 +17.0 +9.2 -0.4 3.78 -0.2 -1.0 -11.9 -14.0 -8.4 +21.1
 187 118 70 44 25 17 14 25 41 48 70 118

.09.3 24.7
 +50.8 +61.7
 168 192

+50

+94.7
 193

356 106 94.0 77.7 60.7 60.6 60.4 60.4 49.3 46.5 81.2
 +91.6 +75.0 +50.0 +33.4 +17.1 -0.4 1.74 -0.2 -0.2 -11.3 -14.1 +20.6
 173 144 100 84 29 18 15 25 40 85 130

TP 0.45 262.33 1305 261.87

262.33

11.6 43.9
 +51.0 +83.8
 164 254

19+0

+90.3 +84.3
 207 167

45.3 21.1 01.0 84.4 75.4 62.1 62.64 62.7 50.5 47.3 60.4 92.2
 +82.7 +58.5 +3.84 +21.8 +12.8 -0.5 12.28 +0.1 -12.1 -15.3 -2.2 +29.6
 152 118 79 83 23 14 25 48 63 98 156

08.4 35.8
 +46.0 +75.8
 175 228

274.92

274.92

Aug-7-45 Lt.

R.N. = Bottom of Mats.
Rt. 27

+50

TP 0.24 227.42 12.91 227.08

24+0

3301
+920 +920
147 132

+50 x

366
+965 +965
180 139

28+0

+50

22+0

249.99

89.0 94.0 94.0 758 678 358 35.8 36.4 28.8 2A.1 23.1 23.1 28.1
+532 +582 +582 +400 +220 0.0 1.6 +0.6 -7.0 -9.7 -12.7 -12.7 -7.7
115 96 78 89 8 3 38 49 49 100 110 111

207.42

36.6 52.1 86.6 0.0
+0.8 +1.3 +5.8 +6.2
123 149 210 359

317.8 01.5 825 714 565 38.1 38.1 38.7 39.1 30.2 30.7 27.2 27.7
+797 +634 +444 +333 +184 0.0 11.9 +0.6 +1.0 -7.9 -7.9 -10.9 -10.9
169 79 48 31 7 3 25 36 49 53 54 84

38.0 40.4 55.4 73.7
-0.1 +2.0 +1.7 +3.6
329 181 207 265

25.1 092 90.1 73.3 50.7 40.1 40.1 41.1 41.5 32.7 29.7 29.7 46.8
+850 +694 +500 +332 +101 0.0 9.9 +1.0 +1.4 -7.4 -10.4 -10.4 +6.7
169 83 82 37 8 4 25 35 48 49 55 65

53.5 66.7 72.4
+13.4 +16.6 +12.3
181 173 213

43.7 20.5 89.2 66.7 42.9 42.9 47.0 35.7 34.1 31.1 31.1 36.6
+100.8 +97.6 +46.3 +23.8 0.0 7.0 5 +0.1 -7.2 -8.8 -11.8 -11.8 -6.3
146 70 61 25 7 33 72 55 56 62 63

44.0 67.5 87.4 97.7
+1.1 +3.6 +4.5 +5.8
81 129 141 207

456 12.0 83.3 61.0 45.6 45.6 46.3 46.3 37.5 37.5 33.4 33.4
+100.0 +66.4 +37.7 +18.4 0.0 1.3 0.7 +0.7 -8.1 -8.1 -12.5 -12.5
182 78 58 17 7 25 38 35 55 58 65

38.3 45.1 68.8 87.0 92.4 318.5
-7.3 -0.5 +2.2 +4.1 +4.8 +7.0 +9.7
69 83 121 149 163 203 226

349.8 12.4 95.4 57.4 48.4 48.4 48.3 36.9 33.4 33.4 31.5 40.0
+10.4 +6.0 +4.0 +9.0 0.0 1.5 0.1 -1.5 -1.5 -1.5 -1.5 -8.2
178 119 86 14 11 30 50 51 58 57 72.7

61.0 69.6 85.6 95.4 16.4 43.7
+1.6 +2.2 +3.2 +4.7 +6.0 +9.5
107 123 151 171 204 252

249.99

BM

653

23089

Ch. 100 ft
Hood Mill Cut
07-21

+87.11 P.O.S.T. = 274 Conc. Bat Culy Taken Line of Culy

See Sketch Page 10

+75 P.O.C.

+50

+25

2540

21x68.09 B.C.R.I

237.42

Lt

2

Rt

28

236.26
11.1
11.1
11.1
11.1
11.1
11.1221.11
16.2
16.2
16.2
16.2
16.2
16.2

43.5	34.1	34.6	30.8	28.7	30.9	30.8	30.4	30.2	19.1	19.0	23.1	25.1
+12.7	+3.3	+3.8	-0.2	-2.1	+0.1	0.6	-0.4	-0.2	-11.7	-11.8	-9.7	-5.7
144	111	98	65	19	12		30	39	56	59	66	84
									41.6	82.7	97.8	
									+10.8	+51.9	+67.0	
									128	196	217	

316	33.4	37.2	32.3	31.8	31.4	31.2	23.3	24.9	36.5	50.2
-0.2	+1.6	+5.4	+0.5	5.6	-0.4	-0.6	-8.5	-6.9	+4.7	+18.4
187.8	109	82	88		36	42	36	71	105	129
									74.0	98.4
									+42.2	+66.6
									191	209

36.9	36.7	49.8	48.9	41.6	33.4	32.7	32.6	21.2	21.2	24.2	36.2
+4.2	+4.0	+17.1	+16.2	+8.9	+0.7	4.7	-0.1	-11.5	-11.5	-8.5	+3.5
145	118	80	53	27	12		46	53	58	67	102
											79.1
											+46.4
											180
											97.7
											+65.0
											210

63.9	69.7	69.7	61.4	40.2	34.0	33.2	33.7	33.7	26.3	22.3	22.3	26.3
+30.7	+36.1	+30.5	+28.2	+6.8	+0.8	4.2	+0.5	+0.5	-6.9	-10.9	-10.9	-6.9
110	84	64	44	16	9		6	39	58	59	69	74
												38.0
									+4.8	59.4	85.5	302.4
									+26.2	+52.3	+69.2	
									118	153	189	221

35.3

2.13

67406

237.42

+25

+102.8
175

22.2	31.34	89.7	67.1	44.4	25.6	25.4	25.0	24.9	18.0	16.5	14.5	14.5
+96.8	+84.0	+64.3	+41.7	+19.0	+0.3	119.8	-0.4	-0.5	-7.4	-8.9	-10.9	-10.9
155	124	89	57	27	14		20	28	38	63	84	72
											67.9	81.2
										17.5	21.0	46.6
										-7.9	-4.0	+21.5
										95	118	163
											19.8	34.2

27+0

08.2	85.4	60.4	42.5	26.4	25.6	25.9	19.3	17.9	14.9	14.9		
+81.8	+37.0	+34.0	+16.7	0.0	10.9	-0.8	-0.5	-7.1	-8.5	-11.5		
138	84	44	29	11		20	28	36	50	61		
											82.1	
										17.9	22.9	45.2
										-8.5	-3.5	+19.6
										70	152	188
											210	225

+75

out

27.4
10.06

+50

+157.5
190

75.7	61.6	50.4	36.8	28.4	28.2	27.7	28.2	22.6	20.6	15.6	15.6	
+55.5	+42.5	+33.4	+22.2	+8.6	+0.2	9.7	-0.5	9.0	-5.6	-7.6	-12.4	
165	117	78	51	28	15		20	32	42	62	53	
											85.6	
										19.6	22.5	56.7
										-8.6	-5.7	+28.5
										68	150	173
											231	248

+25

+44.8
189

67.4	52.0	42.5	30.8	28.4	29.0	28.4	20.7	18.9	16.9	19.4	24.4	
+38.4	+23.0	+12.5	+1.8	-0.6	8.4	-0.6	-0.3	-1.1	-1.1	-0.3	-7.6	
144	72	68	43	18		25	35	44	55	66	84	
											84.5	
										54.4	82.4	04.5
										+25.4	+53.6	+75.5
										154	205	248

26+0

57.0
+27.2
181

116
+11.8
108

35.6	31.2	26.0	24.6	29.8	29.3	30.1	18.5	18.5	21.8	26.7		
+6.8	+1.8	+6.2	+4.8	+1.1	+0.1	7.6	-0.6	+0.3	-1.3	-3.0		
77	65	38	29	10	5		25	35	47	58		
											81	
										30.1	53.2	85.4
										+0.3	+23.4	+58.6
										117	157	202
											230	230

287.42

287.42

+75

+106.5 +100.0
190 165

05.2 89.6 605 278 208 21.0
+84.8 +68.6 +39.5 +6.8 -0.2 4.46 -0.6 0.0 -14.5 14.5 09.5 10.9
134 102 86 31 18 10 20 29 36 37 61

10.9 26.1 39.2 64.4 24.0
-9.1 +5.1 +18.2 +13.4 +60.0
77 115 148 195 348

+50

326 92.4 646 35.0 22 21.6 21.4 10.8 10.8 83 133 168
+110 +71.0 +43.0 +13.4 +0.5 3.85 -0.2 -10.8 -10.8 -3.2 -8.3 -4.8
165 104 88 29 19 20 30 47 49 58 81

31.9 57.6 73.6
+10.3 +36.0 +37.0
118 191 238

+25

349.2
+129.0
197

326.4 317 707 50.1 22 22.7 21.6 22 12.5 12.7 17.7 25.7
+104.0 +90.0 +48.5 +27.9 +0.5 5.18 -0.6 2.0 -9.7 -9.5 -4.5 +3.5
151 128 73 48 19 18 20 30 46 50 93

41.3 54.6 65.5
+19.1 +32.4 +43.3
154 204 249

2810

3105 939 665 30.2 236 22.9 22.7 23.2 14.2 139 12.1 12.8
+107.0 +87.6 +71.0 +43.6 +7.3 +0.9 2.49 -0.7 +0.3 -3.7 -9.0 -10.8 -10.1
167 138 109 71 21 17 13 23 36 40 49 86

188 269 35.2 46.5 56.3
-4.1 +4.0 +12.2 +33.6 +33.4
80 89 135 194 340

+75

114.3
+90.6
149

.029 82.7 65.1 33.0 24.2 23.7 22.9 23.7 14.3 14.7 12.7 12.7
+79.2 +59.0 +41.4 +9.3 +0.5 1.73 -0.8 0.0 -9.1 -9.0 -11.0 -11.0
125 89 84 24 18 14 24 40 55 55 85

225.45 15.4 22.3 40.6 52.2 56.7
-8.2 -1.4 +14.9 +38.8 +33.0
70 88 183 307 310

TP 0.91 225.45 1288 224.54

27+50

out

24.5
12.88

237.12

207.12

+22.06 x FC

336.9

+121.7
194

30+0

+75

+50

+35

29+0

+820
174

225.45

.013	66.7	46.3	37.3	18.2	15.7	15.2	16.2	07.9	06.3	07.5	05.2
+85.4	+57.0	+30.6	+21.6	+0.3	9.72	-0.5	+0.3	-7.8	-9.4	-8.2	-10.5
123	85	33	15	10		20	26	38	54	90	99

out

05.2	06.6	07.9	4.31	7.17	9.31
-10.5	-9.1	-7.8	+25.4	+56.0	+97.4
114	105	132	172	207	250
8.79					305
16.6					

09.4	03.9	84.7	61.9	32.5	18.1	17.7	17.2	18.6	13.0	09.4	06.1	06.1
+91.9	+86.2	+67.0	+41.2	+1.8	+0.4	7.72	-0.5	+0.9	-7.7	-8.3	-11.6	-11.6
208	168	110	67	18	11		23	27	34	88	102	111

out

10.3	30.8	68.0	87.2
-7.4	+12.1	+50.3	+63.5
119	156	200	234
18.7			273
8.71			

92.2	68.5	46.0	32.5	27.6	19.3	19.2	19.8	20.7	20.5	11.3	09.5	07.5
+93.0	+49.3	+26.8	+13.3	+8.4	+0.1	6.26	-0.2	+1.5	+1.5	-7.9	-9.7	-11.7
178	143	86	40	15	12		22	23	28	61	84	87

07.5	17.1	63.6	82.0
-11.7	-2.1	+44.4	+62.8
100	118	191	226
			280

96.6	81.2	48.9		20.30			130	12.6	08.6	10.0
+96.3	+60.9	+28.6	+6.1	+0.1	5.10	-0.5	-0.4	-7.3	-7.7	-11.7
139	107	58	20	14		13	24	38	55	80
										82.7

26.1	52.9	73.1
+5.8	+30.4	+52.8
125	171	207
		245

225.45

20+63

See Page 21

BM

7.44 205.01

P. 11196 Rt
 24+08.48
 205.18 Caution
 Plant 156-7

24+08.48: City Line Taken on City Line on 5/19/90

23+50

212.45

Lt.

2

Rt

33

51.1	15.1	89.1	66.4	55.1	55.7	55.3	54.9	44.5	42.6	48.1	56.5
+95.4	+83.4	+83.4	+10.7	-0.6	6.64	-0.4	-0.8	-1.2	-1.3	-7.6	+0.8
188	183	78	87	17		15	25	41	57	61	89

62.0	55.1	09.4	23.7
+6.8	+2.84	+5.37	+6.80
102	142	182	235

262.327
 St. Ford P 26

91.3	64.6	37.3	14.5	98.3	198.32	98.1	99.3	94.2	92.2	89.5	89.5
+106.3	+93.0	+66.3	+39.0	+16.2	0.0	14.13	-0.2	+1.0	-4.0	-6.0	-8.8
165	143	97	51	20	18	102	135	57	47	75	78

95.4	98.7	15.4	31.9	54.3
-2.2	+0.4	+1.7	+3.3	+3.0
95	116	151	182	215

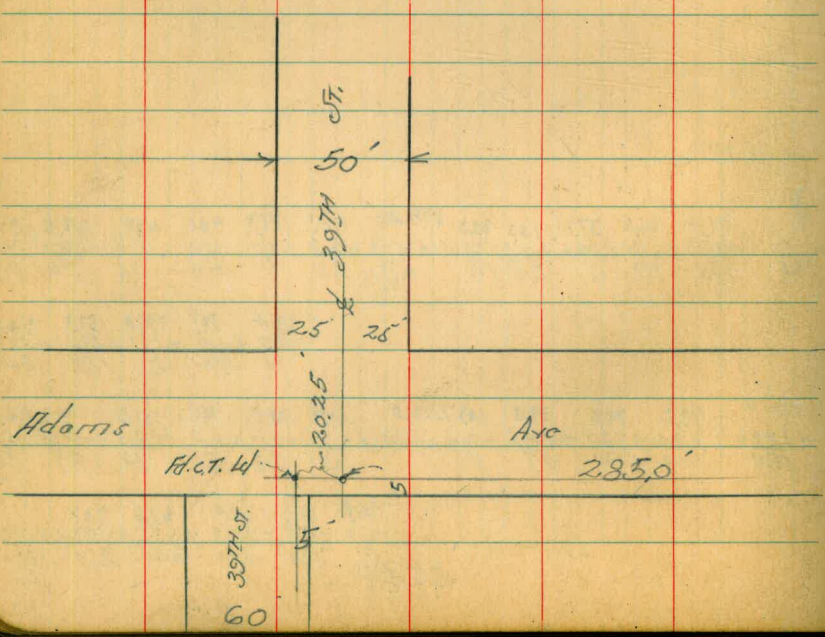
99.2	78.8	39.2	0.5	200.8	.010	0.85	94.0	91.3	91.3	94.2
+122.0	+98.4	+78.0	+3.84	-0.3	1.64	+0.2	+0.7	-6.8	-9.5	-9.5
184	148	94	37	11		25	38	51	74	87

94.8	01	260	69.6	92.8
-6.0	+0.3	+25.2	+8.88	+9.04
111	120	166	234	267

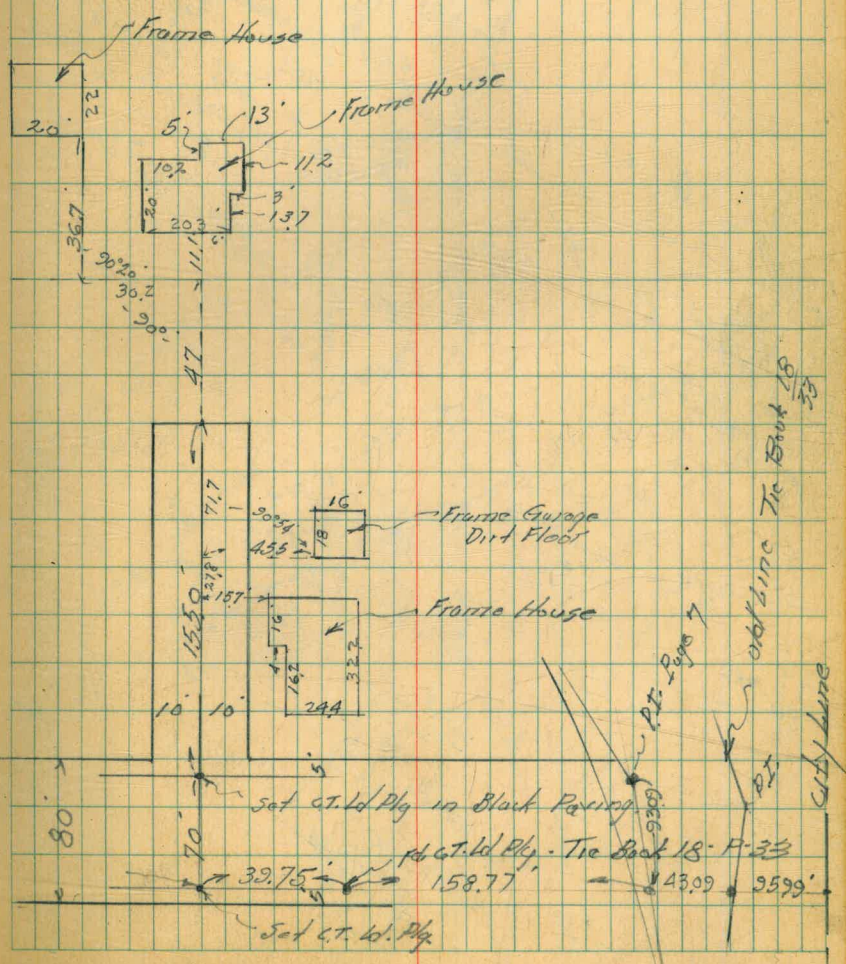
212.45
 1/4 1/3

Walker
Hazard
Hardin
8-9-41

Location Existing Houses etc.
Which might be affected by
Proposed New Alignment - Ward Road

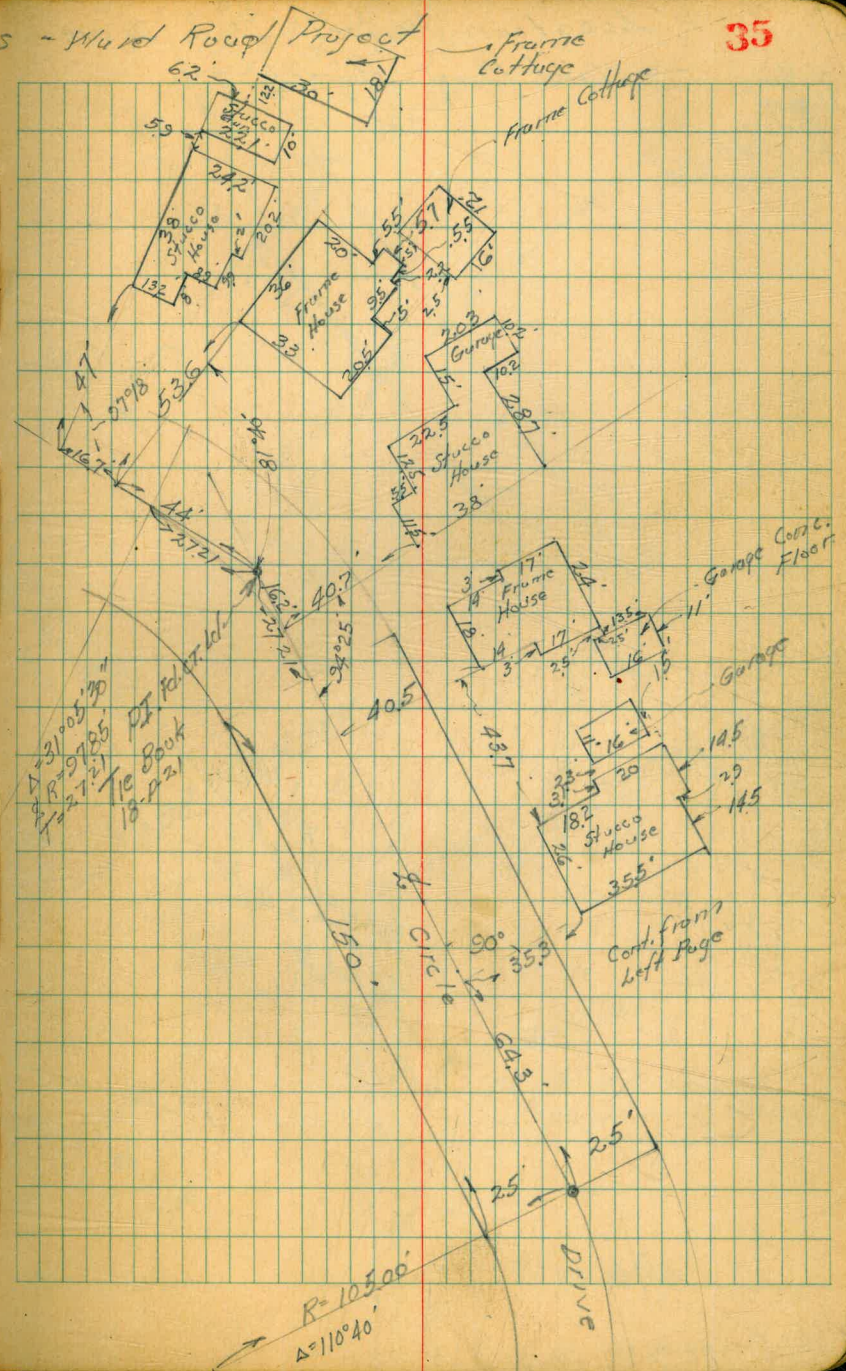
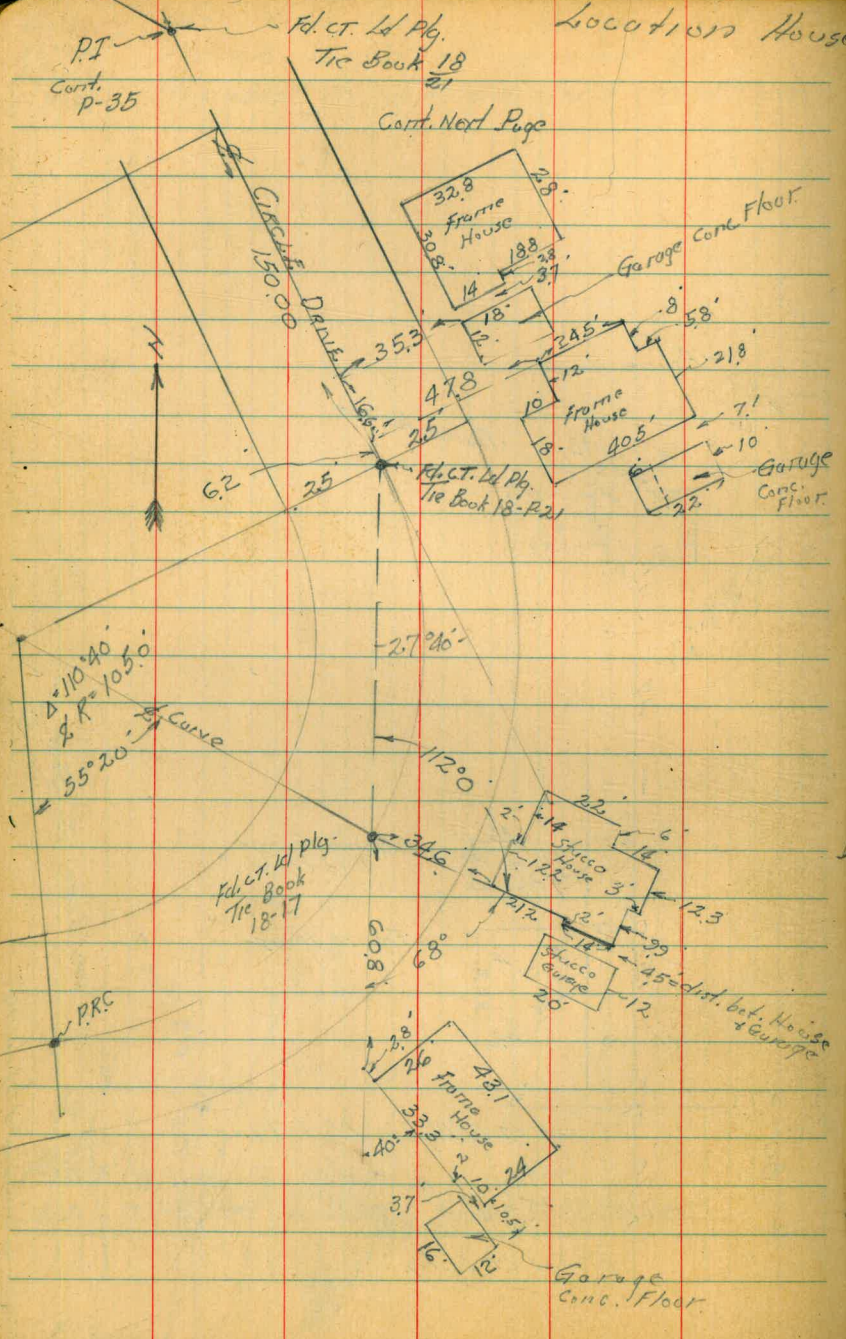


