

141-25

25
JUN 20 1900

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MINING

TRANSIT BOOK

No 222

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EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and
SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

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

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

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

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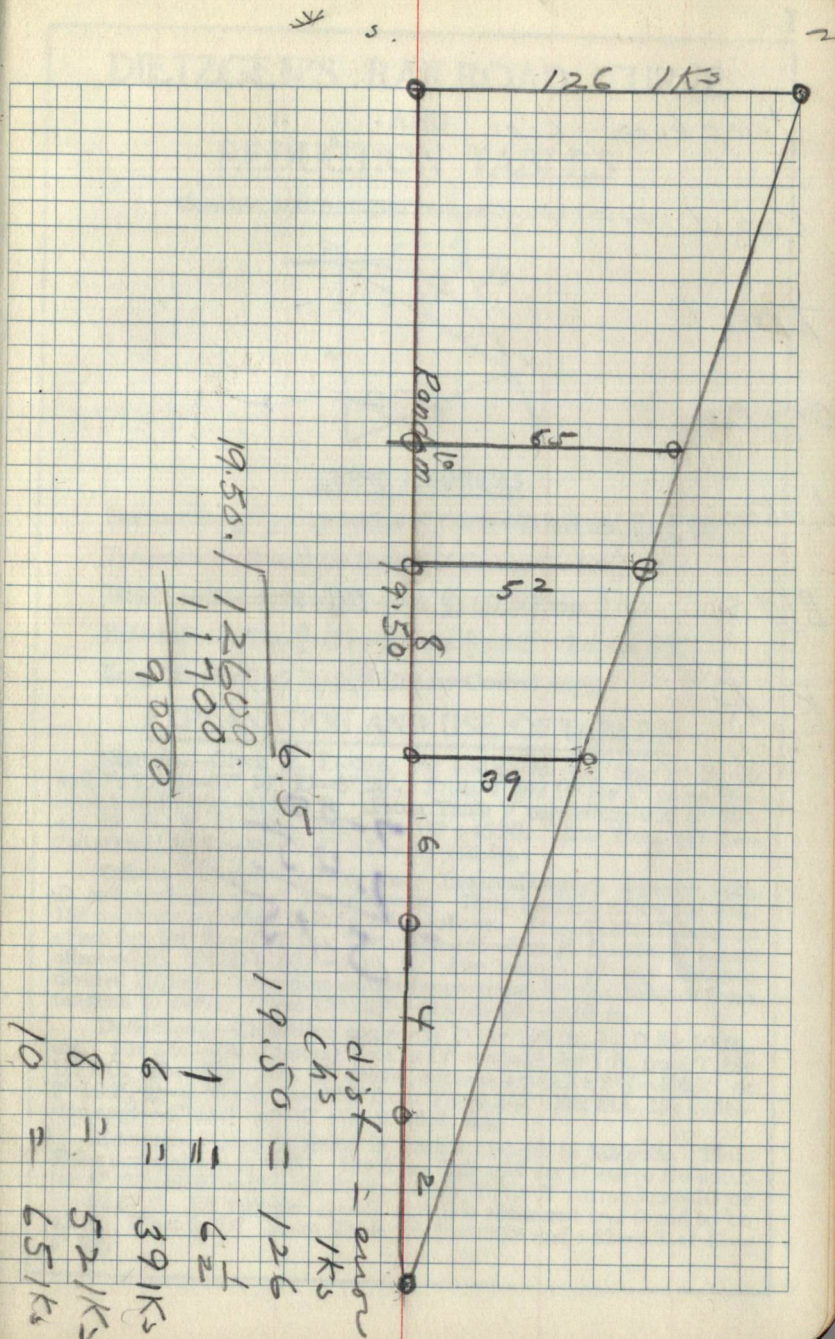
T141 N- R25 W

The paper stock of this book is made of a high grade 50% rag paper having a water resisting surface and is sewed with Bing Special Enamel Waterproof Thread.

Made in U. S. A.

Scanned

June 28, 2012



$$\begin{array}{r}
 19.50 \cdot \\
 \hline
 12600 \\
 11700 \\
 \hline
 9000
 \end{array}$$


dist = even
 Chs Ks
 19.50 = 126
 1 = 62
 6 = 391Ks
 8 = 521Ks
 10 = 651Ks


Telephone Line

Road = = = = =

Trail - - - - -

Creeks ~ ~ ~ ~ ~

Lakes 

Blds. 

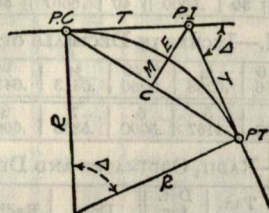
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7-00
 1-45

 5-15

DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES

Copyright, 1914, by Eugene Dietzgen Co., New York City



CURVE FORMULAS

Radius= $R = \frac{50}{\sin D/2}$ (1) Degree of Curve= D and $\sin \frac{D}{2} = \frac{50}{R}$ (2)

Tangent= $T = R \tan \frac{\Delta}{2}$ (3) Length of Curve= $L = 100 \frac{\Delta}{D}$ (4)

Middle ordinate= $M = R(1 - \cos \frac{\Delta}{2}) = R \text{vers} \frac{\Delta}{2}$ (6)

External= $E = T \tan \frac{\Delta}{4} = R \div \cos \frac{\Delta}{2} - R$ (8) $= R \text{exsec} \frac{\Delta}{2}$ (9)

Long Chord= $C = 2 R \sin \frac{\Delta}{2}$ (10) $\Delta =$ Central Angle

EXPLANATION AND USE OF TABLES

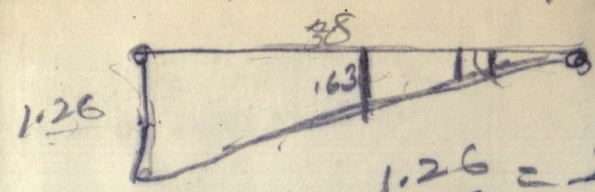
Stations.—Given P. I.—Sta. 161+60.35 to find Sta. of P. C. and P. T. $\Delta = 62^\circ 10'$ $D = 8^\circ 20'$. From Table IV for 1° curve $T = 3454.1$ and $\div 8\frac{1}{2} = 414.49$ ft. From Table V correction=.36 or $T = 414.85$ ft. P. C.—Sta. P. I.— $T = 157 + 45.50$. Also from (4) $L = 746.00$ and P. T.—Sta. P. C. + $L = 164 + 91.50$.

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

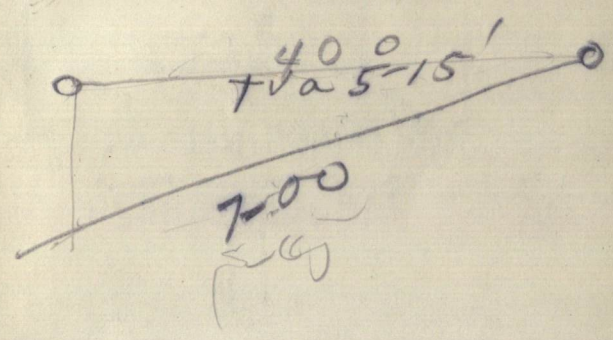
Deflections.—Deflection angle= $\frac{1}{2} D$ for 100 ft., $\frac{1}{4} D$ for 50 ft., etc. For c ft.=(in minutes) $.3 \times C \times D^\circ$ or=defl. for 1 ft. from Table III $\times C$. For Sta. 158 of above curve=.3 $\times 54.5 \times 8\frac{1}{2} = 136.2'$ or $2^\circ 16.2'$, or= $2.50 \times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

Externals.—May be found in similar manner to tangents. Thus E for curve above is 91.37. For from Table IV for 1° curve $E = 960.6$ for $8^\circ 20' = 960.6 \div 8\frac{1}{2} = 91.27$ and from Table V correction=.10 or $E = 91.37$ ft. Or suppose $\Delta = 32^\circ$ and E is measured and found to be 42 ft. What is D ? From Table IV $E = 230.9$ and $\div 42 = 5.5$ or $D = 5^\circ 30'$.

10-45



$$\frac{1.26}{38} = \frac{2}{2}$$

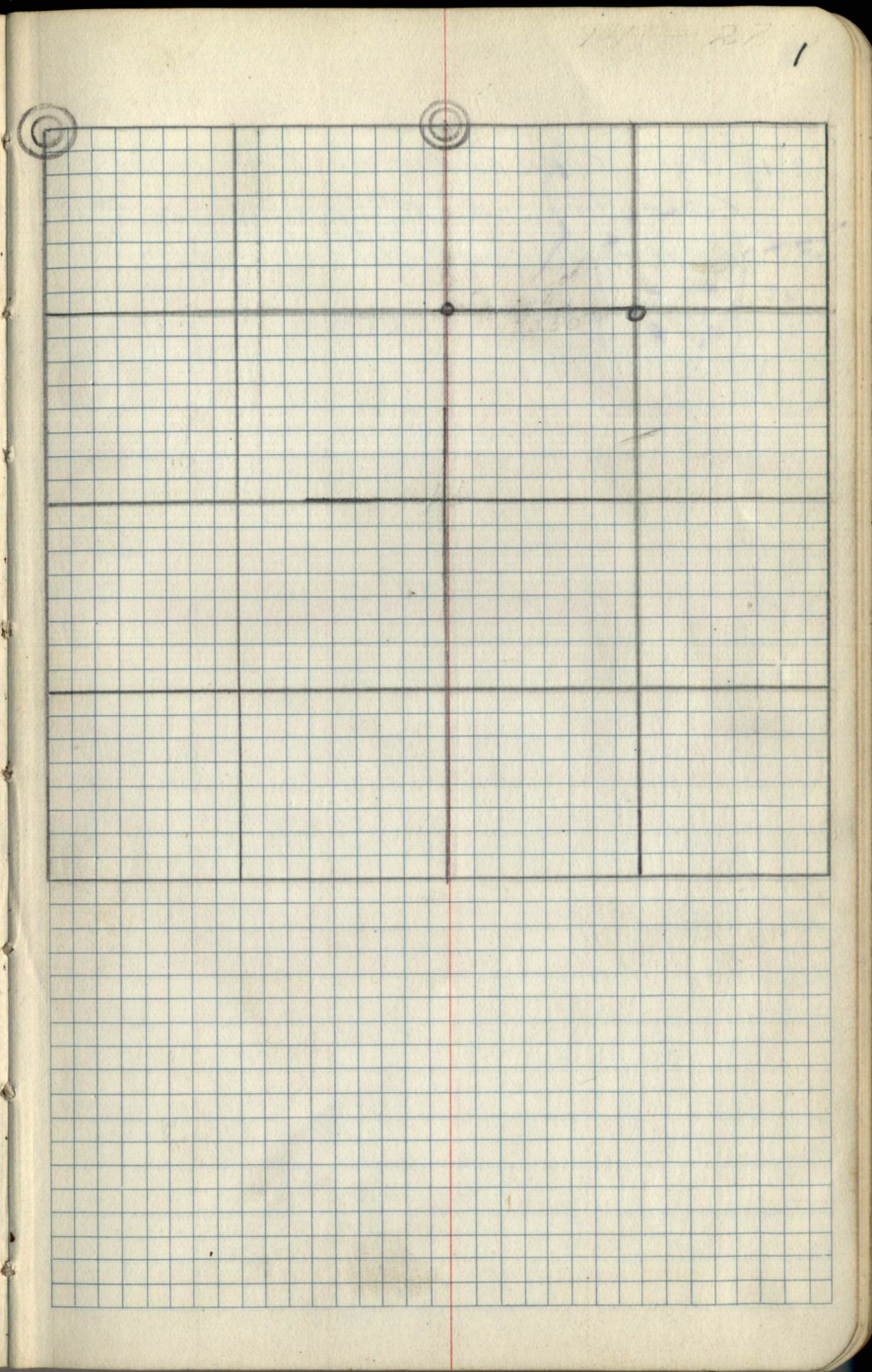
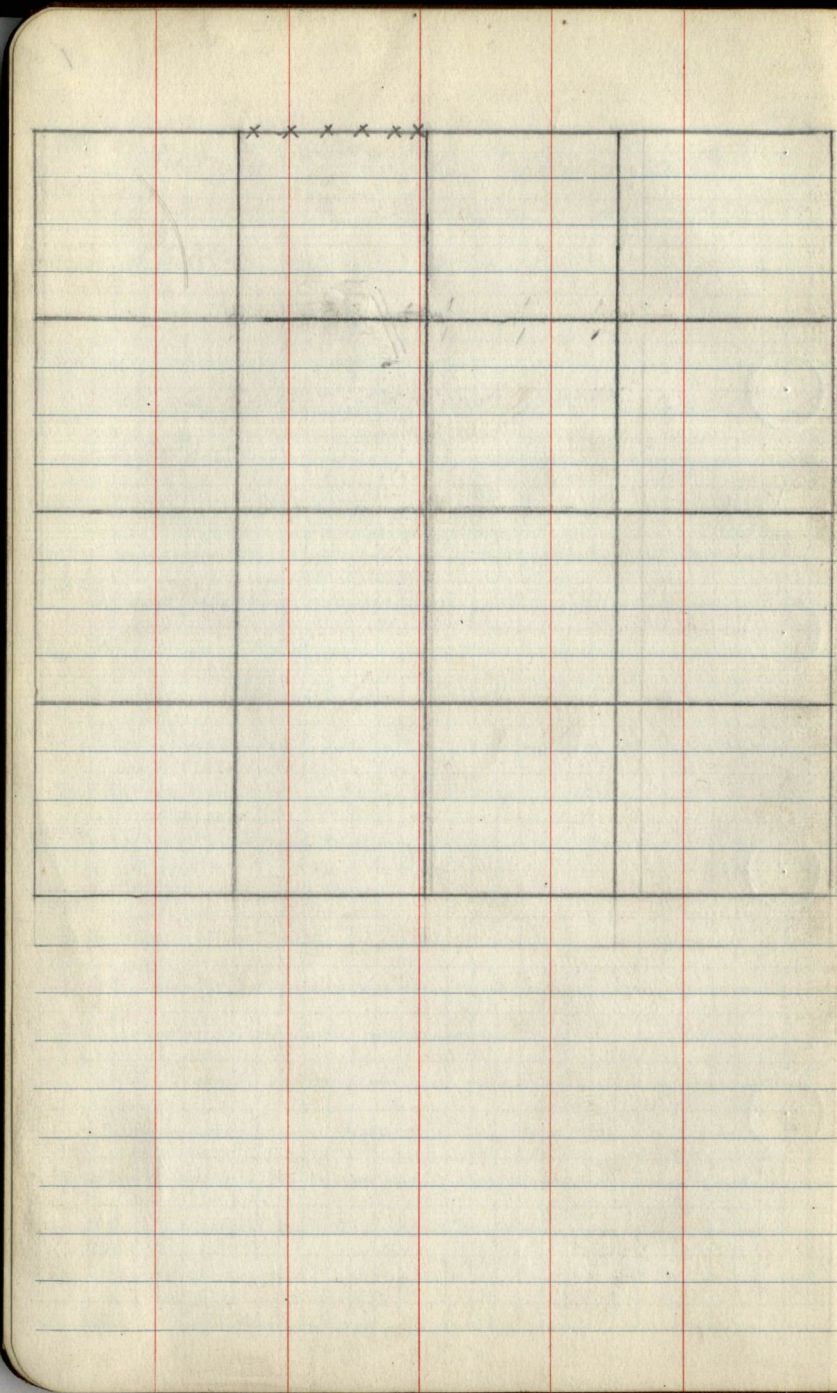


21

Sec. Cor - Cedar Post - County Cor
Tag on 6" Spruce - COR. N5°E
651K5.

36
1

N 1/4 Cor. - cedar post - County
COR. -



21

Sec. Cor. Cedar Post - County

COR - Tag on 6" Spruce - N 5° E

651ks To COR.

