

13

FIELD BOOK

361

W106

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.

105-A

Lower Otay Reservoir

~~INDEX~~

Page to Page

Alignment 150' Contour from Harris survey 1906	1 - 20
Sketch showing Error in old notes on West Boundary line Jona's Ranch	- 21
Retrace Hubs on 100' Offset Line to 150' Contour Lower Otay Res.	22
Levels for new chlorinator W.S. Tank 1925	23
Old Hubs found May 1928	1-20
Upper Otay ^{R/W} - Birch property	26

3/9/18 Reservoir Survey 150' Contour

Station to Station	Course	Dist.	L	1/2 L
480 - 1	S 89° 27' E	2346	Interior L	
1	N 32° 08' W	21	57° 14'	28° 57'
2	N 12° 54' E	400	134° 58'	67° 29'
3	N 16° 22' E	275	176° 34'	88° 16'
4	S 68° 24' W	110	307° 58'	153° 59'
5	S 83° 13' W	185	165° 12'	82° 36'
6	S 29° 13' W	135	233° 59'	116° 59' 30"
7	N 49° 49' W	130	79° 04'	39° 31'
8	N 5° 40' E	200	124° 31'	62° 15' 30"
9	N 30° 12' E	189	155° 28'	77° 44'
10	N 8° 13' E	195	123° 59'	61° 59' 30"
11	N 37° 16' E	310	228° 57'	114° 28' 30"
12	N 66° 17' E	360	150° 59'	75° 29' 30"
13	N 58° 18' E	315	187° 59'	93° 59' 30"
14	N 36° 49' E	205	201° 29'	100° 44' 30"
15	N 87° 49' E	90	129° 0'	64° 30'
16	S 50° 40' E	110	138° 29'	69° 14' 30"
17	N 10° 21' E	195	298° 59'	149° 29' 30"
18	N 74° 52' E	190	115° 29'	57° 44' 30"
19	N 45° 53' E	330	208° 59'	104° 29' 30"
20	N 80° 54' E	279	144° 59'	72° 29' 30"
21	S 83° 35' E	225	164° 29'	82° 14' 30"
22	N 51° 26' E	300	224° 59'	112° 29' 30"
23	N 81° 56' E	400	149° 30'	74° 45'
24	N 60° 27' E	385	201° 29'	100° 44' 30"

List of Bisection Sta

118.92	
120.29	on Boundary between
108.25	✓
100.04	3
227.98	4
100.84	5
112.22	6
157.16	7
117.99	8
107.34	9
113.26	10
109.88	11
103.29	12
100.72	13
101.78	14
110.80	15
106.94	16
196.98	17
118.25	18
103.29	19
104.86	20
100.92	21
108.23	22
103.65	23
101.78	24

BACK 16.05 TO 9 ROAD
CORNERS # 2 and 3

INST. AT 19 ROAD

24 (100 OFF. 150' CONTOUR

SIGHT AT # 23-70' 17' LT.

TO 18 ROAD

(INST. AT (23) SIGHT AT 16
24° 51' L TO 22

15 INST. AT 14 SIGHT AT 13

840' LT.

5840 BACK TO

Note 22 set at 113.23 on account
of Road - 308 spike in Rd

INST. AT 16 SIGHT AT 17

9431 - RT TO (23) (81.90')

150' Contour

Station to	Sta	Bearing	Dist	L	1/2 L
25 -	26	N 89° 03' W	185 ✓	329° 30'	164° 45'
26	27	N 83° 33' W	270 ✓	174° 30'	87° 15'
27	28	S 71° 58' W	100 ✓		
28	29	N 22° 32' W	100 ✓		
29	30	N 28° 58' E	130 ✓		
30	31	N 37° 59' E	270 ✓	270° 28'	135° 14'
31	32	N 52° 29' W	260 ✓	249° 28'	124° 44'
32	33	S 58° 03' W	340 ✓	216° 28'	108° 14'
33	34	S 21° 35' W	285 ✓	182°	91°
34	35	S 19° 35' W	270 ✓	149° 30'	74° 45'
35	36	S 50° 05' W	350 ✓	153° 30'	76° 45'
36	37	S 76° 35' W	115 ✓	223° 29'	111° 44' 30"
37	38	S 33° 06' W	185 ✓	106° 0'	53° 0'
38	39	N 72° 54' W	155 ✓	152° 30'	76° 15'
39	40	N 45° 24' W	185 ✓	217° 29'	108° 44' 30"
40	41	N 82° 53' W	215 ✓	113° 29'	56° 44' 30"
41	42	N 16° 22' W	355 ✓	276°	138° 0'
42	43	S 67° 38' W	155 ✓	112° 59'	56° 29' 30"
43	44	N 45° 21' W	270 ✓	176°	88° 0'
44	45	N 41° 21' W	170 ✓	204° 59'	102° 29' 30"
45	46	N 66° 20' W	185 ✓	117° 29'	58° 44' 30"
46	47	N 3° 49' W	190 ✓	192° 59'	96° 29' 30"
47	48	N 16° 48' W	250 ✓	164° 30'	82° 15'
48	49	N 1° 42' E	230 ✓	164° 29'	82° 14' 30"
49	50	N 17° 13' E	275 ✓		

Dist

Bisection

Sta

380.18	25
100.12	26
100.01	27
100.01	28
100.01	29
100.01	30
147.00	31
121.68	32
105.29	33
100.01	34
103.65	35
107.73	36
107.66	37
125.21	38
107.95	39
105.60	40
119.59	41
149.45	42
119.92	43
100.06	44
102.42	45
116.98	46
100.65	47
101.32	48
100.92	49

P.O.B. of Large Rock in Creek Bottom
66-14 1/2

INST. AT 25 ROAD

SIGHT 2A ROAD

66° 14 1/2' E To #26 CONTOUR
(117.2')

150' Contour

Sta	to Sta	Bear	List	L	1/2 L
50	- 51	N80°13'E	310	117°	58° 30'
51	52	N25°41'W	300	285° 58'	142° 59'
52	53	N39°15'W	170	193 30	96° 45'
53	54	N0°15'W	100	141°	70° 30'
54	55	N44°15'E	145	135° 30'	67° 45'
55	56	S89°45'E	115	134° 0'	67° 0'
56	57	N39°15'E	100	231°	115° 30'
57	58	N24°45'W	150	242°	121°
58	59	N22°45'E	120	134° 30'	67° 15'
59	60	N7°15'W	100	210°	105°
60	61	N1°46'E	375	170° 59'	85° 29' 30"
61	62	N16°13'W	320	197° 59'	98° 59' 30"
62	63	N3°18'E	255	160° 29'	80° 14' 30"
63	64	N22°48'E	103	160° 30'	80° 15'
64	65	N61°48'E	95	141° 0'	70° 30'
65	66	S71°42'E	200	133° 30'	66° 45'
66	67	S59°41'E	385	167° 59'	83° 59' 30"
67	68	S72°40'E	295	192° 59'	96° 29' 30"
68	69	S52°39'E	345	159° 01'	79° 30' 30"
69	70	S82°08'E	140	209° 29'	104° 44' 30"
70	71	N70°53'E	190	206° 59'	103° 29' 30"
71	72	S87°06'E	265	157° 59'	78° 59' 30"
72	73	S77°35'E	235	170° 29'	85° 14' 30"
73	74	S86°35'E	170	189°	94° 30'
74	75	S60°34'E	290	153° 59'	76° 59' 30"

Bisected

List	Sta
117.28	50
166.10	51
100.70	52
106.08	53
108.04	54
108.64	55
110.79	56
116.66	57
108.44	58
103.52	59
100.31	60
101.24	61
101.47	62
101.46	63
106.08	64
108.84	65
100.55	66
100.65	67
101.70	68
103.40	69
102.84	70
102.11	71
100.35	72
100.31	73
102.64	74

150' Contour

Sta	to Sta	Bearing	Dist	L.	$\frac{1}{2}$ L
75	to 76	S53°33'E	145	177.59	86°29'30"
76	77	S26°32'E	230	152.59	76°29'30"
77	78	N48°00'E	400	285.28	142°44'
78	79	N84°01'E	67	143.59	71°59'30"
79	227	North	319.2	84°01'	42°00'30"
80	81	Continued page 10			
81	82				
82	83				
83	84				
84	85				
85	86				
86	87				
87	88				
88	89				
89	90				
90	91				
91	92				
92	93				
93	94				
94	95				
95	96				
96	97				
97	98				
98	99				
99	100				

Dist on

Bisection	Sta
100.19	75
102.85	76
165.15	77
105.15	78
100.55 on Boundary	79

150' Contour

Sta. to	Sta	Bearing	Dist	L	$\frac{1}{2}L$
100	to 101				
101	102				
102	103				
103	104				
104	105				
105	106				
106	107				
107	108				
108	109				
109	110				
110	111				
111	112				
112	113				
113	114				
114	115				
115	116				
116	117				
117	118				
118	119				
119	120				
120	121				
121	122				
122	123				
123	124				
124	125				

Dist. on
Bisection

Sta

150' Contour

Sta to Sta	Bear.	Dist.	α	$\frac{1}{2} \alpha$
125 to 126				
126		127		
127		128		
128		129		
129		130		
130		131		
131		132		
132		133		
133		134		
134		135		
135		136		
136		137		
137		138		
138		139		
139		140		
140		141		
141		142		
142		143		
143		144		
144		145		
145		146		
146		147		
147		148		
148		149		
149		150		

Dist. of
Bisection

Sta

6

150' Contour

Sta	to Sta	Bearing	Dist.	L	$\frac{1}{2}$ L
150	to 151				
151	152				
152	153				
153	154				
154	155				
155	156				
156	157				
157	158				
158	159				
159	160				
160	161				
161	162				
162	163				
163	164				
164	165				
165	166				
166	167				
167	168				
168	169				
169	170				
170	171				
171	172				
172	173				
173	174				
174	175				

Dist of
Bisection pta.

7

150' Contour

Sta to Sta	Bearing	Dist.	L	$\frac{1}{2}$ L
200 to 201				
201	202			
202	203			
203	204			
204	205			
205	206			
206	207			
207	208			
208	209			
209	210			
210	211			
211	212			
212	213			
213	214			
214	215			
215	216			
216	217			
217	218			
218	219			
219	220			
220	221			
221	222			
222	223			
223	224			
224	225			

Dist. of
Bisection

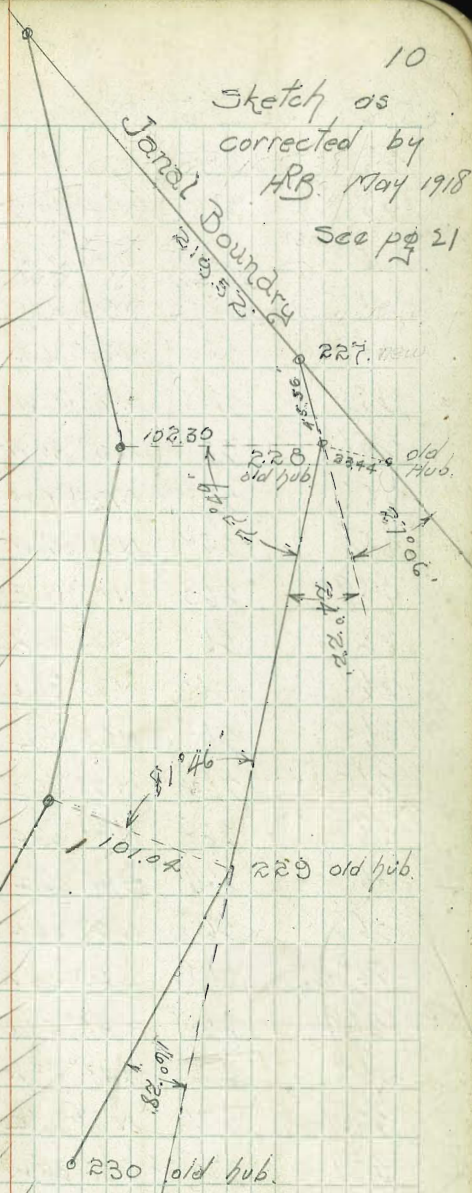
Sta.

