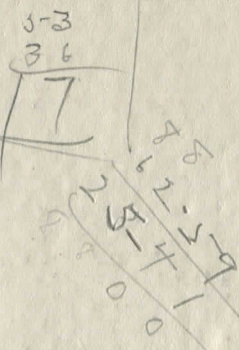


V. I.

MINING
TRANSIT BOOK
422

100' = 1"
5' = 1"

25+41 ft



Olds Contract

Sta 22+3.6 -

" 5-3+25.3

EUGENE DIETZGEN CO.,

Drawing Materials and Surveying Instruments.

NEW YORK.

CHICAGO.

SAN FRANCISCO.

TABLES FOR EXCAVATIONS AND EMBANKMENTS.
DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.
ROADWAY 20 FEET WIDE. SIDE SLOPES 1 TO 1.
FOR SINGLE TRACK EXCAVATION.

Copyright, 1902. No. 39340.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	0
1	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	1
2	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	2
3	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	3
4	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	4
5	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	5
6	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	6
7	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	7
8	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	8
9	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	9
10	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	10
11	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	11
12	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	12
13	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	13
14	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	14
15	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	15
16	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	16
17	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	17
18	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	18
19	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	19
20	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	20
21	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	21
22	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	22
23	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	23
24	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	24
25	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	25
26	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	26
27	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	27
28	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	28
29	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	29
30	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	30
31	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	31
32	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	32
33	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	33
34	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	34
35	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	35
36	46.0	46.1	46.2	46.3	46.4	46.5	46.6	46.7	46.8	46.9	36
37	47.0	47.1	47.2	47.3	47.4	47.5	47.6	47.7	47.8	47.9	37
38	48.0	48.1	48.2	48.3	48.4	48.5	48.6	48.7	48.8	48.9	38
39	49.0	49.1	49.2	49.3	49.4	49.5	49.6	49.7	49.8	49.9	39
40	50.0	50.1	50.2	50.3	50.4	50.5	50.6	50.7	50.8	50.9	40

Apr 5 1915

Sold Chardon in b.s.s. car
arrived at Grove at 11-

Went to work at 11-5-

Dinner at 1-0

Quit on account of rain
at 5-40

Welpier -

Wintem

Check levels on New bridge
Heath Rd ± 300' North of Wilson Mills Rd

Pg 60

THIS SURVEY PROBABLEY DITCH FROM GROVE TOWARD
PARKMAN

COURSE
DATA
No. - RAIL
OFFSET-
AMT-BEARING

STATION
NO.

REMARKS

7+967

X 47-10 E checked at other end of line,
6.967 south corner 19-36 L
No 2 offset 15 L

X 66 50 S
15' offset L
100 ft long
Course No 1

0.00

SCALE { ALONG LINE 1:100 1:100
ACROSS LINE 1:50 1:50

7+967

< 15' >

20'



4

6

5

8

7

22

3

DITCH

28

Sta 1

< 15' >

X 19-36

Pa 0

Harris' garden

Harris' meadow

Harris' West line

line

3 miles N.W. of

Course
Rate 2.5

19° 05' R

course 2
N 85° 55' E

angle with
bearing
15-11

course 3

This course parallels
CH of old ditch but far
enough to south of CH
so that nearly all cutting
comes off one bank.

5.

7+967

40.07 S 41-02

15'

11.387

11

11.384

7.967

3.417

10

15-11

9.000

15'

38.47

8

7+967

Course 2

See A
for note on this course.

Boring
S 5-53 E

11+38 11+38 4

14
1429
384
11384
3045

14+429

< 15 >

14

12.5 - offset to ch
old ditch

14.429
11.384
3.045

13

old ditch

12

< 15 >

11+38 4

< 4007 + 15 >

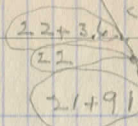
21+91

46-0
Banning - X 79-100 ✓ 5 PM
79-00 8 AM

14.429

cooper

Harris



+5.13

18'

Prop line

21

20

21910
14429

7.481

19

Harris' Meadow

18

17+2.3.3

Harris' Pasture

17

16

15

14.429

4.6504

13.5 affect 5.0 L Ad. diet
3.5 affect 5.0 L old diet

30+473

Counting
Running - 18 73 45 8
↳ with constant 5 5-13 L

21+91

29-01

30+473

30

29

28

27

about +60 just

30 473
21 91
8 562

26

25

24

23

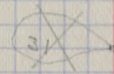
22

21+91

Counting
Running - 18 73 45 8
↳ with constant 5 5-13 L

~~Course 7~~
~~L 29°-01'~~
Bearing X 44°55'E-50'

any way



30+478

~~29-01~~

Comer 7
L 3-16 R
X 77-10E

old water way

36+80

35+97

35+90

35

36.80

30.473

6.327

34

33

Hall

32+72

Cooper

32

31

30+73

3-16 R

3571.06 N
7 05-9
7

39.22

100
57.4
42.6

45+426

45

44

43

42

Paul Anderson

41

40+733

Chris Anderson

40

Anderson

45.426
36.80
8.626

39

38

37

36+80

35.92

X 7000 S

Pointe aux lires

E. 1. 10. 10. 10.

Course No
39-22
Reaming - S

Probably 10' less

70-25 E

55+94.1

45+22.6

29192

55+94.1

55

54

53-258

52

51

55-941
45-426
10-515

50

49

48

47

Fred Anderson

Fred Anderson

46 CALC LINE

45+22.6

2922

105 prof

Fred Anderson

$$59 + 3 \frac{29}{8}$$

10
 29-19
 Bearing N 80-2 W - E 520

+50 trees

+15 trees 1' E.R. of offset.

552941

8.36

$$59 + 3 \frac{29}{8}$$

59

$$\begin{array}{r}
 59 + 29 \\
 55 + 941 \\
 \hline
 3.379
 \end{array}$$

58

57

Burglar

Profile

56+69

Pumpkin

7.15

56

552941

29-19

Burgess 11
L 8-36 L
Burgess N 71-40 E

60305

62+582

Burgess

Burgess

62

59.582
2.29

61.872

61

60

59.582
2.29

61.872

8-36

Course 11
L 8-36 L

Course 12
L 030 L

Bearing X 70-18 E-15

not reliable re rest of being
made wire fence

70+285-

62+582

100
285-
715
000

70+285-

70 0

69 0

68 0

70,285-
62,582
7,703

67 0

66 0

65 0

64 0

63 0

62+582

000

22-10-

Summa

Rogers

Property line
is 62+582

85+53.1

80+32.3

71+155

70+285

20-45

85+53.1

85
84
83
82
81

80+76 □ line Blair

80+32.3

79 Fuller

79

85+53.1
70 285
15.246

78

77

line

76

75

74

73

72

Fuller

71+155

Prop

line

71

70+285

22-45

←
12-15 R
Blair 586+48 E

86-45
70 18
157 6
2 54

1
2
3
4
5
6
7
8
9
10

87+563

Course
4
20
+5
Beaming X 72-32 E

85+531

1+31

87+563

87

87,563
85,531
2,032

86

87+531

20x45

72.32
57.64
14.27

90+95

burn 15
14-31 L
Beating N58-05E

87+462

88-287

9A+94

90.95-
87.563
3.387

90

89
88+93

Dickens
Park
Blair

88

87+563

17:31

6	8	0	4
1	7	2	5
2	4	4	0

100+308

Current 16
 L 38-38 L
 Bearing - K 19.25 E

90+95

100+308

100

98+800

100+308
 90+95
 9.358

98 This point on effect is east bank of channel

97 bank bank 10' east of effect

96 bank bank 40' east of effect

95

94

93+238
 93

92

91
 90+95

20-35

55-55

width marked 80'

channel

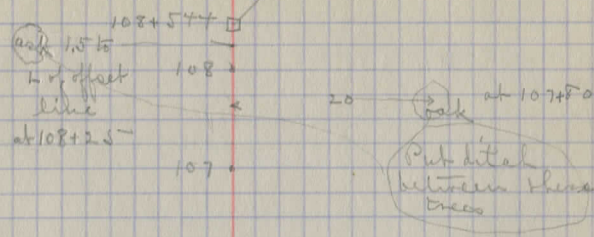
33-20
 19-25
 13 4 4

108+544

Corner 17
 L 1355 R
 Bearing N 33-2-56 E

100+308

38 38



106

108,544
 100,308
 8,236

105

104

103

102

101

100+308

13-55

117+828

Course 18
L 38-38 R
Bearing N 72° - 10' E - 05'

108+544

16-34

117+828

117

116

115 in stream - no take

114+70 < 12' maple make this
tree east
bank ditch
sutter

113+597

113

Diemens

117.828
108.544
9.284

112

111

110

109

108+544

16-38

8830
7218
1620

121+17

Course 19
L 16.34 R
Bearing N 88.30 E

117+828

Finald Wed Apr 7 1915

121+17 □ end of transit line

121 •

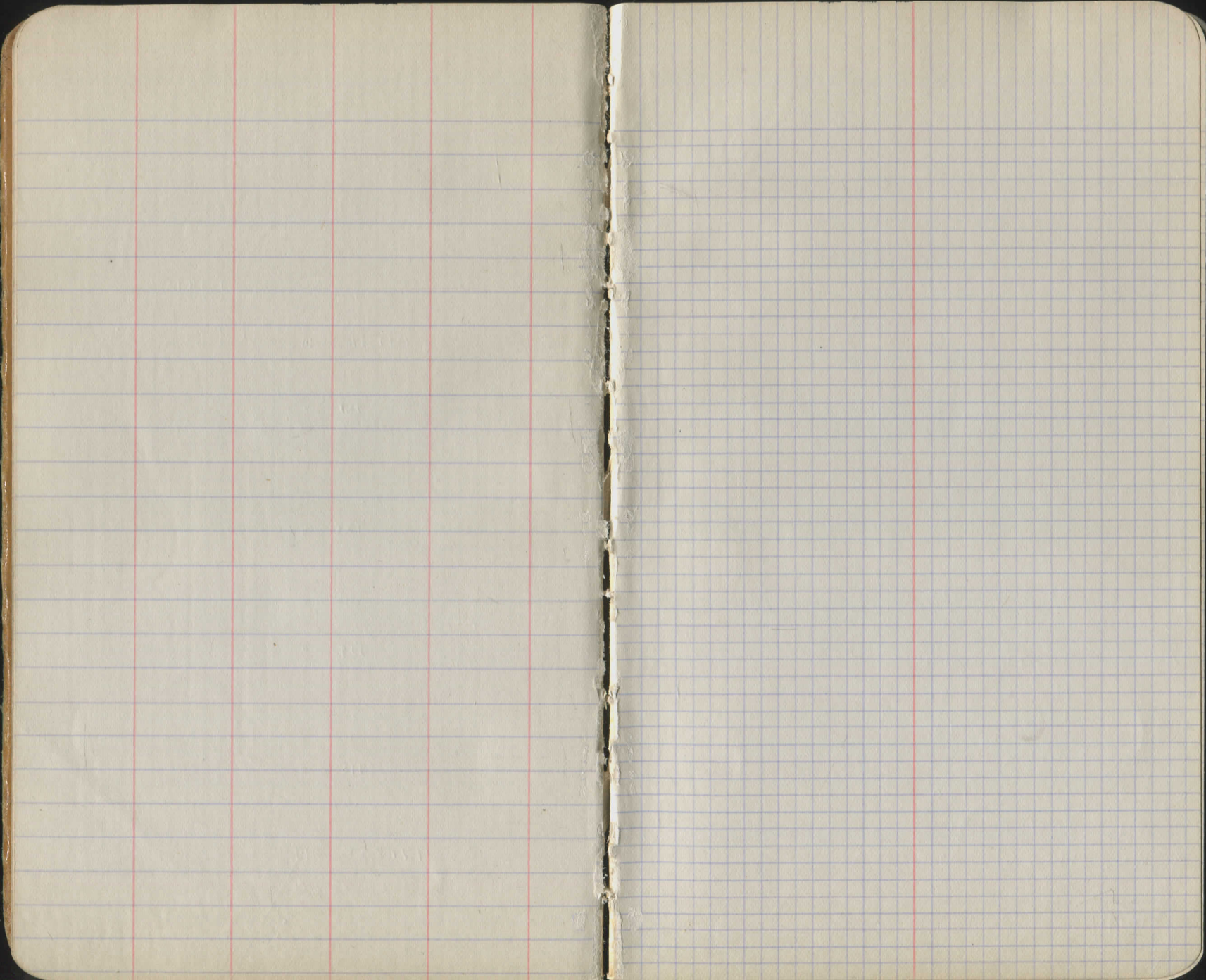
126 •

119 •

118 •

117+828 □

16.34



H <

Dist ft

Remarks

Station 19

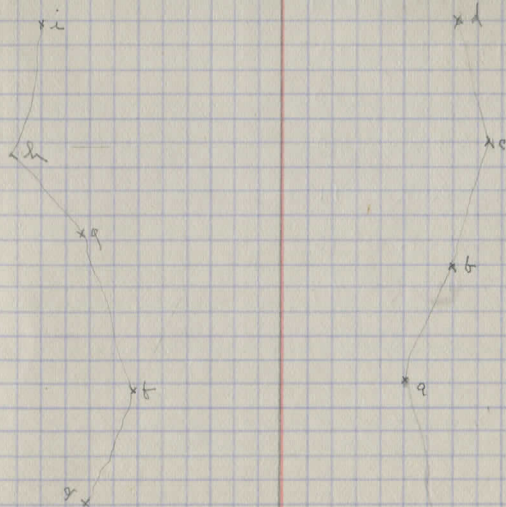
i	33-31 L	270
h	35-50 L	214
g	31-37 L	167
f	46-00 L	96
e B.B.	78-18 L	75
d B.B.	3-36 R	255
c B.B.	21-32 R	150
b B.B.	20-16 R	96
a B.B.	19-55 R	53

Dist 121+14

FS at 0
m 117+82.8

117+82.8

121+14



121+14 x
15'

180

H L

Dist



38-45 L 225-

69-70 L 174

80-70 L 144

97 00 L 185-

10-35 R 230

31-24 R 150

42-50 R 71

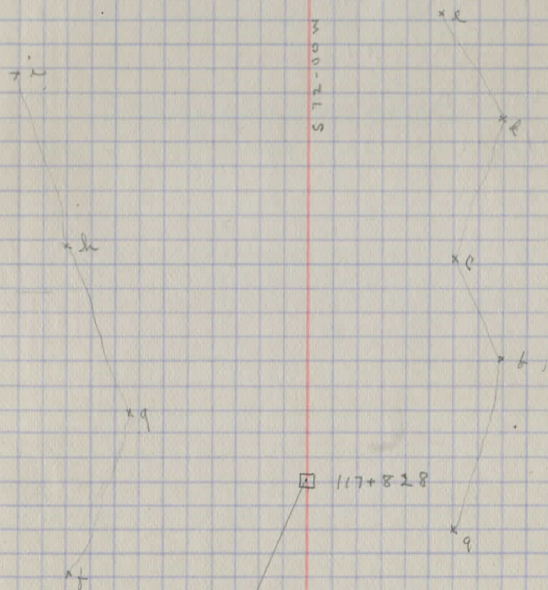
50-05 R 73

118-15 R 69

but 117+82.8

FS on 108+54.7

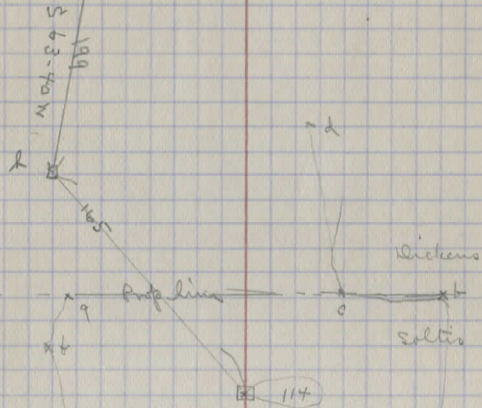
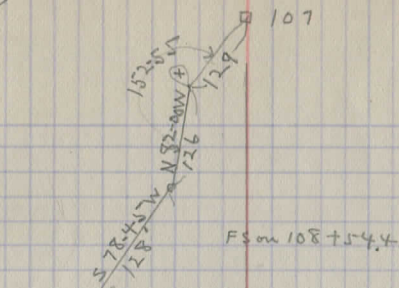
MDO-TLS



