

313

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FIELD BOOK

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313

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Pages

Triangulations - MARRON -

Traverse: Δ #1 S-W-ly 5-8" Δ #4 (Matagorda) S-W-ly 9" Δ #3 N-ly 10-11" Δ #20 N-ly 12-13" Δ #3 S-ly 14-15" Δ #N-238-E-ly 16-18

Tie to Allens Morena Subdiv 4

Description of monuments $\frac{1}{2}$ Hubs 2-3

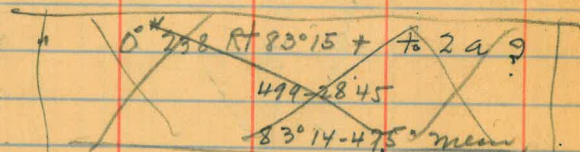
MARRON Drainage Survey 19-21

CAMPO CREEK Investigation 22-25

Sept. 3. 1970

gww
POG
Joe Galindo
mattoon

(T on Hipass) Zenith 0° Lunatels Rt 23048 to Rt H of Mon #238
 " " " 142°47' (6 times)
 " " " 23°47'50" mean
 " " " 58°00'30" to mataguel
 " " " 348°05' (6 times)
 " " " 58°00'50" mean
 " Zenith 0° #238 Rt 6709 to #3.
 " " " 402-53-30
 " " " 67-08-55" mean



" " " 0° #238 Rt 83°17' to 2a p evidently O.K.
 " " " (6) 499-43
 " " " 83°17'10" mean
 " " " 0° Lunatels, 71°59' to Mon #235
 " " " 431-52
 " " " 71°58'40" mean

Rt N-of-238 Zen. 0° on Mat - Rt to Hipass
 " " " 116°22' Rt
 " " " (6) 338°10'20"
 " " " 116°21'43" Rt

Points set by

Engineer Bustamente

Mon #249 is tied to drainage basin survey made by Mr Bustamente also tied back to Santa Cruz.

Hoopes survey also tied to Mon #249

Hubs set at each end of dam axis, at Engineer Bustamente's projected location of dam site no 2 about 5400 feet down stream from dam site no 1 by Cromwell and Hoopes. The El. of these hubs is 217.93 meters Lov 715.028 ft U.S. Coast + G.S. Datum. The distance across the tops at this elevation is 357 meters or 1171 feet. Stream bed El. is 149.53 meters or 490.607 ft U.S. Coast + G.S. Datum.

Points set by Engineer Bustamante
 B' is a 2" x 2" Hub set on Int. line
 between Mon 249 and Mon 250
 on north side of trail leading
 from Cromwell axis of Maroon
 dam to the white gate on the
 old Tia Juana road Course between
 Mon, 249 and Mon, 250 is
 N84°19'E which runs through
 B'.

Concrete monument with brass
 insert marked C.I.A 200 is
 located in grove of Oaks
 south of International line and
 easterly from Cromwell axis
 The elevation of the brass tablet
 is 171.596 meters or 562.006 feet
 U.S. Coast & G. Datum with Zero.

at mean low low water, this is
 elevation of canal invert, canal rate of
 grade is one foot fall in 1500 feet

One inch pipe with brass cap
 set at intersection of section
 line and Int. to dry line by U.S.
 Reservoir Cap is marked

T. 125 R. 2E
S. 32 E. 33
C. C.
Mex.

9/30/30

J.W.W.

at Maroon dam site and vicinity

Concrete monument with brass
 tablet insert marked C.I.A.
 200. the elevation of the brass
 is 170.832 meters or 560.50 feet
 U.S. Coast & G.S. Datum the ground
 El. at this point is 170.752 meters
 or 560.24 feet.

Hub marked T.P. 630 El. top
 of hub is 214.93 meters or 705.185
 feet U.S. Coast & G. datum, this
 hub is about 184 meters or
 600 feet westerly from south
 axis hub of Hooper dam site.
 Survey at Maroon

Hub marked T.P. 587 El. top of hub
 is 214.93 meters or 705.185 U.S.
 Coast and G.S. datum this hub
 is westerly several hundred
 feet from T.P. 600 on a level
 line from south axis of dam
 1 to dam site No 2.

Tie from Allens Morena Subdivision
to end of Traverse Maquata-Westerly
on Campo-Morena Road
to Summit.

J.W. Williams
P.O.G.
W.F. Mooney
J. Salgado
F. Whelan

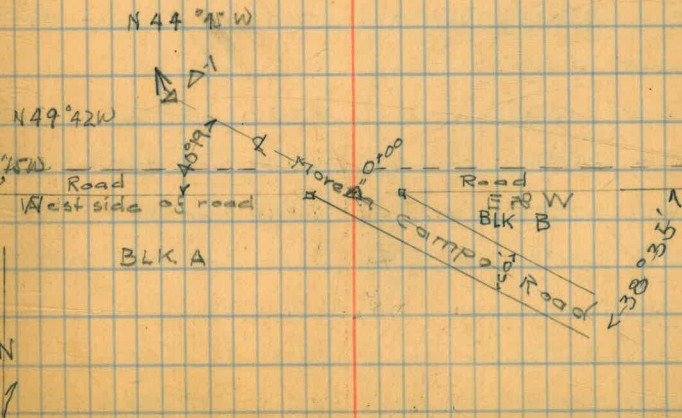
July 31-26

(4)

MAP # 2184 LAKE MORENA OAK SHORES
TOM ALLEN, E.M.

		V. A	V. D.	
4-12-W	A ₁ 358°24 145°51L+	to 4-11-W		End of line from Maquata
		2906	220	0°00
Δ-G	A ₂ 335°30 22°54R+	2685		220 N 1°46W
		150	0°24+	105+
Δ-F	A ₁ 348°04 12°34L+	2535		N 24°40W
		185	0°44+	236+
Δ-E	A ₂ 335°18 12°46R+	2350		N 12°06W
		180	0°58-	3.04-
Δ-D	A ₁ 326°41 18°37R+	2170		N 24°52W
		660	3°34+	41.0+
Δ-C	A ₂ 315°25 11°16R+	1510		N 33°29W
		950	2°00+	33.7+
Δ-B	A ₁ 310°28 4°57R+	560		N 44°45W
		560	1°31+	14.85+

Δ 0+00 = East line of Subdiv. and Campo Road 589°59W = 589°56'W
P.O.G. Allen?
fore sight on S-E cor. Blk A



Stadia Traverse for Marron Project
Drainage determination

Station	Az	Bearing	Dist.	V-A	
Mat 1					
to 1-2-E	45°06'30		2450	0°58-	-41.5 ✓
1-1-E	35°15		2400	1°14-	-51.7 ✓
1-1-W	319°26		445	5°52-	-45.2 ✓
1-2-W	251°51'30	S71°51'20W	1440	4°40-	-116.8 ✓
Mat 1-2-W					
to 1-3-W	341-41		375	2°20-	-15.4 ✓
1-4-W	273°47	N86°13W	1030	5°35-	-100 ✓
Mat 1-4-W					
to 1-5-W	291°59		820	8°20-	-117.6 ✓
1-6-W	294°24	N65°36W	2150	7°49-	-290.0 ✓
Mat 1-6-W					
to R.P.	151°50		18.1	0°00	00
to 1-7-W	271°43	N88°17W	1000	2°10+	+37.8 ✓
Mat 1-7-W					
to 1-8-W	257°37		760	2°37-	-74.6 ✓
1-9-W	266°03	S86°03W	1540	1°06+	+29.5 ✓
Mat 1-9-W					
to 1-10-W	252°41		235	0°00	00
	239°11		390	0°00	00
1-11-W	227°10		480	0°55+	+7.7
1-12-W	237°24	S57°24W	620	1°00+	+10.8
Mat 1-12-W					
to 1-13-W	240°16		765	1°10-	-15.4 ✓
1-14-W	252°23	S72°23W	1860	0°08+	+4.3 ✓

J.W. Williams
P.G.
M.F. Moorey
J. Salgado
E. McLaughlin

July 23-30

(5)

Backsight on Δ Sta. N. of Mon. 238

Az. 11-04 from Mex. Triangulation System

Mag. Bear. N 86°30W

R.P. 388+2359 on N.S. State Highway at Summit

Mag. Bear. N 88°15W

to Fence E 8W

Mag. Bear. S 57°15W

Mag. Bear. S 72°15W

Traverse of Marron Project contin.

J. W. Williams

July 22-30

Sta	Az	Bearing	Dist	V-A	
Start 1-14-W		S 72° 23' W			
to	93° 06		85'	0° 00	00
1-15-W	202° 09	S 22° 09' W	1760	0° 32 +	+ 16.6
Start 1-15-W					
to 1-16-W	196° 46		590	0° 00	00
1-17-W	228° 28		725	3° 17 -	41.3 -
1-18-W	244° 36	S 64° 36' W	1145	4° 30 -	89.5 -
Start 1-18-W					
to 1-19-W	257° 25		515	5° 29 -	49.0 -
1-20-W	263° 56	S 83° 54' W	1300	0° 10 +	+ 3.9
Start 1-20-W					
to 1-21-W	292° 18		1115	1° 50 -	
1-21-W	292° 20	N 67° 40' W	1160	2° 08 -	43.4 -
Start 1-21-W					
to 1-22-W	225° 02		1110	6° 34 -	126.0 -
1-23-W	223° 26	S 43° 26' W	1840	1° 27 -	47.1 -
Start 1-23-W					
to 1-24-W	196° 02	S 16° 02' N	875	1° 18 -	19.8 -
Start 1-24-W					
to 1-25-W	211° 40		205		
1-26-W	250° 20		525	5° 48 -	
1-27-W	267° 04	S 87° 04' W	780	6° 07 -	

Angle in Fence E-28 W

Mag. Bear S 22° 15' W

Mag. Bear S 64° 30' W

in La Posta - Carrizo Road at Summit

Mag. Bear S 83° 45' W

Mag. Bear N 67° 45' W

in low saddle E-28 W

Mag. Bear S 43° 35' W

went to far South

Mag. Bear S 87° 15' W

Abandoned

Traverse of Marron Project water shed

Sta	Az.	Bear.	Dist.	V-Δ	Y.D.
Start 1-23-W		543°26W			
to 1-24-W	225°41	N74°19W	295	0°20-	170-
Start 1-24-W					
to 1-25-W	258°18		225	6°34-	25.3-
1-26-W	268°48		585	7°55-	79.8-
1-27-W	275°57	N84°03W	1120	6°39-	128.8-
Start 1-27-W					
to 1-28-W	294°10		900	9°16-	
1-28-W	293°30		1620	8°19-	232°
1-29-W	374°04	N85°56W	2720	0°14+	11.2+
Start 1-29-W					
to 1-30-W	266°49		700	0°26+	5.3+
1-31-W	238°24		1460	0°12+	5.1+
1-32-W	219°21	S39°21W	2340	1°13+	49.5+
Start 1-32-W					
to 1-33-W	212°00		820	1°16-	18.1°-
	123°00	to Hipaso Flag			
	161°49	" N of 238 Mon.			
	242°19	" Mataguat Flag			
to 1-34-W	239°03		1720	1°08+	35.2+
1-35-W	250°35	S70°35W	2060	0°52-	31.1°-
Start 1-35-W					
to 1-36-W	260°03	S80°03W	2260	1°24+	55.1°+
Start 1-36-W					
to 1-37-W	196°53	S16°53W	2860	1°37-	80.6°-