9

Sta	to Sta	Bearing	Dist.	∠	1/2 ∠
150	Contour				
225	to 226				
226	227	North Continued from page 4			
227	228	S 27° 06' W	54' 45.36	532° 54'	166° 27'
228	229	S 54° 36' W	225	152° 30'	76° 15'
229	230	S 68° 36' W	255	155° 38'	77° 49'
230	231	S 71° 06' W	500	166° 00'	83° 00'
231	232	S 88° 36' W	315	163° 32'	81° 46'
232	233	S 88° 06' W	230	177° 30'	88° 45'
233	234	N 79° 54' W	200	162° 30'	81° 15'
234	235	N 64° 24' W	185	184° 30'	92° 15'
235	236	S 88° 36' W	100	164° 00'	82° 00'
236	237	N 78° 54' W	355	161° 30'	80° 45'
237	238	S 80° 06' W	265	210°	105° 00'
238	239	N 87° 54' W	330	167° 30'	83° 45'
239	240	S 41° 06' W	295	201°	100° 30'
240	241	S 56° 06' W	80	168°	84° 00'
241	242	N 89° 24' W	205	251°	125° 30'
242	243	S 47° 06' W	315	145°	72° 30'
243	244	S 44° 06' W	155	145° 30'	72° 45'
244	245	S 54° 06' W	185	223° 30'	111° 45'
245	246	S 21° 06' W	500	183° 00'	91° 30'
246	247	S 8° 06' W	350	172°	86° 00'
247	248	S 28° 06' W	150	211°	105° 30'
248	249	S 51° 06' W	170	193°	96° 30'
249	250	N 2° 54' W	200	160°	80° 00'
				157°	78° 30'
				54°	27°

Dist. of
Bisection Sta.

on Boundary	227
219.52	228
102.30	229 ✓
101.04	230 ✓
100.02	231 ?
101.18	232 ✓
100.08	233 ✓
100.98	234 ✓
101.32	235 ?
103.52	236 ✓
100.60	237 ✓
101.70	238 ✓
100.55	239 ✓
122.82	240 ✓
100' at RL	241 ✓
100' at RL	242 ✓
107.66	243 ✓
100.03	244 ✓
100.24	245 ✓
103.77	246 ✓
100.65	247 ✓
100' at RL	248 ✓
102.05	249 ✓
220.27	250 ✓



150' Contour

Sta	to Sta	Bearing	Dist	Σ	1/2 Σ
250	to 251	N10°36'E	230	166°30'	83°15'
251	252	N19°24'W	210	210°0'	105°0'
252	253	N14°24'W	200	175°0'	87°30'
253	254	N19°06'E	155	146°30'	73°15'
254	255	N31°06'E	225	168°0'	84°0'
255	256	N8°54'W	225	240°0'	110°0'
256	257	N28°24'W	230	199°30'	99°45'
257	258	N17°54'W	280	169°30'	84°45'
258	259	N2°06'	180	160°0'	80°0'
259	260	N17°36'E	195	164°30'	82°15'
260	261	N53°06'E	100	144°30'	72°15'
261	262	N70°06'E	315	163°0'	81°30'
262	263	N63°06'E	465	187°0'	93°30'
263	264	N25°36'E	235	217°30'	108°45'
264	265	N31°06'E	175	174°30'	87°15'
265	266	N45°06'E	380	166°0'	83°0'
266	267	N27°06'E	200	198°0'	99°0'
267	268	S66°06'W	285	321°0'	160°30'
268	269	N85°54'W	260	152°0'	76°0'
269	270	N48°54'W	245	143°0'	71°30'
270	271	N8°36'E	290	122°30'	61°15'
271	272	S53°36'W	130	315°0'	157°30'
272	273	N84°54'W	215	138°30'	69°15'
273	274	S51°06'W	310	224°0'	112°0'
274	275	S12°06'W	320	219°0'	109°30'

Bisected

Dist.	Sta	Remarks
	250	
100' at B	251	
100.09	252	✓
104.43	253	✓
100.55	254	✓
106.42	255	✓
101.47	256	✓
100.42	257	✓
101.54	258	✓ 101.54
100.92	259	✓ 100.92
105.00	260	✓
101.11	261	✓
100.19	262	✓
105.60	263	✓
100.90	264	✓
100.75	265	✓
101.25	266	?
299.57	267	✓
103.06	268	?
105.45	269	?
114.06	270	?
261.31	271	?
106.94	272	?
107.85	273	?
106.08	274	?

150' Contour

Sta	to Sta	Bearing	Dist	L	$\frac{1}{2}L$
275	to 276	S38°36'W	130	153°30'	76°45'
276	277	N88°54'W	100	127°30'	63°45'
277	278	N53°24'W	120	144°30'	72°15'
278	279	N25°24'W	180	152°	76°0'
279	280	N0°54'W	130	155°30'	77°45'
280	281	N22°36'E	200	156°30'	78°15'
281	282	N61°24'W	340	2640	132°0'
282	283	N21°24'W	60	1400	70°0'
283	284	N38°36'E	90	1200	60°0'
284	285	N87°36'E	170	1310	65°30'
285	286	N39°36'E	150	2280	114°0'
286	287	N60°06'E	210	159°30'	79°45'
287	288	N38°06'E	220	202°	101°0'
288	289	N46°36'E	180	171°30'	85°45'
289	290	N66°36'E	110	160°0'	80°0'
290	291	N7°36'E	130	239°0'	119°30'
291	292	N16°06'E	335	171°30'	85°45'
292	293	S56°06'W	165	320°0'	160°0'
293	294	S36°06'W	230	200°0'	100°0'
294	295	S73°36'W	160	144°30'	72°15'
295	296	N34°54'W	150	108°30'	54°15'
296	297	S78°06'W	170	247°0'	123°30'
297	298	N34°54'W	115	113°0'	56°30'
298	299	N28°06'E	170	117°0'	58°30'
299	300	S89°06'W	325	299°0'	149°30'

Bisected.

Dist	Sta
102.73	275 ✓
111.50	276 ✓
105.0	277 ✓
103.06	278 ✓
102.33	279 ✓
102.14	280 ✓
134.56	281 ?
106.42	282 ✓
115.47	283 ✓
109.89	284 ✓
109.46	285 ✓
101.62	286 ✓
101.87	287 ?
100.27	288 ✓
101.54	289 ?
114.90	290 ✓
100.27	291 ✓
292.38	292 ✓
101.54	293 ✓
105.60	294 ✓
123.22	295 ✓
119.92	296 ✓
119.92	297 ✓
117.28	298 ✓
197.03	299 ✓

150' Contour

Sta	to Sta	Bearing	Dist.	L	1/2 L
300	to 301	N66°54'W	195	156°0'	78°0'
301	302	N5°36'E	190	107°30'	53°45'
302	303	N14°36'E	290	171°0'	85°30'
303	304	N34°36'E	200	160°0'	80°0'
304	305	N15°36'E	230	199°0'	99°30'
305	306	N11°24'W	180	207°0'	103°30'
306	307	N28°54'W	130	197°30'	98°45'
307	308	N9°54'W	265	161°0'	80°30'
308	309	N61°06'E	95	109°00'	54°30'
309	310	S84°54'E	120	146°0'	73°0'
310	311	S72°24'E	245	167°30'	83°45'
311	312	N56°54'W	140	344°30'	172°15'
312	313	N40°54'W	155	164°00'	82°0'
313	314	N57°54'W	130	197°00'	98°30'
314	315	N25°36'E	115	96°30'	48°15'
315	316	S67°06'W	205	318°30'	159°15'
316	317	N75°24'W	160	142°30'	71°15'
317	318	N14°54'W	100	119°30'	59°45'
318	319	N23°06'E	209	142°00'	71°00'
319	320	S78°06'W	225	305°00'	152°30'
320	321	S36°06'W	150	222°00'	111°00'
321	322	S89°36'W	130	176°30'	63°15'
322	323	N52°24'W	255	142°00'	71°00'
323	324	N40°24'W	130	168°00'	84°00'
324	325	N66°54'W	120	206°30'	103°15'

Bsected

Dist.	Sta
102.22	300 ✓
124.00	301 ✓
100.31	302 ✓
101.54	303 ✓
101.39	304 ✓
102.84	305 ✓
101.18	306 ✓
101.39	307 ✓
122.83	308 ✓
104.57	309 ✓
100.60	310 ✓
741.56	311 ✓
100.98	312 ✓
101.11	313 ✓
135.04	314 ✓
282.25	315 ✓
105.60	316 ✓
115.76	317 ✓
105.76	318 ✓
216.57	319 ✓
107.11	320 ✓
111.98	321 ✓
105.76	322 ✓
100.55	323 ✓
102.73	324 ✓

began to reset all points 11-5-28

Here

Used Iron Pin this fall short
3 tenths for dist from 318

Here

150' Contour

Sta	to Sta	Bearing	Dist.	L	$\frac{1}{2}L$
✓ 325	to 326	N14°54'W	115	138°0'	69°0'
✓ 326	327	N61°54'W	108	227°0'	113°30'
327	328	S52°59'W	65	245°07'	122°33'30"
328	329	S29°24'E	65	262°23'	131°11'30"
329	330	S11°54'E	92	162°30'	81°15'
330	331	S52°24'E	100	220°30'	110°15'
331	332	S13°54'E	225	141°30'	70°45'
332	350	S11°06'W	140	155°0'	77°30'
333	334				
334	335				
335	336				
336	337				
337	338				
338	339				
339	340				
340	341				
341	342				
342	343				
343	344				
344	345				
345	346				
346	347				
347	348				
348	349				
349	350				

Dist on

Bisection

Sta

111.26	325 ✓
109.04	326 ✓
118.65	327
132.89	328
101.18	329
106.59	330 ✓
105.92	331 ✓
102.43	332 ✓

set nail in spillway channel
Here -

14

150' Contour
cont from page 14.

Sta	to Sta	Bearing	Dist	L	1/2 L
350	to 351	S45°54'E	130	737°0'	718°30'
351	352	S33°54'E	80	168°0'	84°0'
352	353	S7°24'E	75	153°30'	76°45'
353	354	S42°36'W	140	130°0'	65°0'
354	355	S7°36'W	95	215°0'	107°30'
355	356	S50°06'W	125	137°30'	68°45'
356	357	S64°36'W	150	165°30'	82°45'
357	358	S89°06'W	280	155°30'	77°45'
358	359	S46°54'E	235	316°0'	158°0'
359	360	S2°24'E	90	135°30'	67°45'
360	361	S19°06'W	230	158°30'	79°15'
361	362	S2°06'W	130	197°0'	98°30'
362	363	S5°06'W	275	177°0'	88°30'
363	364	S18°54'E	180	214°0'	107°0'
364	365	S7°24'E	110	158°30'	79°15'
365	366	S2°06'W	170	148°30'	74°15'
366	367	S68°36'W	140	135°30'	67°45'
367	368	S81°06'W	175	167°30'	83°45'
368	369	N79°54'W	140	161°0'	80°30'
369	370	S51°54'E	290	332°0'	166°0'
370	371	S26°24'E	220	154°30'	77°15'
371	372	S61°54'E	220	215°30'	107°45'
372	373	S0°36'W	110	117°30'	58°45'
373	374	S20°36'W	130	160°0'	80°0'
374	375	S17°24'E	180	218°0'	109°0'

Dist of
Bisection

15

Sta	Dist
350	113.79
351	100.55
352	102.73
353	110.34
354	104.85
355	107.30
356	100.81
357	102.33
358	266.95
359	108.04
360	101.79
361	101.11
362	100.03
363	104.57
364	101.79
365	103.90
366	108.04
367	100.60
368	101.39
369	413.36
370	102.53
371	105.00
372	116.97
373	101.54
374	105.76

3/15/35 Replaced with New 2x2" Pin Hub
w.H.S.

3/18/35 -
Dug out old Hub. Replaced with New 2x2" Pin Hub
w.H.S. Fd. old hub Fd. Hub set by F.O.C.

3/18/35
F.O.C.
Set

8/11/19
Here. Not set

3/18/35
Replaced old Hub
Fd. Remains of old Hub.
w.H.S.