180

h	53-77 L	165
q	54-55 L	57
f	82-50 L	68
e	122-20 L	63
d	5-02 R	100
c	30-24 R	57
t	65-05 R	55-
a	142-06 R	132

cont 114



108544 \leftarrow 52 ft \rightarrow

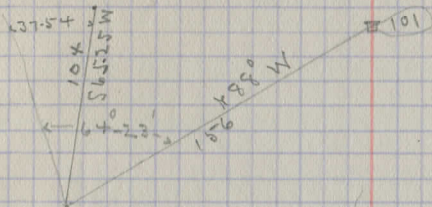
111 65'

112

3' 0" 12+50

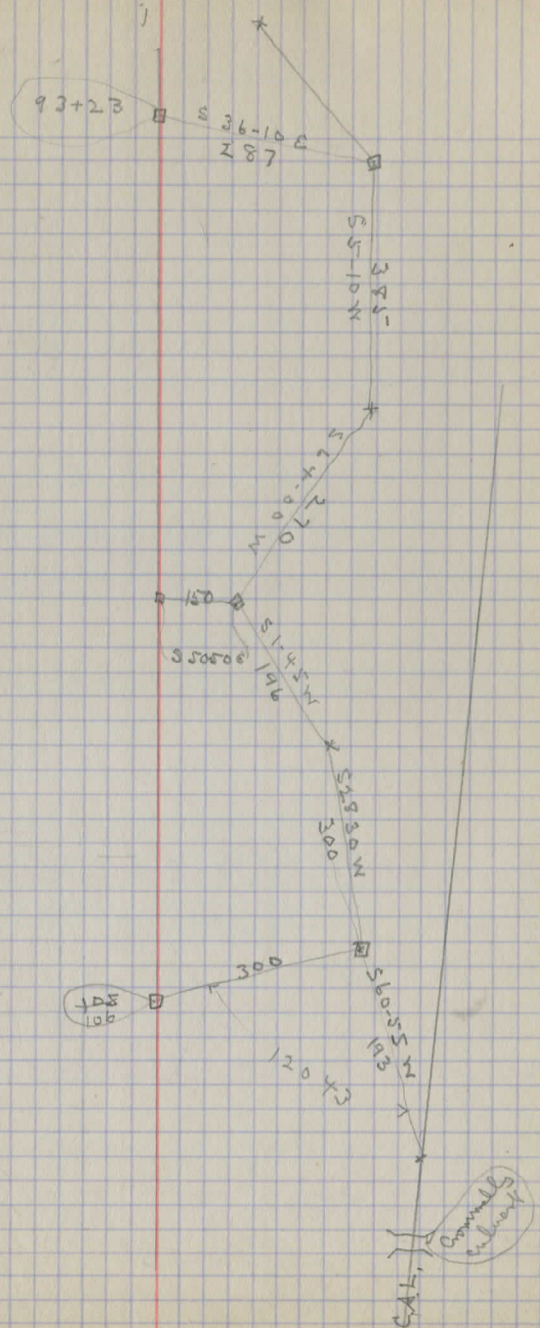
113 10'

Red boundary 0.14.15

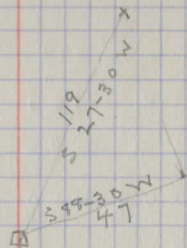


92
 M5259S
 10X
 106
 X880 W
 10
 27.5 ft
 22
 101

same place on
 2nd page back



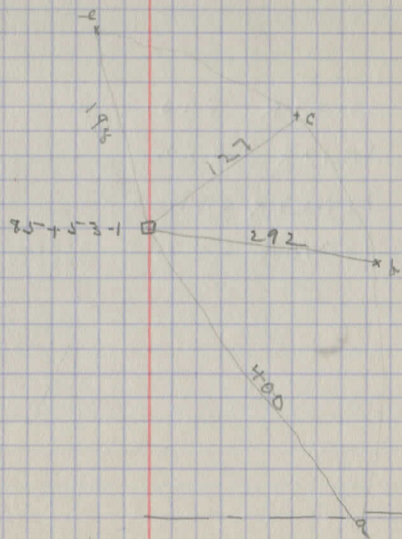
Suntar
93+25



e	11 28 L	198
v	51 35 R	127
f	88-12 R	292
a	137-44 R	400

just at
 □ 85+53,1

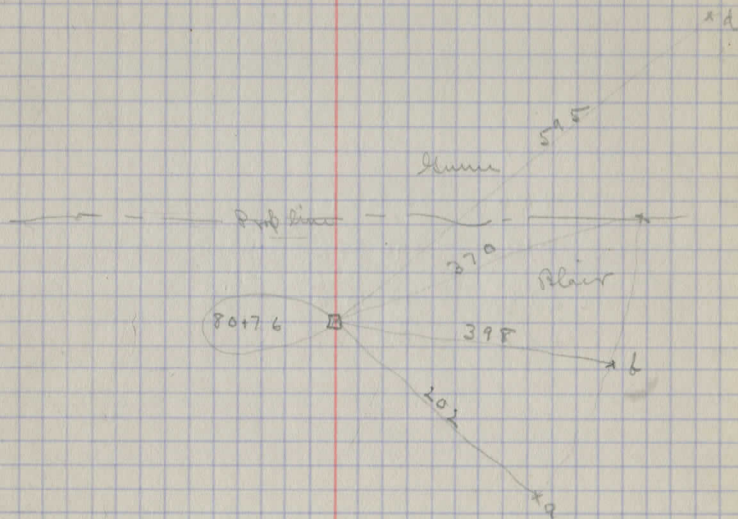
FE 0 9w
 70+28,6-



d	6547R	596
c	8314R	370
b	12+22R	398
a	14840R	202

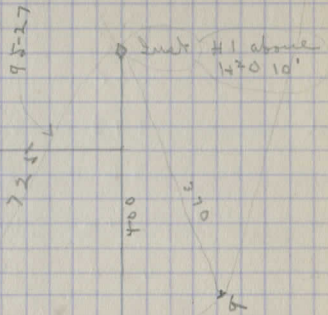
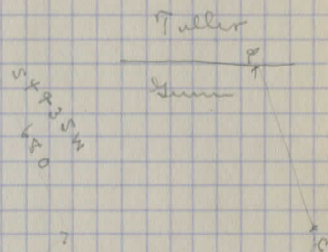
Start at
80+76

80+76
70+286



a	450	158-27 R
c	412	170-27 L
b	370	75-15 L
a	400	54-10 L

70+2850

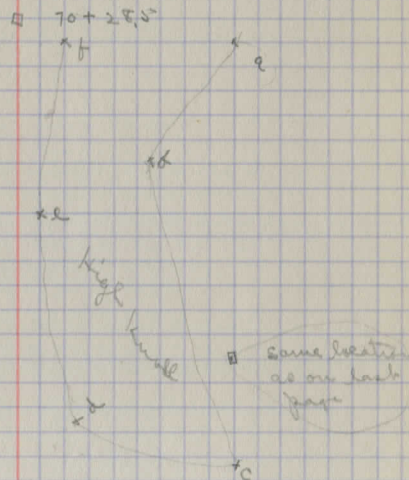


50+76

76+08 2054

f	505	105-12R
e	300	87-55-R
d	173	53-25R
c	36	57-08L
b	248	131-18R
a	420	141-06R

same.
edge hard wood



80+76

c	203	5032 R
v	203	7020 R
a	209	13723 R

70+205
2000

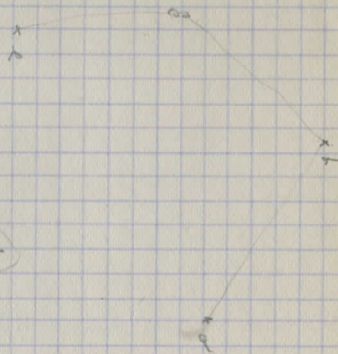
Sum

5' above
top of N^o 20

FS-0
62+58.2

e	120	66 15 R
d	137	92-30 R
c	300	95 30 R
b	410	106-09 R
a	285	125 25 R

67 - 67



FS 0

62+58.2

62+58.2

Burgess

002

Sum

65

hust

T 272⁻ +8-00 R

R 106 110 20 R

9

f 630 55-07 R
p 580 55-07 R

76
47+0
+26

but
55+94 E 580 +26

2

304

90-03L

248 588-452

295 588-462

550

55794

530

90-03

71.2

0.0

int

0.0

5.5

0.0

2.5

0.0

2.5

0.0

2.5

0.0

2.5

0.0

2.5

Burgess

Sumner

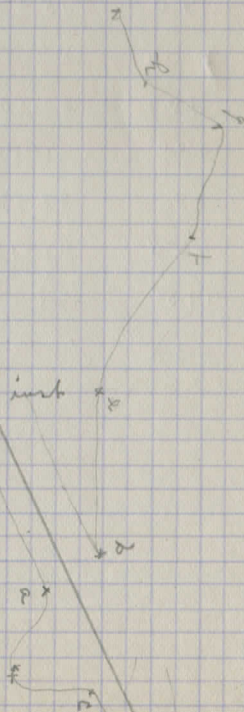
15000
3570
4050

F2-0m
45+42.6

i	215	52.02 R
l	380	62.40 R
q	490	69.24 R
f	391	81.02 R
e	176	99.15 R
d	320	137 R
c	470	142.19 R
t	430	149.30 R
2	384	143.36 R

C-LOCAL

sta 46



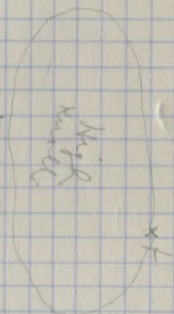
g Sta 41	140	15-34 R	
f	206	89-20 R	
e	457	50-20 R	
d	500	71-00 R	
c	880	88-33 R	do not use
b	650	92-13 R	
a	445	121-00 R	

FS 0

Sta 41

140

inlet


 17
 180
 220
 280
 320

e	79	26-40L	
d	102	71-04R	E fence t+S rd.
c	340	101-50R	
f	400	132-10R	
e	340	158-24R	

FS-0.00

50+47.3

FS-0.00
50+47.3

x
e

x
d

c f

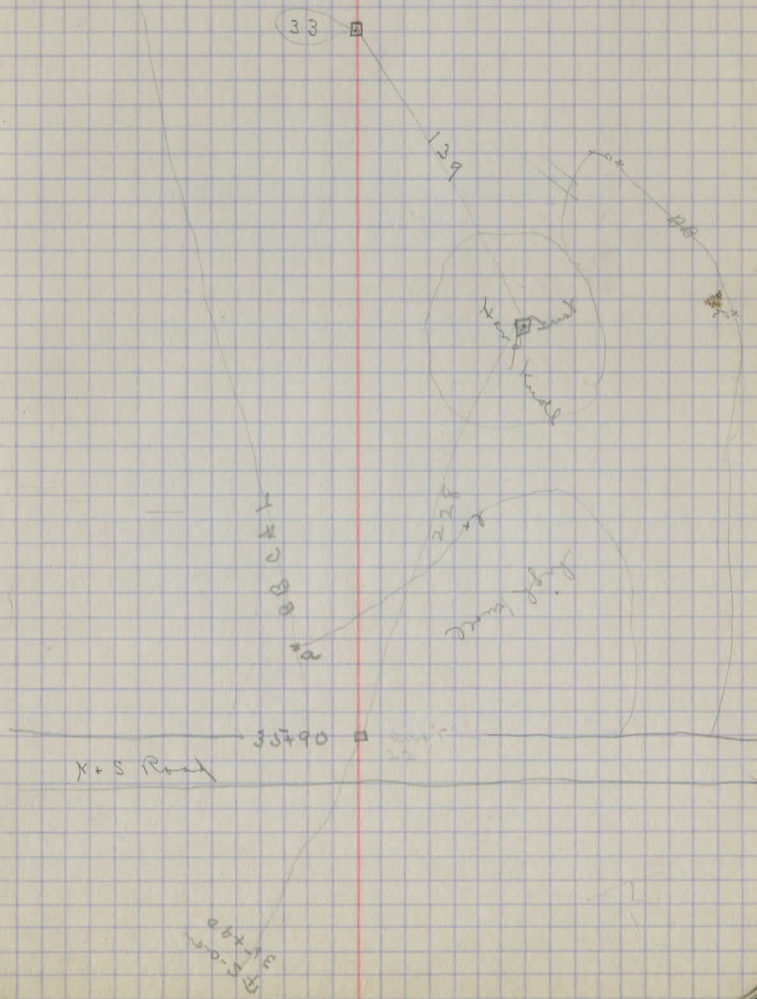
36+80 □

x
f

∞



n	197	173-20 L
w 33	139	102-10 R
l	141	46-30 L
k	204	66-45 L
j	250	49-30 L
i	360	65-30 L
h	272	104-00 L
g	110	120-00 L
f	76	66-30 L
e	56	17-00 R
d	40	116-30 R
c	104	178-20 L
b	245	99-20 R
a	195	23-00 R
35790	228	< 0



139

135

name

Cooper

2570 @ 50 x

25 @ 83 x

x6 x 26 + 60

x8 @

28 @ 30 x

29 @ 140

30 + 47 @

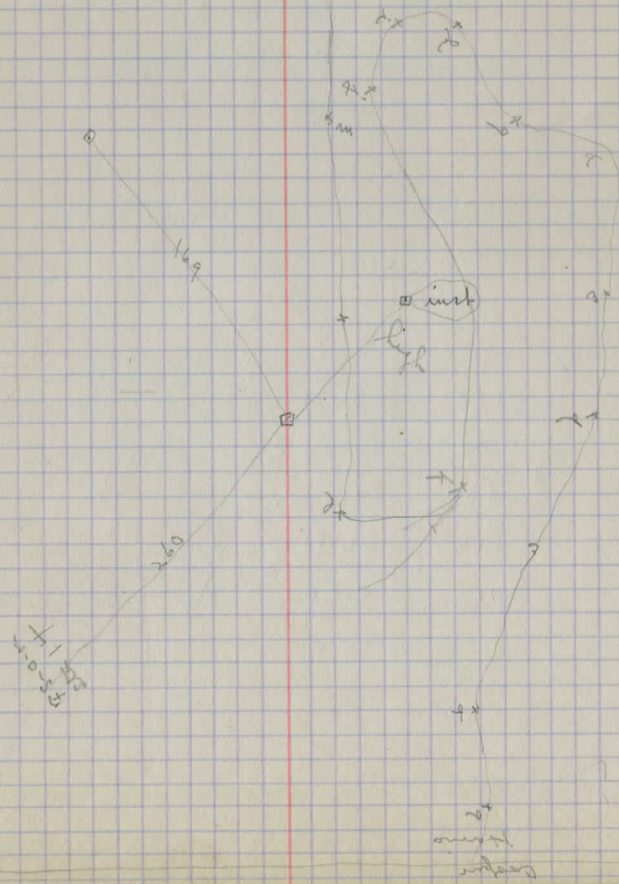
34 + 75 @ 15' x

x 102 @ 31 + 20

GP

GP

14-	260	0-00
11+38.7	169	71-44 R
m	93	77.36 R
l	355-	47-50 L
k	400	85-30 L
j	130	175-40 RL
i	275-	178-10 R
h	285-	162-45 L
g	300	135-30 L
f	490	138-15 L
e	670	121-00 L
d	795-	106-58 L
c	780	96-55 L
t	655-	76-48 L
a	785	81-15 L