39.74 ST.
60



BC. 6+92.73

Location Houses - Ward Road Project



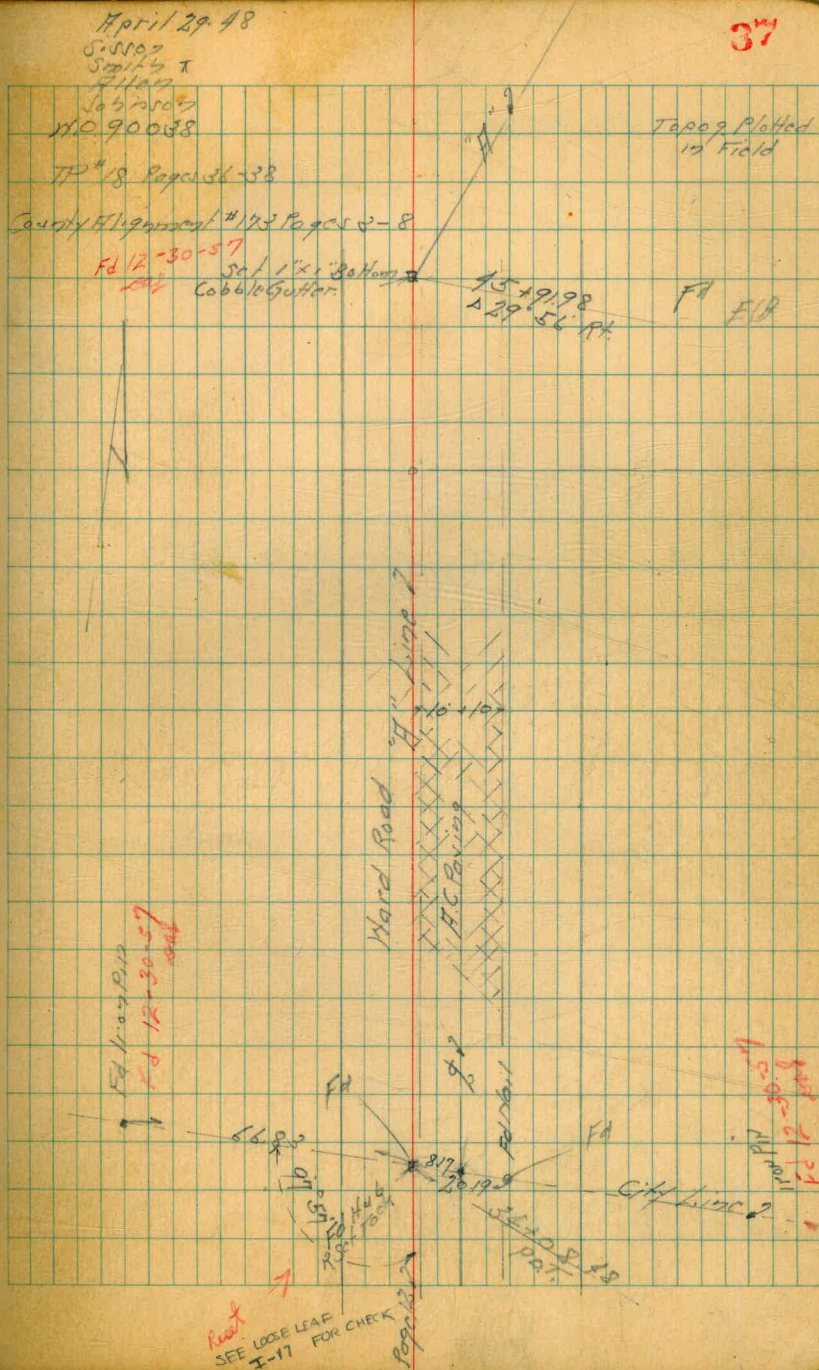
Alignment Ward Road # Line
City Line to Camino Del Rio
Base Line For Topog. Only

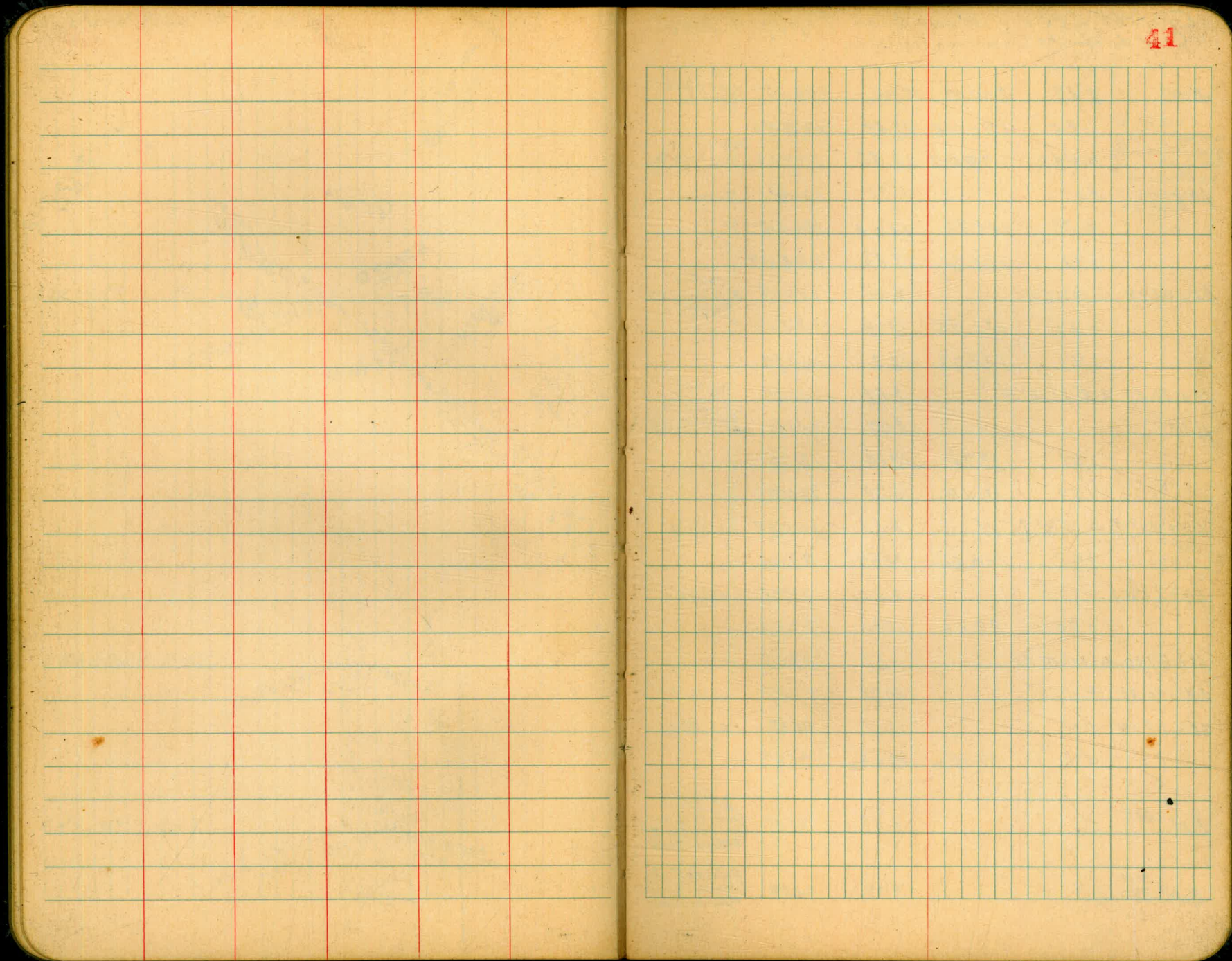
Indexed
93

45+91.98 A 29°56' RT

40+00 P.O.T

34+08.48 P.O.T. Brt. Ford From Page 12





Levels 40th St. Topog.
Monroe Ave. to Ward Road

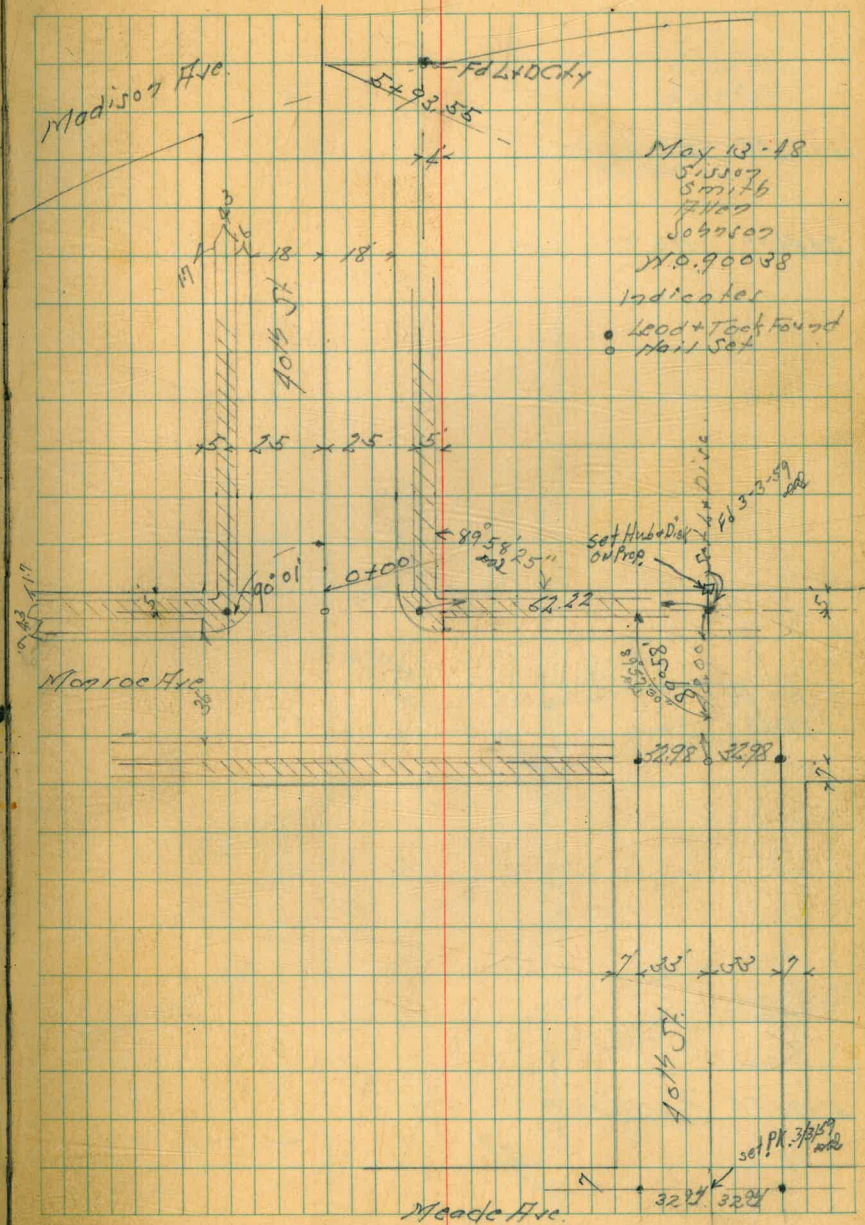
BM	5.25	375.28		370.03	BM BP Ward Ave + 40th Page 14
	5.58	377.06	3.80	371.48	
BM			5.38	371.68	0.240 ± 40th to South 45th Monroe
	4.20	375.54	5.72	371.54	
	4.68	376.28	3.94	371.60	
	8.81	376.25	8.84	367.44	
	2.82	370.26	8.81	367.44	
	3.68	367.49	6.45	363.81	
BM			8.64	358.85	0.78 Hub 3+225

40th St. Topog. Monroe Hie. to Ward Road

5493.55

0+00 = N.W. Monroe Hie.

44



40th St. Topog

3+12.25 B.C. Pt.

2+46.00 P.O.T

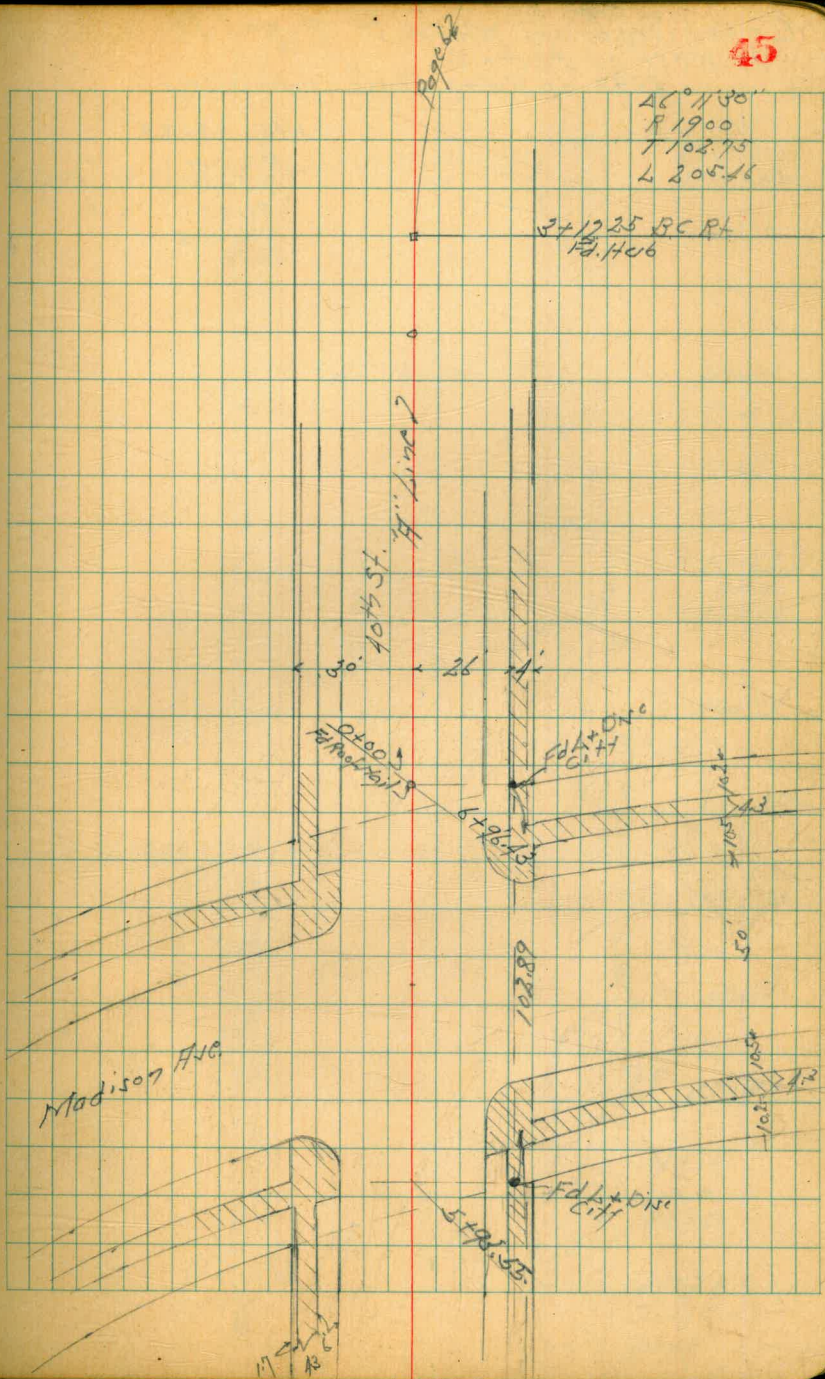
0+00 H.S.
6+96.437

5+93.55

45

AC 0.1138
F 1900
T 102.75
L 205.16

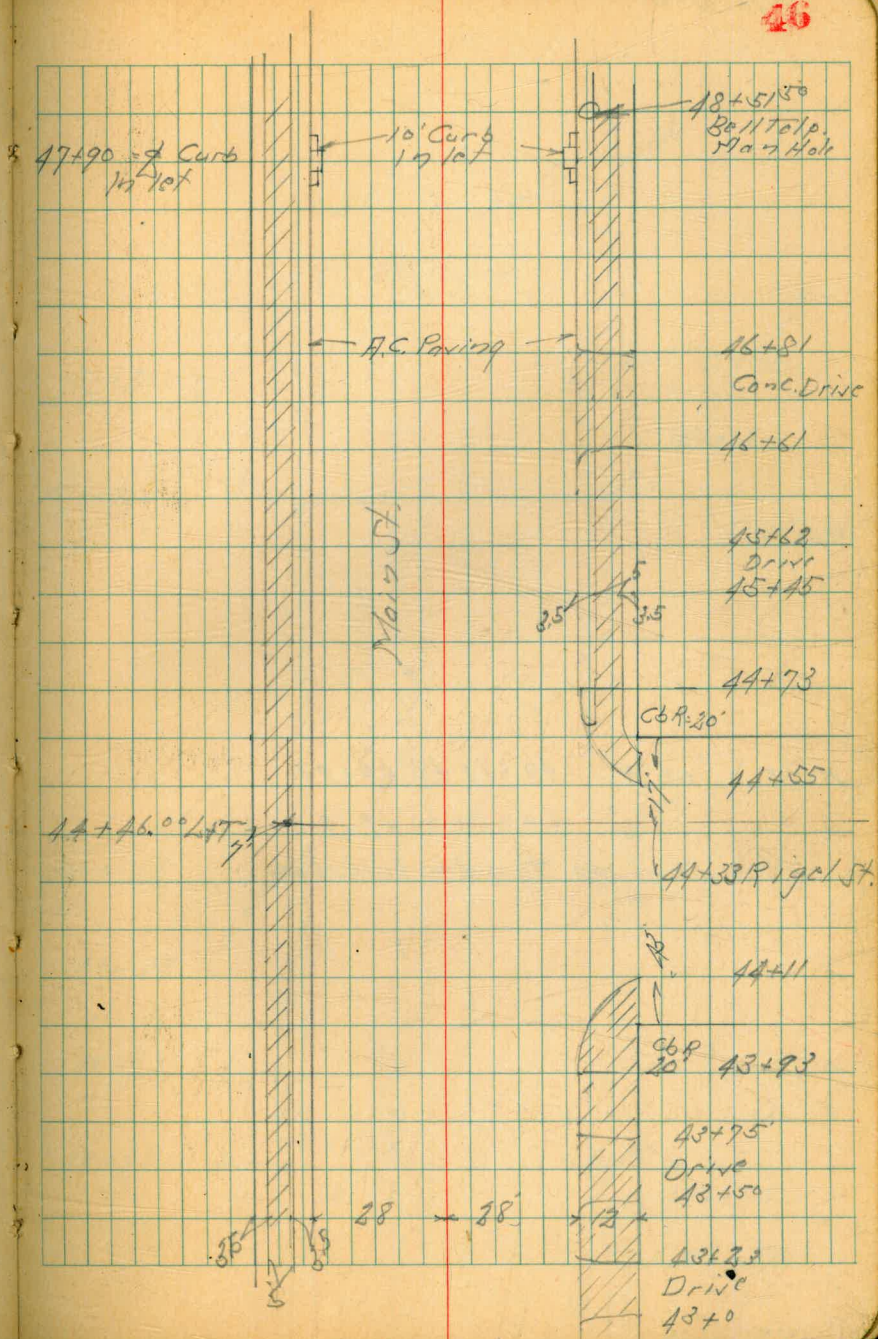
3+12.25 B.C. Pt.
H. Hub



Cross Section Main St. Right St.
to West of Pluto St.
43+0 to 54+0 State Stationing