ub

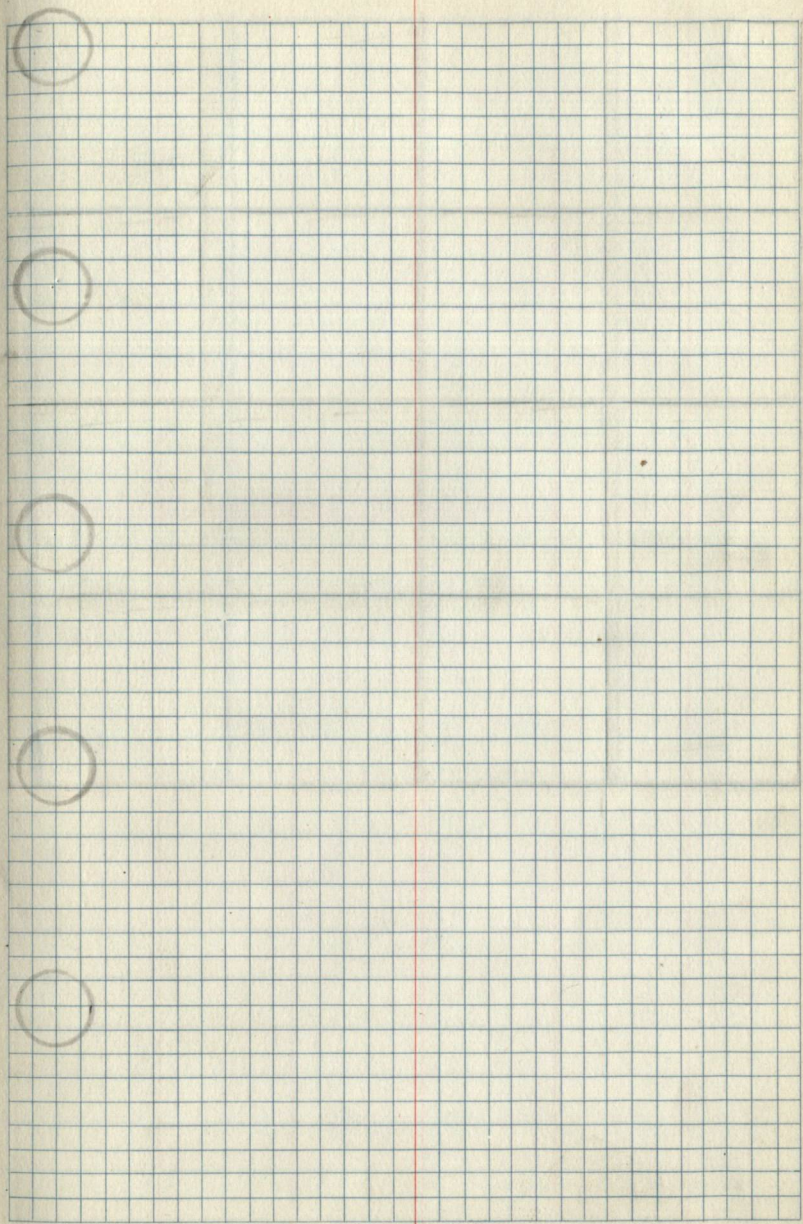
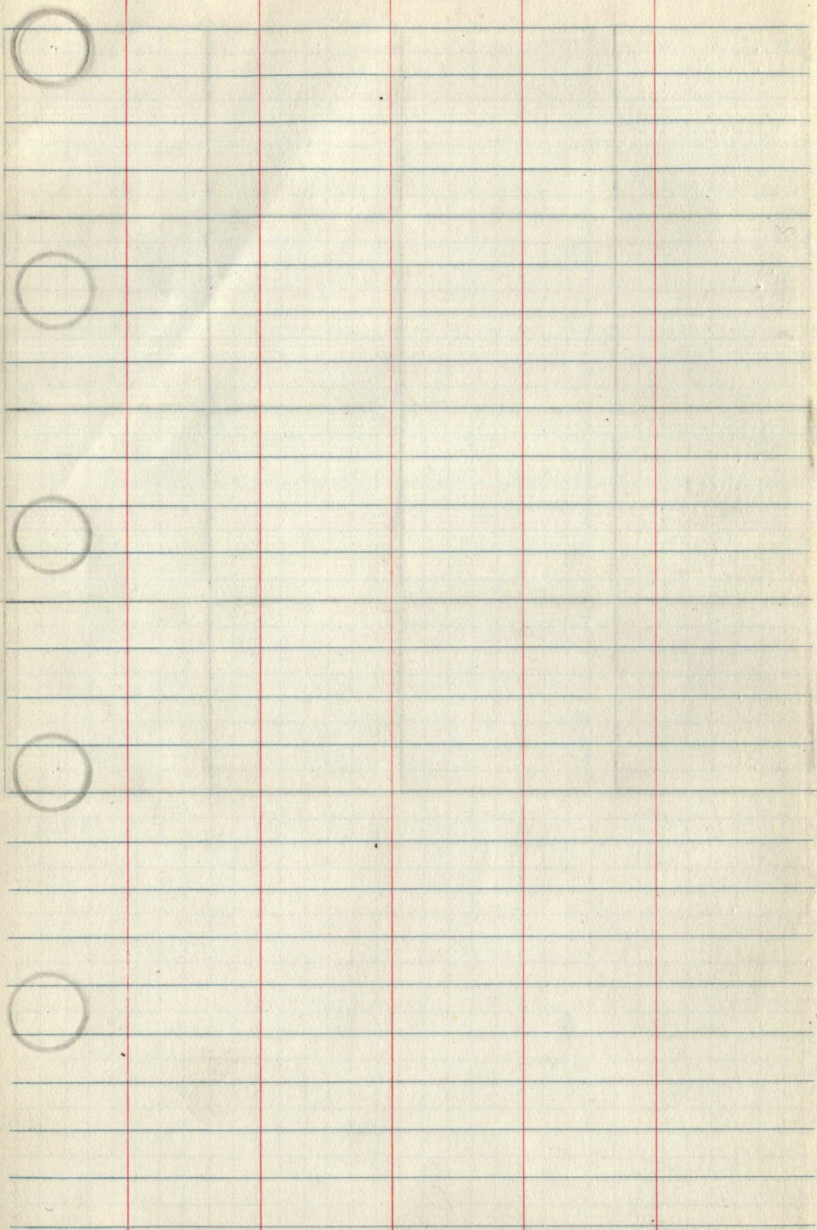
a c

ub

oi o



N 5° E
12.50 2000

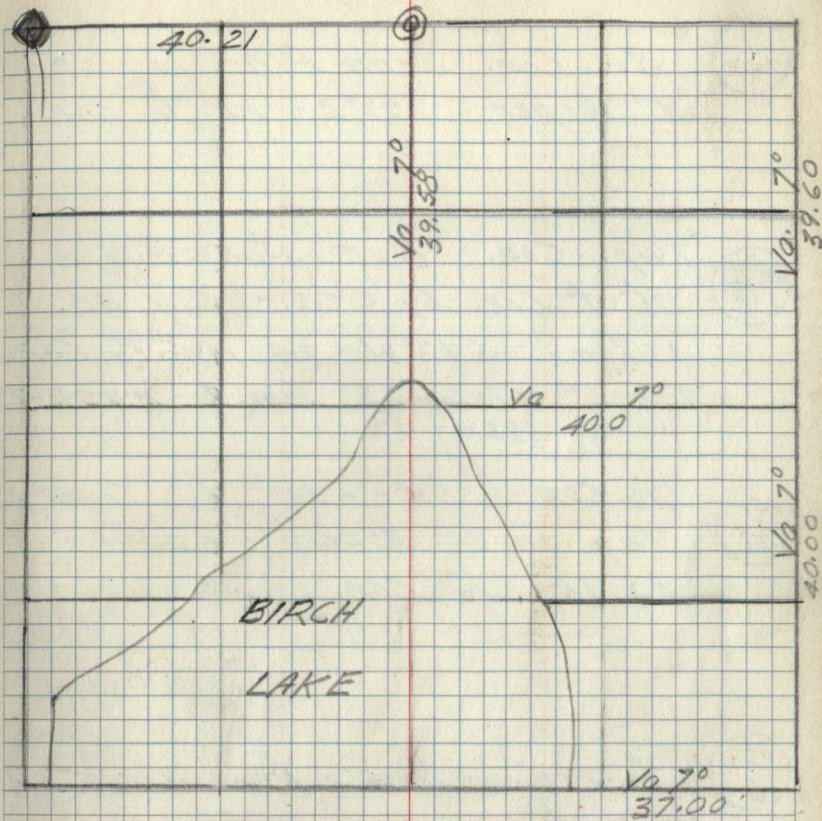
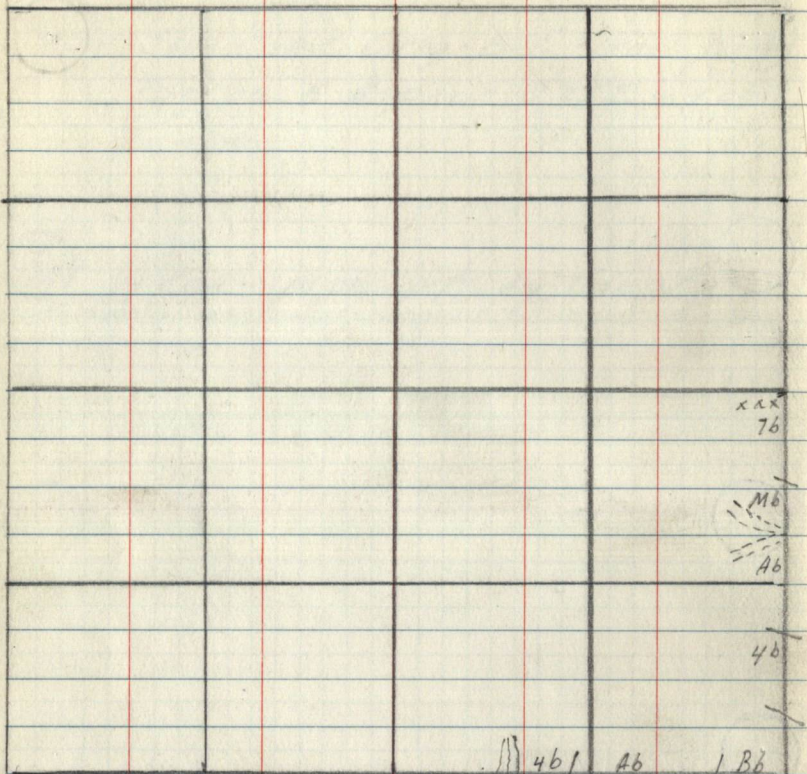


65

Sec. COR. - Orig. B.T. - iron pin
Tag on 6" Aspen - S77°E - 1 ch
To COR.

N
1/4

1/4 COR - pipe set by County



6/5

Sec. Cor. - Iron Pin - Tag on
6" Aspen - S77°E - 1/4 To Cor.

36/31
1/6

Twp. Cor. - Oak stake - pipe
set at Cor. by C.C.C. - Tag on
4 Tam. - 542°W - 24 lks To Cor.
Tam 6" 570E - 23 Tam. 8 - N45E - 23
" 6" 585W - 42

45
1/6

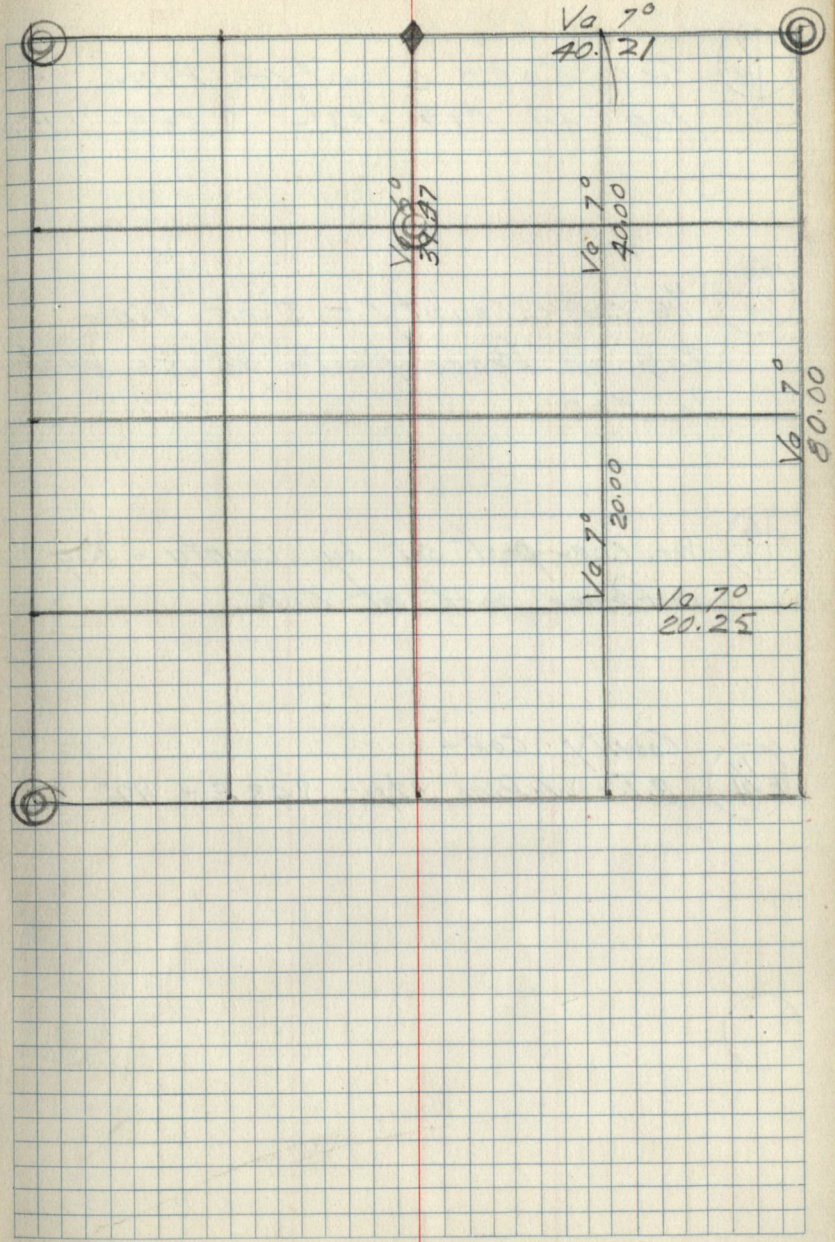
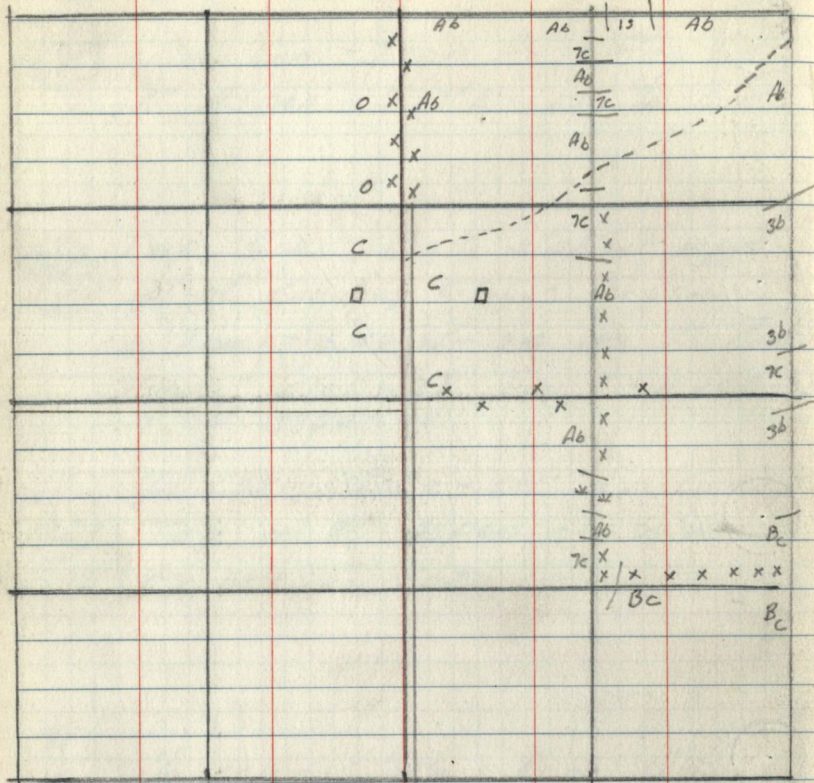
1/16 Cor - stake - set by County
Tag on 8" Aspen - 520W -
62 lks To Cor.

31
6

1/4 Cor - stake & Pipe - Orig. B.T.
W.P. Stamp - 24". South - 20 lks
Tag on 8" Aspen 510W - 36 lks
To Cor.

6/7

Sec. Cor. - post set by County
Tag on fence post at Cor.



7
18

Sec. Cor - County - Pipe in
Tag on Ash - 12" - S 50 E - 1.15 dts.

#10
1/16

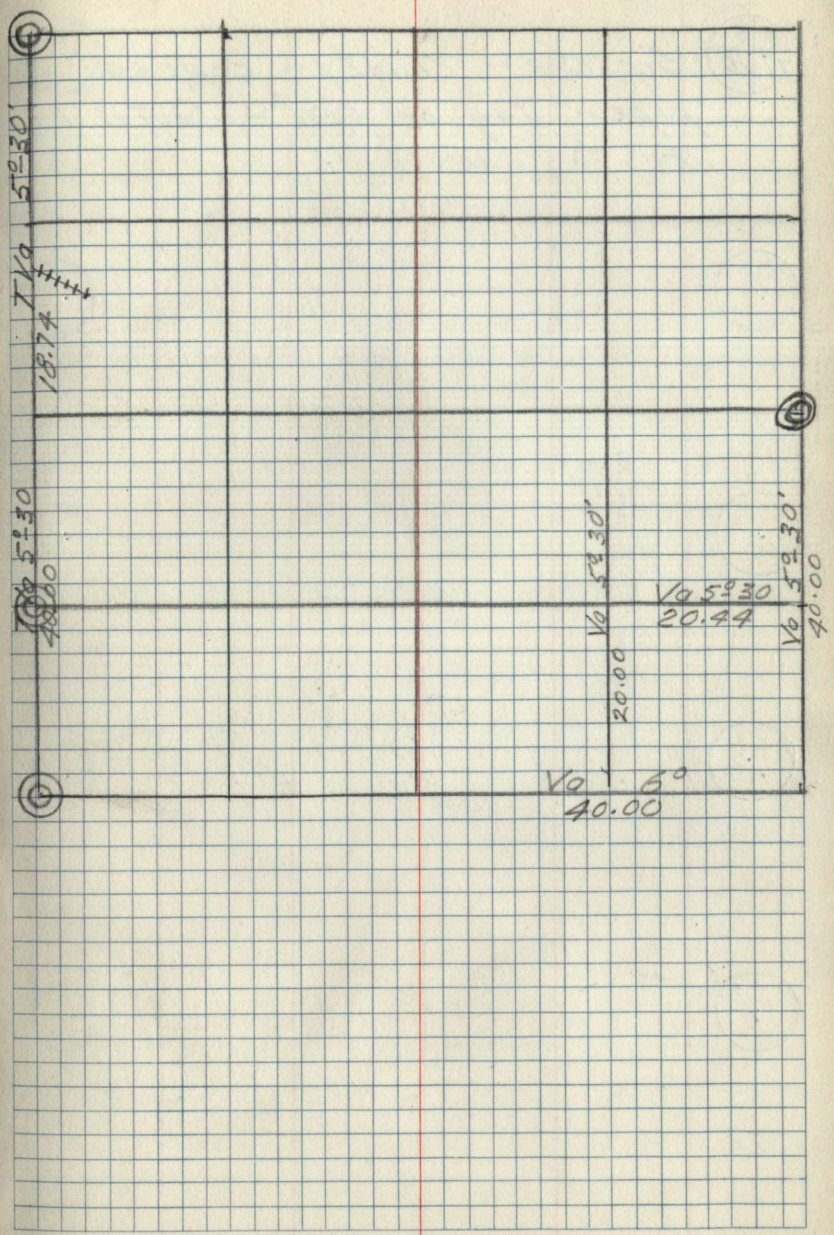
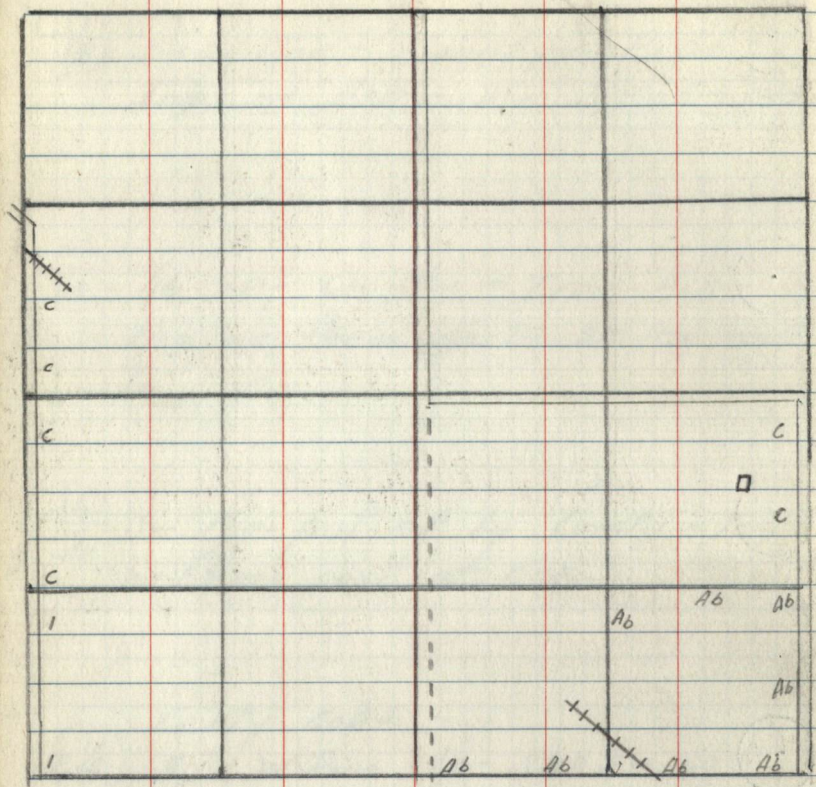
1/16 Cor - County - Iron Pin -
Tag on Fence post - 25 lks West
To Cor.