□ 3	414	90-39 R
□	370	136-05 R
□	53	5000 R
□	190	26-10 L
2nd	271	9-00

Harris meadow
part

□ East

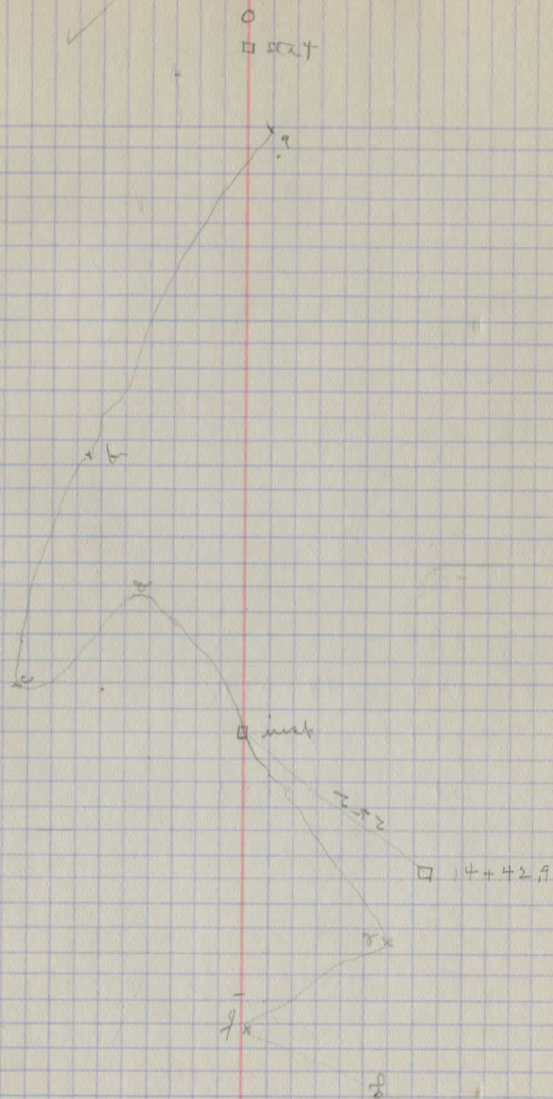
136-05 R

□ 3	under mat on 13.13.	
k	104	140.53 L
j	290	116.00 L
i	400	92.50 L
h	460	60.40 L
g	650	46.72 L
f	550	35.00 L
e	765	14.85 L
d	112	165.10 R
c	157	127.10 R
b	275	71.05 R
a	275	25.10 R
□ 1	0.00	

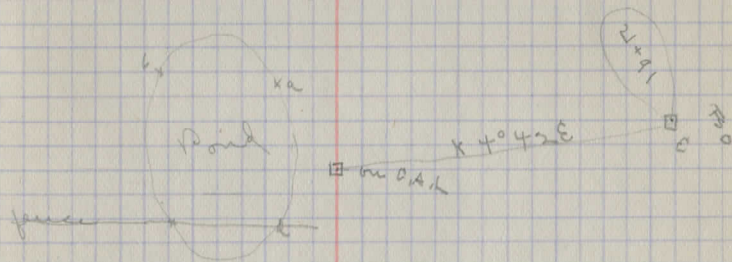
↑ 50 m
 12.1

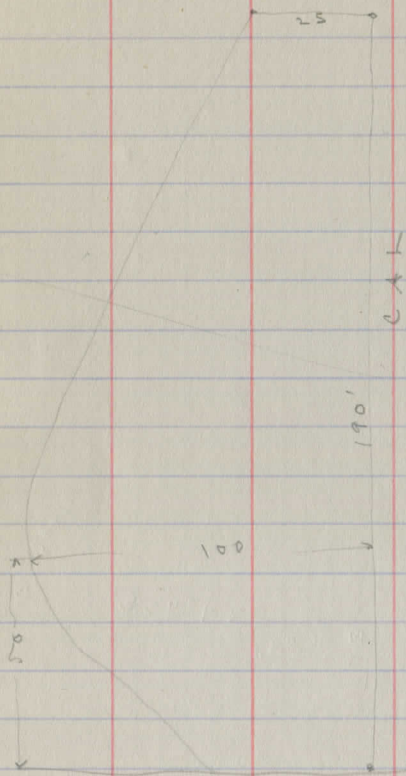
□ 12.3 inch

14+429	252	152-58R
h	850	177-44R
g	615	169-12R
f	260	177-40L
e	161	156-50R
d	170	53-50L
c	225	94-50L
b	342	52-40L
a	620	3-17RR
04	645	0-00

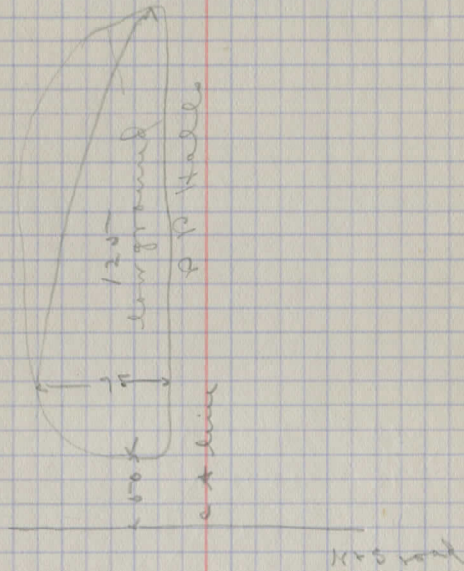


e	✓	200	0.00
e	✓	19	120°29'R
c	✓	163	173.07 R
L	✓	217	153.40 L
a	✓	161	127.15 L



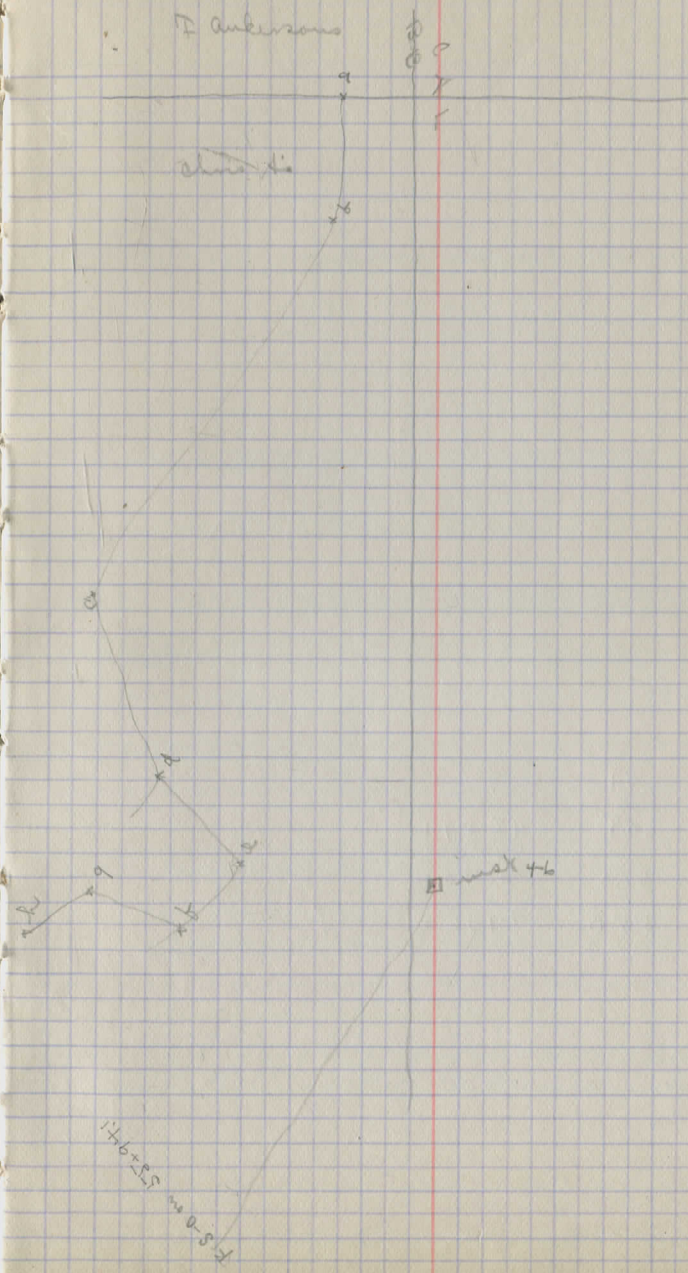


Post
Outline

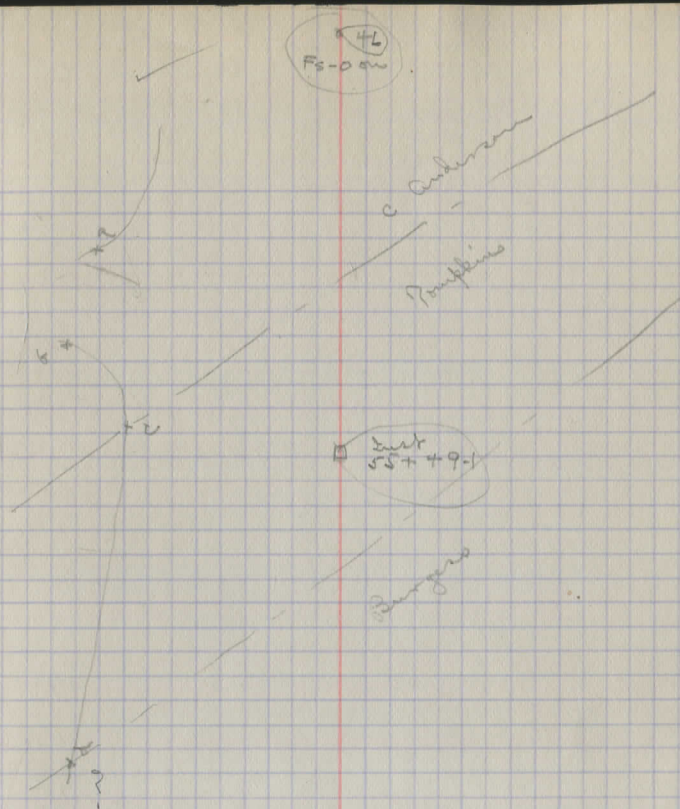


Tommy/0/0/0

h	✓	680	22-43 R
q	✓	575-	25-12 R
f	✓	210	6-10 R
x	✓	132	18-30 R
l	✓	256	42-00 R
e	✓	307	80-30 R
t	✓	600	133-13 R
r	BB ✓	530	138-47 R



a	231	?
c	309	48-57 L
b	600	49-55 L
a	550	57-60 L
		41-16 L



78-0-02

557+491

50

✓

✓

214

2

59+29 □ sent

2

32-0

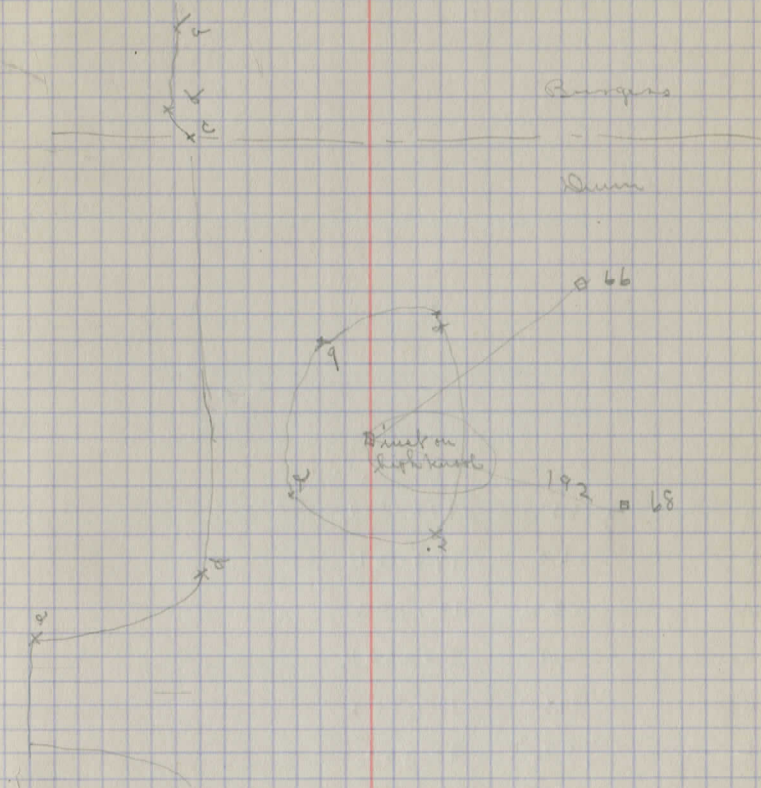
86-20 #1

✓

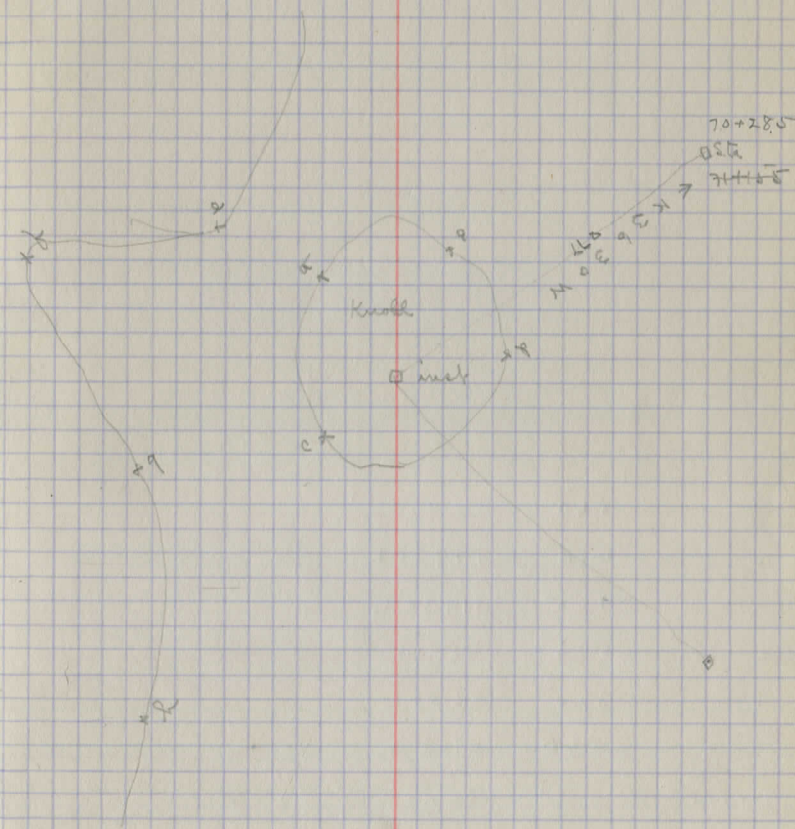
i	100	147-75 R
h	242	116-35 L
g	168	69-20 L
f	70	28-20 R
□ 66	207	43-00 R
□ 68	192	102-26 R
e	580	117-70 L
d	445	118-70 L
c	750	39-25 L
b	820	36-70 L
a	830	26-20 L

PS-0+
Stn 59+29

51



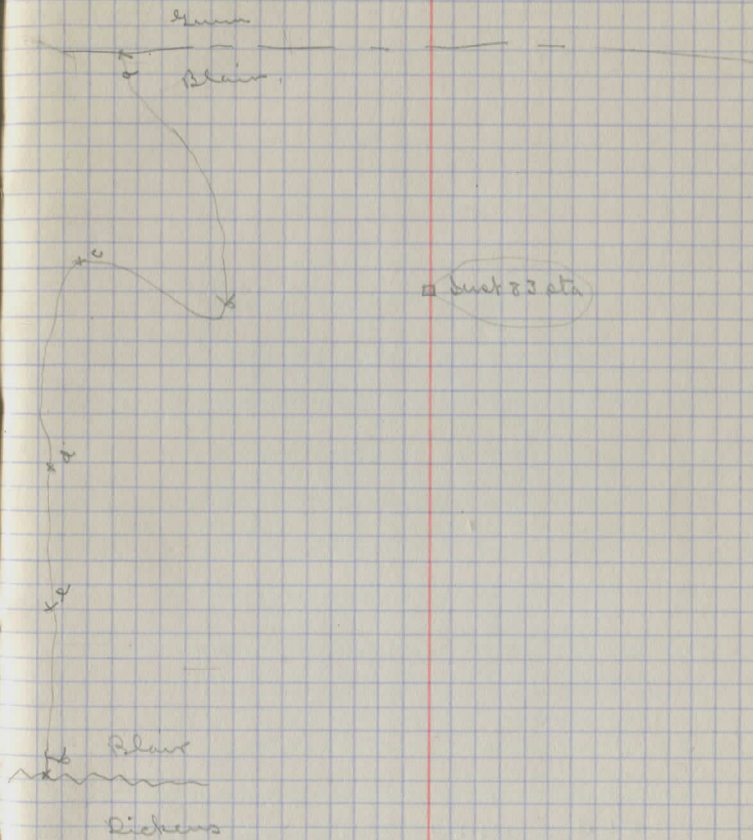
h	320	13630 R
g	165	172-00 L
f	350	143-00 L
e	282	127-00 L
d	50	85-00 R
c	96	127-45 L
b	152	7030 L
a	125	30-00 L
51274155	660	0-00