3/18/35
Found old Hub

3/18/35
Fd. old Hub

Fd. old Hub

150' Contour

Sta to	Sta	Bearing	Dist	Lat	Long
375	376	S36°06'W	200	126°30'	76°15'
376	377	S57°36'W	110	158°30'	79°15'
377	378	S77°06'W	200	16°30'	80°15'
378	379	N65°54'W	105	143°0'	71°30'
379	380	S27°54'E	115	322°00'	161°00'
380	381	S71°36'W	140	80°30'	40°15'
381	382	S56°06'W	115	195°30'	97°45'
382	383	N76°36'E	145	340°30'	170°15'
383	384	S59°24'E	270	136°0'	68°0'
384	385	S87°54'E	135	208°30'	104°15'
385	386	S74°54'E	140	167°00'	83°30'
386	387	S51°24'E	120	156°30'	78°15'
387	388	S27°24'E	130	156°0'	78°0'
388	389	S20°54'E	135	173°30'	86°45'
389	390	S2°24'E	200	162°00'	81°00'
390	391	S6°36'W	250	171°00'	85°30'
391	392	S5°54'E	200	192°30'	96°15'
392	393	S16°54'E	275	191°00'	95°30'
393	394	S11°24'E	155	174°30'	87°15'
394	395	S0°36'W	170	168°00'	84°00'
395	396	S55°36'W	95	125°00'	62°30'
396	397	N83°54'W	170	139°30'	69°45'
397	398	N76°54'W	185	167°00'	83°30'
398	399	N43°54'W	155	153°00'	76°30'
399	400	S32°36'W	125	283°30'	141°45'

Dist on

Bisected	Sta	Notes
111.98	375	✓ 375 - Fd. old Hub on 150' contour 2/10/25 W.H.S.
101.79	376	✓ 376 - " " " " " " " " " " " "
101.46	377	✓ 377 - " " " " " " " " " " " "
105.45	378	✓ 143°12'
307.15	379	✓
154.77	380	✓ Fd old hub
100.92	381	✓
590.50	382	✓
107.85	383	✓
103.17	384	✓ Fd old hub P.O.Cr.
100.65	385	✓
102.14	386	✓
102.23	387	✓
100.16	388	✓
101.25	389	✓
100.31	390	✓
100.60	391	✓
100.46	392	✓
100.12	393	✓ According to Truss 1140
100.55	394	✓ Note 394 to 395 should be about S23°W
112.74	395	✓ Note 395 to 396 should be about S15°W
106.59	396	✓ { Fd old on xx Road } about S15°W May 5 37°W
100.65	397	✓
102.84	398	✓
161.53	399	✓

150' Gage tour

Sta	to Sta	Bearing	Dist.	L	1/2 L
A00	A01	S75°36'W	170	137°0'	68°30'
A01	A02	S46°36'W	260	209°0'	104°30'
A02	A03	S51°54'E	280	278°30'	139°15'
A03	A04	N82°06'E	210	326°0'	113°0'
A04	A05	S64°54'E	200	147°0'	73°30'
A05	A06	S51°24'E	215	166°30'	83°15'
A06	A07	S38°54'E	160	167°30'	83°45'
A07	A08	S55°24'E	200	196°30'	98°15'
A08	A09	S11°24'E	135	136°0'	68°0'
A09	A10	S45°36'W	170	123°0'	61°30'
A10	A11	S21°54'E	125	247°30'	123°45'
A11	A12	S42°24'E	265	200°30'	100°15'
A12	A13	S31°06'W	220	106°30'	53°15'
A13	A14	S17°54'E	125	229°0'	114°30'
A14	A15	S9°06'W	115	153°0'	76°30'
A15	A16	N86°54'W	270	96°0'	48°0'
A16	A17	N57°54'W	310	151°0'	75°30'
A17	A18	S17°06'W	230	275°0'?	137°30'?
A18	A19	S41°36'W	175	285-00	142-30
A19	A20	S16°54'E	170	155°30'	77°45'
A20	A21	N89°36'E	200	238°30'	119°15'
A21	A22	S62°54'E	140	253°30'	126°45'
A22	A23	S35°54'E	205	152°30'	76°15'
A23	A24	N49°06'E	125	153°0'	76°30'
A24	A25	N80°36'E	150	275°0'	137°30'
				148°30'	74°15'

Dist. or Bisection	Sta.	
107.48	A00	✓
103.29	A01	✓
153.19	A02	✓
108.64	A03	✓
104.29	A04	✓
100.70	A05	✓
100.60	A06	✓
101.05	A07	✓
107.85	A08	✓
113.79	A09	✓
120.27	A10	✓
101.62	A11	✓
124.80	A12	✓
109.89	A13	✓
103.84	A14	✓
134.56	A15	✓
103.29?	A16	✓
148.02	A17	✓
102.33	A18	✓
114.61	A19	✓
124.80	A20	✓
102.95	A21	✓
102.84	A22	✓
148.02	A23	✓
103.90	A24	✓

changed angle & dist. page

150' Contour

Sta	to Sta	Bearing	Dist.	L	$\frac{1}{2}L$
	A25 to A26	S67° 54' E	175	148° 30'	74° 15'
	A26	S41° 24' E	163	153° 30'	76° 45'
	A27	S 52° 24' E	180	144° 00'	72° 00'
	A28	S33° 06' W	150	141° 30'	70° 45'
	A29	S10° 36' W	220	202° 30'	101° 15'
	A30	S22° 06' W	140	166° 30'	83° 15'
	A31	S52° 06' W	140	152° 00'	76° 00'
	A32	S87° 06' W	110	145° 00'	72° 30'
	A33	S10° 54' E	190	269° 00'	134° 30'
	A34	S38° 36' W	110	139° 30'	69° 45'
	A35	S71° 36' W	95	147° 00'	73° 30'
	A36	N40° 54' W	160	112° 30'	56° 15'
	A37	S60° 36' W	130	258° 30'	129° 15'
	A38	S74° 36' W	100	166° 00'	83° 00'
	A39	N85° 54' W	120	160° 30'	80° 15'
	A40	N76° 24' W	200	170° 30'	85° 15'
	A41	N46° 54' W	330	150° 30'	75° 15'
	A42	S4° 24' E	200	317° 30'	158° 45'
	A43	S22° 06' W	145	153° 30'	76° 45'
	A44	S76° 24' E	150	278° 30'	139° 15'
	A45	S57° 54' E	260	161° 30'	80° 45'
	A46	S49° 54' E	190	174° 00'	86° 00'
	A47	S29° 24' E	125	159° 30'	79° 45'
	A48+48	S57° 54' E	155	208° 30'	104° 15'
	A49+88	S52° 06' W	140	70° 00'	35° 00'

18

Dist on	Bisection	Sta	Notes
103.90		A25	✓ Fd 2x2 Rwd P.O.G.
107.73		A26	✓ Fd 2x2 P.O.G.
105.15		A27	Chick's Fence
105.92		A28	Hub of FG set of 10634 $\frac{1}{2}$ Angle = 72° 33'
101.96		A29	$\frac{1}{3}$ Angle to old hub = 101° 07' Dist = 101.76
100.70		A30	Fence set of 10534 Correct dist = 100.70
103.06		A31	✓
104.85		A32	✓
140.70		A33	✓
106.60		A34	✓
104.29		A35	✓
120.27		A36	✓
129.13		A37	✓
100.75		A38	✓
101.46		A39	✓
100.32		A40	✓
103.41		A41	✓
275.91		A42	✓
102.73		A43	✓
153.20		A44	✓
101.32		A45	✓
100.24		A46	✓
101.62		A47	✓
103.17		A48	✓
174.34		A49	✓

150' Coy tour

Sta	to Sta	Bearing	Dist	L	h L
450	to 451	S85°36'W	320	146°30'	73°15'
451	452	S50°24'E	170	316°0'	158°0'
452	453	S46°54'E	200	176°30'	88°15'
453	454	S16°24'E	140	149°30'	74°45'
454	455	S27°36'W	200	136°0'	68°0'
455	456	S23°36'W	200	184°0'	92°0'
456	457	S32°06'W	140	171°30'	85°45'
457	458	S66°36'W	130	145°30'	77°45'
458	459	N88°24'W	150	155°0'	77°30'
459	460	N68°54'W	130	160°30'	80°15'
460	461	N42°54'W	220	154°0'	77°0'
461	462	S11°54'E	325	329°0'	164°30'
462	463	S54°24'E	200	222°30'	111°15'
463	464	S36°24'E	240	162°0'	81°0'
464	465	S25°24'E	240	169°0'	84°30'
465	466	S12°54'E	250	167°30'	83°45'
466	467	S7°54'E	200	175°0'	87°30'
467	468	S3°36'W	300	168°30'	84°15'
468	469	S17°54'E	115	201°30'	100°45'
469	470	S9°06'W	285	153°0'	76°30'
470	471	S23°24'E	190	212°30'	106°15'
471	472	S11°54'E	340	168°30'	84°15'
472	473	S17°36'W	165	150°30'	75°15'
473	474	S32°24'E	95	230°0'	115°0'
474	475	S2°54'E	155	150°30'	75°15'
				171°0'	85°30'

Bisected

Dist Sta

100.184	450	✓
266.95	451	✓
100.05	452	✓
103.65	453	✓
107.85	454	✓
100.06	455	✓
100.27	456	✓
104.71	457	✓
102.33	458	✓
102.43	459	✓
101.46	460	✓
102.63	461	✓
374.20	462	✓
107.30	463	✓
101.25	464	✓
100.46	465	✓
100.60	466	✓
100.09	467	✓
100.51	468	✓
101.79	469	✓
102.84	470	✓
104.16	471	✓
100.51	472	✓
103.41	473	✓
110.34	474	✓
103.41	475	✓
100.31	475	✓

Reset should be 104.71

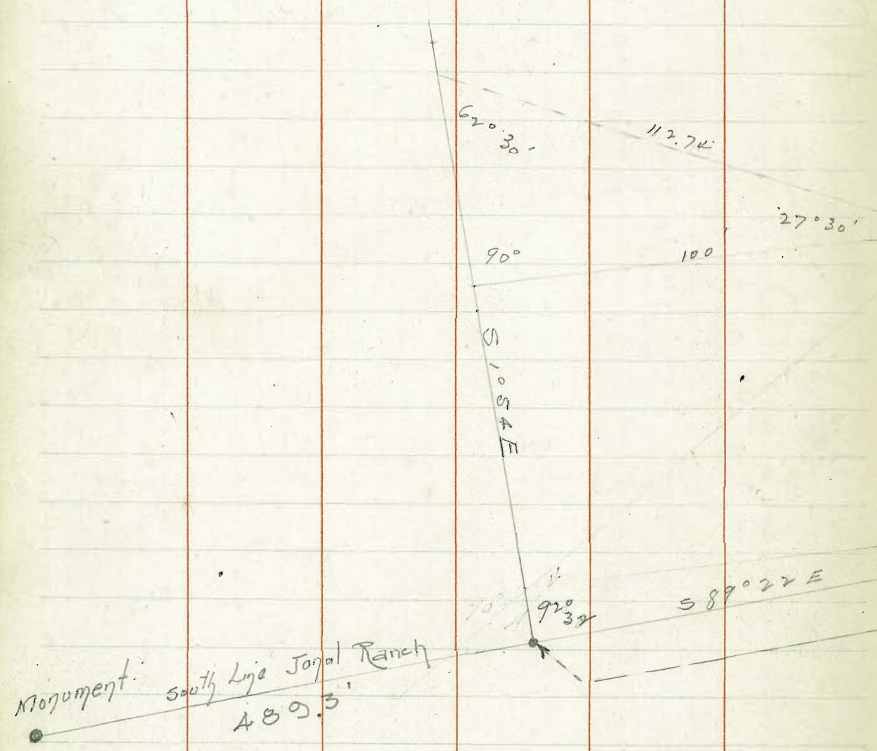
Ed old hub P.06

Fence in proper place

Fence OK from here P.09

150 Contour

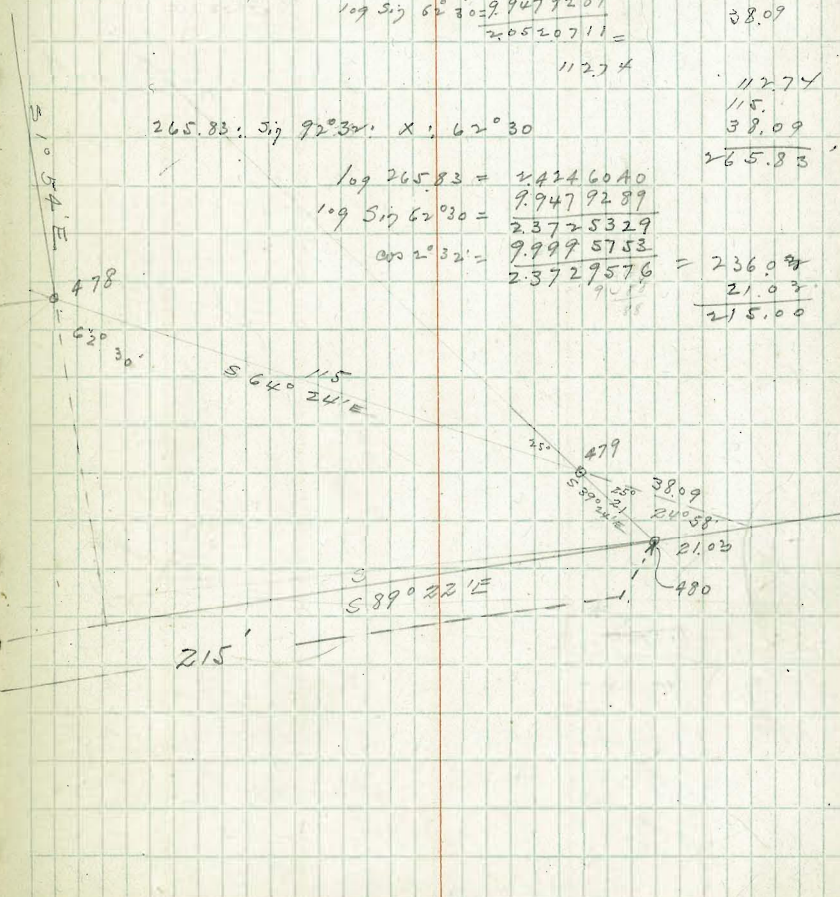
Sta to Sta	Bearing	Dist	L	1/2 L
475 to 476	56°06'W	90'	215°	107°30'
476 to 477	578°54'E	150'	153°	76°30'
477 to 478	51°54'E	125'	267°30'	121°15'
478 to 479	564°24'E	115'	155°0'	77°30'
479 to 480	539°24'E	21'		
480 to 1	589°22'E	2346'		