6
7

Sec. Cor - past set by County - Tag
on Fence post at Cor.

E 1/4

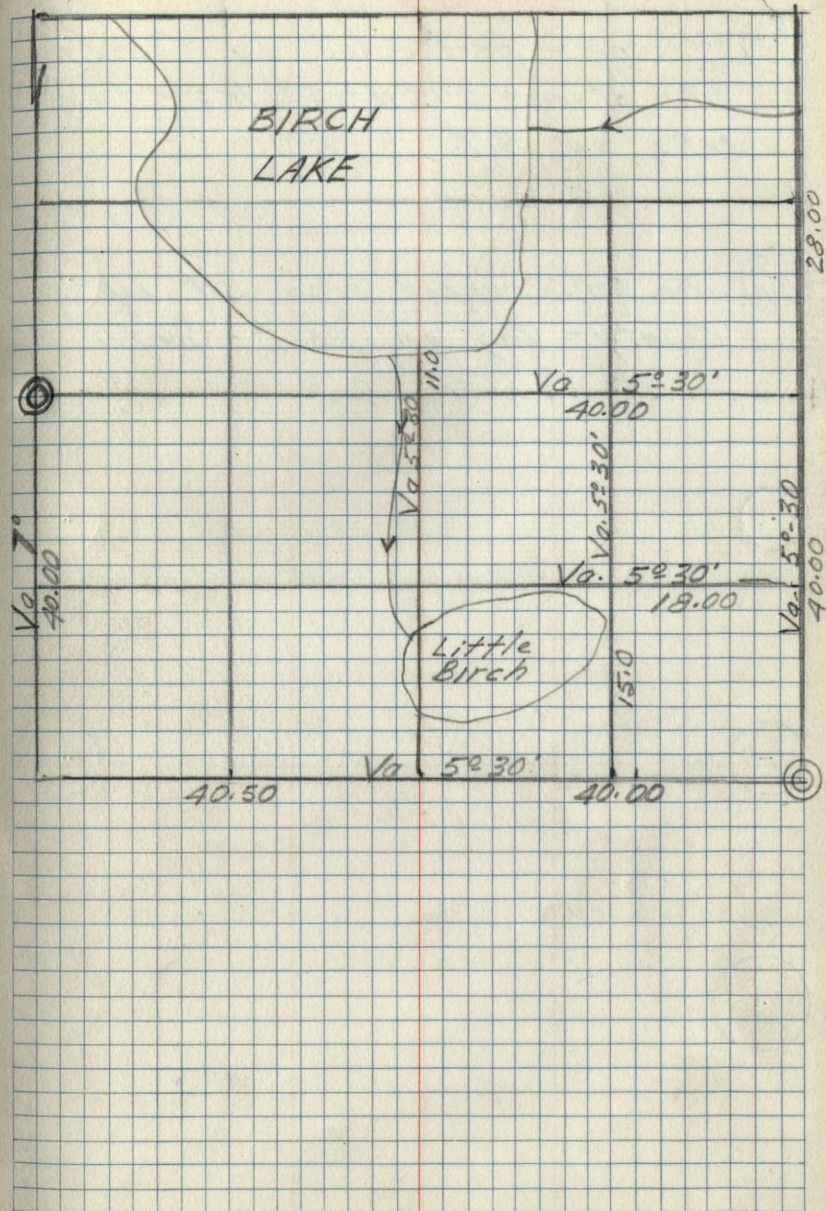
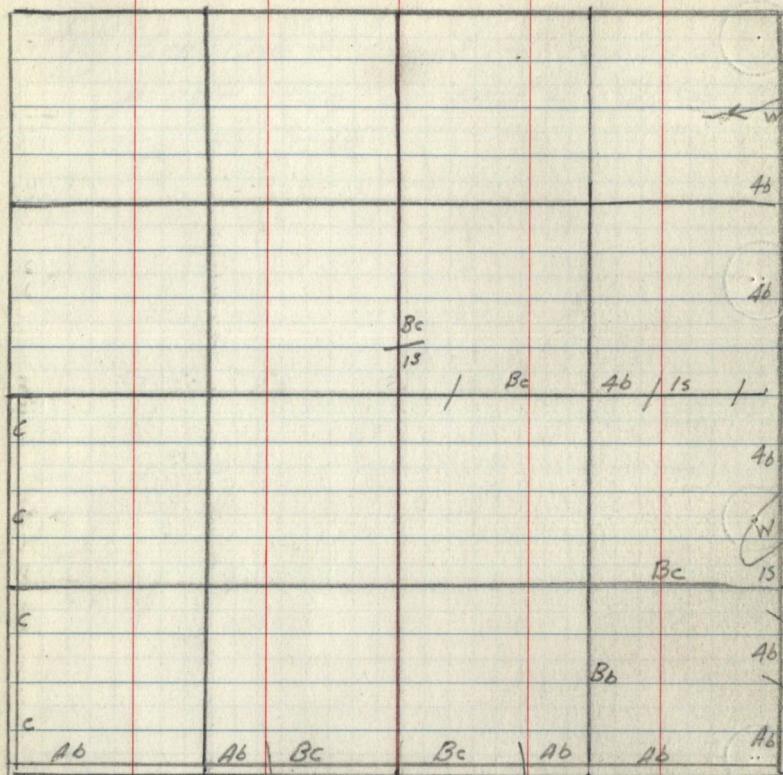
County Cor -
B.T. - W. Pine stp - S 43 E - 49'



89
17/16

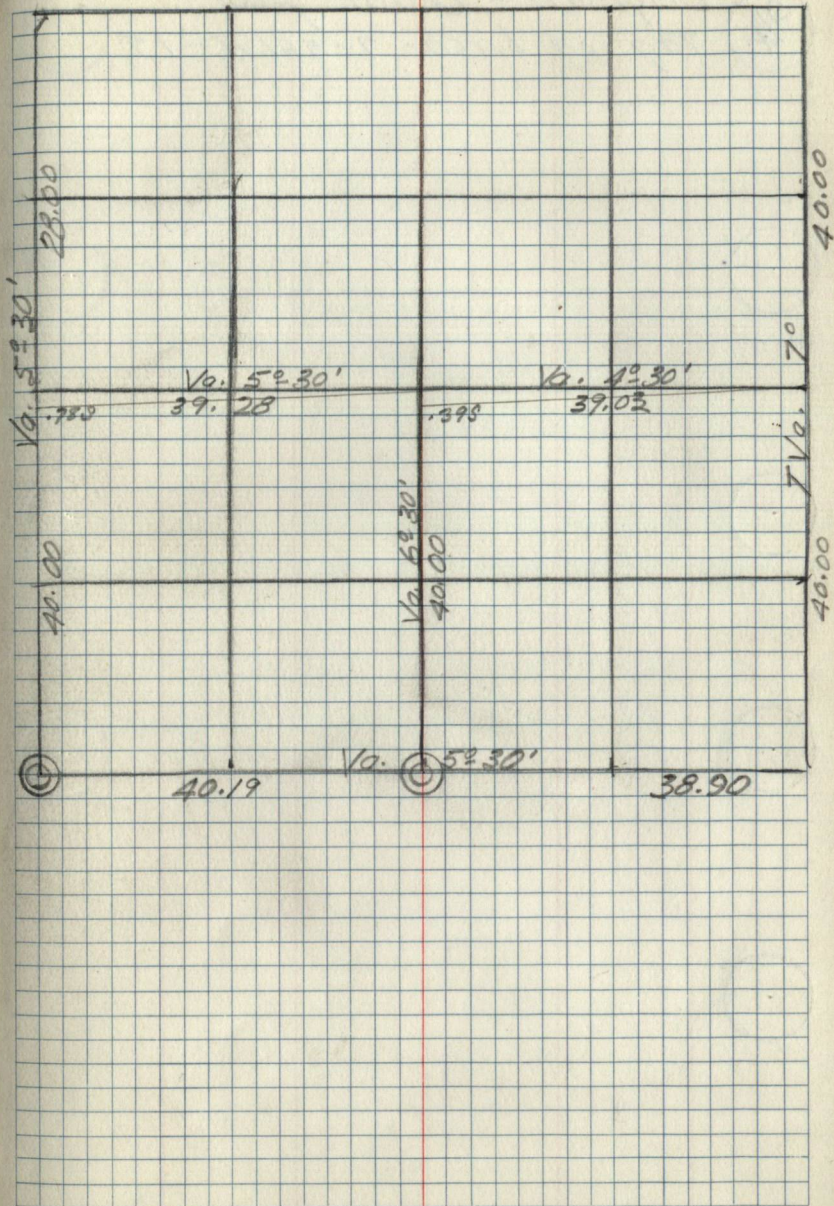
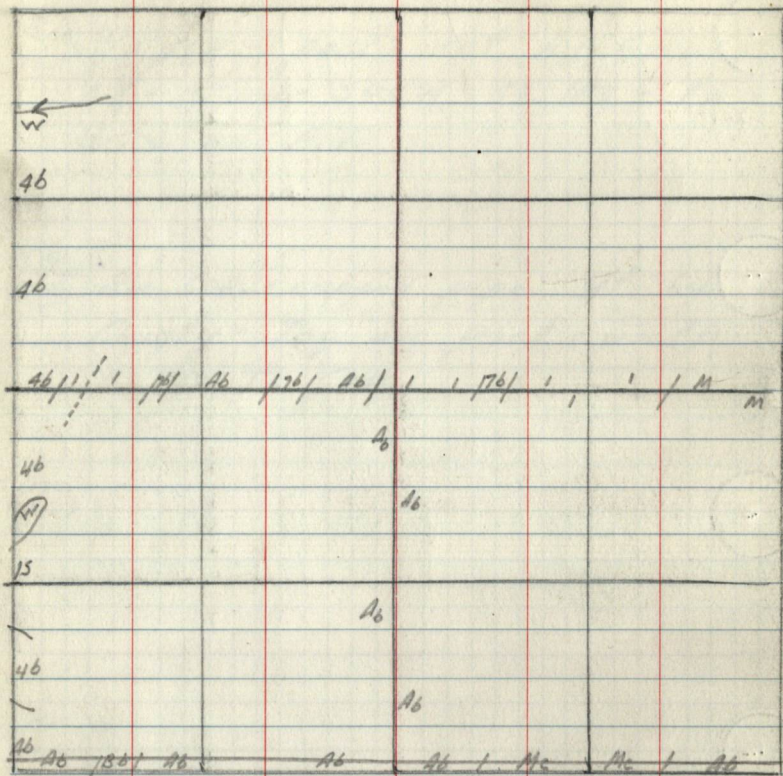
Sec. Cor - County - capped
pipe - Tag on post - South 27
1ks to cor.



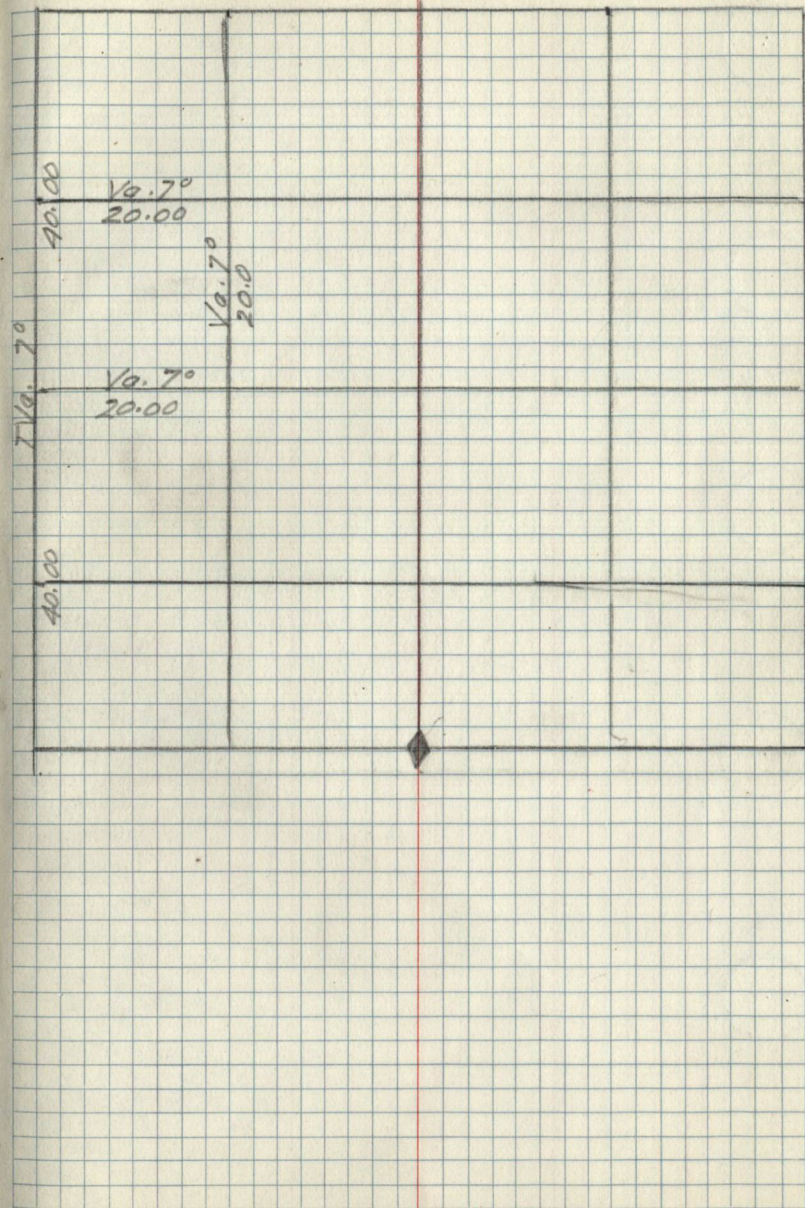
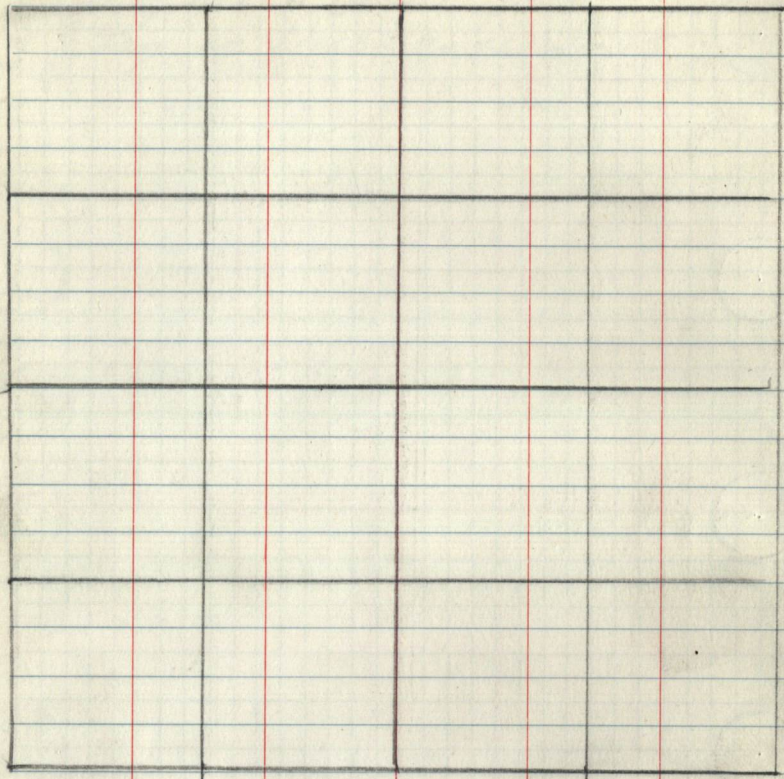


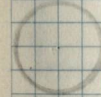
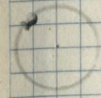
$\frac{9}{16}$ $\frac{1}{4}$ cor. - post - set by County
B.T. - stamp - 545W - 52 1ks - Tag
sets on B.T.

$\frac{89}{1716}$ Sec. cor. - capped pipe set by
County - Tag on post - South
27 1ks to cor.