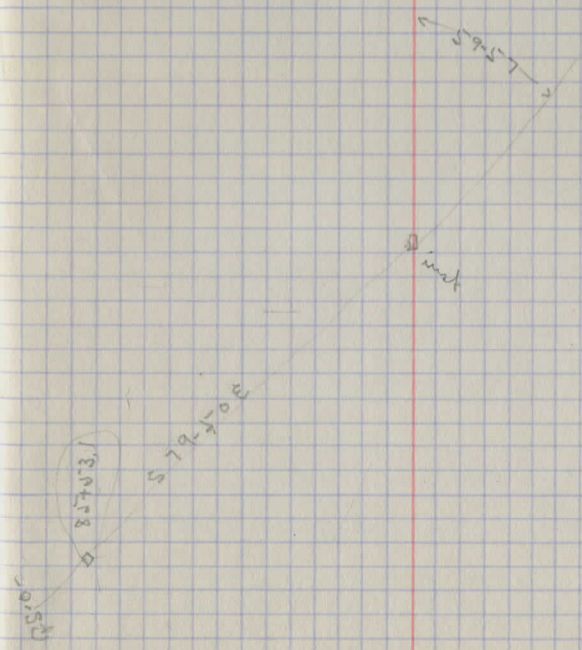
f	560	not used
e	410	179-00 L
d	425	11430 L
c	505	85-10
b	325	86-55 L
a	520	59-3 L
71+155		0-00

Fe 0.00
~~71+155~~
 70+285

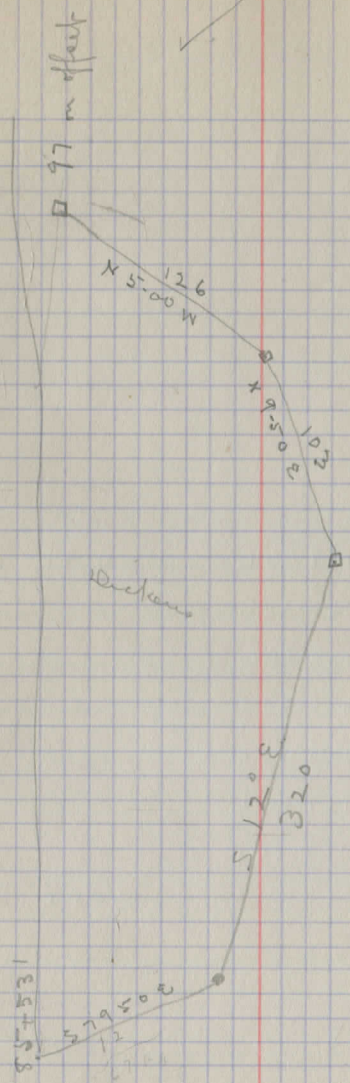
H1 about 430
 6.7
 53



□ 560 59-57
55+53.1 396 0.00 X79.5-0W

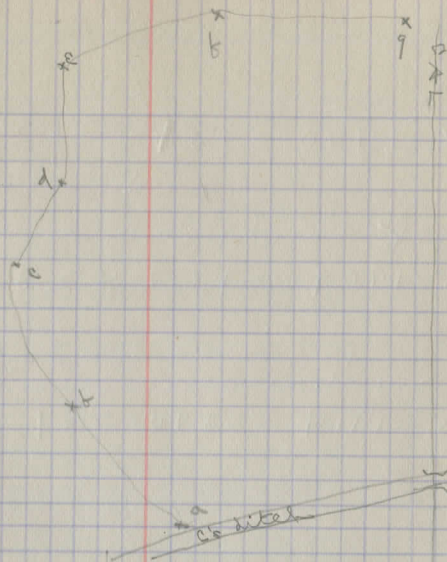


320

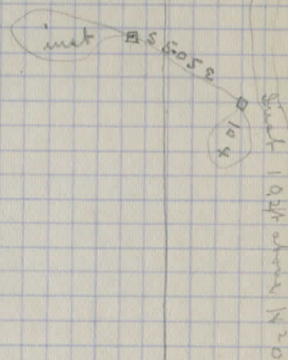


g	630	107-00 L	BB CAL
f	520	119-20 L	
e	480	133-15 L	
d	280	136-30 L	
c	355	152-30 L	
t	370	167-30 L	
a	215	160-30 R	
ST-104	365	000	S 5-05 E