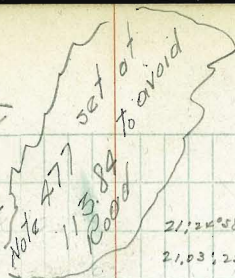
Dist of Bisection

Sta	Dist
476	104.85
477	107.84
478	116.97
479	102.43
480	215

Dist of Boundary



Sta



57.25° =	9.6259483	20
Log 21 =	1.3222193	
57.24°58' =	9.6254060	
21.24°58' x 25	1.3227616	
21.03°25' x 113°02'	21.026	
109.57°13°02' =	9.8840418	
57.62°30' = 100/x	1.3227616	
Log 100 =	2.0000000	
Log 57.62°30' =	9.9479289	
2.0520711 =	9.6259483	
	1.5809551	
	38.09	
	112.74	
	112.74	
	115.	
	38.09	
	265.83	
Log 265.83 =	2.4246040	
Log 57.62°30' =	9.9479289	
2.3725329		
2.0520711 =	9.9995753	
	2.3729576	
	21.03	
	215.00	

265.83: 57.92°32' x 62°30'

Log 265.83 =	2.4246040
Log 57.62°30' =	9.9479289
2.3725329	
2.0520711 =	9.9995753
	2.3729576
	21.03
	215.00

Monument: South Line Jopel Ranch
489.3

Retrace hubs on 100' offset line
to 150' contour Lower Otay Res. E

- 332 Hub found & flagged
350 Plug in pipe found & flagged
351 " " " " "
352 Iron pin " "
353 Plug in pipe " "
354 " " " " "
355 " " " " "
356 " " " " "
357 Hub with tack " "
358 " " " " "
359 Plug in pipe " "
360 Guard-stakes found & flagged
361 " " " " "

362 Plug in pipe found & flagged
363 Guard stake " " at base

Recovery hubs on 100' offset line
to 150' contour L.O. Res. E of Tract B

- 315 Guard stake found & flagged
316 Hub found & flagged
317 Hub " "
318 Hub " "
319 Hub " "

10-8-22

Wueste

Witte

24

= 1st angle point east of Wly line Tract A produced
above PL.
below PL.

about 20' below U.O. PL.

" 20' " " "
above U.O. PL.

25' below junac bush
in spineless cactus patch

" " " " " " " " hubs lying near
near L.O. Road Junction

6' Wly & outside of present fence
present fence cor.

hub probably washed out

Levels for new chlorinator
WS. Tank

11.99	246.99		235.00
12.55	258.88	0.66	246.33
12.80	271.66	0.02	258.86
12.75	283.65	0.76	270.90
11.74	294.38	1.01	282.64
12.59	306.01	0.96	293.42
12.85	317.53	1.33	304.68
12.28	329.63	0.18	317.35
11.76	341.14	0.25	329.38
12.87	353.35	0.66	340.48
12.39	365.20	0.54	352.81
		3.73	361.47

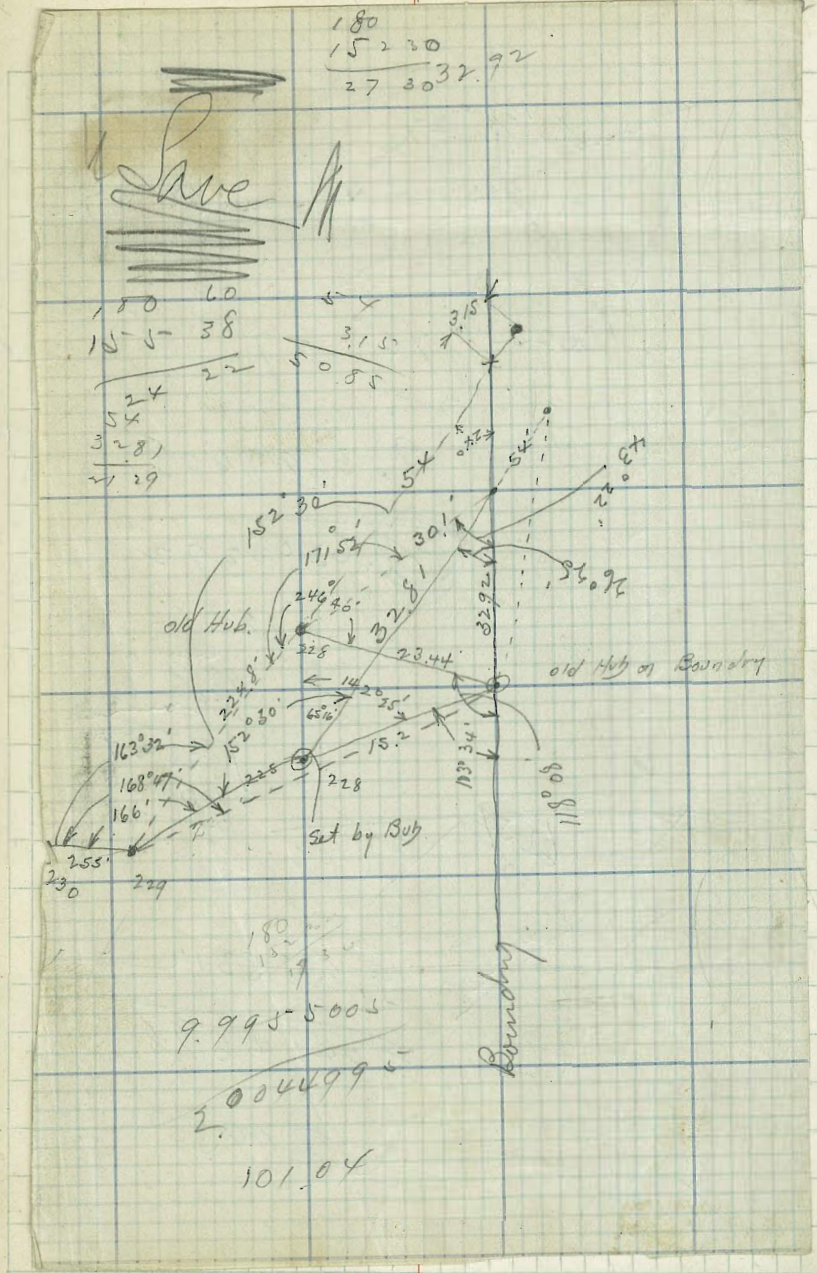
136.57
14.10
126.47
235
361.47

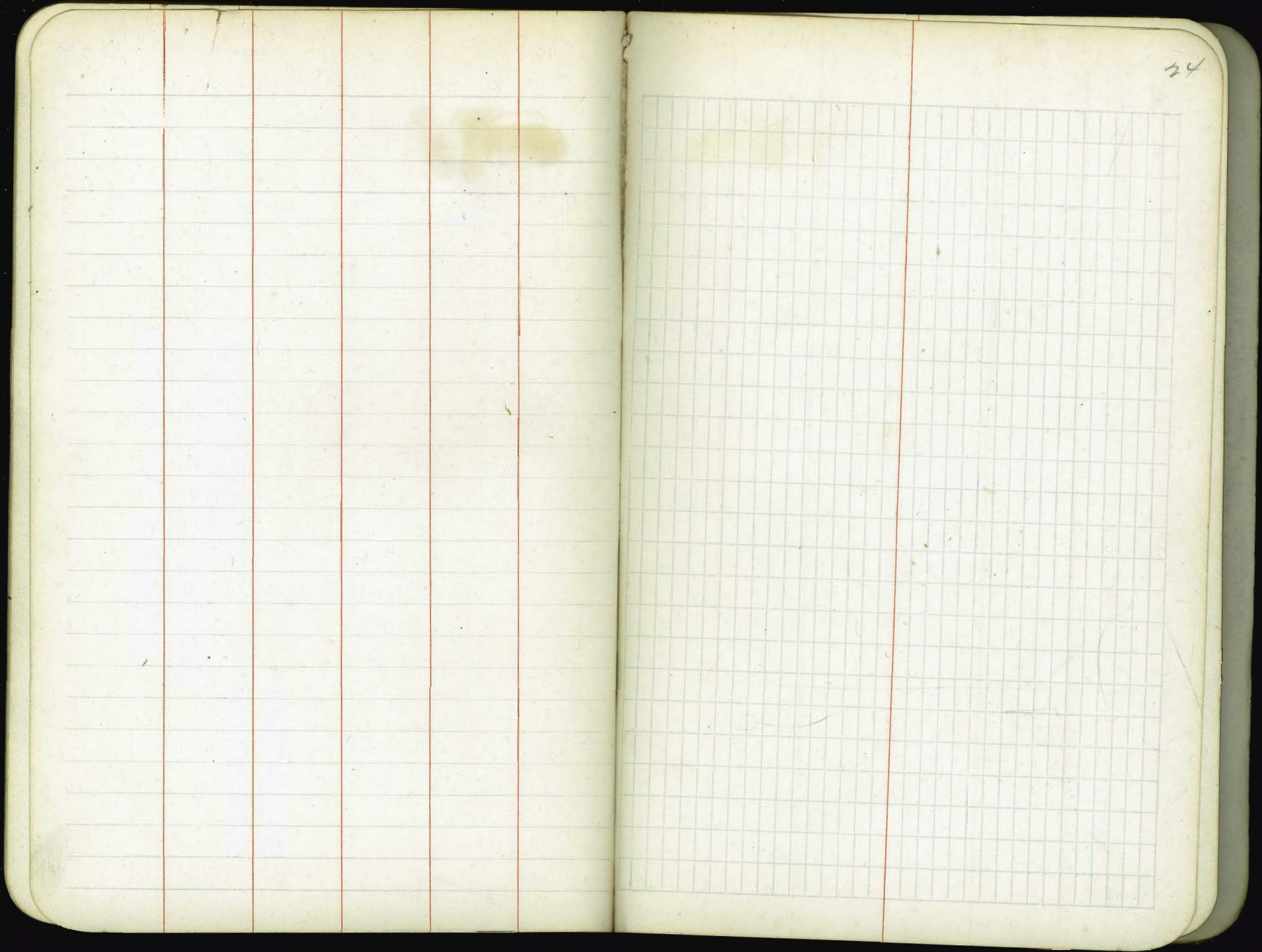
10.10

Dist 850'

Dist present tank to chl H. 1350'

6-21-25
Must
Leak
Top tank





25

Traverse Survey of Proposed Right of way
For Road Through Birch Property at Upper
Otoy.

Hill-Simpson-Soper-Remmen.

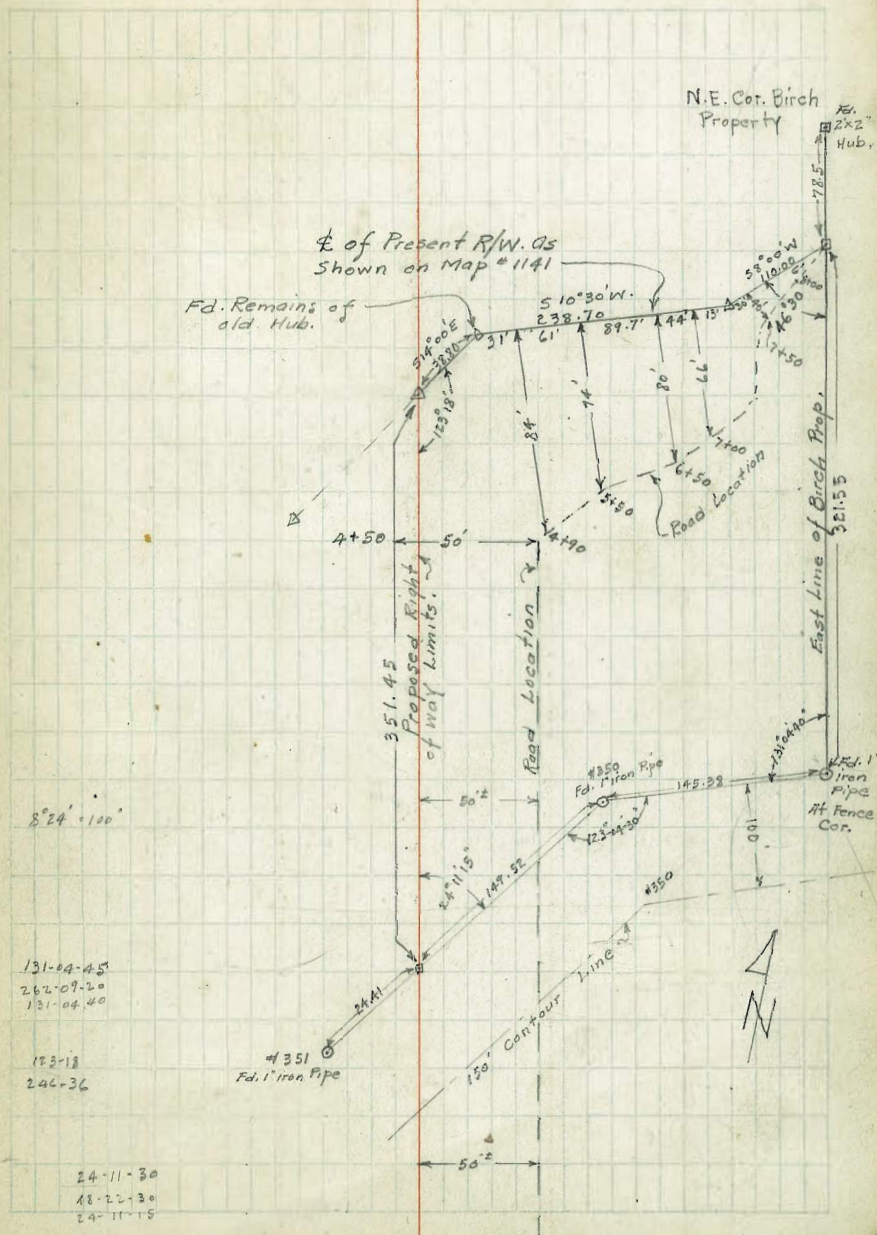
Note: All Angles And Distances Shown on Sketch
Are Measured.