May 16-50

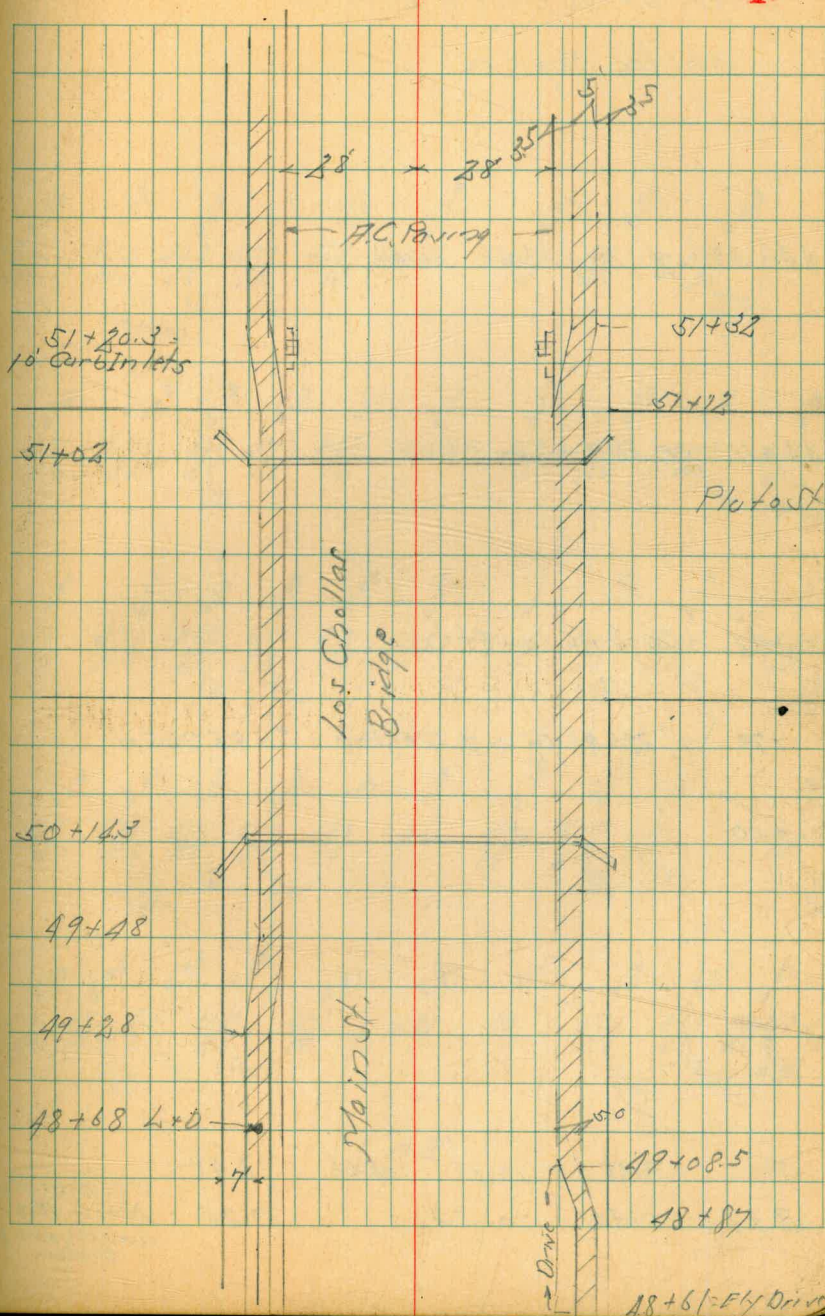
H. Sicron
D. Smith
Rorer
Chavez
Cota



Main St.

47

Note on Rt 49+12 to 49+95
" Lt 49+50 to 49+95
Existing Timber Bulkhead



Mainst.

+64 30' Lt of $\frac{1}{2}$ - 2 Power Pole #3335

+50

+365 290 ft of $\frac{1}{2}$ - 2 Talpole 530115 H

48+10

+90 = $\frac{1}{2}$ 10' Carb Inlet Rte Lt.

+70

+50

47+0

10.34

50

4.5 40	4.84 36.5	4.78 28	5.07 28	4.97 14	5.52 14	5.68 14	5.58 28	5.89 28	5.38 28	5.47 28	5.51 28
5.84	5.50	5.56	x.97	5.52	5.68	5.58	x.89	5.38	5.47	5.51	5.51
4.8 40	5.07 36.5	5.03 28	5.66 28	4.92 14	5.42 14	5.59 14	5.52 28	4.86 28	5.50 28	6.38 28	5.54 28
5.54	5.27	5.31	x.68	5.42	5.59	5.52	4.86	5.50	6.38	5.54	5.54
4.7 40	5.16 36.5	5.25 28	6.10 28	4.96 14	5.98 14	5.60 14	5.74 28	5.47 28	5.50 28	5.36 28	5.34 28
5.44	5.18	5.29	x.24	5.98	5.60	5.74	x.47	5.50	5.36	5.34	5.34
4.6 40	4.92 36.5	4.90 28	5.52 28	4.85 14	5.49 14	5.43 14	5.58 28	5.83 28	5.55 28	5.53 28	5.54 28
5.74	5.44	5.44	x.82	5.49	5.43	5.58	x.83	5.55	5.53	5.54	5.54
4.6 40	4.91 36.5	4.79 28	5.03 28	4.77 14	5.67 14	5.63 14	5.06 28	5.61 28	5.68 28	5.84 28	4.5 40
5.74	5.43	5.55	5.01	5.57	5.67	5.63	5.06	5.61	5.68	5.84	4.5
4.4 40	4.65 36.5	4.68 28	5.10 28	4.62 14	5.74 14	5.85 14	5.76 28	5.30 28	5.86 28	6.97 28	4.5 40
5.94	5.49	5.76	5.24	5.74	5.85	5.76	5.30	5.86	6.97	5.97	4.5

10.34

50+143 = Fly Bridge

+95

+86.4 29 Rt of L - L Tail Pole = 514547H

+48

7P 10.16 15.94 4.56 5.78

+28

49+08.5

48+87 = L Walk on Rt

10.34

20.0 10.0 Bottom Channel	7.50 33-1/2 Walk	7.70 28 66	8.00 28 94	8.10 14	8.09	8.15 14	8.37 28 66	7.71 28 06	7.30 33-1/2 Walk	7.20 18.5 10 = Bottom Channel
14.35 10.9 40	14.83 34	7.76 28	7.60 28	7.03 28	7.33 14	7.40 14	7.34 14	6.94 28	7.54 28	8.21 33-1/2 Walk
6.64 40	6.61 33-1/2 Walk	6.57 28	5.95 28	6.44 14	6.58 14	6.44 14	5.93 28	6.54 28	6.23 33-1/2 Walk	6.24 10.4 40
6.34 40	5.67 33-1/2 Walk	6.19 28	5.61 28	6.14 14	6.29 14	6.17 14	5.66 28	6.24 28	6.34 33-1/2 Walk	5.74 46 40
5.94 44 40	5.71 38.5	5.90 28	5.37 28	5.96 14	6.10 424	5.96 14	5.44 28	6.01 28	6.14 33-1/2 Walk	5.74 46 40
5.94 44 40	5.49 38.5	5.69 28	5.16 28	5.73 14	5.89 146	5.77 14	5.19 28	5.78 31.5	5.74 36 = Bottom Channel	5.64 46 40

10.34

Main St.

TP 1098 25.74 1.18 14.76

+59 = 1/4 Driv on Rt

+50

+24 = 1/4 Driv on Rt

+22 290 Rt of $\frac{1}{2}$ = $\frac{1}{2}$ Tol Pole # 309064 H

52+0

+50

+31.5 29' Rt of $\frac{1}{2}$ = $\frac{1}{2}$ Tol Pole

+26.5 30' Lt of $\frac{1}{2}$ = $\frac{1}{2}$ Post Pole # 3299

+20.3 = $\frac{1}{2}$ 10' Curb 1 on 1 on Rt + Lt.

51+0.2 = 1/4 Bridge

50+50

15.94

52

14.14	14.20	14.11	13.52	14.05	14.14	14.09	13.69	14.24	14.32	14.34
118	174	183	242	189	180	185	235	170	242	26
40	365	28	28	14	14	14	28	315	315	315
	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
12.34	12.56	12.43	11.84	12.32	12.44	12.31	11.78	12.35	12.40	12.54
36	338	351	410	362	350	363	416	359	352	36
40	365	28	28	14	14	14	28	28	36.5	28
	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
11.14	11.20	10.99	10.36	10.79	10.91	10.77	10.98	11.00	11.13	11.34
48	484	485	558	515	503	517	556	494	481	46
40	365	28	28	14	14	14	28	28	36.5	28
	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
10.14	10.36	10.22	9.14	10.07	10.12	10.06	9.16	10.28	10.38	10.44
58	558	578	680	587	582	588	678	566	554	55
40	578	28	28	14	14	14	28	28	36	28
	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
9.06	10.17	10.10	9.45	9.71	9.73	9.70	9.43	10.08	10.16	9.56
20	577	584	649	623	621	624	657	586	578	215
40	33	28	28	14	14	14	28	28	33	40
	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
6.36	9.08	8.92	8.32	8.57	8.60	8.53	8.25	8.92	8.99	8.96
20	691	702	761	737	734	741	769	702	695	218
40	33	28	28	14	14	14	28	28	33	40
	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4

15.94

Mar 5th.

B.M. 0.13 38.70
 H.P. BP
 Moist
 38.65

TP 13.36 38.83 0.27 25.47

54+0

+91 295' Rt of L = L Power Pole # SP 3249

+85 = Wly. Drive on Rt

+63 = Ely. Drive on Rt

+53 30' L of L = L Power Pole # 3255

+50

+47 = Wly. Drive on Rt

+25 = Ely. Drive on Rt

+11 295' Rt of L = L Power Pole # P3256

+09.5 = Wly Drive on Rt

53+0

+75 = Ely Drive on Rt

25.74

Lt

L

Rt

53

19.54	19.73	19.81	19.31	20.08	20.29	20.22	19.72	20.29	20.28
5.3	6.0	5.93	6.43	5.66	5.45	5.53	6.02	5.45	5.46
70	36.5	28.5	28	14	14	14	28	28	36.5
	Wly Walk	Wly Walk	Wly Walk				Ely Walk	Ely Walk	Wly Walk
18.04	17.92	17.85	17.33	17.88	17.98	17.96	17.43	18.03	18.14
7.7	7.82	7.89	8.41	7.81	7.76	7.78	8.31	7.91	7.60
76	36.5	28	28	14	14	28	28	36.5	40
15.94	15.97	15.88	15.33	15.93	15.98	15.90	15.37	16.04	16.11
9.8	9.75	9.88	10.41	9.81	9.76	9.84	10.37	9.70	9.62
70	36.5	28	28	14	14	14	28	36.5	40
	Wly Walk	Wly Walk	Ely Walk	Wly Walk			Ely Walk	Wly Walk	Wly Walk