* path 13' 56



Chomwell
land



And Anderson 3218A
8/24-1910 ~~130-365~~ 131-300

Sold

Chick Anderson
3/15-1909 127423 10.A

James T. Quinn from W. Green
4/15-1914 - 140-331 14²⁰/₁₀₀ A

to about

C. G. Canfield Leino 147¹/₂
C. Cooper 22¹/₂

John A. P. P. Hall
C. Anderson
Fred - 32A Sattler

Ward A. Tompkins in the name,
J. E. Quinn 144-20 rds

H. F. Burgess

E. V. Gunn 31⁴/₈

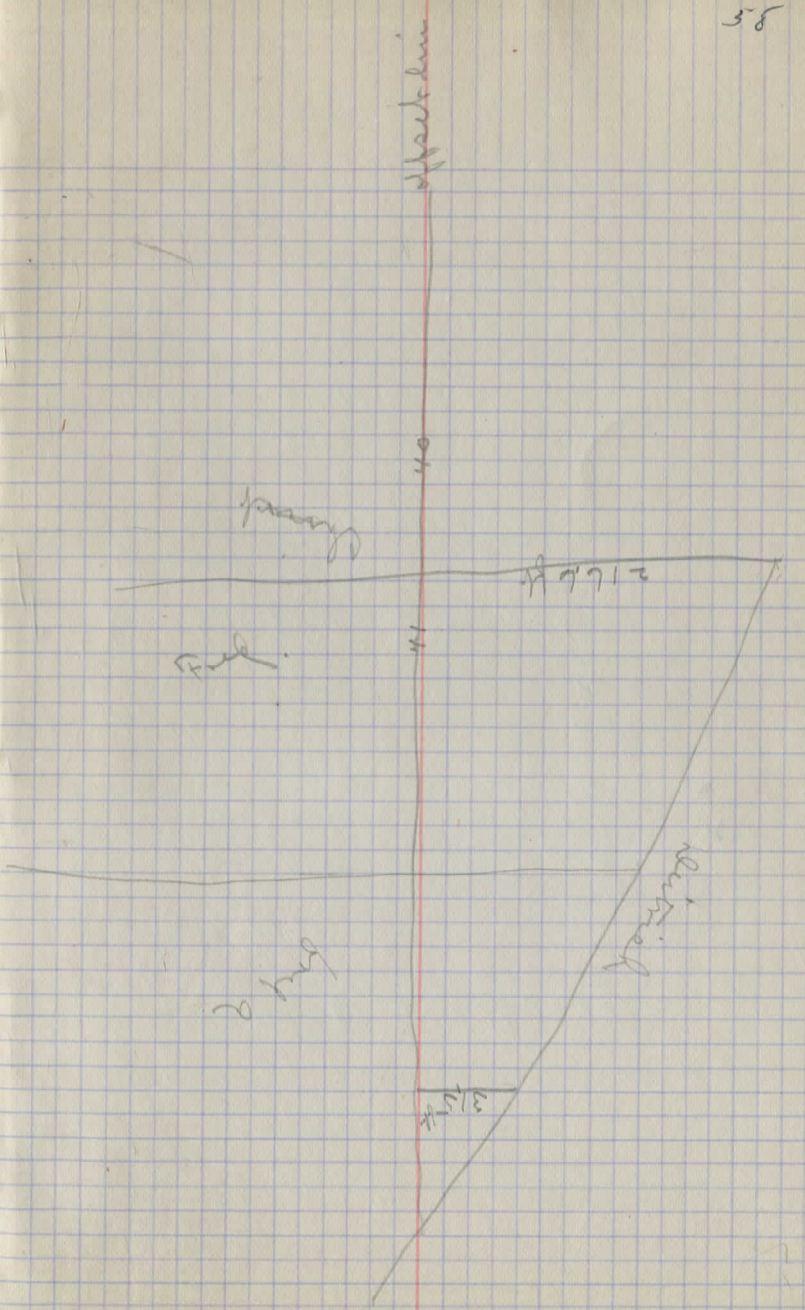
C. C. Fuller 29.53

C. O. Blair 64.

F. M. Dickens 17³/₂

F. M. Soltis on place + F. M.
Stella Annell

offset line

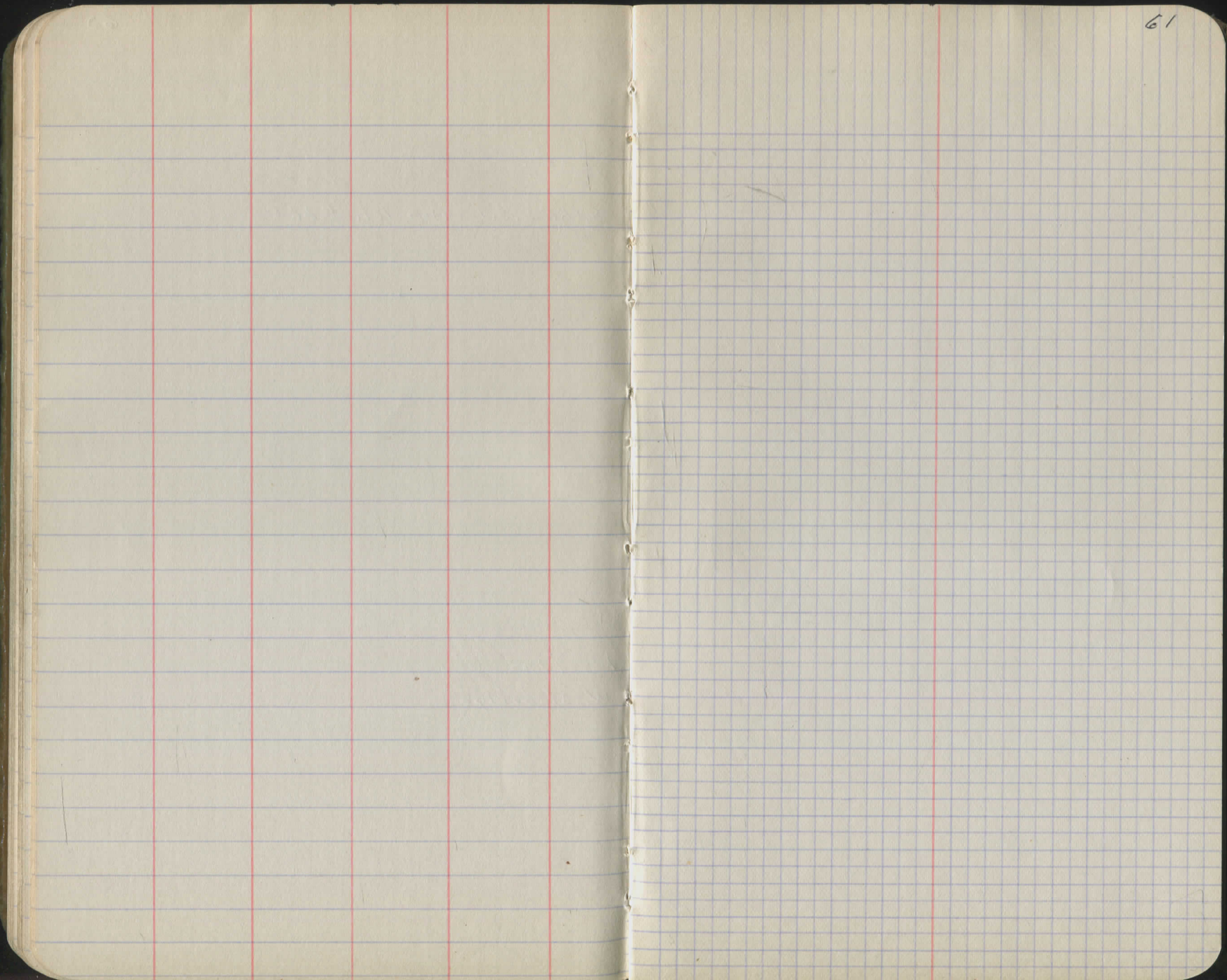


Sta 28420 *Chertus fulvius* 50' to
south specify not to touch

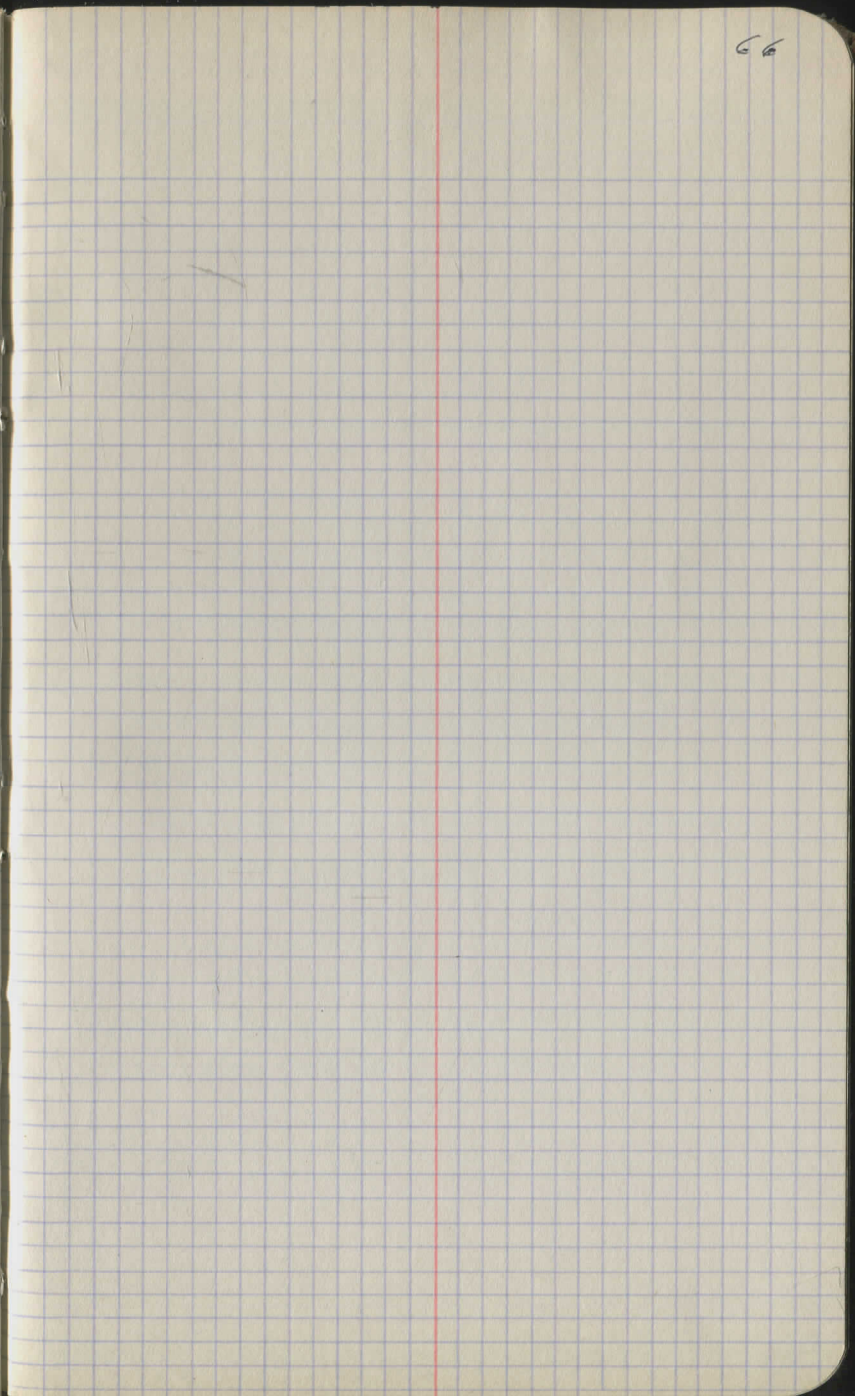
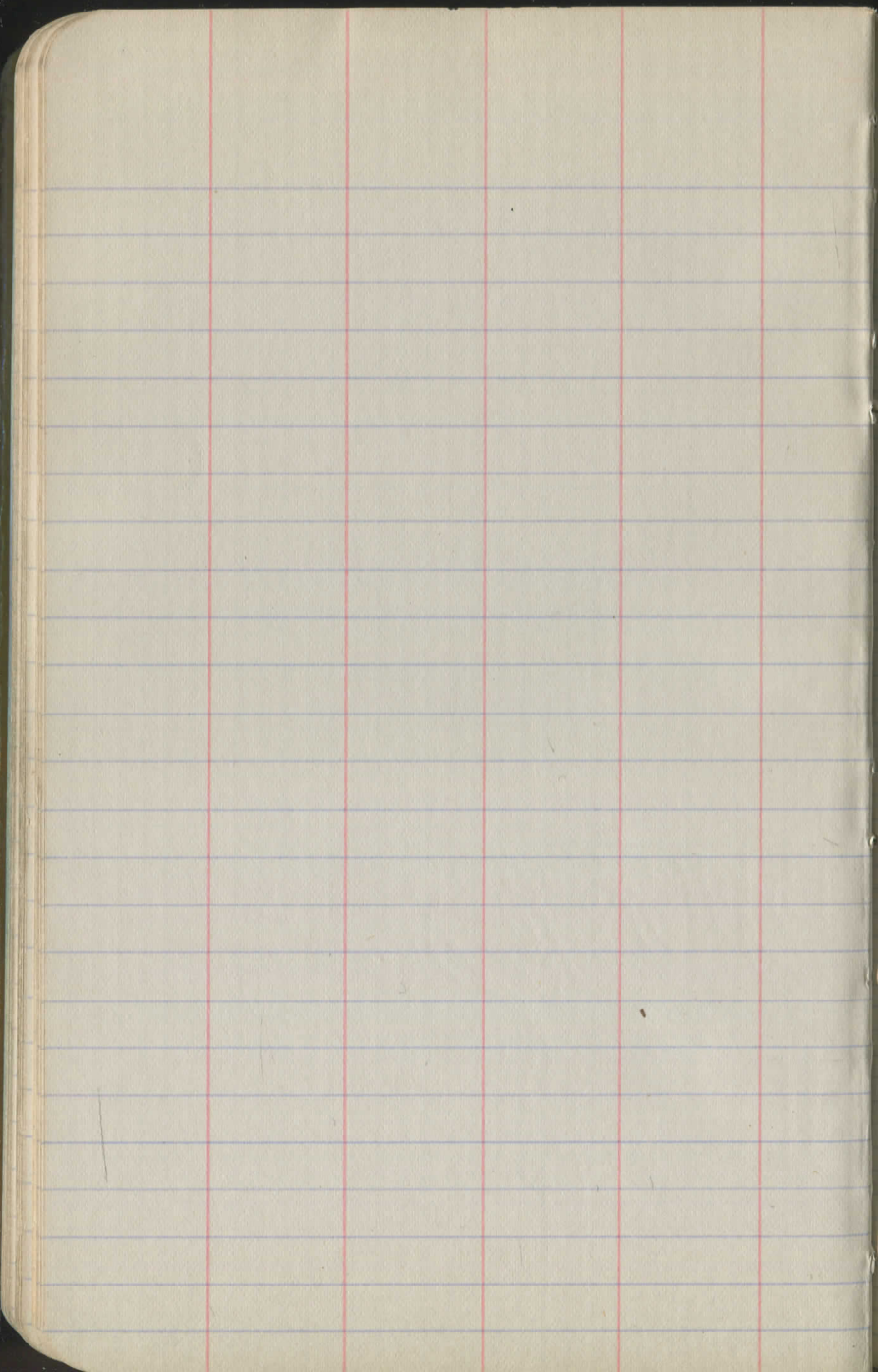
H. Patterson Levels on New
 P. Young Bridge Heath Rd Relocation
 F. Dull ± 500' North of Wilson Mills Rd.
 Cloudy - Rain 5-23-60

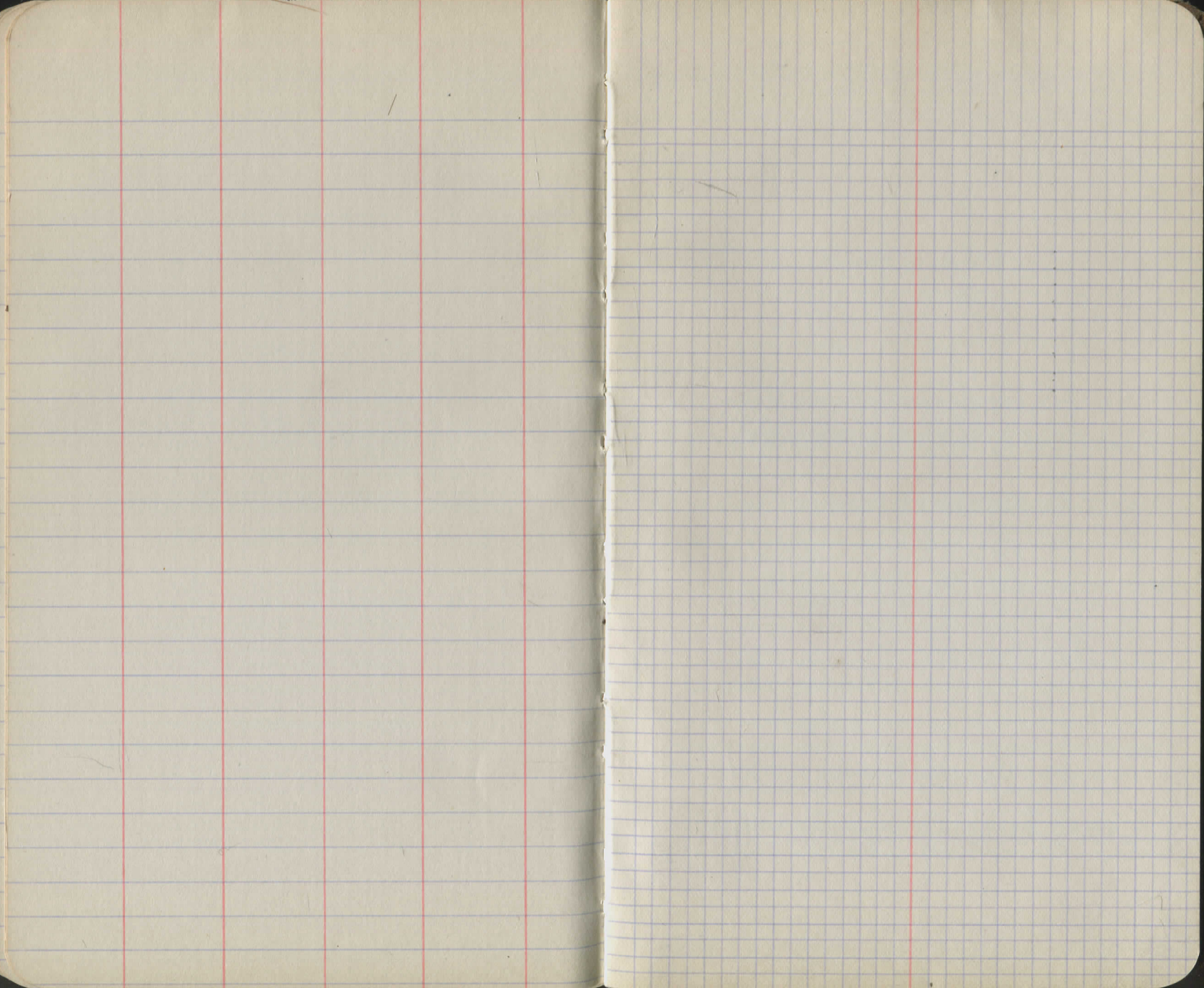
B.M. #1	5.20	971.59		966.39	
B.M. #2	1.66	965.06	8.19	963.40	
T.P.	3.15	961.45	6.76	958.30	
Top SE. Abut.			1.22	960.25	
" SW "			1.24	960.23	
" NW "			1.19	960.28	
" NE "			1.24	960.23	
SE Footer			11.47	950.00	
SW "			11.43	950.04	
B.M. #3 T.P.	0.97	956.84	5.61	955.84	Use
± Stream w. end bridge			8.47	948.37	
Channel at SW ±			9.55	947.29	
" at SE ±			10.22	946.62	
8" Pad under footer SE ±			8.83	948.01	
8" " " " SW ±			9.06	947.78	
± old Channel			9.92	946.92	at log jam
± New Channel			9.05	947.76	± 75' W. of bridge
T.P.	9.40	965.00	1.20	955.60	
B.M. #2			1.65	963.85	

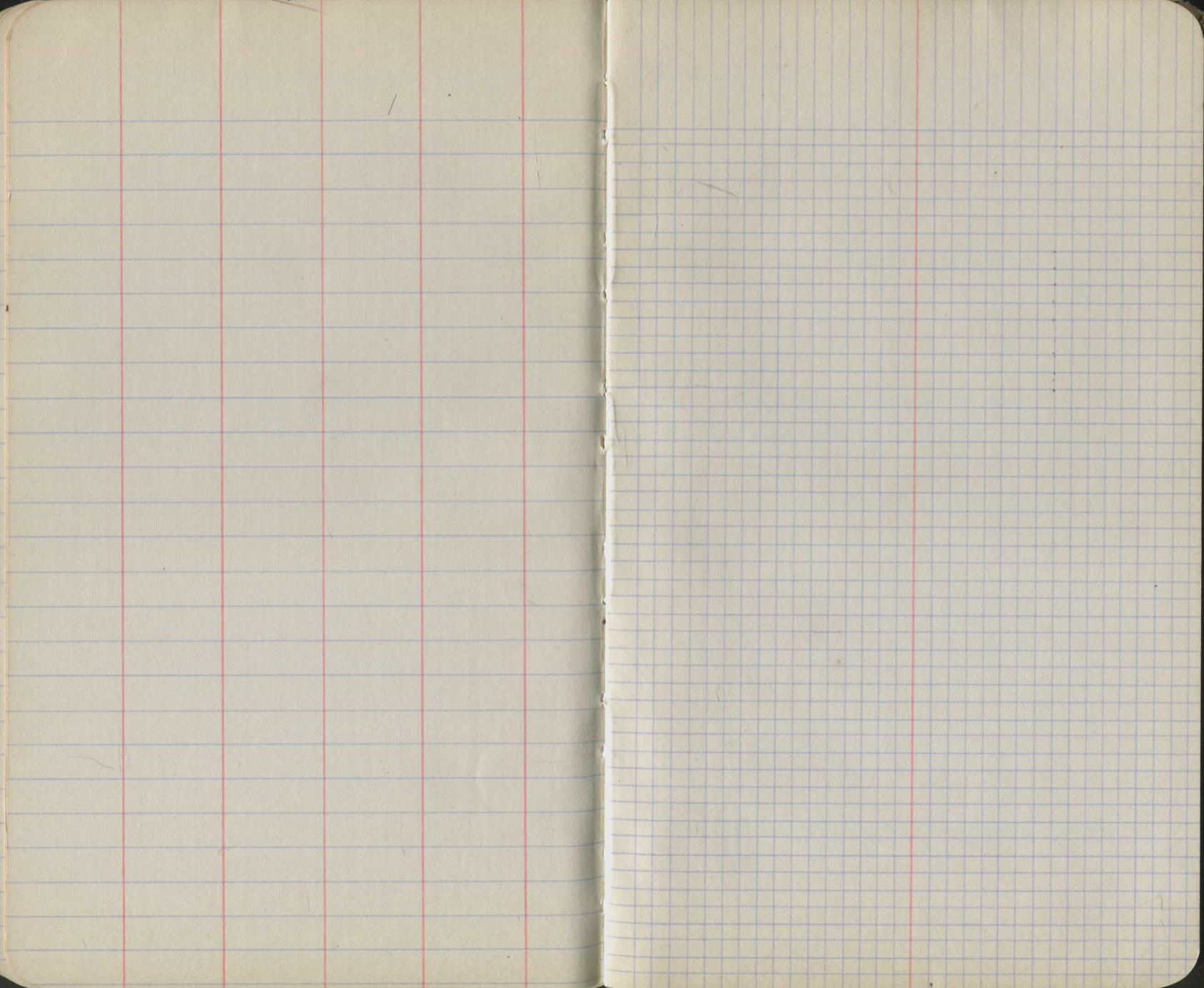
E. end
 Top Drive Pipe Roseum
 Spk. S. side O.B. Tel. #228