3 Mr. Williams
P. G. G.
H. F. Mooney
J. Salgado
F. H. Helan

July 24-26

⑦

Mag. Bear. N74°15W

in low saddle Road N85

Mag. Bear. N8.°45W

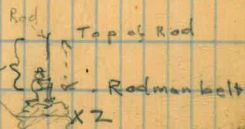
Mag. Bear. S29°15W

Mag. Bear. S70°45W

Mag. Bear. S80°15W

Mag. Bear. S17°15W

for list. 36 to 37



Traverse of Marron Water shed

Sta	Az	Bearing	Dist.	V-A
at 1-37-W		916°53W		
to 1-38-W	255°04	575°04W	1880.	5°20- 174°-
at 1-38-W				
1-39-W	222°16	542°16W	1960	1°00+ 34 ¹⁰ +
at 1-39-W				
to Sta A4	259°13			
at 1-40-W	234°35	554°35W	2360	2°38- 108°-
at 1-40-W				
to 1-41-W	259°56	579°56W	990	1-33+ 26.7+

J.W. Williams
P.O.S.
J.F. Mooney
v. Salgado
E. Nielsen

July 27, 30

Mag. Bear 575°30W

Mag. Bear 542°30W

Flag on Matagat
Az.
243°00 to

Mag. Bear 554°45W

Mag. Bear 580°30W

Traverse of Marron Drainage
from Sta. Δ 4 on Mataguat S-W

	Az.	Bearing	Dist.	V-A	V.D.
	310°50	N49°10W	3280	11°44-	654°-
Mat 4-1-W					
to 4-2-W	216°46		330	4°41-	26 ⁸ -
	252°16		25 [±]		
to 4-3-W	239°19	S59°19W	1130	5°51+	114 ⁶ +
Mat 4-3-W					
	114°00				
to 4-5-W	214°12	S34°12W	2100	2°38-	96 ⁴ -
to 4-4-W	229°15				
Mat 4-5-W					
to 4-6-W	188°11		730	0°54-	11 ⁵ -
to 4-4-W	318°40				
4-7-W	198°52	S18°52W	1270	1°05-	23.9-
Mat 4-8-W					
4-9-W	235°33	S55°33W	1130	1°38-	32 ² -
Mat 4-9-W					
to 4-10-W	235°47	S55°47W	1105	3°08+	60 ⁴ +
Mat 4-10-W					
to 4-11-W	201°45	S21°45W	710	0°54-	11 ⁵ -
Mat 4-11-W					
to Mataguat	64°21				
" Hypoase	106°56				
" N-238 Men	130°38				
to 4-12-W	212°23	S32°23W	930	5°22-	86 ⁵ -
Mat 4-12-W					
to Mataguat	61°06				
	15°09				

J. W. Williams
P.O.S.
W. F. Maoney
J. Salgado
F. Nielsen

July 24-30

Backsight to Flag on Mataguat
Mag. Bear N49°15W
in Road Summit 150± east of new cabin
to ground of rocks as flag Brush line E
Mag. Bear. S59°15W
to flag on Mataguat Δ 4
Mag. Bear. S34°15W

this should be out, but not sure

Mag. Bear. S19°15W

Mag. Bear. S55°45W

Mag. Bear. S55°45W

Mag. Bear. S21°45W

Mag. Bear. S32°30W 4-12-W on south side of Road to
to sign post on S-side of Road Campo-Moreno Lake
on summit

July 24 1/30
" 25

Traverse of Watershed Marron Project

July 25-30

10

Sta	Az	Bearing	Distance	V-D	
Trat #23					
to Malaga Nat	284°38				
#20	349°17	N10°43E			
#21	350°24	N9°36W			
to 3-1-N	10°15	N10°15E	620	0°18+	3.7+
3-3-N	17°09	N17°09E	2120	0°34-	21.2-
Trat 3-3-N					
to 3-2-N	220°20		1030	0°00	0.
to 3-4-N	354°49	N5°11W	1740	0°20+	10.1+
Trat 3-4-N					
to 3-5-N	350°53	N9°07W	505	0°43-	6.3-
Trat 3-5-N					
to 3-6-N	336°55		690	5°27-	65.3-
3-7-N	351°50		1070	4°11-	77.8-
3-8-N	356°06	N3°54W	1880	2°34-	84.6
Trat 3-8-N					
to 3-9-N	7°05		545	2°35-	24.6-
3-10-N	8°55	N8°55E	1520	0°20+	8.8+
Trat 3-10-N					
to 3-11-N	9°02		575	3°20-	33.3-
3-12-N	17°46	N17°46E	1500	0°26+	11.4+
Trat 3-12-N					
to 3-13-N	323°36		605	1°50+	19.4+
3-14-N	338°47		1280	2°07+	47.0+
3-15-N	335°16	N24°44W	1820	2°03+	65.0+

Backsight to N-238 Az 227°03'19" Bear 557°03'19"

Mag. Bear. N10°15E

for Dist = Top of Rod to visor of redman cap XZ

Mag. Bear. N5°11W

Mag. Bear. N9°07W

Mag. Bear. N4°W

to Summit old county road Campo-Boulevard

Mag. Bear. N9°E

on end of Pavement State Highway on Summit

Mag. Bear. N17°45E

N24°45N Mag. Bear.

for dist: 14.8 and top cap of redman XZ

Highway #

Road

Traverse of Notes ched Marron Project

J.W. Williams
R.G.
N.F. Mooney
J. Salgado
F. Whelan

July 25-30

(11)

Sta	Az	Bearing	Dist.	V-A	V.D.
at 3-15-N	335°16	N24°44W			
to 3-16-N	311°26	N48°34W	2360	1°56+	79.5+
at 3-16-N					
to #A 2	331°52	N28°08W	1820	5°35+	196.3+
at #2					
to #3	170°24-30	S9°35-30E			
to #2	347°22	N12°38W			
to 2-1-N	345°01	N14°59W	380	0°28+	3.8+
at 2-1-N					
to 2-2-N	55°23		285	0°10-	0.8-
2-3-N	20°13		1150	1°01+	20.3+
2-4-N	35°30		1710	1°41+	50.4+
2-5-N	25°35	N25°35E	2100	1°34+	57.4+
at 2-5-N					
to 2-6-N	359°13	N0°47W	1380	0°30-	12.0-
at 2-6-N					
to 2-7-N	338°45		1620	2°04-	58.4-
2-8-N	332°41	N27°19W	2680	1°08-	53.0-
at 2-8-N					
to	146°04		365	4°26-	28.6-
#A 2	324°42	N35°18W	2320	3°46+	152.7+
at #2					
to #2	167°23 1/2	S12°37 1/2E			
#A 3	169°20	S10°40E			

for dist: Top of rod & rodman's armpit x 2

Mag. Bear. N48°45W

Mag. Bear. N28°15W

for dist: 14.8 & top of rodman's cap x 2

Mag. Bear. N15°15W

to Fence N 29 S?

Mag. Bear. N25°45E

July 25-30

28.30

Mag. N 10 W

Mag. Bear. N27°30W

to Summit of Road N-S

Mag. Bear. N35°30W

Traverse of Narron watershed

Sta	Az	Bear.	Dist.	V-D	V. D.
209-W	92°11 90°42		2350	0°02-	5.4-
to Δ #1	214°25 212°56				
20-13-W	204°34 203°05		1620	2°35-	73°-
20-12-W	192°13 190°44		1320	3°04-	70.4-
to 20-11-W	185°50 184°28		600	1°11-	12.4-
at 20-10-W	278°48	N 81°12 W			
to 20-10-W	277°19	N 81°41 W	4220 4080? as plotted	0°12+	14.8+
at 20-8-W	258°11	578°11 W			
to 20-8-W	256°42	576°42 W	1345	1°14-	29°-
to Los Pinos	271°13				
to Δ #1	245°03				
at 20-7-N					
to 20-6-W	323°28	N 37°32 W	1330	3°21+	77.5+
at 20-5-W					
to 20-5-W	325°19	N 34°41 W	1430	2°48+	70°+
at 20-4-W					
to 20-4-W	326°21	N 33°39 W	1620	2°05+	59.2+
at 20-3-W					
to 20-3-W	319°50		3100±	0°54+	48.6+
to 20-2-W	317°51		1960	0°33+	18.8+
at 20-1-W					
to 20-1-W	312°28	N 47°32 W	1060	0°18+	5.5+
to Δ #1	281°56				
at 20-2	349°17	N 10°43 E			

J. W. Williams
 POG,
 W. F. Mooney
 F. Salgado
 F. Whelan

July 28-30

(12)

on large Rock on high ridge
 Mag. Bear. N 81°30 W ?

Mag. Bear. 578° W
 576°45 W ?

this is about the highest point on Traverse
 Mag. Bear. N 37° W

Mag.

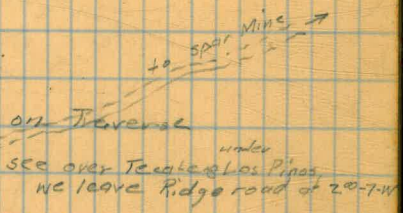
Mag. Bear. N 33°45 W

Mag. Bear. N 47°32 W

Backsight to #3 S 10°43 E

to Live Oak

to McCain Valley



Transverse of Watershed Maroon Project

J.W. Williams
POC
W.F. Mooney
R. Salsgaard
F. Nelson

July 28-30

(23)

Sta Az Bear Dist. V-Δ

1-2-E 213°39'
to 2nd-1-E 212°10' 533°39'W 2700' 3°30' - 164.2'
N of 2°-10-W

Mag Bears 33°30'W this ties to



Traverse of Water shed Marron Project

J. W. Williams
P.O.G.
J. Salgado
W. F. Mooney
F. Whelan

July 29-30

(14)

Sta	Az	Bearing	Distance	Vert. Δ	V. D.	
to 3-14-S	283°14	N76°46W	990	1008-	19.7-	Mag. Bear N76°46W
to 1/4 cor.	281°10		875			2-11 pipe as brain cap.
At 3-13-S						
3-13-S	257°26	S77°26W	1125	0°34+	11.2+	Mag. Bear S77°20W
to E. & N. Fence	180°00		77'			from Sec. cor. fence runs N 28 W
to Sec. cor.	96°43		690			{ 1-2-11-12 } T-175 RGE Iron pipe with Brass cap
At 3-12-S						
to 3-12-S	249°11	S69°11W	1290	0°58-	21.8-	Mag. 369°10W
At 3-11-S						
3-11-S	214°43	S34°43W	1850	0°10+	5.5+	Mag. Bear S34°40W
3-10-S	212°37		1490	0°21+	9.1+	
3-9-S	213°33		1030	0°49-	14.6-	
to 3-8-S	237°16		720	0°10+	2.4+	
At 3-7-S						
3-7-S	210°57	S30°57W	1620	1°54-	53.5-	Mag. Bear S30°45W
3-6-S	207°12		1300	2°20-	53.0-	
to 3-5-S	213°58		545	2°24-	22.8-	
At 3-4-S						
3-4-S	246°52	S66°52W	1940	0°52-	29.3-	Mag. Bear S66°45W
to 3-3-S	263°35		1440	0°44-	18.4-	
At 3-2-S						
3-2-S	108°46 ³⁶	S28°36W	1900	0°54-	29.9-	Mag. Bear S28°45W
to 3-1-S	175°25		445	0°57-	7.4-	
At # Δ 3	237°03-19	S57°03-19W				Sighting on N. of 238 Az = 237°03-19 Bear = 557°03-19W