Original - Cedar post
9/4 Tag on birch - 7-561W-15

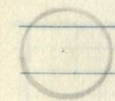
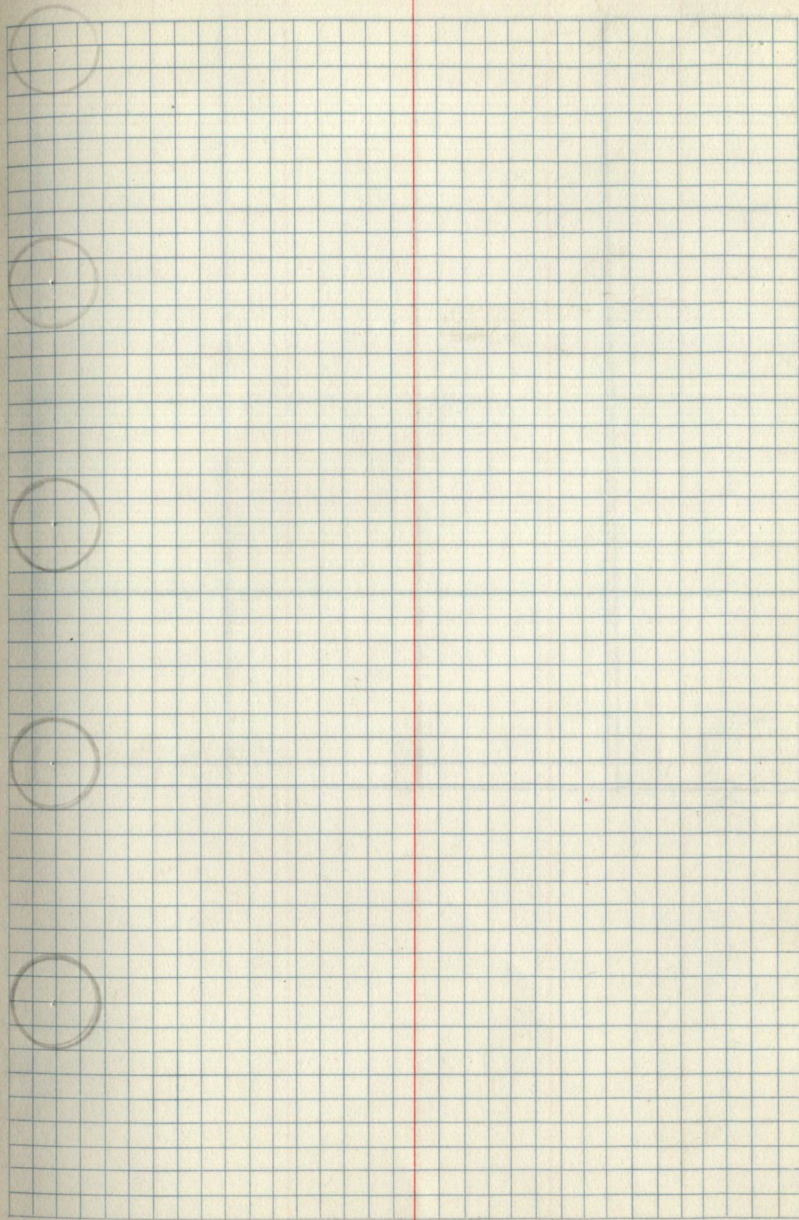


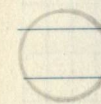
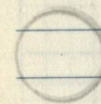
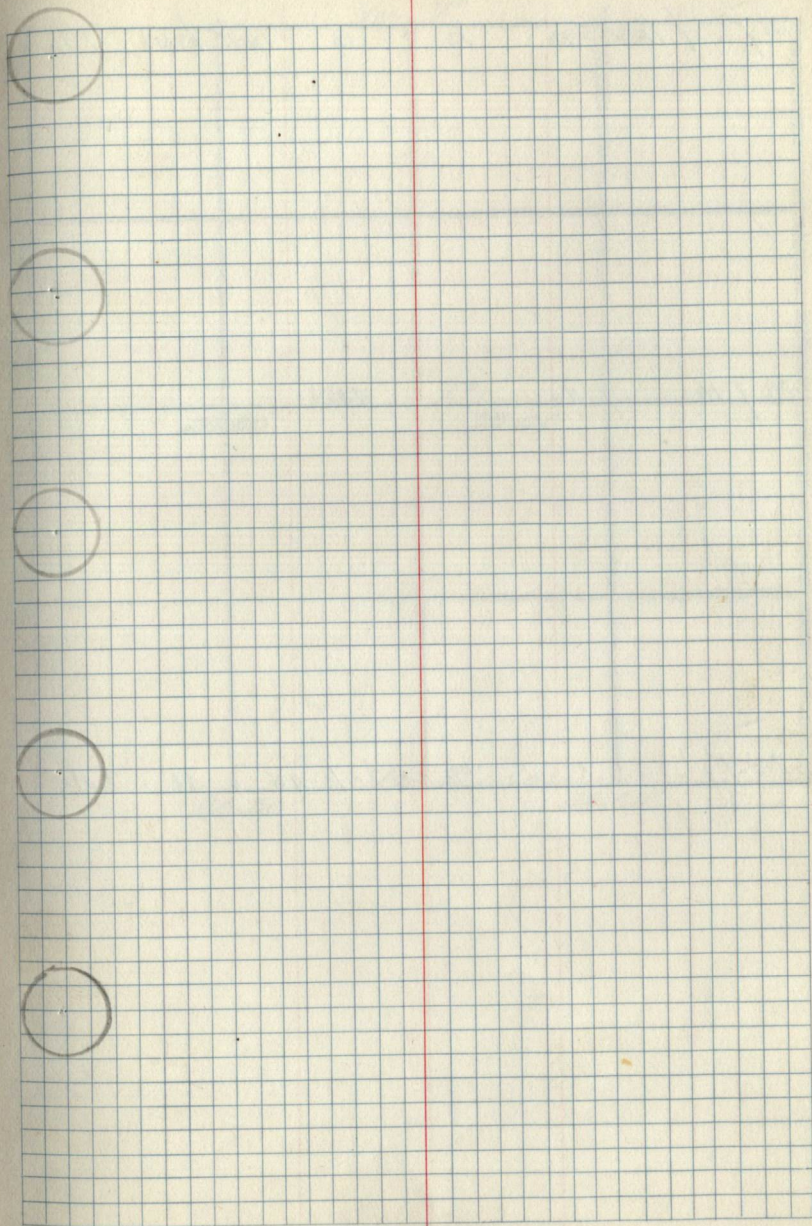


A hand-drawn table on a ledger page. The page has four vertical red margin lines. The table is drawn with black ink and consists of four columns and three rows. The columns are roughly equal in width, and the rows are also roughly equal in height. The table is empty.

11

A hand-drawn table on a ledger page, similar to the one on the left. It has four columns and three rows. The page is covered with a light blue grid. The table is drawn with black ink and is empty.





mb /	1h	1h	1h	1h	1h	mb /	1h
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Mc /	1h	1h	1h
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mb /	-	-	-	-	-	-	-	1h	25"	1h	Mc
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40.00	Va. 7°	40.00
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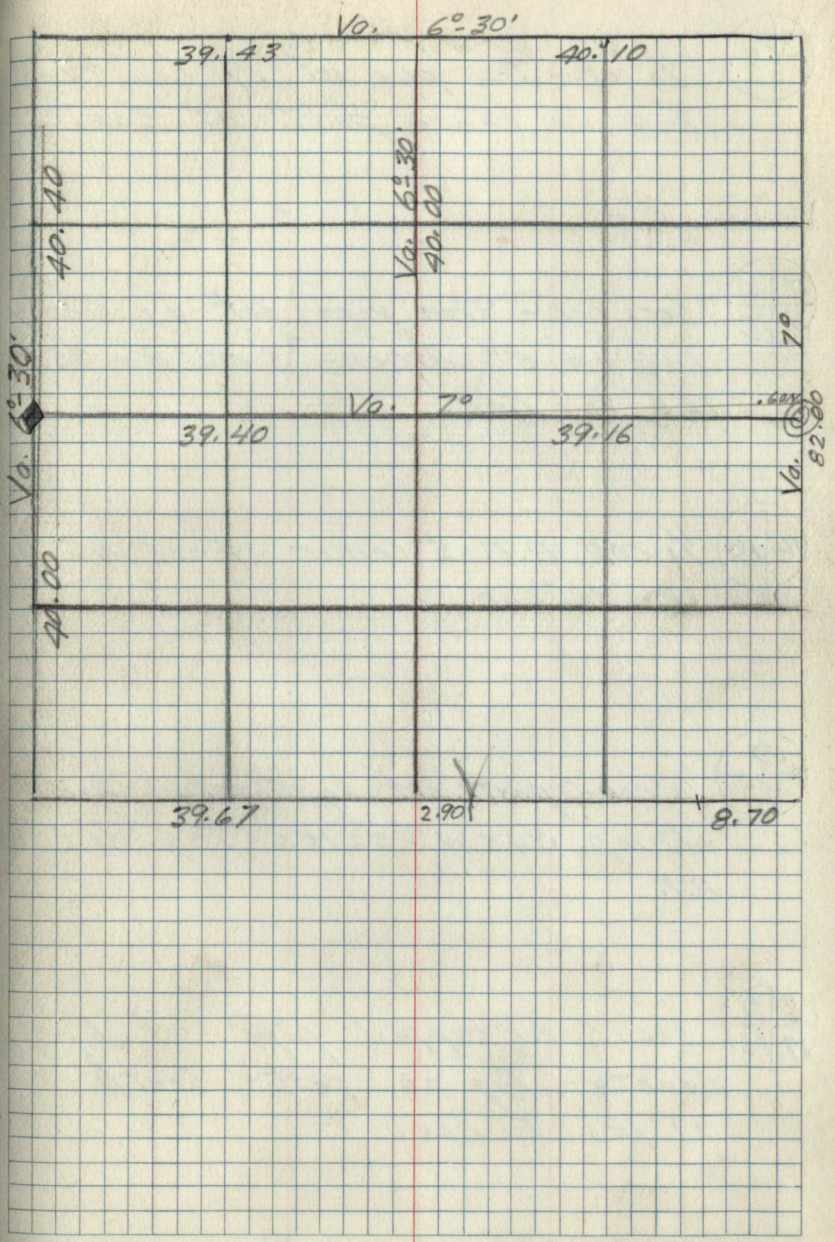
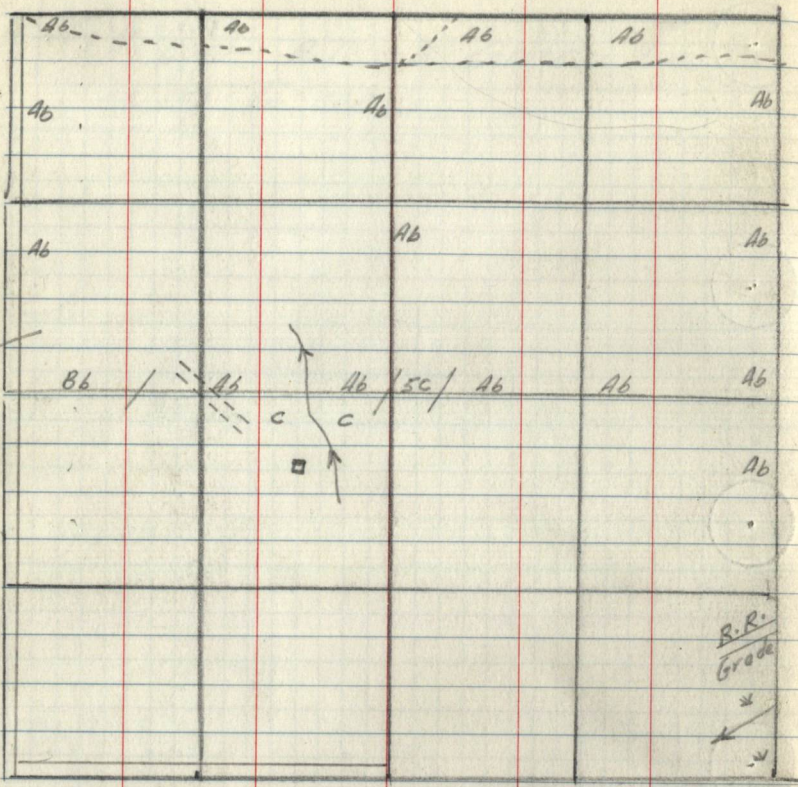
40.00	Va. 7°	20.00
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40.00	Va. 7°	40.00
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16-15

1/4 COR - B.T. - 5" Cedar - East
46 lbs To COR.



17	16
----	----

1/4 cor - Iron pipe set by County -
Tag on fence post at Cor.

17	16
20	21

Sec. Cor - Iron pipe set by County
Tag on 5" Aspen - 552 E - 35.
1ks to Cor.

16	15
----	----

1/4 Cor. B.T. 5" Cedar - East 46.
1ks to Cor.

9	16
---	----

1/4 Cor - post set by County - B.T.
stump S45W - 521ks - Tag set on
B.T.

8	9
17	16

Sec. Cor. capped pipe set by
County - Tag on post - South
27ks To Cor.

Section-17. Sub-divided-

18 17
19 20

Sec. Cor - Orig. B.T. Tam. stump -
N 45° W - 20 lks To Cor.

*11
1/16

1/16 Cor - post - set by County
B.T. - Balsam - 8" - West - 5 lks -
Tag on fence post at Cor.

C/4

Iron pipe set by County -
Tag on Tam: 3" - South 3 ch's
To Cor.

18-17

1/4 Cor - Orig. B.T. - Fir - 10"
N 30° E - 15 lks. - Tag on 4"
Birch - West 88 lks To Cor.

8 9
17 16

Sec. Cor - capped pipe set by
County

17-16

1/4 - Iron pipe set by County

17 16
20 21

Sec. Cor - Iron pipe set by
County

#14

1/16

1/16 COR. - post set by County -
Tag on fence post - 39 Ks E
to Cor.

W

1/4

1/4 COR. - post set by County.
Tag on 6" Ash - N60E - 47
Ks to Cor.

#3

1/16

1/16 COR. - post set by County
Tag on 5" Ash - 560°E - post
sets 25 Ks E of Road E.

#10

1/16

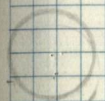
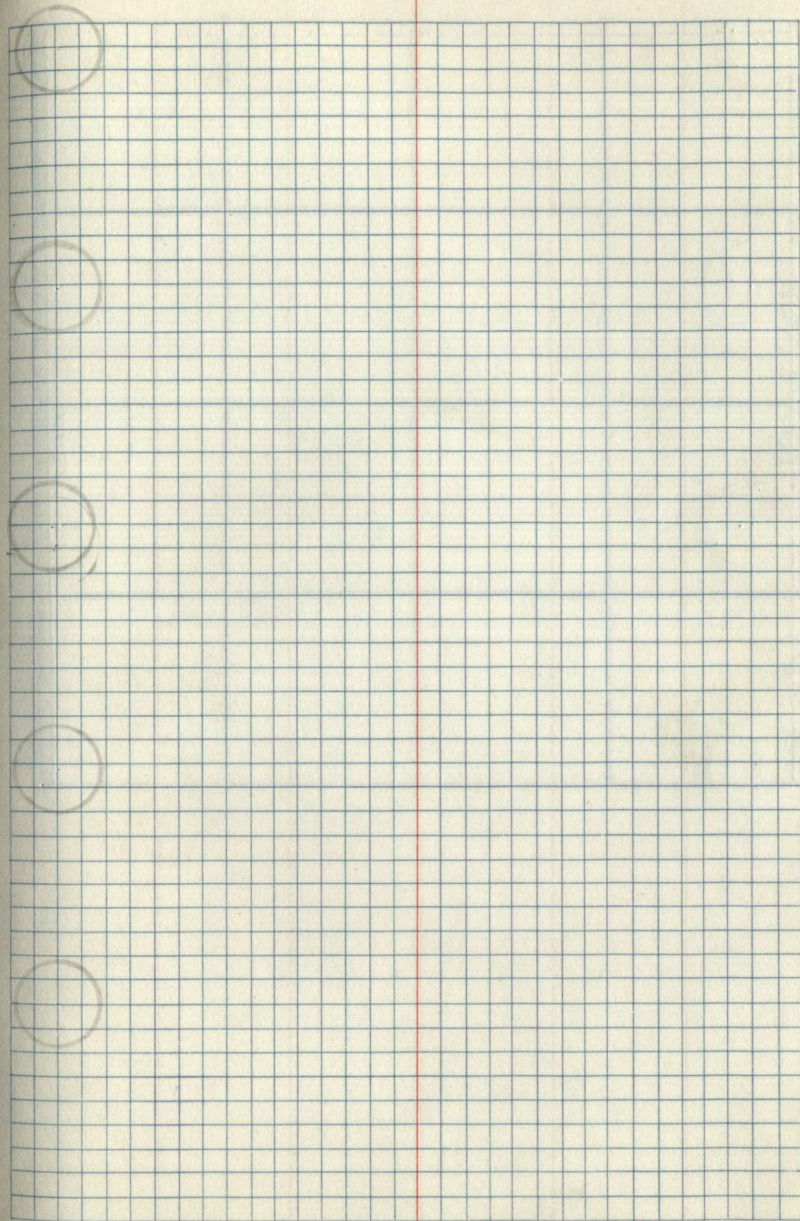
1/16 COR. - Orig. B.T. - Tam - 5"
East - 20 Ks - Tag is on B.T.