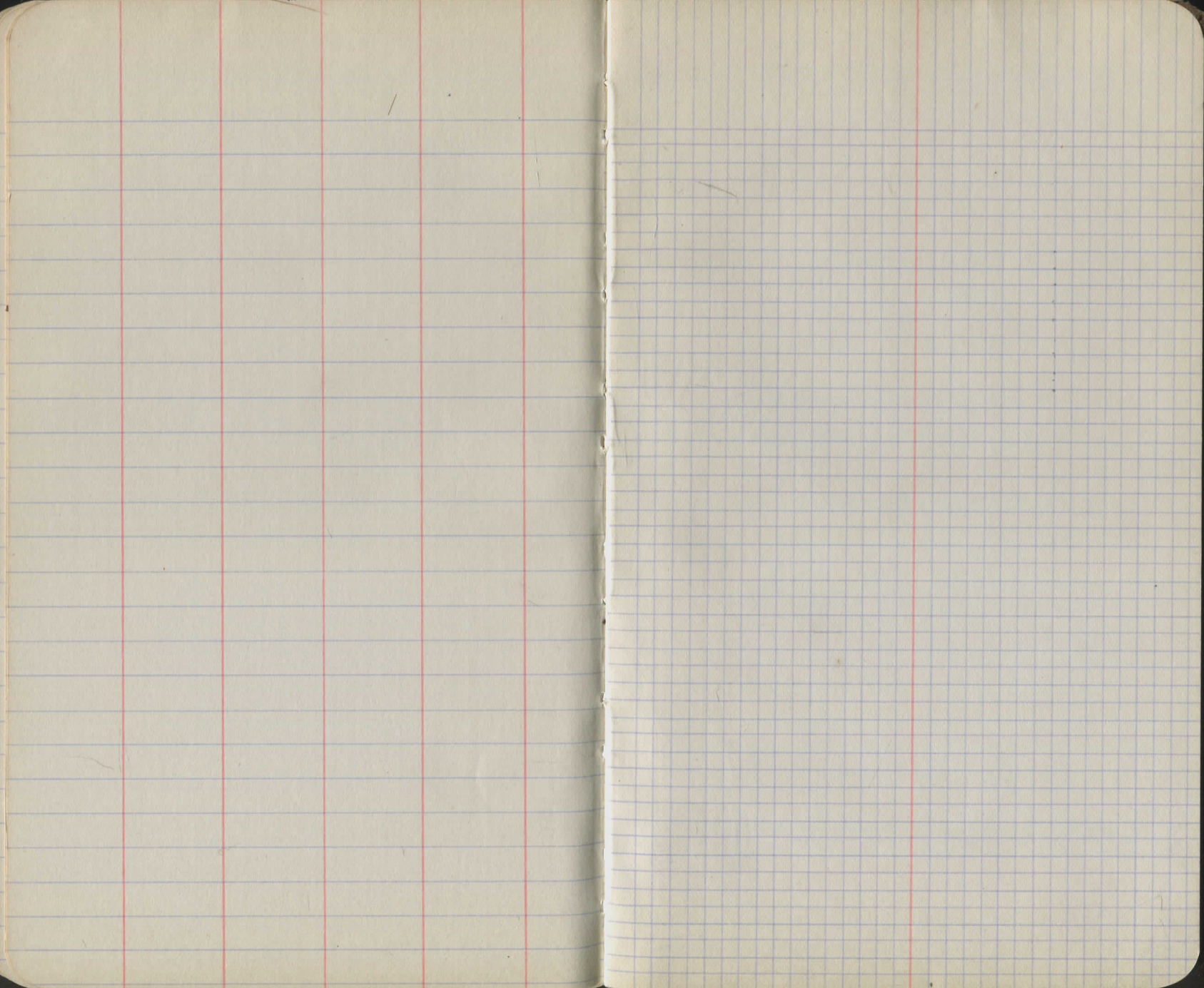


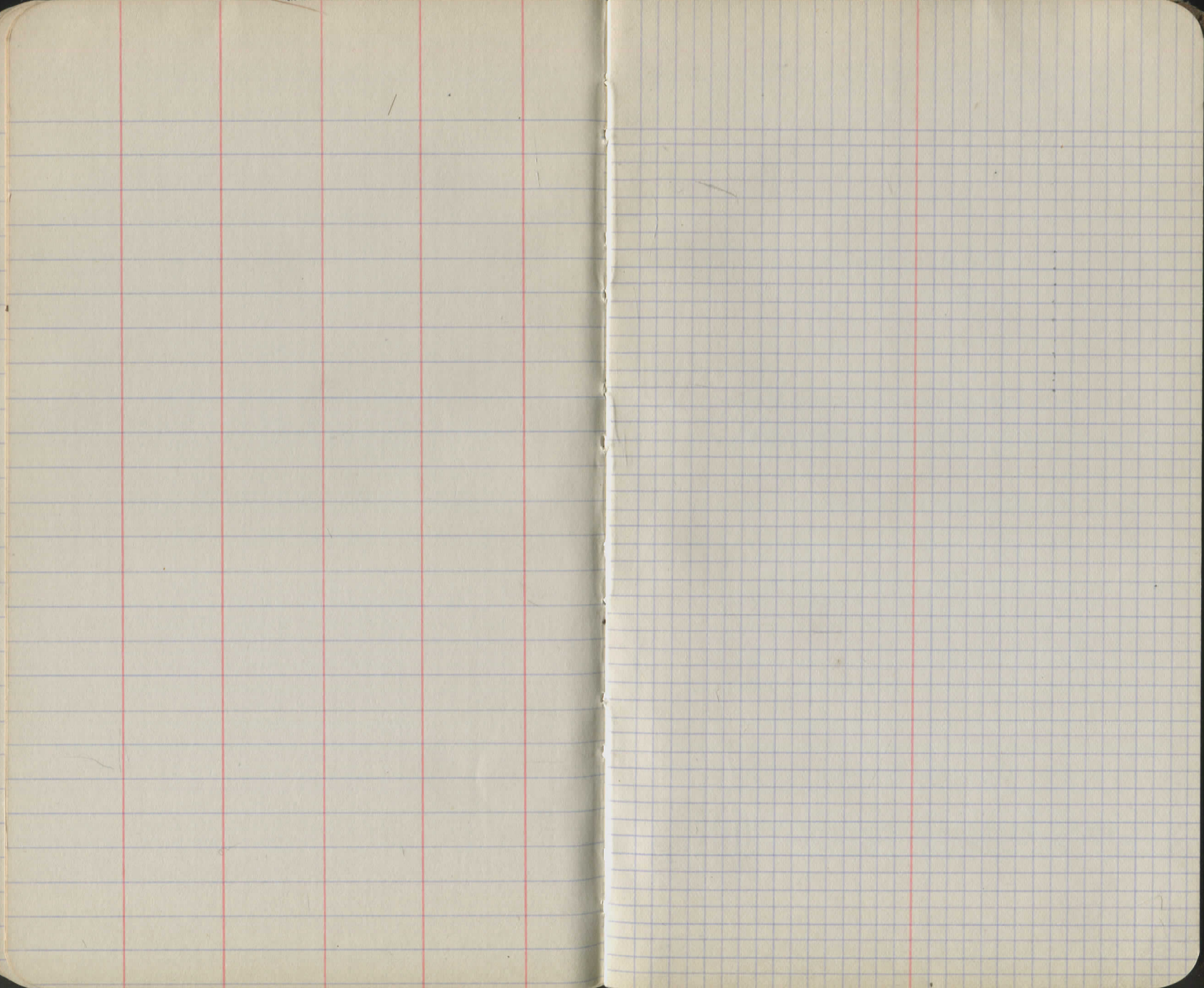
61

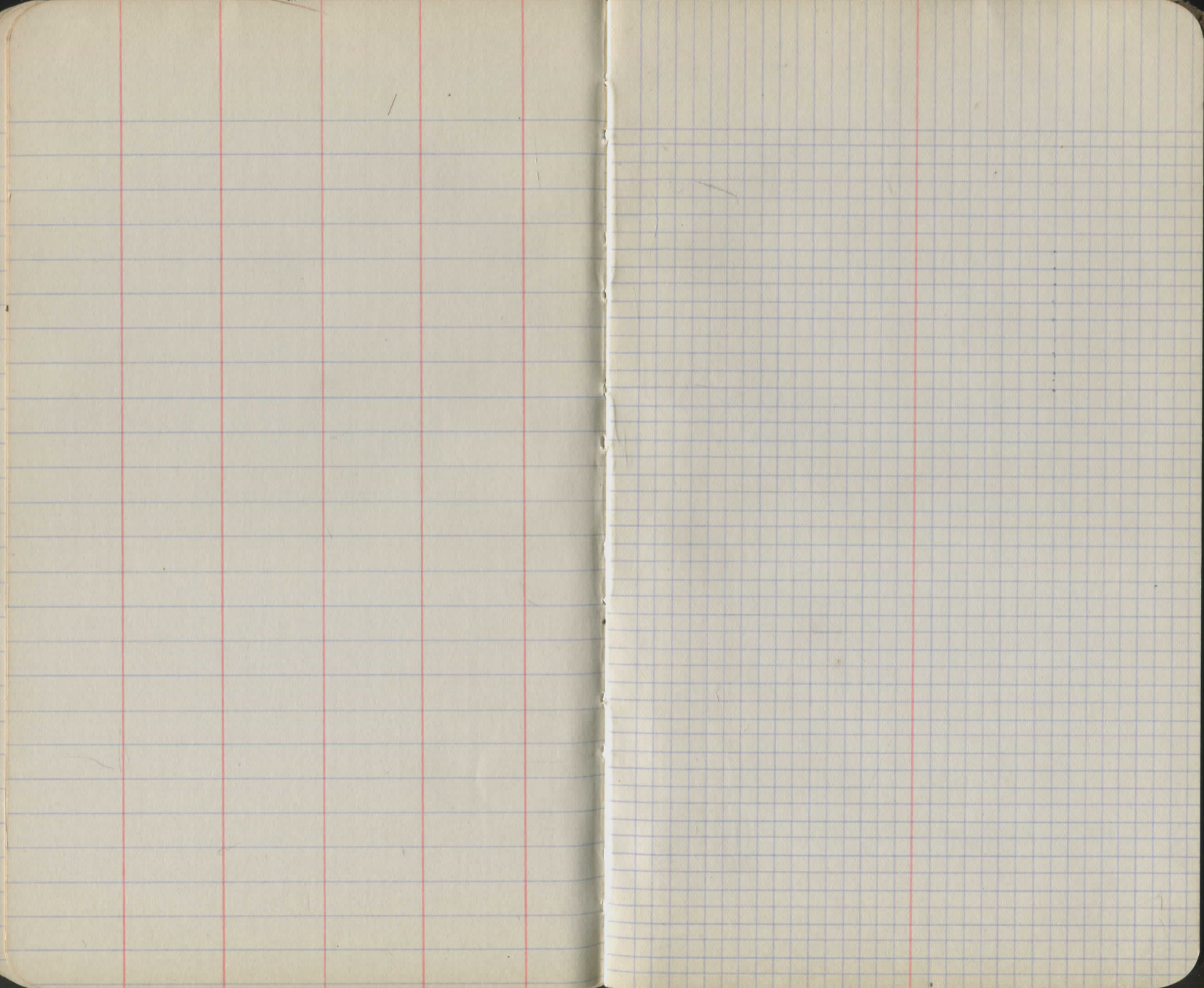


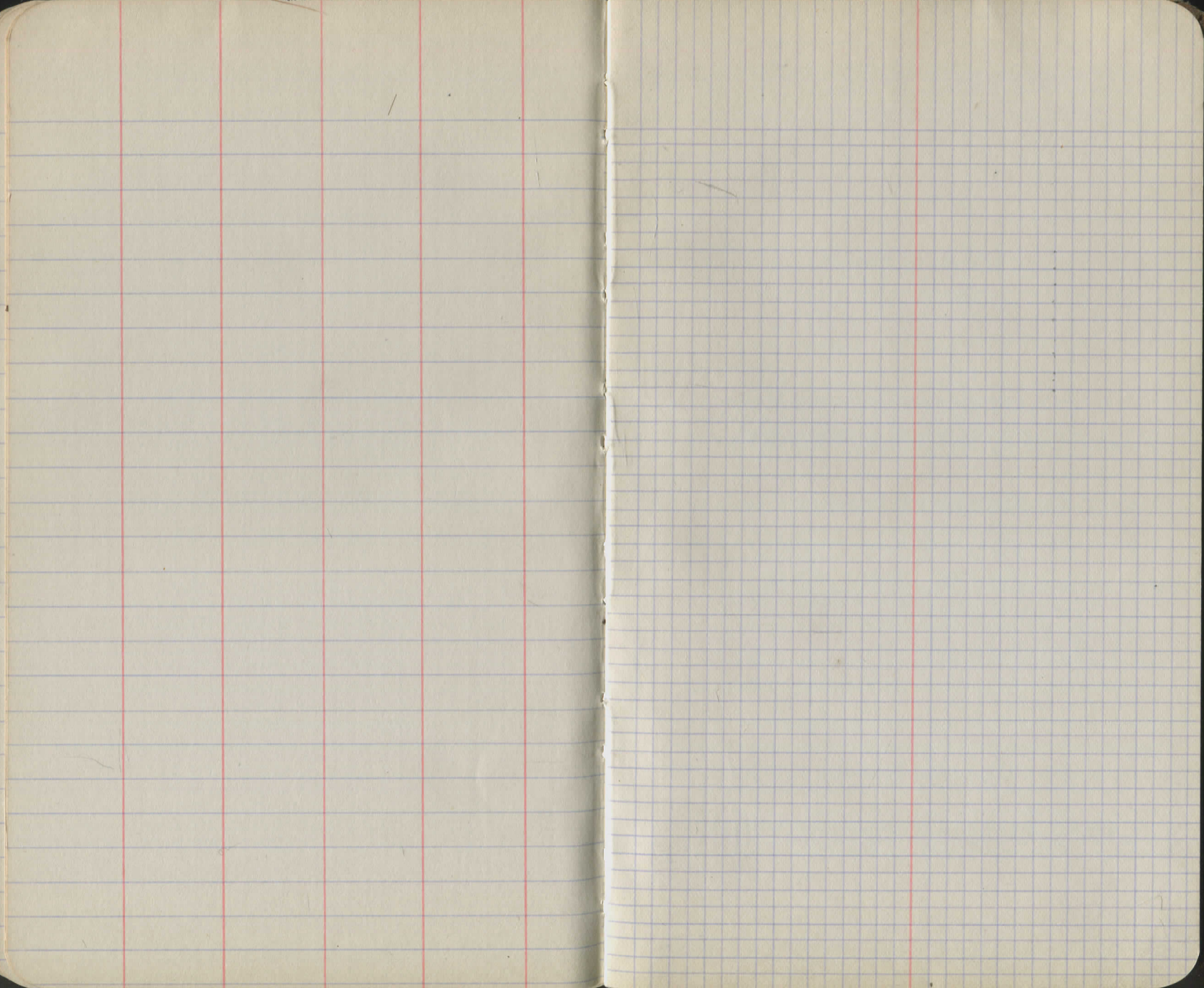


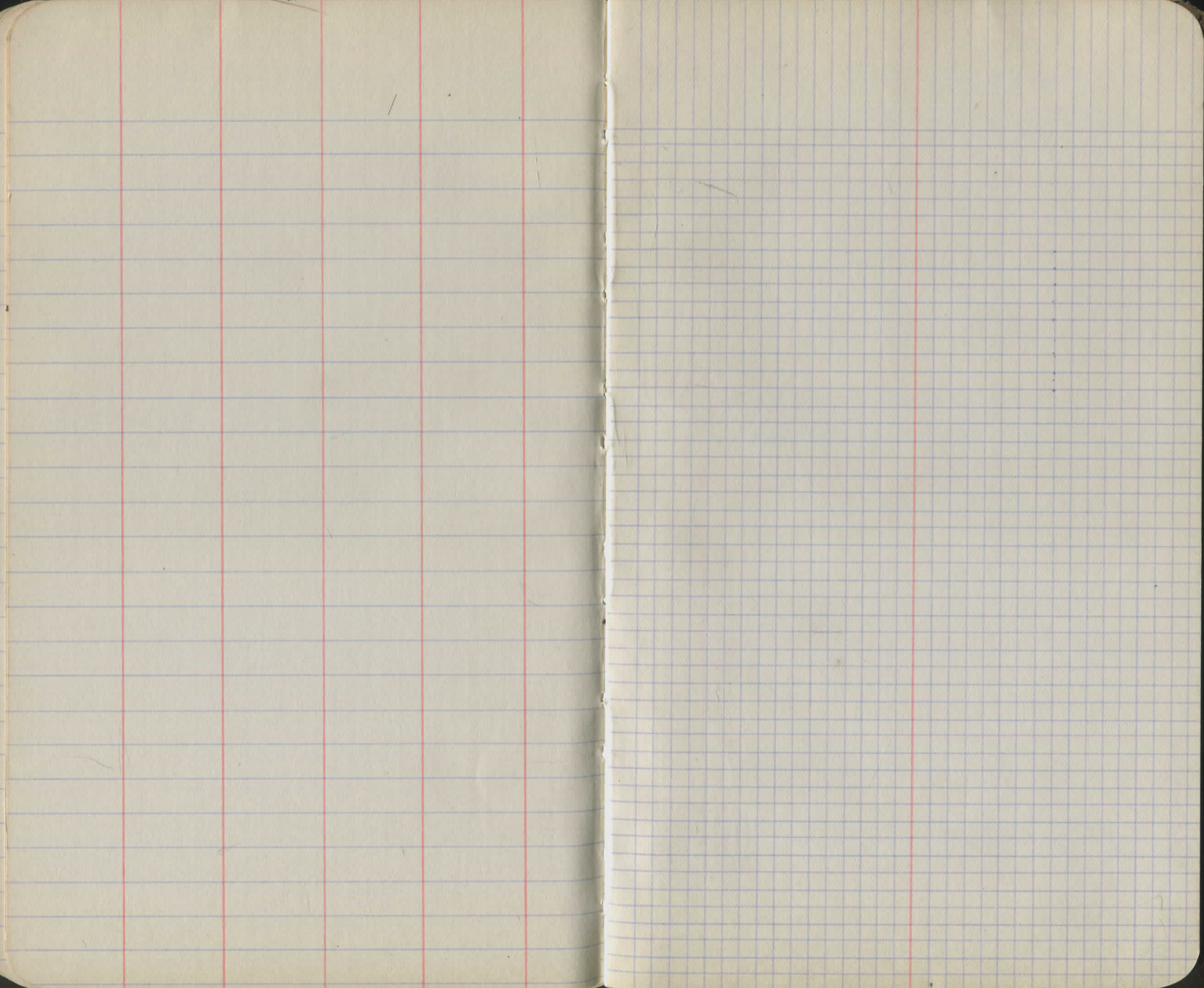


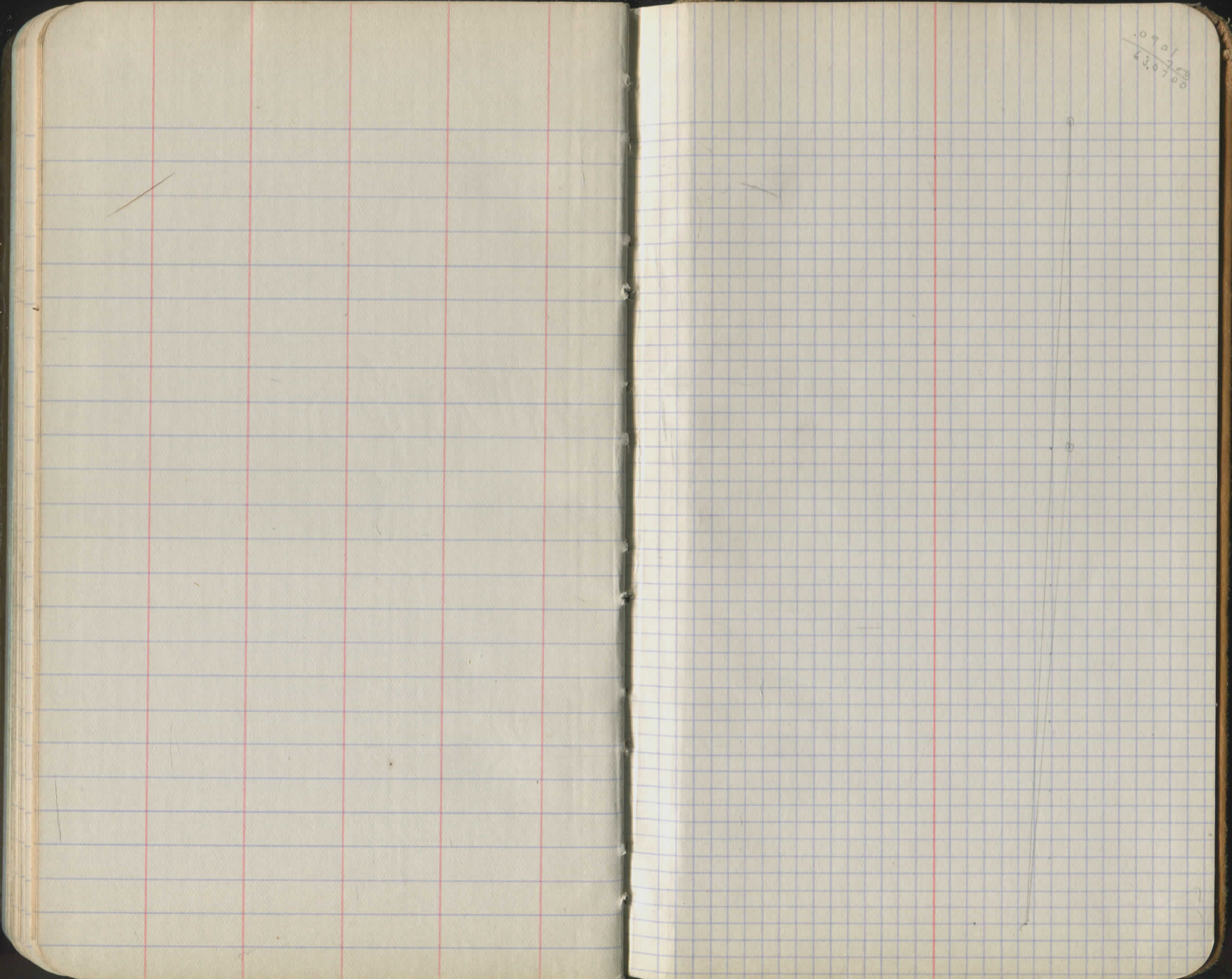








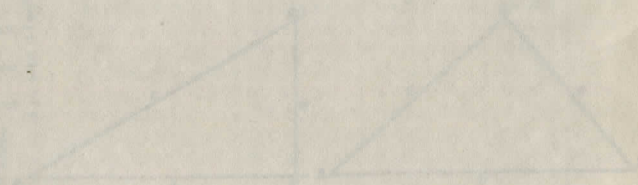




Dickens

4' bottom

3 1/2 + 1/2 deep



INCHES IN DECIMALS OF A FOOT.

1-16	3-32	1/8	3-16	1/4	5-16	3/8	1/2	5/8	3/4	7/8
.0052	.0078	.0104	.0156	.0208	.0260	.0313	.0417	.0521	.0625	.0729
1	2	3	4	5	6	7	8	9	10	11
.0833	.1667	.2500	.3333	.4167	.5000	.5833	.6667	.7500	.8333	.9167

SLOPE REDUCTIONS

Note. — In following table the column, "Feet per 100 ft.," gives the amount by which a measured slope distance of 100 feet must be reduced to obtain the true horizontal distance. Sufficiently accurate results are usually possible by mental calculations, while a slide rule will give exact results. The feature of the method lies in dealing with small quantities:—

Examples:	V. A.	M. D.	H. D.	(calculated by logs)
a)	8° 15'	298.48	298.00	
b)	2° 35'	319.42	319.10	
c)	11° 30'	237.19	232.43	

a) For each 100 feet deduct .161 feet. for 298.48 (say 300) we must deduct $3 \times .161 = .48$ (This is done mentally).

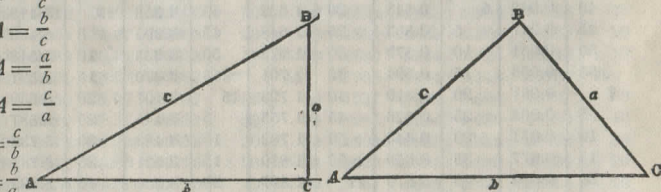
b) 319.42 may be taken as 3.2.

In table opposite 2° 35', is .102. Call this .10 to counterbalance the excess in our other factor (which should be 3.19) and multiply: $3.2 \times .10 = .32$.

c) By slide rule: $2.008 \times 2.37 = 4.76$,
 $237.19 - 4.76 = 232.43$.

1. sin. $A = \frac{a}{c}$
2. cos. $A = \frac{b}{c}$
3. tan. $A = \frac{a}{b}$
4. cosec. $A = \frac{c}{a}$
5. sec. $A = \frac{c}{b}$
6. cot. $A = \frac{b}{a}$

Trigonometrical Formulæ.



Given.	Sought.	Formulae. [Right triangles].		
7 a, c	A, B, b	$\sin. A = \frac{a}{c}$, $\cos. B = \frac{a}{c}$, $b = \sqrt{(c+a)(c-a)}$		
8 a, b	A, B, c	$\tan. A = \frac{a}{b}$, $\cot. B = \frac{a}{b}$, $c = \sqrt{a^2 + b^2}$.		
9 A, a	B, b, c	$B = 90^\circ - A$, $b = a \cot. A$, $c = \frac{a}{\sin. A}$.		
10 A, b	B, a, c	$B = 90^\circ - A$, $a = b \tan. A$, $c = \frac{b}{\cos. A}$.		
11 A, c	B, a, b	$B = 90^\circ - A$, $a = c \sin. A$, $c = c \cos. A$.		
Given.	Sought.	Formulae. [Oblique triangles].		
12 A, B, a	b	$b = \frac{a \sin. B}{\sin. A}$.		
13 A, a, b	B	$\sin. B = \frac{b \sin. A}{a}$		
14 a, b, C	A - B	$\tan. \frac{1}{2}(A - B) = \frac{(a-b) \tan. \frac{1}{2}(A+B)}{a+b}$		
15 a, b, c	A	$\left\{ \begin{aligned} \text{If } s = \frac{1}{2}(a+b+c), \sin. \frac{1}{2}A &= \sqrt{\frac{(s-b)(s-c)}{bc}} \\ \cos. \frac{1}{2}A &= \sqrt{\frac{s(s-a)}{bc}}, \tan. \frac{1}{2}A = \sqrt{\frac{(s-b)(s-c)}{s(s-a)}} \\ \sin. A &= \frac{2 \sqrt{s(s-a)(s-b)(s-c)}}{bc} \end{aligned} \right.$		
		16 A, B, C, a	area	$\text{area} = \frac{a^2 \sin. B \sin. C}{2 \sin. A}$
		17 A, b, c	area	$\text{area} = \frac{1}{2} b c \sin. A$
18 a, b, c	area	$s = \frac{1}{2}(a+b+c)$, $\text{area} = \sqrt{s(s-a)(s-b)(s-c)}$		

TABLE FOR REDUCING SLOPE MEASUREMENTS.

V. A.	Feet per 100 ft.	V. A.	Feet per 100 ft.	V. A.	Feet per 100 ft.	V. A.	Feet per 100 ft.	V. A.	Feet per 100 ft.	V. A.	Feet per 100 ft.
0	20	0	0.002	9	1.231	20	2.696	40	4.716	22	7.282
	25	5	0.003	5	1.254	25	2.729	45	4.760	5	7.336
	30	10	0.004	10	1.277	30	2.763	50	4.805	10	7.391
	35	15	0.005	15	1.300	35	2.797	55	4.850	15	7.446
	40	20	0.007	5	1.324	40	2.831	18	4.894	20	7.501
	45	25	0.009	5	1.348	45	2.866	5	4.939	25	7.556
	50	30	0.011	10	1.406	30	1.371	50	2.900	10	4.985
	55	35	0.013	15	1.420	35	1.396	55	2.935	15	5.030
1		40	0.015	20	1.444	40	1.420	14	2.970	20	5.076
	5	45	0.018	25	1.469	45	1.444	5	3.006	25	5.122
	10	50	0.021	30	1.494	50	1.469	10	3.041	30	5.168
	15	55	0.024	35	1.519	55	1.494	15	3.077	35	5.214
	20	10	0.027	40	1.545	10	1.519	20	3.113	40	5.260
	25	15	0.031	5	1.568	15	1.545	25	3.149	45	5.307
	30	20	0.034	5	1.593	20	1.570	30	3.185	50	5.354
	35	25	0.038	5	1.618	25	1.596	35	3.222	55	5.401
	40	30	0.042	6	1.643	30	1.622	40	3.258	19	5.448
	45	35	0.047	5	1.668	35	1.648	45	3.295	5	5.496
	50	40	0.051	10	1.693	40	1.675	50	3.333	10	5.543
	55	45	0.056	15	1.718	45	1.701	55	3.370	15	5.591
2		50	0.061	20	1.743	50	1.728	15	3.407	20	5.639
	5	55	0.066	25	1.768	55	1.755	5	3.445	25	5.687
	10	60	0.071	30	1.793	60	1.782	10	3.483	30	5.736
	15	65	0.077	35	1.818	65	1.810	15	3.521	35	5.785
	20	70	0.083	40	1.843	70	1.837	20	3.560	40	5.833
	25	75	0.089	45	1.868	75	1.865	25	3.598	45	5.882
	30	80	0.095	50	1.893	80	1.893	30	3.637	50	5.932
	35	85	0.102	55	1.918	85	1.921	35	3.676	55	5.981
	40	90	0.108	60	1.943	90	1.950	40	3.715	20	6.031
	45	95	0.115	5	1.968	95	1.979	45	3.754	5	6.081
	50	100	0.122	10	2.000	100	2.008	50	3.794	10	6.131
	55	105	0.130	15	2.032	105	2.037	55	3.834	15	6.181
3		110	0.137	20	2.064	110	2.066	16	3.874	20	6.231
	5	115	0.145	25	2.096	115	2.095	5	3.914	25	6.282
	10	120	0.153	30	2.128	120	2.125	10	3.954	30	6.333
	15	125	0.161	35	2.160	125	2.155	15	3.995	35	6.384