Traverse of Watershed Marron Project

J.W. Williams
P.O.G.
N.F. Mooney
T. Solgaard
F. Whelan

July 29-30

185

Sta	Az	Bearing	Dist	V-A	
3-29-S	245°52	S65°52W	1560	2°25-	65.5-
to 3-28-S	236°36		385	3°00	20'
at 3-27-S					
to 3-27-S	194°44	S14°44W	1080	0°00	0
at 3-26-S					
to 3-26-S	196°05	S16°05W	1110	0°56-	18'-
at 3-25-S	1°				
3-25-S	188°22	S8°22W	1070	0°52+	16.2+
3-24-S	179°43		885	1°02+	15.9+
to 3-23-S	183°00		550	1°00+	9.6+
at 3-22-S					
3-22-S	218°23	S38°23W	2040	1°17-	46.5-
to 3-21-S	214°23		1600	3°04-	85.4-
at 3-20-S					
to 3-20-S	190°50	S10°50W	930	0°53-	14.0-
at 3-19-S					
3-19-S	242°14	S62°14W	1270	2°53-	68.7-
3-18-S	246°00		1400	2°41-	66.5-
3-17-S	250°58		1230	2°56-	62.7-
to 3-16-S	237°12		610	3°22-	35.7-
at 3-15-S					
to 3-15-S	291°18	N68°42W	750	2°00-	26.1-
at 3-14-S					
	283°14	N70°46W			

Mag. Bear. S65°45W

Mag. Bear S14°30W

Mag. Bear S15°50W

Mag. Bear S8°20W

Mag. Bear S38°15W

250' N Road E 28 W

Mag. Bear S10°45W

Mag. Bear S62°10W

Mag. Bear N68°40W

Traverse of Watershed Marron Project

J.W. Williams
R.O.G.
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F. Salgado
F. Whelan

July 30 30

(15)

Sta	Az	Bearing	Dist.	V. A		
to 238-12-E	128°43	551°17E	355	1°03-	65-	Mag. Bear 551°17E
At 238-11-E						
238-11-E	103°36	576°24E	905	1°26-	226-	Mag. Bear 576°24E
to 238-10-E	85°47		460	1°00-	8°-	
At 238-9-E						
to 238-9-E	114°00	566°E	515	0°40+	6.0+	Mag. Bear 566°E
At 238-8-E						
238-8-E	32°53	N32°53E	2200 <small>at 2300? plotted 2300</small>	2°50+	108.8+	Mag. Bear N32°50E
to 238-7-E	16°30		1740	2°56+	89+	
At 238-6-E						
238-6-E	51°03	N51°08E	2120 <small>or 2320?</small>	0°07+	4.2+	Mag. Bear N51°E
238-5-E	59°04		1620	0°46-	22.75-	
to 238-4-E	60°26		1140	2°34-	51.3-	old Road N 28 S ? in lowest elev.
At 238-3-E						
238-3-E	41°04	N41°04E	1670 <small>or N 70</small>	2°20-	38.9-	Mag. Bear N41°04E
238-2-E	30°35		1520	2°14-	59.3-	
to 238-1-E	31°00		1280	3°05-	63.6-	
At N-238	302°56'41	N57°03'19E to #3				

Turn two pages further for continuation

to 238-2-S	149°14	530°46E	1090	0°58-	18.55-	530°40E
At 238-2-S						
to 238-26-E	71°07	71°06 from 238-26-E				
238-2-S	204°19	524°19W	1140	1°46-	35.10	Mag. Bear 524°20W
	203°50		1080	1°40-		Thunderstorm N.E. 8am
to 238-1-S	199°53		440	2°00-	15.4	
At N-238	57°03'17	N57°03'19E				Sighting on #3 Bear N57°03'19E

Marron Project Traverse of Watershed

J. W. Williams
 P.O.S.
 W. F. Mooney
 J. Salgado
 F. Whelan

July 29-70

(17)

Sta.	Az	Bearing	Dist	V.A		
to #A3	251°06					
at 3-29-S	65°52	N65°52E				
3-29-S = 238-26-E =	86°55	N86°55E	1240	0°10-	3.6-	Mag. Bear N86°50E
238-25-E	69°07		935	0°20+	5.4+	
to 238-24-E	84°14		530	0°58-	8.95-	
at 238-23-E						
to 238-23-E	71°21	N71°21E	350	0°18+	1.8+	Mag. Bear. N71°15E
at 238-22-E						
238-22-E	67°36		790	1°30+	22.+	Mag. Bear N67°30E
E R of W Fence	64°38		300			
to W. R of W fence	64°38		100			X-sing S-D-A-R-R. tracks in deep cut. 150' South of Post 30-20
at 238-21-E						
238-21-E	58°38	N58°38E	1640	0°30+	14.3+	Mag. Bear. N58°30E
to 238-20-E	42°20		680	1°48-	21.4-	
at 238-19-E						
238-19-E	81°32	N81°32E	2500	0°30-	21.7-	Mag. Bear. N81°30E
238-18-E	76°52		1660	2°18-	66.5-	S Turn in North 11 s m
238-17-E	83°50		1110	3°00-	58.-	
to 238-16-E	91°45		560			
at 238-15-E	137°03	572				
to 238-15-E	542°57E	or 525? 725	1049-	23°-		Mag. Bear. 543°E
at 238-14-E						
238-14-E	135°44	535°16E	1130	1°48-	35.5-	Mag. Bear. 544°20E
to 238-13-E	139°23		1000	1°58-	34.3-	
at 238-11-E	103°36	576°24E				

Traverse of Marron Project Watershed

J.W. Williams
P.O.B.
N.F. Mooney
J. Salgado
F. Whelan

July 30-30 ⁽¹⁸⁾

Sta.	Azi.	Bear	Dist.	V-D
to Bdry line	84°23	N84°23E		
Tot Mon. 238				
to Sec. cor.	190°57	S10°57W	187	
to Bdry Fence	210°34	S30°34W	225	4°28 - 17.5-
Tot 238-4-5				
238-4-5	238°22	S58°22W	200	2°52 - 10°
to Mon. 238	170°05	S9°55E	330	2°56 - 16.9-
Tot 238-3-5				
	147°14	S30°14E		

looking to Mon. 237 60' North to Fence

19-20 TIPS RGE K.C.P.R.

this Fence is North of True International Bdry

Mag. Bear S58.40W

big Thunderstorm S-SW 3pm

Marron Drainage Survey

POB
J. Salgado
W.F. Mooney
L. Mathari

Sept. 3-70

(19)

Sta. Az Bear. Dist V.A.

3-17-E	161°41	518°19E	1500	2°20-	-73.2	M.B. 518°18E
to 3-16-E	154°58		470	2°15-	-18.4	
at 3-15-E						
to 3-15-E	124°58	555°02E	480	0°18+	+2.5	M.B. 555°030E
at 3-14-E						
3-14-E	115°33 1/2	564°26 1/2E	1700	0°28-	-13.8	M.B. 564°30E
3-13-E	107°28		1400	1°16+	+30.9	
to 3-12-E	114°46		820	2°12-	-31.5	
at 3-11-E						
3-11-E	157°38	522°22E	2180'	1°26-	-54.5	M.B. 522°30E
3-10-E	159°52		1900'	1°24-	-46.4	
3-9-E	169°52		1350'	1°10-	-27.5	
3-8-E	120°03		1300	1°00-	-22.7	
to 1/4 cor.	187°25		155'		0	1/4 Sec. 1 20'E of N&S Fence
at 3-7-E						in N&S fence
3-7-E	168°48	511°12E	1240	0°15-	-5.4	M.B. 511°11E
3-6-E	179°44		880	0°42+	+10.8	
to 3-5-E	218°34		235	0°00	0	
at 3-4-E						
3-4-E	144°02	535°52E	2280	0°28-	-18.6	144°39 1/2 to Hi pass 525°21E
3-3-E	143°40		1580	1°04-	-29.4	525°30E
3-2-E	149°00		1320	1°10-	-26.9	
to 3-1-E	174°46		450	0°56-	-7.3	
at #3	sighting on #238 Az 237°03-19					Bearing 557°03'19"W M.B. 556°W

Marron Drainage Survey

T.O.E.

Sept. 30 20

Sta.	Az.	Bear.	Dist.	V.A
HP-14-S	171°10		1000	2°34' -44.7
HP-13-S	162°34		870	4°30' -64.1
to HP-12-S	137°50		300'	4°30' -23.5
At HP-11-S				
HP-11-S	137°50	S42°10E	1980	0°58' +33.4
HP-10-S	132°26		1640	0°58' -27.7
HP-9-S	141°12		1500	2°10' -56.7
to HP-8-S	159°00		495	8°40' -73.7
At HP-7-S				
HP-7-S	126°32	S53°28E	2020	2°19' +78.6
HP-6-S	122°34		1680	1°52' +54.7
HP-5-S	113°18		1470	1°20' +33.1
HP-4-S	105°58		900	1°56' +30.3
to RR. ^{x sign}	159°40		310	7°52' -42.0 +11'
At HP-2-S				
HP-2-S	205°06	S25°06N	²²³⁵ 2300	9°40' -380.7
HP-2-S	184°07		1550	11°36'
to HP-1-S	215°00		750	15°30' -193.1
to A*3	144°34	N25°26E = S25°21E		
At Hipass				
Hipass Δ	135°46	S44°19E	2900	4°40' +235.2
3-20-E	118°19		1860	4°40' +150.8
3-19-E	105°16		1800	4°46' +149.1
to 3-18-E	116°00		700	0°50' +10.2
At 3-17-E				
	161°41			

M.B. S42°30E

M.B. S53°45E

this point is two T. Post west of M.P. 85 SD & RR

M.B. S25°N

Back sight to A*3 Az. 144°39

M.B. S44°30E

Marron Drainage Survey

R.O.C.

Sept. 3-30 (21)

Sta Az Bear Dist. V.A.