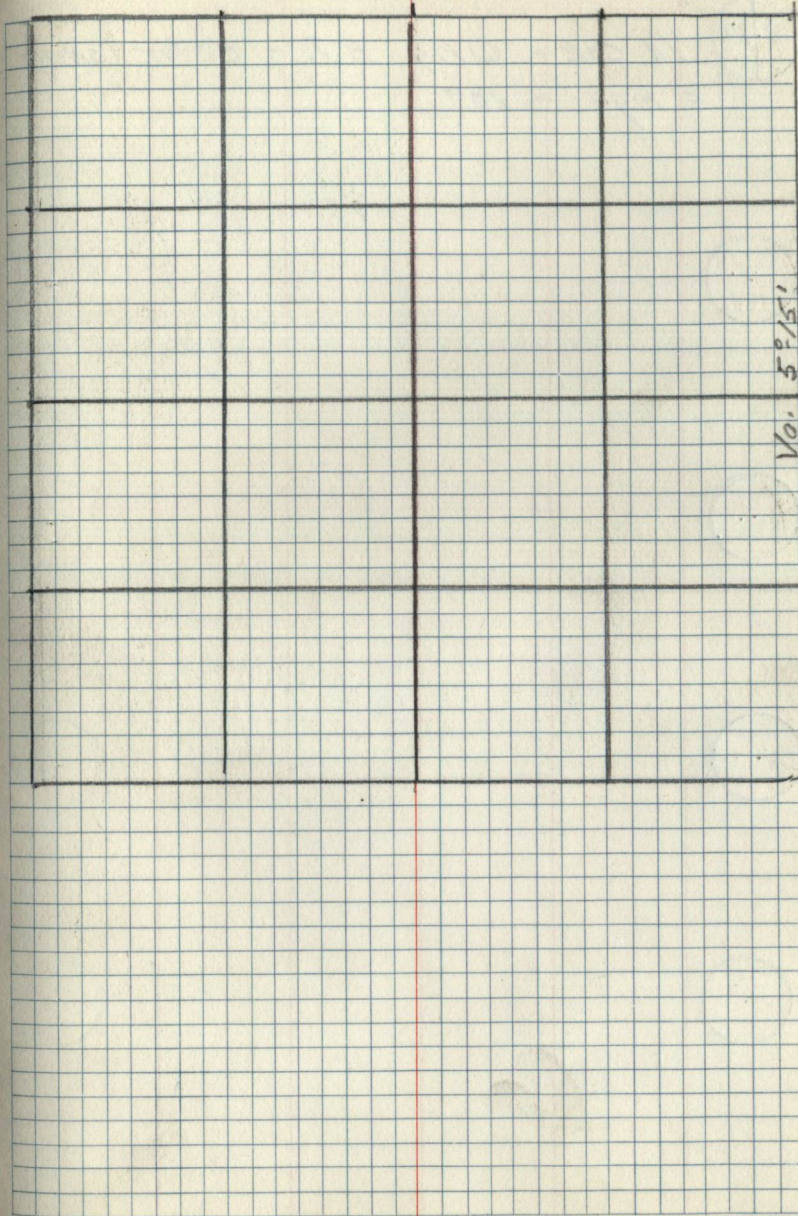
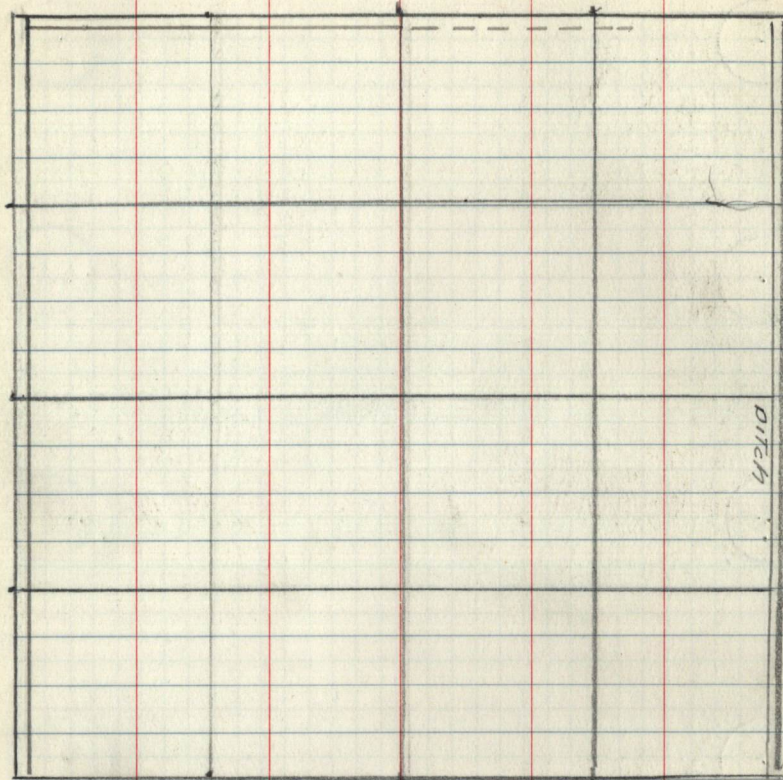
19+20

1/4 COR. - Orig. S.T. - W. pine 3' high
14" - N45°W of COR - 92 lbs - W²

19
30

Sec. Cor - post set by County -
Tag on post - pipe 33' E of
post -





Vo. 5 9/15'

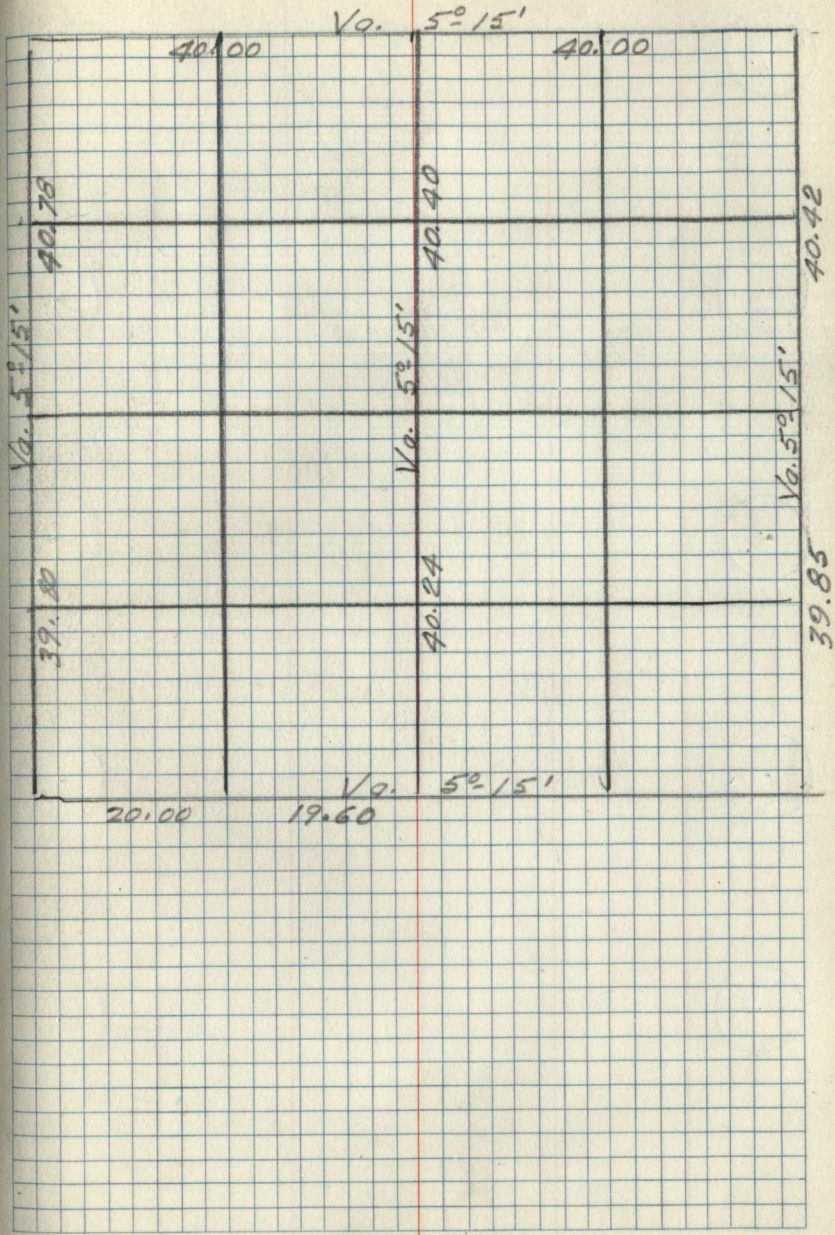
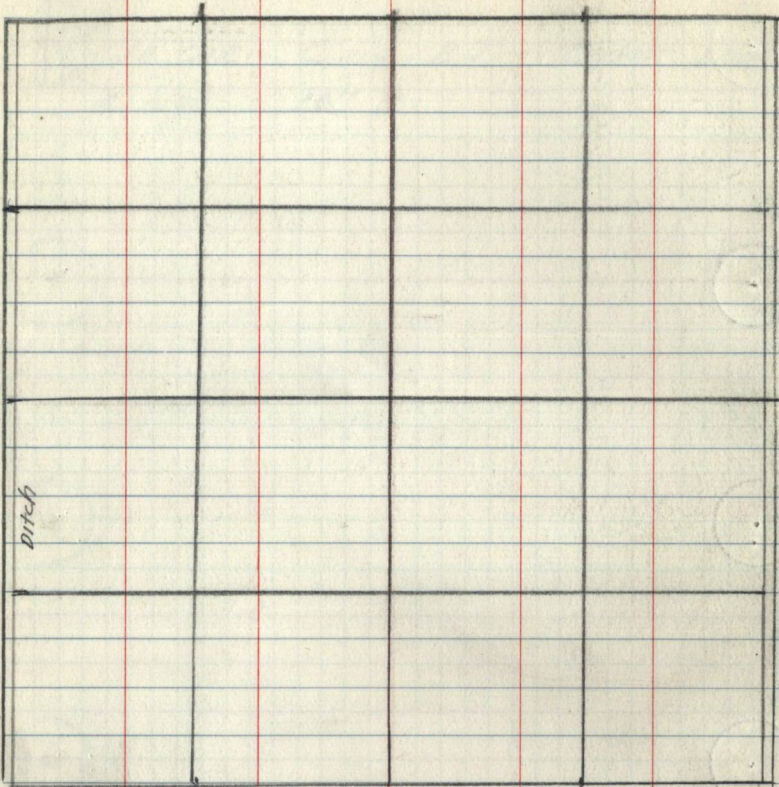
39.80'

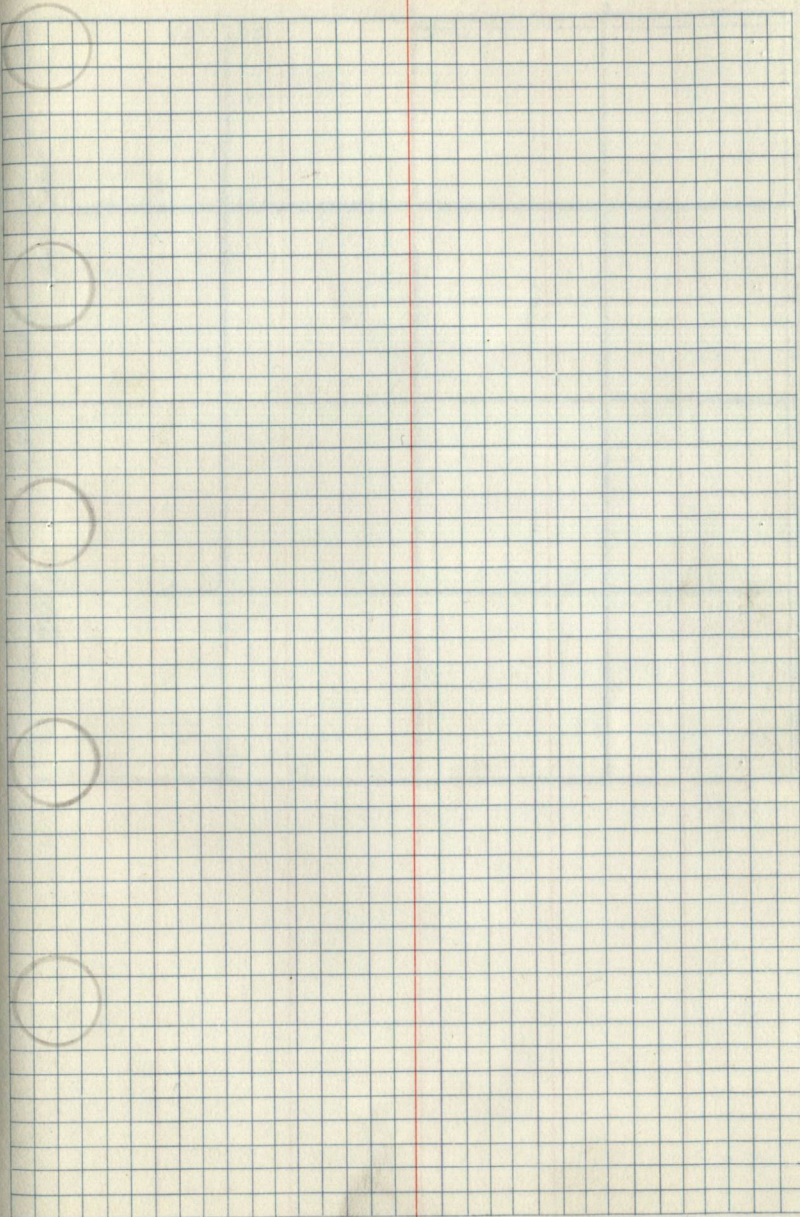
40.78

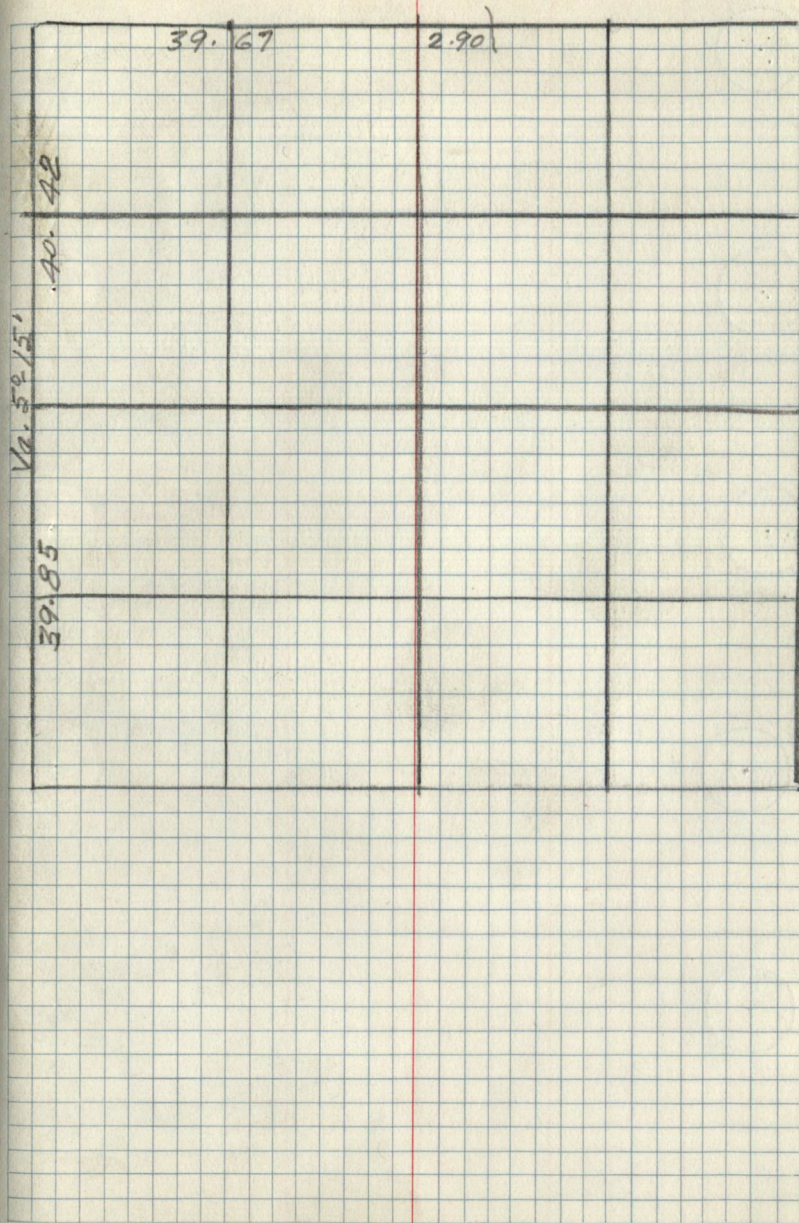
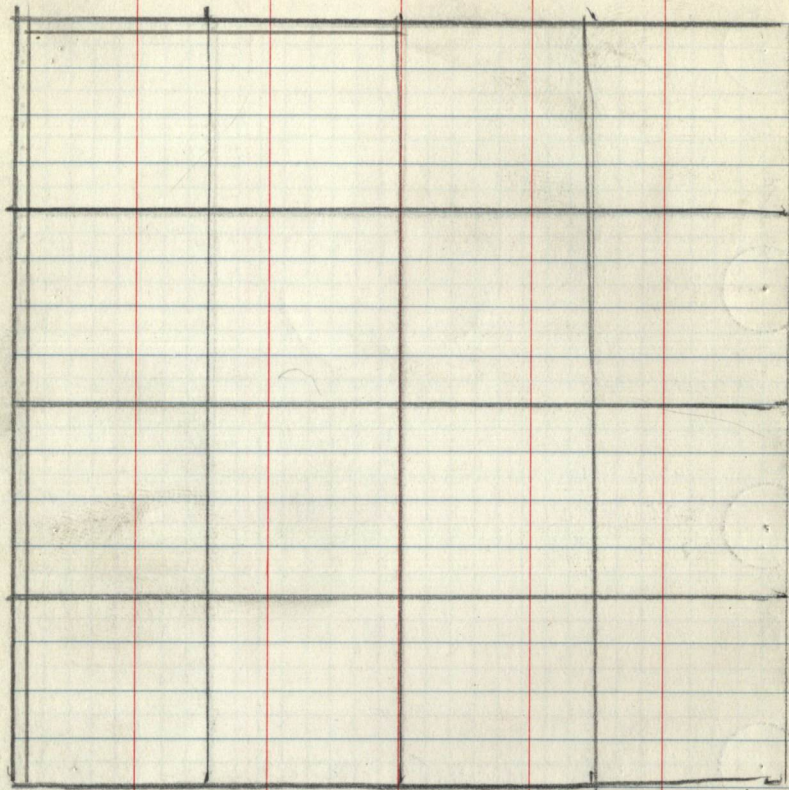
21-22