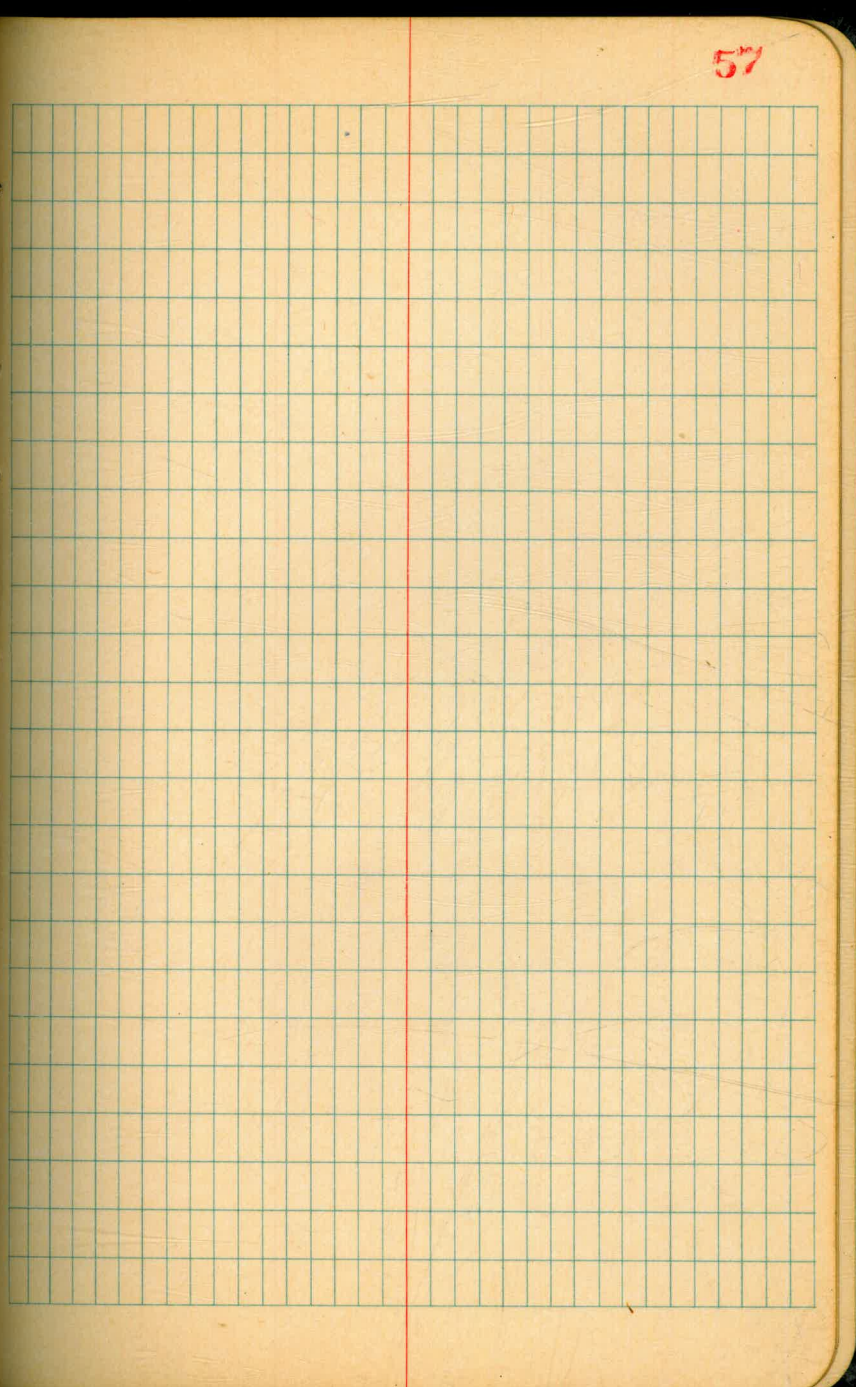
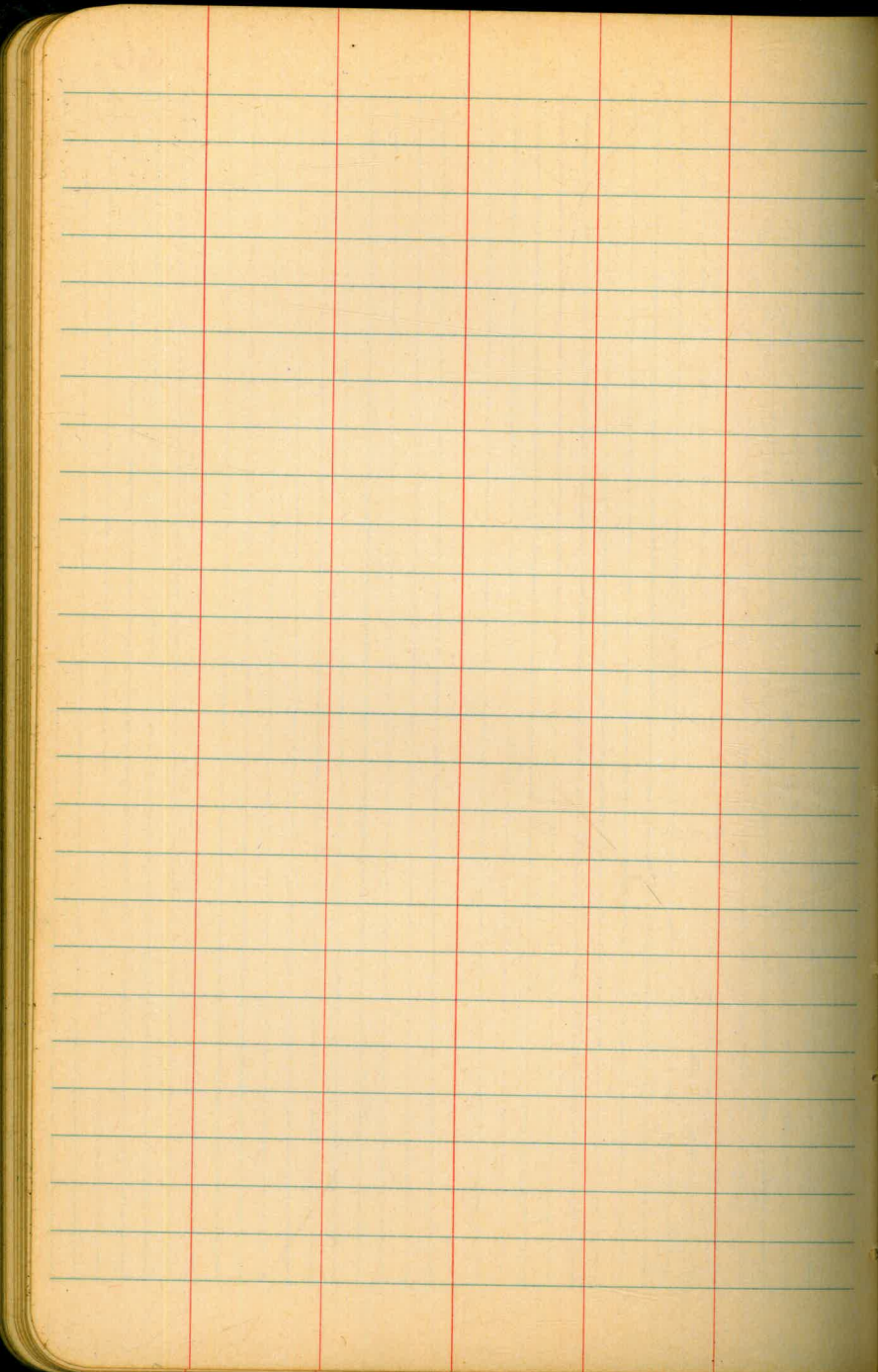
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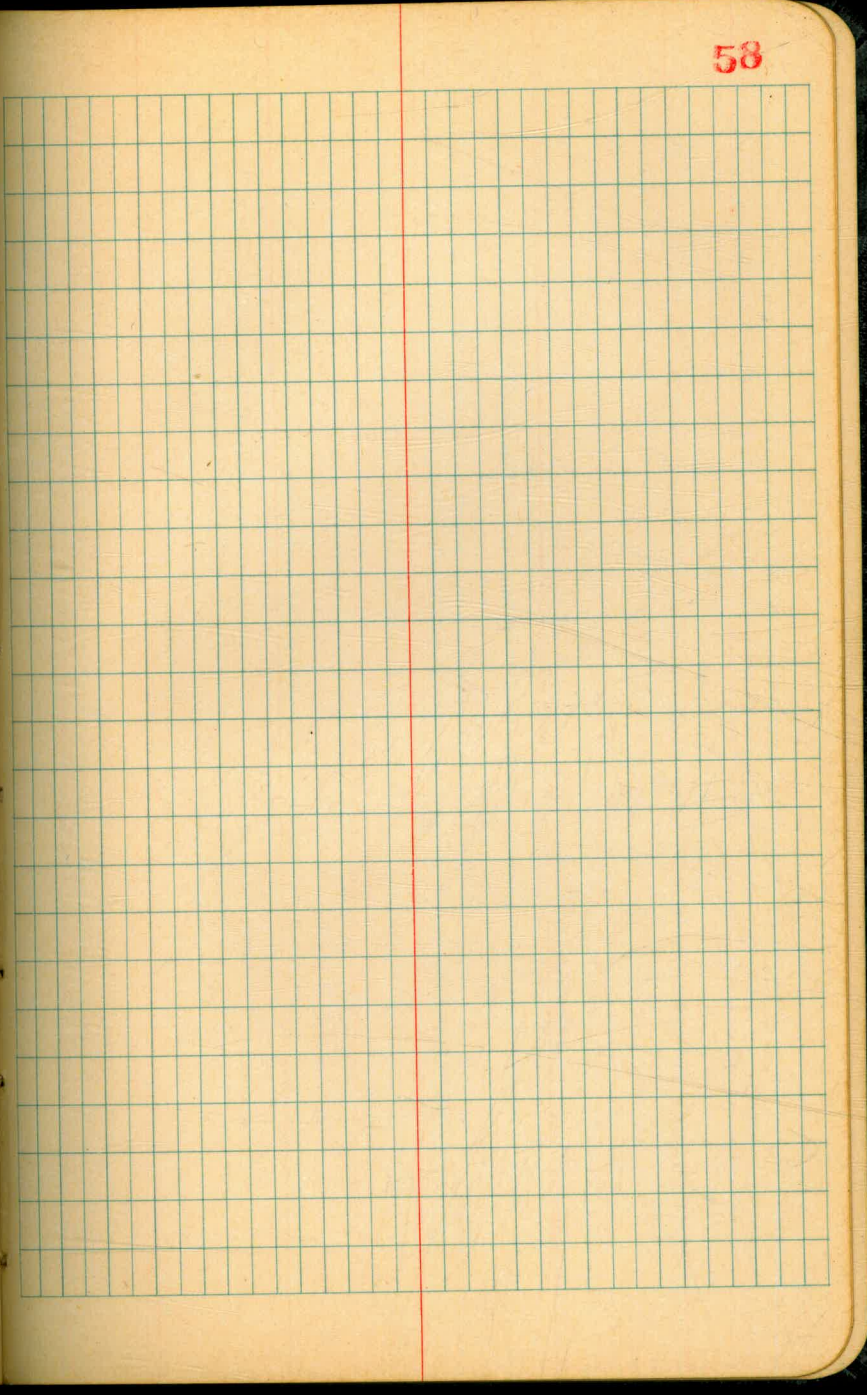
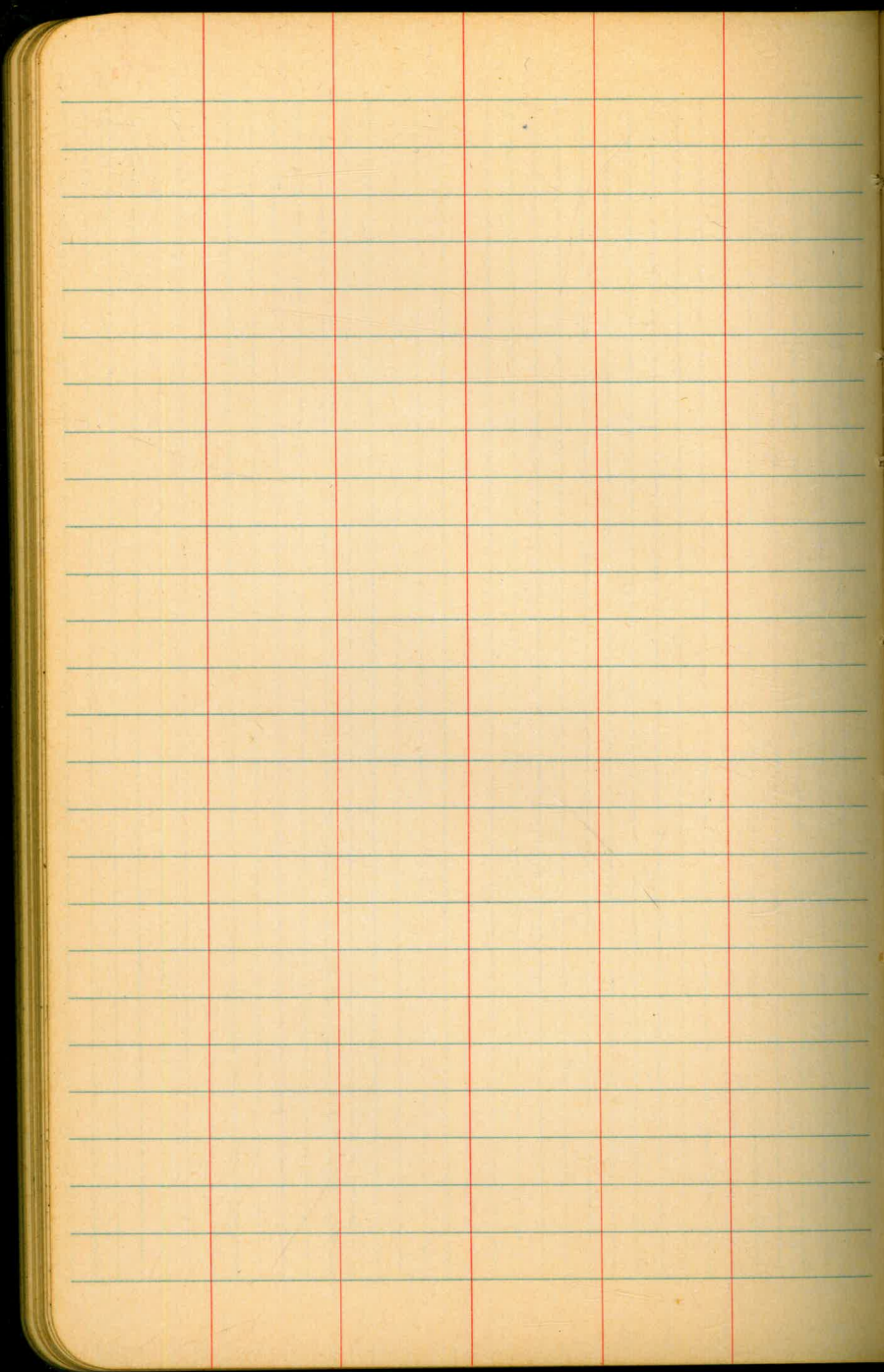
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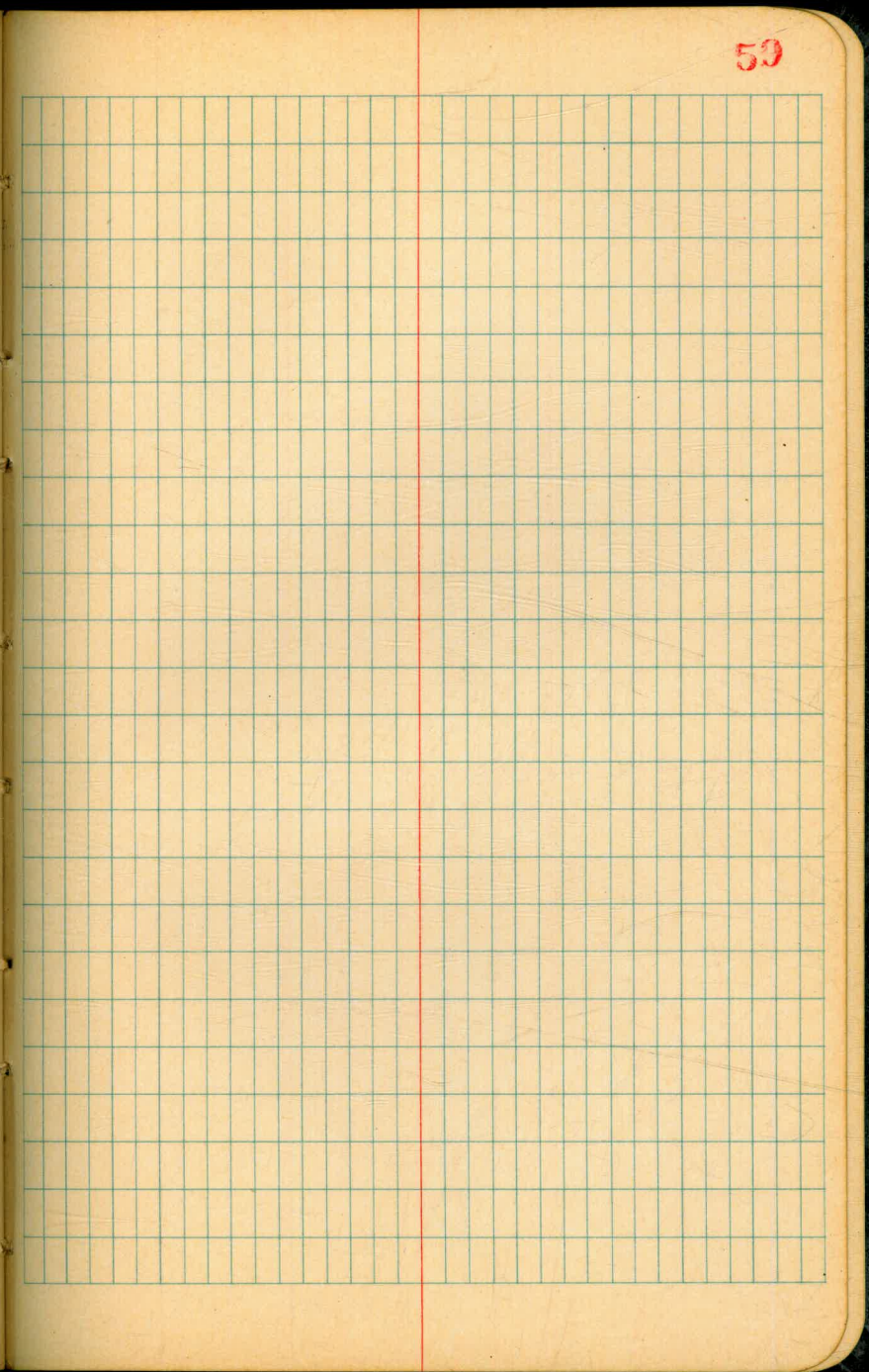
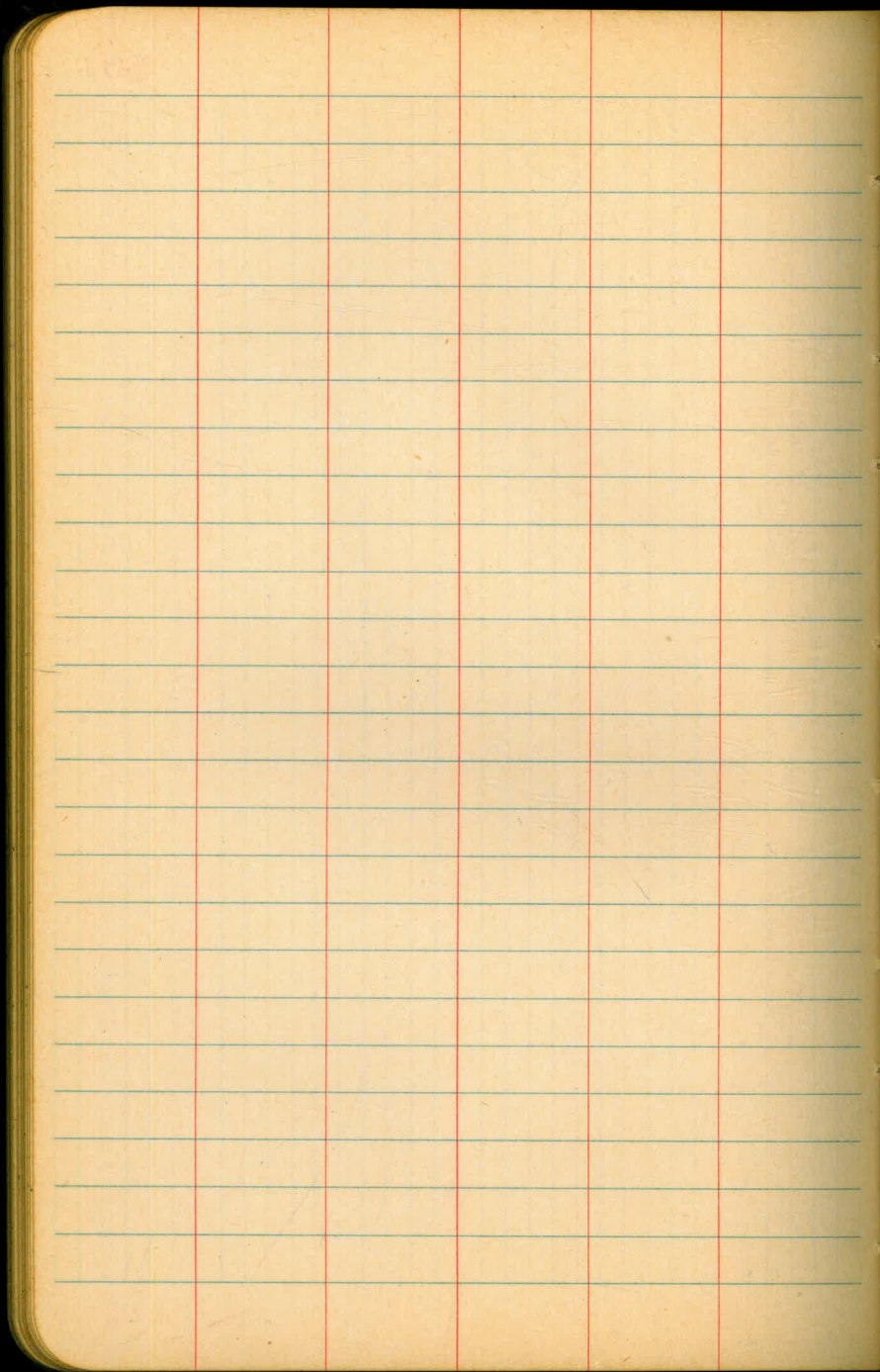
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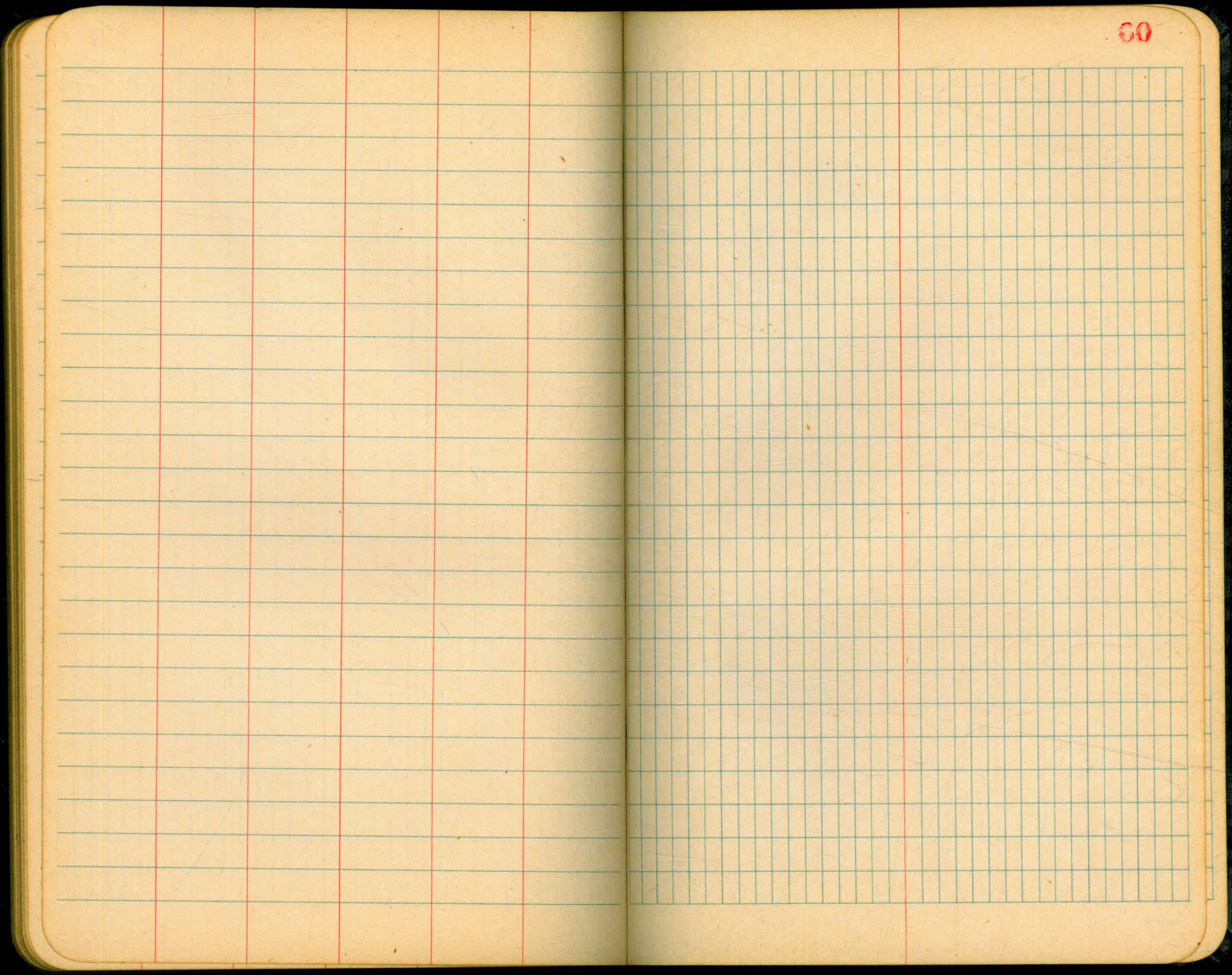
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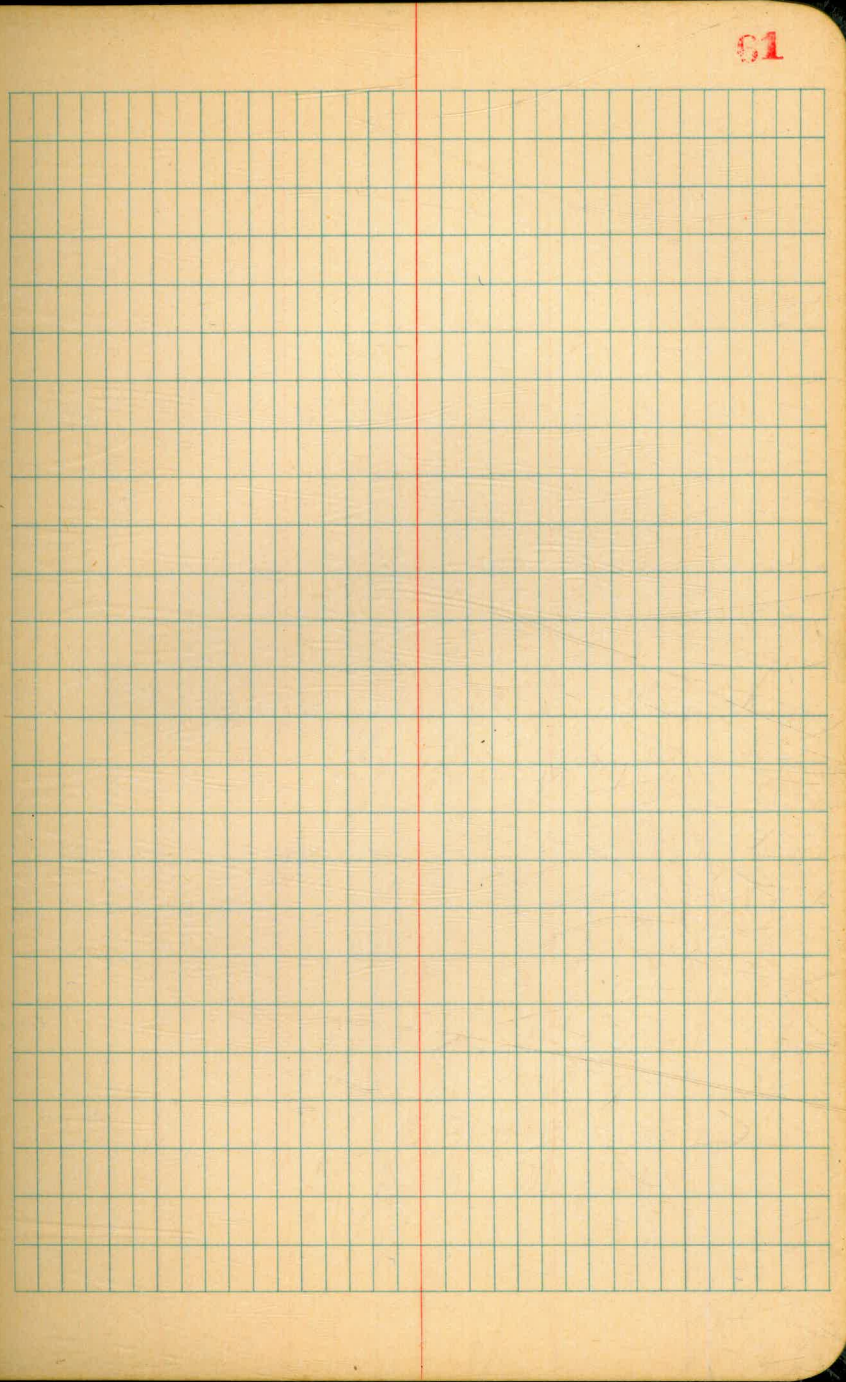
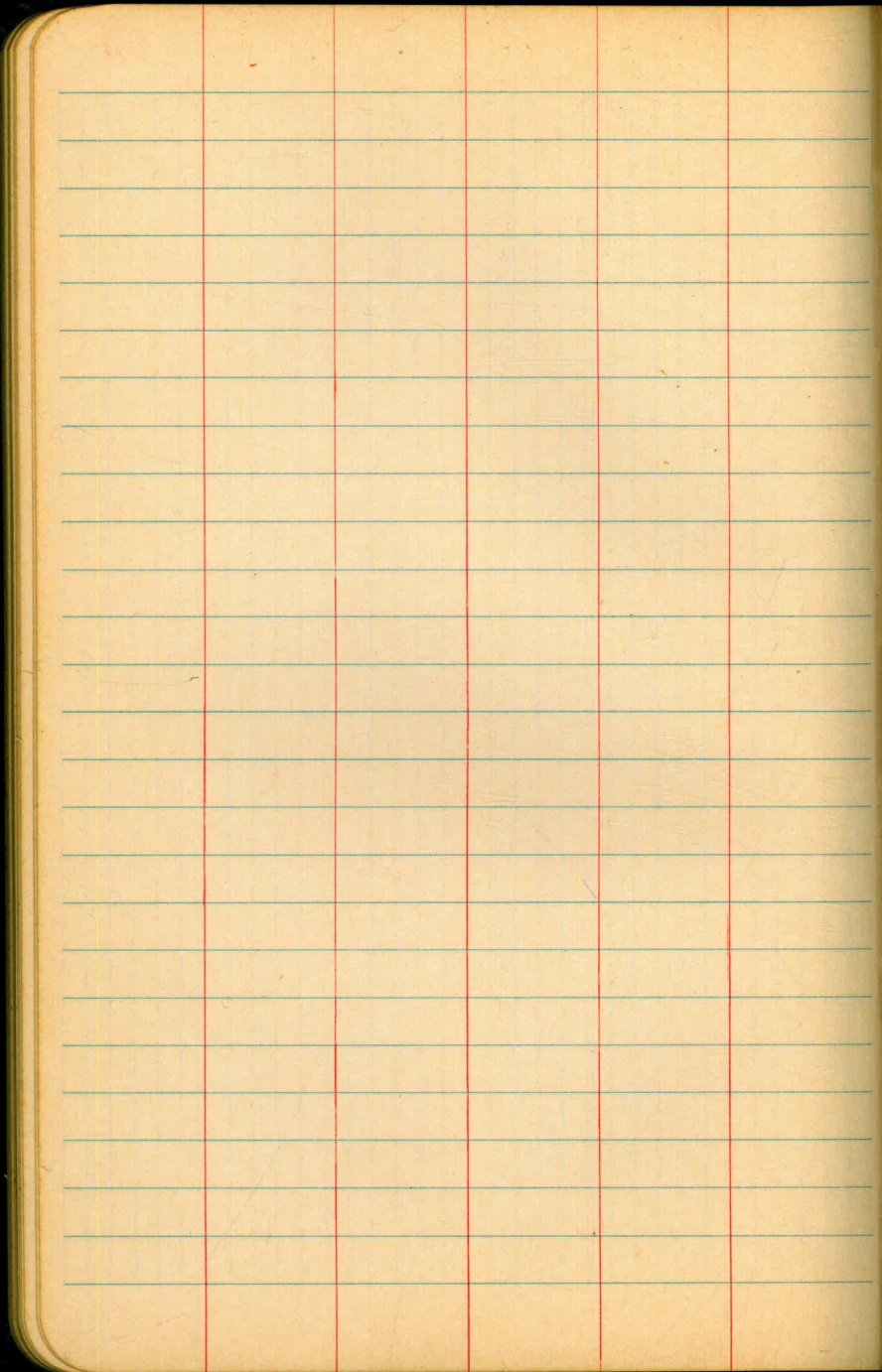
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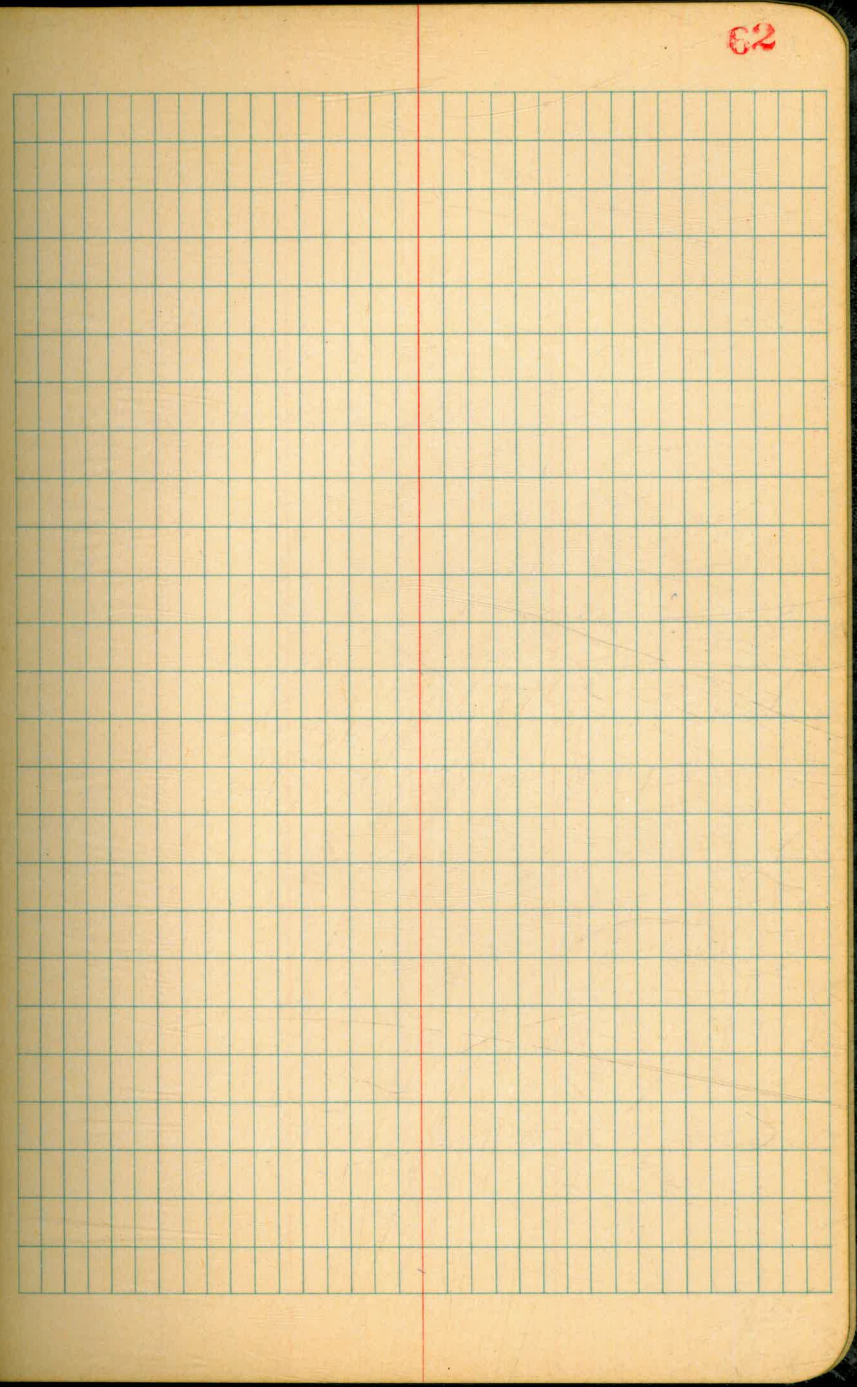
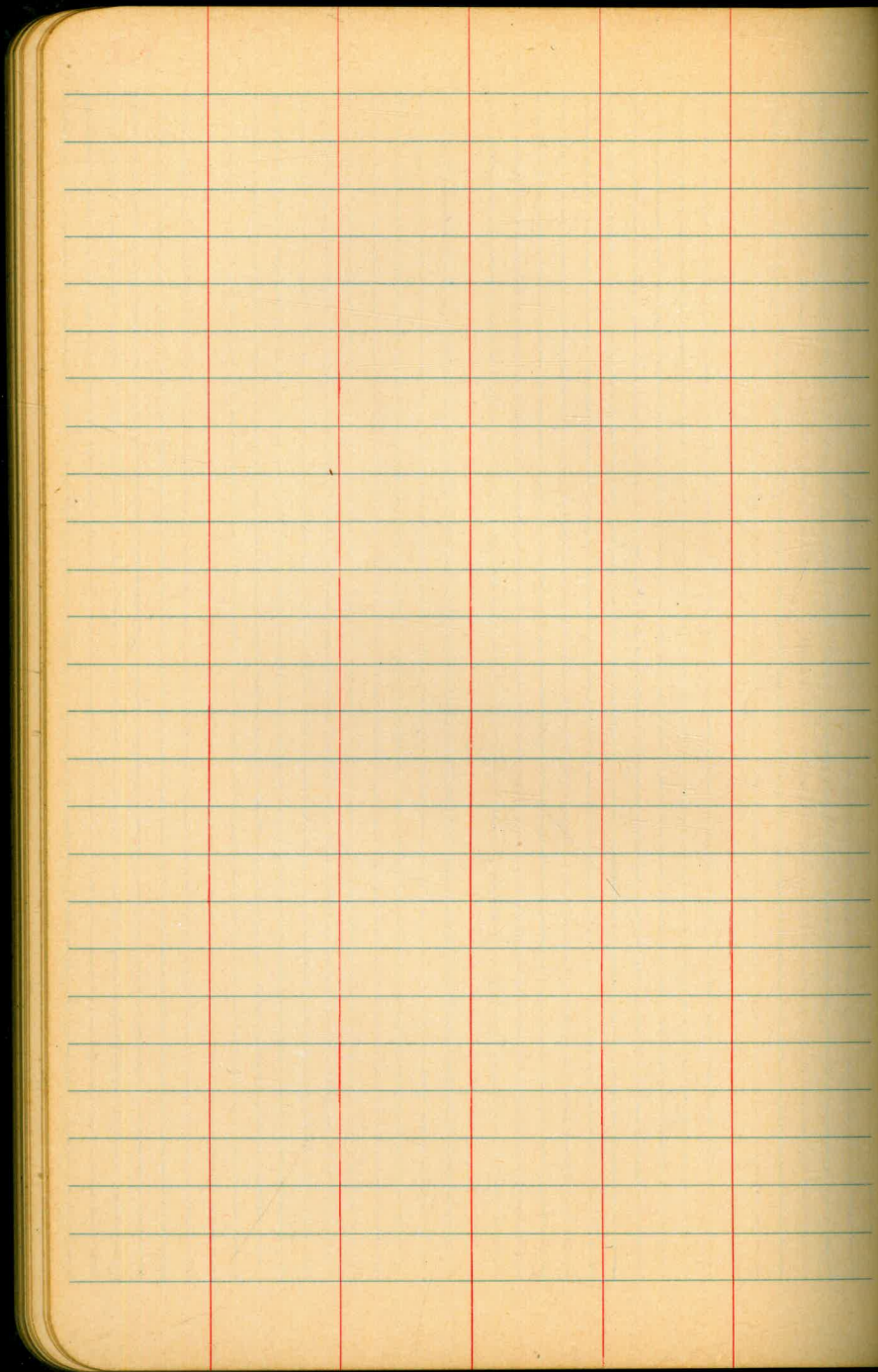