I. B. by Man #225
= to HP-K-S 178°33 51°27W 1440
K94
HP-11-S

M.B. 3194W

Matron Drainage (Campo Creek)

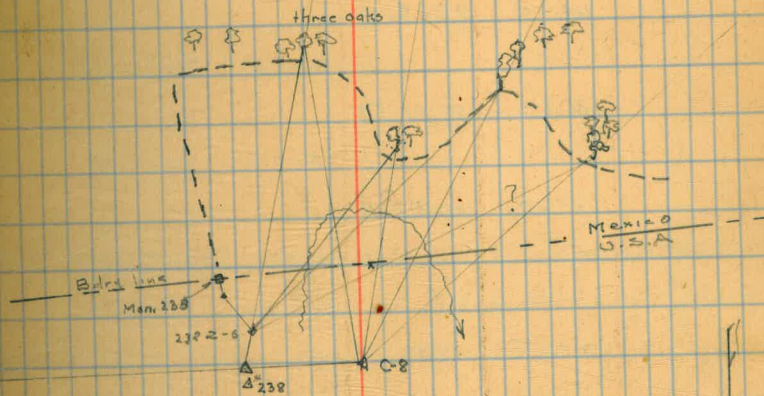
POS

Sept. 4-20

(22)

Sta Az Bear Dist V-D

#1	245°40'	?				
#3	230°45'					
#2	210°52'					
to #1	185°45'					
Mat 238-2-5	209°19'	to A238	See page 16			
#4 broken out at head of gorge	237°40'					
#3 most westerly oak	217°42'					
#2 broken Oak on divide	188°04'					
#1 to oaks s. of divide	173°48'					
C-13	185°04'	2440	3°48'	-161.3	on Bdry fence	
C-12	182°02'	2040	4°14'	-150.1	saddle 150 back 25' lower	
C-11	170°14'	1460	3°12'	-81.3		
C-10	179°42'	830	4°04'	-58.7		
C-9	166°14'	710	5°02'	-62.1		
to C-8	157°30'	350	4°12'	-25.6		
Mat C-7						
C-7	267°43'	587°43'W	2920	0°48'	-40.7	M.B. 587°43'W
C-6	273°56'		2620	0°52'	-39.6	
C-5	270°10'		1960	1°50'	-66.1	
C-4	280°51'		1520	1°48'	-22.1	
C-3	261°31'		1230	2°14'	-47.9	
C-2	247°08'		900	2°00'	-31.4	
to C-1	204°20'		465			



on Bdry fence
saddle 150 back 25' lower

Mat #238

Sighting on A#3 Az N57°03'19"E = Bearing

Az 237°03'19"

Campo Creek investigation

P.O.C.

Sept-5-30

Sta

		2189.0	B.M.
14.10	2203.10		
		0.95	2202.15
14.37	2216.52		
		0.02	2216.50
15.60	2232.10		
		0.05	2232.05
1		1.00	2232.0
0.15	2232.15		
		10.15	2222.00
6.10	2228.10		
		16.20	2212.10
0.30	2212.40		
		15.7	2196.70
0.20	2196.90		

at Campo Creek bridge 5-West of Campo

= B.M. "Y" 57 U.S. Coast & Geodetic on west abut-
of RR bridge over Highway
on bolt head below top of rail

First Bridge north of
International Balboa Line

		2193.7	= 2190
		13.9	
		27.2	2169.7
		25.7	2171.2
		27.45	2169.45
		28.75	2108.15
		18.7	2178.2

RR ab. on top of rail 1000 east of Tunnel
near east end of bridge

N. end of of center panel } = clearance
S. end of " " " }
bottom of creek at RR crossing
S. end of bridge

end panels 7.4 below ab.
of S. end of bridge

Campo Creek investigation

P.O.C.

Sept 5³⁰ 24

to A5 118°28R+ 2148.0 720 10°47- 2468.55
 Nat A4 72.7

S66°28W

to A4 170°32R+ 1395.3 700 13°49+ 2611.95
 60.3

on Summit 200' south 60' lower N52°00W

Nat A3 Az on A2 73.5

to A3 90°50L+ 000 840 20°49+ 2449.6

N42°32W

to Bdry fence 168°19R- 540'
 and 2170 cont. 2170

East end of Dam 58°27R+ 640' 0°00 2170

M.B. 573°0NE

58°27R+ 483.7 540' 6033- 20170

58°27R+ 467. 467. 435' 14°48- 2052. 2108

377 ft on 2052 lowest point

10' same elev 30' back 10' lower

58°27R+ 334.6 250 14°26- 2118

on top of 20' vert. cliff 20' ahead 10' lower

58°27" 187.7 195' 14°26- 2128

+ Dam Axis 58°27R+ 0 00 2170

to draw N.S. 42°2L+ 200' 2170

4.6
2175.2

Nat A2 backsight 0000 on A1

A2 on N.S. 140°65R+ 500' 2170.6

S48°18W

" " 75°24 620

" " 60°40R+ 560

on S-Side 42°50R+ 660 2170.0

S49°02E

Nat A1 0000 on backsight 2173.3

to A1 on N.S. of crack 83°50R+ 1355 2169.1

S88°08W

48°35R+ 700 "

49°55R+ 490 2170

S54°13W

to N. Portal 0°00 125'

Nat sand of bridge RR alignment thru Tunnel 0°00= 2183.1 2178.2

1/2 of track south end of bridge 1000 ± north of Bdry east of Mon. 242 N 88 S ? 84°18W

Campo Creek investigation

Sept. 5-30

25

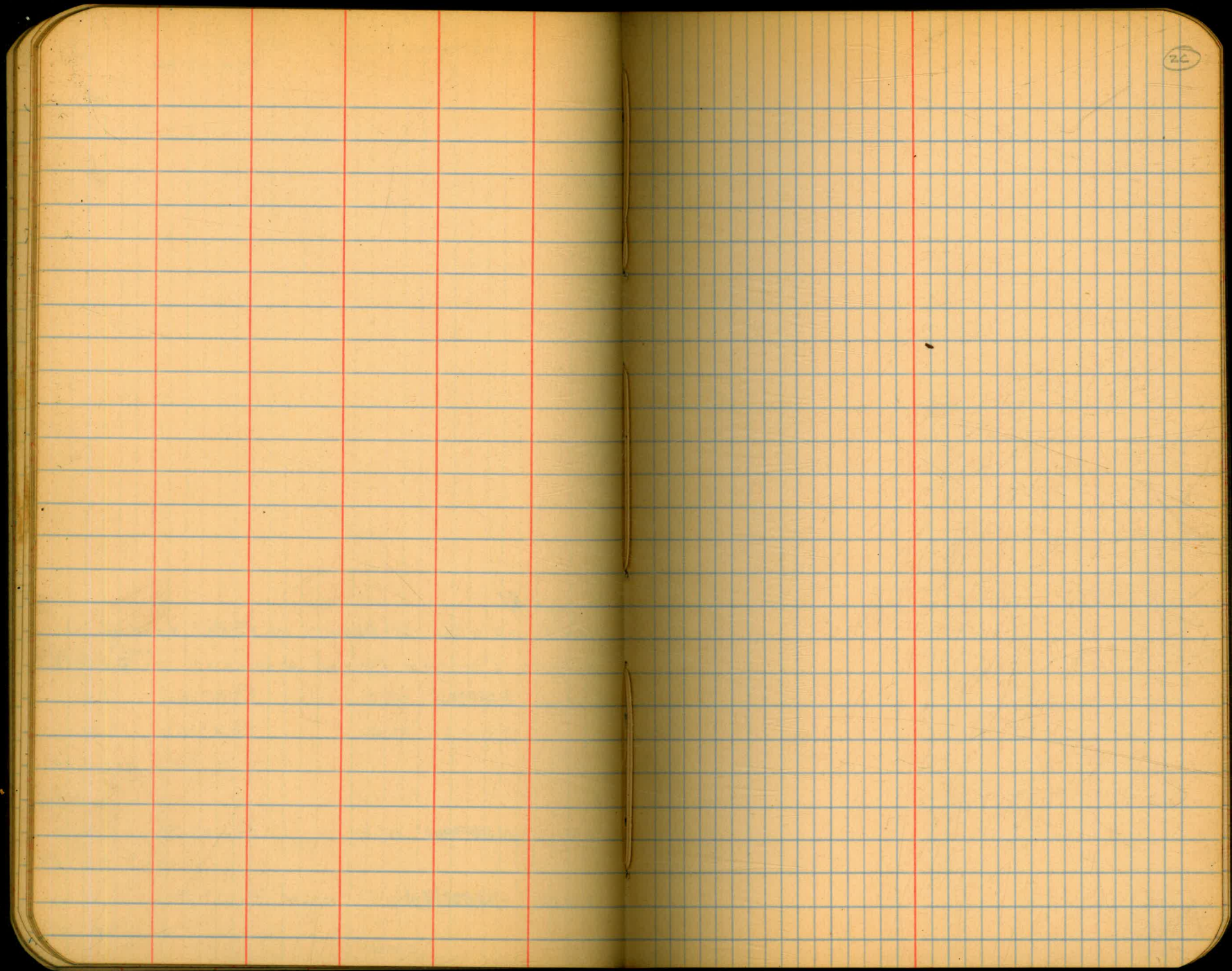
579

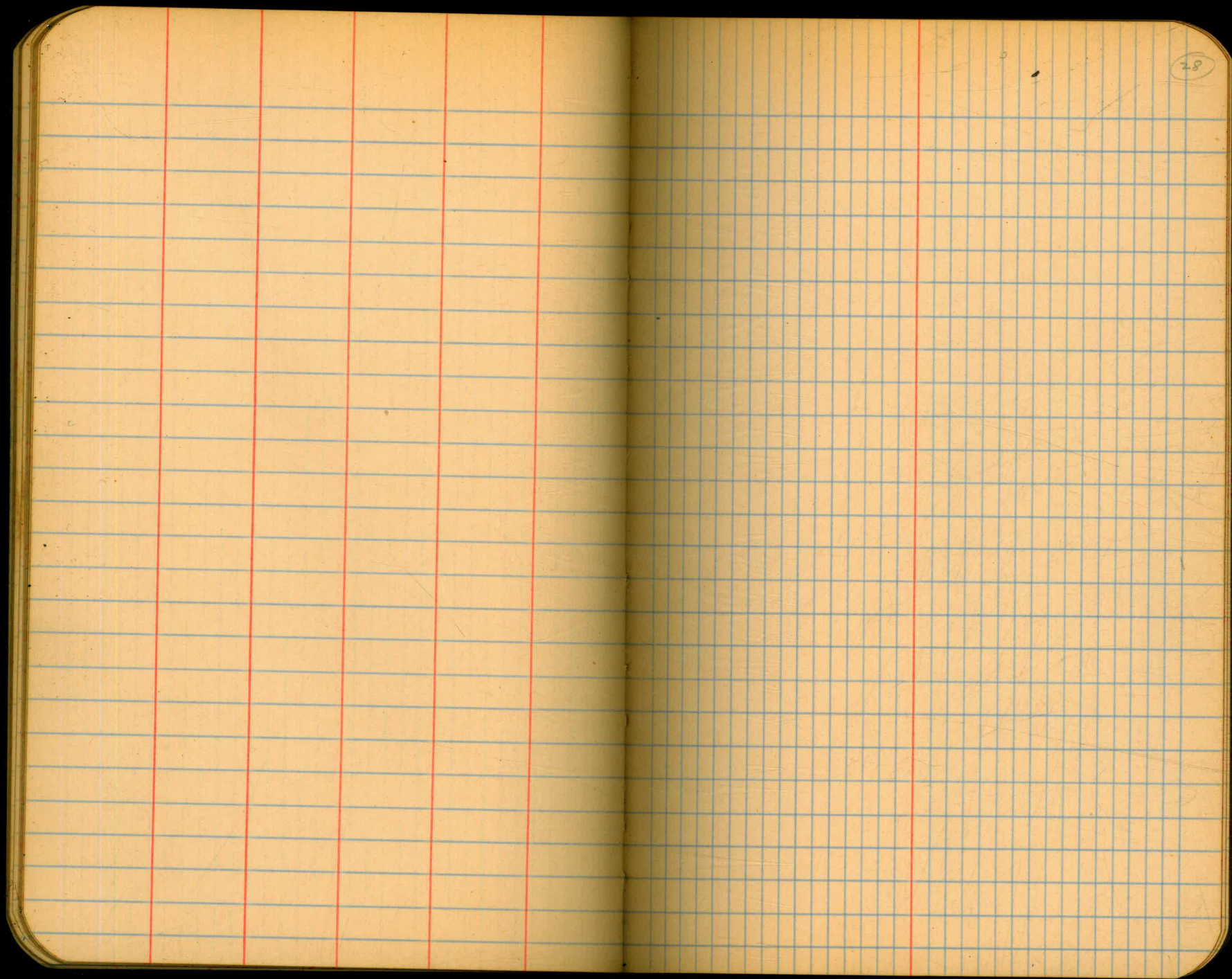
to Bdry Fence Tat Δ 9	81°33 RT		1280	000	2124
Δ 9	141°14 RT	929.6	930	1°14 -	2124.0
Δ 8	161°16 RT		1250	2004 -	
to bottom of gully	76° RT				-25 2119
Tat Δ 7					
to Δ 7	197°06 RT	1358	1370	5°10 -	2144.0
Tat Δ C					
to Δ C	196°26 RT	3426.2	1310	8°58 -	2256.9
Tat Δ C	As backsight on Δ E	1278.2			