	20	130	0.169	40	2.192	130	2.185	20	4.036	40	6.435
	25	135	0.178	45	2.224	135	2.216	25	4.077	45	6.486
	30	140	0.187	50	2.256	140	2.246	30	4.118	50	6.538
	35	145	0.196	55	2.288	145	2.277	35	4.159	55	6.590
	40	150	0.205	60	2.320	150	2.308	40	4.201	21	6.642
	45	155	0.214	5	2.352	155	2.339	45	4.243	5	6.694
	50	160	0.224	10	2.384	160	2.370	50	4.285	10	6.747
	55	165	0.234	15	2.416	165	2.402	55	4.327	15	6.799
4		170	0.244	20	2.448	170	2.434	17	4.370	20	6.852
	5	175	0.254	25	2.480	175	2.466	5	4.412	25	6.905
	10	180	0.264	30	2.512	180	2.498	10	4.455	30	6.958
	15	185	0.275	35	2.544	185	2.530	15	4.498	35	7.012
	20	190	0.286	40	2.576	190	2.563	20	4.541	40	7.065
	25	195	0.297	45	2.608	195	2.596	25	4.585	45	7.119
	30	200	0.308	50	2.640	200	2.629	30	4.628	50	7.173
	35	205	0.320	55	2.672	205	2.662	35	4.672	55	7.227

Calculated by Prof. A. J. Hoskin.

NATURAL TRIGONOMETRICAL FUNCTIONS.

Angle.	Sine.	Tan.	Cotg.	Cosin.	Angle.	Sine.	Tan.	Cotg.	Cosin.
0	0	0	∞	1	90	1	∞	0	0
1	.0175	.0175	57.29	.99985	89	.9816	15.77	1.0183	.15717
2	.0349	.0349	28.64	.99939	88	.9696	16.75	1.03077	.16744
3	.0523	.0523	19.08	.99863	87	.9573	17.76	1.04322	.17771
4	.0698	.0698	14.30	.99756	86	.9450	18.78	1.05573	.18800
5	.0872	.0872	11.43	.99619	85	.9328	19.81	1.06831	.19831
6	.1045	.1045	9.514	.99452	84	.9207	20.85	1.08095	.20865
7	.1219	.1219	8.144	.99255	83	.9087	21.90	1.09365	.21903
8	.1392	.1392	7.115	.99027	82	.8966	22.96	1.10641	.22944
9	.1564	.1564	6.314	.98769	81	.8845	24.03	1.11923	.23988
10	.1736	.1736	5.671	.98481	80	.8724	25.11	1.13211	.25035
11	.1908	.1908	5.145	.98163	79	.8603	26.20	1.14505	.26084
12	.2079	.2079	4.705	.97815	78	.8482	27.30	1.15805	.27136
13	.2250	.2250	4.331	.97437	77	.8361	28.41	1.17111	.28191
14	.2421	.2421	4.011	.97030	76	.8240	29.53	1.18423	.29249
15	.2588	.2588	3.732	.96593	75	.8119	30.66	1.19741	.30310
16	.2752	.2752	3.492	.96127	74	.8000	31.80	1.21065	.31374
17	.2913	.2913	3.288	.95633	73	.7881	32.96	1.22395	.32441
18	.3071	.3071	3.115	.95111	72	.7764	34.13	1.23731	.33511
19	.3226	.3226	2.968	.94561	71	.7648	35.31	1.25073	.34584
20	.3379	.3379	2.842	.94003	70	.7534	36.50	1.26421	.35660
21	.3529	.3529	2.733	.93427	69	.7421	37.70	1.27775	.36739
22	.3677	.3677	2.638	.92833	68	.7310	38.91	1.29135	.37821
23	.3822	.3822	2.554	.92221	67	.7201	40.14	1.30501	.38906
24	.3965	.3965	2.479	.91591	66	.7094	41.38	1.31873	.40000
25	.4106	.4106	2.412	.90943	65	.6989	42.64	1.33251	.41100
26	.4245	.4245	2.352	.90277	64	.6886	43.91	1.34635	.42200
27	.4382	.4382	2.297	.89593	63	.6785	45.20	1.36025	.43300
28	.4517	.4517	2.247	.88891	62	.6686	46.50	1.37421	.44400
29	.4650	.4650	2.201	.88171	61	.6588	47.81	1.38823	.45500
30	.4781	.4781	2.159	.87433	60	.6492	49.13	1.40231	.46600
31	.4910	.4910	2.121	.86677	59	.6398	50.46	1.41645	.47700
32	.5038	.5038	2.086	.85903	58	.6306	51.80	1.43065	.48800
33	.5164	.5164	2.054	.85111	57	.6216	53.15	1.44491	.49900
34	.5288	.5288	2.024	.84291	56	.6128	54.51	1.45923	.51000
35	.5411	.5411	2.000	.83453	55	.6042	55.88	1.47361	.52100
36	.5532	.5532	1.979	.82597	54	.5958	57.26	1.48805	.53200
37	.5651	.5651	1.961	.81723	53	.5876	58.65	1.50255	.54300
38	.5768	.5768	1.945	.80831	52	.5796	60.05	1.51711	.55400
39	.5883	.5883	1.931	.80000	51	.5718	61.46	1.53173	.56500
40	.5996	.5996	1.918	.79200	50	.5642	62.88	1.54641	.57600
41	.6108	.6108	1.907	.78400	49	.5568	64.31	1.56115	.58700
42	.6218	.6218	1.897	.77600	48	.5496	65.75	1.57595	.59800
43	.6326	.6326	1.888	.76800	47	.5426	67.20	1.59081	.60900
44	.6432	.6432	1.881	.76000	46	.5358	68.66	1.60573	.62000
45	.6537	.6537	1.875	.75200	45	.5292	70.13	1.62071	.63100
46	.6640	.6640	1.870	.74400	44	.5228	71.61	1.63575	.64200
47	.6742	.6742	1.866	.73600	43	.5166	73.10	1.65085	.65300
48	.6842	.6842	1.863	.72800	42	.5106	74.60	1.66601	.66400
49	.6940	.6940	1.861	.72000	41	.5048	76.11	1.68123	.67500
50	.7036	.7036	1.860	.71200	40	.5000	77.63	1.69651	.68600
51	.7131	.7131	1.860	.70400	39	.4954	79.16	1.71185	.69700
52	.7224	.7224	1.861	.69600	38	.4910	80.70	1.72725	.70800
53	.7315	.7315	1.863	.68800	37	.4868	82.25	1.74271	.71900
54	.7404	.7404	1.866	.68000	36	.4828	83.81	1.75823	.73000
55	.7491	.7491	1.870	.67200	35	.4790	85.38	1.77381	.74100
56	.7576	.7576	1.875	.66400	34	.4754	86.96	1.78945	.75200
57	.7659	.7659	1.881	.65600	33	.4720	88.55	1.80515	.76300
58	.7740	.7740	1.888	.64800	32	.4688	90.15	1.82091	.77400
59	.7819	.7819	1.896	.64000	31	.4658	91.76	1.83673	.78500
60	.7896	.7896	1.905	.63200	30	.4630	93.38	1.85261	.79600
61	.7971	.7971	1.915	.62400	29	.4604	95.01	1.86855	.80700
62	.8044	.8044	1.926	.61600	28	.4580	96.65	1.88455	.81800
63	.8115	.8115	1.938	.60800	27	.4558	98.30	1.90061	.82900
64	.8184	.8184	1.951	.60000	26	.4538	99.96	1.91673	.84000
65	.8251	.8251	1.965	.59200	25	.4520	101.63	1.93291	.85100
66	.8316	.8316	1.980	.58400	24	.4504	103.31	1.94915	.86200
67	.8379	.8379	1.996	.57600	23	.4490	105.00	1.96545	.87300
68	.8440	.8440							