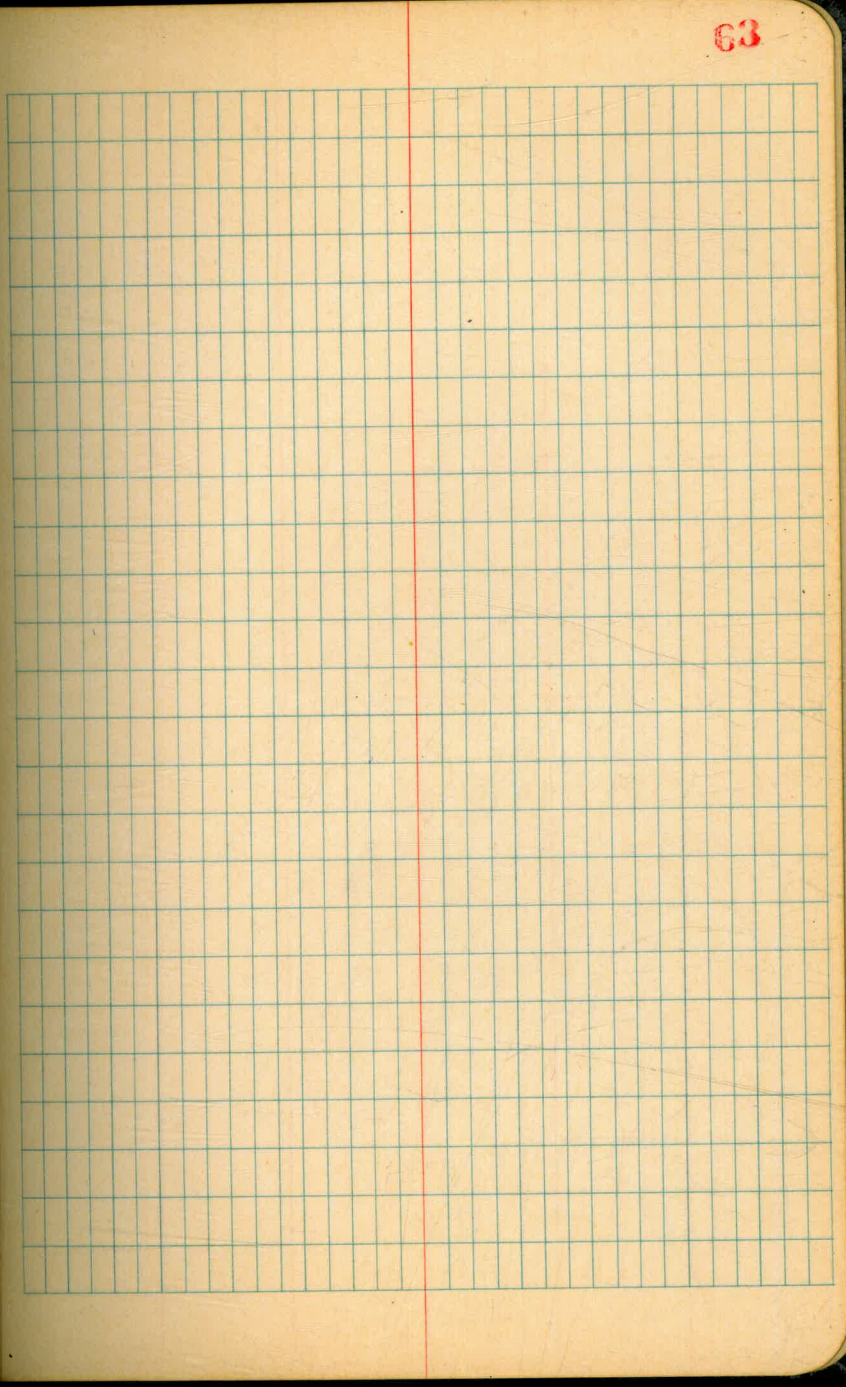
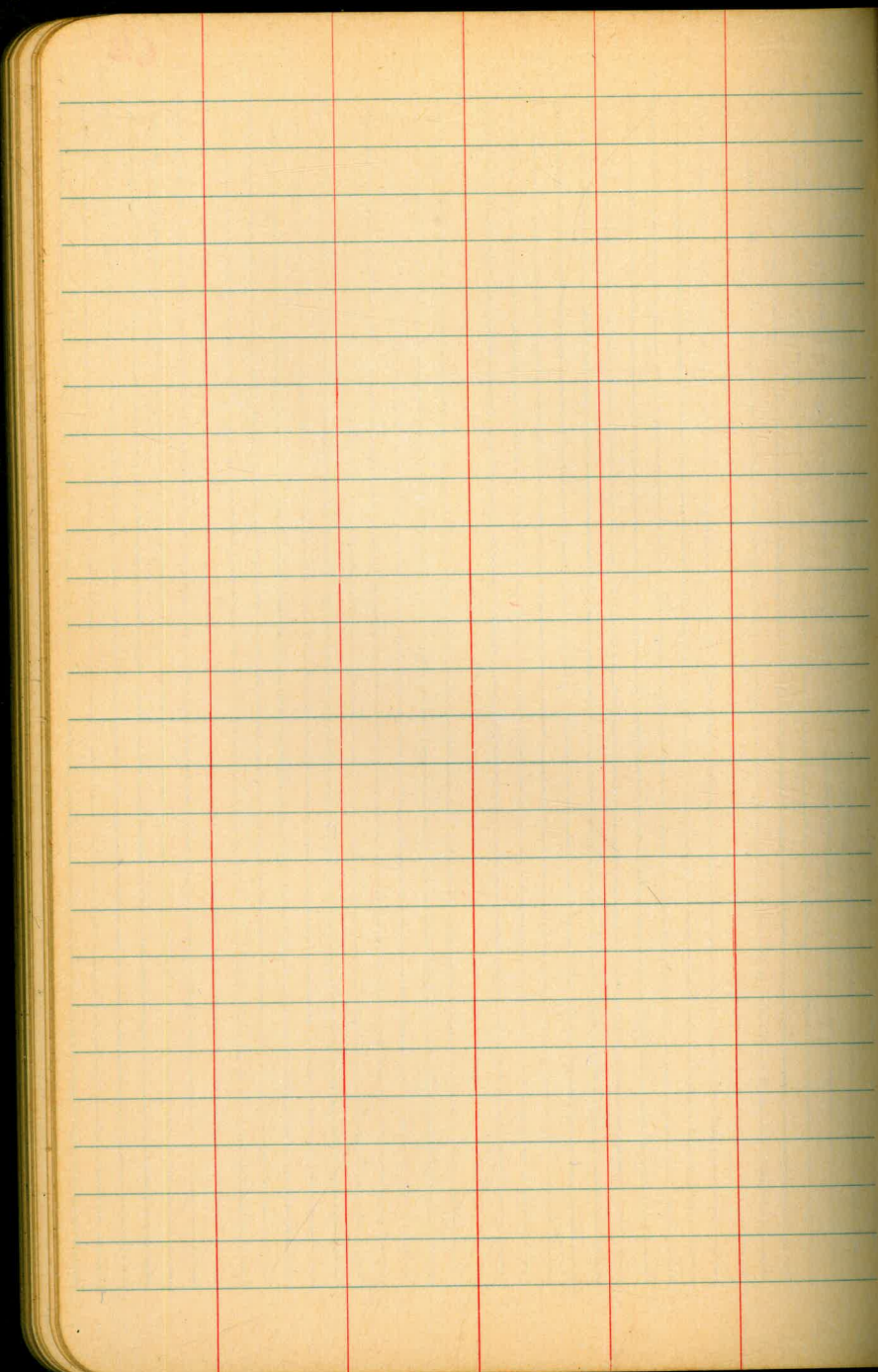


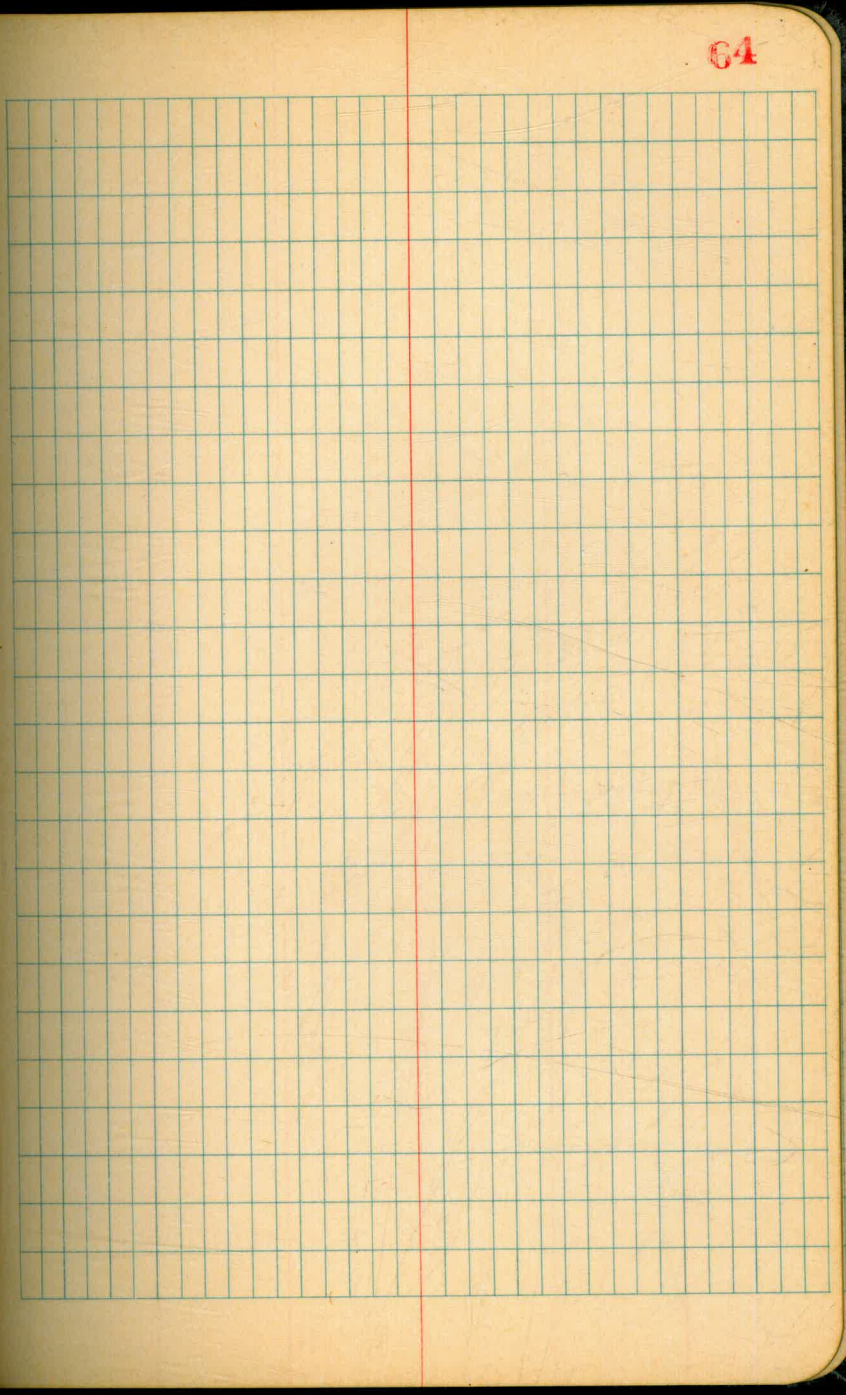
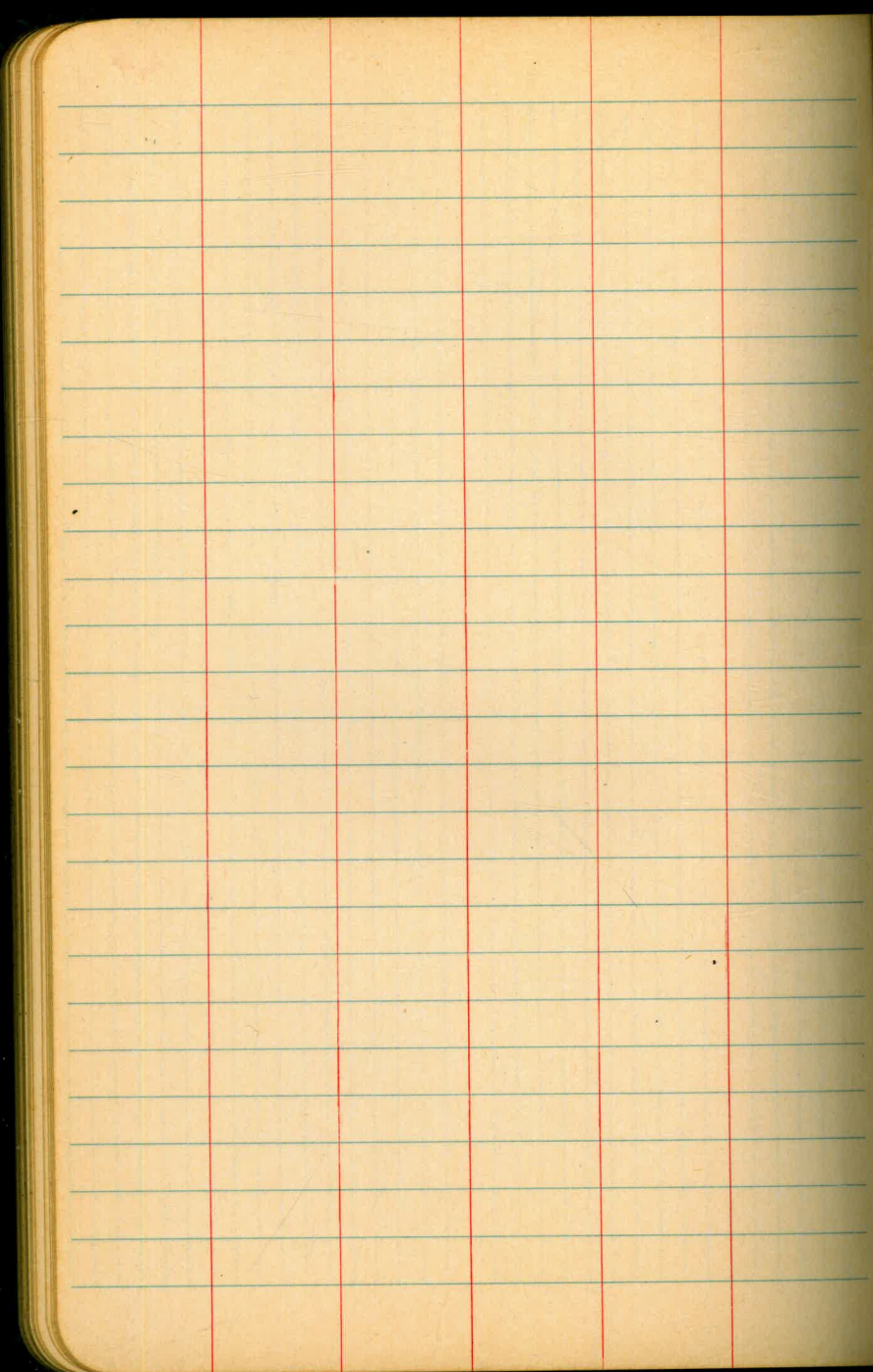