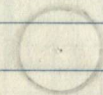
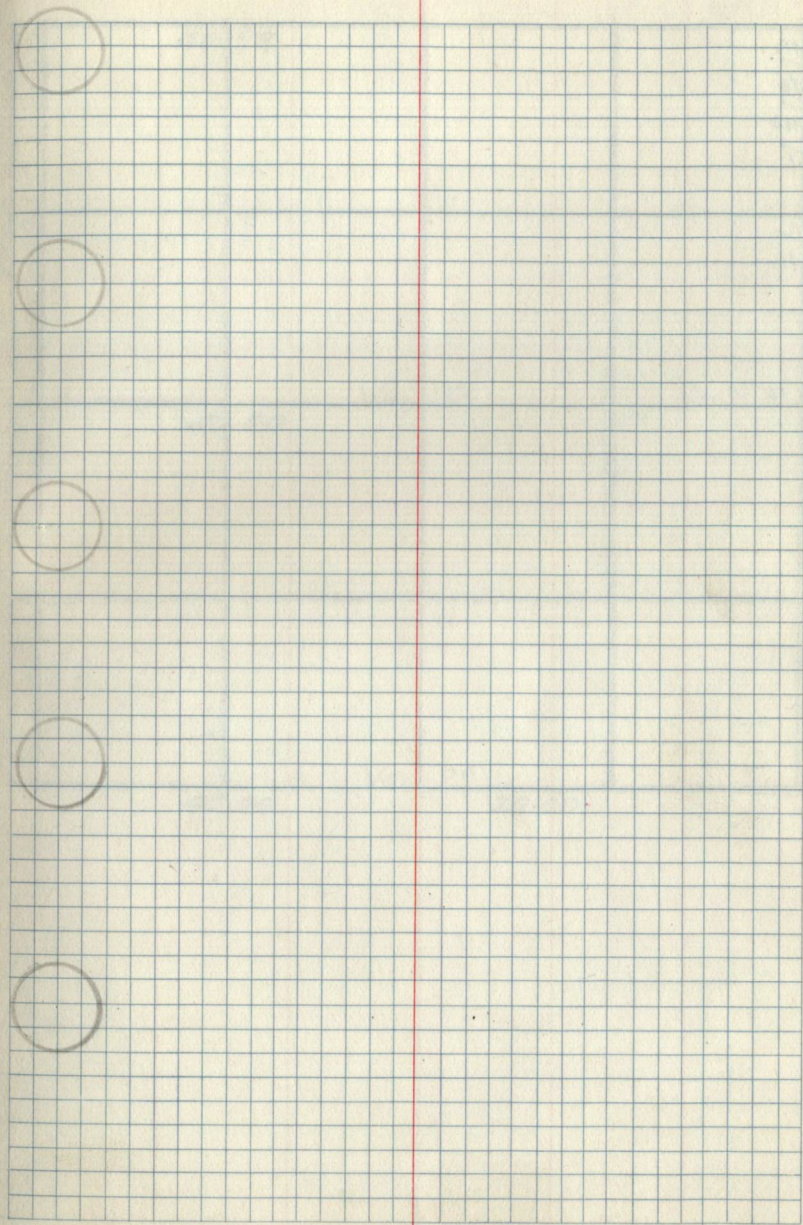
1/4 cor - Orig. B.T. - Cedar snag
4' high - 10"

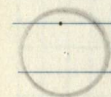


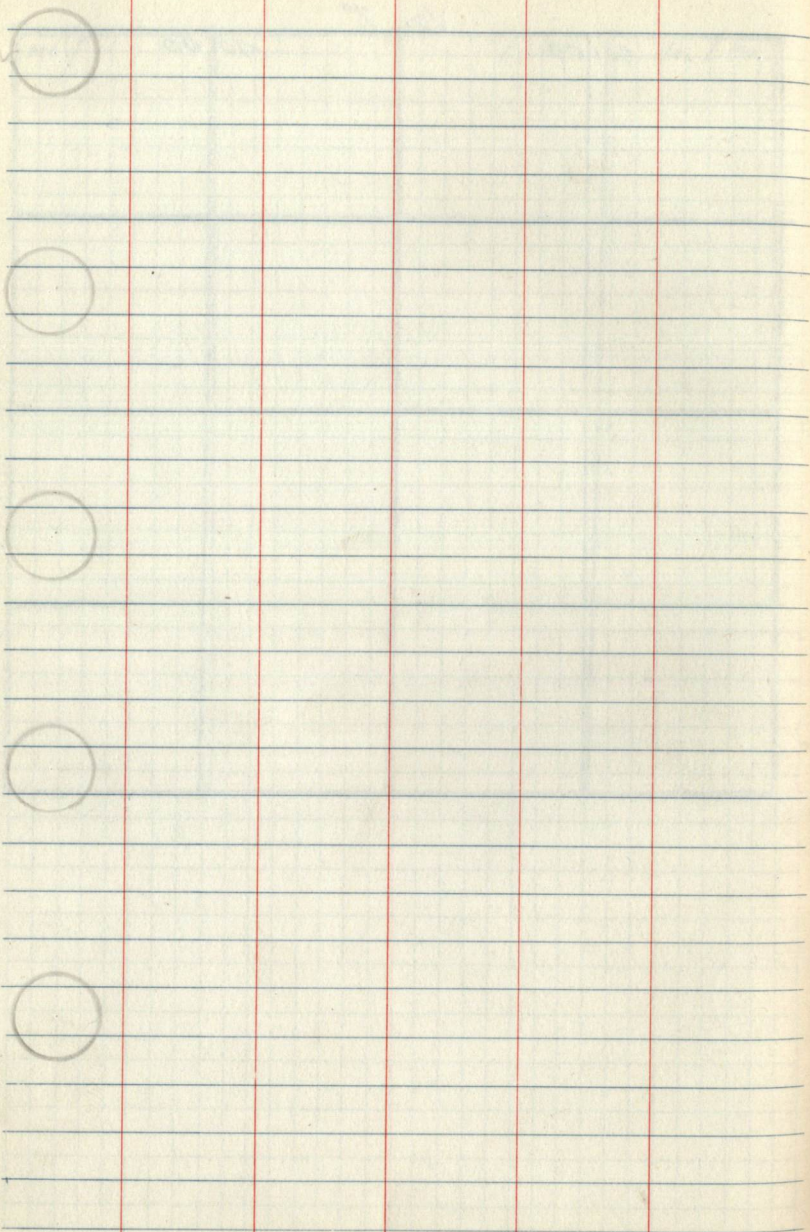
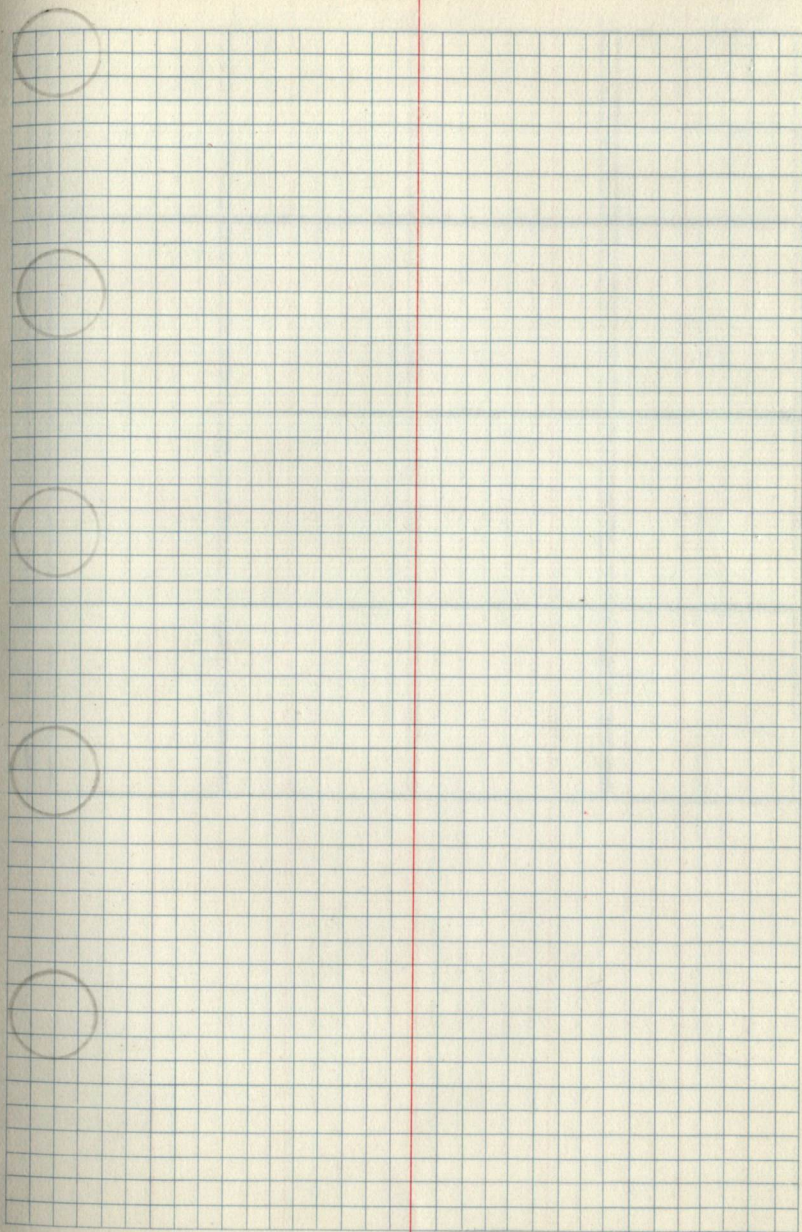


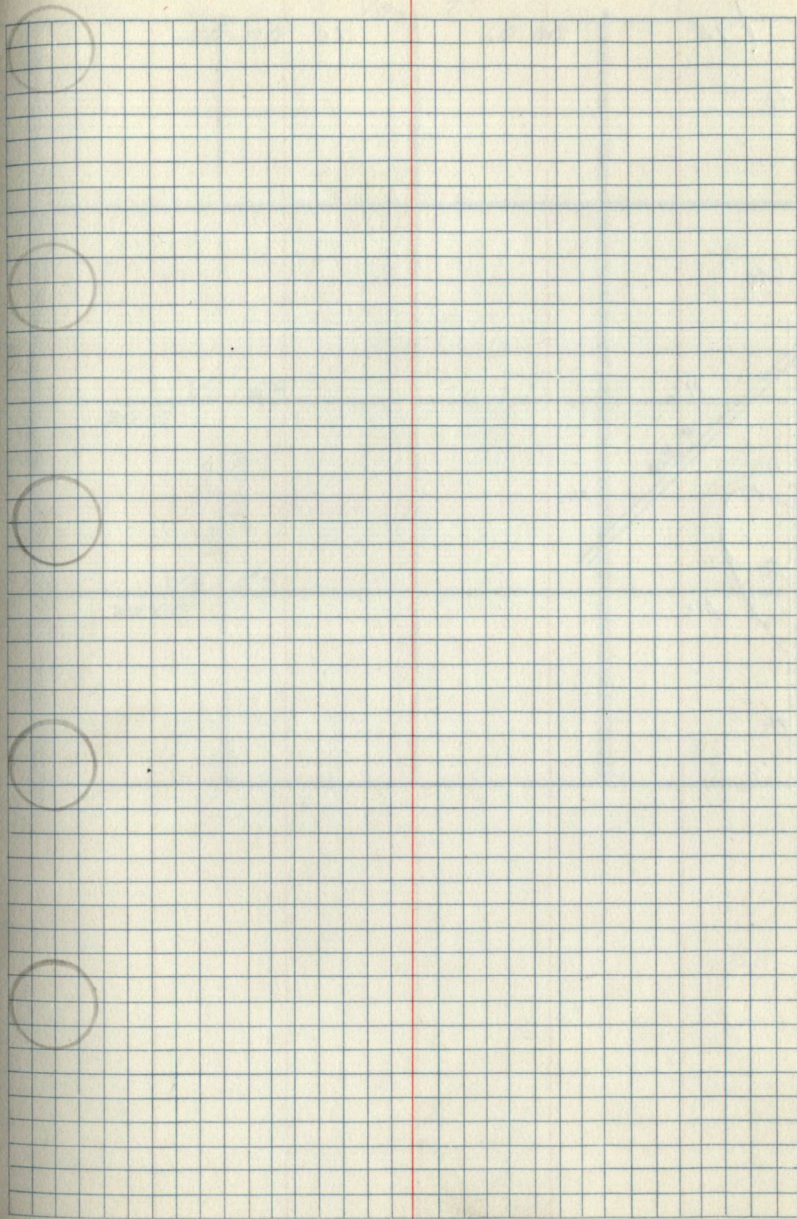


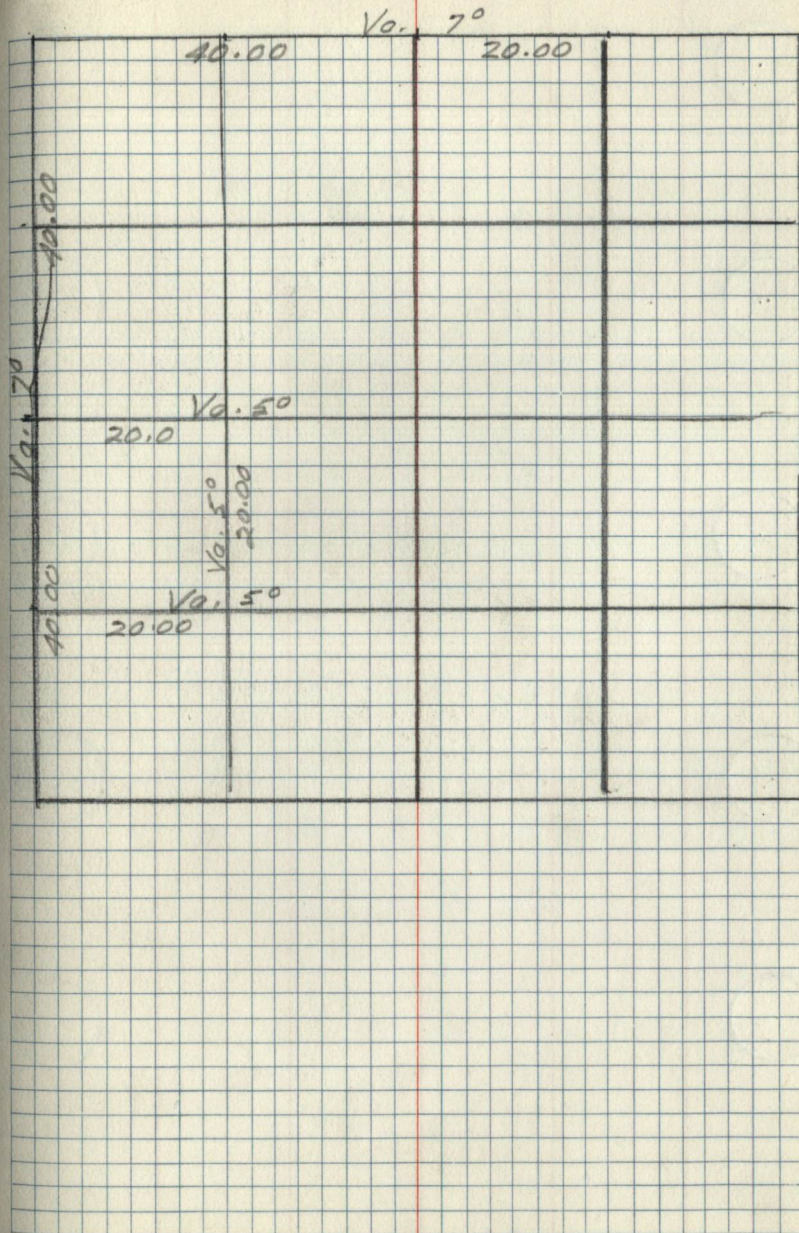
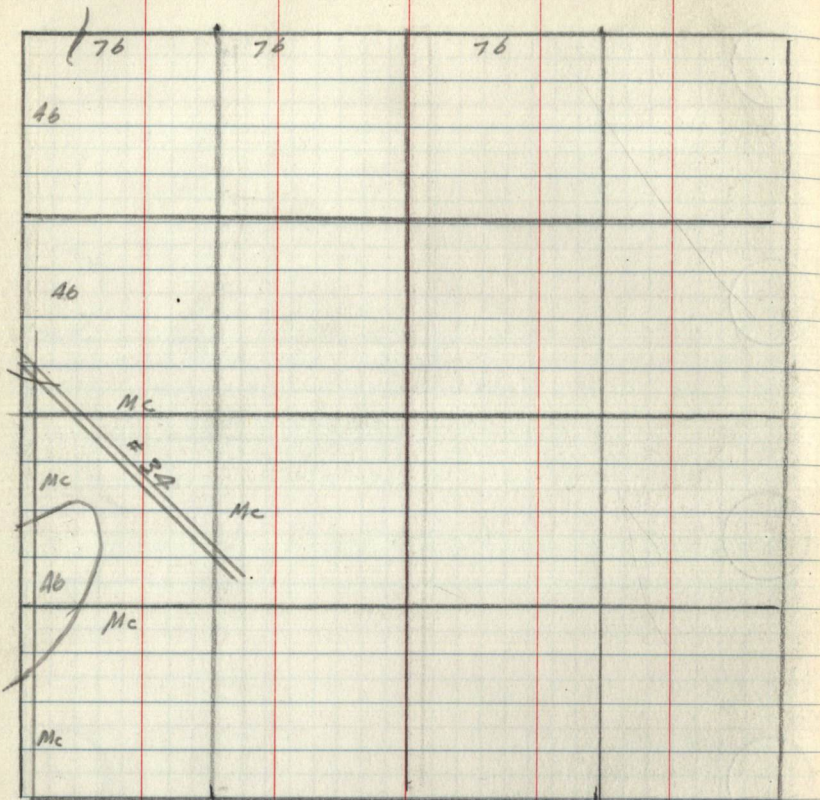