3+51.45 - intersection with $\frac{1}{2}$ of
Present R/W.

0+00

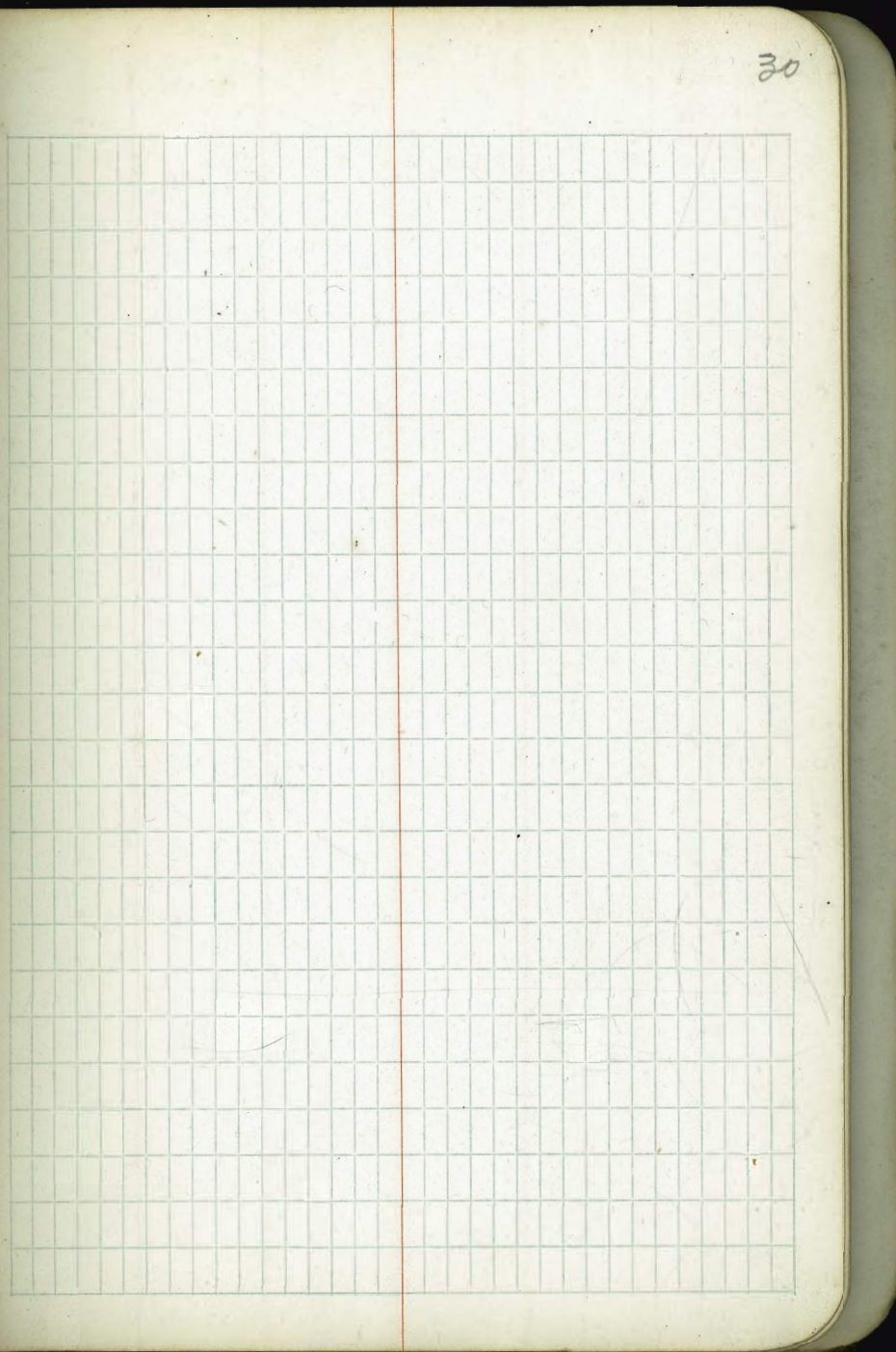
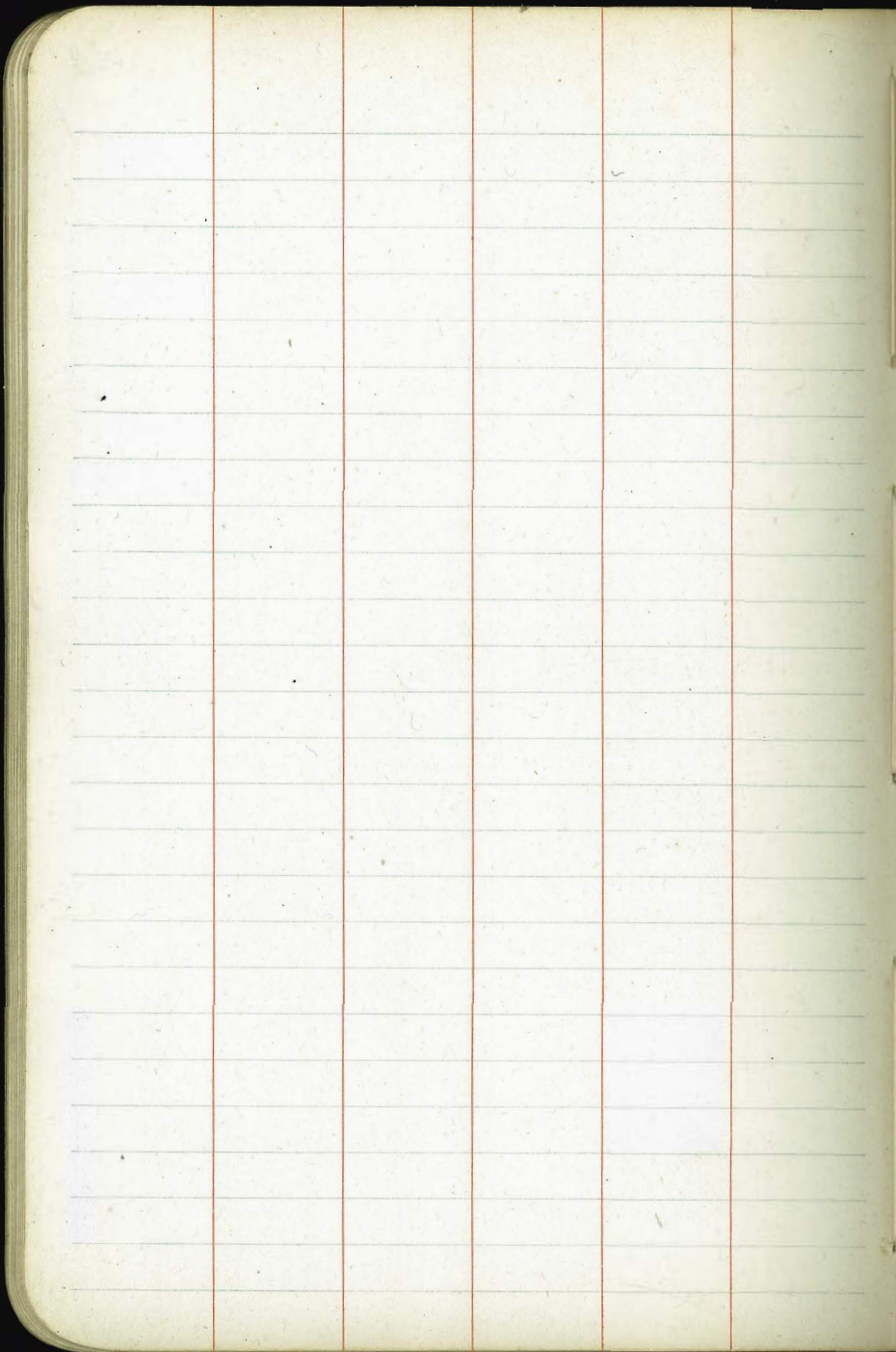
April-11-1935

76



4630'

27



A grid of 20 columns and 20 rows, drawn with light blue lines. A vertical red margin line is positioned to the left of the grid, approximately one-fifth of the way across the page. The grid is empty.

A table with 6 columns and 20 rows. The columns are defined by vertical red lines, and the rows are defined by horizontal blue lines. The table is currently empty.

A table with 20 columns and 20 rows. The columns are defined by vertical blue lines, and the rows are defined by horizontal blue lines. The table is currently empty.

A ledger page with 5 vertical red lines and horizontal blue lines. The lines create 6 columns of varying widths. The page is otherwise blank.

A page with a grid of blue lines and a vertical red line. The grid is approximately 20 columns wide and 25 rows high. The red line is positioned about one-fifth of the way from the left edge of the grid. The page is otherwise blank.

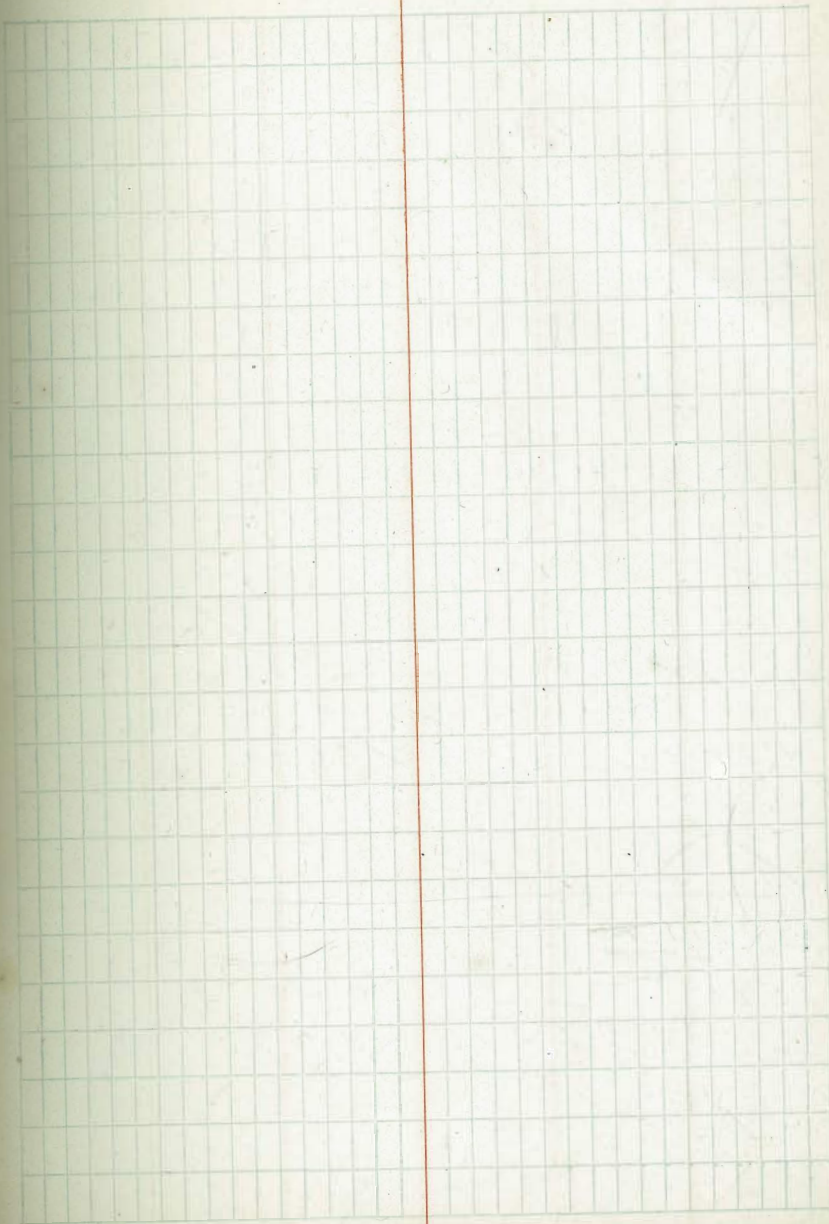
A table with 4 columns and 20 rows. The columns are defined by three vertical red lines. The rows are defined by horizontal blue lines. The table is currently empty.