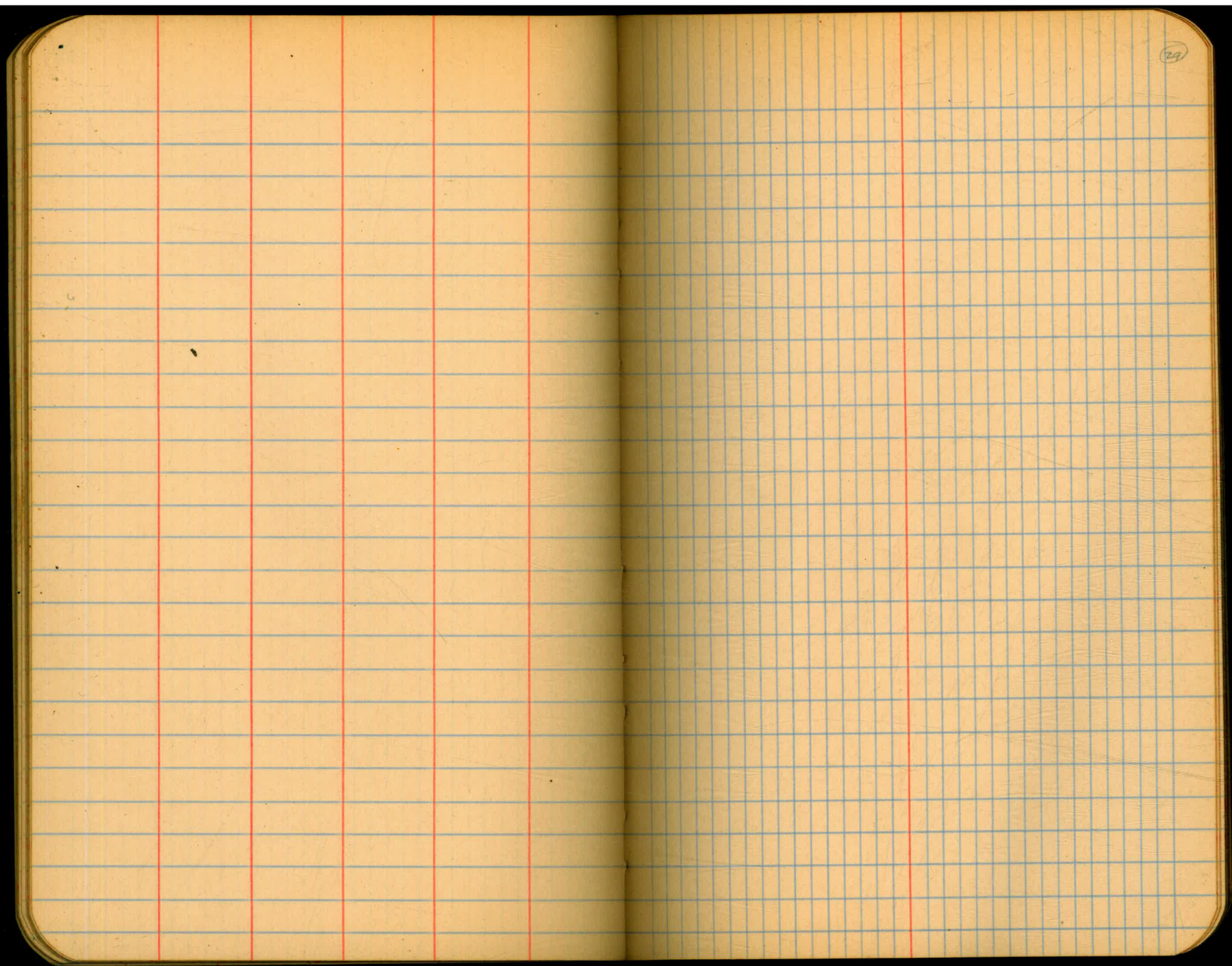
537°12 E
end of line in bottom of Valley east of
where Campo Creek crosses into Mex.
S 61°14 N