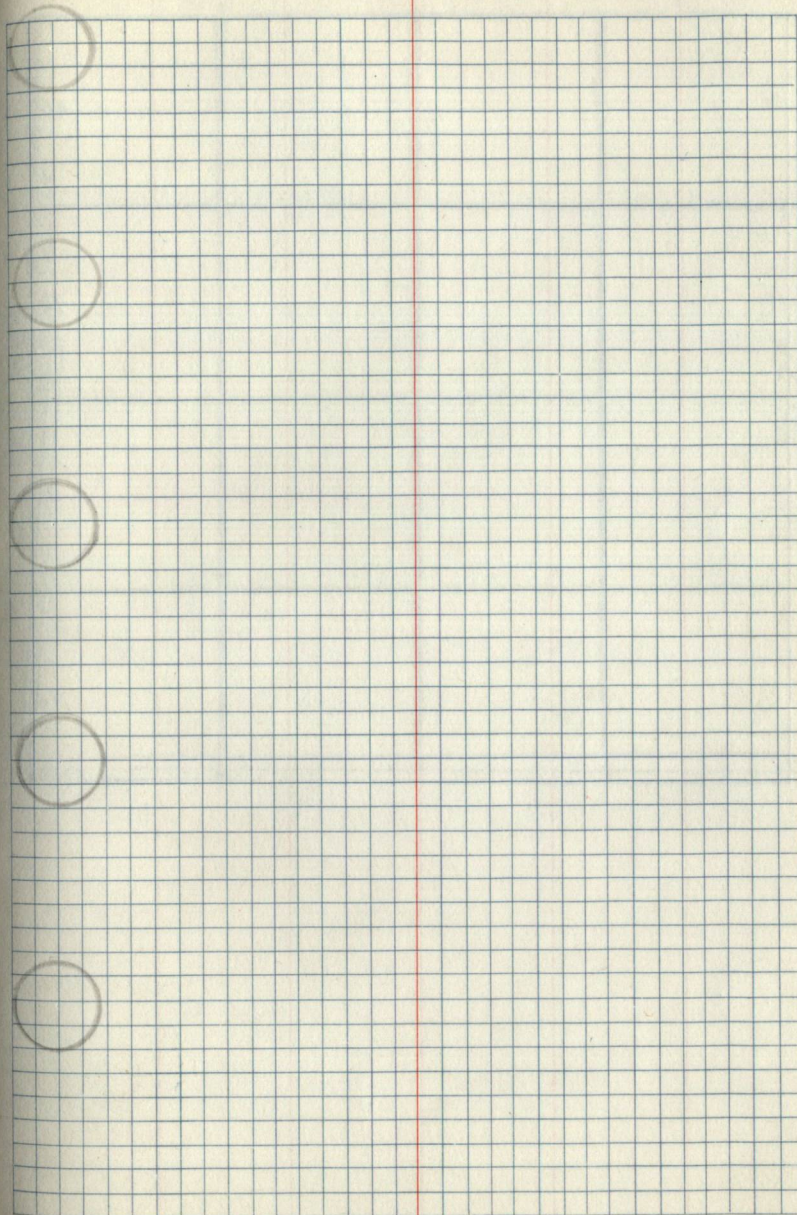


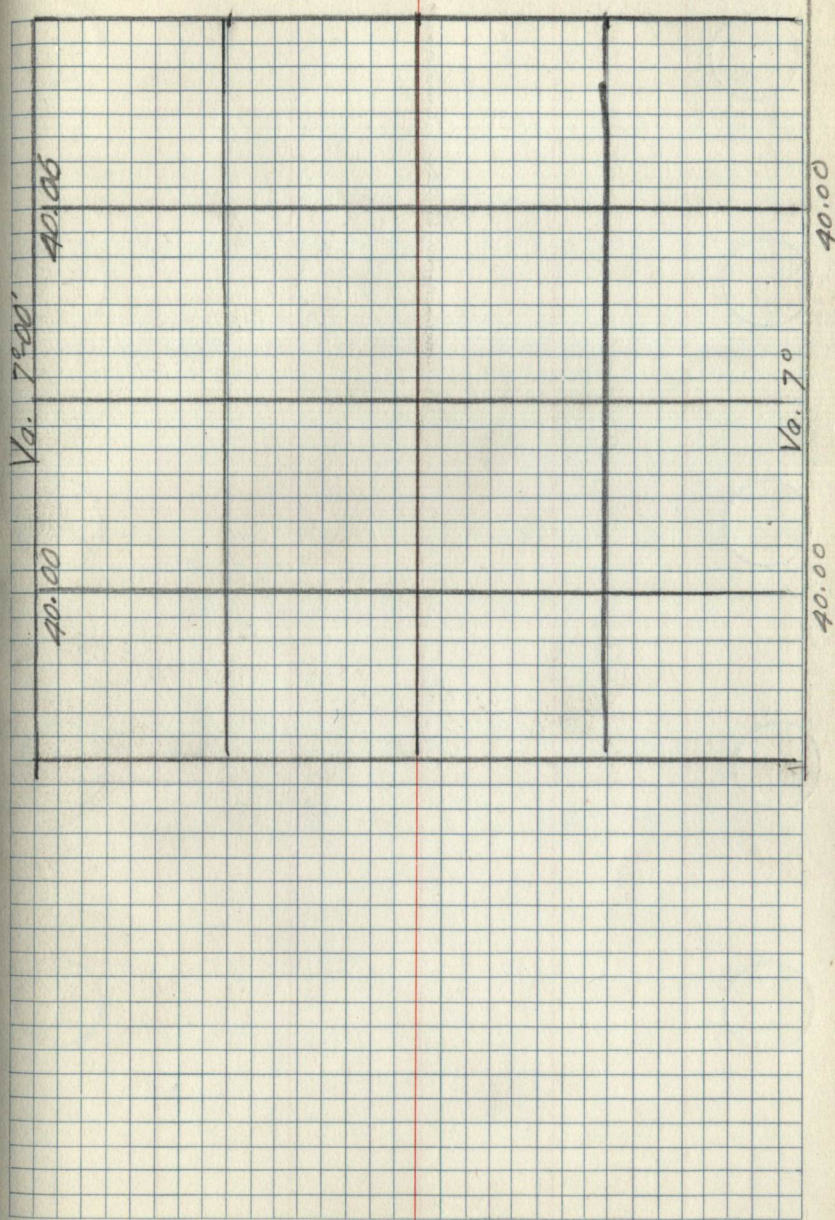
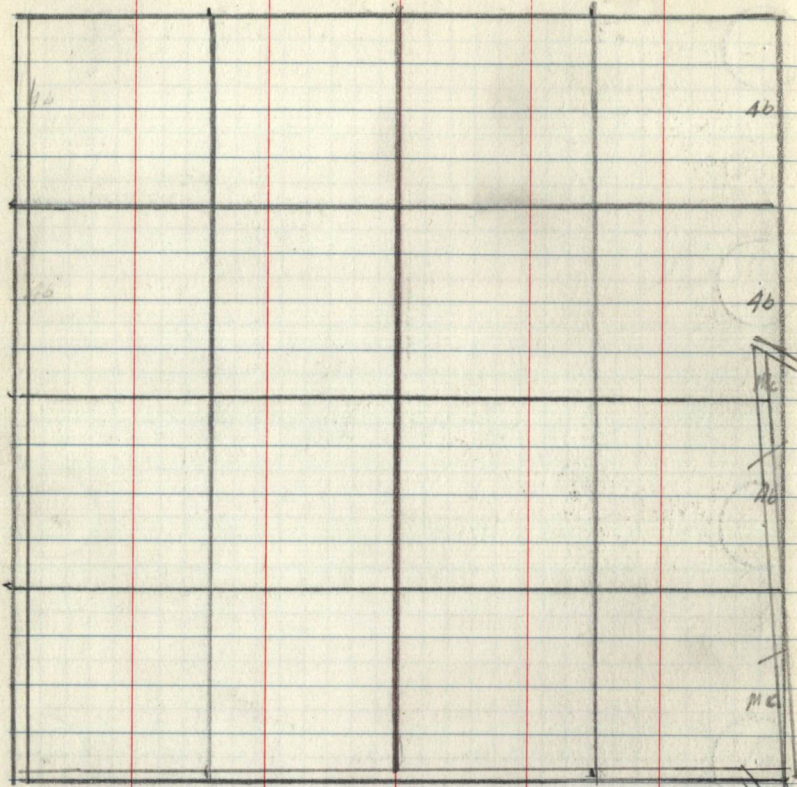


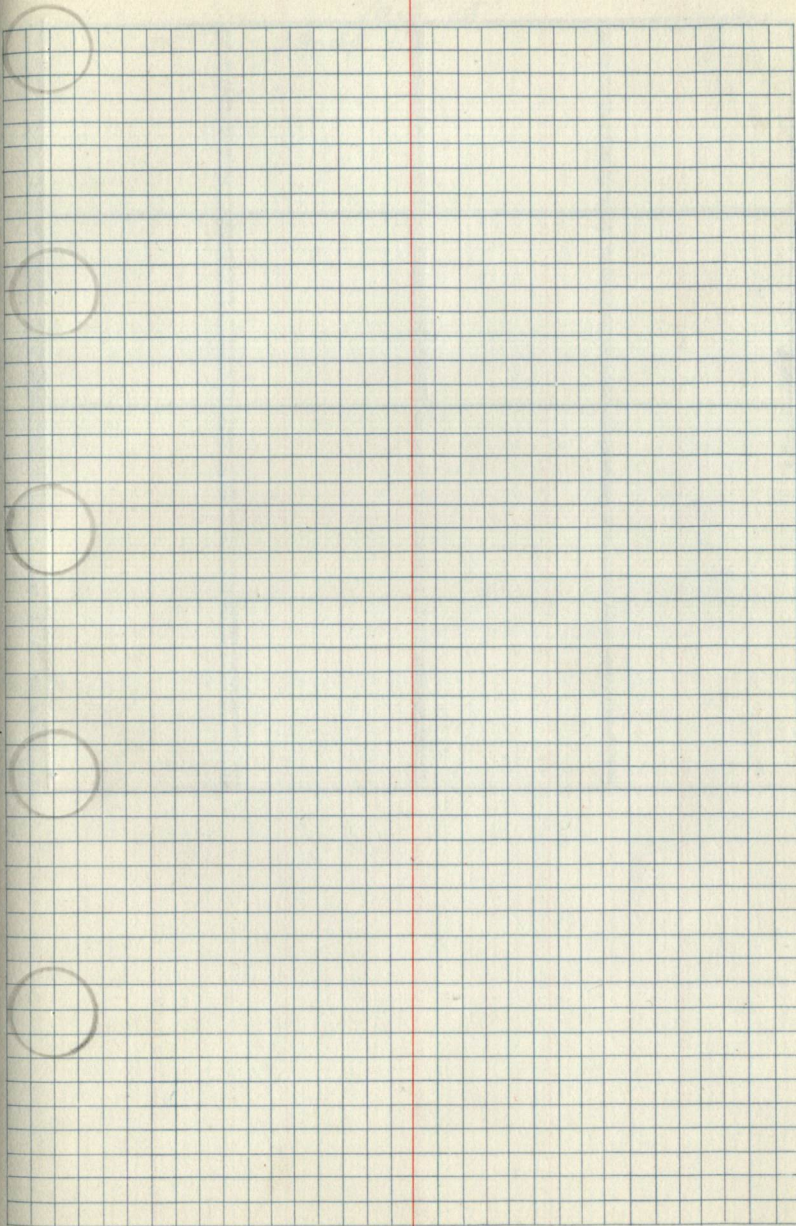




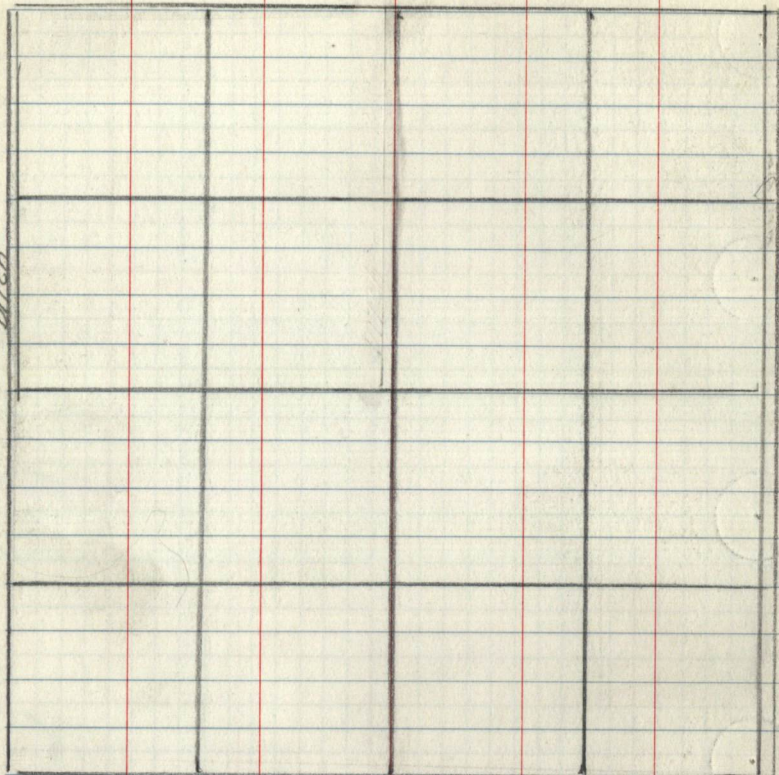








Ditch



28

20.00

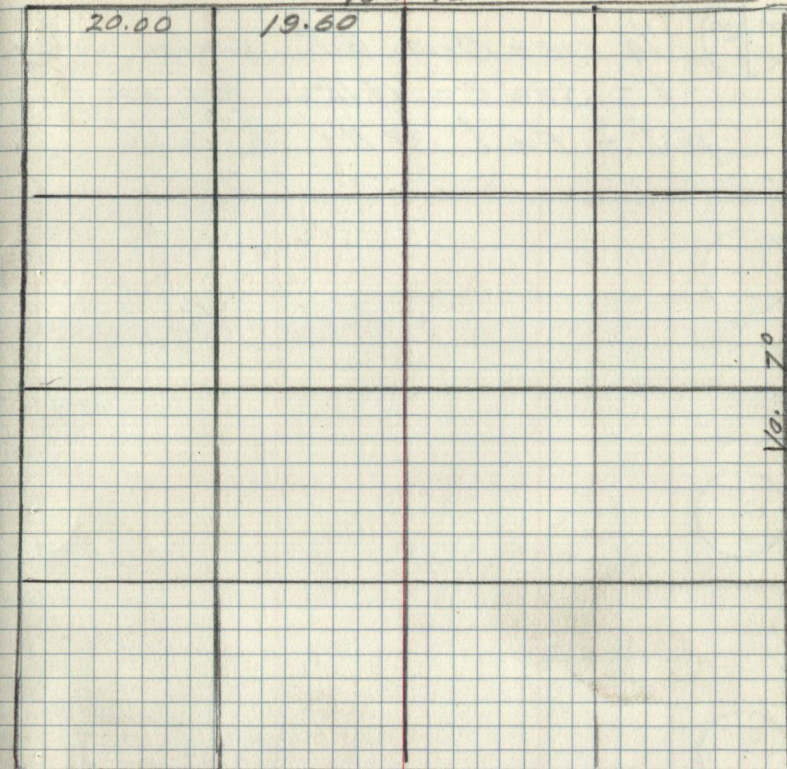
19.60

$V_{0.5^{\circ}15'}$

40.06

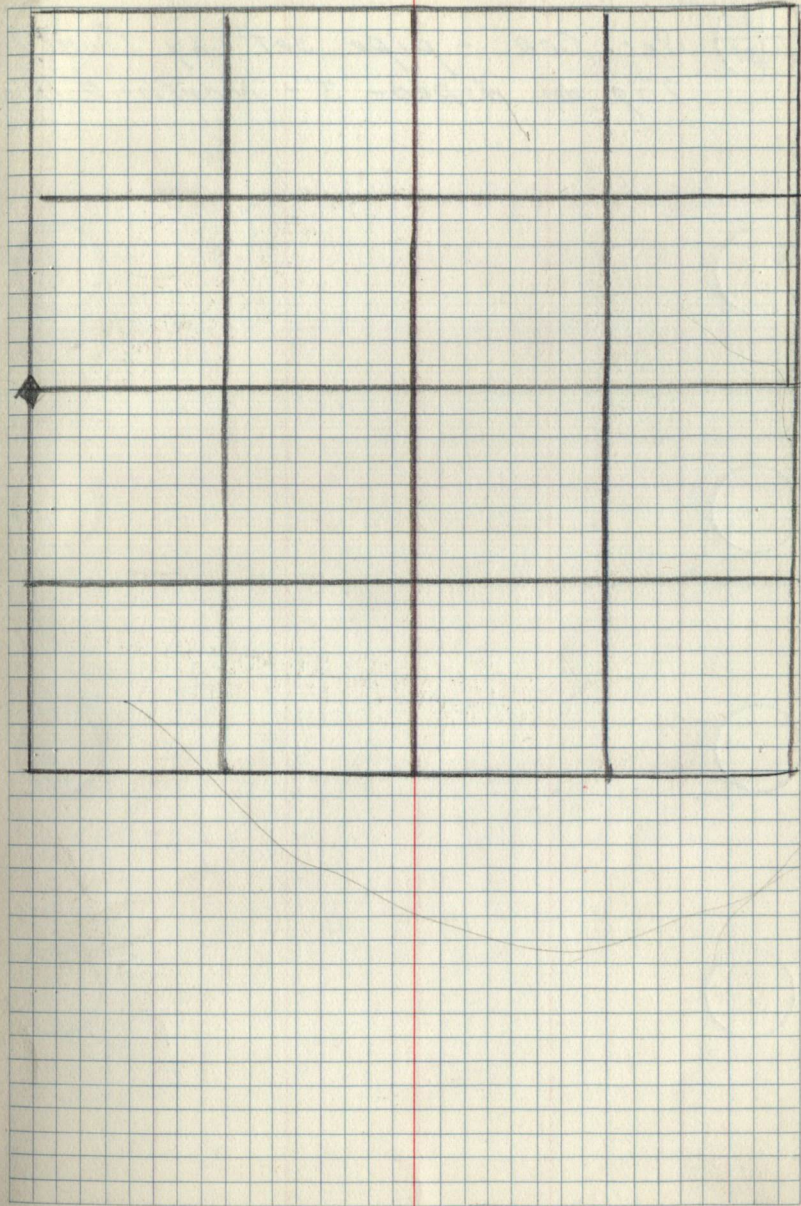
Ver. 7°

40.00



30-29

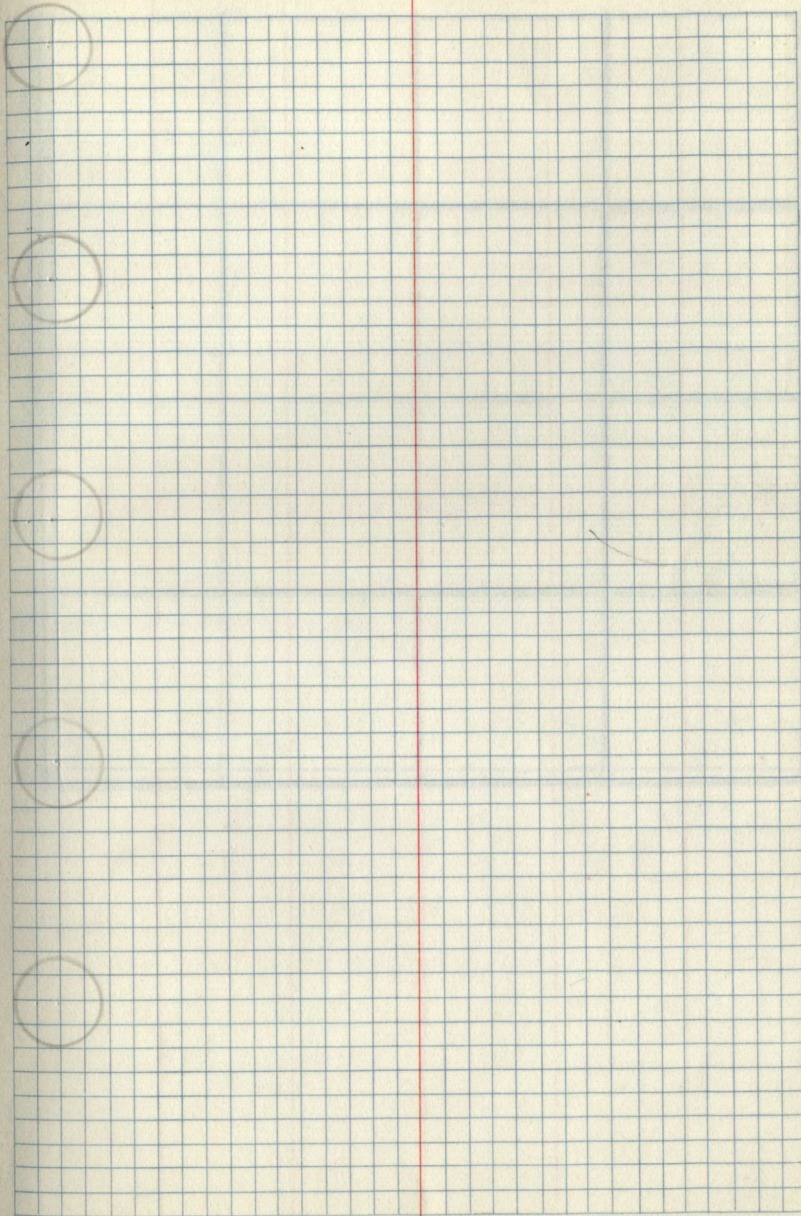
1/4 cor - Orig. B.T. Cedar stump.
8" - 580° E - 141ks. Tag on fence
post - East 38 ks To cor.