A table with 10 columns and 20 rows. The columns are defined by nine vertical blue lines. The rows are defined by horizontal blue lines. The table is currently empty.

A ledger page with 6 vertical red lines and horizontal blue lines. The lines create 5 columns of varying widths. The page is otherwise blank.

A ledger page with a grid of blue lines and a vertical red margin line. The grid consists of 10 columns and 20 rows. The red line is positioned between the 5th and 6th columns from the left. The page is otherwise blank.

41



42

This page is a blank ledger sheet. It features horizontal blue ruling lines spaced evenly down the page. There are four vertical red lines that create five columns of varying widths. The columns are roughly in the proportions of 1:1:1:1:2 from left to right. The page is otherwise empty of any text or markings.

This page is a blank grid sheet. It features a vertical red margin line on the left side, creating a narrow left margin. The rest of the page is filled with a grid of small, light blue squares. The grid is approximately 20 squares wide and 25 squares high. The page is otherwise empty of any text or markings.

This page is ruled with horizontal blue lines and features four vertical red margin lines, creating five columns of varying widths. The page is otherwise blank.

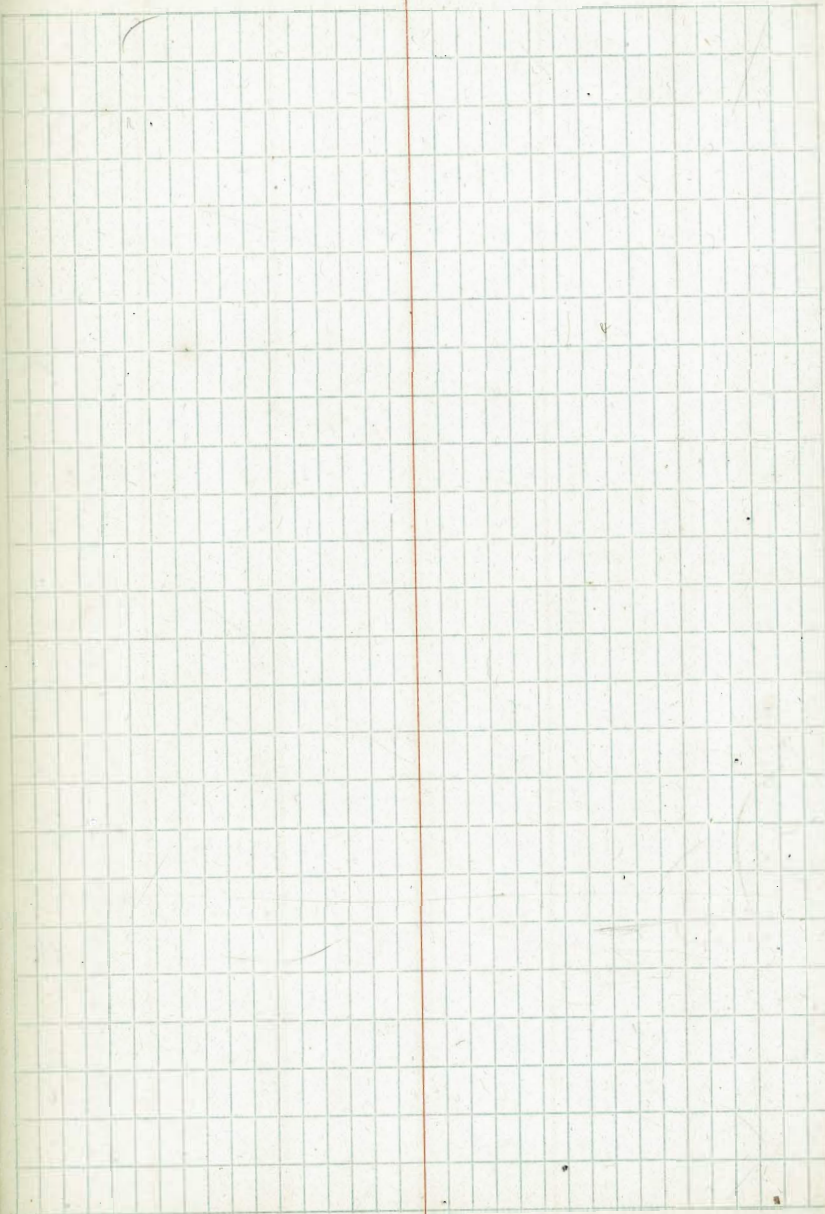
This page is ruled with a green grid pattern. A single vertical red margin line is positioned on the left side of the grid. The page is otherwise blank.

This page features horizontal blue ruling lines spaced evenly down the page. It is divided into five vertical columns by four vertical red lines. The columns are of varying widths, with the two inner columns being the narrowest and the two outer columns being wider. The page is otherwise blank.

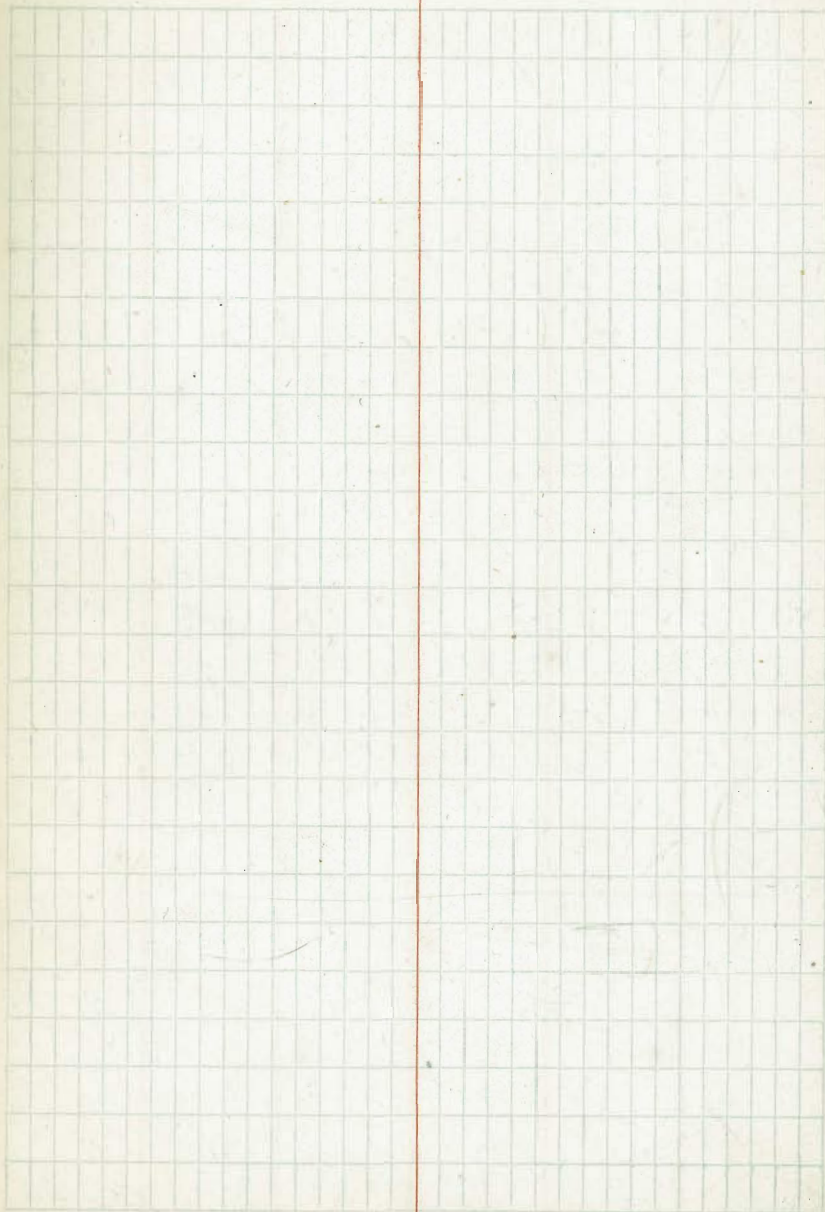
This page contains a full grid of blue lines, forming a series of small squares. A single vertical red line runs down the right side of the page, creating a narrow margin. The grid covers most of the page area, leaving a small margin at the top and bottom. The page is otherwise blank.

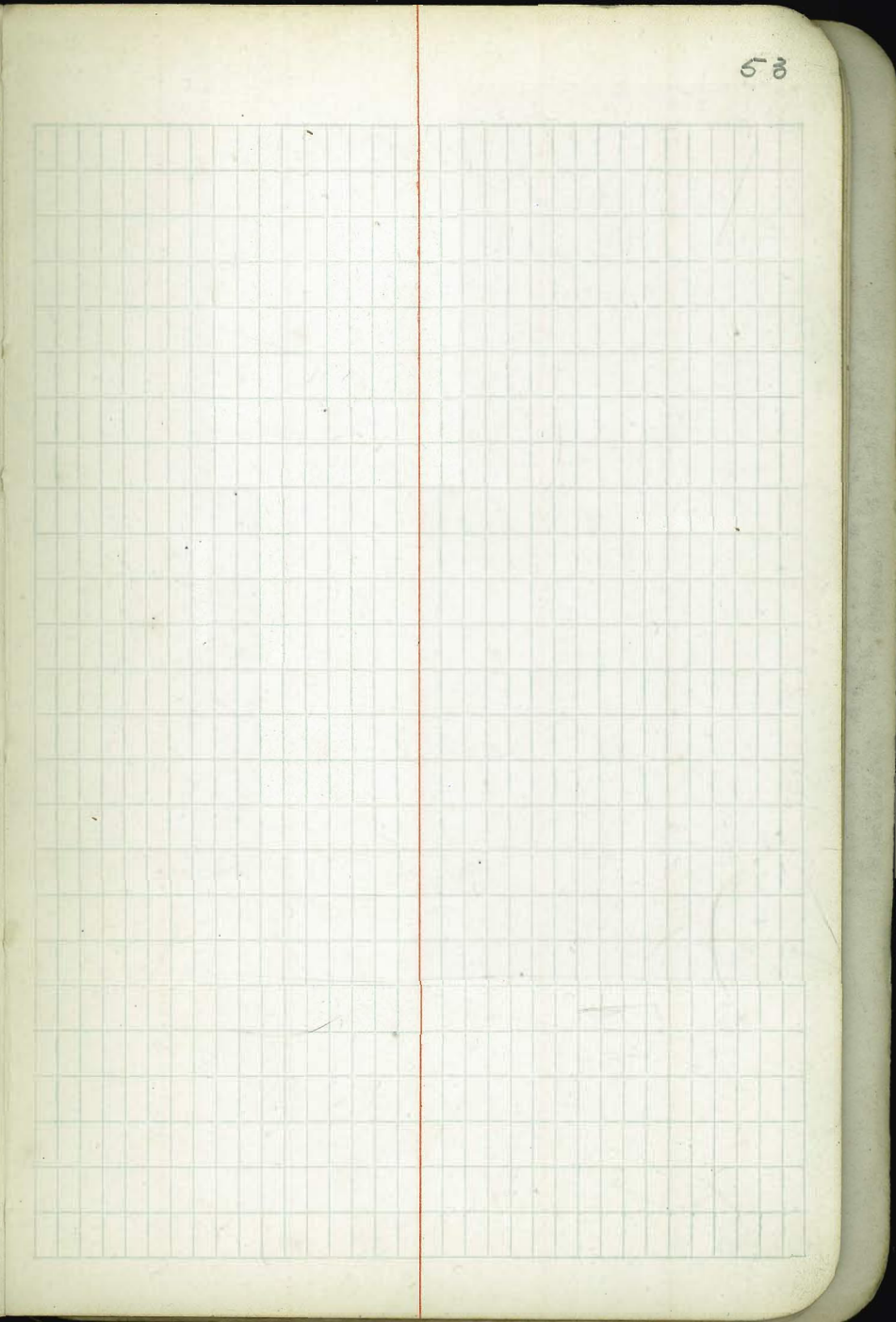
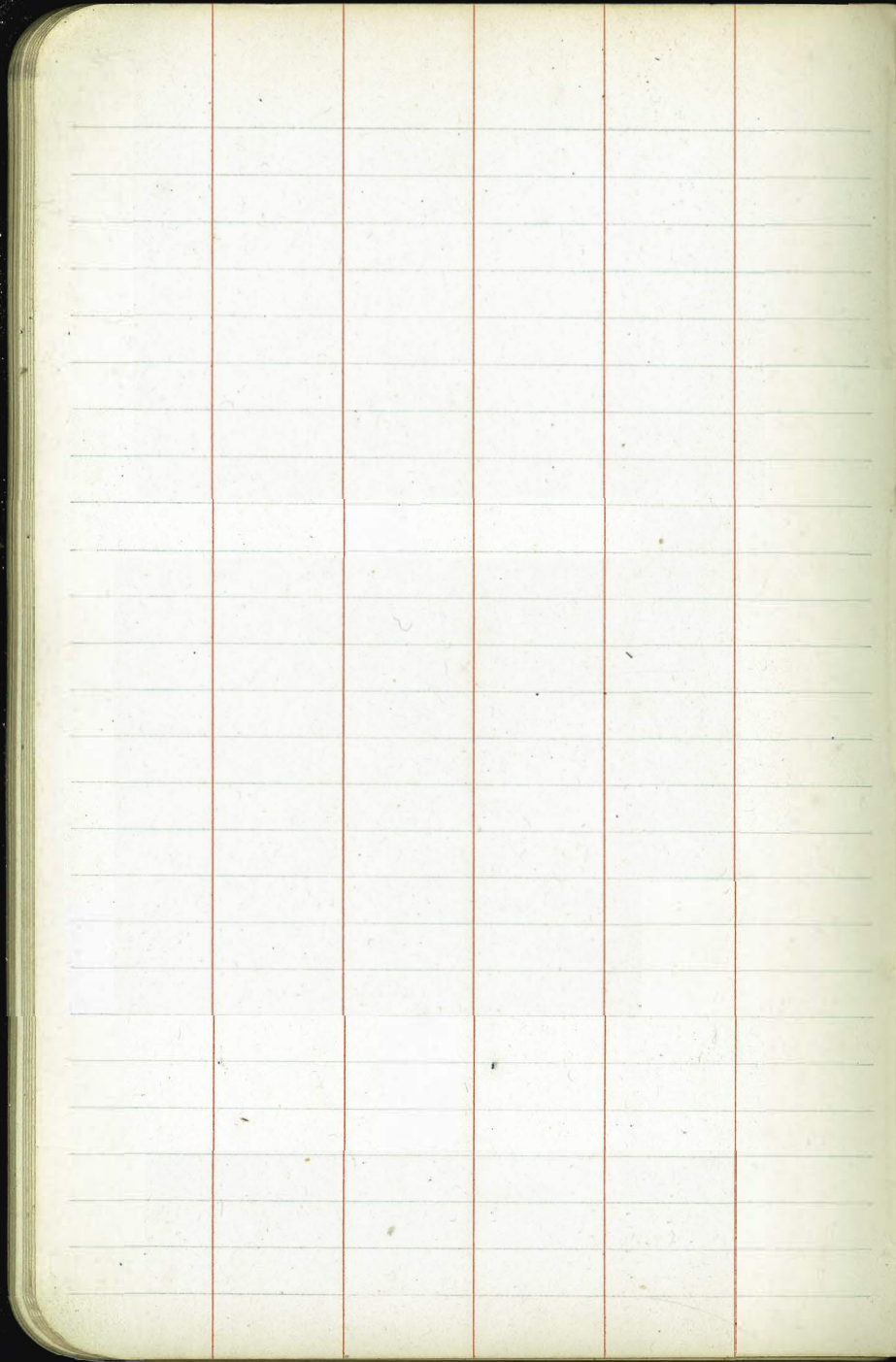
A ledger page with 6 vertical red lines and horizontal blue lines. The lines create 5 columns of varying widths. The columns are approximately 15%, 20%, 25%, 20%, and 20% of the page width from left to right. The page is otherwise blank.