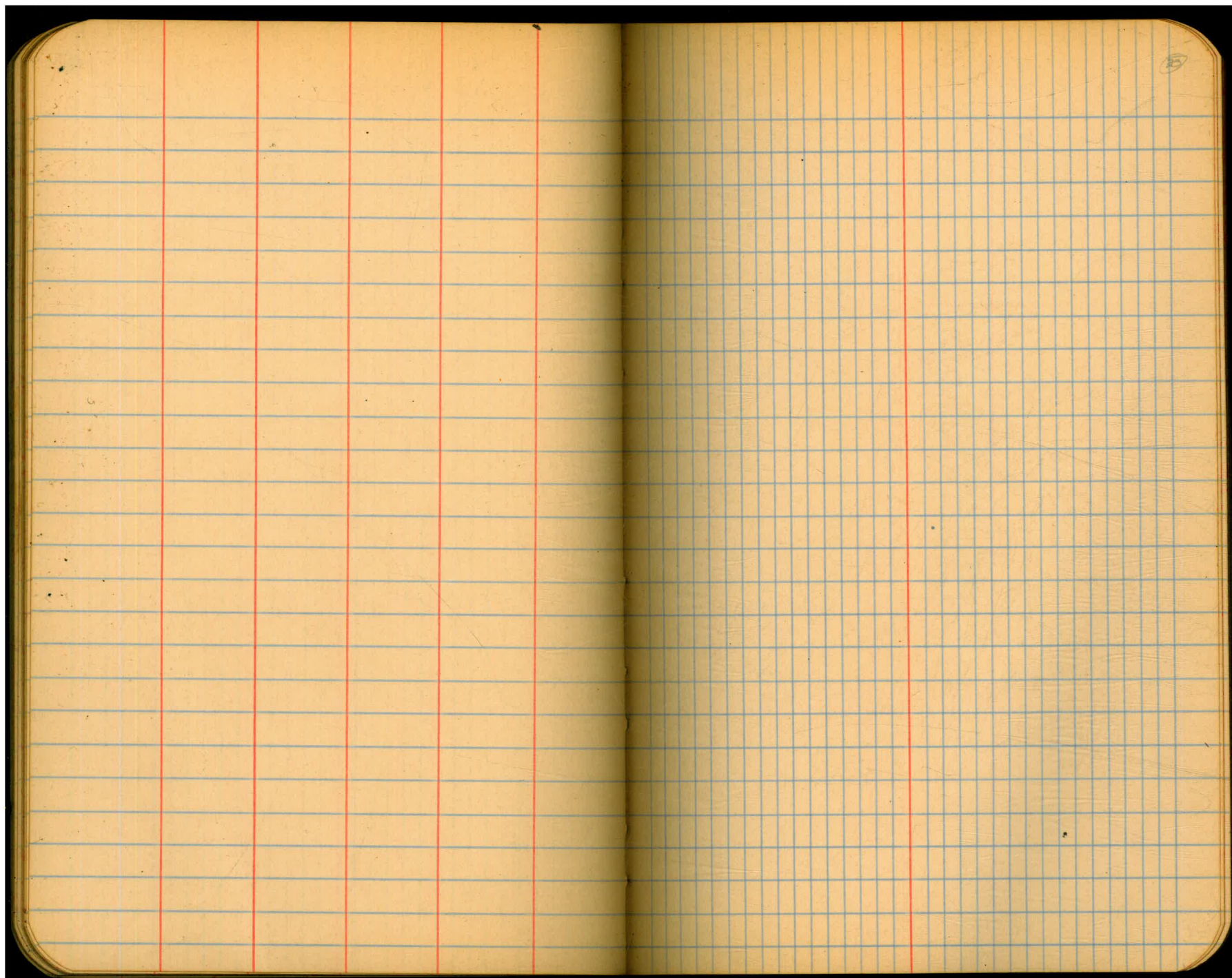
N 80°00 W

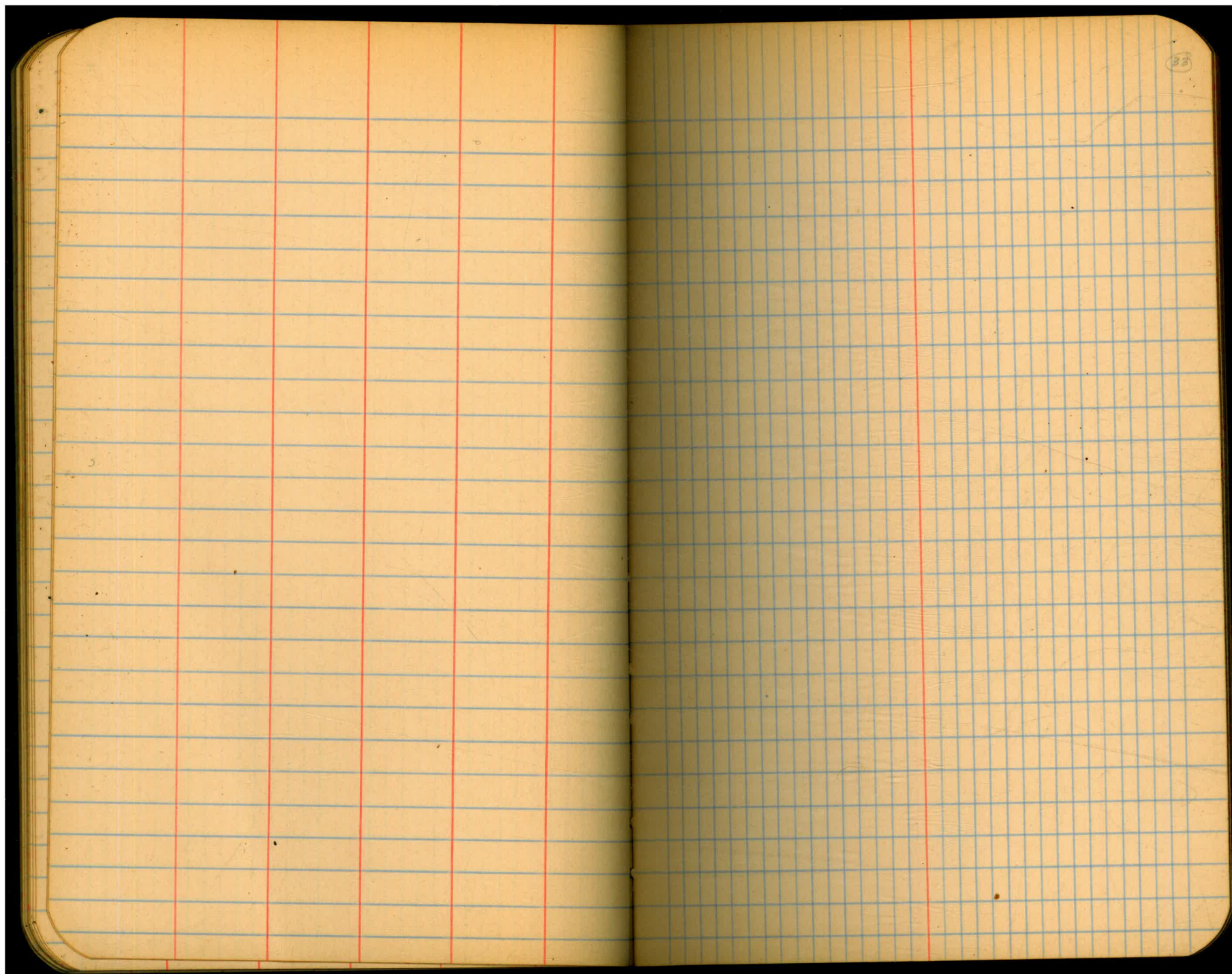
S 82°54 W

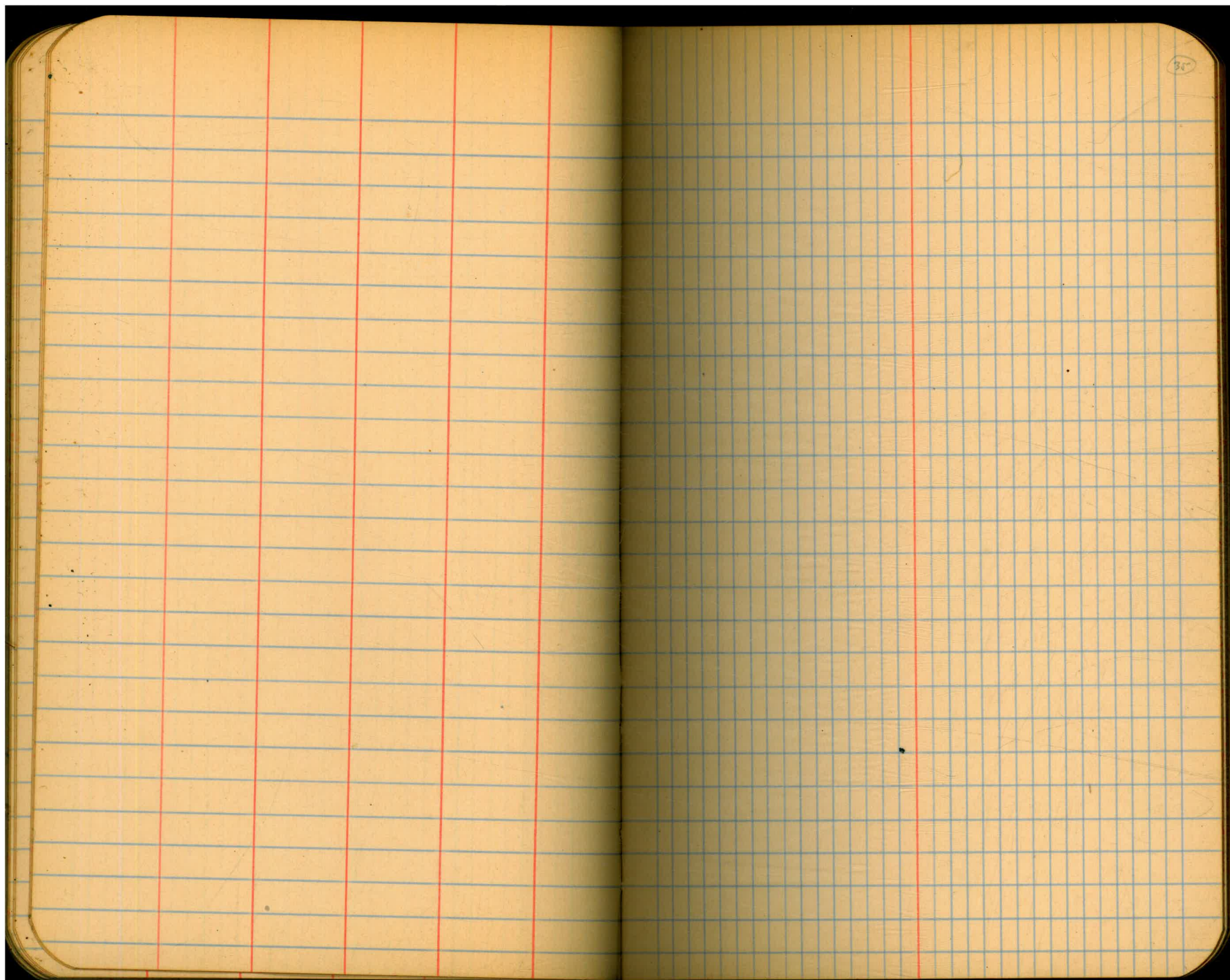


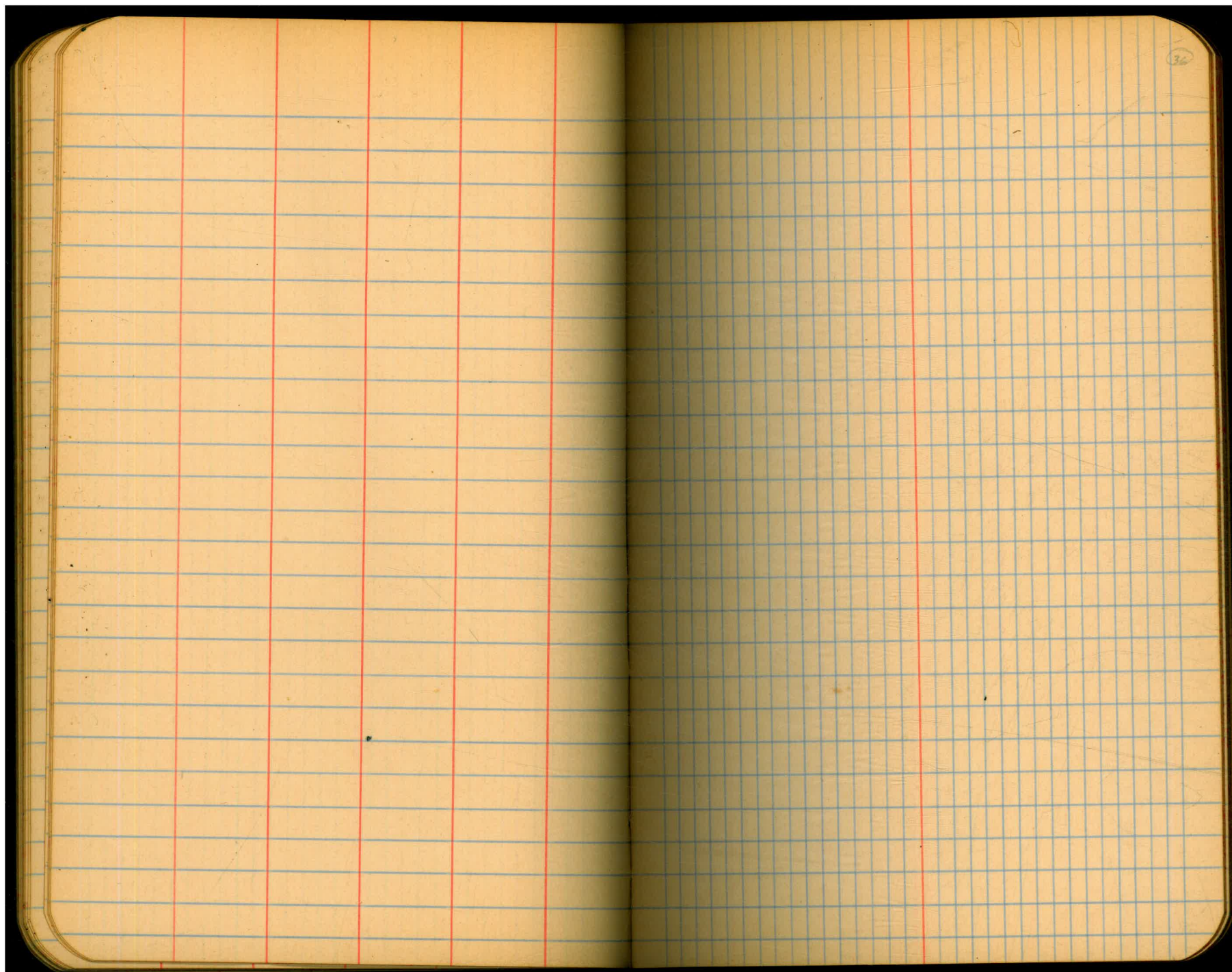


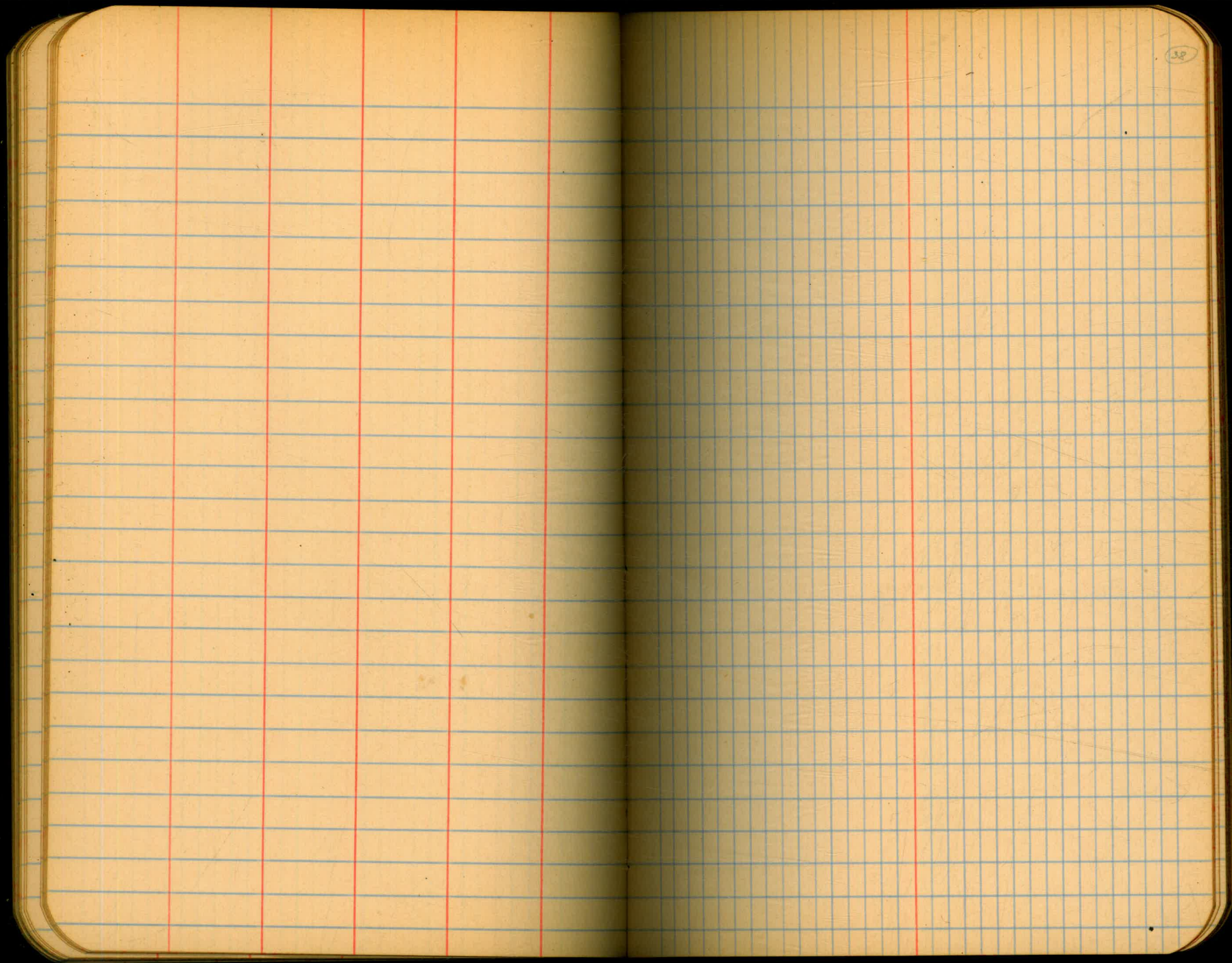


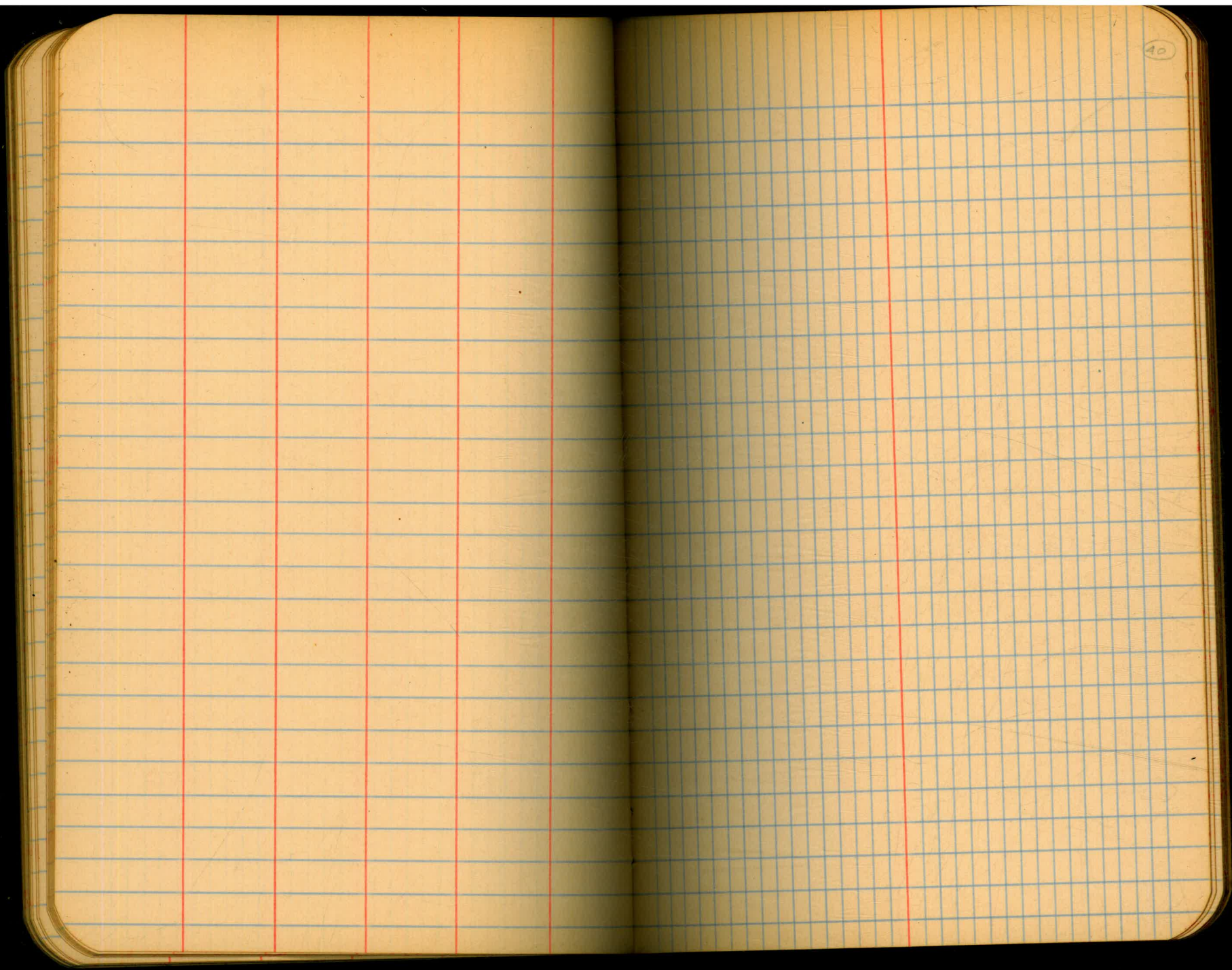


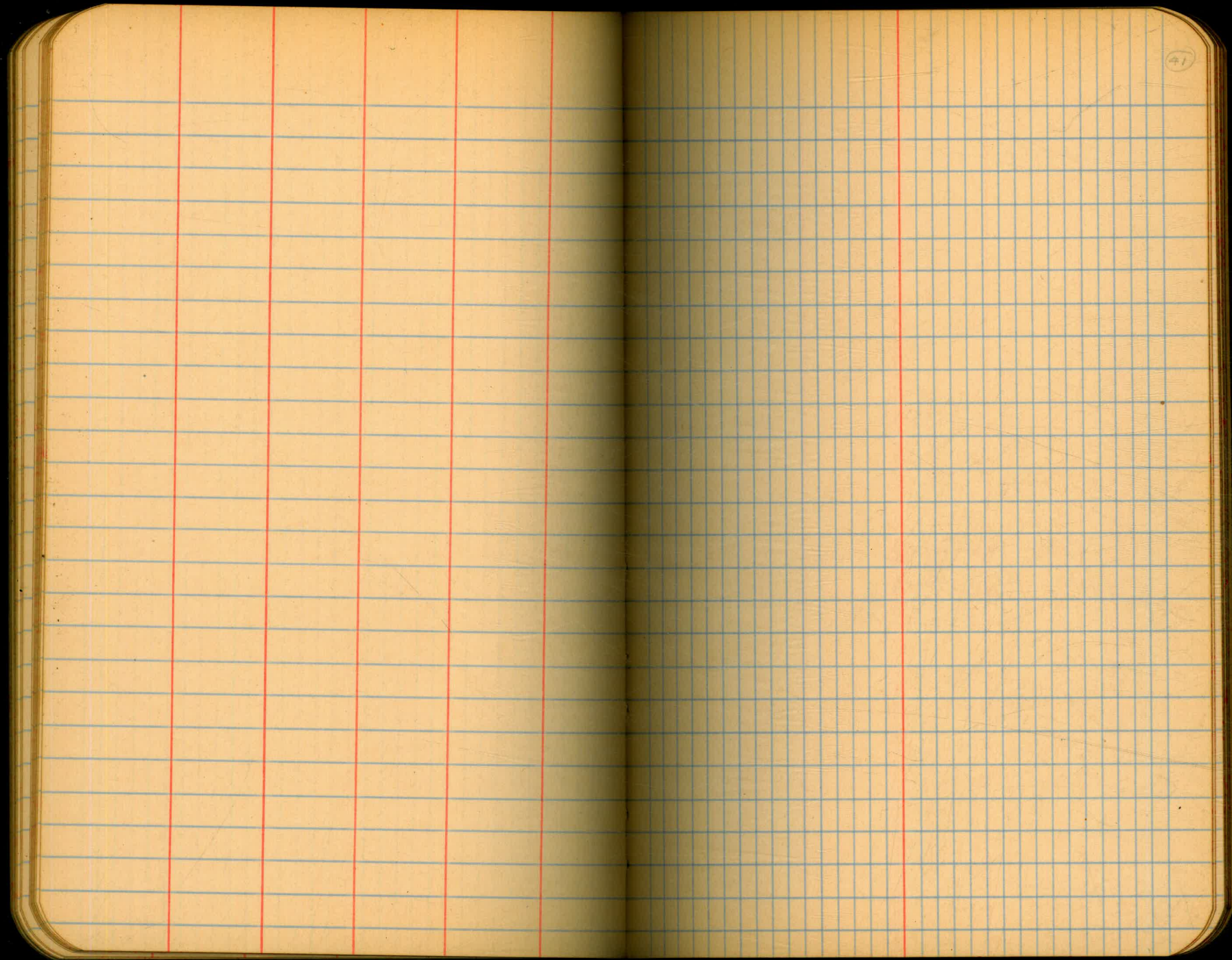


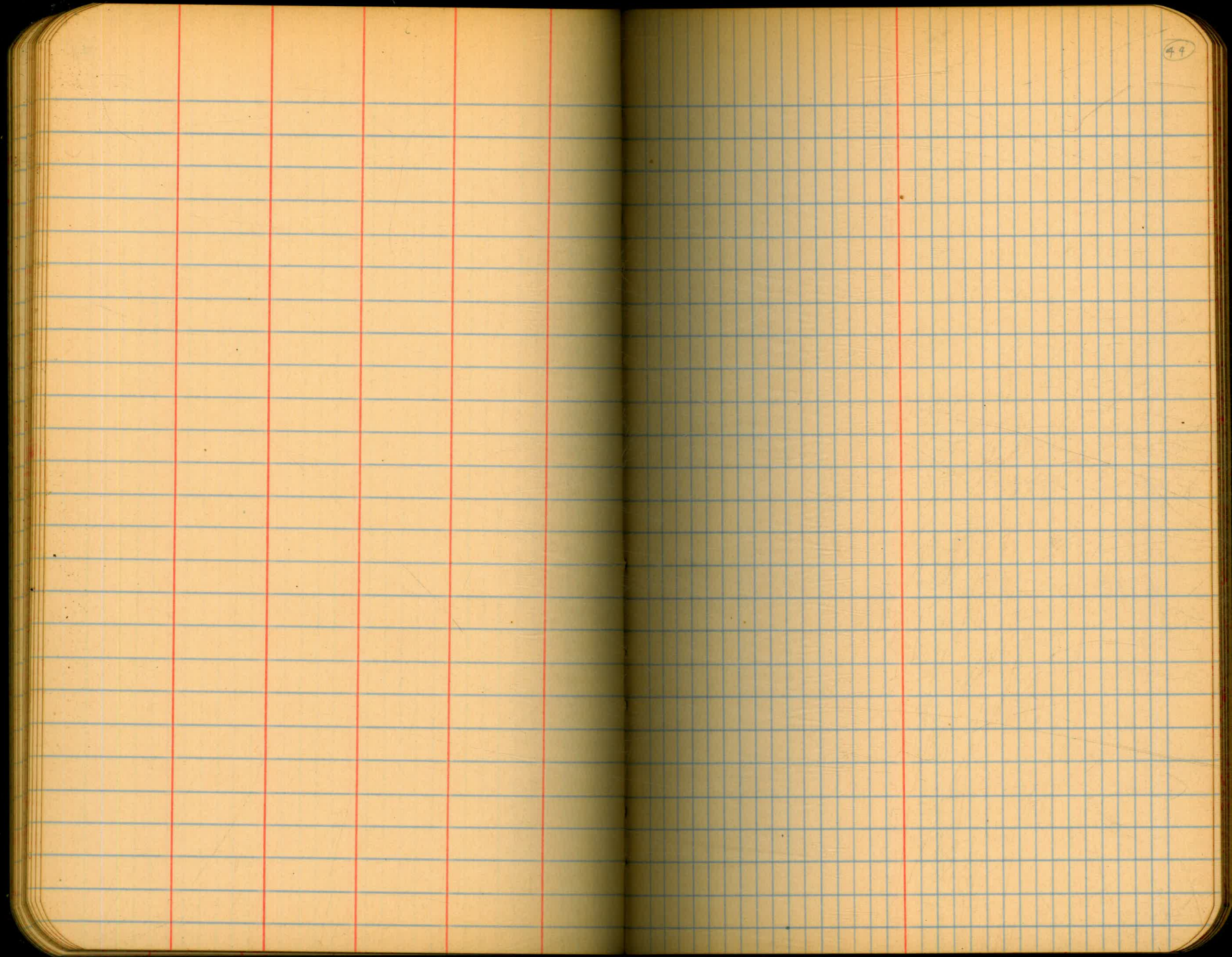




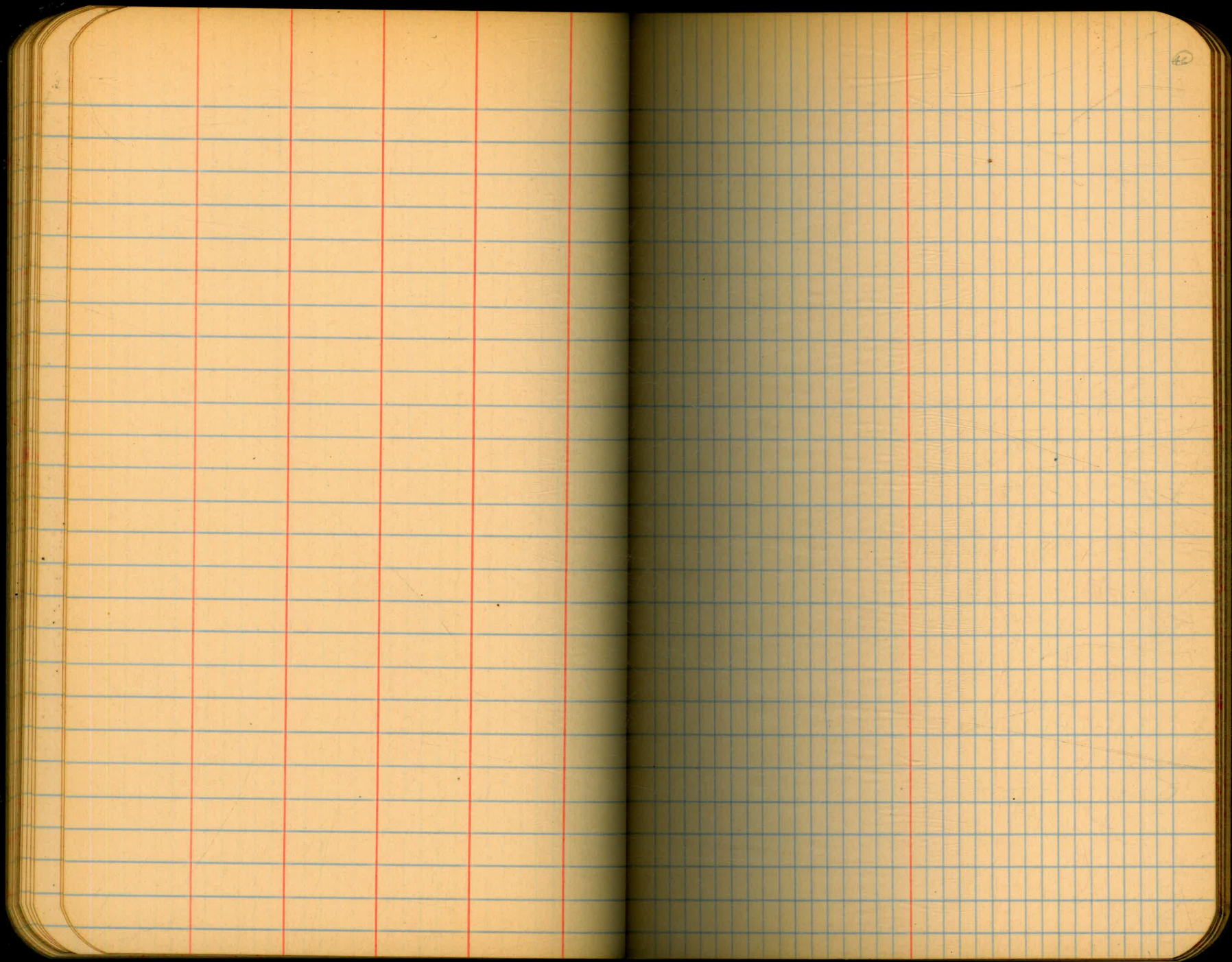


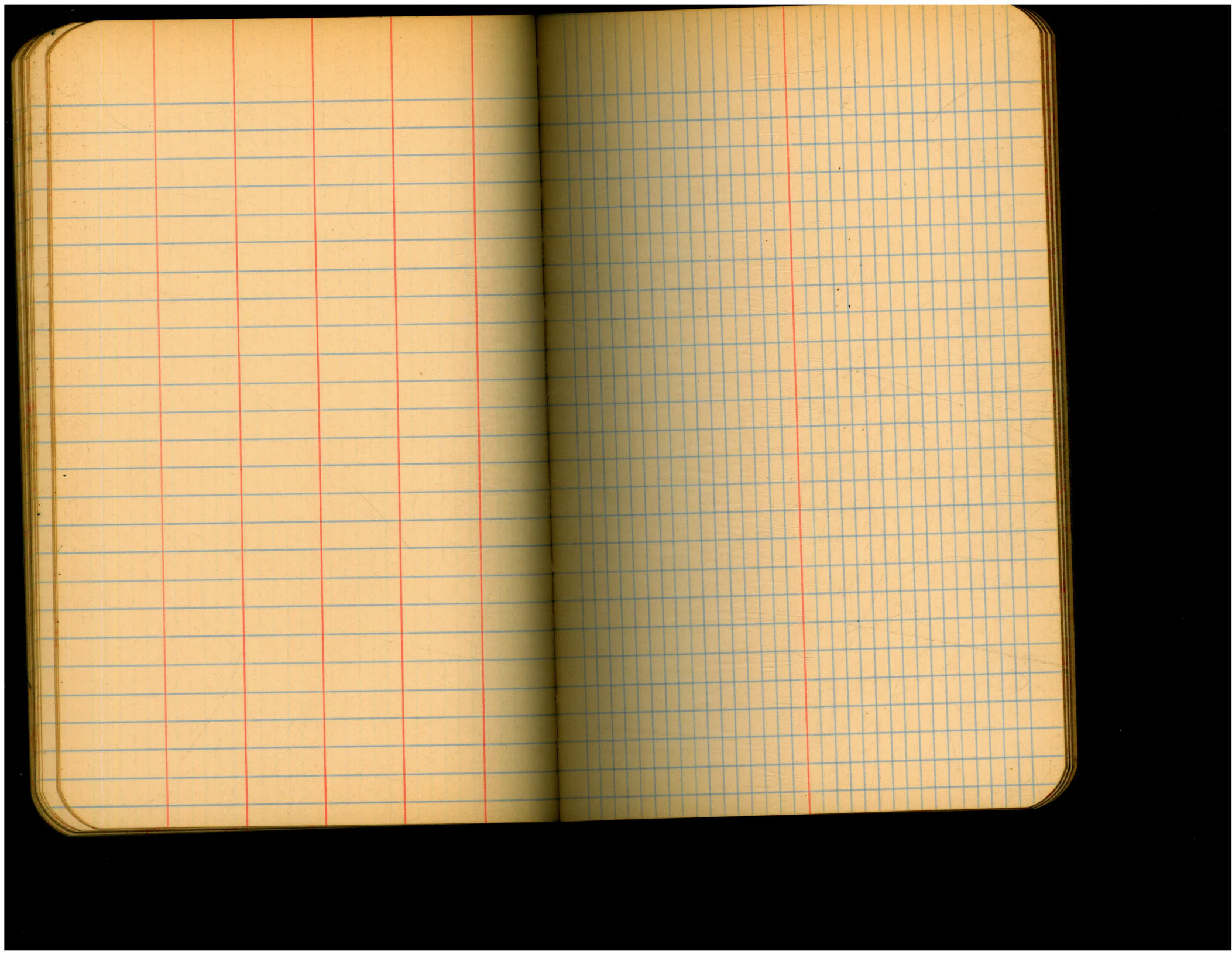












mon to	45.11 Meters	mean in Meters	mon	45. Meter	mean		
224	18	6557.87	6558.13	250	18	2625.36	2625.36
25	"	1877.03	1877.03	51	"	6247.04	6243.9
26	"	4359.80	4357.45	252	"	3681.64	3681.64
27	"	4292.76	4289.22	253	"	5498.50	5495.51
28	"	5868.36	5865.00	254	"	3555.48	3557.06
29	"	5007.86	5006.44	255	"	2461.78	2461.78