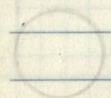
Ditch

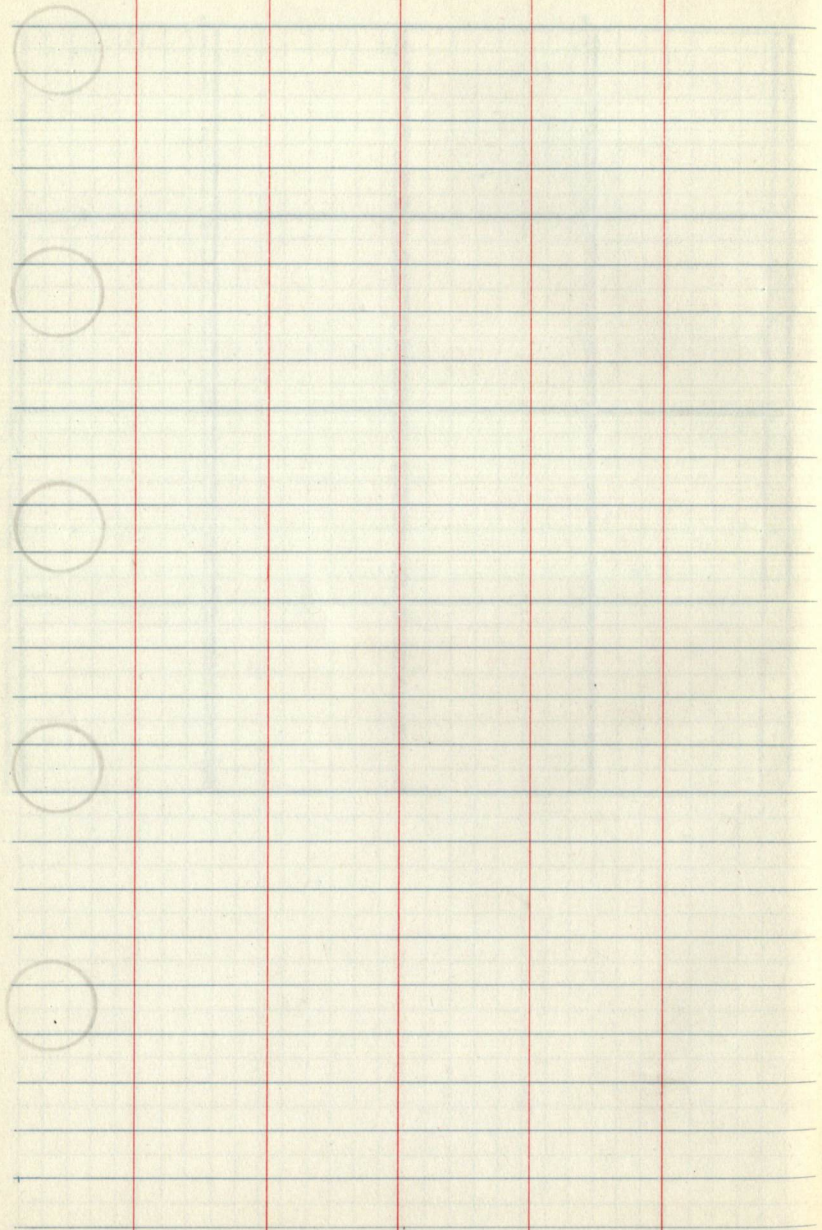
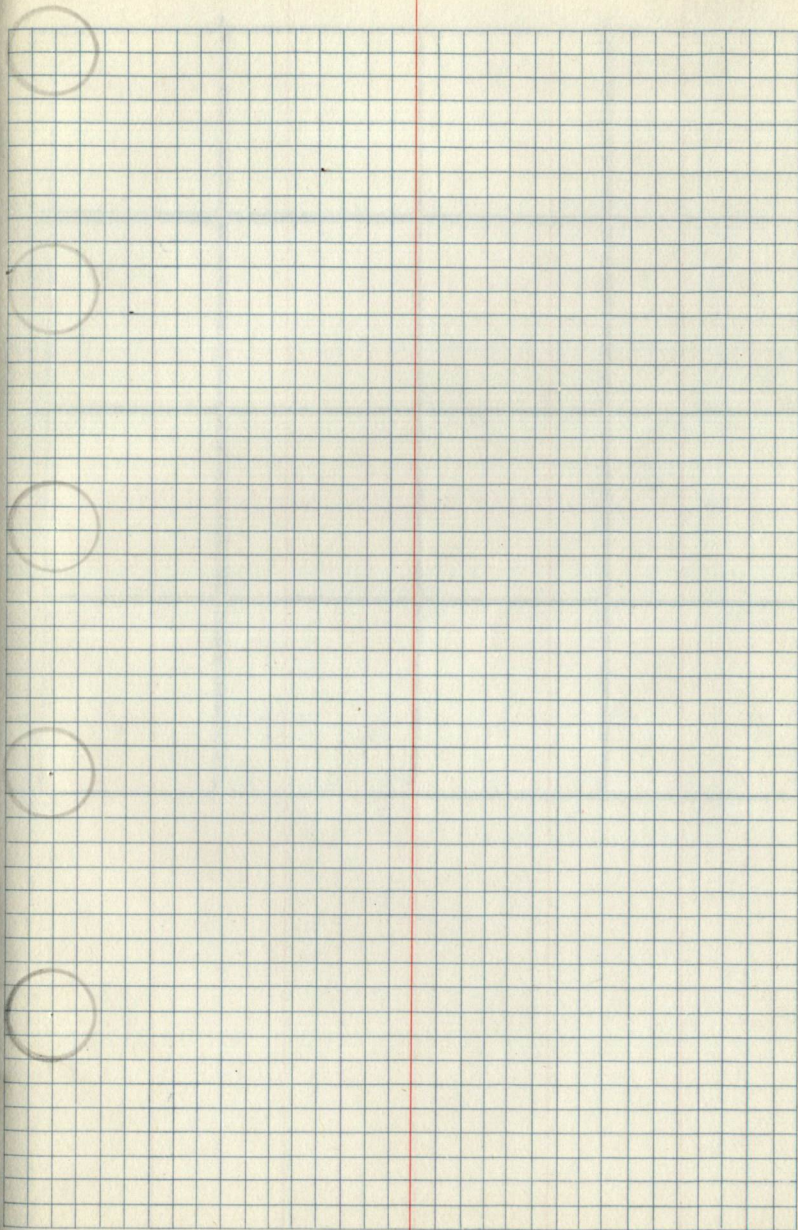
30
31

Sec. Cor. - pipe set by County -
Tag on Aspen - 3" - North - 2 1/2 k.



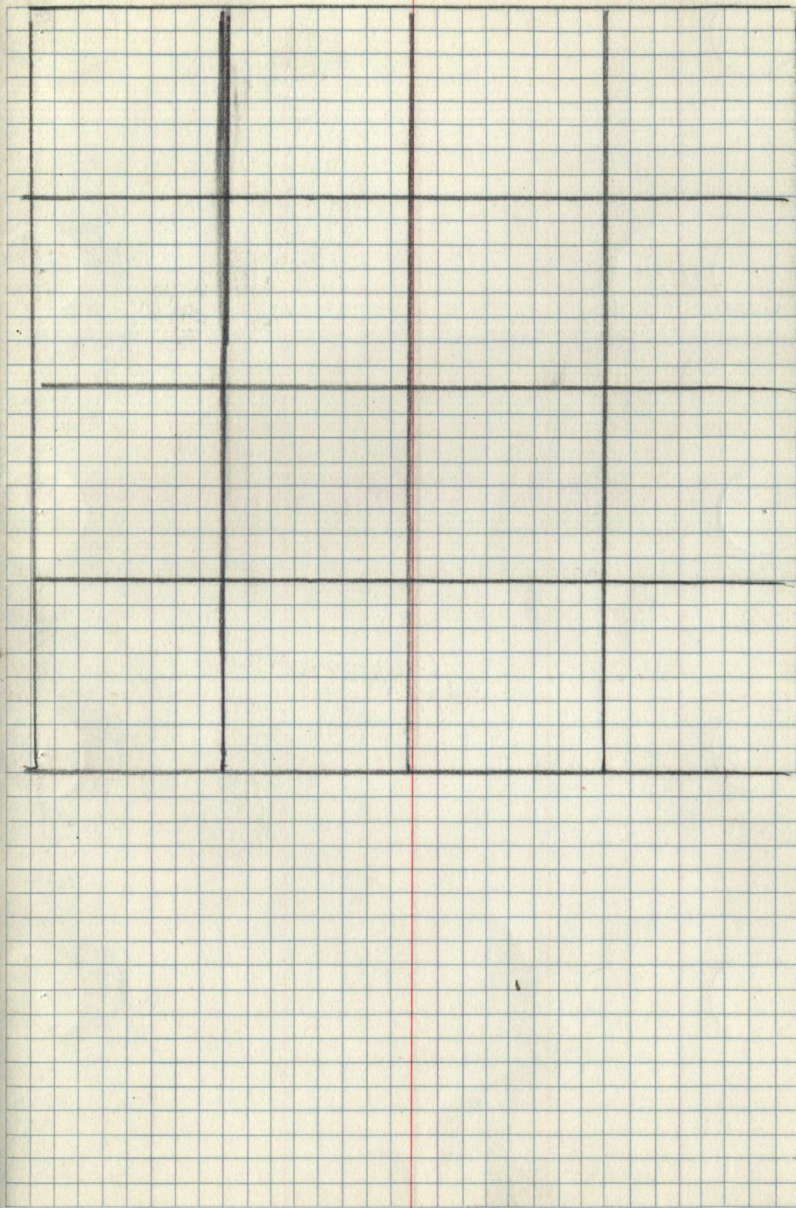
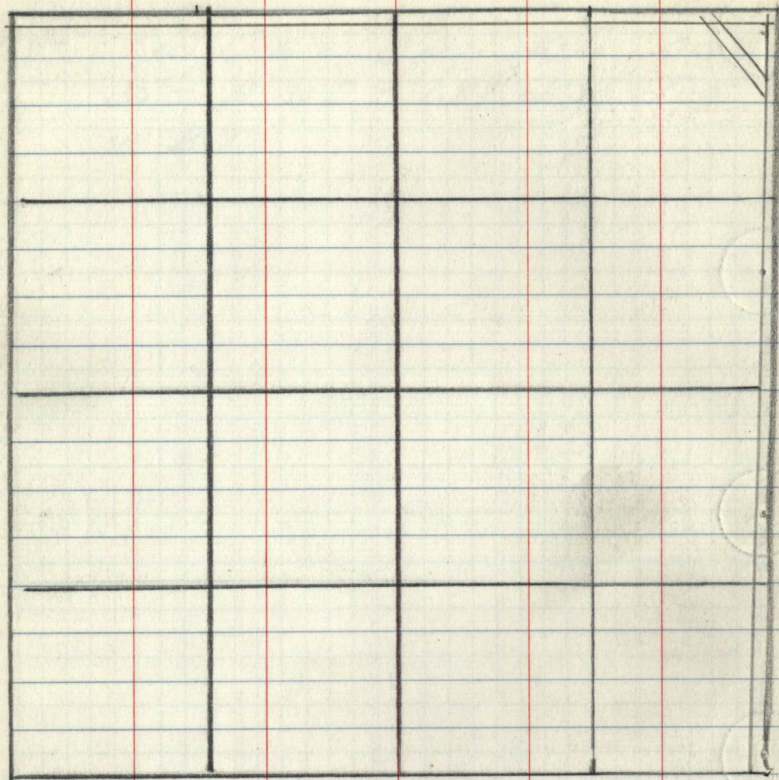


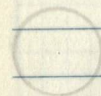




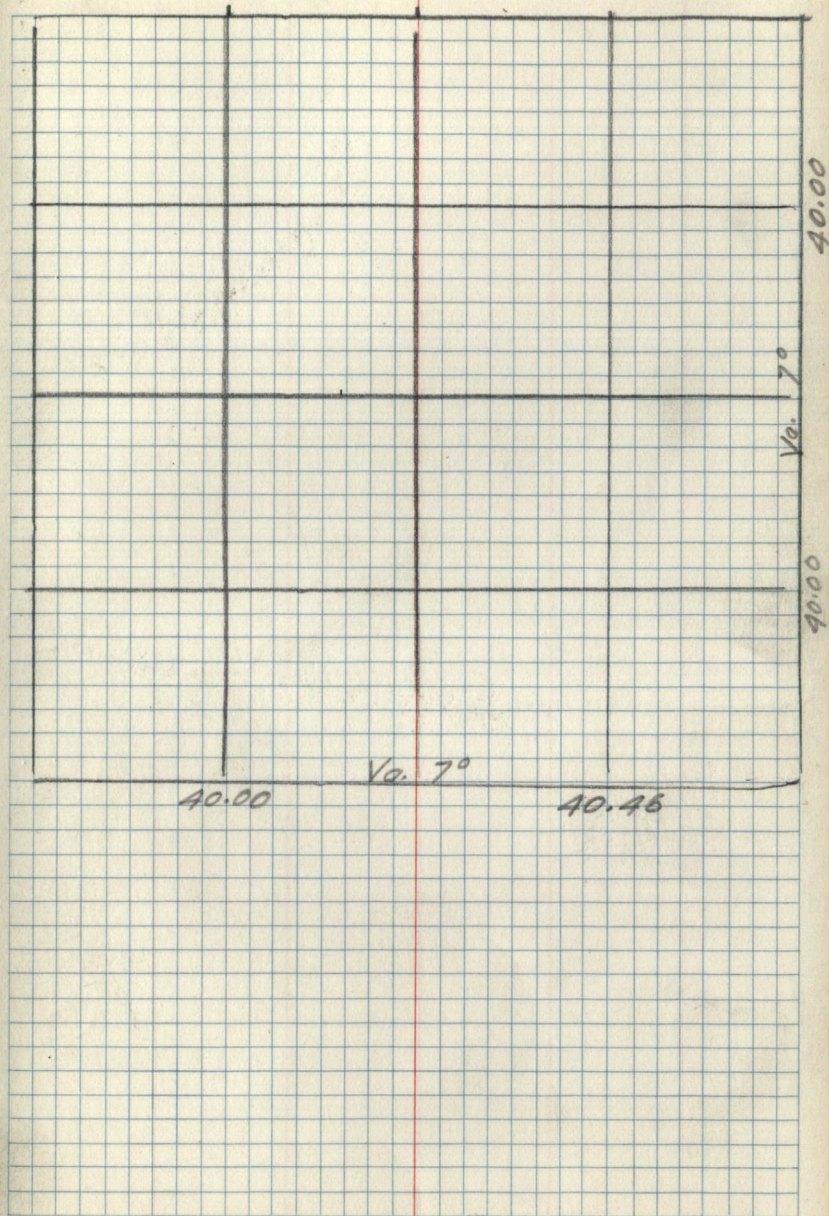
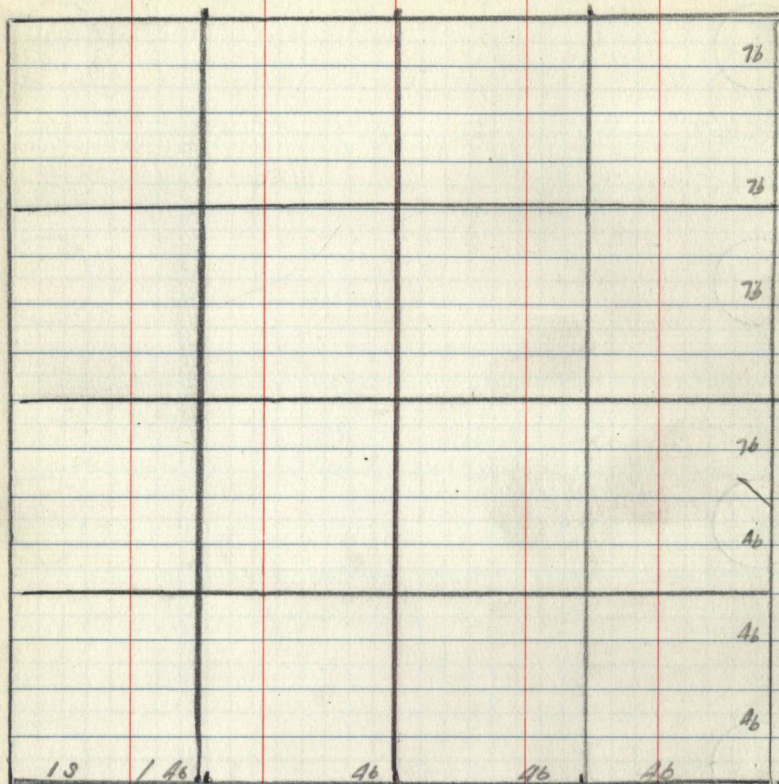
34/35

Sec. Cor - Orig. B.T. Oak -
30" - N 30 E - 1.87 ch's - Tag
on B.T.









Pages 37 Thru 42
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