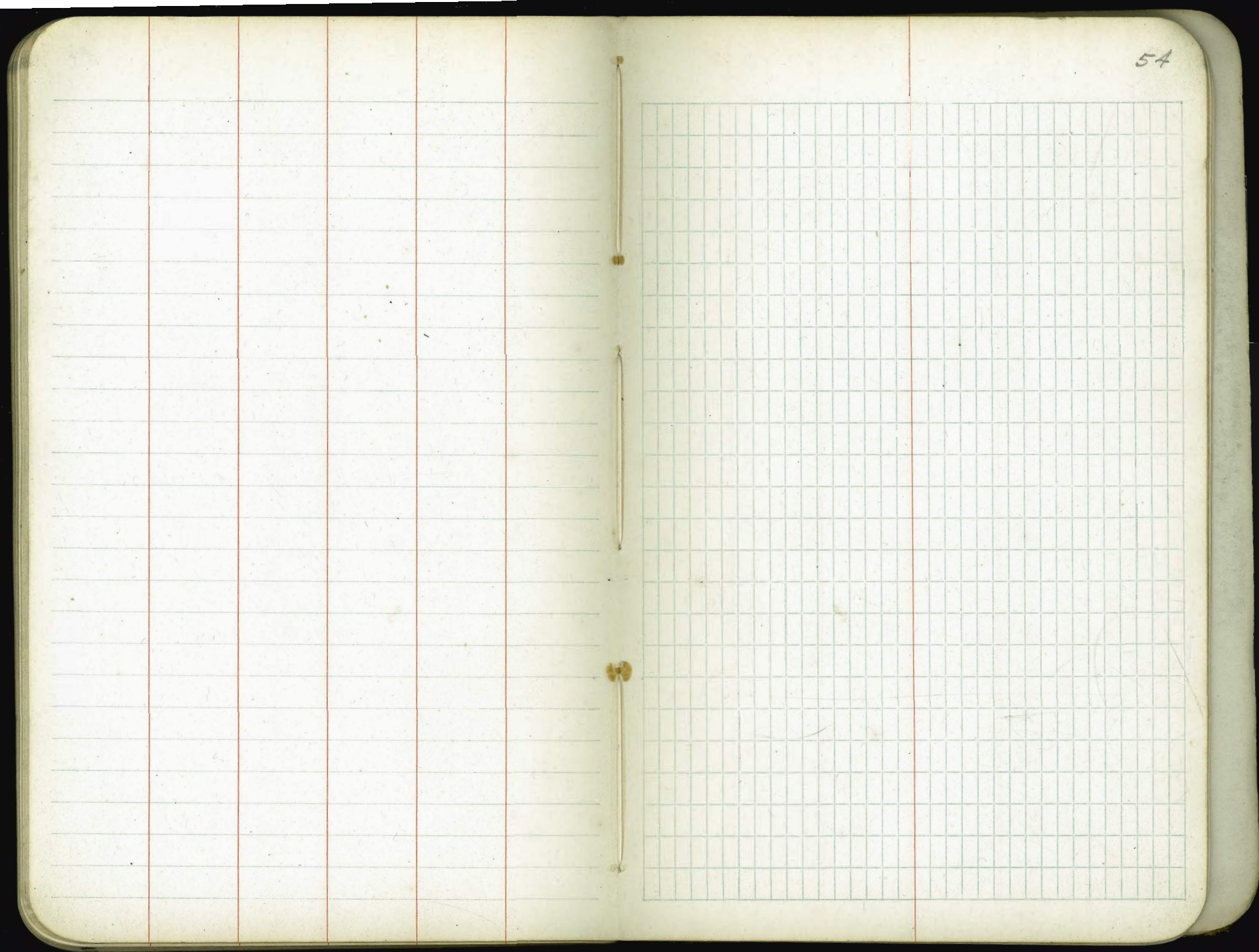
A page with a grid of blue lines and a vertical red margin line. The grid is approximately 20 columns wide and 30 rows high. The red margin line is positioned about 10% from the right edge of the page. The page is otherwise blank.

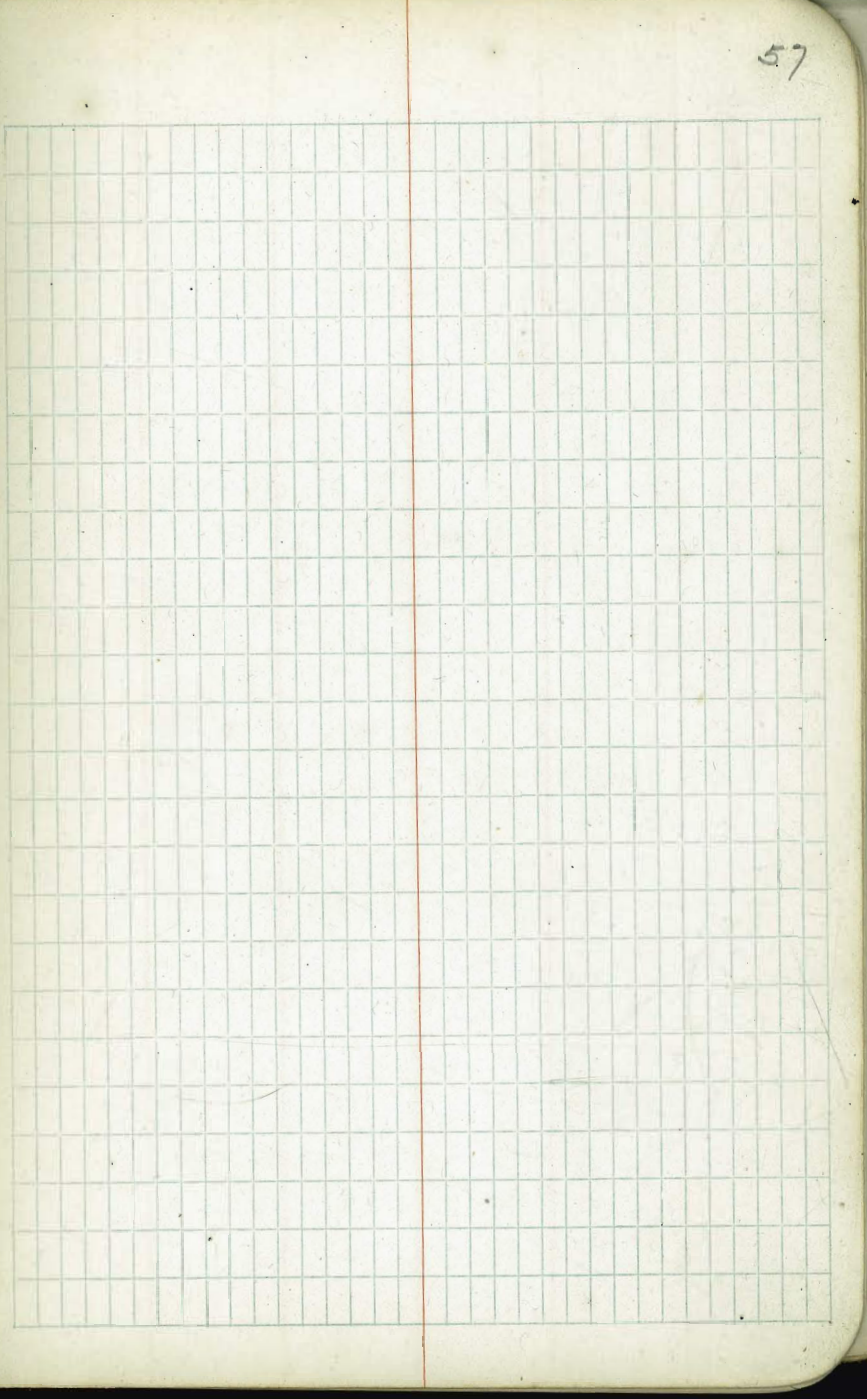
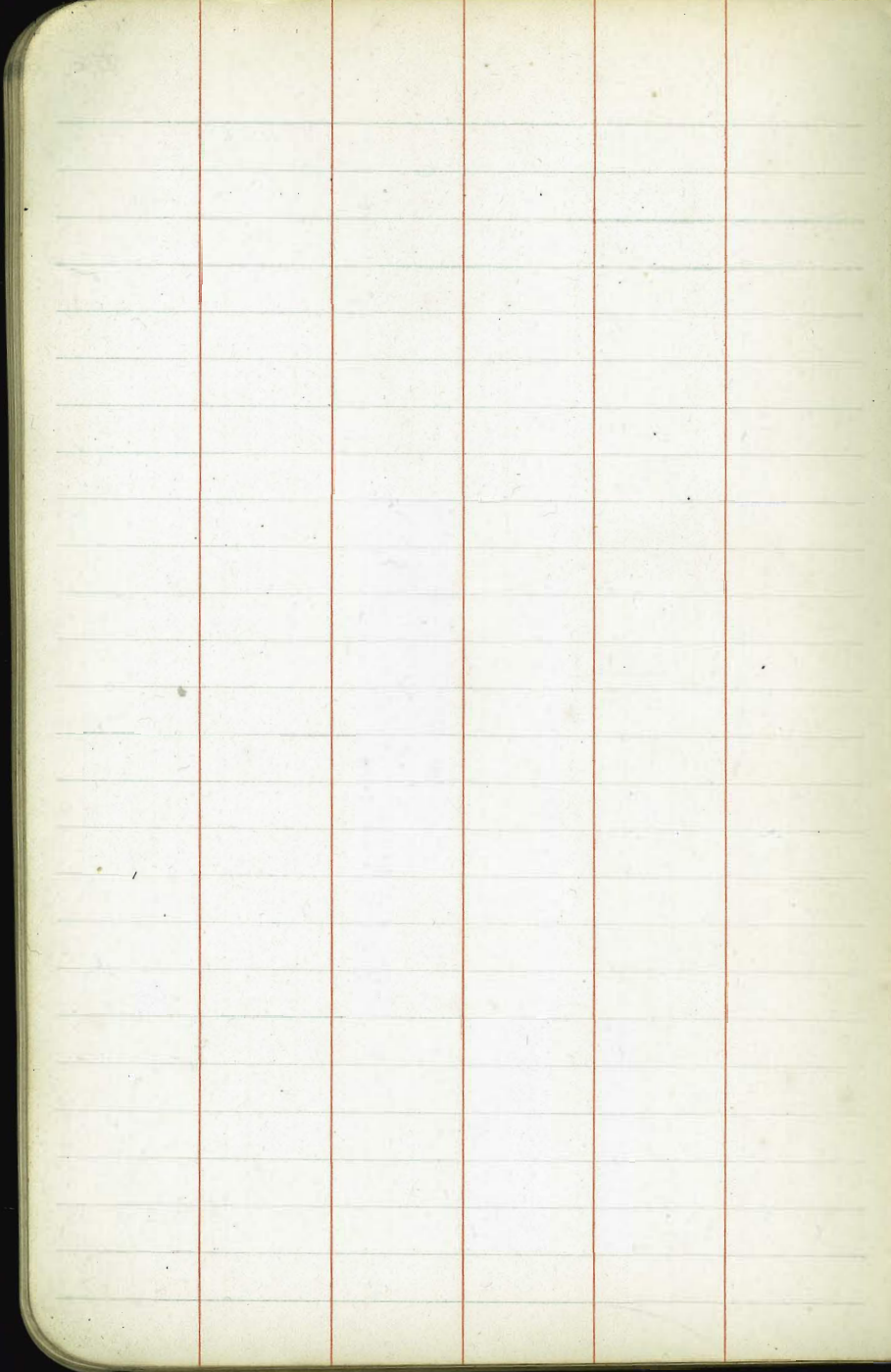


A grid of 20 columns and 20 rows on a ledger page. The grid is formed by light blue lines. A vertical red margin line is positioned on the left side of the grid, approximately one-fifth of the way across the page. The grid is mostly empty, with a few faint pencil marks and a small dark smudge.