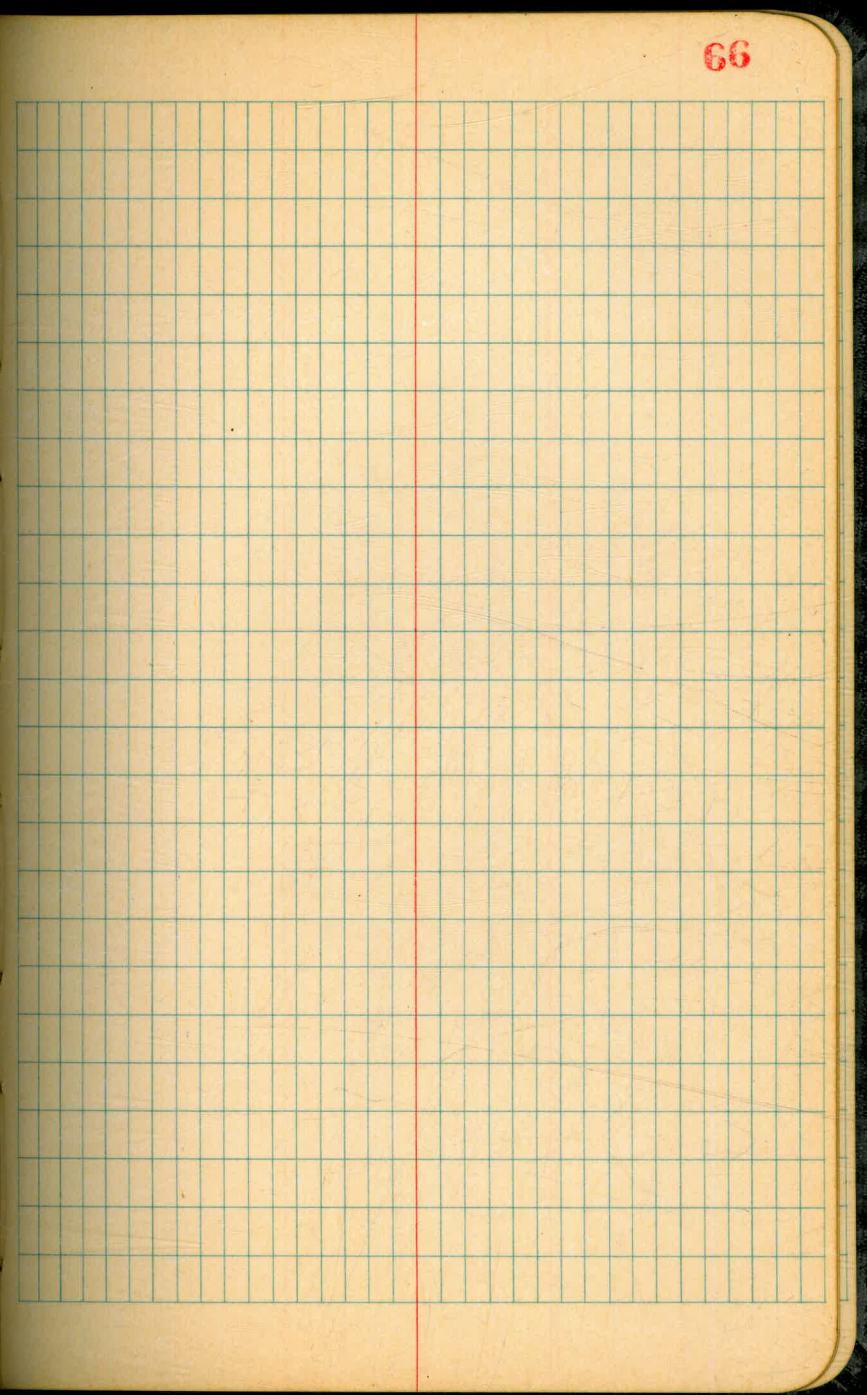
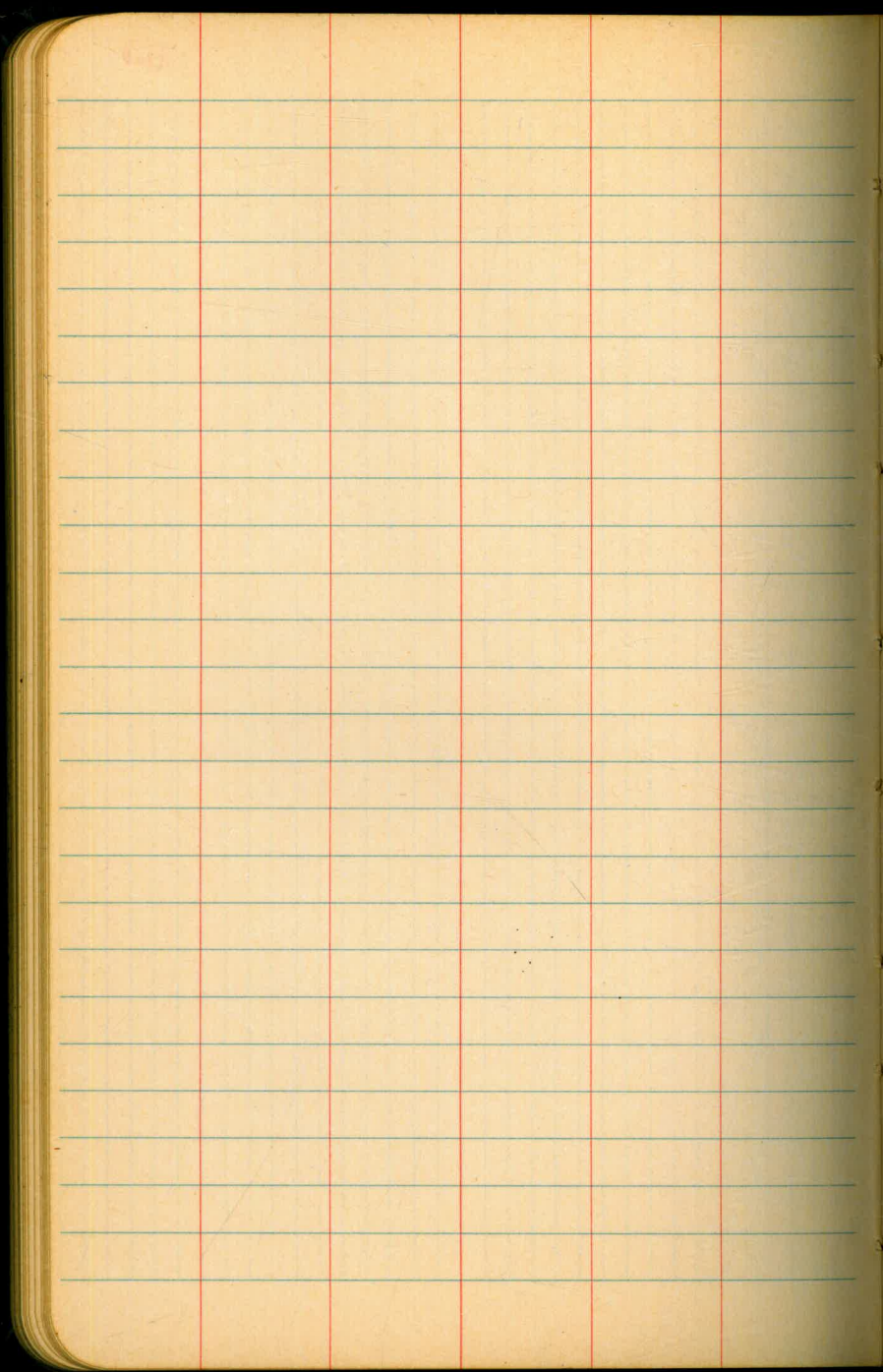