30	"	7524.35	7520.53				
31	"	7486.58	7479.59				
32	"	4924.38	4928.89				
33	"	4555.62	4555.80				
34	"	4097.08	4100.79				
35	"	4099.58	5004.59				
36	"	3620.45	3620.64				
237	"	4154.76	4152.94				
238	"	2856.08	2857.50				
39	"	4177.97	4178.98				
40	"	3055.94	3055.94				
41	"	1859.92	1860.80				
42	"	4713.90	4712.10				
43	"	5122.38	5121.45				
244	"	1641.46	1641.47				
245	"	3649.83	3652.37				
46	"	3025.12	3028.35				
47	"	864.54	864.54				
48	"	3665.12	3665.12				
249	"	3103.51	3104.83				

3,28083 ft. = 1 meter

Long. Mon # 258 Pacific 117-7-31.89

519. Cal. - Yuma Ariz. ^{left of Long.}
10. 9.114

Mon

mean lat.
north lat.

Long.

az.

254 32-33 8.0 116-54-26.4 84-17-57

254 32-32-38.6 117-0 12.7 84-14-43

255 32-32 30.6 117-1-46.7 84-14-34

256 32-32-14.4 117-4-54.6 84-12-57

258 32-31-1.0 117-7-31.9

DIRECTIONS FOR USE OF TABLES

TABLE No. 1.

Distance of slope stake from side or shoulder
stake for any width roadway slope 1 1/2 to 1.
If ground is nearly level the cut or fill at side
stake is located by the double entry method in
left column and top row. The number in both

IMPROVED TABLES

AND

INFORMATION

TABLE No. 2.

To find Tangent and External for curve of
any other degree, divide by degree of curve and
add correction found in column of corrections.
Degree of curve with a given T may be found
by dividing tangent (or external) opposite T by
given tangent (or external).

The distance from a point on the tangent to
the curve is very nearly the square of the tangent
length divided by twice the radius.