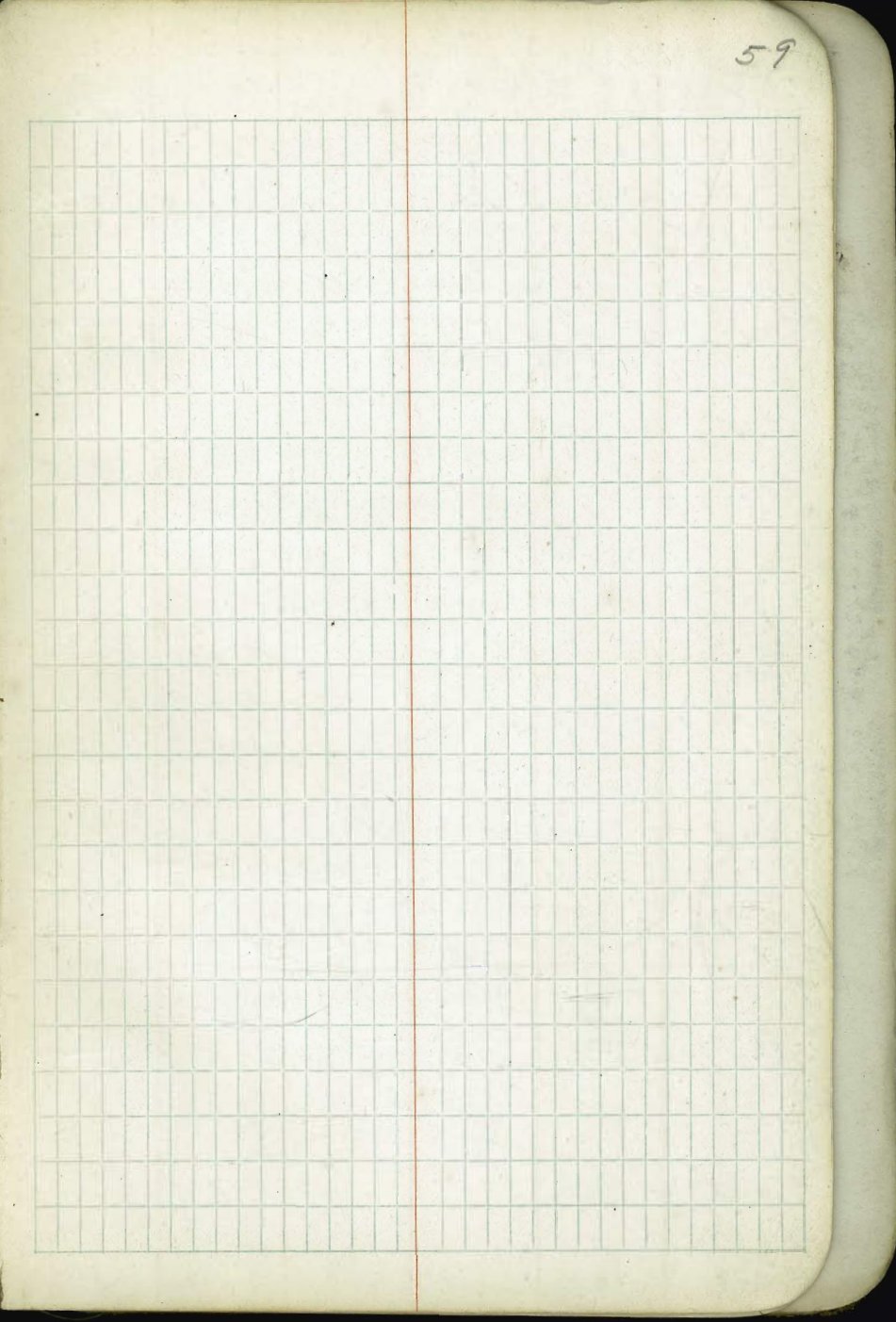
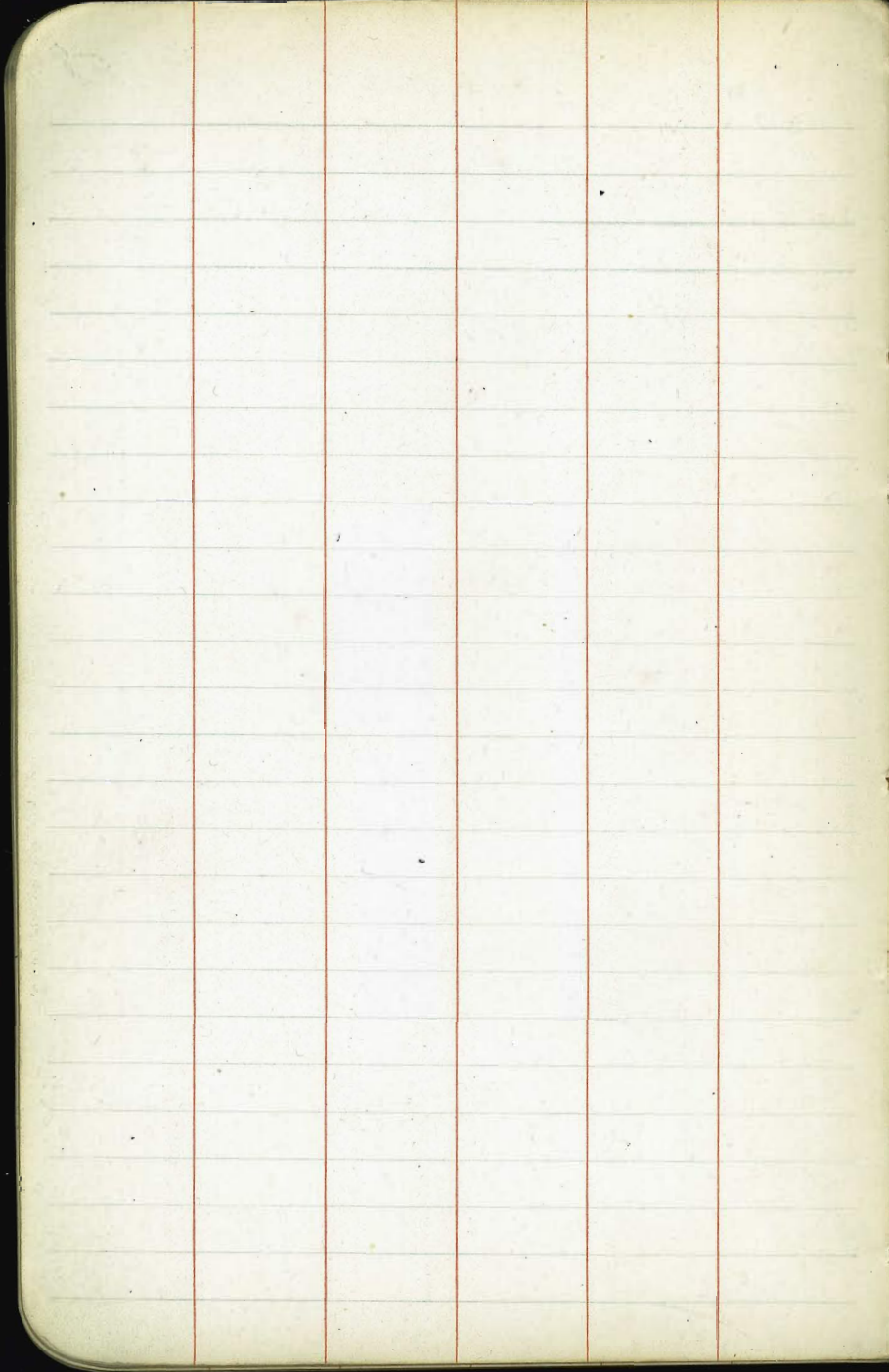






58

A grid of 20 columns and 20 rows, formed by light blue lines, covering most of the right page. A vertical red margin line is positioned to the left of the grid. The grid is currently empty.



B.M's

Elev

U.S.G.S. Cross in Brass Cap in Boulder
East End Dam

486.569

Rock painted Red West End Concrete
Bosin West of W. End of Dam

494.89

Elevation 486.569 = Working Elev 139.40

139.40

347.17 = diff.

150.00 Contour

150' Contour = Elev 497.17 Sea level datum.

KEITH'S RAILROAD CURVE TABLES.

Published by KEUFFEL & ESSER CO., New York.

Entered according to Act of Congress in the year 1883,
by W. Keuffel & H. Esser, in the office of the Librarian of Congress,
in Washington, D. C.

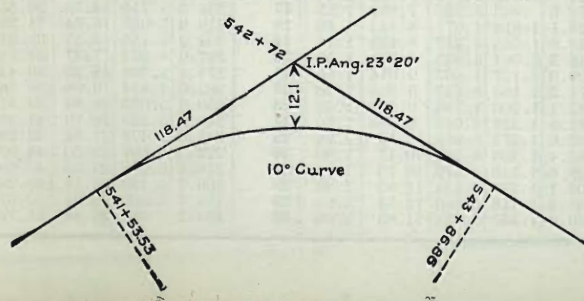
Copyright, 1902, by Keuffel & Esser Co.

HOW TO USE KEITH'S TABLES.

EXAMPLE.

Wanted a Curve with an Ext. of about 12 ft. Angle
of Intersection or I. P. = $23^{\circ} 20'$ to the R. at Station
542+72.Ext. in Tab. IV opposite $23^{\circ} 20' = 120.87$
 $120.87 \div 12 = 10.07$. Say a 10° Curve.Tan. in Tab. IV opp. $23^{\circ} 20' = 1183.1$
 $1183.1 \div 10 = 118.31$.Tab. V correction for A. $23^{\circ} 20'$ for a 10° Cur. = 0.16
 $118.31 + 0.16 = 118.47 =$ corrected Tangent.(If corrected Ext. is required find in same way)
Ang. $23^{\circ} 20' = 23.33^{\circ} \div 10 = 2.3333 =$ L. C.

$2^{\circ} 19\frac{1}{2}' =$ def. for sta.	542	I. P. = sta.	542+72
$4^{\circ} 49\frac{1}{2}' =$ " " "	+50	Tan. =	118.47
$7^{\circ} 19\frac{1}{2}' =$ " " "	543	B. C. = sta.	541+53.53
$9^{\circ} 49\frac{1}{2}' =$ " " "	+50	L. C. =	2.33.33
$11^{\circ} 40' =$ " " "	543+	E. C. = Sta.	543+86.86
	86.86		

 $100 - 53.53 = 46.47 \times 3' (\text{def. for 1 ft. of } 10^{\circ} \text{ Cur.}) = 139.41' =$
 $2^{\circ} 19\frac{1}{2}' =$ def. for sta. 542.Def. for 50 ft. = $2^{\circ} 30'$ for a 10° Curve.Def. for 36.86 ft. = $1^{\circ} 50\frac{1}{2}'$ for a 10° Curve.(These tables are published in Field Books of
KEUFFEL & ESSER CO., New York, N. Y.)

1
1
1
1
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
Deg.

499.1 TP 3/9/18
 5.200 lower 3.77
 3.770 on upper 1.43
 1.430 2.34

111
 314 points

360 00
 318 30
 412 30

12630
 90
 3630

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

ROADWAY 14 FEET WIDE. SIDE SLOPES 1½ 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.