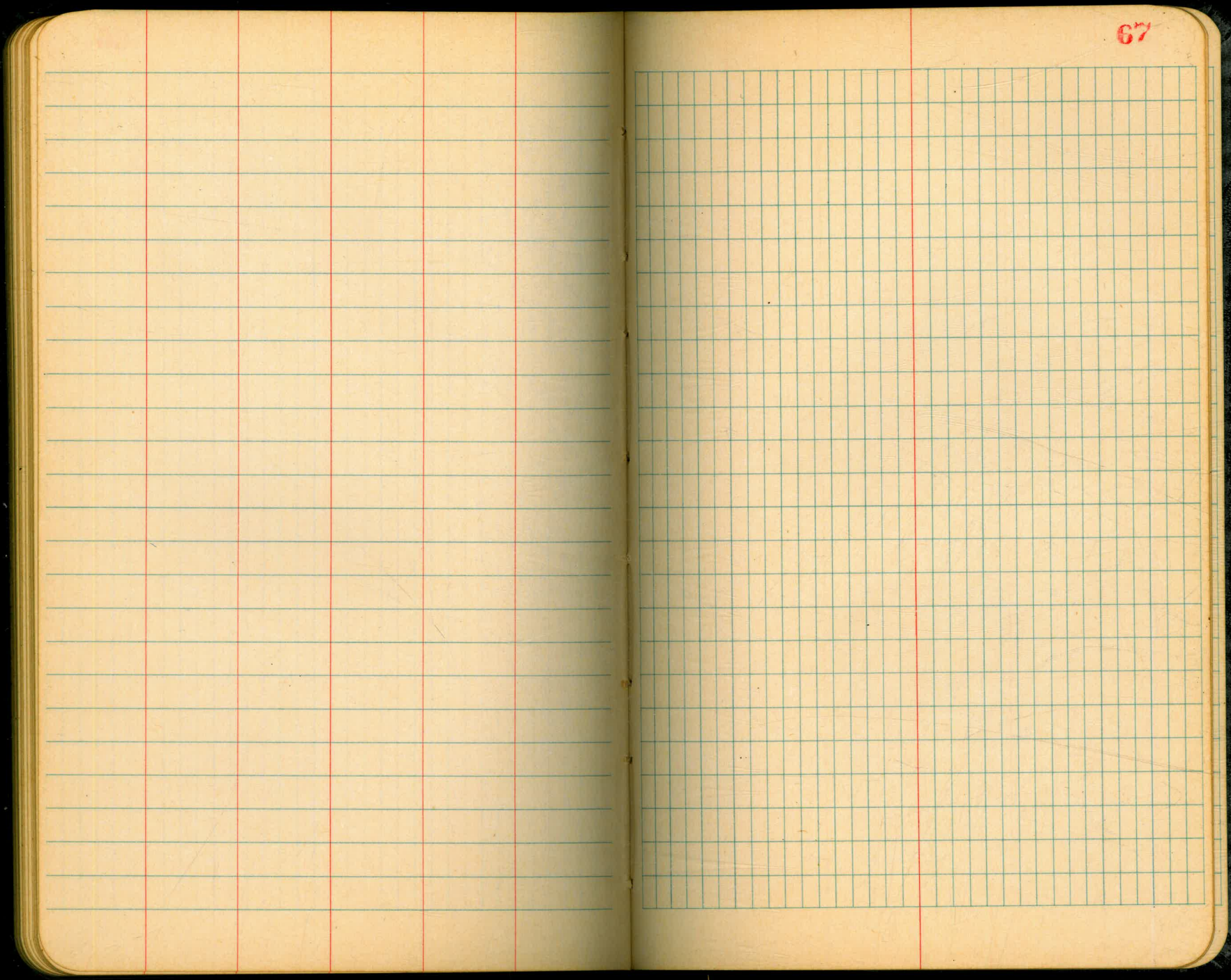


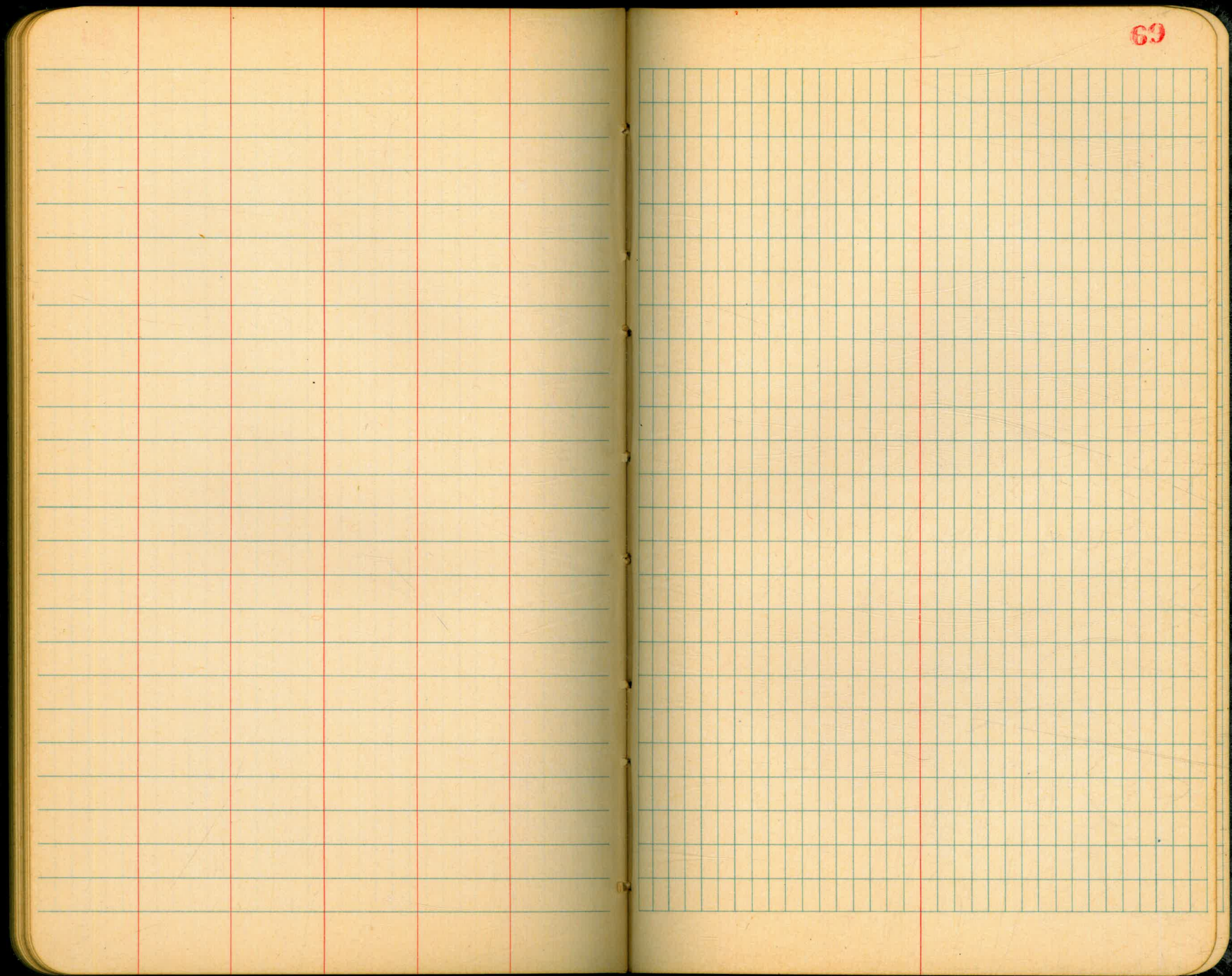


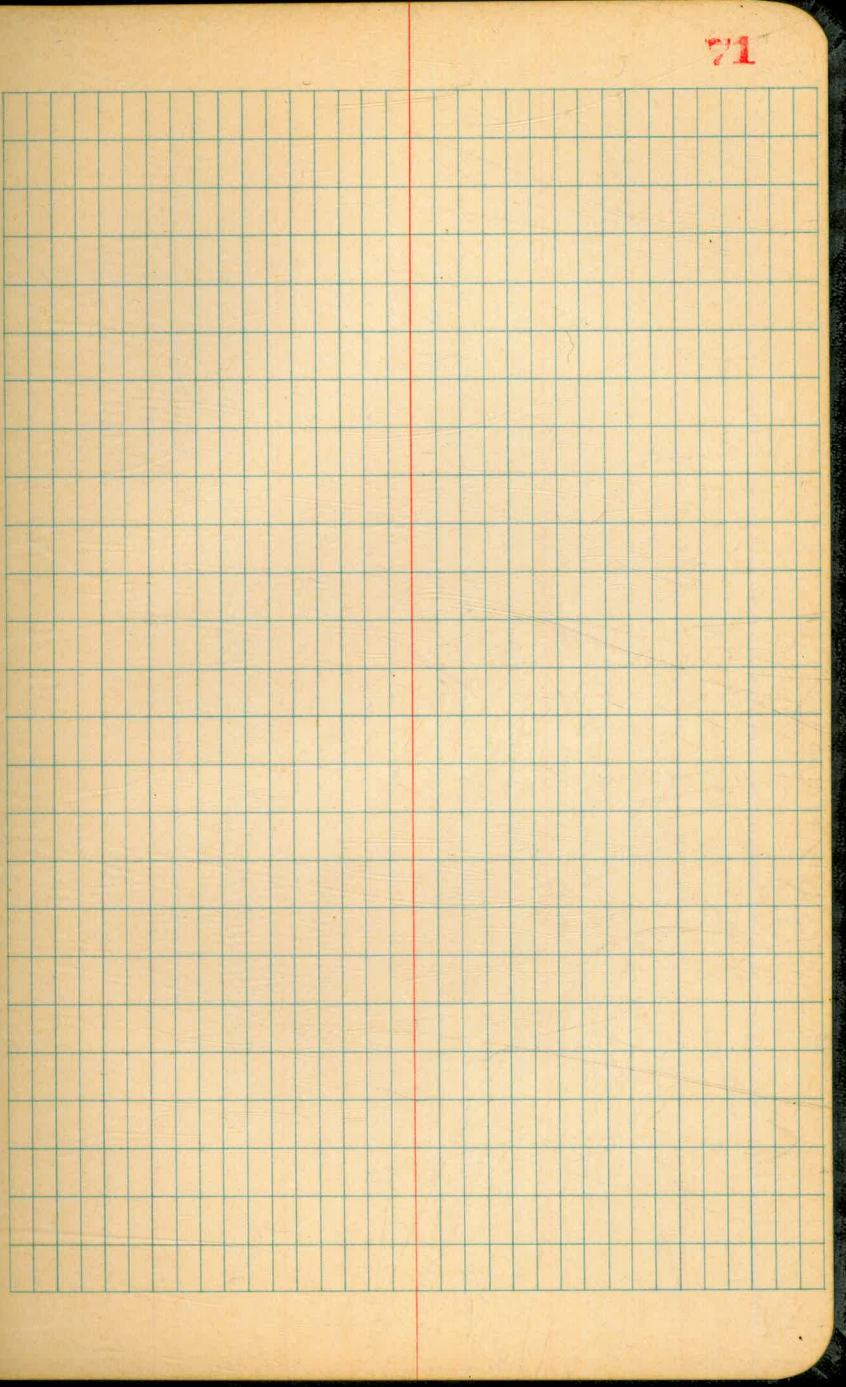
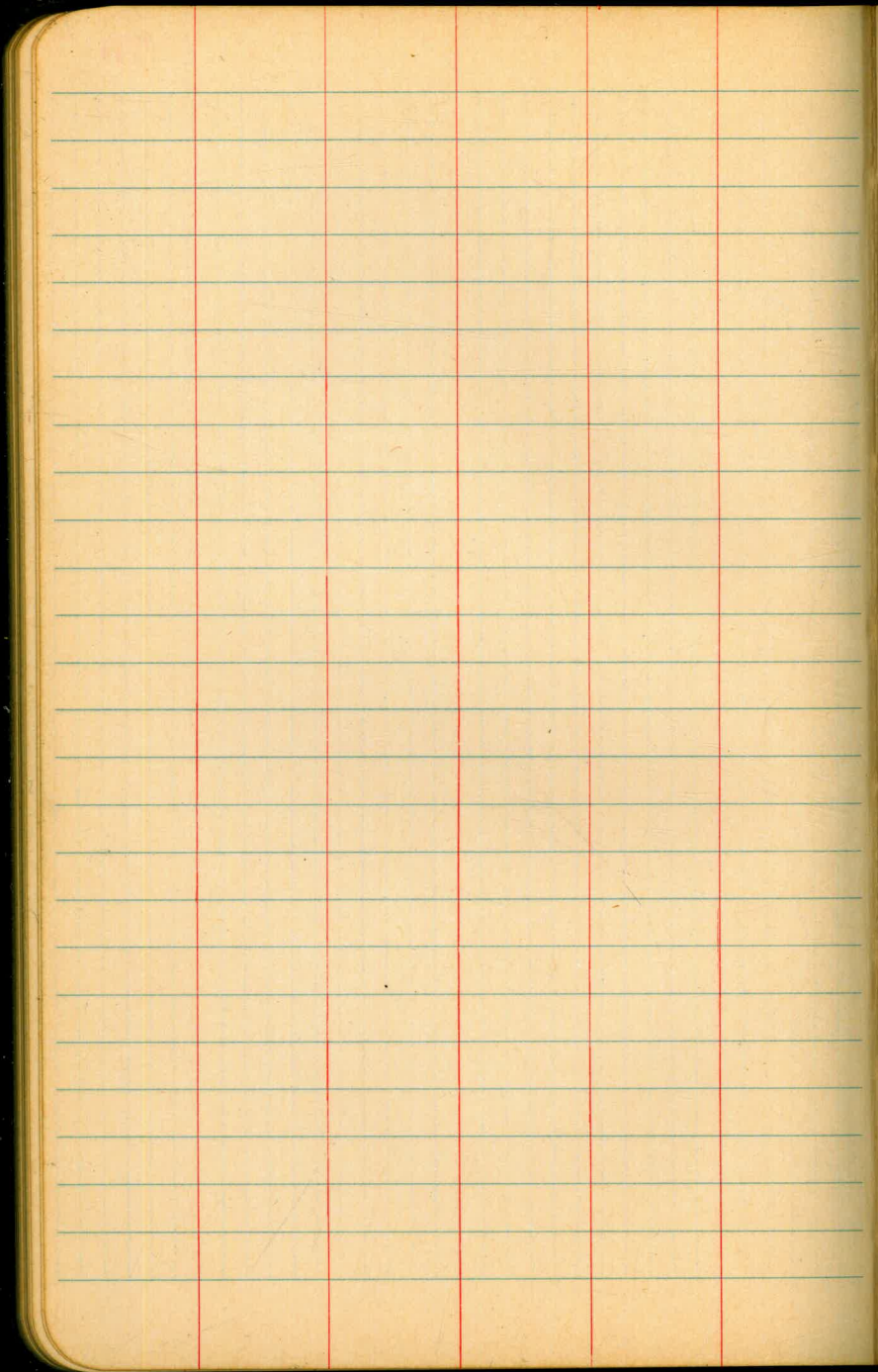
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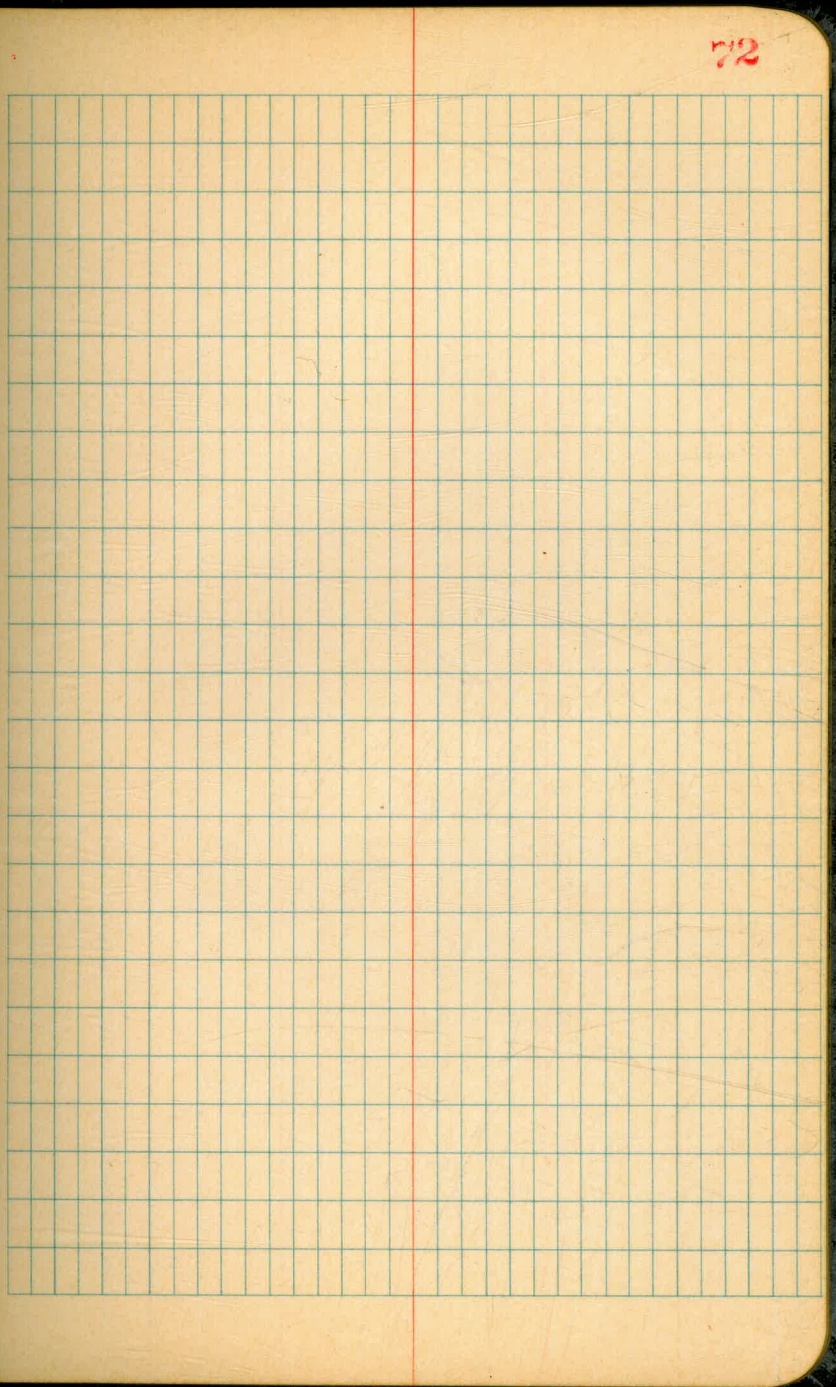
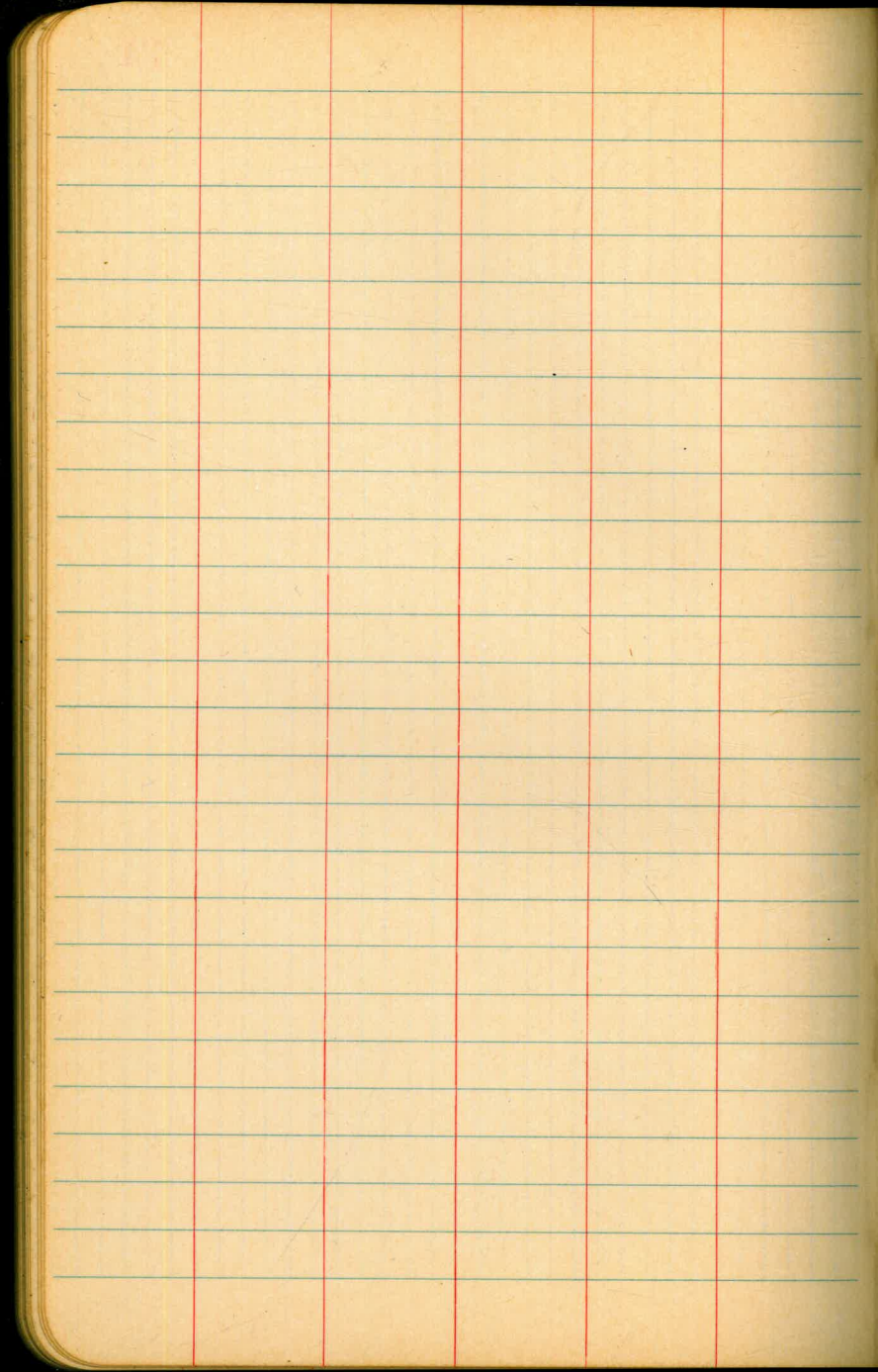
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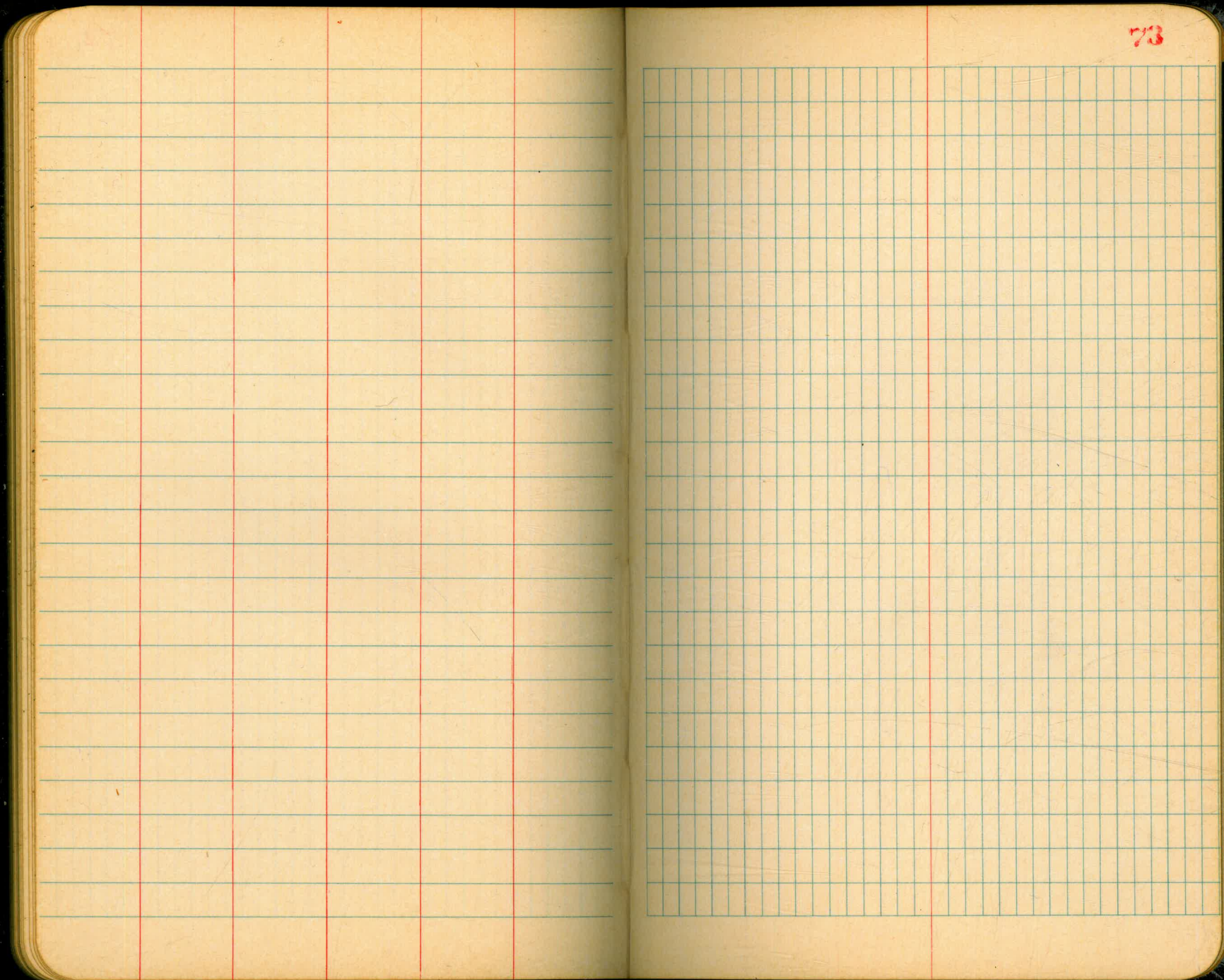


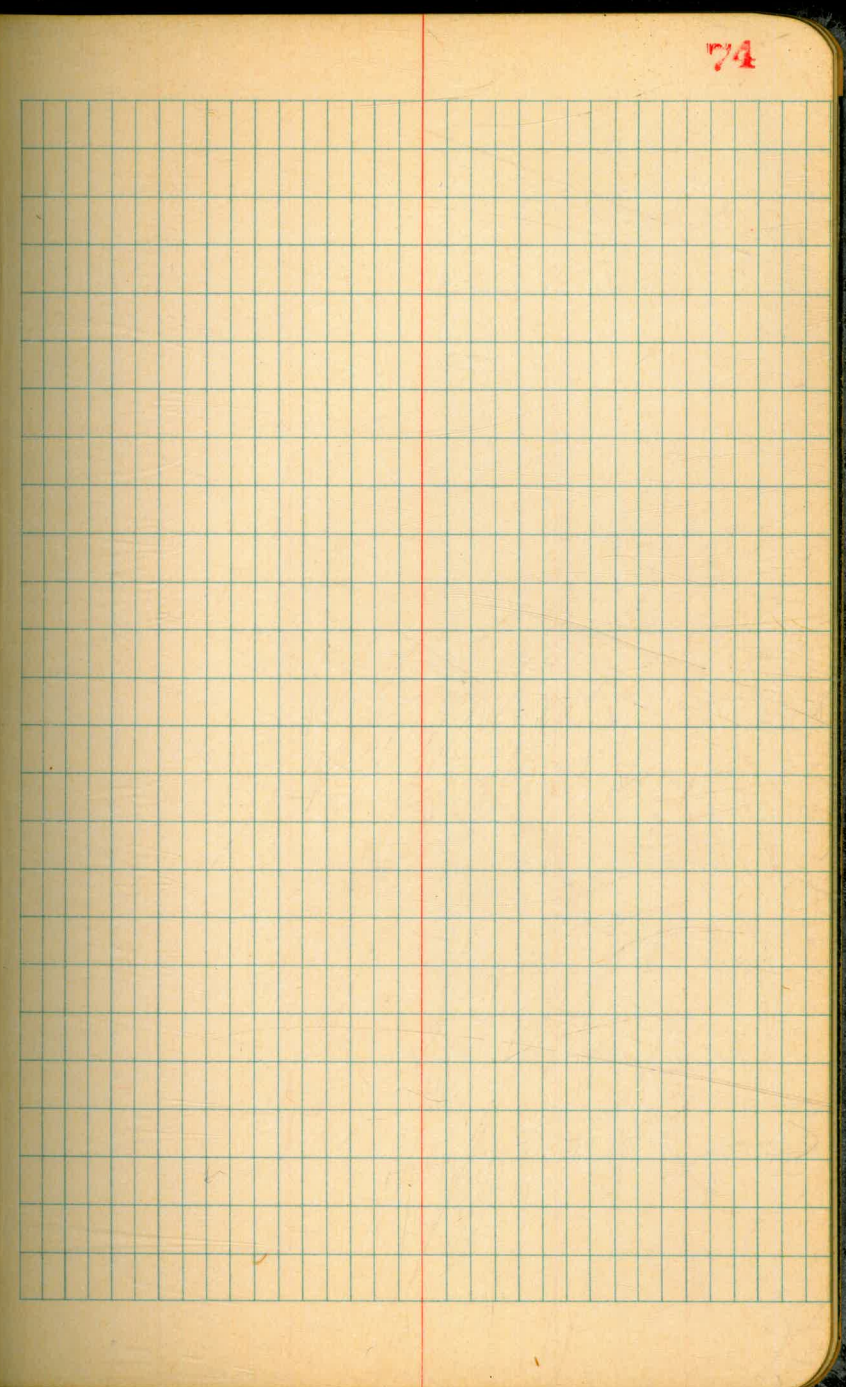
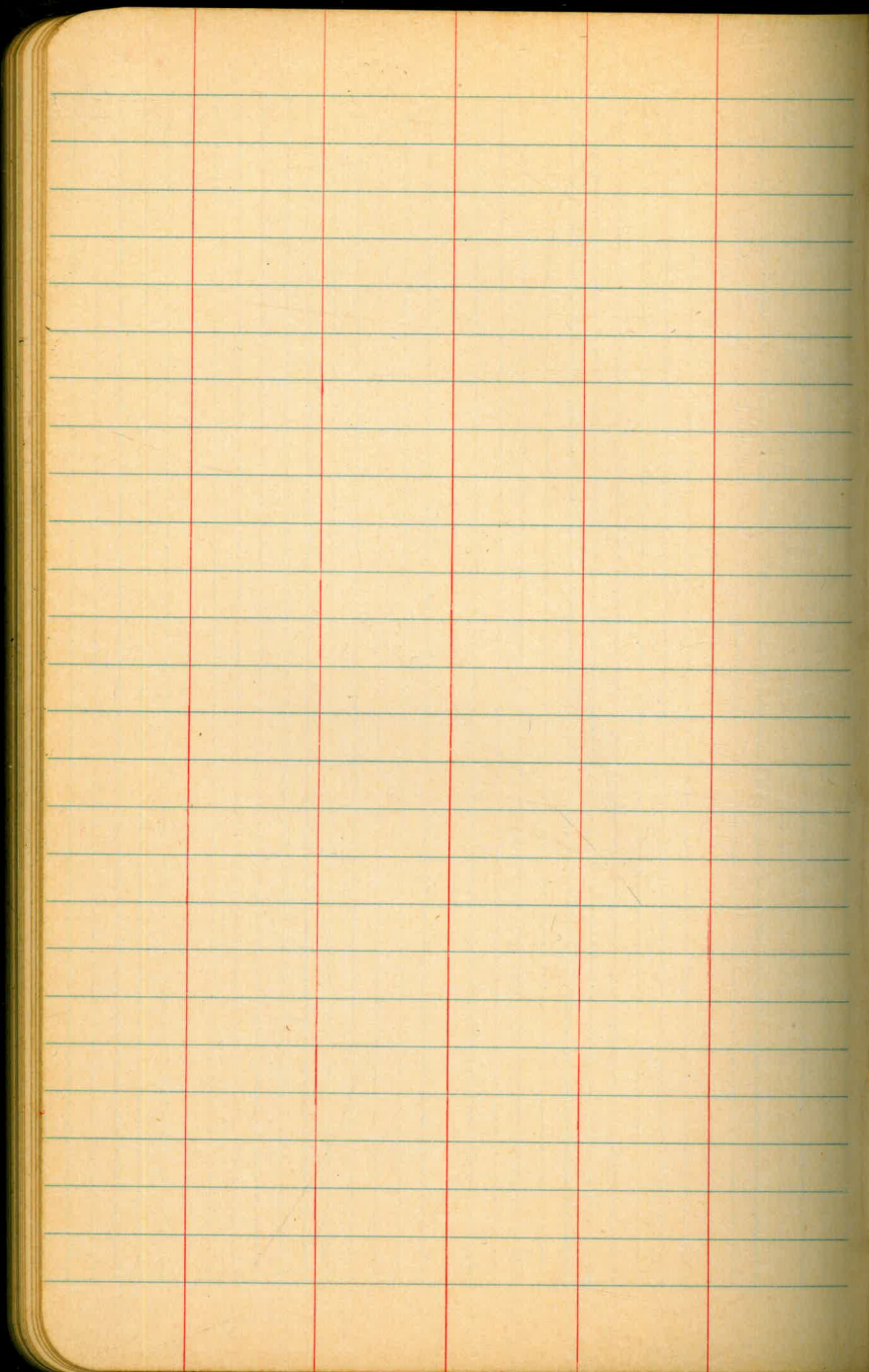