NATURAL TRIGONOMETRICAL FUNCTIONS.

Angle.	Sine.	Tan.	Cotg.	Cosin.	Angle.	Sine.	Tan.	Cotg.	Cosin.
0°					0°				
16	.2756	.2867	3.487	.96126	74	.4067	.4452	2.246	.91355
10	.2784	.2899	3.450	.96046	50	.4094	.4487	2.229	.91236
20	.2812	.2931	3.412	.95964	40	.4120	.4522	2.211	.91116
30	.2840	.2962	3.376	.95882	30	.4147	.4557	2.194	.90996
40	.2868	.2994	3.340	.95799	20	.4173	.4592	2.177	.90875
50	.2896	.3026	3.305	.95715	10	.4200	.4628	2.161	.90753
17	.2924	.3057	3.271	.95615	73	.4226	.4663	2.145	.90631
10	.2952	.3089	3.237	.95545	50	.4253	.4699	2.128	.90507
20	.2979	.3121	3.204	.95459	40	.4279	.4734	2.112	.90383
30	.3007	.3153	3.172	.95372	30	.4305	.4770	2.097	.90259
40	.3035	.3185	3.140	.95284	20	.4331	.4806	2.081	.90133
50	.3062	.3217	3.108	.95195	10	.4358	.4841	2.066	.90007
18	.3090	.3249	3.078	.95106	72	.4384	.4877	2.050	.89879
10	.3118	.3281	3.048	.95015	50	.4410	.4913	2.035	.89752
20	.3145	.3314	3.018	.94924	40	.4436	.4950	2.020	.89623
30	.3173	.3346	2.989	.94832	30	.4462	.4986	2.006	.89493
40	.3201	.3378	2.960	.94740	20	.4488	.5022	1.991	.89363
50	.3228	.3411	2.932	.94646	10	.4514	.5059	1.977	.89232
19	.3256	.3443	2.904	.94552	71	.4540	.5095	1.963	.89101
10	.3283	.3476	2.877	.94457	50	.4566	.5132	1.949	.88968
20	.3311	.3508	2.850	.94361	40	.4592	.5169	1.935	.88835
30	.3338	.3541	2.824	.94264	30	.4617	.5206	1.921	.88701
40	.3365	.3574	2.798	.94167	20	.4643	.5243	1.907	.88566
50	.3393	.3607	2.773	.94068	10	.4669	.5280	1.894	.88431
20	.3420	.3640	2.747	.93969	70	.4695	.5317	1.881	.88295
10	.3448	.3673	2.723	.93869	50	.4720	.5354	1.868	.88158
20	.3475	.3706	2.699	.93769	40	.4746	.5392	1.855	.88020
30	.3502	.3739	2.675	.93667	30	.4772	.5430	1.842	.87882
40	.3529	.3772	2.651	.93565	20	.4797	.5467	1.829	.87743
50	.3557	.3805	2.628	.93462	10	.4823	.5505	1.816	.87603
21	.3584	.3839	2.605	.93358	69	.4848	.5543	1.804	.87462
10	.3611	.3872	2.583	.93253	50	.4874	.5581	1.792	.87321
20	.3638	.3906	2.560	.93148	40	.4899	.5619	1.780	.87178
30	.3665	.3939	2.539	.93042	30	.4924	.5658	1.767	.87036
40	.3692	.3973	2.517	.92935	20	.4950	.5696	1.756	.86892
50	.3719	.4006	2.496	.92827	10	.4975	.5735	1.744	.86748
22	.3746	.4040	2.475	.92718	68	.5000	.5774	1.732	.86603
10	.3773	.4074	2.455	.92609	50	.5025	.5812	1.720	.86457
20	.3800	.4108	2.434	.92499	40	.5050	.5851	1.709	.86310
30	.3827	.4142	2.414	.92388	30	.5075	.5890	1.698	.86163
40	.3854	.4176	2.394	.92276	20	.5100	.5930	1.686	.86015
50	.3881	.4210	2.375	.92164	10	.5125	.5969	1.675	.85866
23	.3907	.4245	2.356	.92050	67	.5150	.6009	1.664	.85717
10	.3934	.4279	2.337	.91936	50	.5175	.6048	1.653	.85567
20	.3961	.4314	2.318	.91822	40	.5200	.6088	1.643	.85416
30	.3987	.4348	2.300	.91706	30	.5225	.6128	1.632	.85264
40	.4014	.4383	2.282	.91590	20	.5250	.6168	1.621	.85112
50	.4041	.4417	2.264	.91472	10	.5275	.6208	1.611	.84959
					66				

NATURAL TRIGONOMETRICAL FUNCTIONS.

Angle.	Sine.	Tan.	Cotg.	Cosin.	Angle.	Sine.	Tan.	Cotg.	Cosin.
58	.84805	1.600	.6249	.5299	32	.5299	.6249	1.600	.84805
59	.84650	1.590	.6289	.5324	10	.5324	.6289	1.590	.84650
40	.84495	1.580	.6330	.5348	20	.5348	.6330	1.580	.84495
30	.84339	1.570	.6371	.5373	30	.5373	.6371	1.570	.84339
20	.84182	1.560	.6412	.5398	40	.5398	.6412	1.560	.84182
10	.84025	1.550	.6453	.5422	50	.5422	.6453	1.550	.84025
57	.83867	1.540	.6494	.5446	33	.5446	.6494	1.540	.83867
56	.83708	1.530	.6536	.5471	10	.5471	.6536	1.530	.83708
40	.83549	1.520	.6577	.5495	20	.5495	.6577	1.520	.83549
30	.83389	1.511	.6619	.5519	30	.5519	.6619	1.511	.83389
20	.83228	1.501	.6661	.5544	40	.5544	.6661	1.501	.83228
10	.83066	1.492	.6703	.5568	50	.5568	.6703	1.492	.83066
56	.82904	1.483	.6745	.5592	34	.5592	.6745	1.483	.82904
55	.82741	1.473	.6787	.5616	10	.5616	.6787	1.473	.82741
40	.82577	1.464	.6830	.5640	20	.5640	.6830	1.464	.82577
30	.82413	1.455	.6873	.5664	30	.5664	.6873	1.455	.82413
20	.82248	1.446	.6916	.5688	40	.5688	.6916	1.446	.82248
10	.82082	1.437	.6959	.5712	50	.5712	.6959	1.437	.82082
55	.81915	1.428	.7002	.5736	35	.5736	.7002	1.428	.81915
54	.81748	1.419	.7046	.5760	10	.5760	.7046	1.419	.81748
40	.81580	1.411	.7090	.5783	20	.5783	.7090	1.411	.81580
30	.81412	1.402	.7133	.5807	30	.5807	.7133	1.402	.81412
20	.81242	1.393	.7177	.5831	40	.5831	.7177	1.393	.81242
10	.81072	1.385	.7221	.5854	50	.5854	.7221	1.385	.81072
54	.80902	1.376	.7265	.5878	36	.5878	.7265	1.376	.80902
53	.80730	1.368	.7310	.5901	10	.5901	.7310	1.368	.80730
40	.80558	1.360	.7355	.5925	20	.5925	.7355	1.360	.80558
30	.80386	1.351	.7400	.5948	30	.5948	.7400	1.351	.80386
20	.80212	1.343	.7445	.5972	40	.5972	.7445	1.343	.80212
10	.80038	1.335	.7490	.5995	50	.5995	.7490	1.335	.80038
53	.79864	1.327	.7536	.6018	37	.6018	.7536	1.327	.79864
52	.79688	1.319	.7581	.6041	10	.6041	.7581	1.319	.79688
40	.79512	1.311	.7627	.6065	20	.6065	.7627	1.311	.79512
30	.79335	1.303	.7673	.6088	30	.6088	.7673	1.303	.79335
20	.79158	1.295	.7720	.6111	40	.6111	.7720	1.295	.79158
10	.78980	1.288	.7766	.6134	50	.6134	.7766	1.288	.78980
52	.78801	1.280	.7813	.6157	38	.6157	.7813	1.280	.78801
51	.78622	1.272	.7860	.6180	10	.6180	.7860	1.272	.78622
40	.78442	1.265	.7907	.6202	20	.6202	.7907	1.265	.78442
					58				

Cosin. Cotg. Tan. Sine. Angle.

Cosin. Cotg. Tan. Sine. Angle.

Cosin. Cotg. Tan. Sine. Angle.

Cosin. Cotg. Tan. Sine. Angle.

STANCES 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	
	7.00	7.15	7.30	7.45	7.60	7.75	7.90	8.05	8.20	8.35	0
	8.50	8.65	8.80	8.95	9.10	9.25	9.40	9.55	9.70	9.85	1
	10.00	10.15	10.30	10.45	10.60	10.75	10.90	11.05	11.20	11.35	2
	11.50	11.65	11.80	11.95	12.10	12.25	12.40	12.55	12.70	12.85	3
	13.00	13.15	13.30	13.45	13.60	13.75	13.90	14.05	14.20	14.35	4
	14.50	14.65	14.80	14.95	15.10	15.25	15.40	15.55	15.70	15.85	5
	16.00	16.15	16.30	16.45	16.60	16.75	16.90	17.05	17.20	17.35	6
	17.50	17.65	17.80	17.95	18.10	18.25	18.40	18.55	18.70	18.85	7
	19.00	19.15	19.30	19.45	19.60	19.75	19.90	20.05	20.20	20.35	8
	20.50	20.65	20.80	20.95	21.10	21.25	21.40	21.55	21.70	21.85	9
	22.00	22.15	22.30	22.45	22.60	22.75	22.90	23.05	23.20	23.35	10
	23.50	23.65	23.80	23.95	24.10	24.25	24.40	24.55	24.70	24.85	11
	25.00	25.15	25.30	25.45	25.60	25.75	25.90	26.05	26.20	26.35	12
	26.50	26.65	26.80	26.95	27.10	27.25	27.40	27.55	27.70	27.85	13
	28.00	28.15	28.30	28.45	28.60	28.75	28.90	29.05	29.20	29.35	14
	29.50	29.65	29.80	29.95	30.10	30.25	30.40	30.55	30.70	30.85	15
	31.00	31.15	31.30	31.45	31.60	31.75	31.90	32.05	32.20	32.35	16
	32.50	32.65	32.80	32.95	33.10	33.25	33.40	33.55	33.70	33.85	17
	34.00	34.15	34.30	34.45	34.60	34.75	34.90	35.05	35.20	35.35	18
	35.50	35.65	35.80	35.95	36.10	36.25	36.40	36.55	36.70	36.85	19
	37.00	37.15	37.30	37.45	37.60	37.75	37.90	38.05	38.20	38.35	20
	38.50	38.65	38.80	38.95	39.10	39.25	39.40	39.55	39.70	39.85	21
	40.00	40.15	40.30	40.45	40.60	40.75	40.90	41.05	41.20	41.35	22
	41.50	41.65	41.80	41.95	42.10	42.25	42.40	42.55	42.70	42.85	23
	43.00	43.15	43.30	43.45	43.60	43.75	43.90	44.05	44.20	44.35	24
	44.50	44.65	44.80	44.95	45.10	45.25	45.40	45.55	45.70	45.85	25
	46.00	46.15	46.30	46.45	46.60	46.75	46.90	47.05	47.20	47.35	26
	47.50	47.65	47.80	47.95	48.10	48.25	48.40	48.55	48.70	48.85	27
	49.00	49.15	49.30	49.45	49.60	49.75	49.90	50.05	50.20	50.35	28
	50.50	50.65	50.80	50.95	51.10	51.25	51.40	51.55	51.70	51.85	29
	52.00	52.15	52.30	52.45	52.60	52.75	52.90	53.05	53.20	53.35	30
	53.50	53.65	53.80	53.95	54.10	54.25	54.40	54.55	54.70	54.85	31
	55.00	55.15	55.30	55.45	55.60	55.75	55.90	56.05	56.20	56.35	32
	56.50	56.65	56.80	56.95	57.10	57.25	57.40	57.55	57.70	57.85	33
	58.00	58.15	58.30	58.45	58.60	58.75	58.90	59.05	59.20	59.35	34
	59.50	59.65	59.80	59.95	60.10	60.25	60.40	60.55	60.70	60.85	35
	61.00	61.15	61.30	61.45	61.60	61.75	61.90	62.05	62.20	62.35	36
	62.50	62.65	62.80	62.95	63.10	63.25	63.40	63.55	63.70	63.85	37
	64.00	64.15	64.30	64.45	64.60	64.75	64.90	65.05	65.20	65.35	38
	65.50	65.65	65.80	65.95	66.10	66.25	66.40	66.55	66.70	66.85	39
	67.00	67.15	67.30	67.45	67.60	67.75	67.90	68.05	68.20	68.35	40

Calculated by F. Q. Paradis, C. F.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

ROADWAY 16 FEET WIDE. SIDE SLOPES 1½ TO 1.
FOR SINGLE TRACK EMBANKMENT.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
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

Calculated by F. E. Paradis, C. E.

7-3 J⁻ bot ditch E road
by C.A.H.

4.7 J⁻ CL x-S road

7.20 low ground

W side x-S +
N.C.A.H.

9.50 bot ditch
at bridge

8.00 low ground
W of bridge



4-1 by end of course 6

DIETZGEN