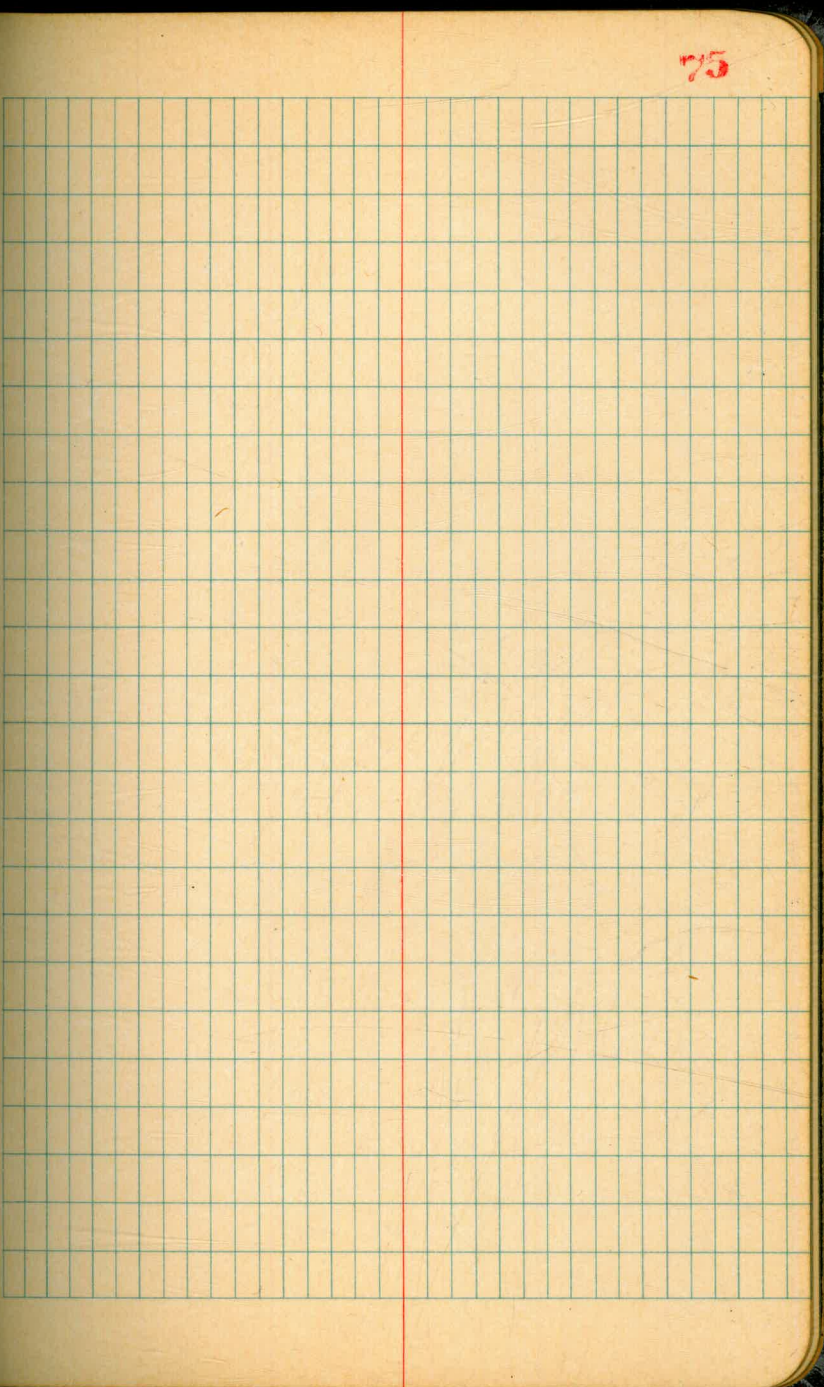
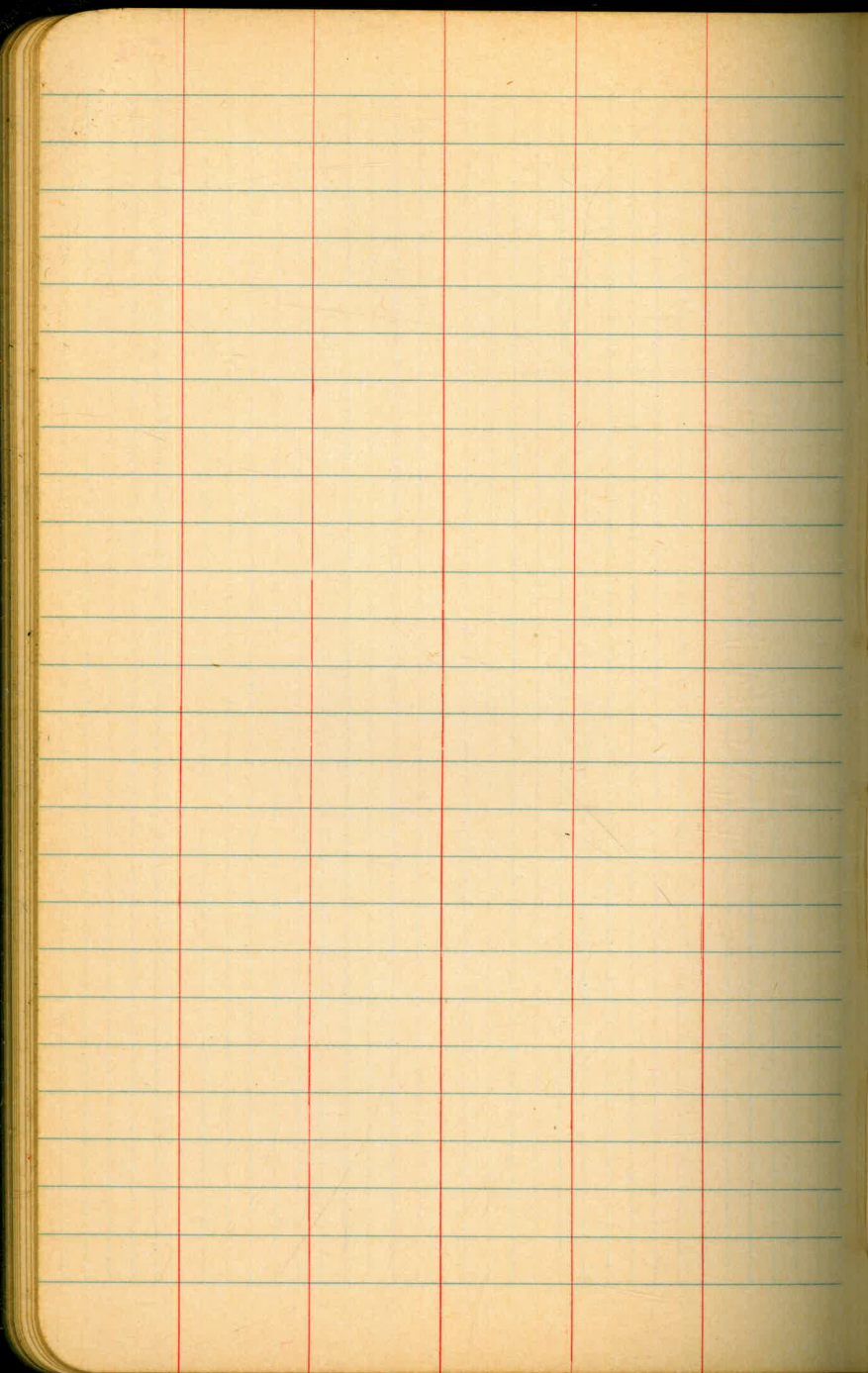


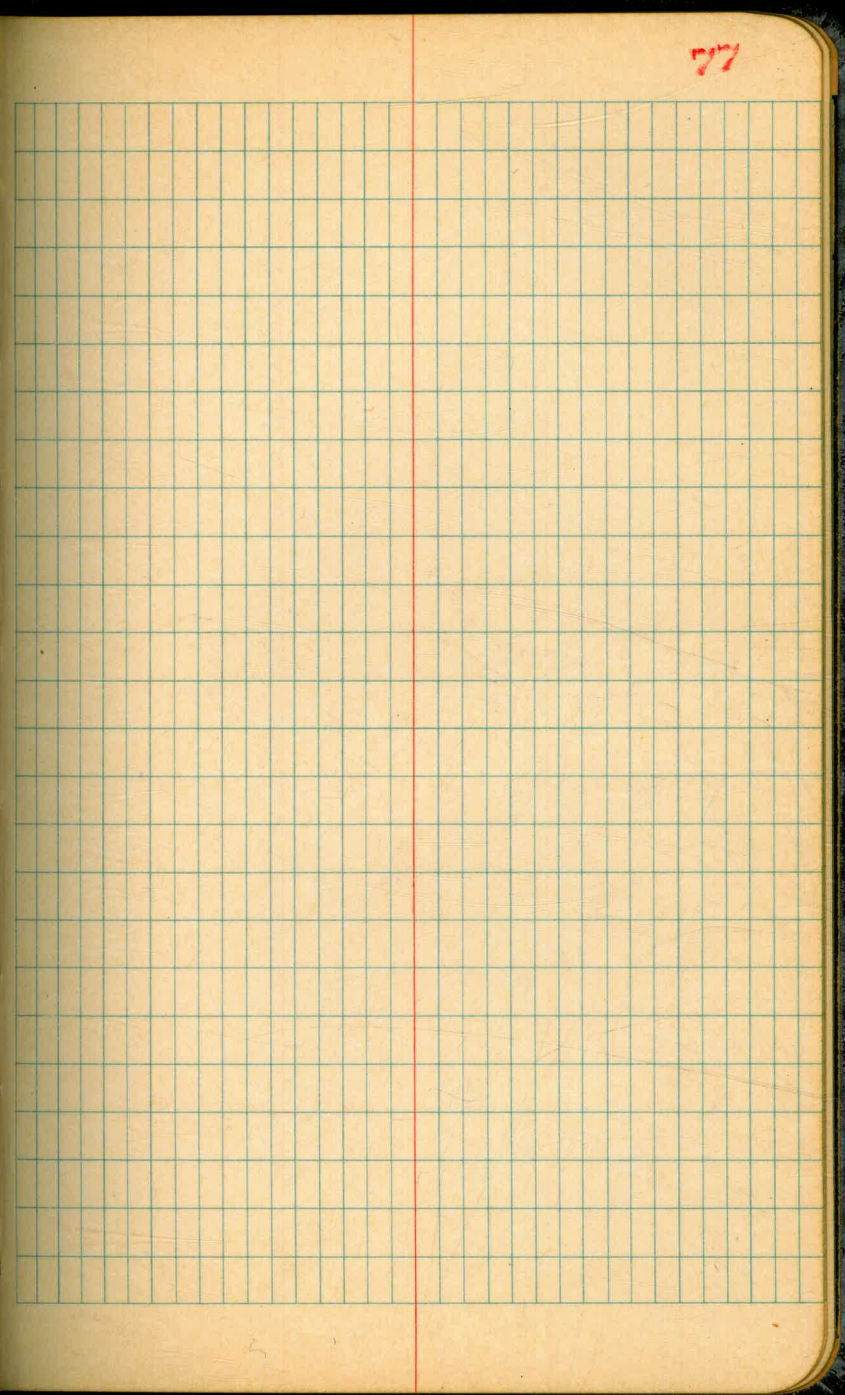
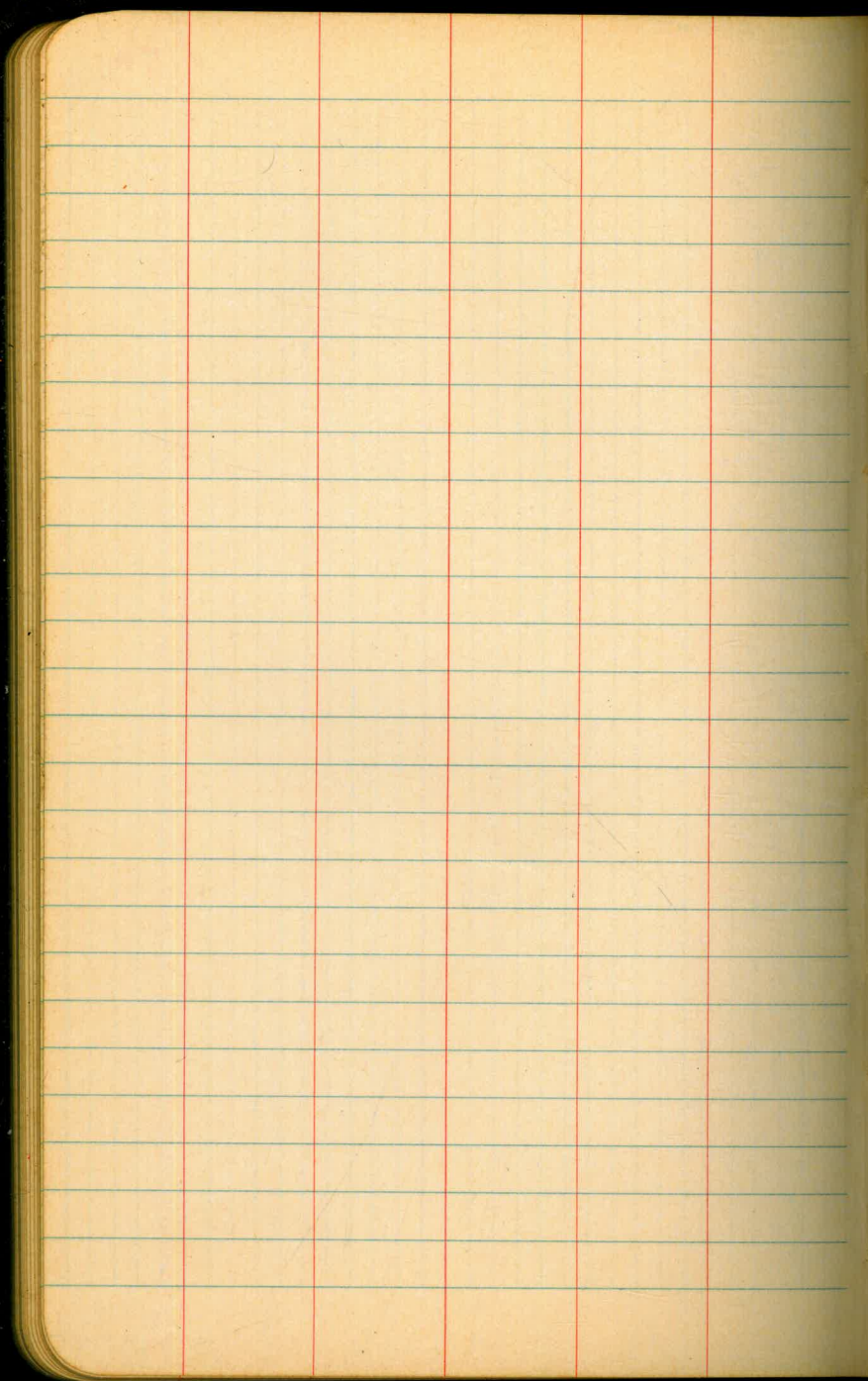






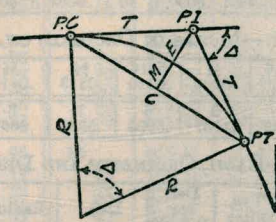






DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES

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CURVE FORMULAS

- Radius— $R = \frac{50}{\sin. D/2}$ (1) Degree of Curve— D and $\sin. \frac{D}{2} = \frac{50}{R}$ (2)
- Tangent— $T = R \tan \frac{\Delta}{2}$ (3) Length of Curve— $L = 100 \frac{\Delta}{D}$ (4)
- Middle ordinate— $M = R(1 - \cos. \frac{\Delta}{2}) = R \text{vers} \frac{\Delta}{2}$ (6)
- External— $E = T \tan \frac{\Delta}{4} = R \div \cos. \frac{\Delta}{2} - R$ (8) $= R \text{exsec} \frac{\Delta}{2}$ (9)
- Long Chord— $C = 2 R \sin. \frac{\Delta}{2}$ (10) Δ —Central Angle

EXPLANATION AND USE OF TABLES

Stations.—Given P. I.—Sta. 161+60.35 to find Sta. of P. C. and P. T. $\Delta = 62^\circ 10'$ $D = 8^\circ 20'$. From Table IV for 1° curve $T = 3454.1$ and $\div 8\frac{1}{3} = 414.49$ ft. From Table V correction—.36 or $T = 414.85$ ft. P. C.—Sta. P.I.— $T = 157 + 45.50$. Also from (4) $L = 746.00$ and P. T.—Sta. P. C. + $L = 164 + 91.50$.

Offsets.—Tangent offsets vary (approximately) directly with D and with square of the distance. Thus tangent offset for Sta. 158 on above curve is 2.16 ft. found as follows. From Table III tangent offset for 100 ft.—7.27 ft. Distance—158—Sta. P. C.—54.50, hence offset— $7.27 (54.50 \div 100)^2 = 2.16$ ft. Also square of any distance divided by twice the radius equals (approximately) the distance from tangent to curve. Thus $(54.50)^2 \div (2 \times 688.26) = 2.16$ ft.

Deflections.—Deflection angle— $\frac{1}{2} D$ for 100 ft., $\frac{1}{4} D$ for 50 ft., etc. For c ft.—(in minutes) $.3 \times C \times D^\circ$ or—defl. for 1 ft. from Table III $\times C$. For Sta. 158 of above curve—.3 $\times 54.5 \times 8\frac{1}{3} = 136.2'$ or $2^\circ 16.2'$, or— $2.50 \times 54.5 = 136.2'$ from Table III. For Sta. 159 deflection angle— $2^\circ 16.2' + 8^\circ 20' \div 2 = 6^\circ 26.2'$, etc.

Externals.—May be found in similar manner to tangents. Thus E for curve above is 115.37. For from Table IV for 1° curve $E = 960.6$ for $8^\circ 20' = 960.6 \div 8\frac{1}{3} = 115.27$ and from Table V correction—.10 or $E = 115.37$ ft. Or suppose $\Delta = 32^\circ$ and E is measured and found to be 42 ft. What is D ? From Table IV $E = 230.9$ and $\div 42 = 5.5$ or $D = 5^\circ 30'$.

TABLE VIII.—NATURAL TRIGONOMETRICAL FUNCTIONS.

Table with columns: Angle, Sine, Tan, Cotg, Cosin. Rows 0 to 7, each with sub-rows for angles 0, 10, 20, 30, 40, 50. Includes Cosin, Cotg, Tan, Sine, Angle at the bottom.

TABLE VIII.—NATURAL TRIGONOMETRICAL FUNCTIONS.

Table with columns: Angle, Sine, Tan, Cotg, Cosin. Rows 16 to 23, each with sub-rows for angles 16, 17, 18, 19, 20, 21, 22, 23. Includes Cosin, Cotg, Tan, Sine, Angle at the bottom.

3408 42
 30 22 00
 3 46. 42

1832
 3408
 5240.

102 75
 312 00
 415 00

DISTANCES FROM CENTER OF ROADWAY FOR
 CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1½
 For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.2	8.3	8.5	8.6	8.8	8.9	9.1	9.2	9.4	0
1	9.5	9.7	9.8	10.0	10.1	10.3	10.4	10.6	10.7	10.9	1
2	11.0	11.2	11.3	11.5	11.6	11.8	11.9	12.1	12.2	12.4	2
3	12.5	12.7	12.8	13.0	13.1	13.3	13.4	13.6	13.7	13.9	3
4	14.0	14.2	14.3	14.5	14.6	14.8	14.9	15.1	15.2	15.4	4
5	15.5	15.7	15.8	16.0	16.1	16.3	16.4	16.6	16.7	16.9	5
6	17.0	17.2	17.3	17.5	17.6	17.8	17.9	18.1	18.2	18.4	6
7	18.5	18.7	18.8	19.0	19.1	19.3	19.4	19.6	19.7	19.9	7
8	20.0	20.2	20.3	20.5	20.6	20.8	20.9	21.1	21.2	21.4	8
9	21.5	21.7	21.8	22.0	22.1	22.3	22.4	22.6	22.7	22.9	9
10	23.0	23.2	23.3	23.5	23.6	23.8	23.9	24.1	24.2	24.4	10
11	24.5	24.7	24.8	25.0	25.1	25.3	25.4	25.6	25.7	25.9	11
12	26.0	26.2	26.3	26.5	26.6	26.8	26.9	27.1	27.2	27.4	12
13	27.5	27.7	27.8	28.0	28.1	28.3	28.4	28.6	28.7	28.9	13
14	29.0	29.2	29.3	29.5	29.6	29.8	29.9	30.1	30.2	30.4	14
15	30.5	30.7	30.8	31.0	31.1	31.3	31.4	31.6	31.7	31.9	15
16	32.0	32.2	32.3	32.5	32.6	32.8	32.9	33.1	33.2	33.4	16
17	33.5	33.7	33.8	34.0	34.1	34.3	34.4	34.6	34.7	34.9	17
18	35.0	35.2	35.3	35.5	35.6	35.8	35.9	36.1	36.2	36.4	18
19	36.5	36.7	36.8	37.0	37.1	37.3	37.4	37.6	37.7	37.9	19
20	38.0	38.2	38.3	38.5	38.6	38.8	38.9	39.1	39.2	39.4	20
21	39.5	39.7	39.8	40.0	40.1	40.3	40.4	40.6	40.7	40.9	21
22	41.0	41.2	41.3	41.5	41.6	41.8	41.9	42.1	42.2	42.4	22
23	42.5	42.7	42.8	43.0	43.1	43.3	43.4	43.6	43.7	43.9	23
24	44.0	44.2	44.3	44.5	44.6	44.8	44.9	45.1	45.2	45.4	24
25	45.5	45.7	45.8	46.0	46.1	46.3	46.4	46.6	46.7	46.9	25
26	47.0	47.2	47.3	47.5	47.6	47.8	47.9	48.1	48.2	48.4	26
27	48.5	48.7	48.8	49.0	49.1	49.3	49.4	49.6	49.7	49.9	27
28	50.0	50.2	50.3	50.5	50.6	50.8	50.9	51.1	51.2	51.4	28
29	51.5	51.7	51.8	52.0	52.1	52.3	52.4	52.6	52.7	52.9	29
30	53.0	53.2	53.3	53.5	53.6	53.8	53.9	54.1	54.2	54.4	30
31	54.5	54.7	54.8	55.0	55.1	55.3	55.4	55.6	55.7	55.9	31
32	56.0	56.2	56.3	56.5	56.6	56.8	56.9	57.1	57.2	57.4	32
33	57.5	57.7	57.8	58.0	58.1	58.3	58.4	58.6	58.7	58.9	33
34	59.0	59.2	59.3	59.5	59.6	59.8	59.9	60.1	60.2	60.4	34
35	60.5	60.7	60.8	61.0	61.1	61.3	61.4	61.6	61.7	61.9	35
36	62.0	62.2	62.3	62.5	62.6	62.8	62.9	63.1	63.2	63.4	36
37	63.5	63.7	63.8	64.0	64.1	64.3	64.4	64.6	64.7	64.9	37
38	65.0	65.2	65.3	65.5	65.6	65.8	65.9	66.1	66.2	66.4	38
39	66.5	66.7	66.8	67.0	67.1	67.3	67.4	67.6	67.7	67.9	39
40	68.0	68.2	68.3	68.5	68.6	68.8	68.9	69.1	69.2	69.4	40

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 41.9. For same slopes but other widths of roadbed correct above figures by one-half difference in width of roadbed; thus in example above for 20 ft. roadbed distance will be 41.9 + (20 - 16) ÷ 2 or 2 ft. added to 41.9 = 43.9. For slopes of 1 on 1 see inside of front cover.

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